

Practice of Hospital Pharmacy in Bangladesh: Current Perspective

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Abstract

Although hospital pharmacists are recognized for its importance as health care provider in many developed countries, in most developing countries it is still underutilized. The aim of the present study was to summarize the current scenario of pharmacy practices in four hospitals of Bangladesh and to identify the pharmacist's roles in these settings. The study was conducted through convenient sampling method using a well-designed 14-item questionnaire to collect the opinions from the respondents. The results showed that hospital pharmacy service, as a unique department of hospital, existed in 50% of the studied hospitals where activities were done by graduate pharmacists and they were also involved in different departments to provide clinical services to the patients. The rest 50% of the studied hospitals had no hospital pharmacy service. Only a retail drug store inside the hospital was present and there was no diploma or graduate or any pharmacy technician for providing patient care. This study concludes that hospital pharmacy practice is just started in some private modern hospitals in Bangladesh which is inaccessible for the majority of peoples due to high patients cost of these hospitals.

Key words: Pharmaceutical care, Good pharmacy practice (GPP), Pharmacy and Therapeutic Committee (PTC), Hospital pharmacy, Clinical pharmacist.

Introduction

The conventional role of pharmacist is to manufacture and supply medicinal products. Recently, however there is a significant change in the pharmacy profession in terms of professional services delivery due to the increased demand of pharmacists (Azhar *et al.*, 2009). Complexities due to increases in range of medicines and poor compliance have shifted the focus of pharmacist toward patient-centered approach. This situation has made pharmacy discipline to be recognized as an equally important profession in the multidisciplinary team for the provision of health care. Since the improvements in health outcomes depends on the workforce levels and quality, accomplishment of desirable results are difficult to achieve without a competent pharmacy workforce (Robinson *et al.*, 2000; Anand *et al.*, 2004; Zurn *et al.*, 2005). The pharmacy profession is still lagging behind in developing countries as compared with developed countries in a way that the pharmacy professionals have never been considered as a part of health care team neither by the community nor by the health care providers (Doucette *et al.*, 2006). In a recent study in UK,

researchers found that most of the pharmacists were involved in advising the doctors and educating the patients (Martin *et al.*, 1998). The findings of Spencer and Edwards with respect to pharmacists' services suggest that general practitioners were satisfied with the pharmacist's health education activities (Spencer *et al.*, 1994). Despite the criticism, pharmacists in developed countries have shown zeal in upgrading their knowledge and have refined their professional skills to meet the health care demands, and this has positioned them in a suitable place in the health care system. Various professional bodies of pharmacists also supported and encouraged the pharmacists' involvement in better patient care (Crown, 2002). In countries like UK, pharmacists were also given the prescribing rights for certain diseases (Stephen, 2003). The Good Pharmacy Practice Guidelines developed by the FIP, and subsequently adopted by the World Health Organization, state that a pharmacist's first concern should be the welfare of the patient (International Pharmaceutical Federation, 2004). In Pakistan, there are opportunities for pharmacists to become more involved with patient care; however, there are difficulties with identifying their role

and responsibilities and having those recognized by hospital administrators, government, and patients (Ghani 1993).

According to WHO, future pharmacists must possess specific knowledge, attitudes, skills and behaviors in support of their roles (Zammit, 2003). The paradigm shift for pharmacy practice took turn in 1990, when Hepler and Strand introduced the term "pharmaceutical care" (Hepler et al., 1990). In many parts of the world, pharmacists have played a significant role in provision of pharmaceutical care services. In addition, it is also widely believed that pharmacists can make a great contribution to the provision of the primary health care, especially in developing countries (Smith, 2004; Jesson et al., 2006).

Literature review showed that there was very limited information of this type of research within the hospital inpatient pharmacy services in Bangladesh. Many researchers have found that, prescribers are in favor of the new extended roles of practicing pharmacists as patient counselors and drug information providers. The objective of this study was to summarize the current scenario of pharmacy practices in the four hospitals of Bangladesh and to identify the pharmacist's activities in these hospitals.

Methods: study design, data collection and evaluation

A cross sectional survey based study was conducted by convenient sampling method from October to December 2011 in four hospitals of Bangladesh. Among these four hospitals three were privately owned and one was government hospital. Among these four hospitals two was located at the centre of Dhaka. These hospitals were selected because these provide patient care services including hospital pharmacy department as a unique part of the hospital and symbolized as "A" and "B" for the study purpose. Another two medical college hospitals was located in the district region of Bangladesh. One was symbolized as "C" located in Bogra and another one was government hospital located in Rajshahi, symbolized as "D". These two were selected as there was no hospital pharmacy department and pharmacist intervention.

A 14-item questionnaire with an open-ended question for personal opinion was supplied to all the respondents. The questionnaires were drawn in English. Different variables were evaluated such as education, experience,

dispensing routine of the attendants at medical stores or functional pharmacies. Their knowledge about hospital pharmacy, commonly dispensed drugs, influence of different factors on prescribing practices and the willingness to have a qualified pharmacist at their medical store were also evaluated.

Result and Discussion

This study tried to explore practices in hospital pharmacies in four hospitals of Bangladesh. The results revealed some important points regarding the standard of practices shown in Table 1. The most striking point was that the of hospital pharmacy practice existed only in some expensive private modern hospitals in the capital of Bangladesh, which were inaccessible for the majority of people. We collected information from hospital "A" where American standard of hospital pharmacy practices was followed and around thirty A-grade pharmacists were involved for providing patient care. Here, activities were done by a Pharmacy and Therapeutic Committee (PTC) and pharmacists involved in different department to provide clinical services. In hospital "B" there was no standard system for distribution of medicine but they provide their services with five A-grade pharmacists according to their own system for better patient care. Hospital "C" actually had no facilities of a hospital pharmacy. Only a retail drug store inside the hospital was present and there was no diploma or graduate or any pharmacy technician for providing patient care. On the other hand, hospital "D", a government owned hospital in Bangladesh there was no standard facilities of hospital pharmacy. Only prescribed drugs were dispensed by pharmacy technician and there was no clinical pharmacy services for providing patient care. Another important evidence was that the positive attitude from doctors was noticed for pharmacists involvement from the hospitals having hospital pharmacy services. In some cases pharmacists discussed with doctors if any confusion was evident and they were seen to take necessary measures doctors if it was acceptable.

According to the study, the profession of pharmacy is well established across the globe especially in the developed countries. However, still some variations exist in the practices of the different countries despite of the guidelines given by World Health Organization (WHO)

regarding the role of pharmacist in clinical settings (Anderson, 2002). This again is totally ignoring the guidelines provided by WHO that a legally qualified licensed pharmacist must be present at a operational pharmacy (Anderson 2002).

A statement from the Society of Hospital Pharmacists of Australia (SHPA) declares that all patients should receive clinical pharmacy services as part of routine care since clinical pharmacists have been shown to decrease the incidence of adverse drug events (The Society of Hospital Pharmacists of Australia, 2004). The introduction of a clinical pharmacist to an intensive care unit (ICU) team in Pakistan demonstrated a high acceptance rate of interventions (91.6%) and has led to the creation of other clinical positions in varying practices in the hospitals (Razi et al., 2002). Hospital pharmacy interventions have also been demonstrated to have a cost-savings in many

countries. Dooley et al. (2004) reported that the annualized cost-savings associated with economically measured resources due to pharmacists' interventions was \$4 447 947 (AUS) in the 8 institutions; \$23 were saved for every \$100 spent on a pharmacist to initiate an intervention.

The introduction of a part-time pharmacist into the ICU in Malaysia resulted in savings of \$4014 (US) over one month (Zaidi et al., 2003). There is increasing evidence that pharmacists can improve patient care and decrease health-related costs and, as such, have begun to economically justify their place within the clinical care of the patient. In addition, the improvement in patient safety through reduction of ADRs has given pharmacists an important justification for involvement in direct patient care.

Table 1. Hospital pharmacy practice in four hospitals of Bangladesh.

Features	Hospital - "A" (450 beds, Dhaka)	Hospital - "B" (320 beds, Dhaka)	Hospital - "C" (310 beds, Bogra)	Hospital - "D" (1000 beds, Government hospital, Rajshahi)
1. Hospital pharmacy department	It is a unique part of the hospital for providing patient care.	It is also a unique part of the hospital for providing patient care.	There are no facilities of a standard hospital pharmacy. There is only a retail drug store inside the hospital but not under the control of the hospital pharmacy.	No standard facilities of hospital pharmacy. Only prescribed drugs are dispensed by pharmacy technician
2. Pharmacy and Therapeutic Committee (PTC)	It has a PTC, which holds 3 or 4 meetings in a year.	It has also a PTC. PTC consists of 11 members including 2 pharmacists. It holds 3 or 4 meetings in a year.	No such committee has been formed yet.	No such committee has been formed yet.
3. Section of hospital pharmacy	Hospital pharmacy department of "A" hospital provide services by dividing it into 5 sections. These are - a) In-patient department (IPD), b) Out-patient department (OPD), c) Central pharmacy department (CPD) d) Clinical service department e) Prescription review unit.	Hospital pharmacy department of "B" hospital provide services by dividing it into 3 sections a) In-patient department (IPD) b) Out-patient department (OPD) c) Central pharmacy department (CPD)	There is no section of hospital pharmacy as there is no separate department.	There is no standard department. They provide patient care services into 3 sections a) One dispensary for Outpatient. b) Floor stock system at the nursing station of every ward. c) One pharmacy store.
4. Distribution system of IPD.	They follow unit dose dispensing system of American standard for dispensing of in-patient medicine.	They follow both prescription order and floor stock system for dispensing of inpatient medicines.	No standard system for dispensing of medicine is followed. After receiving prescription from doctor, nurses make a new copy to buy medicines.	Here, same process as like as 'C' hospital is followed.
5. Arrangement of OPD	Enough space for dispensary and proper seating arrangement for patient and patient's attendants.	Enough space for dispensary and proper seating arrangement for patient and patient's attendants.	No separate dispensary but seating arrangement for patient and patient's attendants.	Enough space in Dispensary and there is no proper seating arrangements for patients.

6. Number of pharmacists	Hospital pharmacy of "A" hospital provide better patient care by recruiting around 30 A grade pharmacists. They perform their activities in every section. IPD- 3 pharmacists OPD-3 pharmacists CPD-3 pharmacists Prescription review unit- 4 pharmacists Ward 15 pharmacists.	Hospital pharmacy department of "B" hospital provide services by only 5 A-grade pharmacists with only 1 Diploma pharmacists in OPD. IPD- 3 pharmacists OPD -2 pharmacists.	No graduate or diploma pharmacists are working in this hospital. Dispensers of the pharmacy shop are from SSC and HSC level.	There is no A grade pharmacist in "D" hospital. 17 Diploma pharmacists are working, of whom 11 Diploma Pharmacists to the out patient dispensary and 6 Diploma Pharmacist to the pharmacy store.
7. Working area	Separate section and working area for every section	There is no separate section and working area. CPD involves with IPD and no special working area of ward pharmacists.	ND	ND
8. Activities of pharmacists in IPD	a) Dispensing for in-patient prescription. Checking parameters include -Right patient -Right medication -Right dose -Right route -Right time. b) Proper patient counseling about disease and medicines.	a) Dispensing of inpatient prescription. Checking parameters include -Right patient -Right medication -Right dose -Right route -Right time. b) Proper patient counseling about disease and medicines.	Dispensing and counseling of inpatient prescription is not done by pharmacist. Nurses give medicine to the patient in time according to prescription.	Dispensing and counseling of inpatient prescription is not done by pharmacist. Nurses give medicine to the patient in time according to prescription.
9. Activities of pharmacists in OPD	Dispensing of each outpatient prescription and also counseling of every patient is done by pharmacist.	Dispensing of only oncology prescription and counseling are done by pharmacists.	Dispensing is performed by salesman but not proper counseling.	Dispensing is performed but not proper counseling of patient.
10. Activities of pharmacists in CPD	Purchase, inventory control and total material management is done by pharmacists.	Purchase, inventory control and material management is done by pharmacy technician but their activities is managed by pharmacists.	Purchase, inventory control and material management is done by dispenser of pharmacy.	Purchase, inventory control and material management is done by Diploma pharmacist.
11. Pharmacist for clinical services	Permanent pharmacist in each ward for providing better patient care.	There is no permanent pharmacist for ward. Only 3 pharmacists are doing there job into ICU and Nephrology unit orderly .	There is no pharmacist or other personnel for clinical services.	There is also no pharmacist or other personnel for clinical services.
12. Activities of ward pharmacists	Diagnosis check of patients such as IBW, CrCl, SCr and checking of prescription for -Drug drug interaction -Side effects -Contraindication -Dose -Medication -Hospital acquired infection.	Diagnosis check of patients such as IBW, CrCl, SCr and checking of prescription for -Drug drug interaction. -Side effects -Contraindication -Dose -Medication -Hospital acquired infection.	No such activities is done for patient care.	ND
13. Prescription review unit.	It is a special department of hospital pharmacy in "A" Hospital. Prescription is checked by pharmacists into online system where all information of a patient is given. Checking parameters include -medication error monitoring -Prescription screening -Expiry date monitoring	In "B" hospital, there is no prescription review unit.	ND	ND

14. Other activities	Pharmacists also responsible for -adjustment of dose for in patients with renal impairment -Therapeutic drug monitoring.	Pharmacists also responsible for - adjustment of dose for patients with renal impairment -Therapeutic drug monitoring. -Preparation of protocol for some toxic drugs.	ND	ND
15. Drug information services.	There is no special department for drug information. But pharmacist in the ward and prescription review unit provide information about the availability, strength of medicine and any other information of medicine to the doctors.	There is no special department for drug information. But pharmacist provide information about the availability, strength of medicine and any other information of medicine to the Doctors.	ND	ND
16. Compounding section	There is no compounding activities in "A" hospital.	Compounding of some medicines that are required by patients and are not available in the market including. -Magnesium sulfate paste and syrup. -Chloral hydrate syrup. -Phenobarbital syrup etc.	ND	ND
17. Doctor-pharmacist involvement.	Positive attitude from doctors is noticed for pharmacist involvement in a hospital. Pharmacists discuss with doctors if any confusion arise and doctors take step if it is acceptable.	Positive attitude from doctors is noticed for pharmacist involvement in a hospital. Pharmacists discuss with doctors if any confusion arise and doctors take step if it is acceptable.	There is no doctor-pharmacists involvement in this hospital.	There is no doctor pharmacist involvement in this hospital.

PTC= Pharmacy and Therapeutic Committee, IPD = In patient department.

OPD = Out patient department, CPD = Central pharmacy department, ND = Not detected

ICU=Intensive care unit, OPD = Out patient department, CPD = Central pharmacy department.

ND = Not detected, IBW - Ideal Body Weight, CrCl - Creatinine clearance, Scr - Serum Creatinine.

PTC – Pharmacy and Therapeutic Committee, IPD – In Patient Department, OPD – Out Patient Department, CPD – Central Pharmacy Department, IBW - Ideal Body Weight, CrCl - Creatinine clearance, Scr - Serum Creatinine, ND=Not detected.

It is true that pharmacists struggled a lot when started to do these activities in a hospital for the first time in Bangladesh since it was totally a new concept and culture for our healthcare system but have succeed. Our respected doctors, nurses and other healthcare providers got satisfied when they have observed that we have ultimately made their task easier and ensured patient safety. They have started to show positive responses to our activities and appreciate. Hospital also itself got benefits through the proper management of medicines and Pharmacy Department became second contributory after Consultation Department in the annual profit margin in a hospital. That's how a hospital pharmacist can play a vital supportive role in health care system in Bangladesh.

Conclusion

National Drug Policy 2005 of Bangladesh suggests that medicine distribution and utilization in retail pharmacies and hospitals should be under the supervision of qualified pharmacists. But reality is that no graduate pharmacist is working in retail pharmacies or government hospitals of Bangladesh except very few tertiary level private hospitals.

These one or two hospitals can not improve the overall health care system in Bangladesh. Along with lack of human resources, the profession seriously lacks government interest. Actually the first foot steps should come from the government by making it mandatory to have at least a graduate pharmacist in every hospitals.

It is also recommended to the hospital administrators that hospital pharmacy should be launched to ensure patient compliance and therapy outcome and to provide healthcare services of international standard. Pharmacists and pharmacy services are a vital part of healthcare system. To attain the ideal healthcare service doctor, pharmacist, nurse and other healthcare professionals must work together. Legal reform is needed to achieve the health objectives of the nation to contribute towards attainment of the Global Millennium Development Goals (MDG) and to achieve the acceptance of the pharmacy profession as an integral part of a well structured health care system. Government of Bangladesh should ensure the hospital pharmacy service to all the peoples in order to reduce medication related errors and to improve patients care and safety.

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References

- Anderson, S. 2002. The state of the world's pharmacy: A portrait of the pharmacy profession. *J. Interprof Care* **16**, 391-404.
- Azhar, S., Hassali, M.A., Ibrahim, M.I. 2009. The role of pharmacists in developing countries: The current scenario in Pakistan. *Human Resources for Health* **7**, 54.
- Crown, J. 2002. Pharmacists involvement in better patient care. *J. Pharm.* 269, 540.
- Dooley, M., Allen, K., Doecke, C. 2004. A prospective multicentre study of pharmacist initiated changes to drug therapy and patient management in acute care government funded hospitals. *J. Br. Clin. Pharmacol.* **57**, 513-21.
- Doucette, W.R., Kreling, D.H., Schommer, J.C. 2006. Evaluation of community pharmacy service mix: Evidence from the 2004 National Pharmacist Workforce Study. *J. Am. Pharm. Assoc.* **46**, 348-55.
- Ghani, S. 1993. The role of the pharmacist in primary health care in Pakistan. *J. Int. Pharm.* **7**, 235- 41.
- Hepler, C. and Strand, L. 1990. Opportunities and responsibilities in pharmaceutical care. *J. Hosp. Pharm.* **47**, 533-543.
- International Pharmaceutical Federation. 2004 June 14. Standards for quality of pharmacy services. www.fip.org/pdf/GPP97_en.pdf.
- Jesson, J. and Bissell, P. 2006. Public health and pharmacy: A critical review. *Critical Public Health.* **16**, 159-169.
- Martin, R.M., Susan, G. and Rink, E. 1998. New tool to enhance role of pharmacists in health care. *J. Int. Pharm. Pract.* **6**, 133.
- Razi, Z., Latif, S. and Shamim, R. 2002. Establishing clinical pharmacy services in a Pakistani intensive care unit. *J. Am. Health Syst. Pharm.* **59**, 1888-9.
- Robinson, J. and Wharrad, H. 2000. Invisible nursing: Exploring health outcomes at a global level. Relationships between infant and under-5 mortality rates and the distribution of health professionals, GNP per capita and female literacy. *J. Adv. Nurs.* **32**, 28-40.
- Smith, F. 2004. Community pharmacy in Ghana: enhancing the contribution to primary health care. *Health Policy Plan.* **19**, 234-241.
- Society of Hospital Pharmacists of Australia. 2004 June 14. Position statement: clinical pharmacists improve patient outcomes. www.shpa.org.au/documents/clin_pharm_ps_aug03.pdf.
- Spencer, J.A. and Edwards, C. 1994. New tool to enhance role of pharmacists in health care. *J. Brit. Med.* **304**, 1670.
- Zaidi, S., Hassan, Y., Postma, M. 2003. Impact of pharmacist recommendations on the cost of drug therapy in ICU patients at a Malaysian hospital. *Pharm. World Sci.* **25**, 299-302.
- Zammit, D. 2003. How to make ethical decisions. *The Pharm. J.* **271**, 468.
- Zurn, P., Vujcic, M. and Diallo, K. 2005. Planning for human resources for health: Human resources for health and the production of health outcomes/outputs. *Cah. Sociol. Demogr. Med.* **45**, 107-33.