

PHARMACY UNDERGRADUATE STUDENTS' ATTITUDE TOWARDS PHARMACEUTICAL CARE IN PAKISTAN

NAJIA RAHIM*¹, SHAGUFTA NESAR²

Dow College of Pharmacy, Dow University of Health Sciences, Karachi, Pakistan, Department of Pharmacy, Jinnah medical & Dental College, Karachi, Pakistan. Email: najia_affan@hotmail.com

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ABSTRACT

Objectives: Aim of the study was to investigate the attitude of pharmacy students toward pharmaceutical care and their opinion about value and reward for offering pharmaceutical care in Pakistan.

Method: A survey of pharmacy students was conducted from Jan to June 2011 in different colleges of pharmacy in Karachi, Pakistan. The students were asked to complete a 13-item questionnaire Pharmaceutical Care Attitude Survey PCAS (developed and revalidated in USA) to check their attitude towards pharmaceutical care. Descriptive statistics on the sample characteristics and questionnaire items including means, standard deviation was calculated. One-way ANOVA was used to observe influence of gender, age and professional year on the opinions.

Results: Pharmacy undergraduate students in Karachi, Pakistan opined moderately positive attitudes toward pharmaceutical care. Total mean score was 54.58. There is no significant influence of age, gender and professional year on the positive response to five questions of 13-item questionnaire.

Conclusion: It is concluded that pharmacy students were motivated to practice pharmaceutical care during their clerkship as well as professional career. A nationwide survey including all pharmacy institutions of Pakistan would provide further evidence.

Keywords: Pharmaceutical care, Pharmacy students, Pharmaceutical Care Attitude Survey (PCAS), Pakistan.

INTRODUCTION

Pharmacy profession has been changed globally. The pharmacy practice has been modified in to a broader term i.e. pharmaceutical care¹. Pharmaceutical care means "a philosophy and standard of provision of care for patients"². Pharmacist should be a part of health care team including physicians, nurses and other health care professionals. Their integrated effort results in the success of disease management. In past twenty years, pharmacist's role has been modified from dispenser to drug therapy managers. To provide pharmaceutical care, pharmacists should be fully equipped with the knowledge of clinical pharmacy and best communication skills. The extended role of pharmacist must be reflected in the education process of pharmacists. Education outcomes should include the patient centered pharmaceutical care.

Professional education of pharmacy should create an impact on the attitude of pharmacy students towards pharmaceutical care³⁻⁵. Negative attitude toward pharmaceutical care among pharmacists has been identified in different studies⁶⁻⁸. Different techniques were used to develop positive attitude among pharmacy students⁹⁻¹¹. An example of such technique was the effective use of actual patient in classroom¹². A patient centered pharmacy practice has to be developed to improve the students' attitudes toward pharmaceutical care¹³. Furthermore, it was emphasized that students should communicate with patients during their professional education in order to improve their communication skills¹⁴.

In developed countries the concept of pharmaceutical care has been established. Hospital and community pharmacist are offering pharmaceutical care services to their patients. Although developing countries including Pakistan, India, Bangladesh, have introduced doctor of pharmacy (PharmD) program, there is a lack of sites and pharmacist available to train fresh graduate in different aspect of pharmaceutical care¹⁵.

In countries like Pakistan where pharmaceutical care practice is still developing, it is very important to promote positive pharmaceutical care attitudes among the pharmacists of tomorrow in order to achieve acceptance and implementation of pharmaceutical care in the region. There are many universities in Pakistan offering clinical oriented five year Pharm.D program. Unfortunately, the pharmacy graduates have not been trained in the aspect of pharmaceutical care. There are no reports of Pakistani students' attitude toward

pharmaceutical care in the literature. The present study is aimed at analyzing the pharmacy undergraduate students' attitude towards pharmaceutical care in Pakistan.

METHODS

Study design and study period

A cross-sectional study was conducted from Jan'2011 till June'2011.

Study population

Third to fifth professional pharmacy undergraduate students were randomly selected as the study population for the present study. This survey was conducted in different institutions and universities of Karachi, Pakistan offering Pharm.D program including one private and three public sector universities. Approval was taken from each institute before conducting the study.

Verbal consent was taken from each student participating in the study after explaining the purpose of the study. Participation in the study was voluntary and the identity of each student was anonymous.

Inclusive criteria

- 1) All students were Pakistani.
- 2) Their age ranged from 20 to 25 years.
- 3) Those who were enrolled in Pharm.D third to fifth professional.
- 4) Students willing to participate in the study.

Exclusion criteria

- 1) Non-Pakistani.
- 2) Those aged below 20 years and above 25 years.
- 3) Those who were not enrolled in Pharm.D third to fifth professional.
- 4) Students not willing to participate in the study.

Data collection

A 13-item questionnaire PCAS (pharmaceutical care attitude survey) previously developed and validated^{16,17} was distributed among 200

students and student were asked to respond to each of the 13-items of the PCAS by using a five-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree." Any score above 3.0 is considered as positive opinion, and below 3.0 is considered as negative opinion.

Data analysis

The retrieved questionnaires were double entered in Microsoft Excel(c) and then downloaded into Statistical Package for Social Sciences (SPSS 17.0, Chicago, IL) for analysis. Means and standard deviations for each of the 13 items were calculated. Cronbach's alpha was calculated to measure internal reliability among items. Factor loading was computed to determine items contributing to group summary scores. In order to assess the influence of gender, age and professional year of Pharm.D students on their opinions

about patient oriented pharmaceutical care, One-Way ANOVA was conducted using 0.05 level of significance.

RESULTS

Pharmacy undergraduate students from different universities were the study population. A total of 200 students were available to respond to the questionnaire. Out of them 141 completed the questionnaire. The characteristics of the study population are mentioned in table 1. 20.6% of students were male and about 79.4% were female. 57.4% of respondents were aged between 20 and 22 years and 42.6% of students were aged between 23-25 years. 63.1% of students were in the 4th and 5th professional years of Pharm.D. Descriptive statistics on the questionnaire items including means, standard deviation and factor loading are given in table 2.

Table 1: Characteristics of the students

Characteristics	N (%)
Gender	
Male	29(20.6)
Female	112(79.4)
Age (years)	
20-22	81(57.4)
23-25	60(42.6)
Professional year of Pharm.D	
5th Professional year	56(39.7)
4th Professional year	33(23.4)
3rd Professional year	52(36.9)

Table 2: Mean score, standard deviation and factor loading of items of questionnaire.

Items	Mean score	Standard Deviation	Factor loadings
1. All pharmacists should perform should pharmaceutical care	4.71	+ 0.580	0.743
2. The primary responsibility of pharmacists in health care setting should be to prevent and solve medication-related problems	4.62	+ 0.556	0.515
3. Pharmacists' primary responsibility should be to practice pharmaceutical care	4.34	+ 0.687	0.791
4. Pharmacy students can perform pharmaceutical care during their clerkship	3.94	+ 0.927	0.576
5. I think the practice of pharmaceutical care is valuable	4.61	+ 0.618	0.527
6. Providing pharmaceutical care takes too much time and effort	3.52	+ 1.099	0.737
7. I would like to perform pharmaceutical care as a pharmacist practitioner	4.24	+ 0.909	0.460
8. Providing pharmaceutical care is professionally rewarding	4.07	+ 0.923	0.684
9. I feel that the pharmaceutical is the right direction for the provision to be headed	4.03	+ 0.729	0.742
10. I feel that pharmaceutical care movement would benefit pharmacists	4.36	+ 0.741	0.436
11. I feel that pharmaceutical care movement will improve patient health	4.63	+ 0.591	0.619
12. I feel that practicing pharmaceutical care will benefit my professional pharmacy career as a pharmacy practitioner	4.41	+ 0.766	0.609
13. Providing pharmaceutical care is not worth the additional workload that it places on the pharmacist	3.10	+ 1.203	0.689

Table 3: Number of students and their percentage opined positively to the questionnaire

Items	No. of positive response (n=141)	Percentage of positive response
1. All pharmacists should perform should pharmaceutical care	134	95%
2. The primary responsibility of pharmacists in health care setting should be to prevent and solve medication-related problems	138	97.8%
3. Pharmacists' primary responsibility should be to practice pharmaceutical care	123	87.2%
4. Pharmacy students can perform pharmaceutical care during their clerkship	101	71.6%
5. I think the practice of pharmaceutical care is valuable	133	94.3%
6. Providing pharmaceutical care takes too much time and effort	71	50.4%
7. I would like to perform pharmaceutical care as a pharmacist practitioner	102	72.3%
8. Providing pharmaceutical care is professionally rewarding	105	74.5%
9. I feel that the pharmaceutical is the right direction for the provision to be headed	107	75.9%
10. I feel that pharmaceutical care movement would benefit pharmacists	128	90.8%
11. I feel that pharmaceutical care movement will improve patient health	135	95.8%
12. I feel that practicing pharmaceutical care will benefit my professional pharmacy career as a pharmacy practitioner	125	88.6%
13. Providing pharmaceutical care is not worth the additional workload that it places on the pharmacist	58	41.1%

Where, Positive response means score above 3.

Most of the respondents (mean score=4.63) were in favor of the question that pharmaceutical care movement would improve patient health. The positive response of students is summarized in table 3. 95% of respondents opined that all pharmacists should perform pharmaceutical care and 71.6% were strongly agreed and agree that students should perform pharmaceutical care during

their clerkship. Overall moderately positive attitude towards pharmaceutical care was observed among pharmacy students (total mean score=54.58). To observe the influence of gender, age and professional year on their response to PCAS, One-way ANOVA was adopted using 0.05 level of significance. The influence of gender, age and professional year on their response is shown in table-4.

Table 4: Influence of gender, age and professional year of students on their response to PCAS.

Items	Gender		Age		Professional year	
	F	Sig.	F	Sig.	F	Sig.
1. All pharmacists should perform should pharmaceutical care	4.090	0.045	0.180	0.672	0.759	0.470
2. The primary responsibility of pharmacists in health care setting should be to prevent and solve medication-related problems	9.257	0.003	0.381	0.538	5.105	0.007
3. Pharmacists' primary responsibility should be to practice pharmaceutical care	3.312	0.071	4.664	0.033	5.378	0.006
4. Pharmacy students can perform pharmaceutical care during their clerkship	5.360	0.022	0.585	0.446	1.061	0.349
5. I think the practice of pharmaceutical care is valuable	0.819	0.367	0.192	0.662	0.338	0.714
6. Providing pharmaceutical care takes too much time and effort	5.539	0.020	1.350	0.247	0.453	0.637
7. I would like to perform pharmaceutical care as a pharmacist practitioner	2.596	0.109	1.970	0.163	0.315	0.731
8. Providing pharmaceutical care is professionally rewarding	0.000	0.990	1.803	0.182	1.529	0.220
9. I feel that the pharmaceutical is the right direction for the provision to be headed	0.272	0.603	1.539	0.217	0.654	0.521
10. I feel that pharmaceutical care movement would benefit pharmacists	0.192	0.662	0.001	0.974	0.271	0.763
11. I feel that pharmaceutical care movement will improve patient health	6.924	0.009	0.105	0.746	0.571	0.566
12. I feel that practicing pharmaceutical care will benefit my professional pharmacy career as a pharmacy practitioner	6.115	0.015	0.139	0.710	0.233	0.792
13. Providing pharmaceutical care is not worth the additional workload that it places on the pharmacist	0.247	0.620	0.000	0.995	9.031	0.000

In the table-4 value of sig. < 0.05 considered as significant.

DISCUSSION

The concept of pharmaceutical care is evolved in the mid-1970s. After the emergence of this concept, a variety of functions and services are added to the responsibilities of pharmacist other than traditional ones. Pharmaceutical care should be offered in clinical pharmacy. Clinical pharmacist requires an expert knowledge of therapeutics, a good understanding of disease processes and knowledge of pharmaceutical products. Pharmacists practicing pharmaceutical care can reduce risk associated with drugs¹⁸. Communication skills also need to be strong. In developed countries, pharmacy profession is established in its full form but in under developing countries, like Pakistan, there is a lot way to go. Other countries of South Asia like Bangladesh also face similar situation¹⁹. There is an urgent need of the provision of pharmaceutical care in hospitals and clinics. To achieve this, Pharm.D graduates should have a positive attitude and enthusiasm towards pharmaceutical care. The present study was design and developed to determine the attitude toward pharmaceutical care among Pharm.D graduates.

Most of the respondents were in favor of the question that pharmaceutical care movement would improve patient health (mean score=4.63). 95% of respondents opined that all pharmacists should perform pharmaceutical care (4.71) and 71.6% of students agreed and strongly agreed that pharmacy students should perform pharmaceutical care during their clerkship (3.94). Students thought that practicing pharmaceutical care is valuable (4.61). 88.6% of students felt that practicing pharmaceutical care would benefit their professional career (4.41). In response to a question that practicing pharmaceutical care is not worth the additional workload that place on the pharmacist, students answered moderately (3.10). Our results as mentioned in table-2 and table-3 are comparable with two similar studies conducted in College of pharmacy King Saudi University, Riyadh²⁰ and Faculty of Pharmaceutical Sciences, University of Nigeria²¹. The Cronbach's alpha was used to measure internal reliability among items and it's value was 0.658. The influence of age, gender and professional year on their opinion towards pharmaceutical care was analyzed by applying One-way ANOVA. Results of One way ANOVA using 0.05 level of significance was shown in table-4.

Pharmacists engaged in community and retail pharmacy just contribute only 10% of the total number of pharmacists in Pakistan²². Reason for this may be lack of pharmacy services in hospital and

community. Observing the positive attitude towards practicing the pharmaceutical care is satisfactory. A clinically oriented five-year Pharm.D program has been started in Pakistan approximately a decade before. However, there is still lack of facilities where undergraduate pharmacy students can practice their responsibility of pharmaceutical care. Introduction of more practical courses in the Pharm.D program and clerkship in the organization offering pharmaceutical care can improve students' attitude to learn and practice pharmaceutical care²³. Government and professional bodies like Pakistan Pharmacy Council should develop sites for undergraduate pharmacy students where they can perform their responsibility of pharmaceutical care in order to develop well-structured health care system in Pakistan as it is structured globally.

CONCLUSION

Pharmacy undergraduate students showed motivation to practice pharmaceutical care. In order to develop this aspect of pharmacy practice, Government and professional bodies like Pakistan Pharmacy Council should work together. Hospitals especially government sector hospitals should develop their hospital pharmacies where fresh Pharm.D graduates do their clerkship and adopt this as their professional career. The survey also provides baseline to modify curricula of five year Pharm.D program. We suggest a nationwide survey including all universities to provide clear picture of the situation.

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