

**ASSESSMENT OF PERCEPTION ABOUT BRANDED AND GENERIC ANTIBIOTICS
AMONG THE HEALTHCARE PROFESSIONALS AND STUDENTS****Khan Mohammad Uzair¹, Abubaker Siddiq^{2*} and Abdul Munaf S.³**¹Department of Pharmacy Practice, S J M College of Pharmacy, Chitradurga-577502, Karnataka, India.²Department of Pharmacology, S J M College of Pharmacy, Chitradurga-577502, Karnataka, India.³Department of Pharmaceutics, S J M College of Pharmacy, Chitradurga-577502, Karnataka, India.

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Karnataka, India.**ABSTRACT**

Generic medicines are generally less expensive than their brand-name counterparts. Many doctors oppose brand substitution and believe generic medicines to be inferior to their branded counterparts. Physician perceptions about generic drugs may affect their acceptance of generic drugs. According to a recent systematic review about one-quarter of physicians and pharmacists expressed negative perceptions about the safety and side effects of generic medicines. In India, there was strong opposition when plans were proposed to introduce generic substitution into primary care. The objectives of this study was to assess the perception of knowledge in healthcare professionals and students about branded and generic antibiotics, to assess whether healthcare professional and students are likely to move from branded to generic antibiotics and also to assess the perception of effects and benefits of branded and generic antibiotics. This is a descriptive cross-sectional study. It was conducted among the Medical and Dental students and healthcare professionals of Chitradurga. The study was carried for a period of six months. About 93.3% of participants were aware of branded and generic antibiotics. But when we conducted a study in brief, we analyzed that the majority of participants have knowledge but in inappropriate manner. We also identified that more than 50% of participants have false belief, lack of knowledge and trust issue. The results are concluded that with our interventions, we found that we could able to improve knowledge regarding appropriate use of branded and generic antibiotics. They are not willing to improve their knowledge regarding branded and generic antibiotics.

KEYWORDS: Branded, Generic, Knowledge, Perception.**INTRODUCTION**

In general, generic medications cost less than their brand-name equivalents. Generic drugs typically cost 30% to 60% less than their brand-name counterpart.^[1] Global healthcare expenditure is increasing steadily, and generic medicine utilization is often encouraged as a cost-containment measure. In addition, patients taking generic drugs appear to be more compliant than those taking brand-name medications. Lower copayment is a key factor. Many doctors oppose brand substitution and believe generic medicines to be inferior to their branded counterparts. Physician perceptions about generic drugs may affect their acceptance of generic drugs.^[2]

According to a recent systematic review, about one-quarter of physicians and pharmacists expressed negative perceptions about the safety and side effects of generic medicines. In the UK, there was strong opposition when plans were proposed to introduce generic substitution into UK primary care.^[3] The high price of branded

medicines was reported as the main barrier towards access to the medicines, mainly in developing countries.^[4]

Several studies indicated that physicians are unaware of bioequivalence acceptability criteria for generic medicines. General practitioners, who opposed generic prescribing, showed a poor confidence towards bioequivalence of generic medicines to the innovator brands.^[5] The Indian market accounts for 22% of the world market of generic drugs. India is the fourth largest market in terms of production and ranks thirteenth in terms of consumption value of generic drugs.^[6] In Indian scenario, generic substitution is not universally practiced and this may result from various factors including non-availability of generic formulations, distrust of generic medicines by practitioners often due to perceived inferior quality, and counterfeiting of drugs. To overcome the problem inflicting immense economic impact on poor population, the Indian government had launched the Jan Aushadhi campaign in April 2008 by opening

government-controlled centers in various states to provide quality generic medicines at lower prices to their counterpart branded ones to make them easily affordable to a common man.^[7]

We know branded and generic medicines is a huge debatable topic. Because there are many different misconceptions about prescribing generic medicines by the doctor. Our purpose of selecting this study is to gain a deeper understanding of people's perceptions regarding branded and generic medicines. This research aims to explore and uncover the various beliefs, attitudes and opinions individuals hold when it comes to these two types of medications. Such insights can be invaluable for healthcare providers, pharmaceutical companies and policymakers in making informed decisions about drug preferences, marketing strategies and healthcare policies. Ultimately, this study can contribute to enhancing healthcare accessibility and affordability by addressing the preferences and concerns of the general population regarding branded and generic medications.

MATERIALS AND METHODS

This is a descriptive cross-sectional study conducted in Basaveshwara Medical College and Hospital (BMCH) and SJM Dental College, Chitradurga, for a period of 6 months. A total of 193 participants were included in the study. The inclusion criteria includes medical and dental students and healthcare professionals. The study was done after obtaining the approval by the Institutional Ethical Committee of SJM College of Pharmacy, Chitradurga, VideRef: No. SJMCP/630/2022-23.

The study was started after obtaining the consent from Institutional Ethical Committee (IEC). After obtaining informed consent, the questionnaire was distributed among Medical and Dental students in the form of copy. A self-designed questionnaire on the basis of perception about branded and generic antibiotics. A brief description regarding the study has been given in the form of copy, those who give consent to participate in the study was only included. Data was collected by the investigators and confidentiality was maintained during the data collection process. The knowledge and practice-based questionnaire was assessed and mean knowledge and practice scores were determined.

Statistical Analysis

The data was entered in Microsoft Excel-2010 version and the results were analyzed using Statistical Package for Social Services (SPSS 25.0). Descriptive methods were applied to obtain the frequency and percentage.

RESULTS

A total of 193 responses were recorded in the study and they are analyzed for their status about Branded and Generic Antibiotics. The questionnaire was designed to assess their perception Branded and Generic antibiotics using is debatable topic. Acceptance of both antibiotics

mostly to prefer branded. To assess perceptions of healthcare professionals and students regarding branded and generic antibiotics knowledge, efficacy, switching preferences, effects and benefits. The results are summarized below, which includes.

Epidemiological Profile

a) Age Distribution

In the conducted research study, participants ranging in age from 20 to 40 years were recruited. The study population exhibited a mean age of 84.9 years. The results revealed that the 20-25 age group displayed a notably higher response rate in comparison to other age groups which is depicted in Table no 1.

Table 1: Details of age group (n=193).

Age group in years	Frequency	Percentage (%)
20-25	164	85.0
26-30	20	10.4
31-35	4	2.1
36-40	5	2.6
Total	193	100.0

b) Gender Wise Distribution:

The study population included 76 males (39.4%) and 117 females (60.6%). The results revealed a higher response rate among females in comparison to males.

c) Course Wise Distribution

The distribution of study participants according to their courses indicated that half of the total participants were medical students, n=98 (50.8%), while dental students accounted for n=63 (32.6%). Additionally, there were n=21 (10.9%) medical professionals and n=11 (5.7%) dental professionals among the participants. Detailed results are presented in Table 2.

Table 2: Course wise distribution.

Course	Frequency	Percentage (%)
Medical students	98	50.8
Dental students	63	32.6
Medical professionals	21	10.9
Dental professionals	11	5.7
Total	193	100.0

Assessment Perception of Knowledge about Branded and Generic

a) The knowledge about branded and generic antibiotics

The knowledge and knowing about branded and generic are very important for both healthcare professionals and students. About 93.3% of participants have this knowledge while 6.7% doesn't have.

b) The similarity between branded and generic.

The response of participants about branded same as generic is 36.3%, the response of participants about branded not same as generic is 44.6% and about 19.2% of participants were not aware of this. The response of

participants about the similarity between branded and generic has been shown in the Table No. 3.

Table 3: Generic antibiotics are same as branded antibiotics.

Response	Frequency	Percentage (%)
Yes	70	36.3
No	86	44.6
I don't know	37	19.2
Total	193	100.0

Table 4: Details of antibiotics usage cost wise.

Responses	Frequency	Percentage (%)
Branded	133	68.9
Generic	19	9.8
Both of them	24	12.4
I don't know	17	8.8
Total	193	100.0

d) The composition of branded and generic.

As we know that the active ingredients are same in the branded and generic, but the inactive ingredients are different in branded and generic. Around 26.9% of participants think that inactive ingredients are same, where 24.9% are not and around 34.7% participants were not aware of this.

c) Pharmacoeconomics

Every practitioner has aim to save the patient medication cost. Most likely the poor people can't afford medicine because of the cost. About 68.9% of participants given response that branded antibiotics were costly, about 9.8% of participants given response that generic antibiotics were costly, about 12.4% of participants given response that both branded and generic antibiotics were costly and about 8.8% of participants were not aware of it. The response of participants about cost of branded and generic has been shown in the Table No. 4

To Assess the Switching Pattern.

a) Choice of antibiotics.

In a routine practice, which choice of medicine has to be used by professionals and students. Around 69.9% people has chose on depends upon the situation and other 24.9% of people prefer only branded antibiotics. The response of participants about the choice of branded and generic has been shown in the Table No. 5.

Table 5: Response recorded from healthcare professionals and students.

Response	Frequency	Percentage (%)
It depends on the situation	135	69.9
I prescribed only branded antibiotics	48	24.9
I prescribed only generic antibiotics	10	5.2
Total	193	100.0

b) Promoted to generic

In a daily practice the health care professional and student has believe that the generic antibiotic has good response as well as branded. Around 50.9% are likely to move from the branded to generic, where as 49.1% participants don't want to switch.

39.9% has believe both have different efficacy and around 19.2% of participants were unaware of it. The response of participants about efficacy of generic and branded has been shown in the Table No. 6.

To Assess the Perception of effect Branded and Generic Antibiotics

a) The perception of efficacy

Mostly doctor believe the branded having good result as compared to generic. But there is no any kind of study that showing branded is better than generic. Around 40.9% believe that both have same efficacy, around

Table 6: Do you agree that branded antibiotics are having same efficacy as generic antibiotics.

Response	Frequency	Percentage (%)
Yes	79	40.9
No	77	39.9
I don't know	37	19.2
Total	193	100.0

b) To assess the effect.

The effect of the antibiotics in patient is showing after several days. Around 38.9 % of participants have agreed that generic has less effect than branded, where 40.9% believe that generic has not less effect than branded and around 20.2% of participants were unaware of it. The response of participants about effect of generic and branded has been shown in the table No. 7.

Table 7: Do you agree that Generic antibiotics are less effective than branded antibiotics.

Response	Frequency	Percentage (%)
Yes	75	38.9
No	79	40.9
I don't know	39	20.2
Total	193	100.0

To assess the benefits**a) Benefits of antibiotics**

The negative biases are in lots of health care professional and student because of poor knowledge. Around 59.1% of participants were believe that both generic and branded giving benefit to the patient, where 21.2% believe only in branded antibiotics, around 11.9% participants were believed only in generic antibiotics and around 7.8% of participants were unaware of it. The response of participants about benefits of generic and branded has been shown in these Table No. 8.

Table 8: Which of the antibiotics get benefits to the patient.

Responses	Frequency	Percentage (%)
Branded	41	21.2
Generic	23	11.9
Both of them	114	59.1
I don't know	15	7.8
Total	193	100.0

b) Purpose of safety

As per the safety purpose, around 37.8% of participants were believe that both branded and generic are safe, where 25.4% chooses only branded for safety purpose, where 15% chooses only generic for safety purpose and around 21.8% of participants were unaware of it. The response of participants about safety of generic and branded has been shown in the Table No. 9.

Table 9: Which is the safest antibiotic.

Responses	Frequency	Percentage (%)
Branded	49	25.4
Generic	29	15.0
Both of them	73	37.8
I don't know	42	21.8
Total	193	100.0

DISCUSSION

The current study was conducted among the Medical and Dental students and healthcare professionals. The study was descriptive cross-sectional study. Its main objective was to assess the perception of knowledge in healthcare professionals and students about branded and generic antibiotics to assess whether healthcare professional and students are likely to move from branded to generic antibiotics and to assess the perception of effect and benefits of branded and generic antibiotics. This study include 193 students and healthcare professionals, where 98 are medical students, 21 are medical professionals, 63 are dental students and 11 are dental professionals.

The basic knowledge of a Branded and Generic antibiotics like dose, composition, effects and benefits are very important aspect. About 93.3% of participants were aware of branded and generic antibiotics. But when we conducted a study in brief, we analyzed that the majority of participants have knowledge but in inappropriate manner. We also identified that more than 50% of participants have miss belief, lack of knowledge and trust issue. In previous studies conducted by **Fadare O J *et al.***, explained about knowledge, perceptions and attitudes of physicians in prescribing of generic medicines, about 63.9% were opposed because of knowledge gap.^[8]

About 69.9% of participants are likely to move from branded to generic antibiotics depending upon the situation. Regarding promoting of generic antibiotics in routine practice, about 50% of participants were agreed to promote and 50% not. In a previous study conducted by **Gawron J A *et al.***, about 57.9% mostly preferred brand name.^[9]

As we know that, the effects of branded and generic antibiotics are same. But around 38.9% of participants believe that generic has less effect, where 40.9% of participants believe that generic has same effect as that of branded and 20.2% of participants were unaware of this. Around 59.1% and 37.8% of participants believe that both branded and generic antibiotics are beneficial and safety respectively. In previous studies conducted by **Chakraborty A *et al.***, there was no statistically significant difference between the antibacterial efficacy of branded medications and generic drugs ($p < 0.05$), also the bioequivalence of generic and branded drugs were same.^[10]

In India there is wrong perception that generic drugs are not real medicines and are suitable for minor treatments only. It is also believed that the medicine might also be adulterated and patients might suffer with a great deal of side effects from the drug. Overall, this study provides a summary of the knowledge and awareness enhancement that is to be need of Healthcare Professionals and Students of Chitradurga.

CONCLUSION

In the present study we found that most of the participants are using branded antibiotics medications frequently. Among these 193 participants majority of the participants are using branded antibiotics. Around 60% of female are interested in participating in this study. Most of the subjects or participants included in the study were experienced generic has less effect as compare to branded. After our interventions, we found that we could able to improve knowledge regarding appropriate use of branded and generic antibiotics. They are not willing to improve their knowledge regarding branded and generic antibiotics. We found majority of participants likely not to prefer generic as compare to branded antibiotics.

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