

Fourth Professional Year Pharmacy Students in the Ambulatory Care Setting: Patient Perceptions and Satisfaction

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ABSTRACT. The purpose of this study was to investigate patient perceptions of the pharmacy student's role in an ambulatory care setting: satisfaction with services, patient care activities, and advice offered to students to become better health professionals. A survey evaluated patients' present and previous interactions with pharmacy students and demographic data. Seventy-four surveys were analyzed using descriptive statistics, ANOVA, Chi-square, and qualitative analysis. All respondents strongly agreed or agreed they enjoyed talking with the student and the student was professional; 93% (n = 69) reported satisfaction with student services. Respondents with more student activities

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performed were more likely to think their time was well-spent ($p < 0.05$). Patient advice emphasized professionalism and empathy. In this setting, patients were satisfied with pharmacy student services and felt the services added to their health care. Results may be used to communicate the benefits of pharmacy student interactions to clinical site administration at various organizations and to emphasize important areas for student professional development. doi:10.1300/J060v13n02_03 [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2006 by The Haworth Press, Inc. All rights reserved.]

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INTRODUCTION

The importance of establishing a good patient-provider relationship is widely recognized in all health care professions. Evidence shows that clinical and health outcomes of patients in both inpatient and outpatient settings can be affected positively by this relationship (1-5). A collaborative patient-provider relationship can help improve the patient's well-being, adherence, and self-management of disease states, as well as decrease morbidity and mortality. Many theories attempt to identify the type of relationship that should exist between patients and providers. Historically, the medical-centered model gave patients a dependent, passive role within the patient-provider relationship. In 1996, a client-centered model was developed by Chewning and Sleath as a means to update the medical-centered model. This newer model suggests that the patient or "client" should be given more decision-making responsibility with regard to his or her drug therapy (6, 7).

Another model developed by Hermansen and Wiederholt utilizes the norm of reciprocity and applications of the social exchange theory as an approach to the patient-provider relationship. This model states the patient feels the need to reciprocate because of a feeling of indebtedness towards their provider (8). Thus, patients who feel that their providers promote exceptional service and emotional support are more likely to feel a greater need to reciprocate. In 1990, Strand and colleagues focused on the patient-centered approach and defined the role of the pharmacist in the patient-provider relationship (9). Under this patient-specific model, the patient is center to any health care endeavor and clinical pharmacy services are integrated into the professional relationship (10).

The above-mentioned models emphasize the importance of establishing a relationship with the patient based on active participation and collaborative reciprocity. The skills necessary to foster such active relationships are first introduced during a pharmacy student's didactic education. In 2000, a Task Force on Professionalism consisting of the American Pharmaceutical Association Academy of Students of Pharmacy [APhA-ASP] and the American Association of Colleges of Pharmacy Council of Deans [AACCP-COD] has commented on student professionalism (11). The Task Force stated, "experience has shown that the attitudes and behaviors that characterize professionalism cannot be learned from a textbook or lecture. Rather, they must be actively acquired and inculcated through the process of professional socialization." Consequently, colleges of pharmacy, pharmacy educators, and pharmacy practitioners play a major role in the development of a pharmacy student's professionalism. In addition to being role models, pharmacy practitioners and preceptors have the ability to directly promote and foster patient-student provider relationships, while students are on their Advanced Practice Experiences (APE).

Role of Pharmacy Student and Patient Satisfaction

A review of the literature suggests that students on APE can provide quality pharmaceutical care to patients in various settings (12-16). The services provided by students range from discharge counseling and education to recommendations for changes in drug therapy and therapeutic lab monitoring. A number of studies have estimated the cost impact of student interventions in particular institutions (16-18). These studies demonstrate that, while on APE, students make substantial contributions to patient care that benefits the institution. Very few studies have evaluated the level of patient satisfaction with regard to the services pharmacy students provide or even their perception of the pharmacy student (19, 20). Therefore, the relationship between the pharmacy student as a health care provider and the patient served during APE was explored in this study.

OBJECTIVES AND RESEARCH HYPOTHESES

The objectives of this study were to assess how patients perceived the pharmacy student's role as health care providers in the ambulatory care setting. This included determining the patients' extent of satisfaction with pharmacy student services, and ascertaining the patient's perceptions of

the activities performed by pharmacy students. In addition, the advice patients have to offer pharmacy students was examined which helps provide them with a basis for developing relationships that allow them to become better health care providers.

Upon designing this study, the authors developed various hypotheses in order to determine if specific factors influenced patient satisfaction and perceptions. The following hypotheses were identified:

Hypothesis 1: (i) There is no difference in patient satisfaction with pharmacy student services between any demographic factors of age, race, education, gender, number of medications, and number of clinic visits;

(ii) There is no difference in the patient's interest in helping students with their training based on demographic factors of age, race, education, gender, number of medications, and number of clinic visits;

(iii) There is no difference in the patient's belief in student's contributing to their care based on demographic factors of age, race, education, gender, number of medications, and number of clinic visits.

Hypothesis 2: (i) There is no difference in the patient's level of confidence in the pharmacy student by the number of activities performed by the student;

(ii) There is no difference in the patient's level of comfort with the pharmacy student by the number of activities performed by the student;

(iii) There is no difference in the patient's perception of the pharmacy student by the number of activities performed by the student.

Hypothesis 3: There is no difference in patient's perceptions of pharmacy students based on previous exposure to pharmacy students.

METHODS

Study Setting

This study was conducted in an ambulatory care clinic in suburban Chicago. The ambulatory care clinic is part of a multispecialty ambulatory

care medical group. The medical group comprises 125 physicians (40 primary care, 85 specialists) and serves approximately 100,000 patients over 12 practice sites. The clinic is affiliated with a university and is an ambulatory care rotation site for both fourth professional year Pharm.D. and non-traditional Pharm.D. students. The ambulatory care clinic is managed and staffed entirely by clinical pharmacists who provide care in both diabetes and lipid management. The majority of the patients seen in this clinic have diabetes; the diabetes clinic was implemented in 2001 with the lipid clinic following thereafter in 2003 (Table 1).

Pharmacists at this ambulatory care clinic possess collaborative practice agreements with the physicians that allow initiation, adjustment, and discontinuation of pharmacologic treatment for diabetes and cholesterol as warranted. Time allotted for new patient appointments are 45 minutes with the pharmacist, and follow-up appointments are scheduled for 30 minutes. All subjects in this study gave their informed consent to participate and the Institutional Review Board of the University and the clinic approved the study protocol.

Study Design

Pharmacy students were involved in this study based on assignment to this particular clinic to fulfill their ambulatory care core requirement

TABLE 1. Clinic Demographics

Diabetes Clinic	n = 1,047
Type	
Type 1 (%)	13
Type 2 (%)	87
Gender	
Male (%)	53
Female (%)	47
Average age	69 years
Lipid Clinic	n = 75
Gender	
Male (%)	55
Female (%)	45
Average age	53 years

in their APE rotations sequence. Based on where this rotation fell in their sequence, students may have had anywhere from one to five rotations of previous experience interacting with patients. A total of 12 entry-level fourth professional year Pharm.D. candidates (five males, seven females), and one non-traditional Pharm.D. candidate (a B.S. degree male pharmacist) participated in this study. In order to ascertain the patient's perceptions of student activities performed and their satisfaction with the student's interaction, pharmacy students were given up to approximately 10 minutes to independently conduct medication histories on patients prior to their appointments with the clinical pharmacist. During this time, the students reviewed the name, strength, route, frequency, indication, and adverse reactions associated with each medication the patient was taking. The students also discussed counseling points of the medications and provided each patient with a medication wallet card with his or her most current drug therapy regimens. Other activities wherein students were allowed the opportunity to perform during this time included discussing laboratory test information, over-the-counter and herbal products, and drug interactions. Guidelines were provided to each student at the time of their rotation on the above-mentioned rules for medication histories to ensure consistency between students.

After the approximate 10-minute interaction with the patient, the pharmacy student administered a survey to the patient asking for his or her evaluation and satisfaction with the service provided by that student. As the patient filled out the survey, the student left the room to review the information gathered and inform the clinical pharmacist of any inconsistencies in medications (between current regimen and patient's computerized medical record), adverse reactions, over-the-counter and herbal product use, adherence issues, or any other problems or concerns that arose during the medication history. Patients were allowed approximately five to ten minutes to complete the survey. After 10 minutes, both the pharmacist and the pharmacy student would enter the room whereby the pharmacist would collect the survey, and conduct the appointment as usual. Collected surveys were placed in a drop-off box to maintain anonymity.

A convenience sample of patients was included in this study based on the appointment schedule at the clinic. Appointments occur every 30 minutes throughout the day. Students performed medication histories for every third or fourth patient according to the day's schedule in order to prevent overlap and delayed appointment times. Patients were excluded if they were visually impaired, or unable to read, write, or speak English. The survey was pilot tested from the middle of September 2004

to the beginning of October 2004 for clarity. Data collection occurred for five months (October 2004-February 2005). Approximately four to five patients were surveyed weekly during this time period.

Survey Instrument and Data Collection

In order to assess the objectives and hypotheses, the survey instrument was divided into three sections. The sections were as follows: (1) interaction with a pharmacy student in the past, (2) interaction with a pharmacy student today, and (3) demographic data (Appendix). The first section determined whether patients had interacted with a pharmacy student over the past three months, and what their comfort level was while discussing medications with various health care providers, including students, to provide a baseline level for comfort. The second section allowed patients to report activities that were performed by the student, and assessed the patient's perception of the student that day at the clinic using a 4-item Likert-type response scale. Questions pertaining to the patient's perceptions of the pharmacy student were adapted from Hermansen and Wiederholt's patient-centered model utilizing social exchange-based principles of the interpersonal relationship quality construct including degree of caring, trustworthiness, and respectfulness (8, 20). Other questions assessed the patient's level of comfort discussing their medications with the pharmacy student, and his or her level of confidence in the pharmacy student after their interaction that day. This section also allowed patients to state whether they were satisfied with the services they received, and suggest up to three pieces of advice for students to become better health care professionals. The final section was used to collect demographic information including age, race, gender, education, and number of previous visits to the clinic. Questions regarding discussing medical information, exposure to various health care professionals, and satisfaction with services have been validated in previous literature in another ambulatory patient population (19, 21).

Statistical Analysis

Descriptive statistics were used to analyze the patients' perceived benefit of the student with regards to activities performed in patient care, and satisfaction with students providing pharmaceutical services. One-Way Analysis of Variance (ANOVA) was used to evaluate patient comfort and confidence based on the number of patient care activities

performed by the student. In addition, ANOVA was used to determine whether the mean number of activities performed by the student affected the patients' perception of the student. Chi-square analysis was used to determine whether the respondents' demographic information affected their agreement with two particular statements in the survey (Appendix; questions 4 and 6 [statement 4]). Qualitative analysis was used to categorize the advice patients offered students into recurring themes. The categories and assessment of patient advice was first developed by the author; four other observers affiliated with the university (unrelated to this study) assessed the analysis to review the categories and themes to be accurately and appropriately determined. This was done to ensure inter-rater reliability.

RESULTS

A total of 74 surveys were completed, and all were used in the analysis. The majority of respondents were Caucasian males aged between 50 and 59 with high school being the highest level of education completed (Table 2). Most respondents had visited the clinic five times or less and were taking six to ten medications. When patients were asked how comfortable they felt discussing their medications with various health care professionals, patients responded they were most comfortable with physicians and pharmacists and least comfortable with pharmacy students and medical students (Table 3). Of the responses received, none of the respondents indicated they were uncomfortable with any health care professional. Most frequently occurring activities during the patient and student interaction were discussing medication frequency, discussing medication adverse effects, and providing the patient a medication card (Table 4).

With regard to patient perceptions, 100% of respondents ($n = 74$) either strongly agreed or agreed that they enjoyed talking with the student, that the student was professional, and that they felt comfortable discussing their medications with the student (Table 5). The majority also agreed that the time they spent with the student was useful, and the student added to the care they had received that day.

As for patient satisfaction with services provided by the student, 93% of respondents said that they were satisfied overall ($n = 69$), and 87% stated they would want to become a patient of the student after graduation ($n = 64$). Since the responses for patient satisfaction were overwhelmingly positive, there were no statistically significant differences between

TABLE 2. Patient Demographics

Demographics (n = 74)	Number (%)
Age	
≤ 30 years	2 (2.7)
31-39 years	2 (2.7)
40-49 years	14 (18.9)
50-59 years	22 (29.7)
60-69 years	16 (21.6)
≥ 70 years	16 (21.6)
Race	
Caucasian	61 (82.4)
Hispanic	9 (12.2)
Asian/Pacific Islander	1 (1.4)
African American	2 (2.7)
Gender	
Male	41 (55.5)
Female	32 (43.2)
Education	
High School	32 (43.2)
College (2 yrs or less)	27 (36.5)
College (4 yrs)	6 (8.1)
Graduate School	7 (9.5)
Number of Clinic Visits	
5 times or less	51 (68.9)
6-10 times	11 (14.9)
11-15 times	4 (5.4)
16 times or more	3 (4.0)
Number of Medications	
1-5	17 (22.9)
6-10	31 (41.9)
11-15	6 (8.1)
> 15	2 (2.7)
Type of Clinic	
Diabetes	32 (43)
Lipid	4 (5.4)
Both	18 (24.3)

TABLE 3. Patient Comfort Level with Health Care Professionals (n = 74)

Health Care Professional	Comfortable (%)	Somewhat Comfortable* (%)	Have not discussed (%)
Physician	98.6	0	0
Pharmacist	97.3	1.4	1.4
Nurse	93.2	2.7	1.4
Pharmacy student	86.5	10.8	2.7
Medical student	85.1	10.8	2.7

*No responses received for Somewhat Uncomfortable and Uncomfortable categories.

TABLE 4. Activities Performed in the Pharmacy Student and Patient Interaction (n = 74)

	Number (%)
Gave me a list of my most current medications	47 (63.5)
Talked to me about side effects of my medication	36 (48.7)
Helped me understand how often I should take my medications	29 (39.2)
Talked about my laboratory test information with me	18 (24.3)
Told me something I didn't know about my medications	15 (20.3)
Recommended an over-the-counter product for me	9 (12.2)
Recommended a laboratory test for me	5 (6.8)
Told me to start a new medication	4 (5.4)
Found a drug interaction with my medications	3 (4.1)
Told me that I should stop taking one of my medications	0 (0)

demographic factors as posited in Hypothesis 1(i). Two statements (“I believe it’s important to help students become better health care professionals by working with them during their training” and “The student added to the care I received today.”) were examined by demographic factors of race, gender, education level, age, number of clinic visits, and type of clinic. None of these factors were found to be statistically significant; therefore, the data failed to reject Hypothesis 1 (ii, iii).

The number of activities performed by the student did not influence the confidence patients had in the student during their interaction, or the comfort level of the patient when discussing their medication with the pharmacy student ($p = 0.14$ and $p = 0.31$, respectively). Thus, the data failed

TABLE 5. Patient Perception of Pharmacy Students* (n = 74)

	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)
The student was very professional with me	79.7	20.3	0	0
I enjoyed talking with the student	66.2	33.8	0	0
The time I spent with the student was useful for me	51.4	41.9	2.7	2.7
The student added to the care I received today	50	41.9	2.7	1.4
I felt comfortable discussing medical information with the student	50	48.7	0	0
The student seemed to know a lot about by medications	41.9	50	1.4	1.4
I think the student learned something from me	14.9	55.4	13.5	1.4
I felt talking with the student was a bother	4.0	1.4	33.8	54

*No statistical significance found at $p < 0.05$ for all statements for demographic factors of race, gender, education, age, number of clinic visits, and type of clinic.

to reject Hypothesis 2 (i, ii). Regarding Hypothesis 2 (iii), the mean number of activities performed by the student did not influence patient perceptions with the exception of the particular statement, "The time I spent with the student was useful for me" ($p < 0.05$, Table 6). Those patients who strongly agreed with this statement showed a higher average number of activities performed (2.73) than those responding with agree (1.81) or disagree (1.5).

When patients were asked if they had previous experience with pharmacy students in the past and whether it was positive or negative, it appeared that patients confused this statement with their present interaction with the pharmacy student in clinic. It seemed that patients interpreted this question incorrectly as responses to the original question would contain statements regarding the student that they had just interacted with in clinic such as "John was very helpful" or "Jane was professional." Therefore, Hypothesis 3 could not be analyzed.

Several recurring themes were identified from the qualitative analysis: "Empathy," "Honesty," "Professionalism," "Ongoing education," and "Relate to patient" (Table 7). In determining (1) the patient's comfort level discussing their medications with the pharmacy student that day,

TABLE 6. Influence of Mean Number of Activities Performed on Patient's Agreement with Statements (n = 74)

	Strongly Agree	Agree	Disagree	Strongly Disagree	p-value
I enjoyed talking with the student	2.39	1.96	NA [†]	NA	0.273
The student was very professional with me	2.32	1.93	NA	NA	0.398
The time I spent with the student was useful for me*	2.73	1.81	1.5	NA	0.035
The student added to the care I received today	2.49	2.1	1.5	2	0.662
I felt talking with the student was a bother	0	3	2.16	2.38	0.080
I think the student learned something from me	1.27	2.39	2.3	1	0.106
The student seemed to know a lot about my medications	2.77	1.91	2	2	0.167
I felt comfortable discussing medical information with the student	2.38	2	NA	NA	0.318

*Significant at $p < 0.05$; $F_{4,61}$ [†]Not Applicable

TABLE 7. Samples of Patient Advice Given to Pharmacy Students and Corresponding Theme

Theme	Advice
Empathy	Be compassionate. Be concerned. Make the patient comfortable while talking.
Honesty	Be straightforward. Be honest. Never be afraid to say I don't know.
Ongoing Education	Keep on learning. Keep working hard and hope to become a pharmacist someday. Continue with education.
Professionalism	Be on time. Be professional on your job. Be discreet.
Relate to Patient	Let the patient tell you about themselves. Try to connect where the patient is with their disease. Try to understand the patient's approach to their medical problem.

and (2) their confidence level in interacting with the students, patients could respond with (1) the same level of comfort, more comfort or less comfort, and (2) the same level of confidence, more confidence or less confidence, respectively (see Appendix, Questions 8 & 9). Patients who responded with the same level of confidence after their interaction with the student that day, and who responded with the same level of comfort after talking with the pharmacy student about their medications that day tended to provide advice in the “Relate to patient” category for the students (Table 8). Patients who cited more comfort or confidence with the student tended to provide advice that emphasized empathy and

TABLE 8. Advice Offered by Patients to Pharmacy Students

	Empathy	Honesty	Ongoing Education	Professionalism	Relate to Patient
	Number (%)				
Comfort Level (n = 24)					
Same	1 (4.2)	1 (4.2)	2 (8.3)	1 (4.2)	3 (12.5)
More	4 (16.6)	1 (4.2)	3 (12.5)	6 (25)	2 (8.3)
Less	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Confidence Level (n = 24)					
Same	2 (8.3)	1 (4.2)	2 (8.3)	0 (0)	4 (16.6)
More	4 (16.6)	1 (4.2)	3 (12.5)	4 (16.6)	3 (12.5)
Less	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Age (n = 24)					
Below 30 years	1 (4.2)	0 (0)	2 (8.3)	0 (0)	0 (0)
31-39	0 (0)	1 (4.2)	0 (0)	0 (0)	0 (0)
40-49	0 (0)	0 (0)	2 (8.3)	3 (12.5)	2 (8.3)
50-59	5 (20.8)	1 (4.2)	0 (0)	3 (12.5)	1 (4.2)
60-69	0 (0)	0 (0)	1 (4.2)	0 (0)	1 (4.2)
70 or above	0 (0)	0 (0)	0 (0)	1 (4.2)	0 (0)
Gender (n = 24)					
Male	3 (12.5)	2 (8.3)	5 (20.8)	6 (25)	3 (12.5)
Female	2 (8.3)	0 (0)	1 (4.2)	1 (4.2)	1 (4.2)
Education (n = 24)					
High School	0 (0)	1 (4.2)	2 (8.3)	1 (4.2)	1 (4.2)
College (≤ 2 years)	4 (16.6)	1 (4.2)	3 (12.5)	5 (20.8)	3 (12.5)
College (4 years)	1 (4.2)	0 (0)	0 (0)	1 (4.2)	0 (0)
Graduate School	1 (4.2)	0 (0)	0 (0)	0 (0)	0 (0)

professionalism. The educational background of the patient related to the nature of advice given. Patients with a college education and those over the age of 30 years advised students to be empathetic and professional. Patients with only high school education advised students to continue their education. In addition, gender appeared to play a role in the advice patients offered: male patients advised the students to be professional and female patients advised them to be empathetic health care providers.

DISCUSSION

Co-Funded faculty relationships were established at this ambulatory clinic approximately five years ago. Before the addition of co-funded faculty, the site did not participate in the practice of enhancing pharmacy student professional development and education. This new relationship provided a site for fourth year pharmacy students to choose as a rotation that allows them to enhance their pharmaceutical care skills. Prior to the implementation of this study, pharmacy students on this rotation would observe the pharmacist's interactions with patients and document interventions in a computerized SOAP note; however, they would not participate in any specific, direct patient care interventions. Therefore, the high level of patient satisfaction in this study not only indicates the value of student involvement in a clinical ambulatory care setting managing diabetes and hyperlipidemia within a multispecialty group practice from a patient's perspective, but also provides the site with quality assurance regarding patient-student provider relationships and patient satisfaction. Accordingly, preceptors can apply this information to assess the level of student involvement in their own settings.

Of note, regarding the patient's perception of the pharmacy students' role as health care professionals, more patients strongly agreed that they enjoyed talking to the student or that they felt the student was professional. However, half of respondents indicated less strong agreement with the following statements: "The time I spent with the student was useful for me," and "The student added to the care I received today." Thus, it appears that patients enjoyed talking to the pharmacy students but were not very certain that the interaction was meaningful to them. Future studies can explore the patients' application of the information provided to them by pharmacy students and whether a difference is made within their disease state management relating to outcomes.

Throughout the qualitative analysis of the advice patients had to offer pharmacy students to become better health care professionals, it was

expressed that patients want health care providers that are both empathetic and professional. Colleges of pharmacy can utilize this information to develop curricula that promote good communication skills allowing students to develop this sense of empathy, professionalism, and integrity. In addition, professional attitudes and behaviors regarding pharmaceutical care can be identified, developed, and measured throughout the curricula to ensure patient satisfaction (22-24).

Limitations

One of the difficulties regarding application of this study is small sample size. Since it was conducted in an ambulatory care setting, the results may not be generalized to other settings. It is possible that the pharmacy students on APE elsewhere may be indistinguishable from the pharmacist as perceived by the patient, and patients may not realize if they have encountered a pharmacy student or a pharmacist. Therefore, it is unknown as to whether patients in this study knew that they had ever encountered a pharmacy student in the past. Depending on whether the patient had prior experience with a student in the past, this may have affected the results as patients who have not had previous interactions would not have comparisons of expectations to draw from. In addition, the major intervention in this study concerned medication histories. These results may not apply to clinics where the students have other responsibilities, are involved in other areas of intervention, and possess different skills. Students in other settings may also work with other health care professionals that may or may not affect the patient's view of their interactions with them, as in these instances the student would not be working independently.

Another factor that limits applicability of this study is related to clinic demographics in that the majority of patients in this setting were mostly elderly Caucasians. Previous studies investigating patient satisfaction with medical students in an ambulatory care setting and have reported an overall high level of satisfaction (25-28). Of these studies, the effects of race, gender, and education are unknown. Similar to this study, a previous study with medical students showed a positive trend between age and social class and found that the elderly and lower social classes were more satisfied (27).

Furthermore, students at this APE site did not document the interventions they made with each patient encounter. Patients responding to the survey questions may not have realized an intervention was made or suggested, and therefore results of the activities performed by the

students on patient care may have been higher. In addition, there may have also been some patient bias towards the student as patients were given surveys to complete by the student and their responses could be skewed based on empathy, as these new health care practitioners can be visually nervous working with patients.

Regardless of these limitations, preceptors can inform students that patients do appreciate their services. The information can also be used to inform clinical site administration that having students at the site is also beneficial. Perhaps future studies may even be able to determine if certain students have particular characteristics that make patients more receptive and allow them to become better health care providers, or can even compare pharmacy students and medical students.

CONCLUSION

Based on the findings of this study, it can be concluded that patients are satisfied with the services fourth professional year Pharm.D. candidates can provide in an ambulatory care setting. Although specific predictors of patient satisfaction could not be extracted, patients feel pharmacy students add to their health care and were more likely to think their time spent with the pharmacy student was valuable as more activities were performed. Patients also want health care providers that are empathetic and professional; characteristics that can be greatly enhanced by preceptors and colleges of pharmacy alike.

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APPENDIX A

Patient Satisfaction Survey Instrument

The following questions help us to determine if you have worked with a pharmacy student in the past:

1. Has a pharmacy student talked to you about your medicines or health in the past three months?
 - a. Yes
 - b. No
 - c. I don't know
 2. How would you rate your experience with the pharmacy student?
 - a. A positive experience
 - b. Neither positive or negative (skip question 3)
 - c. A negative experience
 3. What made your experience positive or negative, in your opinion?
-
-

4. How much do you agree with the following sentence?

I believe it's important to help students become better health care professionals by working with them during their training.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

5. How comfortable are you discussing your *medications* with a:

	Comfortable	Somewhat Comfortable	Somewhat Uncomfortable	Uncomfortable	Have Not Discussed
Pharmacist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physician	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nurse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy Student	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical Student	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following questions help us learn about what you thought of your experience interacting with pharmacy students in the clinic today:

6. Please choose the answer that best describes your experience today:

	Strongly Agree	Agree	Disagree	Strongly Disagree
I enjoyed talking with the student.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The student was very professional with me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The time I spent with the student was useful for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The student added to the care I received today.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt talking with the student was a bother.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think the student learned something from me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not want to talk with the student if I don't have to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The student seemed to know a lot about my medications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt comfortable discussing medical information with the student.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Please mark an (X) on each of the following items that the pharmacy student helped you with today:
- ___ Talked to me about side effects of my medication
 - ___ Helped me understand how often I should take my medications
 - ___ Gave me a list of my most current medications
 - ___ Found a drug interaction with my medications
 - ___ Told me something I didn't know about my medications
 - ___ Talked about my laboratory test information with me
 - ___ Recommended a laboratory test for me
 - ___ Recommended an over-the-counter product for me
 - ___ Told me that I should stop taking one of my medications
 - ___ Told me to start a new medication
8. After today, how comfortable do you feel talking with a pharmacy student about your medications?
- More comfortable
 - Less comfortable
 - About the same
9. After today, how confident do you feel interacting with a pharmacy student about your health care?
- Very confident
 - Less confident
 - About the same
10. Would you want to be a patient of this student's once they graduate?
- Yes
 - No
11. What advice can you give pharmacy students to help them become better health care professionals?
- _____
 - _____
 - _____
12. Overall, were you satisfied with the services that the pharmacy student provided today?
- Yes
 - No

13. What is your age?
- a. 30 or less
 - b. 31-39
 - c. 40-49
 - d. 50-59
 - e. 60-69
 - f. 70 or above
14. What is your race?
- a. African American
 - b. Asian/Pacific Islander
 - c. Caucasian
 - d. Hispanic
 - e. Other: _____
15. What is your gender?
- a. Male
 - b. Female

16. What is the highest level of education you have completed?

	Yes	No
High School	<input type="checkbox"/>	<input type="checkbox"/>
College (2 years or less)	<input type="checkbox"/>	<input type="checkbox"/>
College (4 years)	<input type="checkbox"/>	<input type="checkbox"/>
Graduate School	<input type="checkbox"/>	<input type="checkbox"/>

17. How many times have you visited this section of the clinic (run by pharmacists)?
- a. 5 times or less
 - b. 6 to 10 times
 - c. 11 to 15 times
 - d. 16 times or more

Thank you for participating in this survey. Your input is greatly appreciated.

For Office Use Only:

Number of Medications: 1-5 6-10 11-15 >15

Type of Clinic: Diabetes Cholesterol Both