



# Knowledge, Attitude and Practice Evaluation of Community Pharmacists Apropos of Cognitive Pharmacy Services

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## Abstract

**Objective:** The purpose of this study was to investigate community pharmacist's attitude and their knowledge for implementation of pharmaceutical care in their practice that enhance patient's "quality of life" with better outcome. Pharmacy education should increase the competencies of students for provision of PC and should resolve barriers that influence their behavior towards PC.

**Method:** A cross-sectional study, using online survey forms were prepared to asses' pharmacist's attitude. Validated and close ended questions were included. Data was analyzed statistically using chi square test considering value of Pearson test.

**Result:** Out 250 respondents, there were 69 male pharmacists (27.6%) and 181 female pharmacists (72.4). Most of respondents were aware of fact that their prime responsibility is to resolve medication related problems (91.2%). They believe that in their practice pharmacists should provide PC. Barriers to which most pharmacists agreed were lack of confidence implementing such services in community pharmacies (86.4%), lack of motivation, interest and time (87.6%), lack of training for providing PC in pharmacies (80.8%).

**Conclusion:** Positive attitude was observed among community pharmacist towards PC. More steps should be taken to overcome their perceived barriers.

**Keywords:** Pharmaceutical care; Cognitive pharmacy services; Knowledge; Attitude

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## Introduction

In philosophy of practice, pharmaceutical care involves identifying, preventing and resolving problem that are related to drug therapy in order to get better patient outcome. Over past 25 years, pharmaceutical care in ambulatory setting has improved clinical status of patients. Recent barriers faced by community pharmacists in the provision of pharmaceutical care include unavailability of funds, having difficulty to assess patient's clinical and laboratory data, inadequate clinical knowledge and motivation [1]. The traditional responsibilities of pharmacists such as medication compounding and dispensing has been gradually shifted to providing patient centered care. The primary mission of pharmacists is to ensure the most effective use of medication to achieve improved patient's outcomes. Pharmacist's positive attitude and motivation to provide pharmaceutical care is equally important to serve the needs of patient's knowledge. Skills and attitude are the combination which is desirable for implementing the concept of pharmaceutical care. Pharmacy students need to be educated early in their pharmacy education to prepare themselves proficient enough to expand their clinical skills and apply pharmaceutical care in their future practice too [2-5].

Many studies have revealed that pharmacy school educators should play a supporting role in emergent of pharmaceutical care practitioners. The educational strategies should be design for ensuring the complete understanding of pharmaceutical care principles and practices by students [6-9]. It is also the concern of pharmacy students whether perceptions or observations to meet the terms of teaching of pharmaceutical care when different practice environment are introduced early in pharmacy curriculum. These health care models are in practiced by other professions such as medicine and dentistry. Modeling preceptors helps students learn patient care concepts in a realistic practice environment. Students can in this manner hold better command on their practice

when their performance compared in a laboratory setting [10-13]. In several European countries, to have pharmacy degree is not enough but for the provision of pharmaceutical care, special qualification is obligatory. It has been recently recognized in UK that post graduates education participation of community pharmacists has greater consequence on practice activities certainly [14,15].

From pharmaceutical care point of view, the main setback seems to arise from poor association and non-cooperative attitude between doctors, pharmacists and nurses during their education. Different issues have been focused in pharmaceutical care in Europe. Studies have been done addressing patient's approach towards pharmacists and their requirements and needs for knowledge about medicines. All these studies show that there is limited knowledge of patients about their medication and treatment, but still most patients would like to prefer doctors to give them applicable information pertaining to pharmaceutical care rather than a pharmacist because of unawareness of educational background of pharmacist [16-22].

The studies were conducted in Denmark and Netherlands, assessing actual behavior of pharmacists towards pharmaceutical care and clears that pharmacists are documented to provide pharmaceutical care but there are many barriers to put this into practice [17,23].

In most developing countries, community pharmacies are destitute of qualified and trained personnel in store. Acute shortage of qualified pharmacists leads to miss handling and inappropriate labeling of medicines as many community pharmacies lack standard practice guidelines. Lack of information, education and training has been reported in many cases whereas trained pharmacists are mostly unavailable at these pharmacies [24-29]. In Pakistani community pharmacies, dispensers having inadequate knowledge have been reported. Pharmacy dispensers have different qualification as qualified pharmacists (Pharm D) which is category A pharmacist. Category B pharmacists are diploma holders (certified courses of drug dispensing), medical doctors, nurses and salesperson. Sale personnel have formal education of 10 to 12 years with no dispensing related education and majority of them constitute dispensing responsibilities in Pakistan. They only sell medicines on the basis of information provided by sales representative of pharmaceutical companies [30-32].

Actual practice of pharmaceutical care is poorly affected by social acceptance, commercial pressure and profit maximization which are in demand by customers rather than regulations and clinical indications. Laws and regulations are reinforced to restrain community pharmacies to ensure the presence of authoritative persons for good dispensing practice [33]. There is need to emphasize on qualification, training, experience and knowledge of pharmacy students in area of community pharmacies in the country. The study was conducted to assess pharmacy student's attitude towards PC in Karachi. By assessing pharmacy student's knowledge and their competencies to provide PC can help in improvement and guide curricular changes by providing useful information.

## Methodology

**Study population:** The study population consisted of 250 pharmacists. Participants included had different work experience. As included, 69 male and 181 females had graduation and post-graduation degrees.

**Survey design:** The questionnaire was developed in survey design layout containing closed ended questions. The first section is about demographic data of respondents, which include age, gender and qualification level. The rest questions were included for assessing pharmacy student's attitude and perception towards PC.

**Implementation of design:** Web based survey was conducted by using survey software. The PC was mainframe of this survey. Pharmaceutical care is a region where practitioner assumes patient as centered practice by resolving drug related needs and at same time accountable for this commitment.

**Data analysis:** Data were entered into SPSS. Data was then analyzed and presented in percentages. Chi square test was also applied to data to assess the objective outcomes.

**Student's demographic characteristics:** Table 1 shows 250 of total respondents. 69 male pharmacists and 181 female pharmacists were included. The total numbers of graduates were 238 (95.2%) and total numbers of postgraduates were 12 (4.8%).

**Attitude of pharmacists towards pc:** Pharmacist's attitude towards pharmaceutical care is presented in Table 2. Overall pharmacists show positive attitude towards PC. Most of all pharmacists agreed to the fact that PC practice is important and in health care setting the prime responsibility of pharmacist should be towards resolution of drug related problems.

## Result

Over the study period, 250 pharmacists were approached (Table 1). The average work experience was not more than 9 years. There were 69 male pharmacists and 181 female pharmacists. Number of graduates were 238 (95.2%) and number of postgraduates were 12 (4.8%). The participants had gone through a survey showing their attitude towards PC. The overall response was 100%. The awareness about PC was confirmed by 238 (91.2%) of pharmacist and 22 (8.8%) had not being fully aware of providing PC with SD 0.284.

## Discussion

The study was conducted to assess the attitude of pharmacists towards PC. Most pharmacists show positive attitude towards pharmaceutical care and agreed that PC should be a part of their practice. PC is generally not a part of curriculum although appears to be essentially important for pharmacist's attitude. Another way of changing behavior is the passive way of providing training to pharmacy students. The students should get a chance to observe PC integration in their pharmacy practice. There are several ways for promoting PC by providing pharmacy training sites. One of them is to arrange a work shop, so that pharmacy preceptors can demonstrate exemplary practice of PC. Follow ups applications of interactive skills should be done at preceptor site.

**Table 1:** KAP evaluation results amongst pharmacists.

Gender	Frequency	Percent
Males	69	27.60%
Females	181	72.40%
Total	250	100.00%
Qualification	Frequency	Percent
Graduates Pharmacists	238	95.20%
Post Graduate Pharmacists	12	4.80%
Total	250	100

**Table 2:** KAP Statistical evaluation of pharmacist's perceptions.

Questions	Graduates Pharmacists		P value	Post graduates Pharmacists	
	Yes	No		Yes	No
1. Knowledge requirements to improve pharmaceutical care	195	43	0.106	12	0
2. Experience as sole requirement for improvement of Pharmaceutical care.	158	80	0.068	11	1
3. Dispensing of medicine is only pharmacist responsibility	127	111	0.009	11	1
4. Community pharmacies would certainly enhance the confidence of the patients on pharmacists	188	50	0.076	12	0
5. Lack of self-confidence are the most important barriers in implementing such services in community pharmacies	204	34	0.159	12	0
6. Society and social Norms is also a barrier	129	109	0.157	9	3
7. Training to upgrade their knowledge and skills in pharmaceutical care services in the present scenario.	199	39	0.127	12	0
8. Health screening, adverse drug reaction monitoring and immunization as their first three choices to implement in their practice	209	29	0.198	12	0
9. Lack of motivation/interest and lack of time were the primary reasons of down fall community pharmacy	207	31	0.182	12	0
10. More interaction between pharmacists and patients increase patient satisfaction.	207	31	0.635	11	1
11. Perception that improving the knowledge of the practicing pharmacists would only improve the standards of community pharmacy Practice	140	98	0.973	7	5
12. Satisfied with their profession	180	58	0.202	11	1
13. Pharmacists agreed that they never tried to provide pharmaceutical care	34	204	0.308	3	9
14. Pharmaceutical care is for implemented in clinical setting	177	61	0.176	11	1
15. Rarely double check the prescription against dispensed medicines by practicing pharmacist.	162	76	0.614	9	3
16. PHARMACIST spend 5 to 10 minutes or more	111	127	0.042	2	10
17. Do you agree with Current status of pharmaceutical care services at community pharmacy set-up?		Always	sometime	never	p value
	Graduates pharmacists	76	119	43	0.79
	Post graduate pharmacists	3	6	3	
18. Pharmacists has been found to be familiar with the term pharmaceutical care	202	36	0.145	12	0
19. Should have some assessment for renewal the pharmacy license?	169	69	0.766	9	3
20. lack of motivation accounted as a barrier for providing pharmaceutical care services in the community pharmacy	186	52	0.797	9	3
21. lack of training as a barrier for providing pharmaceutical care services in the community pharmacy	192	46	0.819	10	2

As received preceptor training, the pharmacy students should get an opportunity of providing PC to actual patients directly under observation. The significant goal of this practice is to evaluate the skills of pharmacists to assess patients. The most perceived barrier for the provision of PC is the minimum access to patient's record. Pharmacists also faced difficulty in assessing clinical and laboratory data worldwide. PC is comprehensive process associated with complete delivery of pharmaceutical services which include initial assessment by taking patient's history to complete follow up evaluation.

Another barrier is the poor understanding of public towards pharmacist's role of providing drug therapy, health screening process and delivery of information. Initiatives should be taken to promote pharmacist's role in regard of clinical, humanistic and economic outcomes. Another barrier for providing PC was lack of time which pharmacists faced when high number of prescriptions is to be dispensed at one time. It is reasonable to understand the barrier of insufficient time to implement PC by having more number of pharmacists in pharmacies. This study confirms that community pharmacists has overall positive attitude towards their profession willing to implement PC in their practice. As conducted through survey, there are also some barriers faced by pharmacists during dispensing. There is also need to build strategies to limit

gaps between what has been taught to students about PC and its actual practice. Moreover, emphasis should be given to clinical training of pharmacists for integration of standard pharmaceutical care. Appropriate interventions are also need to design for effective implementation of PC and for maximum utilization of potential of pharmacists at community pharmacies in Pakistan.

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