



A Review on Consumer Patterns and Behaviours' Towards Generic Medicines

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: <https://doi.org/10.9734/air/2024/v25i41125>

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/121182>

Review Article

Received: 06/06/2024

Accepted: 08/08/2024

Published: 12/08/2024

ABSTRACT

Generic medicines have become an important topic in healthcare due to their potential to reduce costs while providing equivalent treatment to branded drugs. This review article investigates consumer patterns and behaviors related to generic medicines, focusing on awareness, purchasing factors, and satisfaction levels. The research employs a systematic literature review methodology, analyzing peer-reviewed journals, government reports, and industry studies on generic medicines and consumer behavior. Various statistical techniques, such as percentage analysis, chi-square

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tests, factor analysis, Garrett ranking, and Likert scales, are used to summarize demographic profiles, examine relationships, identify influencing factors, prioritize purchase constraints, and measure satisfaction levels. Key findings reveal that consumer awareness of generic medicines varies widely, influenced by factors such as age, education, and exposure to information from healthcare providers. Government initiatives like India's Pradhan Mantri Jan Aushadhi Yojana aim to increase access to affordable generics, yet awareness remains limited in some areas. Price is a major motivator for purchasing generics, but other factors like perceived quality, doctor recommendations, availability, and prior experience also play significant roles. Generally, consumers express positive experiences with generics, citing effectiveness, cost savings, and quality. However, some consumers and healthcare providers harbor concerns about the safety and efficacy of generics compared to branded versions. This review underscores the need for ongoing efforts to enhance consumer confidence in generics through education and awareness campaigns, ensuring the success of initiatives aimed at making essential medicines affordable and accessible to all.

Keywords: Generic medicines; consumer buying pattern; conceptual review.

1. INTRODUCTION

Pharmaceuticals are medicinally active compounds that are transformed into dosage forms that patients can consume [1]. These medications are known as bulk pharmaceuticals in their most basic chemical form, while formulations refer to their final, consumable forms. Typically, doctors prescribe formulations (ethical medications) to treat specific illnesses. However, some formulations, like pain balms and health tonics, can be purchased directly from pharmacists as over-the-counter (OTC) medications. Generic medicines have become an important topic in healthcare due to their potential to reduce costs while providing equivalent treatment to branded drugs [2]. Switching to generic medicines at community pharmacies can help people save money on their medications [3]. This review article examines consumer patterns and behaviors related to generic medicines, with a focus on awareness, purchasing factors, and satisfaction levels.

Ensuring that every individual in a nation has access to healthcare services is crucial, yet India faces significant challenges. While India's healthcare system is gradually improving, it remains underdeveloped compared to other BRICS nations. Healthcare spending in India accounts for approximately 4% of the GDP, which is significantly lower than in countries like Brazil, South Africa, Russia, and China [4]. Consequently, out-of-pocket expenses for healthcare are around 80%, with medicine prices constituting 40-50% of total health expenditures.

1.1. Global Scenario

The global pharmaceutical market has undergone significant changes, characterized by mergers, acquisitions, and strategic partnerships among multinational pharmaceutical companies. Generic pharmaceutical companies are poised to capitalize on opportunities arising from the expiration of patents on blockbuster drugs. The pharmaceutical industry is influenced by various macro-level factors, including the emergence of bio-pharmaceuticals, the genome revolution, increased patient health awareness, and changes in global demographics [5]. Additionally, regulatory environments, declining R&D productivity, and the rise of e-pharmaceuticals are reshaping the industry.

1.2 Indian Scenario

India plays a vital role in the global pharmaceutical market as the world's third-largest producer by volume and the fourteenth by value. The Indian pharmaceutical sector is a significant contributor to international trade, with the United States being the largest export market. The domestic market comprises a vast network of medicinal businesses and manufacturing units, contributing to a predicted growth of US\$120-130 billion by 2030. Despite this, the high out-of-pocket expenditure and low healthcare spending highlight the need for increased access to affordable medications, such as generic medicines, which can significantly reduce healthcare costs and improve access to essential medicines for all [6].

Many studies have found that consumer awareness of generic medicines varies widely.

While some consumers understand that generic drugs are similar in quality and effectiveness to brand-name medications, others lack knowledge or hold misconceptions about generics. Factors like age, education level, and exposure to information from doctors and pharmacists can influence awareness. Government initiatives like the Pradhan Mantri Jan Aushadhi Yojana scheme in India aim to increase access to affordable generic medicines, but awareness of such programs is still limited in some areas [7].

Several key factors appear to influence consumer purchasing behavior for generic medicines. Price is often cited as a major motivator, with the lower cost of generics being appealing to many consumers. However, other factors like perceived quality, doctor recommendations, availability, and prior experience with generic drugs also play important roles. Some studies have found that consumers who are more aware of generic medicines tend to have more positive attitude towards purchasing them. Consumer satisfaction with generic medicines seems to vary, but many studies report generally positive experiences among those who use them. Factors like perceived effectiveness, cost savings, and quality influence satisfaction levels. However, some consumers and healthcare providers continue to have concerns about the safety and efficacy of generic drugs compared to brand-name versions [8]. Improving confidence in generic medicines among both patients and medical professionals remains an ongoing challenge in many areas.

This review article provides a comprehensive overview of existing research on consumer patterns towards generic medicines. It examines studies conducted across various regions, focusing on key aspects such as consumer awareness, factors influencing purchasing behavior, satisfaction levels, and barriers to generic medicine adoption. The scope of this review encompasses both developed and developing countries, allowing for a broad perspective on global trends and regional differences in consumer attitudes and behaviors.

2. METHODOLOGY

The methodology for this review article on consumer patterns towards generic medicines employs a comprehensive approach to analyze and synthesize existing research. The primary method used is a systematic literature review,

which involves searching and examining peer-reviewed academic journals, government reports, and industry studies related to generic medicines and consumer behavior.

Key research techniques highlighted in the literature are incorporated into this review. These include percentage analysis, which is used to summarize demographic profiles and basic trends in consumer awareness and preferences. Chi-square tests are utilized to examine relationships between various factors, such as demographic characteristics and purchasing behaviors. The Garrett ranking technique is used to prioritize factors affecting consumer choices, while Likert scales are applied to measure attitudes and satisfaction levels towards generic medicines.

By integrating these diverse analytical techniques, this review aims to provide a holistic understanding of consumer patterns towards generic medicines. The methodology allows for a comprehensive examination of quantitative and qualitative data from multiple studies, enabling the identification of consistent trends, contradictions, and gaps in the current research landscape. This approach helps to draw meaningful conclusions about consumer awareness, purchasing factors, satisfaction levels, and barriers to generic medicine adoption across different contexts and populations.

2.1 Conceptual Framework

The review process is guided by a conceptual framework (Table 1) that outlines the key components of consumer patterns and behaviour towards generic medicines. This framework serves as an organizational tool for synthesizing diverse literature on consumer patterns and behaviour towards generic medicines, facilitating a structured and comprehensive review.

3. REVIEW OF CONCEPTS

3.1 Customer

Levy and Weitz [9] described customers as those who consume goods and services from manufacturers or retailers. Kotler and Armstrong [10] stated that customers buy goods for personal use, not for business purposes. Pawar and Naranje [11] saw customers as central to the market, fulfilling roles of user, payer, and buyer. This study focuses on individuals purchasing generic medicines from Jan Aushadhi Medical Stores.

Table 1. Conceptual framework

Review of Concepts	Review of Past Studies
Customer	Generic medicines
Demographic Profile	Customer buying/purchasing behaviour
Awareness	Level of customer awareness
Customer Buying behaviour	Factors influencing towards buying/ purchasing
Factors influencing	Customer level of satisfaction
Customer level of satisfaction	Factors limiting the Purchasing
Percentage Analysis	
Chi-square Test	
Garrett Ranking	

3.2 Demographic Profile

3.2.1 Age

Skelton and Dinan-Young [12] defined aging as a continuous decline in health due to internal physical deterioration.

3.2.2 Gender

Zheng et al. [13] described gender as societal expectations of behavior for men and women.

3.2.3 Education

Naziev [14] defined education as the transfer of knowledge and experience across generations. Neeraj and Narula [15] noted that customers use various media to inform their purchase decisions.

3.2.4 Profession

Cruess et al. [16] described professions as occupations requiring specialized knowledge and skills, committed to public good, and governed by ethical codes.

3.2.5 Income

Hewett [17] defined income as the money received from a business after reducing expenditures.

3.3 Awareness

Ishak and Zabil [18] emphasized awareness in influencing buying behaviors, while Mathew and Thomas [19]. Differentiated between theoretical and practical customer awareness.

3.4 Customer Buying Behaviour

Orji et al. [20] defined customer behavior as activities to fulfill needs through products or

services. Jhanji and Kaur [21]. described it as the sum of a customer's preferences and decisions. Shaaban et al. [22] noted that brand, price, and product factors shape behavior. Hale et al. [23] incorporated group influence and noted the unpredictability of customer behavior. This study relates to purchasing generic medicines from Jan Aushadhi stores.

3.5 Factors Affecting Customer Buying Behaviour

Kotler and Armstrong [10] identified cultural, social, personal, and psychological influences on buying behavior. Muniady et al. [24] noted multiple influences on decision-making, including personality and lifestyle. Bhatt [25] identified quality, warranty, cost, and advertising as key factors. Meghrajani [26] found discounts and brand image influential in rural markets. Kushwaha et al. [27] highlighted the impact of shopping mall environment. Krishna and Balasubramanian [28] emphasized health and environmental consciousness. Kumari and Gowthamy [29] noted quality and taste in cold-pressed oil choices. This study uses factor analysis to examine influences on buying generic medicines from Jan Aushadhi.

3.6 Customer Level of Satisfaction

Tse and Wilton [30] defined customer satisfaction as the reaction to the perceived gap between expectations and actual product performance. Weijun et al. [31] described it as a feeling of happiness or disappointment post-purchase. This study measures satisfaction with generic medicines from Jan Aushadhi Medical Stores.

3.7 Percentage Analysis

Samsai et al. [32] analyzed demographic profiles and brand preferences. Chowdhary et al. [33] found customer satisfaction towards food brands.

Bakshi et al. [34] studied packaging influence on buying behavior. Junejo et al. [35] analyzed website content's effect on buying behavior. This study uses percentage analysis to examine demographic profiles and brand preferences for generic medicines from Jan Aushadhi.

3.8 Chi-Square Test

Zhu et al. [36] examined umami seasoning awareness in China. Pallathadka et al. [37] studied A2 milk buying behavior in Hyderabad. This study uses the chi-square test to analyze customer behavior in purchasing generic medicines from Jan Aushadhi.

3.9 Garrett Ranking

Palanichamy et al. [38] identified millet production constraints. Balaganesh et al. [39] analyzed banana farming issues. Brar et al. [40] studied milk marketing factors. Agarwal and Banerjee [41] identified constraints in tomato growing. This study uses Garrett ranking to identify factors limiting the purchase of generic medicines from Jan Aushadhi.

4. REVIEW OF PAST STUDIES

4.1 Generic Medicines

Bai [7] determined that the quality of generic medicines sold in Jan Aushadhi stores matches that of branded medicines available in the market. Martin and Kavita [42] argued that generic medicines could meet medicine demand and supply cost-effectively, despite the misconception that lower-priced generics are of inferior quality. Singhal et al. [43] discovered that intern doctors are knowledgeable about and supportive of prescribing generic medicines, contingent on their availability in hospital pharmacies. Idris et al. [44] highlighted that generic drugs are clinically comparable to branded ones, though public perception often doubts their quality. Pawar et al. [45] found no significant difference in the quality and efficiency between generic medicines from Jan Aushadhi stores and branded ones. Significant cost savings can be made if private sector buyers switch from brand-name medicines to the cheapest generic alternatives. National medicine policies should include strategies to encourage the use of generics, such as allowing pharmacists to substitute generics for brand-name drugs and boosting trust in generics among healthcare professionals and the public [46].

4.2 Level of Customer Awareness

Desai et al. [47] reported that while many doctors prescribe generics, some remain concerned about their safety and efficiency. Gupta et al. [48] found high awareness among doctors in North India and recommended further studies to increase awareness among medical professionals and the public. Charan et al. [49] found that patient awareness of generic medicines is positively associated with age and education level, and doctors' guidance can improve their perception. Ballala et al. [50] indicated poor general population awareness, advocating for community-based literacy campaigns to educate about generics' quality, safety, and government initiatives. Johnson [51] noted that while rural people are unaware of generics for dental issues, they are interested in learning more to reduce their medicine expenses, prompting policymakers to conduct awareness campaigns. Bai [7] found that rural people were unaware of the Jan Aushadhi initiative and suggested using TV advertisements and pamphlets to inform them.

4.3 Factors Influencing Customer Buying Behaviour

Solomon and Sundar [52] found that Jan Aushadhi store employees' behaviour negatively impacts customer buying behaviour, recommending training programs to improve customer relations and trust. Nagarajappa and Srinivasan [53] highlighted that doctors' prescriptions, pharmacists' promotion, and word of mouth are key to promoting generics in Jan Aushadhi stores. The cost was the first thing that everyone noticed about generic drugs. Most patients didn't know about generic drugs, but when asked about cheaper drugs, many said they knew there were some cheaper ones available, though they believed these were mainly for poor people [54].

4.4 Customer Level of Satisfaction

Chandrashekhar and Monika [55] reported high satisfaction among Jan Aushadhi store customers with low-cost generics, influenced primarily by friends and relatives. Arunkumar et al. [56] found that customers are satisfied with the quality of generics in Jan Aushadhi stores and show strong loyalty to these stores.

4.5 Factors Limiting Purchasing

Mukherjee [57] found that some branded medicines are cheaper than their generic

counterparts in Jan Aushadhi stores, suggesting a review of pricing policies. Mallam et al. [58] called for extensive research to ensure generic medicine safety and improve accessibility and availability. Gupta et al. [59] identified medicine shortages in Jan Aushadhi stores due to insufficient health ministry budgets and recommended transparent supplier selection processes and third-party inspections for safety and quality. Baghel et al. [60] found that lack of knowledge, unfavorable attitudes, and misconceptions about generics led to non-acceptance among the general population. Das [61] noted that Jan Aushadhi stores are fewer than commercial ones, stock fewer medicines, and often lack attachment to government hospitals. They also highlighted lower profits for store owners, inadequate doctor training, and limited exposure of pharmacy students to generics.

5. CONCLUSION

In conclusion, the review article underscores the crucial role of generic medicines in enhancing healthcare accessibility and affordability, particularly in countries like India, where high out-of-pocket healthcare expenses and low government spending pose significant challenges. Despite being the third-largest pharmaceutical producer by volume, India's healthcare system is still underdeveloped compared to its BRICS counterparts. The review highlights that generic medicines, being cost-effective alternatives to branded drugs, can significantly alleviate financial burdens on patients and increase access to essential medications. However, the awareness and acceptance of generic medicines vary widely among consumers, influenced by factors such as age, education, and information from healthcare professionals. Government initiatives like the Pradhan Mantri Jan Aushadhi Yojana aim to promote generic medicines, but awareness and trust in these programs need further enhancement through effective public education and marketing strategies.

Moreover, consumer behavior and satisfaction with generic medicines are shaped by multiple factors, including price, perceived quality, doctor recommendations, and prior experiences. While many consumers report positive experiences with generics, misconceptions about their efficacy and safety persist. This review reveals that building consumer confidence in generic medicines remains a critical challenge,

necessitating concerted efforts from government policies, healthcare providers, and community education programs. By synthesizing existing research on consumer patterns, this article provides a comprehensive understanding of the key elements influencing the adoption and satisfaction of generic medicines. It emphasizes the need for continuous research and policy initiatives to address barriers and foster a more informed and confident consumer base, ultimately contributing to better healthcare outcomes and economic savings.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
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