

Pharmacy Patrons' Awareness of Pharmacists' Education and Routine Patient Care Responsibilities

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ABSTRACT - Purpose: To assess the similarities between pharmacists' and pharmacy patrons' views of pharmacists' roles and to explore the extent to which persons actually see pharmacists assuming certain roles. **Method:** Cross-sectional survey was administered to pharmacists and patients who were filling prescriptions or seeking nonprescription medications in 9 community pharmacies in Morgantown, West Virginia. The survey assessed 11 routine patient care services. Main outcome measures include opinions of pharmacists and patients about responsibility for providing 11 routine care services and the extent to which these services are provided. **Results:** Pharmacists and patients had similar opinions about services that pharmacists should provide for 7 of the 11 services evaluated. For the other 4 items for which opinions were divergent, the mean scores for the extent to which pharmacists provide these services indicated that pharmacists do not always provide these services. **Conclusion:** Pharmacy patrons might not attribute certain patient-related functions to pharmacists because pharmacists do not frequently perform these routine care-related services in actual practice.

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INTRODUCTION

Pharmacists' responsibilities have expanded significantly over the years, from primarily dispensing and compounding of medications to include more patient-care roles.(1) To an increasing extent, pharmacists are involved in developing, implementing and monitoring therapeutic plans, counseling patients about medications, and managing patients' medical conditions.(2) An important step towards the expansion of pharmacists' patient-care roles in the U.S. occurred in the 1990s, when the U.S. federal government enacted the Omnibus Budget Reconciliation Act of 1990 (OBRA '90) and mandated that pharmacists provide prescription drug counseling to Medicare recipients.(3) Pharmacy professional organizations have further reinforced these clinical responsibilities through the development of new practice guidelines and initiatives. In 2002, the American College of Clinical Pharmacy released a white paper, "A Vision of the Pharmacy's Future Roles, Responsibilities, and Manpower needs in the United States." This document focused on moving pharmacy from a product-focused to a patient-focused profession.(4) Two years later, the Joint

Commission of Pharmacy Practitioners issued a future vision statement that highlighted the importance of public recognition of pharmacists as integral to ensuring that all patients have access to medication therapy management services to achieve optimal therapeutic outcomes. This statement also emphasized the importance of pharmacists in reducing drug-related problems resulting from medication misuse and ensuring the cost effectiveness of medication therapy.(5)

While many U.S. pharmacists have adopted or begun to embrace their new roles, the understanding and acceptance of these roles by patients remain a challenge. Several studies investigating the perception of pharmacists' responsibilities in the U.S. and abroad have reported that pharmacists and patients have conflicting views.(6- 9) Law et al. assessed the perception of physicians, pharmacists and patients about unmet needs in the medication use process and the health professionals responsible for resolving these needs.

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Approximately 75% of the pharmacists compared to 13% of patients believed that pharmacists should help ensure that patients receive adequate medication counseling. Also, 53% of pharmacists compared to 19% of patients reported that pharmacists should monitor medication therapy.(7) Bislew and Sorensen further explored differences in pharmacists' and patients' perceptions of pharmacists' roles by using focus groups. The 4 patients interviewed expected pharmacists to only provide written information about medications with verbal counseling coming from physicians when the prescriptions are written, fill their prescriptions correctly, obtain refill authorization, and ensure they had enough medication to avoid therapy interruption. They were unsure how pharmacists could help them achieve better drug therapy outcomes. In contrast, the 2 pharmacists interviewed believed that pharmacists should be involved in counseling patients about their medications and other medical needs. They also felt that their responsibilities should include answering questions about medical devices, performing triage counseling, referring patients to physicians when needed, reminding patients about laboratory test needs, screening for drug-related problems and assuring that patients received the right medication with correct directions.(8) Studies in the United Kingdom similarly found that the majority of community pharmacy patrons preferred physicians as their source of advice on healthy living, with very few reporting that they ever sought such advice from pharmacists.(9-10) Overall, while pharmacists have consistently acknowledged responsibility for educating patients about the proper use of their medications and other health care needs, patients often have attributed these responsibilities to physicians rather than pharmacists.

Suggested reasons for the disparity in viewpoints regarding pharmacists' roles include a lack of awareness that pharmacists can help patients with their health care and medication needs,(6-7) and patient opinions that certain responsibilities claimed by pharmacists best belong to physicians.(10-11) Another possible reason for the discord in opinions may be related to the extent to which pharmacists perform certain functions in practice.(12) The objective of this study was to assess the similarities between community pharmacists' and pharmacy patrons' views of

pharmacists' responsibilities and to explore the extent to which patients observe pharmacists assuming these roles.

METHODS

The study was approved by the Institutional Review Board (IRB) at West Virginia University (WVU). A list of all community pharmacies in Morgantown, West Virginia, U.S.A. was generated and calls were made to all pharmacy managers or pharmacists-in-charge to obtain consent to participate. Surveys were administered to all the pharmacists in each participating pharmacy. To identify the pharmacy patrons to include in the study, two visits were made, one week apart, to each participating pharmacy from April 1st – 30th 2009 for approximately an 8 hour period. On the first visit, all individuals 18 years and older waiting for a prescription to be filled and those shopping for over-the-counter medications were asked to complete the patient survey. A cover letter explained the purpose of the survey and patients could refuse to participate if desired. Each pharmacist on duty was provided with a copy of the pharmacist survey, a prepaid envelope, and a letter explaining the purpose of the study, with instructions to complete the survey and return it in envelope. Additional surveys and return envelopes were left for the pharmacists (including part-time/relief pharmacists) who were not on duty at the time. In addition to the site visits by the investigator, fourth year pharmacy students from West Virginia University who were completing a clerkship rotation at the participating pharmacies and pharmacy technicians at these sites were provided a script for approaching patients and were also asked to assist in distributing surveys to patients during the week between site visits. Completed surveys were collected during the second visit, and additional surveys were distributed to pharmacy patrons by the same individual from the first visit, using the same script provided to pharmacy students and technicians.

Survey questions were developed based on the 11 routine pharmacy care services (RPCS) identified in Tables 3, 4 & 5 and focus on pharmacists and physicians. The first section of the surveys focused on who should provide the 11 RPCS with four answer options: a) both physicians and pharmacists; b) physicians only; c) pharmacists

only; and d) not sure. The second section of the surveys explored the extent to which each of the RPCS are being provided: a) never; b) sometimes; c) most times; or d) always. The patient survey also looked at whether patients thought pharmacists possessed the skills to perform the identified RPCS. Other information gathered in the surveys included demographic information such as gender, age, education, and frequency of pharmacy use (patients) and years of practice (pharmacists).

We calculated a needed sample size of 222 patients and 45 pharmacists (estimated ratio of 5 patients per pharmacist) to detect a 10% difference in the opinions between pharmacists and patients with a power of 80% at a significance level of 0.05 (2-sided alpha level = 0.05). Data were analyzed using JMP 8.0, available through SAS Institute Inc., Cary, NC. Means for the items related to pharmacists' provision of the RPCS were calculated for the pharmacist and patient surveys and compared using t-tests. Chi-square tests were used to analyze all nominal variables. Participants' background information and opinions were reported using descriptive statistics.

RESULTS

Nine of the 21 Morgantown community pharmacies gave permission to participate in the study. Seven of these were chain pharmacies or pharmacies located in grocery stores and 2 were independent pharmacies. Completed surveys were obtained from 17 of 22 available pharmacists' (77%) and 229 patients. A relatively small percentage of patients (~8.5%) did not complete the survey. Approximately 53% of the pharmacists completing the survey were female, with the majority between the ages of 26 and 40 years (76.5%) (Table 1). All pharmacists were in practice for at least a year. The majority of patient respondents were female (62.8%) and were at least 18 years old (Table 2). About 78% of the patients were educated beyond high school and took at least one prescription medication on a regular basis, with 80% visiting a pharmacy at least once every 2-3 months.

There were no statistically significant differences between the patients' and the pharmacists' opinions for 7 of the 11 RPCS (Table 3). The majority of the patients and pharmacists (77 to 82%) agreed that both pharmacists and physicians are responsible for educating patients

Table 1: Pharmacist Characteristics

	Number (%)
Total participants	17
Gender	
Female	9 (53)
Male	8 (47)
Age group	
18-25	1 (5.9)
26-40	13 (76.5)
41-65	3 (17.6)
Over 65	0
Level of education	
BS Pharm	9 (53)
MS Pharm	0
Pharm.D	8 (47)
Residency training	0
Length of practice	
1 year or less	0
2-5years	5 (29.4)
6-10years	2 (11.8)
11-15years	4 (23.5)
More than 15years	6 (35.3)

about their medications ($p=0.4119$), counseling patients about medication side effects and possible interactions ($p=0.1202$), and answering questions about their medication ($p=0.7303$). A majority of the pharmacists and patients believed that pharmacists only should provide patients with written information (76.5 vs. 59.3% respectively) ($p=0.4659$) and assist them in selecting over-the-counter (OTC) medications (70.6 vs. 50.9% respectively) ($p=0.4447$). A significant number (58.8%) of pharmacists felt that both physicians and pharmacists should be responsible for selecting the best prescription therapy for patients, while equal numbers of patients (44.1%) were divided between "only physicians" and "both physicians and pharmacists." No statistically significance difference was found between the pharmacists and patients regarding who should perform this task, however ($p=0.5495$). Most patients and pharmacists agreed that physicians should be responsible for reminding patients when medical or lab tests are due (64.7 vs. 83.1% respectively) ($p=0.0607$). Pharmacists and patients disagreed on the health care professional who should be responsible for adjusting a patient's medication therapy if needed ($p=0.0002$), answering patients' questions about their medical conditions ($p=0.0007$), helping

patients to better manage their medical conditions ($p=0.0002$), and advising patients about healthy living and preventing disease ($p=0.001$). For all four items, the majority of pharmacists (64.7 to 88.2%) felt that both pharmacists and physicians should be responsible for these roles, while most patients (55.9 to 73.5%) attributed these responsibilities to physicians advising patients about healthy living and preventing disease ($p=0.001$). For all four items, the majority of pharmacists (64.7 to 88.2%) felt that both pharmacists and physicians should be responsible for these roles, while most patients (55.9 to 73.5%) attributed these responsibilities to physicians only.

Pharmacists indicated they most frequently provided patients with written drug information, answered drug-related questions, helped patients select OTC products, and provided education about correct medication use (mean values of 2.11-2.94) (Table 4). Pharmacists and patients agreed about the extent to which all except the following three RPCS were being provided: provision of written information about drugs to patients ($p=0.0009$), assistance with selecting OTC medication ($p=0.0192$), and identifying the best prescription therapy for patients ($p=0.0074$).

Table 2: Patient Characteristics

	Number (%) ^a
Total participants	229
Female	144 (63.7)
Male	82 (36.3)
n	226
Age group	
18 - 25	58 (25.8)
26 - 40	68 (30.2)
41 - 65	80 (35.6)
Over 65	19 (8.4)
n	225
Level of education	
8th grade or less	1 (0.4)
9 th -12 th grade	44 (19.6)
Vocational and technical school	24 (10.7)
Some college	67 (29.9)
Bachelor's degree	42 (18.8)
Master's degree	35 (15.6)
Doctoral degree	11 (4.9)
n	224
Number of prescriptions used on a regular basis	
None	47 (20.8)
1	56 (24.8)
2-3	71 (31.4)
4-5	27 (11.9)
Over 5	25 (11.1)
n	226
Frequency of pharmacy visit	
More than once a month	49 (22.0)
Once a month	92 (41.3)
Once every 2-3 months	44 (19.7)
Once every 4-6 months	19 (8.5)
Once a year or less	19 (8.5)
n	223

^a Percentages based upon number of respondents for each category (some respondents did not answer all questions).

Table 3. Health Care Professional Responsible for Providing Patient Care Services

	Pharmacists Number (%)	Patients Number (%)	<i>p</i> [*]
Total number of participants	17	229	
Educate patients about how to use medication correctly			0.4119
Both physicians and pharmacists	14 (82.4)	177 (77.3)	
Physicians only	0	27 (11.8)	
Pharmacists only	3 (17.6)	24 (10.5)	
Not sure	0	1 (0.4)	
n		229	
Counsel patients about medication side effect and possible interaction			0.1202
Both physicians and pharmacists	10 (58.8)	158 (69.3)	
Physicians only	0	22 (9.6)	
Pharmacists only	7 (41.2)	44 (19.3)	
Not sure	0	4 (1.8)	
n		228	
Provide patients with written information about their drugs			0.4659
Both physicians and pharmacists	4 (23.5)	75 (32.9)	
Physicians only	0	17 (7.5)	
Pharmacists only	13 (76.5)	135 (59.2)	
Not sure	0	1 (0.4)	
n		228	
Remind patients when medical or lab tests are due			0.0607
Both physicians and pharmacists	6 (35.3)	27 (12.3)	
Physicians only	11 (64.7)	182 (83.1)	
Pharmacists only	0	4 (1.8)	
Not sure	0	6 (2.7)	
n		219	
Help patients to select nonprescription (OTC) products			0.4447
Both physicians and pharmacists	4 (23.5)	91 (39.9)	
Physicians only	1 (5.9)	16 (7.0)	
Pharmacists only	12 (70.6)	116 (50.9)	
Not sure	0	5 (2.2)	
n		228	
Identify the best prescription therapy for patients			0.5495
Both physicians and pharmacists	10 (58.8)	101 (44.1)	
Physicians	5 (29.4)	101 (44.1)	
Pharmacists	2 (11.8)	21 (9.2)	
Not sure	0	6 (2.6)	
n		229	
Take steps to adjust patients' drug therapy (if needed)			0.0002
Both physicians and pharmacists	14 (82.4)	68 (30.1)	
Physicians only	2 (11.8)	138 (61.1)	
Pharmacists only	1 (5.9)	8 (3.5)	
Not sure	0	12 (5.3)	
n		226	
Answer patients' questions about their drugs			0.7303
Both physicians and pharmacists	12 (70.6)	159 (69.4)	
Physicians only	0	8 (3.5)	
Pharmacists only	5 (29.4)	62 (27.1)	
Not sure	0	0	
n		229	

Table 3 – Continued

Answer patients' questions about their medical condition			0.0007
Both physicians and pharmacists	11 (64.7)	52 (24.2)	
Physicians only	5 (29.4)	158 (73.5)	
Pharmacists only	1 (5.9)	5 (2.3)	
Not sure	0	0	
n		215	
Help patients better manage their medical conditions			0.0002
Both physicians and pharmacists	15 (88.2)	77 (33.8)	
Physicians only	2 (11.8)	143 (62.7)	
Pharmacists only	0	6 (2.6)	
Not sure	0	2 (0.9)	
n		228	
Advise patients about healthy living and preventing disease			0.001
Both physicians and pharmacists	14 (82.4)	91 (39.7)	
Physicians only	1 (5.9)	128 (55.9)	
Pharmacists only	1 (5.9)	4 (1.7)	
Not sure	1 (5.9)	6 (2.6)	
n		229	

Percentages based upon number of respondents for each category (N = 17 for pharmacists in each category)
 *Comparison of pharmacist vs. patient percentages.

Table 4. Extent to Which Patient Care Services are Provided

Type of Service	Pharmacists	Patients	<i>p</i> [*]
	Mean (SD)	Mean (SD)	
Educate patients about how to use medication correctly	2.11 (0.60)	2.07 (0.88)	0.7814
Counsel patients about medication side effect and possible interaction	1.82 (0.63)	1.92 (0.95)	0.5589
Provide patients with written information about their drugs	2.94 (0.24)	2.67 (0.64)	0.0009
Remind patients when medical or lab tests are due	0.64 (0.49)	0.68 (1.04)	0.8195
Help patients to select nonprescription (OTC) products	2.29 (0.68)	1.84 (0.93)	0.0192
Identify the best prescription therapy for patients	0.94 (0.42)	1.31 (1.13)	0.0074
Take steps to adjust patients' drug therapy (if needed)	0.94 (0.74)	1.04 (1.15)	0.6144
Answer patients' questions about their drugs	2.64 (0.66)	2.60 (0.60)	0.7672
Answer patients' questions about their medical condition	1.71 (0.68)	1.39 (1.09)	0.1041
Help patients better manage their medical conditions	1.41 (0.61)	1.20 (1.07)	0.2203
Advise patients about healthy living and preventing disease	1.58 (0.87)	1.13 (1.05)	0.0567

1 = Some times, 2 = Most times, 3 = Always *Comparison of pharmacist vs. patient ratings

The overwhelming majority of patients (89 to 96%) felt that pharmacists have the skills to educate patients about their medications, counsel about side effects and drug interactions, provide patients with written information about their drugs and assistance with selecting OTC medications, and answer questions about their drugs (Table 5). A sizable proportion of patients were unsure about or did not feel that pharmacists have the skills to remind patients about medical or lab tests (73.3%), identify the best prescription drug for patients (41%), take

steps to adjust a patient's drug therapy (56.3%), answer patients' questions about their medical conditions (51.9%), and provide advice on healthy living and disease prevention (41.5%).

DISCUSSION

Similar to findings by Worley et al., (6) pharmacists and patients agreed that pharmacists have a responsibility to counsel patients about the proper

Table 5: Whether Pharmacists Possess Needed Skills to Perform Service

Type of Service (N)	Patients		
	Yes N (%)	Unsure N (%)	No N (%)
Educate patients about how to use medication correctly (226)	211 (93.3)	13 (5.8)	2 (0.9)
Counsel patients about medication side effects and possible interactions (226)	210 (92.9)	13 (5.8)	3 (1.3)
Provide patients with written information about their drugs (226)	219 (96.9)	6 (2.7)	1 (0.4)
Remind patients when medical or lab tests are due (225)	57 (25.3)	95 (42.2)	73 (32.4)
Help patients to select nonprescription (OTC) products (226)	204 (90.3)	14 (6.2)	8 (3.5)
Identify the best prescription therapy for patients (223)	129 (57.8)	60 (26.9)	34 (15.2)
Take steps to adjust patients' drug therapy (if needed) (225)	96 (42.7)	76 (33.8)	53 (23.6)
Answer patients' questions about their drugs (226)	216 (95.6)	8 (3.5)	2 (0.9)
Answer patients' questions about their medical condition (220)	101 (45.9)	72 (32.7)	47 (21.4)
Help patients better manage their medical conditions (225)	84 (37.3)	82 (36.4)	59 (26.2)
Advise patients about healthy living and preventing disease (225)	129 (57.3)	63 (28.0)	33 (14.7)
Percentages based upon number of respondents for each service			

use of medications, side effects, and possible drug interactions. Most pharmacists and patients in our study significantly agreed that pharmacists only are responsible for providing written drug information and helping patients select nonprescription drugs. The majority of both respondents also indicated that pharmacists and physicians shared responsibility for educating patients about correct medication use and answering drug-related questions. About 89 to 96% of patients felt pharmacists had the needed skills to perform these functions, and the pharmacists likewise indicated they provided these services most of the time.

Several pharmacists felt that only physicians had responsibility for identifying the best prescription therapy for patients, with a considerable percentage of patients stating that identifying prescription drug therapy was primarily a physician's responsibility. These findings are consistent with the relatively infrequent extent to which pharmacists indicated they provided these services. Peterson et al. found that 76.6% of patients were very likely to use physicians for selecting prescription medication compared to just 10.3% who would consult pharmacists.(13) Slightly over half the patients in our study felt pharmacists had the needed skills to identify the best prescription therapy. While pharmacists have been encouraged to assume greater responsibilities for managing a patient's medical condition and drug therapy,(4,5) patients might be less willing to call upon pharmacists to provide these services.

We found that opinions about how frequently certain RPCS were provided were generally

consistent with opinions about role responsibilities as well as whether patients' felt that pharmacists possessed the skills necessary to perform those responsibilities. For certain RPCS that pharmacists often consider as part of their responsibilities, including taking steps to adjust drug therapy, answering questions about and helping patients better manage medical conditions, and providing advice about health promotion and disease prevention, from 56% to almost 74% of patients in our study considered these roles to belong to physicians only. Pharmacists primarily felt these roles should be shared with physicians. Other studies have suggested that patients view physicians as the preferred source for health advice.(2)(10)(134) A literature review conducted by authors from the United Kingdom found that the public did not often perceive pharmacists as a source for general health advice or information about illness.(14) McAuley et al. found that for epileptic patients surveyed, only 30% expressed interest in having a more detailed consultation/coaching session with their pharmacist about their condition and drugs even if the patient's insurance covered 100% of the costs.(13) In our study, these services were 4 of the 6 least frequently provided services. For only 1 of these services, advising patients about healthy living/disease prevention, did at least 50% of patients believe their pharmacist possessed the necessary skills to provide them. McAuley et al. speculated that patients might not realize that pharmacists could provide these types of services and/or that patients might not believe pharmacists can or should provide these

services.(13) Our findings indicate that the respondent patients infrequently observed pharmacists involved in modifying drug therapy and in answering questions about or managing medical conditions while most did not believe pharmacists possessed the skills to do so. The lack of observation of these services in practice may reinforce a perception that pharmacists are unable to provide disease state or condition-oriented services due to insufficient education or training.

If patients do not perceive that pharmacists are or should be responsible for providing services that pharmacists and professional pharmacy organizations feel fall within the pharmacists' responsibilities, the benefits from those services will likely be undermined.(15-16) It was said to be "crucial" that the public be educated about the extent of the community pharmacists' potential role in providing consultation and advice in order to expand awareness and acceptance of these types of services.(16) Thus, pharmacists should work to educate patients about the actual extent of their training, knowledge and skills, while reinforcing this education by providing the full range of their patient-care services. Potential barriers to RPCS provision that still need to be resolved include differences in pharmacists' comfort level and their own perceived abilities,(17) obtaining sufficient reimbursement for their time, and documenting the beneficial outcomes that would result from service provision across a variety of patients.(13)

A study limitation is that only 9 of 21 pharmacies in the targeted geographical area participated. The mode of practice and opinions by pharmacists in the non-participating pharmacies may differ from those of the participants'. The small number of pharmacist participants limits the power although several statistically significant differences were still observed. Since the study was conducted in an area with a population of about 90,000, larger urban settings might not be reflected. Although several of our patient respondents included those seeking nonprescription medications and not filling a prescription, only 20% did not use prescription medications on a regular basis. Thus, most respondents were able to have observed a pharmacist(s). The fact that about 80% of our patient respondents were educated beyond high school could potentially introduce bias in our results. However, it might be expected that college-educated individuals would have a better

understanding of the education and training of a pharmacist compared to persons who never attended college. Yet, there was still a considerable lack of understanding about the contemporary roles and responsibilities of pharmacists.

CONCLUSION

Community pharmacists and patients disagreed on the responsibility for some RPCSs that most pharmacists believed should be shared with physicians. Patients may not see these services frequently enough in community pharmacies to associate their responsibility to pharmacists and may not believe that pharmacists possess the necessary skills to perform them. Future research should explore how pharmacists can better provide a full range of RPCS and how they might best inform patients about the extent of their education and training.

REFERENCES

1. Kenreigh CA, Wagner LT. Pharmacists' Role in Healthcare Still Evolving. Accessed at <http://www.medscape.com/viewarticle/546717>, January 16, 2009.
2. Amsler MR, Murray MD, Tierney WM, et al. Pharmaceutical care in chain pharmacies: Beliefs and attitudes of pharmacists and patients. *J Am Pharm Assoc.* 2001; 41:850-856.
3. Omnibus Budget Reconciliation Act of 1990. Washington, DC Government Printing Office. 1990:152-171.
4. American College of Clinical Pharmacy. ACCP white paper: A vision of Pharmacy's future roles, responsibilities, and manpower needs in the United States. *Pharmacotherapy.* 2002; 20:991-1022.
5. Joint commission of Pharmacy Practitioners. JCCP Future Vision of Pharmacy Practice. Alexandria, Va: American Association of Colleges of Pharmacy; 2004.
6. Worley MM, Schoomer JC, Brown ML, Hadsall RS et al. Pharmacists' and patients' roles in the pharmacist-patient relationship: Are pharmacist and patients reading from the same relationship scripts? *Res Soc Adm Pharm.* 2007;3:47-69.
7. Law AV, Ray MD, Knapp KK, Balesh J. Unmet needs in the medication use process: perception of physicians, pharmacists, and patients. *J Am Pharm Assoc.* 2003;43:394-402.
8. Bislew HD, Sorensen TD. Use of focus groups as a tool to enhance a pharmaceutical care practice. *J Am Pharm Assoc.* 2003;43:424-34.

9. Hassell K, Rogers A, Noyce P, Nicolaas G. The public's use of community pharmacies as a primary health care resource. Report to the community pharmacy research community. Manchester: University of Manchester, 1998
10. Anderson C. Health promotion by community pharmacists: consumer's views. *Internat J Pharm Pract* 1998;6:2-11.
11. Schoomer JC. Patient expectation and knowledge of patient counseling services that are available from pharmacists. *Am J Pharm Educ* 1997; 61(Winter)402-406.
12. McAuley JW, Miller MA, Klatte E, Shneker BF. Patients with epilepsy's perception on community pharmacist's current and potential role in their care. *Epilepsy Behavior* 2009;14:141-145.
13. Peterson GM, Jackson SL, Hughes JD. et al. Public perceptions of the role of Australian pharmacists in cardiovascular disease. *J Clin Pharm Therap* 2010;35(6): 671-677.
14. Anderson C, Blenkinsopp A, Armstrong M. Feedback from community pharmacy users on the contribution of community pharmacy to improving the public's health: a systematic review of the peer reviewed and non-peer reviewed literature 1990-2002. *Health Expect* 2004;7:191-202.
15. Schommer JC. Effects of interrole congruence on pharmacist-patient communication. *Health Commun.* 1994;6:297-307.
16. Solomon MR, Suprenatant C, Czepiel JA Gutman, E.G. A role theory perspective on dyadic interactions: the service encounter. *J Market* 1985;49(winter):99-111.
17. Blake KB, Madhavan SS. Perceived barriers to provision of medication therapy management services (MTMS) and the likelihood of a pharmacist to work in a pharmacy that provides MTMS. *Ann Pharmacother.* 2010;44(3):424-431.