



Assessment of user satisfaction of service provided by Khartoum Medicines Information Centre (KhMIC)

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Contributions: (I) Conception and design: All authors; (II) Administrative support: All authors; (III) Provision of study materials or patients: All authors; (IV) Collection and assembly of data: All authors; (V) Data analysis and interpretation: All authors; (VI) Manuscript writing: All authors; (VII) Final approval of manuscript: All authors.

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Background: Khartoum Medicines Information Centre (KhMIC) begins its activities in 2000, the first medicines information centre in Sudan, established by General Directorate of Pharmacy Khartoum State to promote rational medicine use and disseminate unbiased drug information among medical professionals in Khartoum State, as well as the public. The aim of this study is to assess the user satisfaction of service Provided by KHMIC.

Methods: A descriptive retrospective study was done KhMIC. Three hundred and forty-one callers were randomly selected out of 2,972 total number of callers from 1st June 2016 till 28th February 2017. Exclusion criteria: any enquirer was chosen once even if he called more than one in the study period, drug availability enquiries were excluded.

Results: Out of the 341 customers who were surveyed, 68% of them were physicians, 21.4% were pharmacists and 9.97% were public. Ninety-four percent of the physicians said that they were able to contact KhMIC easily by phone, email, or personally. Ninety-nine percent of physicians interpreted correctly, 98% of them received the answer at suitable time, 98% of them said that the advice was applicable, and gave them enough details, all of them are confident on response received from KhMIC staff, 98% of these answers involved patient care. Ninety-nine percent of them said they would use the service again, 70% of the surveyed physicians consulted the centre four times or more, 68% of them rated the service provided by the centre as very good, and 22% rated it excellent.

Conclusions: Our study shows that high physicians' satisfaction regarding KhMIC services was found. This satisfaction based on quality, understandability, timeliness, confident, and helpfulness which would reflect positive patient outcomes.

Keywords: Medicines Information Centre; Sudan; Khartoum

Received: 31 May 2018; Accepted: 25 June 2018; Published: 01 August 2018.

doi: 10.21037/jhmhp.2018.06.03

View this article at: <http://dx.doi.org/10.21037/jhmhp.2018.06.03>

Introduction

The WHO stated high level of irrational use of medicines around the world. This may lead to waste of resource and most importantly irrational use of antimicrobial (1).

Therefore, the provision of medication information is among the most fundamental responsibilities of pharmacists in the form of patient-specific information, as an integral part of pharmaceutical care, development of a therapeutic guideline, publishing an electronic newsletter, or updating

a website. Therefore, the role of the pharmacist can be directed towards cost-effective medication selection and use, medication policy decisions (drug benefits), medication information resource selection, or practice-related issues (2).

National Drug Information Centers around the world are recently established to promote rational medicine use and disseminate unbiased drug information. For instance, the drug information service provided by Faculty of Pharmaceutical Sciences Prince of Songkla University Thailand, showed a high level of user satisfaction in term of reliability, completeness and availability of the service (3). In Germany, assessment of National Drug Information Centre, showed high level of user satisfaction in term of professional quality of advice (4.7 ± 0.5), clarity/understandability of advice (4.7 ± 0.5), timeliness of response (4.6 ± 0.7), and helpfulness regarding counseling patients and/or physicians (4.6 ± 0.6). Potential patient benefits could be identified in 42% of the cases that were available to follow-up (190/455) (4). In 2015, United Kingdom Medicines Information (UKMI) was pharmacist-led service funded by the National Health Service providing evidence-based advice about medicines to healthcare professionals. Service evaluations have repeatedly shown high user satisfaction (5). Similar outcomes of high quality of user satisfaction were also reported in Brazil and in two studies in India (6-8). Khartoum Medicines Information Centre (KhMIC) begins its activities in 2000, the first medicines information centre in Sudan, established by General Directorate of Pharmacy Khartoum State to promote rational medicine use and disseminate unbiased drug information among medical professionals in Khartoum State, as well as the general public. KhMIC was responding to all questions and queries related to medicines and received from the customers, using the latest methods and taking advantage of the scientific references used globally, also provides initial care information and guidance for poisoning cases at home and hospitals. The services of the center have been provided even to Non-Khartoum State users. The center receives and responds to questions daily for 24 hours for 7 days per week. The center's library consists of local and international journals, and textbooks on various medical and pharmaceutical fields, Resources World's leading drug and healthcare references via the online library, evidence-based practice resources, databases (9).

KhMIC promotes the pharmaceutical services and the dissemination of the concept of rational use of medicines through medicines Information Bulletin, issuing guidebooks and booklets for medical care professionals, offering regular

lectures for medical staff and publics, issuing selected articles and topics on various pharmaceutical subjects in the mass-circulation newspaper, issuing educational posters, pamphlets and brochures, participation in many audio media visual programs, participation in various seminars, workshops and exhibitions (9). The last assessment of KHMIC was conducted 2008. Therefore, as part of the quality improvement of the service we have conducted this assessment of KHMIC in 2017 in order to assess user satisfaction with service and quality of the service provided.

Methods

Type of study and location

Descriptive retrospective study. KhMIC, General Directorate of Pharmacy-Ministry of Health Khartoum State, from 18th March 2017 till 6th July 2017.

Study population

KhMIC callers were recruited from the KHMIC's records from 1st June 2016 till 28th February 2017.

Sample size

Three hundred and forty-one callers systematic randomly selected out of 2,972 total number of callers from 1st June 2016 till 28th February 2017.

According to statistically calculated sample size:

$$N = Nz^2p(1-p)/(N-1)d^2 + z^2p(1-p)$$

Where:

n is the sample size;

N is the size of the population under study;

z (1.96) is the value of normal curve corresponding to the level of confidence 95%;

P is the probability of target group having the problem =0.5;

1-p is the probability of target group not having the problem;

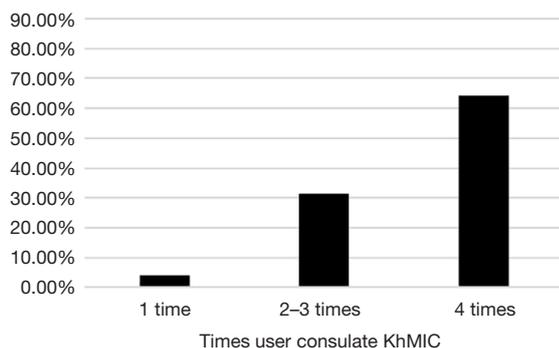
d is the desired margin of error =0.05.

Data collection tools

The questionnaire was written in English and translated into Arabic and was checked for face and content validity by a medicine information staff. Furthermore, a pilot test was done on 1st March 2017 conducted on a randomly selected 10% of study population and analysis sample of 34 enquirers; some change exists in the questionnaire.

Table 1 Basic and general information about the participants in this study

Variables	Percentage
Physician used the service	68
Pharmacist used the service	21.4
Layperson used the service	9.97
Health professional inside Khartoum used the service	84.7
Ease of contact	95.31
User interpret correctly	98.2
Answered in suitable time	97.95
Response answered the question	99.71
Advice was applicable	99.41
Details given was enough	98.8
User was confident in answer	99.71
Response contributed in patient care	97.95
User will use the service again	99.71

**Figure 1** Showed how many times user consultate KhMIC, Khartoum Medicines Information Center.

The total number of service users during 1st June 2016 till 28th February 2017 was 2,972. Three hundred and forty-one callers were recruited from the KhMIC's records using a systematic random sampling technique. Those who consulted the center more than once and who had been recruited into the study sample were not allowed to be selected again, and were replaced by the next person listed in the records (i.e., no user was included in the study more than once). Subjects were interviewed by telephone using a specially designed semi-structured questionnaire. Besides necessary information on the respondent, the questionnaire

included 14 questions adapted from UKMI survey (5).

Ethical approval

Consent was obtained from each participant prior to enrolment. The participation was optional; and complete description of the aims and procedures of the study was clarified; and assurance of confidentiality of any information was guaranteed. An ethical clearance of the research was obtained from the Ethical Committee—University of Medical Science and Technology, Khartoum, Sudan (IRB No. 00008867).

Data analysis

Data was analyzed using SPSS software was using, and data presented as percentages for each of the questions answered.

Results

The basic characteristic of participants

Out of 341 those of the KhMIC user found that 68% of the physicians, 21.4% pharmacist and 9.97% layperson. The result showed that 84.7% of the user called from Khartoum state and 12.65% from other states. *Table 1* provides the details about how the user found the performance of KhMIC.

How many times user consultate KhMIC?

Among those who surveyed 64.41% of the user consultate KhMIC more than four times, 31.47% consulted two to three times, and 4.1% consulted once (*Figure 1*).

Overall rating

At the present study 23.17% rate the service provided by KhMIC as excellent, 67.7% rating very good, 8.8% good and satisfactory by 0.29% (*Figure 2*)

Discussion

At the present survey, the most users of the KhMIC service is physician 68% and pharmacist 21.4%. In study conduct at KhMIC in 2008 the physician consultate the center 29.5% and 36.1% pharmacist (10). In South India, it was found that most of the beneficiaries of the service were

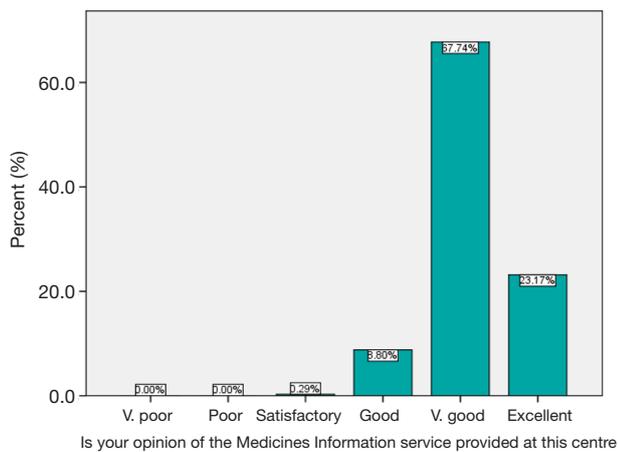


Figure 2 Showed the opinion of the users of the medicines information center.

the physicians (82%) and postgraduate students (16%) of the department of medicine (7). In Anantapur-India, the majority of queries were received from nurses (8).

KhMIC went through significant development in staff training and using state of the art methods of telecommunication. For instance, the previous study in KhMIC showed a delay in response to callers, 14% reported an unsatisfactory response, 3.8% reported a non-response, and seven people (1.7%) asked for additional information which was not provided (10). Therefore, it's not surprising this survey showed improvement in performance. For instance, the present study 99.72% of the user were confident from the response of KhMIC staff. As result, 64.4% of the user consultate the center more than four times, and 99.7% will use the service again. In 2015, UKMI prescribers acted directly on the advice provided enabling them to provide the right care for their patients. Advice had a positive effect on how they viewed a medication problem and empowered them to make decisions that appeared to confer greater confidence in managing patient problems (5). The standard of service achieved by KhMIC is almost comparable to the in German national drug information center in UK and Germany (4,5).

In the present survey 98.8% rate the service provider as excellent to good, 99.4% of advice was applicable, 97.9% of the answer contribute at patient care and the staff interpret 98.2% of the inquires correctly. In South India, the analysis of the feedback questionnaire showed that most of the enquirers (92.5%) utilized the drug information service regularly and appreciated the quality of services provided

by the drug information center (7). In a Brazilian Drug Information Center Among respondents, 94.5% declared being satisfied with the easiness of access, 88.1% with the quality of information, and all of the subjects reported that would get back to consult the service (6). In Prince of Songkla University Thailand, the reliability of answerers was 94.12%, 61.54%, 74.07% and 63.33% (3). The majority of users 97.7% respond their answer at the suitable time, 99.71% of the answer response to user enquires. Therefore, the recent improvement in KhMIC has led to significant development of the service that meets the international standards. One of the limitations of this descriptive study is that we have not looked at association or causation for the improvement in the performance of KhMIC and this can be included in future research studies. It worth mentioning, that KhMIC is conducting regular research and monitoring to maintain the high standard of service for its users.

Conclusions

Our study shows that high physicians' satisfaction regarding KhMIC services was found. This satisfaction based on quality, understandability, timeliness, confident, and helpfulness which would reflect positive patient outcomes.

Acknowledgments

The authors would like to acknowledge the support of the staff of KhMIC for the study.

Funding: None.

Footnote

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <http://dx.doi.org/10.21037/jhmhp.2018.06.03>). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). Consent was obtained from each participant prior to enrolment. The participation was optional; and complete description of the aims and procedures of the study was clarified; and assurance of confidentiality of any information was guaranteed. An

ethical clearance of the research was obtained from the Ethical Committee—University of Medical Science and Technology, Khartoum, Sudan (IRB No. 00008867).

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Cite this article as: Mohamed SY, Elkhawad AO, Ahmed MH. Assessment of user satisfaction of service provided by Khartoum Medicines Information Center (KhMIC). J Hosp Manag Health Policy 2018;2:38.