

Preference for utilization of drug information sources among postgraduate medical residents

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ABSTRACT

Background: Drug use information is vital for ensuring rationale and safe drug therapy. Physician across the globe use different sources of drug information during their routine practice. Postgraduate residents are in their interim-phase of education, research and clinical exposure. They are exposed to vast array of authentic and non-authentic drug information due to technology advancements and interaction with peers and medical representatives. There exists paucity in literature on their preference and drug information pattern. Therefore, this study was conducted to find out their preference for drug information sources.

Methods: The present study was prospective, observational, questionnaire-based survey. The study was conducted between March 2017 and April 2017. The study included postgraduate medical residents pursuing speciality courses at a tertiary care teaching hospital in Navi-Mumbai. Data was compiled and analysed in Microsoft excel.

Results: Majority postgraduate residents preferred Non-electronics source for drug information. Text books (84%) were commonly preferred followed by medical journals in Non-electronic sources while internet-websites (76%) followed by e-journals and e-books were preferred in electronic sources. Majority preferred non-electronic sources for drug pharmacology and adverse reactions while electronic was preferred for indication, interaction, cost and therapy guidelines. For information on new drugs, majority preferred journals (71%) and websites (64%). Lack of time, source knowledge and high cost were perceived limiting factors for drug information.

Conclusions: Postgraduate residents have varied preferences for drug information resources. Internet websites poses a challenge for authentic drug information. Interventions in the form of continuous medical education are required to improve their information-seeking behaviours.

Keywords: Drug information, Information seeking behaviour, Physician, Residency, Sources

INTRODUCTION

Health has been taking priority throughout the world since the beginning of life. Diseases and drugs have been going side by side since the start of life. With the increase in population the diseases are also increased due to different reasons.¹ Medicine occupies an important role in the health system and, when appropriately utilized, it is the most frequently cost-effective therapeutic resource.²

The physicians are expected to manage a wide array of medical conditions for large number of patients.³ They usually use a variety of information resources to support their personal knowledge base. However, this accumulated knowledge is not enough to answer all questions arising during routine medical care of patients.³

Drug use information is essential for health care providers throughout the globe and is a vital factor in ensuring safe drug therapy.¹ Physicians worldwide use different sources of drug information such as newsletters, pharmaceutical

promotional materials/ brochures, text books, conferences/seminars, consult pharmacist, continuing medical education, and web literature. The preferential choice could be guided by whether the source is available online or through a portable electronic device or hardcopy.⁴ The dissemination of new medical information and incorporation of research findings into practice by health professionals are major challenges in the field of medicine.⁴

The majority of global efforts in providing drug information stem from the pharmaceutical industry with the aim of promoting specific drugs to the target doctors.⁵ Researchers have attempted to describe the sources, importance and use of information about pharmaceuticals that can influence physicians' prescribing decisions. Fallacious and misleading claims are commonly found in the content presented by the pharmaceutical industry, which may pose a threat to the credibility of material/content as a useful source of accurate and reliable drug information.^{5,6}

The introduction of newer medications, advancement in the knowledge, and availability of updated and independent sources of technical-scientific information is a concern for budding postgraduate residents pursuing speciality training.

Postgraduate medical residents are in their interim phase of education, research and clinical exposure during their speciality training. They are exposed to vast array of authentic and non-authentic drug information due to technology advancements and interaction with peers and medical representatives. There exists paucity in literature on their preference and drug information pattern in India. Thus, the present study was designed to determine the preference for drug information sources among postgraduate medical residents at a tertiary care teaching hospital in Navi-Mumbai.

METHODS

The present study was a prospective, observational, questionnaire-based survey, conducted at a tertiary care teaching hospital in Navi-Mumbai. The study was conducted from March 2017 to April 2017. The study included postgraduate medical residents pursuing their specialty courses and willing for informed consent. We excluded undergraduate medical students, interns, paramedical and non-medical postgraduates from the study. A total sample of 100 postgraduates residents were considered for this study

Postgraduate medical residents were approached. The purpose and details of the study was explained to them. Informed consent was obtained from the eligible participants. The participants were administered the study survey questionnaire, which was a self-designed questionnaire based upon earlier studies to obtain information regarding the preference and source for

seeking drug information.^{1,3,4} The survey questionnaire consisted of two sections. The first section consisted of general demographic information of the participants, while the second section focused on physicians' current resource utilization practice and their preferences for drug information. The responses to these questions were of multiple choices / "Yes" or "No" options.

Statistical analysis

Data was entered in Microsoft Excel version 2007 and analysed. Data was expressed in descriptive statistics i.e. actual number and percentage.

RESULTS

A total of 100 postgraduate medical residents participated in the study. Out of the total, 52% preferred Non-electronic, 32% preferred electronic medium for drug information and 16% preferred both the sources.

Among the non-electronic sources, standard text books (84%) were commonly preferred followed by medical journals (70%), monthly index of medical speciality (46%) and from peers (38%) (Figure 1). Among the electronic sources, internet-based websites (76%) were commonly preferred followed by e-journals (54%), e-books (35%) and mobile apps (17%) (Figure 2).

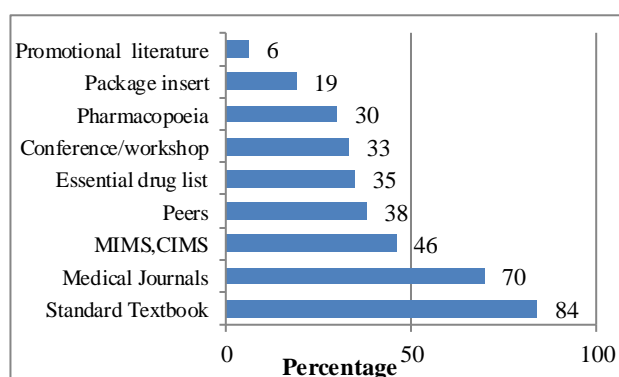


Figure 1: Non-electronic sources preferred for drug information.

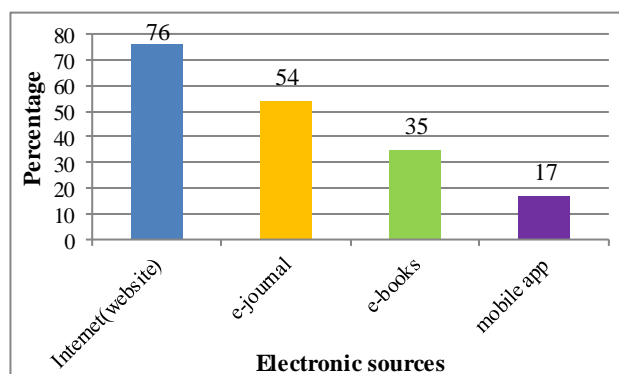


Figure 2: Electronic sources preferred for drug information.

Type of sources preferred for seeking drug information

In this study, majority preferred non-electronic source for seeking information on route of drug administration (67%), drug pharmacology (62%) and adverse drug reactions (59%) while Electronic sources were preferred for seeking information on drug interactions (59%), indication of the drug (57%), cost of the drug (56%) and therapy guidelines (51%) (Table 1).

Table 1: Type of sources preferred for seeking drug information.

Type of information	Electronic source (%)	Non-electronic source (%)
Indication of the drug	57	43
Pharmacology of drug	38	62
Route of administration	33	67
Drug-drug interactions	59	41
Adverse drug reactions	41	59
Cost of therapy	56	44
Treatment Guidelines	51	49

Information on new drugs

In this study, the preference for seeking information on new drugs was journals (71%) followed by internet-based websites (63%) and standard textbook (62%) (Figure 3).

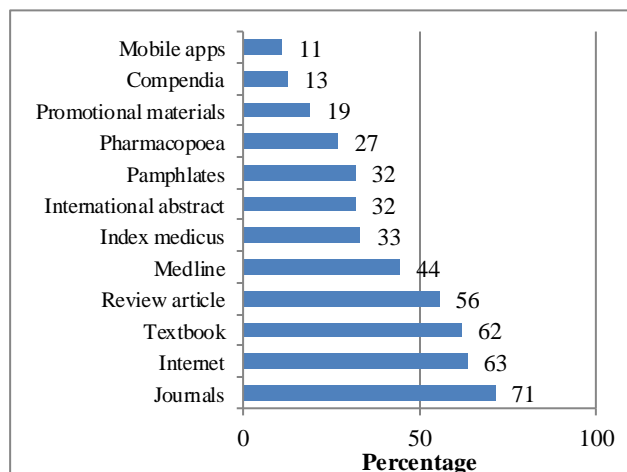


Figure 3: Sources utilized for seeking information on new drug.

Limiting factors for seeking drug information

In this study, the limiting factors and potential barriers perceived by the postgraduate medical residents for drug information were lack of time (41%), source knowledge (37%), lack of infrastructure (30%) and high cost (29%) (Figure 4).

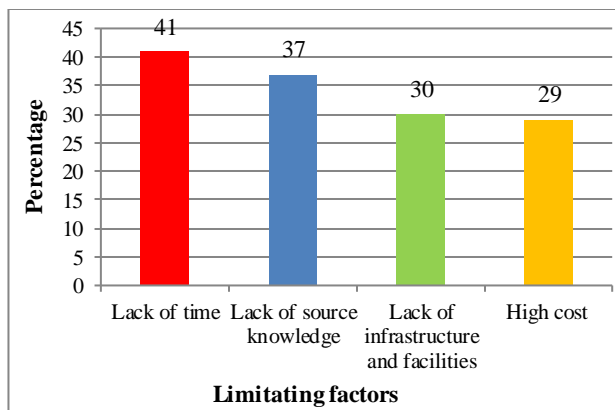


Figure 4: Limiting factors and potential barriers for seeking drug information.

DISCUSSION

The key finding of the present study suggests that the postgraduate medical residents have varied preferences for drug information resources. Physicians worldwide use different sources of drug information. The dissemination of newer medical information and incorporation of research findings into practice are major challenges for the physician in the field of medicine.^{1,4} It is essential for the healthcare professionals to refer and utilize accurate, authentic and reliable drug information. Studies in literature have documented mixed preference among physician and influence from the pharmaceutical industry.¹⁻⁶

The present study is the first attempt at identifying the preference for drug information sources among postgraduate medical residents at a tertiary care hospital in Navi Mumbai.

In the present study, majority postgraduate medical residents preferred Non-electronic (52%) while 32% preferred Electronic and 16% preferred both (non-electronic and electronic) as sources of drug information. These findings are in contrast to a study, in which physicians preferred online/ electronic sources over hardcopy.⁴

In the present study among the non-electronic sources, text books were commonly preferred by postgraduate residents followed by medical journals, MIMS, peers and lastly package inserts and promotional literature, whereas among the electronic sources, internet-websites were commonly preferred followed by e-journals, e-books and mobile app. Previous studies have documented varying preference for sources of drug information.¹⁻⁵

In a review article of several studies by Davies on information seeking behaviour of doctors has documented that the two most frequently used information sources were textbooks, followed by human contact (senior staff and peer contact).⁷ The use of textbooks being commonest source of drug information was similar to our findings. A

study, documented that physicians relied heavily on textbooks (79%), periodicals (59.2%), symposia/continuing medical education (CME) (55.1%) and drug company representatives (53.5%), whereas package inserts (40.7%), pharmacists (35.3%) and colleagues (29.8%) were less used as drug information sources.³

However, in the Emirate of Abu Dhabi-UAE documented that physicians preferred online/ electronic sources of drug information (74%) to hardcopy (26%). The online/ electronic medium was preferred as internet access and use of computers was very common in their setting.⁴ For a broader source of information, physicians preferred continuing medical education followed by drug information references and lastly peer-to-peer interactions. The most utilized sources of drug information by physicians were the British National Formulary (BNF), followed by Package inserts, Up-to-date, drugs in pregnancy and lactation, Physicians' desk reference, and Micromedex. Physicians in this study preferred British National Formulary, as it provided drug information as well treatment guidelines which was necessary for their day-to-day practice, while package inserts were selected due to easy availability with each drug product container.⁴

Regarding information on new drugs, the present study documented that majority of the postgraduate residents preferred medical journals (71.2%) followed by internet websites (63.5%) and standard textbook (61.9%) as sources of drug information. Medical journals were preferred probably as they not only provide drug information but also latest medical advances and critical appraisal skills. On the other hand, standard textbooks help to strengthen and impart basic concepts, core knowledge and treatment algorithms /guidelines, which are necessary during their day-to-day residency training/practice. However, Internet websites as a source can poses a challenge for authenticity of information and therefore the residents need to be trained to search for reliable, authentic and unbiased drug information over the internet.

A study in Thailand, documented that the medical residents preferred to get information on new drug from senior staff, conferences, medical representatives followed by journals, senior staff and peers.⁵ The younger physicians in this study revealed that, they preferred getting information from the medical representatives or at conferences to reading journals. Medical representatives were likely to be their initial sources of information about new drugs, however, they regarded this channel less reliable compared to other sources. Safety and efficacy profiles were the most common types of information considered for prescribed new drugs.⁵

In the present study, we found that the limiting factors and potential barriers commonly perceived by the postgraduate medical residents for seeking drug information were lack of time, followed by source knowledge, high cost, and lack

of infrastructure/facilities. These findings are similar to studies conducted in doctors and pharmacist.^{1,5,7}

In a review by Davies on information seeking behaviour of doctors, they identified that lack of time, followed by issues with information technology or online resources, limited search skills and cost as potential barriers to drug information searching.⁷ A study also documented that busy schedule, job nature and heavy workload of doctors were potential barriers for seeking drug information.¹ A study by authors, among pharmacist in Brazil has also documented lack of time, non-acquaintance about source availability, high cost and lack of information sources as potential barriers to seeking drug information which is similar to barriers perceived by physicians.²

We are living in an era where physicians are exposed to vast array of information, due to advancement of technology and aggressive marketing of pharmaceutical companies. Internet has certainly made life easier in many aspects. The question, which lies within us, is which source and data we should be reading for betterment of knowledge, for safe and efficient use of medicines as well as for research work, to make it more authentic and reliable. Faculty can be a role model on the prescribing habits of the residents. Hence, it is important for medical educators to encourage appropriate rational drug use with critical appraisal competency during the training stages.⁸ At the same time, a reliable source that can provide the prescribers with unbiased or two-sided information about the drug is essential.^{5,8} Interventions and awareness in the form of continuous medical education, workshops are required to improve their drug information-seeking behaviours and enhance their abilities of literature search.

CONCLUSION

Postgraduate medical residents have varied preferences for drug information resources. Internet websites and technology advances pose a challenge for authentic drug information. Faculty role model is essential and interventions in the form of continuous medical education is required to improve their drug information-seeking behaviours.

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