

Evaluation of drug information services in a tertiary care hospital in kanchipuram district and community pharmacies in neighbouring areas

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ABSTRACT

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Drug information service refers to activities carried out by pharmacists in providing any drug related information to healthcare professionals to provide better patient care. The study was aimed to evaluate the drug information services provided by a drug information centre in a teaching hospital in Kanchipuram district and community pharmacies in neighbouring areas. A total of 158 queries were received which were retrospectively evaluated for a period of six months, from August 2010 to January 2011. Majority of the enquirers were the interns (44.3%) and physicians (25.9%), from the general medicine department (56.3%). Most of the questions were asked by direct access (86.7%). Answers to queries were most often needed immediately (48.1%) and in most cases was answered verbally (56.3%). Most frequently asked questions were about adverse drug reactions (30.3%) followed by dosage and indication (27.8%) and the purpose of the queries were for better patient care (44.9%) and to update knowledge (40.03%). The quality of drug information services provided was assessed both from the receivers' as well as from the providers' perspective using feedback questionnaires and guidelines from the DSE/WHO seminar respectively. Assessment of the feedback questionnaire indicated that majority of the enquirers (98.2%) found the quality of the service provided by the centre to be satisfactory. Evaluation of queries answered by the centre from the providers' perspective revealed that they were within the acceptable limits of quality. In conclusion, the services provided by the centre cater to the need of healthcare professionals towards better patient care.

Keywords: Drug information service, Drug information Centre, Pharmacist, Healthcare professionals.

INTRODUCTION

Drug information service is the service rendered by pharmacists to provide accurate, unbiased, factual information on any aspect of drug use received from healthcare professionals.¹ The provision of drug information is one of the professional responsibilities of clinical pharmacists in healthcare system. As per the definition of Society of Hospital Pharmacists of Australia (SHPA), drug information is the provision of written and/or verbal information or advice about drugs and drug therapy in response to a request from other healthcare providers, organisations, committees, patients or members of the public. This may relate to specific patient or consist of general information promoting the safe and effective use of medications.²

In 1962, at the University of Kentucky Medical Centre, the first drug information centre was started which was intended to be utilized as a source of accurate, unbiased, selected,

comprehensive drug information to cater to the needs of the healthcare team.³ In India, Rosemary Sharp, a missionary from UK, started the first drug information centre at Christian Medical College, Vellore in the early 1970s. This centre provides information on drugs to doctors, pharmacists, nurses and other personnel of various departments.⁴

Till the recent past, the drugs available were few in number and hence, the need for drug information was minimal. But now, the present situation has changed with new modes of treatment, tremendous information explosion and great number of drug products being available each year. Therefore, it is very important to procure accurate unbiased information. In India, irrational use of drugs is common and this has led to antibiotic resistance, adverse drug reactions, drug interactions and other drug related problems. Among the many factors that make clinicians unable to update their knowledge about drugs, lack of unbiased drug information, availability of more than 60,000 formulations and lack of time are few notable reasons which ultimately lead to an increasing demand for independent, specific and unbiased drug information for better patient care.⁵ To maintain consistency in the service provided and for better functioning of the centre, it is important to evaluate the functioning and

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quality of the services provided by the centre at constant intervals⁶. Improper functioning of the drug information centre may contribute to poor patient outcomes in terms of health and economics due to provision of biased and limited drug information⁷. The present study was aimed at evaluating drug information services in a tertiary care hospital in Kanchipuram district and community pharmacies in neighbouring areas for a period of six months.

MATERIALS AND METHOD

The study was conducted in SRM Medical College Hospital and Research Centre, which is a 750 bedded tertiary care hospital in Kanchipuram district, Tamil Nadu and community pharmacies in neighbouring areas. The study was approved by institutional ethical committee. The drug information centre is a part of the department of pharmacy practice in SRM College of Pharmacy, which was established in 2009 in the hospital. The centre is efficiently equipped with trained pharmacists and a library stocked with textbooks, national and international journals and other resources. It is also facilitated with computer and internet access along with electronic databases. The centre is managed by the faculty members and postgraduate students of the pharmacy practice department. A query box is placed outside the centre and other speciality departments of the hospital which can be availed at all times.

The drug information centre caters to the need of doctors, pharmacists, nurses and other healthcare professionals working in various departments of the hospital. The study also takes up voluntary requests from sources other than the hospital and community pharmacies. The services of the drug information centre can be accessed by direct access, telephone, email and during ward rounds. Evaluation of drug information queries received is undertaken and answers are formulated and provided according to the modified systematic approach. The drug information request and documentation forms prepared by the department are utilized to document the drug information requests and answers, which are then filed and maintained by the department. The first step in the evaluation of drug information services involved assessment of drug information request and documentation forms retrospectively for a period of six months, from August 2010 to January 2011, for various parameters such as status of the enquirer, speciality of practice, mode of receipt of query, category of question, purpose of enquiry, timeframe to reply and references used.

The second step involved assessment of the quality of services provided from the receivers' perspective on the basis of the feedback questionnaire circulated, which comprised of questions pertaining to awareness, utilization, ease of contact and quality of service provided by the centre. Suggestions from the requestors on the drug information centre were also solicited. The filled questionnaires were collected on the same day from individual respondents.

The third step involved assessment of quality and effectiveness of drug information services from the providers' perspective using guidelines developed in the DSE/WHO seminar.⁸ According to these guidelines, the queries were categorised into judgemental and nonjudgemental types. The former type of queries require judgement, integration of new data with pre-existing knowledge and experience and extensive searching of secondary and tertiary references and a primary literature review. These types of queries are often patient specific. Nonjudgemental responses characterize a lower degree of complexity and do not require judgement. The aspects which were considered for evaluation included effectiveness in obtaining the demographic data of the enquirer and collecting background information, level of understanding of the question, using search strategy, evaluation of literature and the response given by the provider. From the total queries handled during the study period, a total of 30 queries of 15 each of the judgemental and nonjudgemental type were selected. Queries after evaluation were scored from 1-5, 5 indicating that the information given was excellent, 4 as very good, 3 as good, 2 as adequate and 1 indicating that the consultation was unacceptable for use. The minimum acceptable level of rating was considered to be 3.

RESULTS

The drug information centre received a total of 158 drug information queries during the study period. More number of queries was from the general medicine department (56.3%). Queries were also obtained from various other departments such as gynaecology (7.5%), paediatrics (5.06%), ophthalmology (0.6%), nephrology (1.2%), dermatology (2.5%), cardiology (1.8%), respiratory medicine (5.06%), pharmacists (12.02%) and others (7.5%) as shown in Figure 1. Majority of the questions were asked by the interns (44.3%) and physicians (25.9%). Pharmacists (12.02%), postgraduate students (8.2%), nurses (5.6%), residents (0.6%) and others (3%) also availed this service as indicated in Figure 2. Most of the queries were received by direct access (86.7%). Queries were also received through telephone (10.7%) and during

Fig. 1: Categorization of drug information queries based on speciality

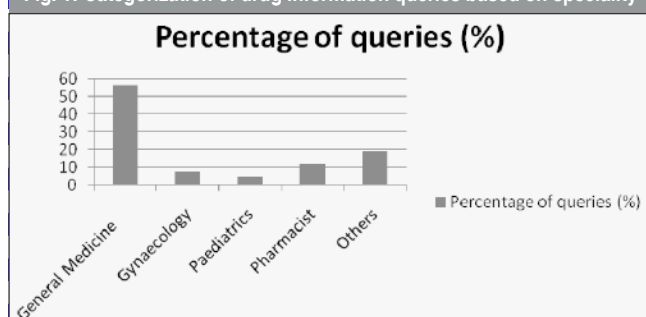


Fig. 2: Categorization of drug information queries based on status of the enquirer

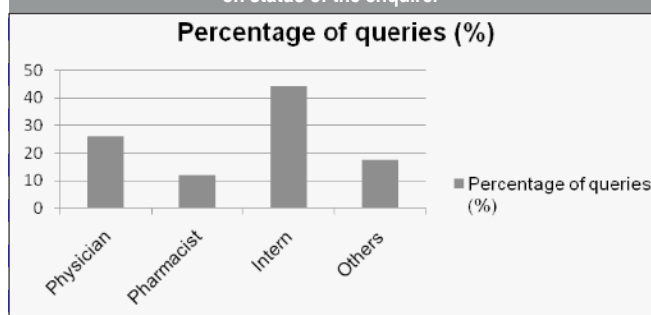
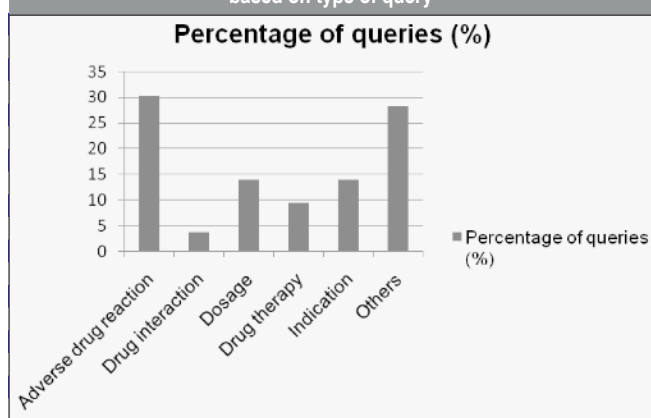


Fig. 3: Categorization of drug information queries based on type of query



ward rounds (2.5%). Answers to the queries were most often needed immediately (48.1%) and in most cases was answered verbally (56.3%). In other cases, answers were required either on the same day (8.8%), next day (27.8%) or within the week (15.2%). In such cases, the answers were provided in a printed format (43.6%). Reply was also provided via email on the request of the enquirer. Categories of questions most frequently asked were about adverse drug reactions (30.3%) and dosage and indication (27.8%). Queries were also asked about drug therapy, interactions, generic name, administration, availability, pharmacodynamics, pharmacokinetics, drug profile and others as shown in Figure 3.

Table 1: Categorization of the drug information queries

Categorization of Queries	Number of Queries	Percentage of Queries (%)
Speciality		
General Medicine	89	56.3
Gynaecology	12	7.5
Paediatrics	08	5.06
Pharmacist	19	12.02
Others	30	18.9
Status of the enquirer		
Physician	41	25.9
Pharmacist	19	12.02
Intern	70	44.3
Others	28	17.7
Mode of request		
Direct access	13	86.7
During ward rounds	04	2.5
Telephone	17	10.7
Purpose of query		
Better patient care	71	44.9
To update knowledge	68	43.03
Educational purpose	19	12.02
Time frame to reply		
Immediately	76	48.1
Same day	14	8.8
Next day	44	27.8
When time permits	24	15.1
Mode of reply		
Verbal	89	56.3
Printed	69	43.6
Type of query		
Adverse drug reaction	48	30.3
Drug interaction	06	3.7
Dosage	22	13.9
Drug therapy	15	9.4
Indication	22	13.9
Others	45	28.4
References		
Textbooks	60	37.9
Websites	58	36.7
Electronic database	25	15.8
Medline	10	6.3
Others	05	3.2

Questions were mostly asked for the purpose of providing better patient care (44.9%) and to update knowledge (43.03%). Questions for educational purpose (12.02%) were asked to a lesser extent. Textbooks (37.9%), websites (36.7%)

and electronic databases (15.8%) were the most commonly used resources for answering queries. Medline (6.3%) and other resources (3.2%) were used to answer queries to a lesser extent as shown in Table 1. A total of 141 questionnaires (Annexure1) were distributed to the enquirers of various departments of the hospital for their feedback, out of which, all 141 (100%) responded. For a question on the awareness about the drug information centre, 78% of them responded positively and 70% utilized the services of the centre at least few times. Among the respondents who utilized the services 98.2% received the appropriate answer within the stipulated time. Some of the suggestions put forward by the enquirers to improve the performance of the drug information centre were 24 hour drug information service and need for awareness program in hospital. Out of the total number of queries, 15 judgemental and 15 nonjudgemental queries were randomly selected for evaluation using quality assurance form. Evaluation of nonjudgemental queries revealed that 9 (60%) of the queries were rated as 5 which was the highest rating, 5 (33%) of the queries were rated as 4 and 1 (6%) query was rated as 3. Rating of judgemental queries showed that 8 (53%) queries were rated as 5, 5 (33%) queries were rated as 4 and 2 (13%) queries were rated as 3. The results showed better rating for nonjudgemental than judgemental queries. All the responses were rated above 3, thereby satisfying the minimum acceptable level of quality (Table 2).

DISCUSSION

Among the 158 queries received by the drug information centre during the study period, a great percentage of the queries were from the general medicine department. This could be due to the utilization of vast number of drugs in the department that necessitates the need for specific unbiased and timely information. The service was utilised by interns and physicians to a greater extent compared to pharmacists, postgraduates, nurses and other healthcare professionals. Majority of the queries were asked for better patient care and hence required an immediate answer, leading to a great

number of queries being answered verbally, which was similar to the results of a study reported by Beena G *et al*⁹. Most of the queries were received by direct access, which could be accounted by the easy accessibility of the centre and its service. Results of a study by Venkatraghavan S *et al* showed that the drug information queries most commonly asked were related to adverse drug reactions and dosage/administration and drug therapy¹⁰. The present study also indicated similar results. For providing answers to the queries received, most commonly used resources were tertiary resources such as textbooks and websites followed by electronic databases. This might be because of ease of retrieval of information from textbooks and ease of use of computers and internet and availability of recent and relevant information from them. In the survey conducted among the healthcare professionals, a great percent of the respondents were aware of the drug information service and about seventy percent of them used it several times. Almost all of the enquirers received the appropriate answer within an acceptable time. A few suggestions put forward to improve the performance of the centre were provision of a 24 hour service and increasing the interaction of clinical pharmacists and other healthcare professions. Among the 15 nonjudgemental queries randomly selected, nine of them received a rating of 5, five of them a rating of 4 and 1 was rated 3. These types of queries required the highest level of sophistication and clinical judgement. Queries which were rated 4 and above indicated that the consultation was very good and trivial problems with documentation, comprehensiveness, timeliness or other essential problems existed. Responses rated less than 3 represented significant deficiencies with regard to documentation, comprehensiveness, timeliness or other important aspects. Among the 15 judgemental queries randomly selected, eight were rated 5, five rated as 4 and two were rated as 3. All the responses were rated above 3, thereby satisfying the minimum acceptable level of quality. Judgemental responses

Table 2: Qualitative assessment and evaluation of randomly selected drug information queries from the providers perspective

Rating	Judgemental (n=15)		Nonjudgemental (n=15)	
	Number	Percentage	Number	Percentage
Excellent (5)	8	53%	9	60%
Very good (4)	5	33%	5	33%
Good (3)	2	13%	2	6%
Adequate (2)	0	0	0	0
Unacceptable (1)	0	0	0	0

Drug Information Feedback Form

Department of Pharmacy Practice

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1. Are you aware of the Drug Information services in our hospital?
Yes No
2. a) Have you utilized the Drug Information services any time?
 Yes No
 b) If yes, have you received the answer in time?
 Yes No
 c) Have you received the appropriate answer?
 Yes No
 d) If no, the reason was, the information was
 Outdated Too extensive Not relevant Others
3. Are you able to contact the services easily?
Yes No
4. Do you think that the Drug Information service provided by the department is useful and helps in providing better patient care?
Yes No
5. Any suggestions and comments to improve the drug information services provided by the department?

Thank you for the cooperation.

Name and Signature

require extensive searching and clinical judgement compared to nonjudgemental queries, thus making the latter type of queries easier to answer effectively. The overall performance of the drug information centre was found to be good and this shows that the centre is maintaining the quality of service.

CONCLUSION

Upon evaluation of the feedback questionnaires, it was found that the quality of the services provided by the centre was appreciated by majority of its users. However there is a need for greater awareness about the service in the hospital and encouragement to healthcare professionals to utilise the services for better patient care. On the whole, the study showed that drug information services provided by the department of pharmacy practice caters to the need of health care professionals towards rendering better patient care and in future more studies should be conducted to assess the improvement in the performance.

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