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Original Article

Assessment of Pharmaceutical Care Services Provided by a Community Pharmacy in Kedah, Malaysia

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ABSTRACT

Objectives: To assess the pharmaceutical care services provided by the pharmacists in a community pharmacy in Kedah. **Method:** Prospective analysis of pharmaceutical care services provided by a community pharmacy in Kedah, by means of customized questionnaires given to the customers. Convenience sampling technique was used. Descriptive analysis was used to compute the data collected. **Results:** Out of a total of 508 respondents, 251 (49.41%) of the patients responded that they always go to the community pharmacy; 377 (74.21%) stated that the pharmacist discuss their health issues with them. 297 (58.46%) respondents stated that the pharmacists spent around 5 to 9 minutes per customer. 189 (37%) of respondents indicated that the pharmacist or pharmacist's assistant did not explain to them how to take their medication correctly, while 358 (70.47%) of respondents stated that the pharmacist did not find out if the patient understand the instructions given. Regarding the responsibility that the pharmacist assumes for patient drug therapy 155 (30.15%) of respondents answered "Yes" and 353 (69.49%) stated "No". 489 (96.26%) of the respondents agreed the pharmacists show readiness to listen and answer their questions as well as use simple language while counselling. 314 (61.81%) stated that the counselling services provided by pharmacist is useful with regard to the medication(s) and the disease condition. 264 (51.97%) were satisfied and stated that the overall rating of pharmaceutical care services in the pharmacy was good. **Conclusion:** Community pharmacists must discuss health issues with their patients, spend sufficient amount of time with each patient at each visit. Counselling services are a vital part of pharmaceutical care services. The pharmacist and/or their assistants must explain to the patients how to take their medication correctly. Assessing the patients' comprehension with regard to the medication(s) is another mandatory role of the community pharmacist. In this study, majority of the respondents 264 (51.97%) felt that the pharmaceutical care services provided overall by the community pharmacy was good, though improvements could be made with regard to understanding the patients' comprehension levels.

Key words: Community Pharmacist, Counselling services, General Level Framework, Pharmaceutical care services, Patients satisfaction, Seven-star pharmacist.

INTRODUCTION

The World Health Organization (WHO) defines health as the 'state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. This WHO definition emphasizes wellness and the social, environmental, and economic factors that may influence the behaviours affecting the people's health. Public health is defined as an organized community effort to protect, promote, improve, or restore the community's or population's health.[1] Pharmacists are knowledgeable specialists who are currently underutilized in the primary health care team. If patients do not accept the expertise of pharmacists in the new fields that pharmacists wish to enter, their expectations and behaviours in pharmacist encounters will not support interactions desired by pharmacists. This will be of particular concern in an effort to incorporate roles that go beyond dealing with drugs, into pharmacists' professional practice. However, structural changes in health care delivery can create new platforms from which pharmacy practice can develop, although not necessarily deliberately.[2] In addressing the education and professional development of pharmacists, a WHO consultative group identified seven roles around which 'preparing the future pharmacist' should aspire. The framework describes the activities of a 'seven-star pharmacist' as care-giver, decision-maker, communicator, leader, manager, lifelong learner and teacher.[3,4] Traditionally, community pharmacists compounded and dispensed prescribed medications. A new patient-centered role requires pharmacists to shift from a task-oriented practice such as filling physicians' orders to a patient oriented practice, including expanded pharmacy services and it has stimulated the development and implementation of counselling services responding to the drug related needs of individual patients.[5]

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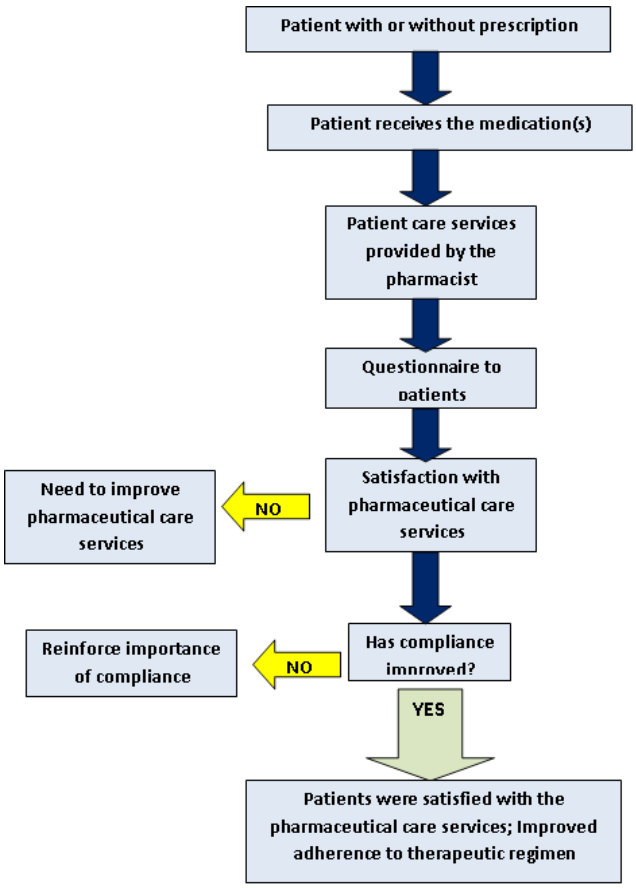

Graphical Abstract

Hepler and Strand, described the concept of pharmaceutical care and suggested the evaluation of models for implementing pharmaceutical care practice, which includes the Therapeutic Outcome Monitoring (TOM) model and the Pharmacists Implementation of Pharmaceutical Care (PIPC) model.[6] Currently, pharmaceutical care is widely understood as "the direct, responsible provision of medication-related care to achieve definite outcomes intended to improve the patient's quality of life". The pharmaceutical care process was divided into several steps which includes

- Establish relationship with the patient: Contact and commitment to the patient
- Collect, synthesize, and interpret the relevant information: Patient, drug, and disease data interpret as pharmacists
- List and rank the patient's DRPs: Define and prioritize
- Establish a desired pharmacotherapeutic outcome for each DRP: Quantitative and measurable
- Determine feasible pharmacotherapeutic alternatives: Desired outcomes
- Choose the best pharmacotherapeutic solutions and individualize the regimen
- Design a therapeutic drug monitoring plan: Monitor therapeutic outcome and adverse effect
- Implement the individualized regimen and monitoring plan: Documentation
- Follow-up to measure success: Patient's basis and long-term basis.[7]

In essence pharmaceutical care is that component of pharmacy practice that can be performed by no one other than a competent pharmacist. Competence comprises adequate knowledge and skill to perform a particular function, and an attitude of commitment to the patient's valued interests. In that context, the future direction of the pharmacist in hospital and community will continue to evolve towards patient-directed services that apply scientific knowledge and clinical skills to the prevention and resolution of drug-related problems.

However, community pharmacies are so focused on business orientation and acting like a business centre. So here a study was conducted with the primary objective of investigation, how well the patients are satisfied with the services provided by community pharmacy. This study has the purpose to determine satisfaction levels with the care provided in community pharmacies in Malaysia, if there is a relationship between factors of a personal nature such as age and gender and satisfaction, evaluating if the proper care is related to continued treatment, analyzing the differences between care provided and expectations showing key aspects to improve in order to increase satisfaction. Nevertheless, this study also provides insight regarding the role of community pharmacists and their involvement in patient care.

METHODOLOGY

Study population

This prospective study was carried out in a community pharmacy in Kedah state from October 2013 to April 2014, after obtaining the approval from the requisite authorities. The study delved into the pharmaceutical care services provided by the pharmacists in the selected pharmacy, by means of 1 questionnaire and 1 data collection format, adapted from other sources. The study was approved by the Aimst University Human and Animal Ethics committee (AUHAEC10/FOP/SP/2014) and subjects were explained about the study and

prior consent was obtained. This study was conducted according to the Declaration of Helsinki.

Customers purchasing medications and/or receiving pharmaceutical care service(s) from the study site were included in the study. The number of respondents (n) which used to determine the level of patient satisfaction with pharmacy service was calculated by the online Raosoft software. As per the Raosoft software, the sample size calculated was 377 (95% CI). The final version of the questionnaires was pilot tested among 20 customers visiting the study site. A Cronbach's alpha value of 0.698 was obtained and considered as reliable.

Study Instrument

The study instrument utilized in this study was developed based on the instrument formulated by Traverso *et al* (2007) and Andrade *et al* (2009).[8,9] The instrument was modified and translated into the two main languages - Bahasa Melayu and English. The instrument was divided into two domains. The first domain consisted of the demographic details of the respondents. The second domain consisted of questions related to the assessment of pharmaceutical care services. The responses for these questions were 'Yes' or 'No' only. The General Level Framework (GLF) was used to measure the community pharmacists' competencies in delivering pharmaceutical care services. The GLF contains a detailed description of actions, skills, and knowledge that should be applied by a pharmacist in delivering competent pharmaceutical patient care. There are 4 competency clusters: delivery of patient care, problem-solving competencies, personal competencies, and management and organization competencies. The cluster Delivery of Patient Care, which comprises various different competencies, is chosen to use in scanning community pharmacists' professional performance (Annexure – I).

Data Collection Method

The questionnaires were distributed to the selected community pharmacy and a written detailed explanation of the study was given to the pharmacists in charge. The questionnaires were then randomly distributed to customers who visited the selected pharmacy. This survey was strictly voluntary, and written informed consent was obtained from the customers prior to the study. The questionnaires were required to be filled when the patients (customers) were waiting in the pharmacy.

Data Analysis

Descriptive analysis was carried-out using Statistical Package for the Social Sciences (SPSS; Version 16), SPSS Inc., USA.

RESULT AND DISCUSSION

The demographic details of the study participants and summary of assessment of Pharmaceutical Service were presented in Table 1 and 2. The questionnaire results comprised the demographic profile of respondents and the responses to each of the statements in the questionnaire were assessed. The total number of respondents in the study initially was 521, of which 241 (47%) were males and 267 (53%) were females. Of the 512 respondents, 13 were deemed redundant because they did not complete the self-administered questionnaire. The ethnic groups of the respondents were 234 (46.06%) Malay, 172 (33.86%) Chinese and 102 (20.08%) Indian. The most common types of health complaint presented were allergic rhinitis (293 (63.15%) of the 464 health complaints), NIDDM 89 (12%), and gastric 82 (17.67%). The most common medications requested were paracetamol (40 customers) and loratidine as well as esomeprazole (39 customers).

The maximum number was of respondents 197 (38.78%) were in the age range 31-40 years, and most them were females where 267 (53%) of respondents. A survey carried out by Geetha Jayaprakash *et al* (2009) found that females and consumers above 55 years express more satisfaction with the General Satisfaction dimension. This may be because this group of people visit the same pharmacy and hence establish a relationship with their pharmacist than males or younger group of people, who do not show patronage of individual pharmacy.[10]

The maximum number of visits by the respondents (individual) to the pharmacy for their medication requirements was 28. A study conducted by Abu-Omar *et al*., (2000) found that customers' views differed according to the pharmacy from which they were recruited. Their finding indicates one of the pharmacy customers had a personal relationship with the pharmacist and used the pharmacy as a health care resource.[11]

With regard to the site preference for health problems, 251 (49.41%) of the patients responded that they always go to the community pharmacy whereas, 145 (28.54%) prefer traditional medications and only 110 (21.65%) of respondents choose hospitals or clinics. This finding was similar to a study done by Cordina *et al*., (1998) in which they revealed that almost 31% of their population visited a pharmacy primarily to purchase prescribed medication. In comparison, a public opinion survey of community pharmaceutical services carried out by Hadida Hashim *et al* (2001) discovered that the majority of the respondents (55.4%) preferred to buy OTC medicines from places other than the pharmacy.[12,13]

Many studies across the world also have highlighted the potential of community pharmacies in promoting safe and effective use of drugs. Major reasons behind this is their unique position in the healthcare delivery system, high magnitude of operation, irrationalities cropped up there, and evidence for improvement. Community pharmacies are a part of healthcare system, being the first or final contact between patients and drugs in majority of the cases.[14] This puts them as the most important influencing link on how drugs are being used. This importance is augmented by their large extent and magnitude of operations, thus serving to millions of patients in a day. In addition, this result is also in parallel with the findings of a recent survey conducted in England by Anderson *et al*, (2014).[15]

The community pharmacist was mentioned as the first person to contact for drug related problems by more than half of respondents. This is promising in terms of expanding and developing the current role of community pharmacists in Malaysia. This finding was in contrast to the study done by Stratton (1993) in a sample of older persons in Canada where patient reliance on health care providers other than the pharmacist to answer medication questions. In his research, pharmacists provided brown bag medication reviews for a sample of older persons. Study results showed that even after receiving the pharmacist's medication review, these older persons would first seek their physician to answer medication-related questions.[16]

Table 1: Demographic details of the study participants

Gender of the study participants	**Male**	**241**
	Female	**267**
Age of the study participants	1 to 10	2
	11 to 20	24
	21-30	86
	31-40	197
	41-50	79
	51-60	53
	61-70	56
	71-80	11
Site preference	Hospital/Clinic	110
	Community pharmacy	251
	Traditional medicine centre	145
	Others	2

The presence of pharmacy services at a community level is often regarded as one of pharmacy's major selling points. The accessibility of pharmacy personnel and services is the first of the four areas highlighted in the FIP working party recommendations for the implementation of Good Pharmacy Practice in developing countries. A greater proportion of respondents 404 (79.53%) indicated that the pharmacist always available when they go to the community pharmacy. This reflects the community pharmacists are aware of their responsibility as a care giver and also the expectation of customers to provide good pharmaceutical services other than selling products. Saramunee *et al.*, (2014) stated that all participant groups except general practitioners mentioned the approachability of community pharmacists and their availability without an appointment, which was viewed as being greater than that of general practitioners.[17] But the study carried out by Jayaprakash *et al.*, (2009) stated that consumers in general are not satisfied with the evaluation skill and gathering non-medical information of the pharmacist in the current practice. This can be due to lack of knowledge or communication skill of the pharmacist, which can be improved by making attendance to continuing education program a mandatory for the renewal of license.[10]

A large majority of customers 377 (74.21%) stated that the pharmacist discuss their health issues with them. This results shows that the pharmacist-patient interaction may improve the patient/ public awareness about the drug usage and pharmacy services.[14]

Regarding the amount of time spend by the pharmacist with patient at each visit, majority of them 297 (58.46%) answered 5 to 9 minutes. The study conducted by Hassali and Subish (2009) reported that most of the respondents (n=60, 75.1%) agreed that lack of time was a barrier that limited them from involving in health promotion activities.[1] The study done by Doucette *et al* (2002) indicated that patient visits generally last from 10 to 20 minutes, depending on the patient's progress and length of time in the program.[18]

Consideration should be given to the proportion of patients who stated that the service in Section 7b is not provided. Almost 355 (69.88%) indicated that the pharmacist does not use any teaching aid/technique to make the patient understand and remember the instructions been given. This results patient counseling, which are necessary for comprehensive pharmaceutical care, are not yet frequently applied to pharmacy practice. Praska *et al* (2005) reported availability of adherence aids that could help low-literacy patients if such patients were identified and targeted to receive additional assistance. These included verbal and written counseling, packaging or organizing aids, refill services, and graphic or multimedia aids.[19] However, a study conducted by Hamoudi *et al.*, (2011) revealed that some patients were not satisfied with pharmacists' explanations on dispensing, and hence there was a need for consultation services at pharmacies.[20]

Regarding the responsibility that the pharmacist assumes for patient drug therapy 155 (30.15%) of respondents answered "Yes" and 353 (69.49%) were stated "No". Currently the pharmacist's task is to ensure that a patient's drug therapy is appropriately indicated, and that the most effective, safe, and convenient ones are used by the patient. Pharmacists can contribute enormously in drug therapy outcome and patient's quality of life by taking direct responsibility for

Table 2: Assessment of Pharmaceutical Service

Q. No	Description			Response
1	Frequency of community pharmacy visit	1-3		-
		4-6		-
		over 10		-
2	Site preference	Hospital/ Clinic		110
		Community Pharmacy		251
		Traditional medication		145
		Others		2
3	Distance of pharmacy from home	Walking distance		-
		Need to take a bike/taxi/ buses		-
4	Availability of the pharmacist	4a		104
		4b*		138
		4c		428
5	Pharmacist's professional relationship	5a		377
		5b		378
		5c		446
		5d		397
6	The promptness of service delivery	<5 minutes		398
		>5 minutes		65
7	Patient counseling	7a	Yes	469
			No	39
		7b	Yes	153
			No	355
		7c	Yes	487
			No	21
		7d	Yes	329
			No	179

8	Pharmacist's ability to advice you about your medications Patient counseling	8a	Yes	403
			No	105
		8b	Yes	283
			No	225
		8c	Yes	149
			No	359
		8d	Yes	414
			No	94
		8e	Yes	362
			No	146
		8f	Yes	483
			No	25
		8g	Yes	64
			No	444
		8h	Yes	393
			No	115
		8i	Yes	333
			No	175
		8j	Yes	71
			No	437
		8k	Yes	74
			No	434
		8l	Yes	119
			No	389
		8m	Yes	76
			No	432
		8n	Yes	150
			No	358
		8o	Yes	493
			No	15
		8p	Yes	43
			No	465
9	Answering patient's questions	9a	Yes	489
			No	19
		9b	Yes	352
			No	156
		9c	Yes	54
			No	454
		9d	Yes	487
			No	21

patients' drug related needs. Over the years, pharmacists have been involved in providing evidence relating the abilities of pharmacists to address the needs of patients through successful integration of enhanced community practice models. The success of demonstrating the benefits of pharmacists has resulted in increased pressure for change and has led to the concept of pharmacists as providers of pharmaceutical care services.[21]

489 respondents (96.26%) agreed that the pharmacist shows readiness to listen and answer their questions as well as use simple language while counselling, however, the lack of private space for counselling reported by respondents is likely an important factor in limiting their interactions with pharmacists. Saramunee *et al.*, (2014) stated that privacy, as reported by other studies was clearly an issue. The potential difficulty of providing a private consultation area within a pharmacy because of limited space was recognized and concerns about other personal information remaining confidential have been previously reported but did not emerge in their study.[17]

336 (66.14%) respondents stated that they get all the medications needed from the same pharmacy. 314 (61.81%) respondents stated that the counselling services provided by pharmacists are useful. Karapinar-Çarkt *et al.*, (2009) conducted a survey on effect of medication reconciliation with and without patient counselling in which concluded that significantly more interventions were identified after

patient counselling and patient information is essential in medication reconciliation.[22]

264 (51.97%) respondents were satisfied and stated that the overall rating of pharmaceutical care services in the pharmacy was good. A study conducted by Abdel amid *et al*., (2008) on pharmaceutical care services for patients with asthma showed that the intervention group showed a significant greater improvement in the score for assessing the inhalation technique, patient's knowledge about asthma, and its drug therapy compared with control.[23] Cordina *et al* (2001) carried out a study to implement and assess a community-based pharmaceutical care program for patients with asthma. They concluded that a community-based pharmaceutical care program was appreciated by the participants and had a positive impact on the vitality of patients with asthma, inhaler technique, and PEF.[24]

Study Limitations

The survey that was conducted was only confined to a representative sample of customers in the state of Kedah. Thus, the findings that were obtained only show the representative perceptions of customers in the state of Kedah, which can't be generalized to customers in other states of Malaysia. A study with longer duration and covering all the states in Malaysia would thus, give a more clear scenario of this topic of interest.

CONCLUSION

Heppler and Strand defined 'Pharmaceutical care' as "responsible provision of drug therapy for the purpose of achieving definite outcomes which improves the patient quality of life.[25] Pharmaceutical care involves the process of designing, implementing and monitoring a therapeutic plan which will produce specific outcome in terms of patient care. It is the combination of day-to-day activities that pharmacists perform when interacting with patients in a pharmaceutical care practice. Community pharmacists must discuss health issues with their patients, spend sufficient amount of time with each patient at each visit. Counselling services are a vital part of pharmaceutical care services. The pharmacist and/or their assistants must explain to the patients how to take their medication correctly and assessing the patients' comprehension with regard to the medication(s) is another mandatory role of the community pharmacist. In this study, majority of the respondents 264 (51.97%) felt that the pharmaceutical care services provided overall by the community pharmacy was good, though improvements could be made with regard to understanding the patients' comprehension levels.

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ABBREVIATIONS

CI: Confidence Interval
DRPs: Drug Related Problems
GLF: General Level Framework
NIDDM: Noninsulin-Dependent Diabetes Mellitus
OTC: Over The Counter
PIPC: Pharmacists Implementation of Pharmaceutical Care
PEF: Peak Expiratory Flow
TOM: Therapeutic Outcome Monitoring
WHO: World Health Organization

Highlights of Paper

- Community pharmacists must discuss health issues with their patients, spend sufficient amount of time with each patient during each visit.
- Counseling services are a vital part of Community pharmaceutical care services.
- Community pharmacists explain to the patients how to take their medication(s) correctly, must assess the patients' comprehension with regard to the medication(s), and engage in regular follow-up as well as monitoring.
- In this study, majority of the respondents [264 (51.97%)] felt that the pharmaceutical care services provided by the community pharmacists in this pharmacy were essentially good.

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- **Ms. Thenmoli Hanbrasi a/p Jothy:** Is currently a final year student in Bachelors of Pharmacy, AIMST University (Malaysia). She was the co-investigator in this research.

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Annexure–I

ASSESSMENT OF PATIENT CARE SERVICES PROVIDED BY COMMUNITY PHARMACIES

Demographic Description of Respondents			
Name :	**Age :**		**Gender :**
Nama :	**Umur:**		**Jantine :**
Education background :	Secondary/ Diploma/ Degree/ Master/ Doctor of Philosophy		
Latar belakang pendidikan :	Sekolah Menengah/Diploma/ Degree / Master/ Kedoktoran		
Address :		Patient complaints :	
Alamat :		Aduan pesakit:	
Medication history :		Lab. findings :	
Sejarah perubatan :		Laporan makmal :	

Counseling elements provided by the pharmacists		
No.	**Counseling elements**	**Remarks**
1.	Indication of the medication	
2.	Frequency of use	
3.	Dose	
4.	Administration	
5.	Side effects	
6.	Name of medication	
7.	To be taken pre-/post-prandially	
8.	Duration of use	
9.	Product information	
10.	Shelf-life	
11.	Special precautions	
12.	Storage condition	
13.	Drug interactions	
14.	Onset of action	
15.	Contraindications	

Pharmaceutical Service Assessment						
1. How many times did you come to this Community Pharmacy in the last three months?						
1-3		**4-6**		**over 10**	**1-3**	
2. Where do you go for most of your health problem?						
Hospital/ Clinic	Religious organization					
Community Pharmacy	Others					
Traditional medication/healer	(specify)					
3.Distance of pharmacy from home						
Walking distance						
Need to take a bike/taxi/buses						

4.The availability of the pharmacist to answer your questions			
a.	Have you ever been to the pharmacy and met the pharmacist's absence?	Yes	No
b.	Did you receive satisfactory answers to all your questions?	Yes	No
c.	Did you have to wait a long time to see the pharmacist?	Yes	No
5. The pharmacist's professional relationship with you			
a.	Does the pharmacist discuss your health issues with you?	Yes	No
b.	Does the pharmacist accept responsibility for the outcome of the medication being given to you?	Yes	No
c.	Does the pharmacist show commitment to helping you address your health issue?	Yes	No
d.	Does the pharmacist correct your mistakes with diplomacy?	Yes	No
6. The promptness of service delivery			
<5 minutes	5-9 minutes	10-15 minutes	>15 minutes
7. How well the pharmacist explains what your medications do (patient counseling)			
a.	Does the pharmacist use simple understandable language when explaining your medication use?	Yes	No
b.	Does the pharmacist use any teaching aid/technique to make you understand and remember the instruction been given?	Yes	No
c.	Did the pharmacist allow you to ask questions?	Yes	No
d.	Did you understand the pharmacist instruction every time?	Yes	No
8. The Pharmacist's ability to advice you about your medications (Medication use and adherence counseling)			
a.	Did the pharmacist tell you the medication name?	Yes	No
b.	Did the pharmacist tell you the expected benefits?	Yes	No
c.	Did the pharmacist tell you when the action is expected to start	Yes	No
d.	Did the pharmacist tell you the route of administration	Yes	No
e.	Did the pharmacist tell you the direction for the preparation (if needed)	Yes	No
f.	Did the pharmacist demonstrate how to open or close the containers	Yes	No
g.	Did the pharmacist tell you how many and when to take the drugs?	Yes	No
h.	Did the pharmacist tell you what to do when you miss your dose?	Yes	No
i.	Did the pharmacist tell you the potentials adverse effects/side effects?	Yes	No
j.	Did the pharmacist ask if you were taking other drugs before giving you your medication?	Yes	No
k.	Did the pharmacist tell you the potential drug-drug; drug-food interactions?	Yes	No
l.	Did the pharmacist tell you how to know if your medication is working	Yes	No
m.	Did the pharmacist tell you the best storage condition for the drug?	Yes	No
n.	Did the pharmacist find out if you understand the instructions given?	Yes	No
o.	Did the pharmacist contact you to find out how you faring with the medication dispensed?	Yes	No
P	Did the pharmacist label the medication?	Yes	No
q.	Did the pharmacist tell you how to dispose of the remaining medication (if not exhausted)	Yes	No
9. How well the pharmacist answers your questions			
Does the pharmacist show readiness to listen and answer your questions?		Yes	No
Do you understand the pharmacist response every time?		Yes	No
Has the pharmacist ever been unable to provide the answer to your questions?		Yes	No
Does the pharmacist use simple language to explain complex medical terms/conditions?		Yes	No