



**PERCEPTIONS OF DOCTOR OF PHARMACY DEGREE STUDENTS ABOUT  
INTRODUCTORY COMMUNITY PHARMACY CLERKSHIP, TAIF, SAUDI ARABIA**

**Dr. Adil Abdelrahman Mahmoud\***

Department of Clinical Pharmacy, Faculty of Pharmacy, University of Taif, KSA.

\*Corresponding Author: Dr. Adil Abdelrahman Mahmoud

Department of Clinical Pharmacy, Faculty of Pharmacy, University of Taif, KSA.

Article Received on 25/08/2017

Article Revised on 15/09/2017

Article Accepted on 06/10/2017

**ABSTRACT**

**Aim of the study:** to investigate students' assessment of the site and preceptors in an introductory community pharmacy practice clerkship, faculty of pharmacy, Taif university. **Method:** a cross-sectional study, in which two self-administered questionnaires for site of training and preceptors were distributed. Two academic sessions were investigated: 2014/2015 (response rate 94%), and 2015/2016 (response rate 84%). Descriptive statistics and paired T-test were used. **Results:** Students gave moderate evaluation for the skills which were definitely obtained in the site of training (36%-53%), and the partially obtained ones (43%-51%). The following skills either not provided (40%-53%), or not applicable (11%-14%): inventory, pricing and interaction with patients. Students were highly satisfied with their preceptors (70%-88%), but 22%-29% commented that the following skills were not given conveniently: adequate orientation, and helping students to use the training manual. **Conclusion:** The results showed that students did not get adequate training, and more orientation and training for the preceptors, to accomplish the clerkship objectives, is required.

**KEYWORDS:** Introductory community pharmacy experience, community pharmacy, Preceptors, Pharmacy clerkship.

**INTRODUCTION**

Doctor of Pharmacy program (PharmD) is adopted in most of pharmacy colleges in Saudi Arabia recently.<sup>[1]</sup> The experiential experience, in PharmD program, is expected to augment the didactic lectures in the colleges. The presence of the students in a real field of practice is very important in building their future career competencies. Introductory community pharmacy experience clerkship training is advised to be given in early pre-graduate years.<sup>[2,3]</sup> Many barriers could be envisaged in facilitating this training in real sites. These include: non-acceptance by managers, inexperienced site preceptors, and suitability of the locations. Community pharmacy training is important since, at a certain point, most pharmacists will be employed in this important sector. Many studies document inadequate counseling practice by community pharmacists,<sup>[4-6]</sup> a matter which should be strengthened by giving importance to undergraduate didactic and experiential training. PharmD programs are expected to improve the clinical practice of the pharmacists versus the traditional distribution one.

In college of pharmacy, Taif university, Saudi Arabia, a new introductory pharmacy practice experience (IPPE) manual was devised for the community pharmacy clerkship. The manual was adapted from the manual of faculty of pharmacy, University of Minnesota.<sup>[7]</sup> This

manual was revised and accepted by the committee of clinical training in the college. The real use of this manual started for two sessions, the years of 2014/2015 and 2015/2016. This clerkship is usually done in the summer vacation, for a four weeks period, 40 hours per week, after third professional year. The outcomes expected from this rotation include the following: accurate prescription processing, effective patient education and appropriate communication skills, skills regarding Over-the-Counter (OTC) medications, professional and administrative activities, knowledge of purchasing, inventory, quality assurance and appropriate professional and work ethics.<sup>[8]</sup> Although this introductory rotation might be to some extent oriented towards distribution processes but much will be gained from the responding to symptoms activities, when interacting with patients to provide OTC medications, and it is a good opportunity for students to be for the first time within a practice site.

The objectives of this study was to assess students perceptions about the introductory community pharmacy experience by evaluating both; the training site and the preceptor. This is expected to give a deeper understanding about benefits and barriers of implementation.

## MATERIALS AND METHODS

### Participants

Forty seven students for the two sessions of 2014/2015 and 2015/2016 were chosen (total94).

### Design

The clerkship duration is 4-weeks. Students register their names in the training committee office before summer vacation, and they will choose the nearby pharmacy to their residences. Letters will be issued from the training committee to each pharmacy. Each pharmacy accept not more than two students. Site-perceptors were not given prior training. Students will be provided with workbook manual through the Blackboard system. Students will present to rotation from the first day with this workbook.

### Intervention

The workbook contains all the activities and assignments required from the students. The timetable, mentioned in the workbook, consisted of each day activity, starting from general orientation and continuing with pharmacotherapy of hypertension, cholesterol management, diabetes, psychosis, dermatology, infectious diseases and gastroenterology. The minimum activities required are illustrated in Table-1. Challenge optional assignments which were designed to further challenge advanced students, are left for perceptors'discretion to decide the suitable student to carry.

**Table 1: Community Pharmacy activities required from students.**

Activity description	Number required
Antihypertensives short monograph	10 per week
Antidaibetics short monograph	10 per week
Psychotic drugs short monograph	10 per week
Dermatology drugs short monograph	10 per week
Antifective medications	10 per week
Gastroenterology medications	10 per week
Respiratory diseases medications	10 per week
OTC knowledge and Counseling interaction	20 per week(5day)
Challenge assignments	Optional(number to be decided by the preceptor and student)

The preceptors are expected to submit an evaluation for students after the end of the rotation. Students should submit their workbook to the training committee for further evaluation. The students will undergo a written exam after the end of the rotation. This exam will be on 100 medications, including all groups mentioned in Table-1. The exam will be held usually in the first two weeks of The fourth professional year.

### Data collection

The students were given two surveys. The first one asking students about their evaluation of the extent of the training obtained at the community pharmacy, the second one asking students about the extent to which the preceptor provided them with training activities. The survey design was adapted from literature.<sup>[9]</sup>

The first survey (Table 2) composed of fourteen questions, in a Likert scale form. The responses were ranging from 1-4(1="not applicable";2="did not occur"; 3="partially occurred";4="definitely occurred"). The second survey (Table 3) consisted of nine questions, and they were in Likert scale type, ranging from1-5(1="Stronglydisagree",2="disagree";3="neutral";4="agree";5="strongly agree"). The two surveys were piloted among 10 students, and few changes were made to render questions more clear and easy for the students. The research was approved by the ethical committee of the college.

### Statistical Analysis

The results of the survey were coded and entered in Excel and revised, then entered to SPSS version 21.Discriptive statistics (frequency, percentages and standard deviations) was used for the general responses to the questions, and paired student T-test for comparison of the results of session 2014/2015 and that of 2015/2016. Significance is for P-value below 0.05.

## RESULTS

### Students 'survey for site of training

The response rate was 94% (47/50) for the first academic session 2014/2015 and 84% (47/56) for the second academic session 2015/2016. The overall results for the two sessions are shown in Table 2. The highest responses to which students thought that their site provided them with are as follows: improve their knowledge with disease and medications(55.3%), work in suitable training environment(38.3%) and improve their knowledge about international and local pharmaceutical manufactures(36.2%). Between 43-51% of the students though that the site partially provided them with the following: Develop professional maturity and responsibility to patient care and social benefits, develop experience to read prescriptions and to know proper abbreviations, work in suitable training environment, obtain sufficient experience about drug abuse, integrate didactic information learned in college to interact with patients, improve their knowledge with over the counter medications and patients/ caregivers counseling, improve

their knowledge with regulations governing pharmacy practice. About 40-53% of the students reported that the following skills were not provided by the site: Develop their skills in pricing of medications, develop their ability to interview patients to obtain relevant information, obtain experience in use of computer for all pharmacy activities, develop sufficient knowledge of with inventory process and medication storage, and develop

their communication skills to interact with patients. About 11-14% informed that the following skills were not applicable: Develop sufficient knowledge of with inventory process and medication storage, develop their ability to interview patients to obtain relevant information and develop their skills in pricing of medications.

**Table 2: Students' evaluation of \*extent of training obtained at site of clerkship (Number/Percentage).**

Training activities	NA	NO	Partially	definitely	Mean ±SD
Develop professional maturity and responsibility to patient care and social benefits	3(3.2)	13(13.8)	48(51.1)	30(31.9)	3.12(076)
Develop their communication skills to interact with patients	9(9.6)	38(40.4)	32(34)	15(16)	2.56(0.87)
Develop their ability to interview patients to obtain relevant information	11(11.7)	49(52.1)	25(26.6)	9(9.6)	2.34(0.81)
Integrate didactic information learned in college to interact with patients	4(4.3)	20(21.3)	43(45.7)	27(28.7)	2.99(0.82)
Improve their knowledge with disease and medications	0	3(3.2)	39(41.5)	52(55.3)	3.52(0.56)
Develop experience to read prescriptions and to know proper abbreviations	8(8.5)	22(23.4)	44(46.8)	20(21.3)	2.81(0.87)
Work in suitable training environment	3(3.2)	11(11.7)	44(46.8)	36(38.3)	3.20(0.77)
Develop sufficient knowledge of with inventory process and medication storing	13(13.8)	44(46.8)	22(23.4)	15(16)	2.41(0.92)
Develop their skills in pricing of medications	11(11.7)	50(53.2)	21(22.3)	12(12.8)	2.36(0.85)
Improve their knowledge with over the counter medications and patients/ caregivers counseling	5(5.3)	32(34)	41(43.6)	16(17)	2.72(0.81)
Improve their knowledge with international and local pharmaceutical manufactures	2(2.1)	23(24.5)	35(37.2)	34(36.2)	3.07(0.83)
Improve their knowledge with regulations governing pharmacy practice	3(3.2)	23(24.5)	41(43.6)	27(28.7)	2.98(0.82)
Obtain sufficient experience about drug abuse	5(5.3)	29(30.9)	44(46.8)	16(17)	2.76(0.80)
Obtain experience in use of computer for all pharmacy activities	8(8.5)	49(52.1)	18(19.1)	19(20.2)	2.51(0.91)

\*Definitely =definitely occurred; Partially=partially occurred; No=did not occur; NA=not applicable.

### Students 'survey of preceptors

The responses to this survey are displayed in Table-3. When summation of responses was done, a summation of strongly agree/agree showed that about 70-88% of students indicated that the following were provided by the preceptor: Was well organized showing professional behavior (wearing white coat), provided adequate orientation to pharmacy areas and staff, readily available to answer questions, was giving students the ideal pharmacist example, met with students regularly to review work, provide directions and feedback. The

summation of disagree/strongly disagree showed that 22-29% of the students reported that the following activities were not provided satisfactorily by the preceptor: Adequate orientation to pharmacy areas and staff, helping students to understand and use the manual, and he followed its instructions.

A comparison between session 2014/2015 and 2015/2016 showed no significant differences in the responses for both surveys: site evaluation (P 0.498) and preceptor evaluation (P 0.447).

**Table 3: Students 'evaluation of the\* extent to which their preceptor provided the following activities (Number/percentage).**

Evaluation criteria	SA	AG	N	D	SD
Provided adequate orientation to pharmacy areas and staff.	34(36.6)	44(47.3)	7(7.5)	4(4.3)	4(4.3)
Provided the opportunity to engage in all the mandatory activities outlined in the manual	15(16.1)	49(52.7)	8(8.6)	18(19.4)	3(3.2)
Met with students regularly to review work, provide directions and feedback	18(19.4)	47(50.5)	13(14)	8(8.6)	7(7.5)
Encouraged students to record and document their information	27(29)	33(35.5)	16(17.2)	11(11.8)	6(6.5)
Involved students in active participation of discussions and problem solving	14(15.1)	21(22.6)	15(16.1)	33(35.5)	10(10.8)

Was readily available to answer questions	35(37.6)	42(45.2)	9(9.7)	4(4.3)	3(3.2)
Helped students to understand and use the manual, and he followed its instructions.	18(19.4)	31(33.3)	17(18.3)	18(19.4)	9(9.7)
Was well organized showing professional behavior (wearing white coat)	50(53.8)	32(34.4)	6(6.5)	4(4.3)	1(1.1)
Was giving students the ideal pharmacist example	36(38.7)	35(37.6)	14(15.1)	3(3.2)	5(5.4)

\*SA=strongly agree; AG= agree; N=neutral; D= disagree; SD=strongly disagree.

## DISCUSSION

The study objective was to evaluate the students' perceptions about the introductory community pharmacy clerkship, focusing mainly on the training site and preceptor' interaction. The community pharmacy training site survey 'responses revealed that 53% of the students thought that they definitely obtained skills of knowledge about diseases and medications, suitable environment and knowledge about local and international manufacturers. This percentage is considered lower than the value obtained from a study from Canada,<sup>[9]</sup> which achieved 80%, for the definitely obtained skills, especially, therapeutic and disease knowledge, which was shared between this study and the current research. The partially obtained skills (43-51%), consisted of some points as: professional maturity, prescription processing, integration of what the students learned in the college with that of the practice and OTC counseling activities. These are considered as important aims of the rotation in general, and were not expected to be only partially obtained. Integration of what students learned with practice is the main objective of all clinical rotations in pharmacy. A real interaction Between the college and the preceptors should be made to strengthen these areas.

The main items of the skills which are not provided (40-53%) and not applicable ones (11-14%), have similarity in the following: pricing skills, inventory and medical storage skills, and ability to interview patients to obtain relevant information. This viewed as mainly due to preceptors not being sufficiently oriented about what is needed in this area in details. This the first time for the students to be in direct contact with patients, and especially in OTC medications 'counseling, an area which the community pharmacists daily encounter. They are in need of adequate training in this competency.

Preceptor 'evaluation responses, showed that students generally gave high percentage, 70-88% (strongly agree/agree), for the preceptor interaction with them. This result is higher than that obtained from another study,<sup>[10]</sup> in which nearly half of the students(46.6%) moderately agreed that their preceptors involved them effectively in pharmaceutical care process and met them regularly to review their work. On the other hand 22-29% strongly disagree or disagree, with the provision of adequate orientation to pharmacy areas and staff, and helping students in understanding and using their training manual. Orientation to pharmacy sections is important in understanding different processes, but in general Saudi community pharmacies mainly consisted of limited areas confined to dispensing and cosmetics apartments.

Although the manual is generally explained to the students in the college, preceptors should have a roles in-site to explain any queries from students, and should make sure that they are by themselves following the instructions in their training process. It is clear from the overall results, that there is a problem with preceptor's training and understanding of the objectives of the clerkship. The general trend in the college is depending on the experience of the preceptors, without prior training. The students will discuss with them whatever problem that appears in their understanding of the processes. The students will just show the time- table of the rotation and start under the general supervision of the pharmacists. That means the contact of the preceptor with the training manual is only superficial. In a survey of advanced community pharmacy practice experiences at US pharmacy colleges,<sup>[11]</sup> the authors suggested that colleges are encouraged to use some mechanisms of quality assurance to review sites and preceptors as: student evaluations, a review council or experiential committee, and individual interviews with preceptors. They also stressed on training and orientation of the preceptors, and the importance of the partnership between colleges and community practice sites and preceptors. The training of preceptors can vary from online, 1-hour session, to extensive training program. This problem should be addressed by the college directors of training. A training program for selected community pharmacists should be done prior to the rotation. Also only sites, in which environment is suitable for training, should be chosen. Other authors<sup>[12]</sup> suggested that experiential training manual requires continuous evaluation and revision on quarterly basis, to show different changes in pharmacy practice, and concluded that the success of the manual is mostly dependent on the preceptor and student use and their adherence to its instructions. A thorough orientation of the preceptors about the manual is essential. The lack of the orientation with the manual objectives in our case leads to preceptors giving high evaluation marks, and treating that as a routine practice. Due to this malpractice the college training committee implemented a written exam after the end of the rotation, to at least give a realistic evaluation. Other authors suggested strategies, for improving the IPPE courses in general. These strategies include: better sites selection, less workload, exposure of students to pharmacotherapy prior to IPPEs, and implementation of special activities to apply clinical skills.<sup>[13]</sup>

This study according to our literature search is the first of its type to be done in Saudia Arabia, and it gives insight



about the problems with training in community sites, and many schools with PharmD program can make benefit from these results. Further studies about other clinical clerkships are expected.

### LIMITATIONS

This study has some limitations. It is a one site experience and cannot be generalized to other pharmacy colleges. The two questionnaires are self-reported and bias is expected due to overestimation or underestimation in responses. In Saudi Arabia all community pharmacists are males, and therefore this study is limited to male students who got their rotation in these pharmacies. A future educational innovation should involve females in real community pharmacy practice. A suggestion for model community pharmacy in the college, as starting point, could be tried. Evaluation of the preceptors to the introductory community pharmacy experience and to students was not done.

### CONCLUSION

In this study the general trend shows that the students obtained to some degree some skills, but many discrepancies were discovered in very important activities, such as interaction with patients, pricing, and inventory skills, and these mainly were due to the lack of training of the preceptors. Perceptors'training about the objectives of the clerkship manual and follow-up from college directors is important in facilitating real fulfillment of the outcomes required from the introductory community practice rotation. Assessment of students before and after rotations will help in continuous improvement and revision in the training course.

### ACKNOWLEDGEMENTS

The author acknowledges the participation of the leaders of the classes: 2014/2015, and 2015/2016, who contributed in distribution of the questionnaire, and the faculty of pharmacy, Taif University for giving the chance for this research.

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