



International Journal of Advance Research Publication and Reviews

Vol 03, Issue 8, pp 626-633, August, 2026

Generic Versus Brand-Name Antibiotic Prescribing and Utilization Patterns Across Healthcare Settings: A Narrative Review

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ABSTRACT

Background: Antibiotics are essential medicines for the treatment of bacterial infections, but their benefits can be reduced when prescribing is inappropriate or unnecessarily costly. The choice between generic and brand-name prescribing is an important aspect of rational medicine use, as it may influence prescription transparency, treatment cost, and antimicrobial stewardship. Previous studies have reported considerable differences in prescribing practices across clinical specialties and healthcare settings, with brand-name prescribing remaining common in many hospital-based settings.

Objective: To review and summarize the available evidence on generic versus brand-name antibiotic prescribing and to identify variations in prescribing patterns across different healthcare settings.

Methods: A structured literature review was conducted using PubMed, Google Scholar, and Scopus. Studies published between 2021 and 2026 were considered using search terms related to antibiotic prescribing, generic prescribing, brand-name prescribing, antibiotic utilization, and rational medicine use. Studies conducted in hospitals and other healthcare settings and reporting relevant antibiotic prescribing data were included. Eleven eligible studies were identified. Information on study design, setting, population, and generic and brand-name antibiotic prescribing patterns was extracted and synthesized narratively. Results: The review demonstrated substantial variation in antibiotic prescribing practices between healthcare settings and patient groups. Of the 11 included studies, brand-name prescribing was predominant in 8 studies (72.7%), whereas generic prescribing was predominant in 3 studies (27.3%). Higher levels of brand-name prescribing were reported in surgical (86.21%), postoperative (80%), and ENT (100%) settings. In contrast, generic prescribing was more prominent in some outpatient and paediatric settings, including 87.5% in a South Indian outpatient study and 74.18% in a pediatric outpatient study. These findings indicate that prescribing practices are influenced by the clinical setting, patient population, institutional practices, and prescriber preferences.

Conclusion: Brand-name antibiotics were more frequently reported than generic antibiotics across the reviewed studies, particularly in several hospital-based and specialty settings. Promoting the use of generic or International Nonproprietary Names (INN), together with regular prescription audits, hospital-specific prescribing guidelines, and educational initiatives, may improve prescription transparency and support more economical and rational antibiotic use. Strengthening such measures could also contribute to broader antimicrobial stewardship efforts.

Keywords: Antibiotics; generic prescribing; brand-name prescribing; antibiotic utilization; rational drug use; antimicrobial stewardship.

1. INTRODUCTION :

Antibiotics are essential in managing infections caused by bacteria since they have significantly contributed to the treatment of a large number of patients. Nonetheless, their efficacy depends on the choice of antibiotic, dose, route, and duration of administration, which must be properly selected based on individual needs. Thus, antibiotics may be detrimental when they are inappropriately administered, resulting in increased treatment costs and adverse effects and promoting antimicrobial resistance. It is critical to consider these issues when making prescriptions and following the course of treatment.

Some studies in hospitals have found that doctors prescribe antibiotics in different ways. For example in departments where surgeries are performed antibiotics are used a lot. Doctors often give patients β -lactam antibiotics. They usually give them through a needle. Another thing that these studies found is that doctors like to prescribe antibiotics by their brand names of their generic names.¹ This is also true for patients who have just had surgery and are prescribed many antibiotics. Doctors still like to use brand names for these medicines.² This is a problem because it can cost a lot of money. It is not transparent. It would be better if doctors used names, for antibiotics so we can see exactly what medicines are being prescribed.

The use of antibiotics has been studied extensively in different medical fields and facilities. In particular, antibacterial prescriptions in the field of ENT have been found to be common, meaning that their use should be evaluated periodically.³ Additionally, antibacterial use in the medical intensive care unit was found to vary between hospitals, suggesting that the influence of a healthcare institution on prescription patterns should be considered when observing antibiotic use.⁴ On the other hand, studies conducted in different tertiary-care hospitals have found extensive antibacterial use, with variations noted between private and public facilities.⁵ These findings suggest that antibacterial prescriptions should be considered on a per-facility basis.

The implementation of standardised prescribing indicators allowed for the extensive evaluation of antibiotic usage. The use of the WHO prescribing indicators and AwaRe classification allowed for the assessment of the extent and nature of antibiotic prescriptions within tertiary-care facilities.⁶ Additionally, hospital-based assessments have found differences in the selection and use of antibiotics, with particular emphasis placed on the need for continuous monitoring of antibiotic prescriptions.⁷ Notably, paediatric prescriptions require special consideration, as the development of antimicrobial resistance to antibiotics is especially concerning. Studies conducted on paediatric outpatient antibiotic prescriptions found extensive use of antibiotics and demonstrated the utility of the WHO Access, Watch, and Reserve classification.⁸

While antibiotic prescriptions have been assessed within Indian territory, South Asian facilities have also been subject to extensive research. Studies conducted in Bangladesh have found significant use of antibiotics in the context of ENT infections and paediatric outpatients, with variations noted between the categories of patients.^{9,10} Additionally, research conducted in tertiary-care hospitals has found that approximately half of all antimicrobial prescriptions were generic, with significant shortcomings noted in quality and appropriate use.¹¹

Overall, antibiotic use and generic versus brand-name prescription differ across the settings. This will allow assessing possible discrepancies in appropriate prescribing, developing rational use of antibiotics, reducing costs, and increasing antimicrobial stewardship.

2. NEED FOR THE ASSESSMENT:

Assessment of generic versus brand name antibiotic prescribing is essential due to cost implication of antibiotics, transparency of prescription, and rational use of medicines. The significance of assessing the prescription comes from the following aspects:

1. The use of surgical wards has revealed the prevalence of brand name prescription of antibiotics. This poses the necessity for investigating the extent of generic antibiotic name prescription in routine medical practice.¹
2. Post-surgical wards have also shown the frequent prescription of antibiotics by brand name along with polypharmacy. This poses the necessity for investigating the preferences of prescribing and transparency by choosing generic names in appropriate cases.²
3. Differences in prescription have been detected among various specialties and clinical departments such as in ENT prescriptions. This implies the influence of prescriber's preferences in choosing antibiotic formulations between generic and brand names.³
4. The variation in antibiotic use has been detected among different hospitals and indicates the influence of institutional policies, medicine availability, and prescriber's preferences on antibiotic prescriptions.⁴
5. Variation in prescriptions has also been detected between public and private hospitals, implying differences in preferences towards generic or brand name prescription according to the setting.⁵
6. The need for standardized assessment of antibiotic prescriptions comes from the potential of such audits for providing insight into medicine selection and prescription practices as well as detecting inappropriate brand name preferences.⁶
7. The need for consistent monitoring of prescriptions emerges from the differences in hospital settings and implies the importance of regular surveillance of prescriptions and detection of antibiotic use by generic or brand name.⁷
8. The importance of economical antibiotic prescriptions is undeniable and implies the significance of generic name prescription in appropriate cases in order to avoid unnecessary expenditures.⁸
9. Studies conducted in South Asian settings such as Bangladesh have revealed the volume of antibiotic prescriptions among several patient categories and emphasizes the relevance of assessing prescription patterns in the region.⁹

10. Variation in prescription preferences has been detected among different patient populations and implies differences in prescription practices and preferences among different clinicians.¹⁰

11. The importance of promoting generic antibiotic prescriptions emerges from studies conducted among tertiary-care hospitals that have revealed the proportion of antimicrobials that could be replaced with generic formulations as well as the potential for improvement in prescription practices.¹¹

Therefore, the assessment of antibiotic prescriptions in terms of generic and brand name is essential for investigating the current practices and promoting the economical and rational use of antibiotics.

3. METHODOLOGY

3.1 Study Design

A prospective observational study was conducted to assess antibiotic prescribing patterns, with particular focus on generic versus brand-name prescribing among patients receiving antibiotics in a tertiary care hospital. Antibiotic prescriptions were reviewed without influencing or modifying the treatment prescribed by the healthcare professionals.

3.2 Literature Search Strategy

A structured literature search was conducted using electronic databases, including **PubMed, Google Scholar, and Scopus**, to identify studies related to antibiotic utilization and **generic versus brand-name prescribing**. Relevant studies published between **2021 and 2026** were considered. The search strategy used a combination of keywords and Boolean operators such as **“AND”** and **“OR”** to identify relevant publications. The main concepts included antibiotic prescribing, generic prescribing, brand-name prescribing, and antibiotic utilization. The principal search terms and combinations are presented in Table 1.

Table 1. Search terms and Boolean operators used for the identification of relevant studies

Concept	Boolean Operators and Search Terms
Antibiotics	“antibiotics” OR “antibacterial agents” OR “antimicrobial agents”
AND	AND
Antibiotic Prescribing	“antibiotic prescribing” OR “antimicrobial prescribing” OR “prescribing practices” OR “prescription pattern”
AND	AND
Generic Prescribing	“generic prescribing” OR “generic name” OR “generic drugs” OR “generic medicines” OR “INN prescribing” OR “International Nonproprietary Name”
AND	AND
Brand-Name Prescribing	“brand-name prescribing” OR “branded medicines” OR “brand name” OR “proprietary name” OR “trade name”
AND	AND
Antibiotic Utilization	“antibiotic utilization” OR “antibiotic use” OR “antimicrobial utilization” OR “drug utilization”
AND	AND
Healthcare Setting	“tertiary care hospital” OR “hospital” OR “healthcare setting” OR “inpatient” OR “outpatient”
AND	AND
Rational Use of Medicines	“rational drug use” OR “rational antibiotic use” OR “appropriate prescribing” OR “cost-effective prescribing”

3.3 Eligibility Criteria

3.3.1 Inclusion Criteria

- Studies evaluating **antibiotic prescribing and utilization**, with particular focus on generic versus brand-name prescribing.
- Studies conducted in **hospitals or other healthcare settings** involving antibiotic prescriptions or patients receiving antibiotics.

Observational, cross-sectional, prospective, retrospective, and drug-utilization studies reporting relevant prescribing data.

3.3.2 Exclusion Criteria

- Studies not related to **antibiotic prescribing, utilization, or generic versus brand-name use**.
- Studies focusing only on **non-antibiotic medicines** or unrelated therapeutic areas.
- Studies without relevant **primary data on antibiotic prescribing practices**.

Editorials, commentaries, letters, conference abstracts, and duplicate publications.

3.4 Study Selection

All identified articles were initially screened by reviewing their titles and abstracts to determine their relevance to antibiotic prescribing, utilization, and generic versus brand-name prescribing. Articles considered relevant were then reviewed in full text against the eligibility criteria. Studies providing information on antibiotic prescribing patterns, generic/INN use, or brand-name prescribing in healthcare settings were included in the review. The overall study selection process is shown in Figure 1.

3.5 Data Extraction

Relevant information from the included studies was collected using a standardized data extraction format. The following details were extracted from each study:

Author(s) and year of publication.

Study design, setting, and study population.

Sample size and patient characteristics, where available.

Antibiotic prescribing patterns, including **generic (INN) and brand-name prescribing**.

Key findings related to antibiotic utilization and factors influencing generic or brand-name prescribing.

3.6 Data Synthesis

A **narrative synthesis** was used to summarize and compare the findings of the included studies. The studies were grouped according to their main focus, including:

Generic versus brand-name antibiotic prescribing.

Patterns of antibiotic utilization and prescribing.

Differences in prescribing practices across healthcare settings.

Factors influencing the choice of generic or brand-name antibiotics.

The findings were then compared to identify common prescribing trends, differences between healthcare settings, and gaps in the use of generic names. Particular attention was given to the extent of **generic versus brand-name prescribing** and its relevance to rational and cost-effective antibiotic use.

3.7 Ethical Considerations

This review was based entirely on previously published research and did not involve direct interaction with patients or healthcare professionals or the

collection of identifiable personal information. Therefore, institutional ethical approval was not required.

4. RESULTS

4.1 Study Selection and Characteristics

A total of 11 articles were included in this review. All studies evaluated **antibiotic prescribing and utilization, particularly generic versus brand-name prescribing**. Most of the included studies used a **cross-sectional or observational design** and were conducted in different healthcare settings.

4.2 Antibiotic Prescribing and Utilization

Antibiotic prescribing showed considerable variation across the 11 included studies, depending on the healthcare setting and patient population. Generic prescribing was predominant in 3 studies (27.3%), while 8 studies (72.7%) reported a greater preference for brand-name antibiotics.^{1–11} Generic prescribing was particularly high in the South Indian outpatient study (87.5%), the pediatric outpatient study (74.18%), and the prescription-quality audit (55%).^{6, 8, 11}

On the other hand, brand-name prescribing was more common in the surgical study (86.21%), postoperative study (80%), and ENT study (100%).^{1–3} A similar preference was observed in the medical intensive-care study (97–89%, depending on the hospital), multicentre tertiary-care study (59%, based on 41% generic prescribing), prospective tertiary-care study (>70%), Bangladesh ENT study (92%), and pediatric Bangladesh study (100%).^{1–5, 7, 9, 10}

4.3 Overall Finding

Overall, the reviewed studies showed that brand-name antibiotics were prescribed more frequently than generic antibiotics, with brand-name prescribing reported in 72.7% of the studies, compared with 27.3% showing predominant generic prescribing. However, generic prescribing was more commonly observed in some outpatient and pediatric settings, indicating that prescribing preferences varied across different healthcare settings.

Table 2. Quantitative Summary of Generic and Brand-Name Antibiotic Prescribing Across Included Studies

Prescribing Type	Number of Studies (n=11)	Percentage (%)
Generic prescribing	3	27.3
Brand-name prescribing	8	72.7

5. DISCUSSION

This review looked at how antibiotics were prescribed across different healthcare settings, with a focus on generic and brand-name prescribing. The 11 included studies showed noticeable differences in prescribing patterns. Brand-name prescribing was more common, being predominant in 8 studies (72.7%), while generic prescribing was predominant in 3 studies (27.3%). These differences may be related to the type of healthcare setting, patient group, and prescribing habits.

5.1 Generic Antibiotic Prescribing

Generic prescribing was more common in some outpatient and pediatric settings. The South Indian outpatient study reported 87.5% generic prescribing, while the pediatric outpatient study reported 74.18% and the prescription-quality audit reported 55%.^{6, 8, 11} These findings show that generic prescribing can be used widely in routine practice. Using generic names may also make prescriptions clearer and help reduce medicine costs.

5.2 Brand-Name Antibiotic Prescribing

Brand-name prescribing was seen more often in most of the studies. Higher levels were reported in the surgical (86.21%), postoperative (80%), and ENT (100%) settings.^{1–3} Similar patterns were found in intensive-care and other hospital-based settings.^{4, 5, 7, 9, 10} This preference for brand names may be linked to doctors' familiarity with particular products, established prescribing habits, and practices followed within individual hospitals.

5.3 Variation in Prescribing Practices

The studies showed that prescribing patterns were not the same in all healthcare settings. Generic prescribing was more common in some outpatient and pediatric groups, while brand-name prescribing was more frequent in several hospital and specialty settings.^{1–11} This shows that antibiotic prescribing can vary depending on where and for whom the medicines are prescribed.

5.4 Implications for Rational Antibiotic Use

The frequent prescription of brand antibiotics indicates the need to prescribe generic or International Nonproprietary Names (INN). Prescribing generic drugs periodically and developing simple hospital guidelines will motivate physicians to prescribe generic drugs more often and thereby reduce unnecessary costs of branded medicines. Moreover, encouraging the right use of antibiotics may promote their responsible use..

6. SUMMARY

Table 3. Summary of Generic and Brand-Name Antibiotic Prescribing and Utilization Patterns Across Included Studies

Study	Country	Setting / population	Generic (%)	Brand (%)	Key finding
1. Kamath et al. ¹	India	Tertiary hospital; surgical	13.79	86.21	Brand-name predominated.
2. Sawhney et al. ²	India	Tertiary hospital; postoperative G&O	20	80	Brand-name use was high.
3. ENT study ³	India	University hospital; ENT OPD/IPD	—	Predominant	Brand-name use predominated.
4. Sharma et al. ⁴	India	Two private hospitals; medical ICUs	—	Predominant	Prescribing varied between hospitals.
5. Mali et al. ⁵	India	Multicentre tertiary referral centres	41	59	Brand-name prescribing was higher.
6. Priyadharsini et al. ⁶	India	Tertiary hospital; OPD	87.5	12.5	Generic prescribing predominated.
7. Mani et al. ⁷	India	Tertiary-care hospital	—	>70	Brand-name prescribing predominated.
8. Mandal et al. ⁸	India	Tertiary teaching hospital; pediatric OPD	74.18	25.82	Generic prescribing predominated.
9. Begum et al. ⁹	Bangladesh	ENT patients; Dhaka	8	92	Brand-name prescribing predominated.
10. Paul et al. ¹⁰	Bangladesh	Pediatric OPD; Rajshahi	—	100	Brand-name prescribing predominated.
11. Adedapo & Akunne ¹¹	Nigeria	Tertiary hospital; admitted patients	55	45	Generic prescribing was slightly higher.

7. Strengths and Weaknesses

7.1 Strengths

Focus on generic and brand-name use: This review looked specifically at whether antibiotics were prescribed by their generic or brand names. This helped bring out the differences in prescribing habits reported in the studies.^{1–11}

Different clinical areas included: The studies covered several areas, including surgery, postoperative care, ENT, intensive-care units, tertiary hospitals, and pediatric outpatient services.^{1–11}

Evidence from South Asia: Most of the studies were from India, along with studies from Bangladesh. Together, they provide useful information on antibiotic prescribing in this region.^{1–11}

Different ways of measuring antibiotic use: The included studies assessed antibiotic use through prescribing patterns, utilization measures, prescribing indicators, and generic or brand-name use.^{4–8}

Differences in prescribing habits were identified: The studies did not show the same prescribing pattern everywhere. Brand-name antibiotics were used more often in several hospital-based studies, while some outpatient and pediatric settings reported greater use of generic names.^{1–11}

7.2 Limitations

Different study settings: The studies involved different departments, hospitals, and patient groups. This made it difficult to compare all the results on the same basis.^{1–11}

Differences in study methods: The studies varied in their sample sizes, study designs, duration, and methods used to assess antibiotic prescribing. These differences may have contributed to variation in the results.^{1–11}

Not all studies reported generic and brand-name percentages: Some articles did not give separate figures for generic and brand-name prescribing. As a result, a direct comparison could not be made for every study.^{3–7}

Limited geographical representation: The evidence was mainly from India and Bangladesh, so the results may not apply equally to other countries or healthcare systems.^{1–11}

Mostly observational evidence: Most of the studies described prescribing practices as they occurred and did not test an intervention. Therefore, they provide a picture of current practice but cannot confirm whether a particular intervention would increase generic prescribing.^{1–11}

8. Future Directions

Generic prescribing requires more attention, especially in hospitals, where brand antibiotic prescribing is still frequent. Prescribing antibiotics using generic or International Nonproprietary Name (INN) can make prescriptions less ambiguous and save money for patients and hospitals.^{1–3}

In addition, antibiotic prescriptions should be reviewed regularly. Such prescriptions' audits can help identify unnecessary brand prescribing and other areas for improvement.^{6,7,11} Moreover, establishing guidelines for appropriate antibiotic prescription within each hospital can increase prescribers' knowledge of antibiotics and promote their appropriate use within facilities.^{4–6}

These guidelines may also facilitate pharmacists' work, as they will have less work reviewing prescriptions. As a result, pharmacists can provide feedback on the cost of the prescribed drugs to prescribers, thus influencing future prescriptions. Healthcare facilities can also conduct periodic educational programs for pharmacists to ensure they are aware of the importance of generic antibiotic prescribing and its opportunities and challenges.

Studies on generic antibiotic prescribing require more thorough research, which would allow obtaining more accurate data on brand and generic antibiotic use in different settings. This data will enable researchers to compare the use of these two types of antibiotics within and between facilities and populations in various healthcare settings. Moreover, studies should track antibiotic prescriptions for a more extended period than this review's included articles to evaluate if regular audits, educational programs, and pharmacist participation in prescription control processes have a meaningful impact on prescriptions.

9. CONCLUSION

Thus, the discussed research demonstrated that antibiotic prescription varied significantly between the included studies. Prescriptions of brand antibacterial agents were more prevalent than generics in most facilities. Indeed, 8 out of 11 studies reported that antibacterial prescriptions were predominantly brand ones.^{1–11} The other three studies showed the opposite trend, indicating that generic prescriptions were more prevalent than brand ones.^{1–3,6,8–10} Overall, antibiotic prescriptions varied depending on the setting, patient population, and guidelines within facilities.

This review's findings contribute to a more significant understanding of the current situation regarding antibacterial prescriptions and emphasize the significance of increasing generic antibiotic prescriptions. This can be done through regular audits of antibiotic prescriptions and establishing guidelines within facilities, as well as conducting educational programs for pharmacists to improve their knowledge and awareness of the importance of generic prescriptions and their challenges. These measures will help ensure cost-effective and appropriate antibacterial prescriptions within hospitals while promoting antibiotic stewardship programs.^{1–11}

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