

*Full Length Research Paper*

## Patients' perception and expectations of services provided by pharmacists in Ghanaian hospitals

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A customer's perceived value of service has been identified as one of the most important drivers of satisfaction. Using a cross-sectional survey among out-patients with a chronic disease in Ghana, this study assessed their perception on the role of the hospital pharmacist, their expectation of services provided by the hospital pharmacist and the factors encouraging them to speak to the hospital pharmacist. This was a cross-sectional survey of out-patients during visits to pharmacies at the Korle-Bu Teaching Hospital. Six pharmacies with a high patronage of patients with chronic diseases were purposively selected. A structured questionnaire was completed using a face-to-face approach and the results were presented in the form of descriptive and analytical (logistic regression) statistics. In all, 331 respondents made up of 56.8% women and 43.2% men were interviewed. The mean age of respondents was 42 years. Of those who responded, 87.3% (289/331) have had at least basic education and 63.7% of respondents were in some form of employment. In all, 77.2% at least agreed that the pharmacist is a health professional just like doctors and nurses, and only 3.8% of respondents strongly disagreed that their awareness of the role of the pharmacist has improved over the last five years. It was found that those who reported little difficulty identifying the pharmacy staff were about three times as likely (OR 3.19, 95% CI 1.78 to 5.80,  $p < 0.001$ ) to request to speak with the pharmacist compared to those who found this difficult. Counseling services at the various pharmacies in the Korle-Bu Teaching Hospital need improvement. More work should be done by pharmacists to educate patients on the role of the pharmacist in providing pharmaceutical care.

**Key words:** Patient's perception, out-patient pharmacist, Korle-Bu Teaching Hospital.

### INTRODUCTION

The perception of a service is one of the most important drivers of customer satisfaction (McDougall and Levesque, 2000). Daily interactions between pharmacists

and patients generate various opinions and views which if tapped, could improve current trends in service delivery and/or open avenues for communication and expectations

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between the two parties (Kucukarslan and Nadkarni, 2008). Consideration of patients' perspectives of the influence of health care services on the needs and expectations can improve health care systems in various ways (Curtiss et al., 2004). Pharmacy users, as societal consumers, assertively challenge specialized knowledge and play an increasing role in demanding convenient services (Morgall and Almarsdo'ttir, 1999). As in other health care professions, pharmacists' true societal power, including professional development, lies in the relationship between the service and the users (Abu-Omar et al., 2000). It is therefore important that any implementation of a change in pharmacy practice in Ghana should entail a prior, thorough understanding of who uses the pharmacy care resource, why and how it is used (Hassell et al., 2000).

In a study in Singapore, Tam and Lim (1997) were surprised that counseling on medicines which is a major responsibility of pharmacists was rated as the fourth most important service by respondents. If patients are aware that one of the most important functions of the pharmacist involves counseling on their medicines, then one will expect these patients to often request to speak to the pharmacist.

Hypertensive patients in a cross-sectional survey in Nigeria (Erah and Chuks-Eboka, 2008) reported that they were less likely to develop health related problems when they saw the pharmacist, however, the overall perception was that benefits received by such patients as a result of services received from the pharmacist was not substantial. As we monitor the quality of service delivery for gaps, patient evaluations may be valuable in unearthing their needs, perceptions, and other areas of service deficiency which may be valuable to health care providers (Ford et al., 1997). Dispensing of medicines in Ghana is predominantly under the supervision of pharmacists and "chemical sellers". Pharmacists providing this service work in hospital/clinic pharmacies or in community pharmacies and "chemical sellers" work only in community chemical sellers' shops. Pharmacies need a superintendent pharmacist to supervise all activities because they work with all types of medicines (prescription only and over-the-counter). On the other hand, chemical sellers' shops only need a knowledgeable person to be in charge since they are restricted to over-the-counter medicines. In addition, the latter operate only in those areas deprived of services from pharmacies. A pharmacy technician may work in a pharmacy or a chemical sellers shop. In Ghana, patients decide on where to fill their prescriptions because they are not restricted to any drug dispensing facility.

According to Mead and Bower (2000), the current emphasis on patient-centered approach to medicine has created the need for the patient's perspective of the services they receive to be monitored. Moreover, services of this nature can be used to evaluate and improve upon

practice. Literature review to date shows no publication on patients' perception of the pharmacist's role or patients' expectation of services by the pharmacist using quantitative (or even qualitative) methods in Ghana. Using a cross-sectional survey among out-patients with a chronic disease in Ghana, this study assessed their perception on the role of the hospital pharmacist, their expectation of services provided by the hospital pharmacist and the factors encouraging them to speak to the hospital pharmacist.

## MATERIALS AND METHODS

### Study design

This was a hospital-based study in which a sample of the out-patients visiting the pharmacies was surveyed over a five-day period in April, 2013. A structured questionnaire was used in face-to-face communication by interviewers during patient's exit from the pharmacy. Every questionnaire was completed at the study site on the day of interview. A one day pilot study was conducted prior to the main study. The instrument was pre-tested during a pilot study. Two pharmacies were randomly selected by balloting and twenty people were interviewed at each site. The authors then held a meeting with the data collectors and issues raised were addressed.

### Setting

This hospital-based survey was conducted in the Pharmacy department of the Korle-Bu Teaching Hospital (KBTH) in Ghana. The KBTH provides tertiary health care and the Pharmacy department has nine satellite pharmacies distributed in all the major clinical departments in the hospital to meet their specific needs. Six pharmacies with a high patronage by patients with chronic diseases were purposively chosen for questionnaire administration. These included the Paediatric pharmacy which caters for children less than 14 years old, the Surgical Pharmacy which provides treatment for all adult surgical cases excluding obstetrics and gynaecology patients, the Cardio-Thoracic pharmacy which supplies drugs to most patients suffering from cardio-vascular diseases, the Polyclinic pharmacy which serves all types of patients because the polyclinic is the gate-keeper of the hospital. Also included were the Korle-Bu pharmacy which serves all categories of patients of all ages and the Main pharmacy responsible for medical patients. In particular, dispensed medicines may differ among some of these pharmacies but general services rendered were not necessarily different. All of these facilities serve both in and out-patients. Patients were approached to participate during the morning shift (7.30 am to 3.00 pm) at all six pharmacies. Each of the six pharmacies normally had between 2 to 5 pharmacists at post during the morning shift.

### Study/target population

The study population consisted of all out-patients who used the teaching hospital, including its Polyclinic (a first port of call). The target population comprised of patients with chronic diseases visiting the various pharmacy units. In this study, a "chronic" condition was defined as a condition with duration of at least 3 months as defined by the US National Centre for Health Statistics (Larson, 1998). All those with a chronic disease who reported to the

selected pharmacies at the KBTH for their medication were eligible to participate. Parents served as proxies for those aged 14 years or under. Clientele who were visiting any of the selected pharmacies for the first time, those with non-chronic diseases, pregnant women and babies under 3 months old were not included in the survey. By excluding first time visitors, the results may not be adversely affected by a change in attitude of pharmacy staff during data collection (Hawthorne effect) because respondents had the opportunity to comment on their previous experience at the pharmacy.

### Sample size

In calculating the sample size, we considered the number of patients/clients who would request to speak to the pharmacist. According to the Ratiopharm (2003) Certified Financial Planner Report (Pharmacy Service) on consumers' perception of pharmacy in Canada, 43% of the time, interviewees talked to the pharmacist. Because of the knowledge gap between Canada (a developed country) and Ghana (a country south of the Sahara), we assumed that requests to speak to the pharmacist would be made for only 30% of the time. Using a precision of 0.05, we obtained a sample size of 322. However, the total sample used for this study was 331.

### Data collection

The questionnaire was in four sections (predominantly closed ended questions). Section A was made up of questions concerning the demographic characteristics of respondents. Section B concerned the medical history of respondents. The third section (section C) measured respondents' expectations with regards to pharmaceutical services provided by pharmacists. Finally, the last section measured respondents' perception of pharmaceutical services provided by pharmacists. In this last section, the perceived value of the role of pharmacists by respondents was ascertained using a Likert scale. The questionnaire was validated for content of information, representativeness of translations, ease of understanding and layout (Smith and Morrow, 1996; Kane and Radosevich, 2011). This was done by an epidemiologist, a health systems researcher, two public health specialists and a psychologist (who are all members of the research team) and two patients with chronic disease. In all, three meetings were held. Trained data collectors, educated to at least tertiary level, were used for the study. Most of them were pharmacy interns. During the training sessions, the questionnaire was translated into Ga and Twi, the predominant local languages and back into English, to ensure that translation into the local language was uniform and did not alter the questions communicated to the respondents. Incorrect translation was resolved during the training sessions. During data collection two interviewers were assigned to each pharmacy and no identifiable clothes (laboratory coats) linked with the hospital or the pharmacy department was worn. Each interviewee was proficient in at least one of the two local languages.

Data collectors introduced themselves as health workers carrying out research on patient perception. This was done to conceal the background of the researchers from respondents. Patients were approached as they walked out of the pharmacy without any structured preference or order. Eligibility was ascertained during a brief friendly rapport. For those eligible, the study objectives and protocols were explained and they were given the opportunity to ask questions and seek clarification on the given information. Interested individuals were registered and interviewed after they had given oral informed consent. This study was approved by the Korle-Bu Teaching Hospital Management Committee.

### Data processing and analysis

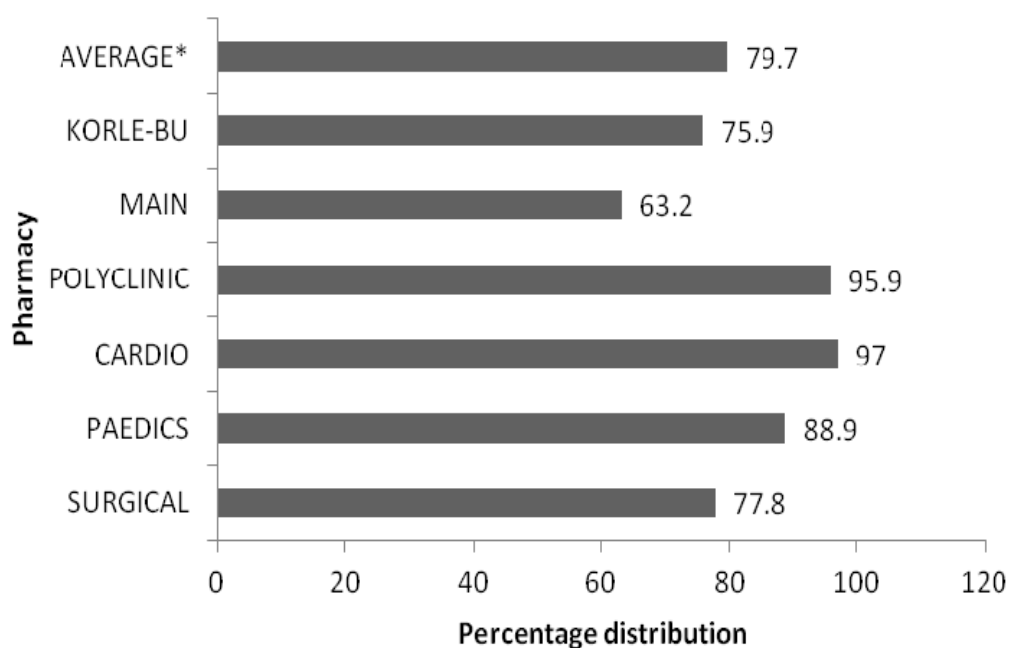
Data entry was done by two separate data entry clerks into Microsoft Excel version 2007 (Microsoft Corporation, Redmond, WA, USA). This was validated and transferred to STATA Intercooled Version 12 (StataCorp LP, College Station, TX, USA) for analysis. Descriptive data, including client demographic characteristics, details of pharmacy visits and customer services expected, were presented in percentages. Associations were determined using Chi squared tests (and Fisher's exact tests where appropriate) and multivariate analysis was done using logistic regression. A p-value less than 0.05 was used as the cut-off for significance.

## RESULTS

Of the total of 331 respondents interviewed, 56.8% (188/331) were women. The mean age of participants was 42 (SD = 11.2) years. The most used language of communication by respondents was Twi, followed by English and then Ga. Of those who responded, 87.3% (289/331) have had a minimum of basic education and 63.7% of them were in some form of employment. There were some missing values but most of these were less than 10% of responses and may have had little effect on final outcomes. The distribution is as shown in Table 1.

There was an association ( $p < 0.0001$ ) between the place of service and provision of counseling by pharmacists. Those who said they were counseled after receiving their medication amounted to 63.2% from main pharmacy, 75.9% from Korle-Bu pharmacy, 77.8% from surgical pharmacy, 88.9% from child health pharmacy, 95.9% from polyclinic pharmacy and 97.0% from National Cardiothoracic Centre (NCTC) pharmacy. On average, 79.7 respondents were counseled (Figure 1).

Among those who said they were counseled after receiving their medicines from the pharmacy, 42.0% said they had some information on drug interaction, 39.2% said they had some information on medicine side effects and 37.2% said they were given advice on healthy lifestyle. There was an association ( $p = 0.002$ ) between length of disease and whether one considers him/herself as a client, a customer or a patient. Only 33.3% of those with a disease history of at most one year considered themselves as "patients", while 57.2% of those with a disease history greater than one year considered themselves as patients. In particular, those with a disease history of at most one year were more likely to consider themselves as "clients" or "customers". Those who participated in the survey were asked questions to identify their perception of the role of the pharmacist compared with other health service providers. For their responsibility for medications and minor ailments, pharmacists scored 32.9% compared with 60.4% for doctors who nevertheless, were rated extremely highly compared to the former. The government, nurses, family members and other health personnel were also not given high ratings with respect to the questions posed. Table 2



**Figure 1.** Respondent's response on counseling services after dispensing.  
\*Overall proportion of patients who reported to have been counseled.

**Table 1.** Distribution of characteristics and responses from research participants.

Variable	Distribution (N=331)	Percentage distribution (%)
<b>Sex</b>		
Male	134	40.5
Female	188	56.8
Missing	9	2.7
<b>Age group (years)</b>		
<25	45	13.6
25-34	60	18.1
35-44	50	15.1
45-54	77	23.3
55-64	56	16.9
≥65	27	8.2
Missing	16	4.8
<b>Language of interview</b>		
English	144	43.5
Twi	169	49.5
Ga	20	6.0
Ewe	0	0.0
Missing	2	0.6
<b>Education</b>		
None	38	11.5
Primary/Secondary	193	58.3
Tertiary	96	29
Missing	4	1.3

Table 1. Contd.

<b>Marital status</b>		
Single	100	30.2
Married/Cohabiting	181	54.7
Divorced/Others	38	11.5
Missing	12	3.6
<b>Occupation</b>		
Employed	211	63.7
Unemployed	77	23.3
Missing	43	13.1
<b>Period on medication</b>		
First time	75	22.7
About 1 month	31	9.4
About 3 months	26	7.9
Over 3 months	194	59.6
Missing	5	1.5
<b>Pharmacy visits in last 6 months</b>		
Once	57	17.2
Twice	64	19.3
Monthly	154	46.5
Don't Know	34	10.3
Missing	22	6.7
<b>Counselled after service</b>		
Yes	238	71.9
No	63	19
Missing	30	9.1
<b>Percentage of medicines dispensed*</b>		
Yes	267	80.7
No	27	8.2
Missing	37	11.2
<b>Type of chronic disease</b>		
Hypertension	129	50.8
Diabetes	83	32.7
Arthritis	34	13.4
Asthma	8	3.2

\*This is addressing the number of medicines dispensed as a percentage of the number prescribed

shows the percentage responses.

Using a Likert scale, we explored patients' expectations on services provided by the pharmacist. In all, 60.2% of them at least agreed that over the last 5 years, their understanding of the role of the pharmacist had improved. Only 3.8% strongly disagreed with this. 77.2%

at least agreed that the pharmacist is a health professional just like doctors and nurses and 61.5% of respondents at least disagreed that pharmacist are just counting pills. Further results are shown in Table 3.

Further expectations of patients on additional pharmacy services that will enhance the quality of pharmacy practice

**Table 2.** Patients' perception on role of pharmacists.

Perception	Doctor (%)	Pharmacist (%)	Govt. <sup>‡</sup> (%)	Nurse (%)	Family (%)	Other <sup>¶</sup> (%)
Responsible for personal health and well being	84.9	3.4	5.3	0.6	4.3	1.5
Responsible for information about health	93.6	5.5	0.3	-	-	.6
Responsible for medications and minor ailments	60.4	32.9	0.3	3.1	2.4	0.9
Responsible for disease condition and information about minor ailments	92.0	5.2	-	2.8	-	-

<sup>‡</sup>Government; <sup>¶</sup>other health professionals.

**Table 3.** Expectations of patients on services provided by the pharmacist.

Parameter	Strongly disagree (%)	Disagree (%)	Not sure (%)	Agree (%)	Strongly agree (%)
Improved knowledge of pharmacist's role in the last 5 years	3.8	11.6	24.3	39.0	21.3
Pharmacist are also health professionals	2.7	8.2	11.9	57.1	20.1
Pharmacists give advice on health related issues	1.4	8.7	24.2	52.6	13.2
Pharmacists just dispense medicines	19.6	41.9	19.2	15.5	3.8
Pharmacists are just business people selling medicines	22.0	35.8	22.0	17.6	2.7

practice were also investigated. The most recommended service among respondents was a queue-number system (40.3%). This was followed by provision of a public telephone booth (23.9%), pharmacy service at home (14.2%), screening of videos on health topics (11.2%), a system whereby prescriptions will be faxed to pharmacy and collected later (8.2%), and last but not least, provision of vaccination shots (2.2%). Of those inter-viewed, 41.3% said they would speak to the dispensing technician if the pharmacist is busy. Furthermore, 71.1% of respondents thought that the pharmacist and the dispensing technician are equally qualified to provide information on their medication.

We examined the relationship between knowing who was behind the counter in the pharmacy and

a request by patients to speak to the pharmacist about their medication. The odds for a request to speak with the pharmacist increased with increasing educational level, however, only those with tertiary education were significantly associated with a request to speak to the pharmacist. Similar results were obtained for increasing number of visits per month. Those with at least three visits in the last six months were significantly associated (OR: 2.60; 95% CI, 1.25 to 5.43; p-value = 0.008) with speaking to the pharmacist compared to those with only one visit. These are shown in Table 4. In multivariate analysis we found that those who reported little difficulty identifying the pharmacy staff were independently associated with about three times the odds (OR: 3.19, 95% CI 1.78 to 5.80, p <0.001) of speaking

to the pharmacist on their medicines compared with those who had some difficulty. This was after adjusting for age, patients' education and number of visits in the last six months.

## DISCUSSION

According to Hepler and Strand (1990), pharmaceutical care is the responsible provision of medicine therapy with the purpose of achieving specific outcomes that improve a patient's quality of life. In determining improvement in the patient's quality of life, his/her role is paramount. The main concern of this study was to determine patients' perception of the role of the hospital pharmacist and their expectations on services provided by the

**Table 4.** Association between patient characteristic and request to speak to the pharmacist.

Characteristic	Frequency (%)	Odds ratio (CI)*	p-value
<b>Age group (years)</b>			
<25	45 (14.3)	Reference	-
25-34	60 (19.1)	0.79 (0.32-1.92)	0.6000
35-44	50 (15.9)	0.78 (0.31-1.95)	0.590
45-54	77 (24.4)	1.24 (0.52-2.95)	0.636
55-64	56 (17.9)	1.50 (0.59-3.84)	0.395
≥65	27 (8.6)	2.18 (0.59-7.81)	0.237
<b>Sex</b>			
Male	134 (41.6)	Reference	-
Female	188 (58.4)	1.01 (0.60-1.70)	0.967
<b>Education</b>			
None	38 (11.6)	Reference	-
Up to secondary level	193 (59.0)	1.42 (0.81-2.50)	0.216
Tertiary	96 (29.4)	3.37 (1.15-9.88)	0.018
<b>Occupation</b>			
Unemployed	77 (26.7)	Reference	-
Employed	211 (73.3)	1.23 (0.67-2.23)	0.505
<b>Pharmacy visits in last 6 months</b>			
Once	57 (18.5)	Reference	-
Twice	64 (20.7)	1.44 (0.62-3.30)	0.393
≥ Three times	188 (60.8)	2.60 (1.25-5.43)	0.008
<b>Type of chronic disease</b>			
Hypertension	129 (50.8)	Reference	-
Diabetes	83 (32.7)	0.98 (0.52-1.84)	0.951
Asthma	8 (3.2)	0.61 (0.14-2.69)	0.513
Arthritis	34 (13.4)	0.89 (0.38-2.13)	0.800
Others	77 (23.3)	0.97 (0.47-2.00)	0.926

\*Unadjusted odds ratio

latter.

Between 63.2 and 97.0% of participants reported receiving counseling service from the pharmacist after collecting their medication from the pharmacies under investigation. This disparity is unlikely to be due to experience of the pharmacist because there is an even distribution of pharmacists to the various satellite pharmacies by the pharmacy administration to ensure good service delivery. It could be due to some pharmacists personally performing better than others. The type of chronic disease and medication received may have led to more or less counseling and this is reflected in the type of pharmacy visited. In a study among hospital

pharmacists on their role in the health care system in Pakistan, at least 42.0% mentioned patient education about their medicines (Azhar et al., 2011). Studies (Liu et al., 1999; Bultman and Svartad, 2002; Singhal et al., 2001) have shown that an increase in the frequency of counseling, in addition to monitoring and guidance may lead to higher satisfaction rating. But client perception is an important driver of satisfaction (McDougall and Levesque, 2000). This calls for improvement in counseling services in all pharmacy outlets of the hospital with special emphasis on those areas with a lower score in this survey. The quality of information received is very likely to be limited to drug administration. This is because

for information on “medication side effects” or “drug interaction” or “healthy lifestyles” less than 50.0% of respondents reported having received this service. This trend was reported by researchers from Nigeria (Erah and Chuks-Eboka, 2008), another West African country.

In contrast, 76.0% of respondents in Australia (Peterson et al., 2010) in a cardiovascular disease survey said that pharmacists are capable of providing advice on lifestyle changes. The low rates of special service (healthy life styles, contra-indications and drug interactions) provision reported in the present study could be due to high patient turnover during the morning shift leading to inadequate provision of drug information. Furthermore, if most of our clientele came for repeat prescriptions, it would be assumed that they had already been counseled on their first visit. Policy makers in the pharmacy directorate should take the opportunity to encourage the provision of adequate drug information in all pharmacies.

Concerning responsibility of their health care needs, doctors were highly rated compared to pharmacists, nurses, the government, family members or other health care workers by respondents. This sounds plausible because doctors are the leaders of the health care team thus making their role the most significant. However, in a study in Trinidad and Tobago (Singh et al., 1999) nurses were rated higher than doctors or pharmacists. This calls for further efforts by pharmacists to improve their status as members of the health care team.

Although 60.2% of those interviewed expressed an improvement of their knowledge of the role of the pharmacist over the last five years, it is clear that more than 1 out of every 5 respondents were not sure if they understood the pharmacist’s role in giving advice on health related issues. Furthermore, only about 20.0% of respondents strongly disagreed with the statement that pharmacists are just medicine dispensers. It would be desirable to improve patients’ awareness of the values of pharmaceutical care in order to change their perception of the pharmacist. If patients are aware that one of the main responsibilities of the pharmacist is to provide information on medicines they may request for consultation more often. This study identified that clients who said they found it difficult to identify professionals at the pharmacy were less likely to assess some services at the pharmacy when compared with those who did not. Most of the literature on patient perception of the pharmacist did not look at this issue using multivariate analysis.

Researching on asthma patients’ perception of the pharmacist, Ried et al. (1999) observed that the patient may not be in the best position to ascertain the technical quality of the care they receive but they still appreciate the social interaction with the pharmacist. This underscores the need for pharmacists in this setting to explore ways of convincing patients and clients to appreciate their contribution. It will also give patients the chance

to access better health care from the pharmacist. An introduction of medicines use review, for example, may improve the relationship between the patients and the pharmacist. If wearing of staff identity badges could be encouraged, most patients (even on their first visit) would be better informed.

This study had its limitations. The study interviewed patients patronizing pharmacies of different clinics. This may be responsible for the differences in levels of service provision. The advantage here is that being the first of its kind in Ghana, this study has revealed prevailing issues at the different pharmacies and future studies could be directed at resolving such challenges. The presence of missing values, although low in this study, may have had an effect on study validity. But these were minimal and their effects may not significantly alter the results. Response bias may have occurred due to more people with greater interest in their health consenting to participate in this study (Ankrah and Ofei, 2010).

## Conclusion

Reports from patients in this study showed that the quality of information provided at the various pharmacies in the hospital were different. Counseling services at the various pharmacies in the hospital need to be revamped with emphasis on side effects, drug interaction and healthy lifestyles. The role of the pharmacist in the hospital should be more clearly understood and appreciated by patients. It was also found that patients who had little difficulty in identifying the pharmacist were more likely to speak with him/her. More work should be done by pharmacists to educate patients on the role of the pharmacist in the provision of pharmaceutical care.

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### Conflict of interest

The researchers are all workers of the KBTH. Almost all of them have at one time or the other received sponsorship packages from the Pharmacy Department of the KBTH. Thus the authors do not declare any conflict of interest.

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