



# Journal of Applied Sciences

ISSN 1812-5654

**science**  
alert

**ANSI***net*  
an open access publisher  
<http://ansinet.com>



## Research Article

# Perception of Hospital Pharmacists on their Current Professional Role in Urban Health Care System in India: A Cross Sectional Study

Bandaru Yeswanth Raja, Kolli Sowjanya, Manihottiyale Angelo Simon and T.M. Vijayakumar

Department of Pharmacy Practice, SRM College of Pharmacy, SRM Institute of Science and Technology, 603203, Kattankulathur, India

## Abstract

**Background and Objective:** Hospital pharmacists are the most voluntarily convenient health professionals within their communities. Pharmaceutical care is the provision of drug therapy for the purpose of achieving definite outcomes to improve the patient's quality of life. Pharmacists play a key role in providing quality health care to patients and use their clinical skill together with practical knowledge to ensure the safe supply and use of medicines by patients and members of public. The practice of pharmaceutical care should be new and updated. Therefore, a cross sectional study was carried out using a self-administered questionnaire on hospital pharmacists regarding their professional, pharmacy store maintenance, communication skills, prescription auditing services, patient education and awareness programs etc. **Materials and Methods:** A cross sectional study was conducted among the hospital pharmacists working in two urban cities in south India. A sample of 409 hospital pharmacists was selected from urbanised hospitals in these two cities. Data was analyzed using Microsoft Excel 2007. **Results:** A total number of 106 hospital pharmacies were visited of which 409 hospital pharmacists have responded to the questionnaire. Most of the hospital pharmacists were qualified with a D.Pharm (75%), B.Pharm (22%) and M.Pharm degree (3%). Around 92.2% of the hospital Pharmacists constantly updated their knowledge whereas only 53% wore white coat during work. Regarding pharmacy store maintenance, almost every pharmacist was following the rules and regulations of state pharmacy council except 72.5% were found not following proper storage restrictions for narcotics. Most of the pharmacists counselled patients on medication use, provided customer care services and did not dispense OTC medications frequently while only 55% of them conducted awareness programmes in their hospitals. Almost all the pharmacists handled the prescription correctly with regard to checking date, record maintenance and verifying signature of prescriber. In terms of interaction with other health care professionals, pharmacists maintained good relationship, reported the medication errors and explained the rational use of drugs. With regards to attitude, 72.5% pharmacists agreed that pharmaceutical services are important for selection and safe and effective use of medicines. **Conclusion:** In this survey hospital pharmacists lacked to meet their professional requirements. Pharmacists should also be consistent in upgrading their knowledge regarding pharmacy, drugs and diseases.

**Key words:** Hospital pharmacy, pharmaceutical care, prescription, patient education, pharmacy profession

**Citation:** Bandaru Yeswanth Raja, Kolli Sowjanya, Manihottiyale Angelo Simon and T.M. Vijayakumar, 2019. Perception of hospital pharmacists on their current professional role in urban health care system in India: A cross sectional study. J. Applied Sci., 19: 355-359.

**Corresponding Author:** T.M. Vijayakumar, Department of Pharmacy Practice, SRM College of Pharmacy, SRM Institute of Science and Technology, 603203, Kattankulathur, India Tel: +91-44-2745 3160; +91-44-2745 5718 Fax: +91-44-2745 5734

**Copyright:** © 2019 Bandaru Yeswanth Raja *et al.* This is an open access article distributed under the terms of the creative commons attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

**Competing Interest:** The authors have declared that no competing interest exists.

**Data Availability:** All relevant data are within the paper and its supporting information files.

## INTRODUCTION

Hospital pharmacists are professional health care experts who advice to provide prescribing, administering, monitoring of medicines and also ensure that medicines are available through procurement, storage, distribution, inventory control and quality assurance<sup>1</sup>. Hospital pharmacy is considered to be 'the engine of innovation' in the pharmaceutical services field, which has become patient oriented together with specialists, compounding and providing drug information<sup>2</sup>. The hospital pharmacist interacts with prescribers to promote the rational prescribing and use of drugs. They communicate with other fellow pharmacists to gain knowledge and upgrade their expertise on diseases and drugs. They have access to medical records and can influence the selection of drugs, dosage regimens, monitor patient compliance and recognize drug interactions and report adverse drug reactions or events. They also serve as policy makers in drug selection, use of antibiotics and hospital infections committees such as Drug and Therapeutics Committee and Infection Control Committee to prepare the hospital formulary and are also involved in planning and implementation of clinical trials in the hospital<sup>3</sup>.

In the current scenario, pharmacy profession has undergone change from product oriented to patient oriented practice which is considered as pharmaceutical care<sup>4</sup>. Pharmaceutical care is the provision of drug therapy to achieve a definite therapeutic outcome that improves the patient's quality of life<sup>5</sup>. India possesses a high number of trained pharmacists but their pharmacy training is focused more towards the industrial sector as compared to other sectors. This is due to the demand from the industrial side<sup>6</sup>. There is a lack of appropriate and good-quality medicines which are the most common problems encountered. Irrational use of drugs and weak regulatory enforcement of drug sales are also serious issues that have to be addressed<sup>7</sup>.

However, in developing countries such as India, there is a lack of hospital pharmacy services because of the isolation and under recognition of pharmacists as health care professionals. The shortage of trained personnel results in less patient-pharmacist interaction<sup>8</sup>. To our knowledge, no survey or study has yet been conducted among the hospital pharmacists in Indian urban hospitals. Therefore, the primary objective of this study was to evaluate the perception of hospital pharmacists towards their profession in tertiary care urbanized hospitals.

## MATERIALS AND METHODS

A cross sectional survey was conducted on present status and was observed in both outpatient and inpatient

departments of hospital pharmacies in urbanized hospitals in the areas of Chennai (Tamil Nadu) and Kadapa (Andhra Pradesh) for a period of 3 months from June-August, 2016. The study participants consisted of hospital pharmacists who gave their informed consent and were working at the hospital during the study period.

A self-administered questionnaire was prepared and validated from the Department of Pharmacy Practice, SRM College of Pharmacy, Kattankulathur, Tamil Nadu. The questionnaire was divided into 7 sections: (i) Demographic details, (ii) Pharmacist profession, (iii) Pharmacy store, (iv) Interaction with patients, (v) Prescription analysis, (vi) Interaction with medical professionals and (vii) Attitude of pharmacists. Reliability test was applied for variables of 20 and reliability of tool was estimated on the basis of Cronbach's Alpha which was found to be 0.68 ( $\alpha = 0.68$ ) by using SPSS version 25.

The questionnaire was composed of a total of 7 sections where each of the first to sixth sections comprised of a set of six statements in which respondents were asked to give 'Yes' or 'No' response whereas in the seventh set, they were asked to indicate the level of agreement using a 5-point Likert scale where 1 = strongly disagree, 2 = disagree, 3 = strongly agree, 4 = agree, 5 = don't know. This scale was used in order to avoid confusion with neutral responses from the respondents.

The data was entered into and analyzed using Microsoft excel sheet version 2007 and the results were represented using percentage with high percentage indicating good level of significance and low percentage indicating poor level of significance.

## RESULTS AND DISCUSSION

In this survey which was conducted in 2 urban hospitals in India, Table 1 represents demographic details. Mean age group of pharmacists was found to be 21-30 years. The gender wise distribution showed male population to be pre-dominant

Table 1: Demographic details of hospital pharmacists

Age of pharmacists	Percentage
<b>Age (years)</b>	
0-20	4.0
21-30	35.0
31-40	18.0
41-50	31.0
51-60	12.0
<b>Gender</b>	
Male	76.5
Female	23.5
<b>Qualification</b>	
D. Pharm	75.0
B. Pharm	22.0
M. Pharm	3.0

Table 2: Pharmacist adherence to the pharmacy profession

Profession	Yes (%)	No (%)
Registered	100.0	0.0
Pharmacist oath	72.5	27.5
Up-to-date knowledge	92.2	7.8
Dress code	53.0	47.0

Table 3: Pharmacy store adhered to the requirement

Pharmacy store	Yes (%)	No (%)
Registered	92.2	7.8
Minimum space (100 sq.ft)	94.2	5.8
Code and codification	94.2	5.8
Proper storage conditions	88.2	11.8
Special storage for narcotics	47.5	72.5
Drugs (old stock and date of expiry)	100.0	0.0

Table 4: Pharmacists handling the patients

Patients	Yes (%)	No (%)
Counselling	100.0	0.0
Customer services	84.4	15.6
OTC medication	11.7	88.3
Awareness programs	55.0	45.0
Handling over bills	84.4	15.6

Table 5: Handling of prescription by the pharmacist

Prescription	Yes (%)	No (%)
Checking date	100.0	0.0
Prescription records	100.0	0.0
Changing the drug while dispensing	25.5	74.5
Checking signature of prescriber	98.0	2.0

in number as compared to females. In our study Diploma degree holders shared the highest percentage in degree qualification. The study was carried out in a total number of 106 hospital pharmacies of which 409 hospital pharmacists responded and approximately 17955 patients visited the pharmacies each day.

The hospital pharmacists showed an effective communication with their patients. All the hospital pharmacists had 100% registered licensure certificate to work at the hospital pharmacy, 53% followed proper dress code i.e., a neat white over coat and the remaining 47% did not follow any dress code. About 72.5% of the sample practiced pharmacist's OATH and 92.2% hospital pharmacists had up to date knowledge regarding banned drugs and new drugs available in the market every year, a small percentage of them (7.8%) lacked up-to-date pharmacy knowledge<sup>9</sup>. With regards to pharmacy store maintenance, 92.2% of the pharmacy stores were registered under state pharmacy council and 7.8% of pharmacy stores were not registered. About 94.2% of the pharmacy stores followed minimum space regulation of 110 sq.ft to store high number of medicines in wider space and 5.8% of pharmacy stores did not meet the pharmacy store space requirements<sup>10</sup>. About 94.2% of the pharmacies showed coding and codification regarding dispensing of drugs whereas 5.8% did not any proper codes and codification for

dispensing of drugs<sup>11</sup>. About 88.2% of the pharmacies had adequate space for storage of drugs with proper ventilation, lighting, temperature maintenance in refrigerator, regular inspection and cleanliness outside the premises of the storage facilities which plays a key role in material management of a pharmacy whereas 11.2% of hospital pharmacies were deficit of the above. About 47.5% of the hospital pharmacies followed special storage conditions including packaging and labeling for narcotics, psychiatric and alcohol preparations, hormonal drugs with proper refrigeration at cold temperatures whereas 72.5% of hospital pharmacies did not meet the above requirements. 100% of the hospital pharmacists had observation regarding the old stock and date of expiry ensuring proper storage and protection of the product quality until expiry<sup>12</sup>. The results of pharmacist profession and maintenance of pharmacy store in hospital pharmacare shown in Table 2 and 3.

According to pharmacists handling the patients and prescriptions as per Drugs and Cosmetics Act 1948, all the hospital pharmacists contributed their 100% on counseling and advising patients on his/her medications regarding the dosage, dose, route of administration, usage and rational use of drugs to promote suitable, effective, safe and convenient use of medicines<sup>9,13</sup>. About 84.4% of hospital pharmacists provided their 24 h customer care services including the delivery of drugs to indoor and outdoor patients and patients felt comfortable by the friendly gestures and ambiances when they visited the stores while the remaining 15.6% had not provided 24 h service<sup>9</sup>. Only 11.7% of the pharmacists dispensed OTC medications to patients in need and 88.3% did dispense any OTC drugs<sup>13,14</sup>. Around 55% of hospital pharmacists conducted awareness programs on influenza vaccination, smoking cessation and patient care whereas 45% did not conduct any such programs<sup>15</sup>. About 84.4% of the hospital pharmacists handed the bills on time where as 15.6% could not dispense it on time due to lack of personnel and heavy working hours<sup>16</sup>. The details of patient handling by the pharmacist are shown in Table 4.

According to Drugs and Cosmetics Act 1948, 100% of the hospital pharmacists in our study checked the date of prescription while dispensing, kept the records of prescriptions, refill prescriptions noted dispensing date either in document or computer feeding. 25.5% of them changed the drug when the prescribed drug was not available at the pharmacy while 74.5% did not dispense any alternative drug<sup>17</sup>. About 98% of the hospital pharmacists checked the signature of the doctor while dispensing and drugs were not dispensed if prescription was unavailable, whereas 2% did not check for prescriber's signature<sup>18</sup>. The details of pharmacists handling the prescription are shown in Table 5.

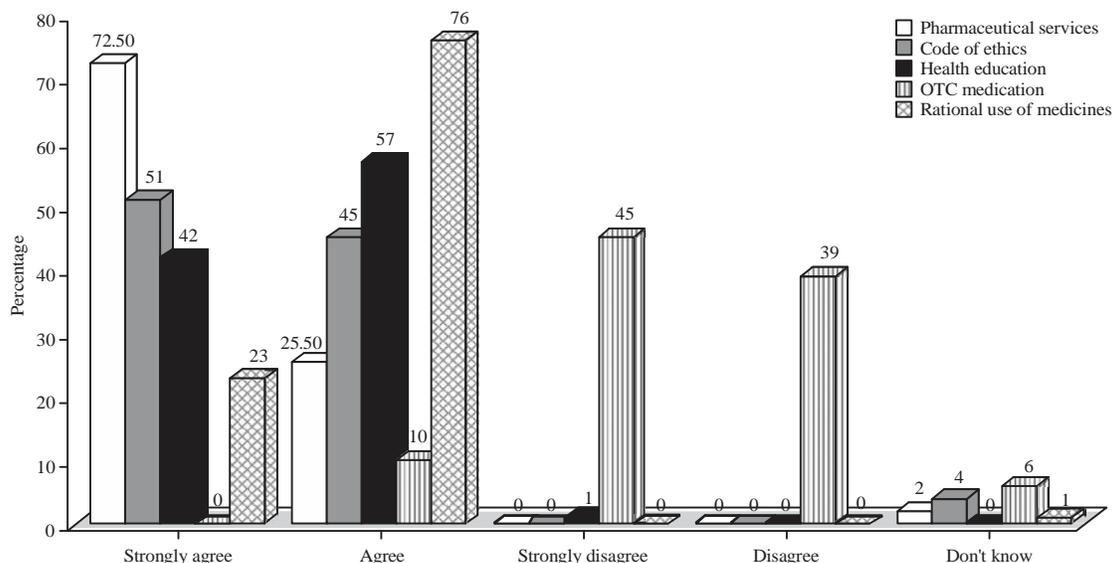


Fig. 1: Pharmacist's attitude towards their profession

Table 6: Pharmacist's approach with other health care professionals

Medical profession	Yes (%)	No (%)
Relation with health care professionals	100	0
Errors reporting	100	0
Discussion on rational use of medicines	90	10

Regarding the hospital pharmacist practice towards his profession, 100% of the hospital pharmacists maintained good relation and effective communication with health care professionals regarding the errors, drug availability. All of the hospital pharmacists contributed their duty towards reporting of prescription errors effectively to the medical staff and ensuring that the right patient receives the right medicine in the correct dose, form, frequency and route<sup>9</sup>. About 90% of the hospital pharmacists discussed with the medical professional regarding the safety if they identified harmful signs and symptoms, drug-drug interactions and handled the patients to health care professional regarding the rational use of drugs mostly on OTC drugs and antibiotics, whereas 10% failed to discuss<sup>19</sup>. Table 6 showed the details of pharmacists' practice towards their profession.

The attitude of pharmacists was surveyed by a questionnaire which noted that 72.5% of the pharmacists strongly agreed that pharmaceutical services were important during the selection of medication and that it should be effective, safe and convenient and 25.5% agreed and 2% were not aware of those<sup>20</sup>. Around 51% of the subjects strongly agreed that they follow code of ethics and 45% agreed where as 4% were not aware of ethics<sup>21</sup>. Around 42% of the subjects strongly agreed, 57% agreed and 1% strongly disagreed that conducting health education to public and health care unit

provides patient care and health benefits<sup>22</sup>. As of dispensing OTC medications, 45% of the subjects strongly disagreed, 39% disagreed and 10% agreed that it was safe whereas 6% were not aware of it<sup>13</sup>. Around 23% of the subjects strongly agreed and 76% agreed that rational use of medicines or drug therapy is beneficial to patient's care whereas 1% were not aware of it<sup>23</sup>. The details of pharmacists attitude towards their profession was shown in Fig. 1.

### CONCLUSION

In our survey, it discovered that hospital pharmacists felt short of meeting their professional requirements. Pharmacists must see that all the conditions required for his store are met properly. They must not change the prescribed drugs without a proper consultation from the prescribers. Pharmacists must constantly update their knowledge regarding pharmacy, drugs and diseases. As provision of pharmaceutical care is an important responsibility of pharmacists, they need to conduct awareness programs, deliver information about the importance of diseases and drug therapy management services.

### SIGNIFICANCE STATEMENT

This study discovered the strengths and the lacunae in the practice of hospital pharmacists that is beneficial for other pharmacists who are practicing in their respective hospitals around the world so that they recognize and follow proper standards of pharmacy profession and fill in the short

comings thus rendering improved patient care. This study will help the researchers to uncover the critical areas of pharmacist's profession in the health sector, where the pharmacists has major role in health sector that many researchers were not able to explore.

### ACKNOWLEDGMENT

We would like to thank Prof. K.S. Lakshmi, Dean, SRM College of Pharmacy for her kind support throughout the study.

### REFERENCES

1. Olson, C., 2012. Hospital Pharmacy Management. In: MDS-3: Managing Access to Medicines and Health Technologies, Embrey, M.A. (Ed.). 3rd Edn., Chapter 45, Management Sciences for Health Inc., Arlington, VA., USA., pp: 1-42.
2. Farrar, K., 2000. Hospital pharmacy: Thinking the unthinkable. *The Pharmaceutical Journal*, January 1, 2000. <https://www.pharmaceutical-journal.com/hospital-pharmacy-thinking-the-unthinkable/20000004.article>
3. WHO., 1994. Hospital Pharmacy. In: *The Role of the Pharmacist in the Health Care System*, WHO (Eds.). Chapter 4.3, World Health Organization, Geneva, Switzerland, pp: 13-14.
4. Awad, A., S. Al-Ebrahim and E. Abahussain, 2006. Pharmaceutical care services in hospitals of Kuwait. *J. Pharm. Pharmaceut. Sci.*, 9: 149-157.
5. Hepler, C.D. and L.M. Strand, 1990. Opportunities and responsibilities in pharmaceutical care. *Am. J. Hosp. Pharm.*, 47: 533-543.
6. Goel, P., D. Ross-Degnan, P. Berman and S. Soumerai, 1996. Retail pharmacies in developing countries: A behavior and intervention framework. *Social Sci. Med.*, 42: 1155-1161.
7. Farris, K.B., F. Fernandez-Llimos and S.I.C. Benrimoj, 2005. Pharmaceutical care in community pharmacies: Practice and research from around the world. *Ann. Pharmacother.*, 39: 1539-1541.
8. Azhar, S., M.A. Hassali, M.I.M. Ibrahim, M. Ahmad, I. Masood and A.A. Shafie, 2009. The role of pharmacists in developing countries: The current scenario in Pakistan. *Hum. Resour. Health*, 10.1186/1478-4491-7-54.
9. Gazette of India, 2015. The gazette of India: Extraordinary, part III-section 4. Registered No. D.L.-33004/99, Government of India, New Delhi, India, January 16, 2015. <https://www.kspconline.in/documents/pharmacy-practice-regulations.pdf>
10. Mankikar, S.U., 2012. Govt to frame new rules for chemist shops. *Hindustan Times*, May 28, 2012. <https://www.hindustantimes.com/mumbai/govt-to-frame-new-rules-for-chemist-shops/story-2YONzElfxg2wxqRENbi9VI.html>
11. CDMU., 2012. Guide materials for medical stores management training. Community Development Medicinal Unit (CDMU), Bhubaneswar, Odisha, India, pp: 1-52.
12. Berman, A., 2004. Reducing medication errors through naming, labeling and packaging. *J. Med. Syst.*, 28: 9-29.
13. WHO., 1998. The role of the pharmacist in self-care and self-medication. WHO/DAP/98.13, Department of Essential Drugs and Other Medicines, World Health Organization, Geneva, Switzerland.
14. Alshogran, O.Y., K.H. Alzoubi, O.F. Khabour and S. Farah, 2018. Patterns of self-medication among medical and nonmedical university students in Jordan. *Risk Manage. Healthcare Policy*, 11: 169-176.
15. Anonymous, 2014. Awareness campaign promotes pharmacists as "dispensers of health". *The Pharmaceutical Journal*, January 15, 2014. <https://www.pharmaceutical-journal.com/news-and-analysis/awareness-campaign-promotes-pharmacists-as-dispensers-of-health/11132864.article>
16. IPA., 2002. Good pharmacy practice guidelines: Guidelines for delivery of pharmaceutical services and care in community pharmacy settings in India. Indian Pharmaceutical Association (IPA), Mumbai, India, March 2002, pp: 1-24.
17. Khan, N.A., P. Singh, M. Abid, A. Verma and K. Kishore, 2013. A study on the present status of pharmacy and pharmacists in health care sector. *Int. J. Pharm. Life Sci.*, 4: 2915-2919.
18. Basak, S.C. and D. Sathyanarayana, 2009. Community pharmacy practice in India: Past, present and future. *Southern Med. Rev.*, 2: 11-14.
19. Abdel-Latif, M.M.M., 2016. Knowledge of healthcare professionals about medication errors in hospitals. *J. Basic Clin. Pharm.*, 7: 87-92.
20. Yousef, A.M.M., A.G. Al-Bakri, Y. Bustanji and M. Wazaify, 2008. Self-medication patterns in Amman, Jordan. *Pharm. World Sci.*, 30: 24-30.
21. Salari, P., H. Namazi, M. Abdollahi, F. Khansari, S. Nikfar, B. Larijani and B. Araminia, 2013. Code of ethics for the national pharmaceutical system: Codifying and compilation. *J. Res. Med. Sci.*, 18: 442-448.
22. Scott, D.M., M. Strand, T. Udem, G. Anderson, A. Clarens and X. Liu, 2016. Assessment of pharmacists' delivery of public health services in rural and urban areas in Iowa and North Dakota. *Pharm. Pract.*, 14: 836-846.
23. Sabir, M.B., 2018. Role of WHO: Government and pharmacist in promoting rational drug use. *J. Applied Pharm.*, Vol. 10, No. 1. 10.21065/1920-4159.1000256.