

Knowledge, attitude, and practice of generic medicines among physicians at multispecialty hospital: An observational study

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Abstract

Background: Nowadays, brand-name drugs are becoming an out-of-pocket expense which comprises 80% of total health-care expenditures. However, generic drugs are less expensive than brand-name drugs with the same therapeutic effect, but many doctors hold negative views of generics and resist prescribing. This study was designed to assess the knowledge, attitude, and practice of doctors toward generic medicines.

Methods: This was a questionnaire-based cross-sectional study conducted in a multispecialty private hospital. The study participants were doctors who were practising in a hospital during the study period (January 2017 to July 2017). The questionnaire comprises 35 questions related to demographics, knowledge, attitude, and practice evaluation of generic medicines. Descriptive statistics was applied to represent participant characteristics and response rates.

Results: A total of 86 questionnaires were distributed to the doctors and the response rate was 37%. The majority of doctors who participated in this survey perceived that generic medicine is effective, safe, and has same active component, dose, and bioequivalent as the brand medicines. Majority of the doctors (72%) believe that generic drugs were manufactured by poor techniques. However, more than three-quarter of doctors (78%) routinely prescribed generic drugs.

Conclusion: Most of the doctors had an honest angle about the efficacy and safety of generic medicine. However, a high proportion of physicians believe that the generic drugs are of poorer quality. To have a better understanding of the generic drug, the doctor must be well informed about the generics products during their academic career that will significantly impact health-care budgets.

Keywords: Attitude, doctors, generic drugs, knowledge, practice

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INTRODUCTION

Patient health-care expenditure is increasing worldwide due to brand-name drugs which comprises out-of-pocket

expenses that are 80% of total health-care expenditures.^[1] In developing countries like India, out-of-pocket payment is as high as 80%. Between 1986 and 2004, the average real

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expenditure per hospital admission increased three times in both government and private hospitals. In India, most health-care expenses are paid out of pocket by patients and their families. Around 35% of Indian households incur catastrophic health expenditure and hence pose a burden of affordability of medicine.^[2,3] Generic product utilization is often encouraged to curb the cost of medicine due to lower in price, leading to substantial savings of health-care expenditure.^[4,5] Although the generic medicines are manufactured according to good manufacturing practices, then also physicians are apprehensive regarding the quality and reliability of generic drugs as compared to their brand innovator and resist to prescribing them.^[6,7] Therefore, understanding of doctor's perceptions about generic medicines compare to brand medicine may help to eradicate possible barriers related to the usage of generic drug.^[8-10] The main objective of conducting this study was to assess the knowledge, attitude, and practice of frontline health-care worker (doctors) toward generic drug usage.

METHODS

This study was conducted in a multispecialty tertiary care private teaching hospital. Prior to initiation of the study, an Institutional Ethics Committee (SJM College of Pharmacy Ethics Committee) approval was obtained.

Study design

This was a questionnaire-based cross-sectional study conducted in a multispecialty private hospital. The main participants in the study were all doctors who are working in the multispecialty private teaching hospital during the study period and are selected based on qualification (January 2017 to July 2017). The questionnaire includes for this study has 35 questions related to the knowledge, attitude, and practice of generic medicine and demographic details of the doctors who have participated in the study.

Development, validation, and distribution of survey questionnaire

A questionnaire-based cross-sectional survey has included 35 questions [Tables 1-4] in the English language related to knowledge, attitude, and practice of generic medicines among physicians and was formulated using reference material from a similar type of study. The survey covered the domains of Physician demographics, knowledge, attitude, and practice of generic medicines. The developed draft questionnaire was validated by face and content validation method by the three selected physicians and three selected faculty members to assess its readability and validity before pretesting among five randomly selected medical doctors for clarity, significance, and acceptability. Modifications and

Table 1: Basic Demographic information of the study participants (n=32)

Parameters	Demographic information	Frequency (%)
Gender	Male	20 (62.5)
	Female	12 (37.5)
Age (years)	25-35	24 (75)
	35-45	8 (25)
Qualification	MBBS	21 (66)
	MD	9 (28)
	DM	2 (06)

refinements were made as per the comments received to enable better understanding and to organize the sequence of questions. On the day of the data collection, structured and prevalidated questionnaires were distributed to the doctors who gave consent for participating in the study.

Content of the survey questionnaire

The survey comprised a total of 35 closed-ended questions which takes about 30 min to complete. The survey was divided into three parts including knowledge-, attitude-, and practice-related question about generic medicine.

Data collection

All the doctors were well informed about the study, and the reminder card was sent 1 day before providing the questionnaires. On the day of the data collection, structured and prevalidated questionnaires were distributed to the doctors who gave consent for participating in the study. As per the doctors' feedback after validating questionnaire, necessary amendments were made to the questions before the main study. The responses of all participated physicians were included in the analysis.

Statistical analysis

Descriptive statistics was used to analyze the demographics of the participants and respective answers on different categories of the questionnaires.

RESULTS

A total of 86 questionnaires were distributed, of which 32 physicians have responded (response rate 37%). In total, 21 MBBS doctors, 09 MD doctors, and 02 DM doctors have been participated in this study. The basic demographic details of the study participants are illustrated in Table 1.

Knowledge assessment

In our study, 78% of doctors agreed that generic medicine is bioequivalent to a brand-name medicine. About 84% of doctors did not agree that generics are less effective and produce more side effects. Nearly 66% of doctors disagreed that brand-name drugs meet the higher safety standard, but 72% of doctors were not satisfied because

Table 2: Knowledge-based questions and its percentage of responses from doctors

Question number	Knowledge-based questions	Yes (%)	No (%)	No response (%)
1	A generic drug is bioequivalent compare to a brand medicine	25 (78)	4 (13)	3 (09)
2	Is it possible that generic drug dosage is the same dose as brand-name medicine?	23 (72)	9 (28)	0
3	is it possible to have generic medicine composition same as brand medicine?	24 (75)	7 (22)	1 (03)
4	Generic drugs are less effective compared to brand medicines	4 (13)	27 (84)	1 (03)
5	Generic drug produce more side effects compared to brand medicines	4 (13)	27 (84)	1 (03)
6	Brand medicines meet higher safety standards as compared to generic one	10 (31)	21 (66)	1 (03)
7	Generic drug product can be marketed after the expiry of the patent of the original drug product	6 (19)	23 (72)	3 (09)
8	Generic medicine product company must need to repeat the preclinical as well as clinical studies required for the original medicine	16 (50)	14 (44)	2 (06)
9	Generic drug product company must to conduct bioequivalence studies again to showcase equivalence between the generic product and the original drug product	26 (81)	4 (13)	02 (06)
10	Do you have an awareness related to the scheme of Government of India known as Jan Aushadhi?	14 (44)	18 (56)	00
11	Are you aware of the IMC act to prescribe drugs with Generic names?	27 (84)	5 (16)	00
12	Are you satisfied with the quality control measure of generic medicines by the Regulatory authority?	8 (25)	23 (72)	01 (03)

IMC: Indian Medical Council

Table 3: Attitude-related basic questions and percentage of responses

Question number	Attitude-related basic questions	Disagree, n (%)	Neutral, n (%)	Agree, n (%)
1	Generics medicines are as safe as branded medicines	4 (13)	6 (19)	22 (69)
2	The price difference between generic and brand-name drugs is often so great that I feel I must prescribe generic substitutes	0	5 (16)	27 (84)
3	Generic medicine cost less because they are inferior to trade-name drugs	25 (78)	2 (06)	5 (16)
4	Generic drugs are generally of the same quality as brand-name drugs	6 (19)	5 (16)	21 (66)
5	It is easier to remember brand names, rather than generic drug names	20 (62)	5 (16)	7 (22)
6	Quality use of generic medicines among patients can be achieved if both prescribers and pharmacist work together	0	4 (13)	28 (87)
7	We need a standard guideline to prescribe generic medicines	0	2 (06)	30 (94)
8	Patient should be given an enough information about generic medicines in order to make sure they really understand about the medicines they take	0	3 (09)	29 (91)
9	Advertisement by the drug companies will influence my future prescribing pattern	7 (22)	13 (41)	12 (37)
10	Need more accurate information on the issues pertaining to the safety profile and efficacy of generic drugs	0	8 (25)	24 (75)
11	There must be a training session to increase the awareness related to generic drugs among doctors as well as patients	0	3 (09)	29 (91)
12	There must be a generic drug store in every multispecialty hospital	0	3 (09)	29 (91)
13	Satisfied with the marketing permission process granted to generic medicine	11 (34)	9 (28)	12 (38)
14	Satisfied with the quality control measures of generic medicines	13 (41)	9 (28)	10 (31)

Table 4: Practice-related basic questions and percentage of responses

Question number	Practice-related basic questions	Yes (%)	No (%)	No response (%)
1	Do you prescribe generic drugs to your patients?	25 (78)	6 (19)	1 (3)
2	Have you ever taken generic medicine?	20 (63)	11 (34)	1 (3)
3	Have you ever prescribed generic medicine to your family members?	22 (69)	9 (28)	1 (3)
4	Have you ever talked to your patient regarding generic drugs?	15 (47)	16 (50)	1 (3)
5	What do you thinking about switch to all patients from a brand product to generics drug product may be change the treatment outcome?	13 (41)	17 (53)	2 (6)
6	What do you think that switching brand medicine with narrow therapeutic range to generic drug product may be change the main outcome of treatment?	12 (38)	18 (56)	2 (6)
7	Does the socioeconomic condition of your patient influence your prescription?	27 (84)	3 (09)	2 (6)
8	Have you ever received free samples of generic drugs?	5 (16)	26 (81)	1 (3)
9	Have you ever received free samples of brand-name drugs?	26 (81)	5 (16)	1 (3)

of the quality of generic drugs that are not good enough. Around 70% of doctors were unaware that generic product can be marketed after the patent expiry of the original product. Half of the study participants know that generic manufacturers do not have to repeat preclinical and clinical studies of original drugs. Most of them

conducted a bioequivalence studies for generic product approval process. Among all the participants, 56% were aware of the Jan Aushadhi Scheme (an initiative by the Government of India to provide generic medicine to the community) and 84% of doctors were aware of the Indian Medical Council (IMC) Act to prescribe drugs with generic

names. Knowledge-based questions and its responses are mentioned in Table 2.

Attitude assessment

Most of the study participants agreed that the generic drugs are safer as compared to branded drugs and believed that because of the huge price difference, they usually prescribe cheaper generic substitutes. A high proportion of respondents disagree that generic drugs cost less because they are inferior in quality. More than half of doctors disagreed that brand names are easy to remember and almost all of them believe that the coordination between prescriber and pharmacist can improve prescribing practice and promotes rational drug use. It was observed that 72% of participants felt that they need more information related to safety and efficacy of generic medicines and 38% of doctors felt that advertisement by the drug companies will influence their future prescribing pattern. Majority of participants agreed that there must be a training session to increase the awareness related to generic product usage among doctors as well as patients and generic drug store should be available in each and every nearby hospital. Attitude-related questions and frequency (%) of responses are mentioned in Table 3.

Practice assessment

Majority of doctors prescribed generic drugs to their patients and 63% of them prescribed as much as one to three generic products as per the prescription. About half of the participants discuss about generic medicines with their patients and 84% of them felt that the patient's socioeconomic condition influenced their prescribing pattern. One-third of physicians acquire information regarding the availability of generic drugs from the Internet followed by journals (12.5%), drug compendium (12.5%), and medical representatives (12.5%). Majority of doctors (81%) never received any free sample of generic medicines but received (81%) free samples of branded drugs. Most of the study participants (59% of doctors) stated that medical representatives of generic drug manufacturer were never visited to them, but medical representatives of brand drugs manufacturers visited each and every week. Practice-related basic questions and percentage of responses are illustrated in Table 4.

DISCUSSION

The majority of doctors who participated in this survey perceived that generic medicine is effective, safe, and has the same active component, dose, and bioequivalent as the brand-name medicines. It is quite similar to the earlier study by Jamshed *et al.* as stated specific knowledge related to

generic medicine being a “Copy of the brand name drug.”^[11] In the study, the majority of doctors (81%) were aware of bioequivalence studies which are required by generic drug manufacturers during generic product approval system. Our finding is different than the finding reported by Chua *et al.* and Hassali *et al.*, here 4.6% and 33.3% doctors, respectively, were aware of the bioequivalence standards for generic products.^[11] Most of the respondents in our study were unaware about some regulatory requirements (like generic marketed after the expiry of the patent of the originator or no need to repeat preclinical and clinical study for the generic product) imposed on generic drugs, as stated in previous studies.^[11,12] A large number of doctors (72%) were believe that generic product was manufactured in a poor quality to the brand-name medicines. According to the present analysis, nearer to three-quarter of the participants had a good attitude about the efficacy and safety of generic medicines and the majority of doctors actively prescribe generic medicines similar to the earlier study.^[13,14] Moreover, various studies have reported that generic drugs are neither differ substantially from their innovator drugs nor about to poor safety or efficacy and even favored the use of generic medicine in treating various type of diseases.^[15,16] In our survey, the majority of doctors were aware of the huge price difference between generic and brand-name products and they give enough information to the patient about generic medicines with their price differences. They also prescribe cheaper generic substitutes considering the patient socioeconomic condition. It was earlier reported that the cost of generic medicines is up to 91% less than that of the brand-name drugs.^[17-19] The increasing health-care cost day by day remains a serious issue for the health-care system globally, especially in developing countries like India where affordable and easily available medicine is a major issue. To tackle this issue, the Indian Government initiated a project “Jan Ausadhi” to supply essential low-priced generic medicine on-demand to Jan Ausadhi stores. Only half of the participants in our study were aware regarding the Jan Aushadhi Scheme. The expansion of the generic drug market must have a particular vision and have a positive impact on patients' access to cheaper medicine with good quality.^[20-22] Although most of the participating doctors received free sample of branded drugs and half of the participants were visited weekly by representative of brand-name medicine manufacturers in our study, a few of doctors (38%) felt that advertisement by the drug company will influence their future prescribing pattern which is contradictory to earlier studies^[23,24] where they stated the presence of heavy and successful promotional activities from branded product industry may negatively influence generic prescribing. More than three-quarter of

doctors (78%) prescribed generic drugs and they (84%) were aware of the IMC Act to prescribe drugs in generic names in the present study. Our result is far better than the previous studies in Bahrain (10.2%), Belgium (2.8%), Malaysia (12.7%), and the USA (2%–22%) but is quite similar to the earlier studies in the UK (83%) and Thailand (73.9%).^[25,26] This may be due to the introduction and encouraging generic prescribing at the early stage of medical school and the IMC Act to prescribe drugs in generic names. Even in Europe, several measures and interventions have been taken to enhance prescribing in generic medicines.^[27-29] Although majority of the doctors had excellent knowledge and attitude about generic drugs and a meaningful proportion of doctors actively prescribed generic drugs, still more information about generic drugs are needed by them, especially on quality to increase generic medicine prescription rates.^[30]

Limitations

A possible limitation of this particular study could be the small sample size, thus findings of this study can hardly be generalized. A further potential limitation may be the manner of participant selection as only one multispecialty hospital was considered and all the respondents belonged to the same hospital. Finally, we have only analyzed the doctor's view, perception, knowledge, attitude, and practice about generic medicine prescribing.

CONCLUSION

To have a better understanding about generic drug products, physicians must be well informed about it during their academic career which will significantly impact the health-care budget. Further, awareness programs about generic medicines should be conducted by government health authorities to rationalize the prescribing practice and to improve prescriber as well as consumer understanding. In addition, standard guidelines on generic drug substitution policy should be drafted to minimize the health-care expenditure.

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Conflicts of interest

There are no conflicts of interest.

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