

ORIGINAL ARTICLE

Sources of Drug Information and Rational Prescribing Practice Among Practitioners in Dhaka City: Comparison With a Teaching HospitalMorshed Nasir¹, Saima Parveen², Mily Chowdhury³, Rawshan Ara Parveen⁴, Tahmina Zahan⁵,**Abstract:**

Irrational use of medicine is a major problem worldwide. Pharmaceutical drug promotion is a means of informing health professionals about new drugs. The approach is often unethical and inappropriate and may promote irrational prescribing. Sources of drug information are one of the important indicators of irrational drug use by the practitioners in developing countries. A randomized cross sectional study was done to evaluate and compare the knowledge about drug information and indicators of rational drug use among the practitioners in Dhaka city. 183 practitioners were randomly selected and interviewed in two groups. Ninety of them were selected from Holy Family Red Crescent Medical College (HFRCMC) an autonomous teaching hospital in Dhaka city. Ninety three practitioners from non-teaching hospitals of Dhaka city were also interviewed by uniform structured questionnaire comprising the sources of drug information and rational drug use indicators by WHO and International Network for Rational Use of Drug (INRUD) criteria. The interviews were taken during February 2010 to July 2010 by the undergraduate medical students of third year and fourth year. 71% doctors of HFRCMC considered the internet and 73% doctors from other group considered the company literature as the source of drug information. Use of medical journal and BDNF was very low in both the groups. The overall awareness and strength of rational prescribing practice was found poor in comparison to HFRCMC. Most of the practitioners (84% and 71%) were found concerned and informed about the prices of drug that indicates the strength of rational practice of pharmacoeconomics.

Introduction:

According to GMC guidelines for good practice in prescribing medicine where a patient's care is shared between clinicians, the

doctor with the responsibility for the continuing management of the patient must be fully competent to exercise their share of clinical responsibility. They also have a duty to keep themselves informed about the medicines that are prescribed for their patient. They should take account of appropriateness, effectiveness and cost when prescribing any medicine. They should also keep up to date with any relevant guidance on the use of the medicine and on the management of the patient's condition¹.

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WHO estimates that more than half of all medicines are prescribed, dispensed or sold inappropriately, and that half of all patients fail to take them correctly. According to WHO, rational use of medicines requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community. The overuse, underuse or misuse of medicines results in wastage of scarce resources and widespread health hazards. Drug information has since long been considered as an instrument to influence physicians, however evaluation of its effects is a new field of research². Although a majority of practitioners understand the importance of recognizing potential drug interactions, they do not appear to have the knowledge to achieve the desired outcome. Fortunately, they are quite willing to be assisted in the identification of potential drug interactions. A report in The Los Angeles Times on 26 October 2009, revealed that more than one in five of the prescriptions U.S. doctors write for 160 common drugs is for a use other than that approved by the Food and Drug Administration (FDA). The practice is perfectly legal, though patients are largely in the dark about what "indications" or uses the FDA has approved for different prescription medications. But whenever a doctor prescribes a drug off-label without solid evidence that it works, he has a responsibility to help build a body of evidence about the drug's safety and effectiveness. If it proves ineffective or the patient suffers notable side effects, adverse drug reaction (ADR) or drug interaction; the physician should make a report to the authority. These are ethical strength of practicing rational prescribing.

Rational Prescribing is based on *Rule of right*: the right medicine given to the right patient at the right time with the right dosages. They should also fulfill SANE criteria: safety, affordability, need and efficacy. Rational prescribing, therefore, involves a right decision of the prescriber. This will eventually encourage the patients to take the medication and comply the prescription served by the prescribers to them. Drugs can cure ailments when used rationally. On the other hand, they may become harmful and can even threaten life when used irrationally³.

Pharmaceutical companies are the only information providers to the health professionals in Bangladesh. It is well-known that misleading drug promotion is quite common in Bangladesh. But no study is conducted till now to gauge the nature and prevalence of misleading promotion in the country⁴.

Rational prescribing cannot be defined without a method of measurement and a reference standard. The former is now available but the latter needs further development. Proven effective interventions to promote rational prescribing in developed countries are treatment protocols based on wide consultation and consensus, properly introduced and with a possibility of feedback; face-to-face education focused on a particular prescribing problem in selected individuals; structured order forms; and focused educational campaigns. Essential drugs lists are probably effective when based on consensus and used within a comprehensive educational programme. In most cases the usefulness of such strategies in developing countries has not been proven and should be studied. Medical education in clinical pharmacology and pharmacotherapy should be

based on the practical needs of future prescribes, should include the principles of rational therapeutics and problem solving, and should immunize the students against the influences they are likely to encounter in their professional life, such as patient pressure, drug promotion and irrational prescribing by peers. Within the scope of a national formulary, specialist departments in teaching hospitals should define prescribing policies as the basis for prescribing, teaching, examinations and medical audit⁵.

Material and method:

A cross sectional randomized study was done to evaluate the practitioner’s knowledge about rational prescribing and use of different sources of drug information using INRUD

indicators and WHO guideline by Drug and Therapeutics Committee. A total of 183 doctors practicing in Dhaka city were evaluated with a structured questionnaire for their demographics and sources of drug information. Ninety (90) doctors from Holy Family Red Crescent Medical College and 93 doctors who were not attached to any teaching hospitals were randomly interviewed by the undergraduate medical students of third year and fourth year. Questions are standardized with a fixed set of responses or options. Respondents are selected so as to represent the larger population and useful for a large sample of respondents. The questionnaire was structured to measures the frequency of attitudes, beliefs, and knowledge.

Result:

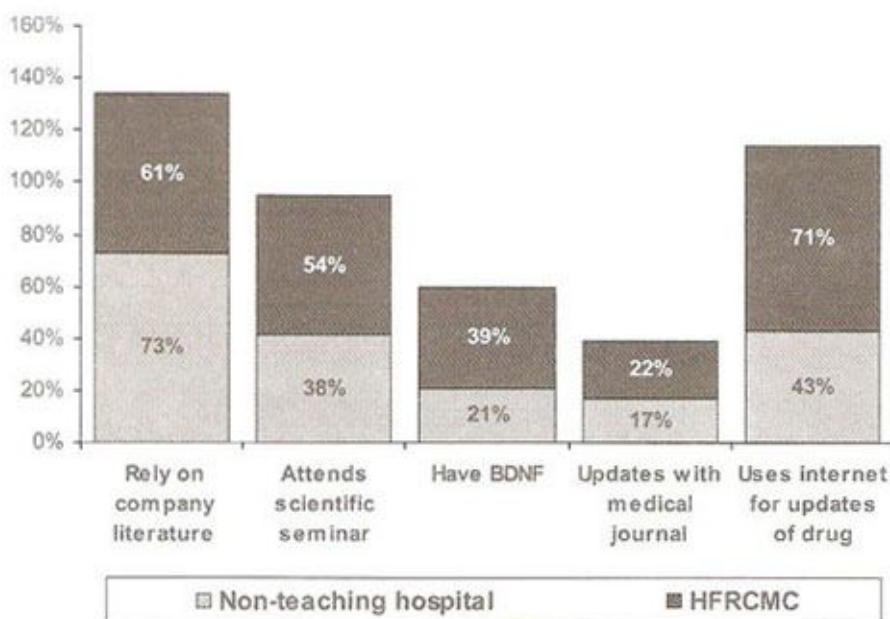


Figure 1: Comparison of use of sources of drug information

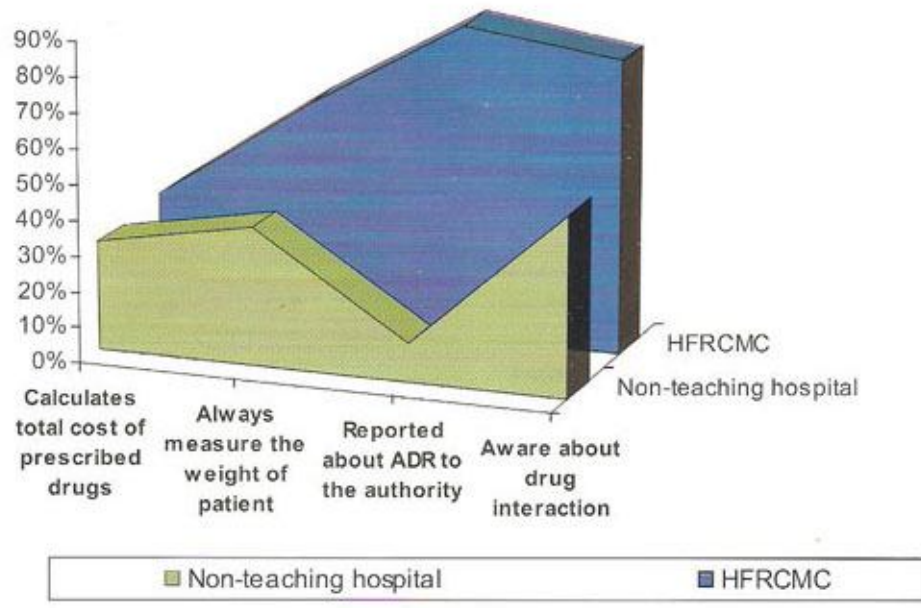


Figure 2: Overall strength of rational prescribing indicators

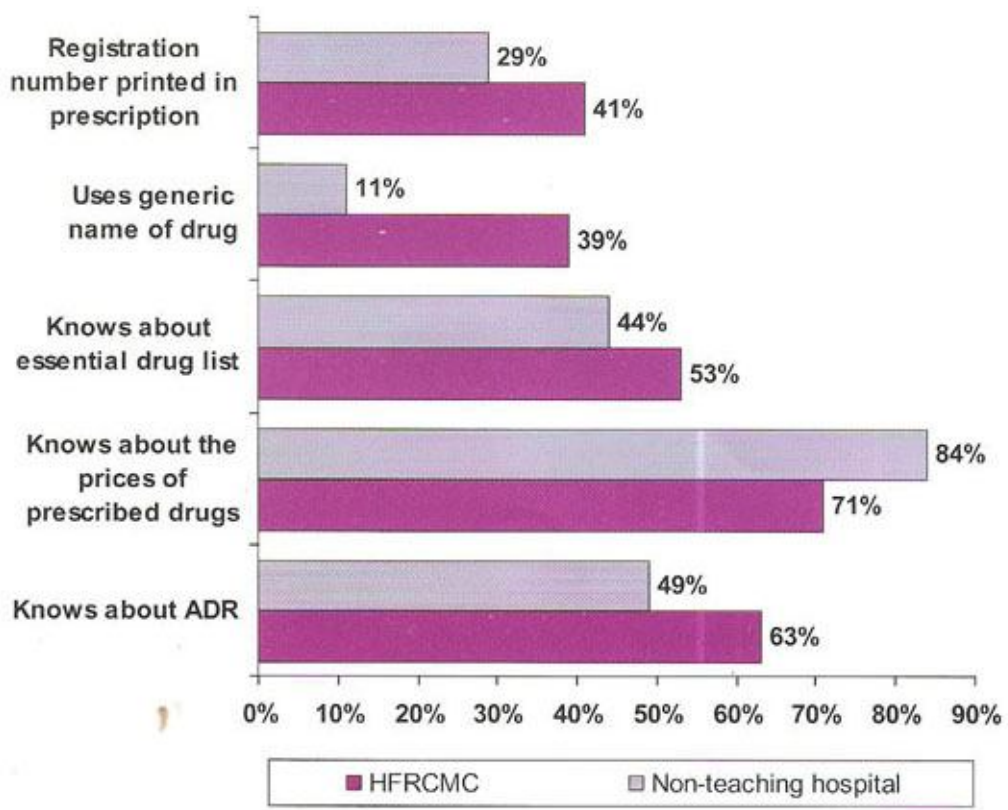


Figure 3: Status of ethical practices and rational prescribing

Drug information obtained from company literature was 73% in practitioners of non-teaching hospitals and 61% in practitioners of HFRCMC. Other parameters are higher in case of HFRCMC. Uses internet for update of drug was more than the expected level (71%) in HFRCMC and lower (43%) in practitioners from non-teaching hospitals. Higher percentage of attendance in scientific seminar was found in HFRCMC (54%) than the much lower (38%) in non-teaching hospital. Referring the BDNF as a source of drug information was less in both groups, HFRCMC (39%) and non-teaching hospitals (21%) respectively. Update with medical journal was also very low both in practitioners of HFRCMC (22%) and non-teaching hospital (17%) (Fig.-1).

Almost similar number of practitioners from both HFRCMC (38%) and non-teaching hospital (36%) were aware of calculating total cost of prescribed drugs. 64% of practitioners in HFRCMC and 41% practitioners of non-teaching hospitals always consider to measure the weight of the patient. Only 14% of the practitioners of non-teaching hospitals had ever reported about the ADR, whereas the response was significantly high (89%) among the practitioners of HFRCMC. Awareness about the drug interaction was also observed much higher in practitioners of HFRCMC (82%) than the practitioners of non-teaching hospitals 46% (Fig.-2).

Figure 3 shows status of ethical practices and rational prescribing. All parameters were higher in HFRCMC. Among these parameters knows about the prices of prescribed drugs was higher than the expected level in both cases, non-teaching hospital (84%) and slight less in HFRCMC (71%). Knowledge about the ADR was slight less than expected level in HFRCMC (63%) and non-teaching hospital

was much lesser (49%). Knowledge about essential drug list was low in respondents of both HFRCMC (53%) and non-teaching hospital (44%). Awareness about the registration number printed on prescription was also lower than the expected level in HFRCMC (41%) and non-teaching hospital (29%). Use of generic name of drug in prescription was remarkably less in both HFRCMC (39%) and non-teaching hospital (11%).

Discussion:

Pharmaceutical drug promotion is a means of informing health professionals about new drugs. The approach is often times unethical and inappropriate and may promote irrational prescribing. The dearth of information on the impact of pharmaceutical drug promotion on the prescribing behavior of doctors in developing countries has necessitated continuous study. The scopes, facilities and avenues to enrich the drug information is probably more among the practitioners attached to a teaching hospitals. Because of exchange of knowledge and experiences, and interactions between different clinical, pre-clinical and para-clinical departments facilitates the prescribers to practice rational prescribing comparing to the non-teaching hospitals. Younger general practitioners prescribe in a more rational way than their older colleagues and this is partly reflected in the patterns of obtaining information⁷. Internet is a great source of drug information. Best web sources for pharmacy, pharmacological and pharmaceutical information on the Web are drug-related databases, medication guides, government agencies, industry and university sites, health associations. Other online sources providing useful information on medications and

diseases are online pharmacies. Drug databases are the best source of drug information. Bibliographic databases serve to locate data published in scientific literature. Directories contain carefully selected by human editor web sites, placed in different categories. The indexes are alphabetical or systematic arrangement of medications information resources. Additional sources of information are search engines, medical or nursing textbooks, dictionaries or encyclopaedias, therapy handbooks⁶. Promotional claims not substantiated by proper scientific evidences were considered as misleading claims. The misleading claims were further categorized debatable, overstated, and ambiguous and forged to specify the nature of misleading claims for better understanding. About 34% of the total promotional claims were found to be misleading from the evaluated promotional brochures. Of the total misleading claims, 50% were based on unsettled evidences and about 22% were presented exaggeratedly in those promotional brochures³.

In this study the knowledge about ADR, essential drugs and drug interactions were observed in practioners of teaching hospital (HFRCMC). But the basic indicators to promote rational use of drugs were not up to the expected level. This might be due to the lack of motivation and professional education about pharmaco-economics, institutional supervision and practice of standard guidelines.

More than half of all medicines are prescribed, dispensed or sold inappropriately and half of patients fail to take them correctly. According to WHO reviews, between 1990 and 2009, worldwide there was less than 50 per cent of compliance to clinical guidelines in all regions and only 15 per cent compliance in the

Southeast Asia region. There are many programmes on rational prescribing but given the pressure of the industry on private practitioners, coupled with the latter's lack of confidence and knowledge regulation alone is insufficient to change behaviour. Therefore, a comprehensive programme is required by networking with pharmacists, doctors and educational institutes to guide prescribing and dispensing. There is also a need for educational intervention for prescribers and both pharmaco-vigilance and educational intervention for the hospitals to improve prescribing and dispensing.

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