

RESEARCH ARTICLE

A Study of Consumer Choice Between Generic and Branded Drugs Under Current Regulations in Bhimavaram



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Abstract: This research work is aimed to study about the consumer preferences between generic and branded medicines in Bhimavaram Town, evaluating the factors influencing purchasing decisions. Through stratified random sampling, 252 respondents participated in a structured survey exploring awareness, affordability, safety perceptions, and regulatory understanding. Results revealed that 66.4% of participants preferred branded medications, primarily citing safety (40.7%) and effectiveness (32.8%) concerns. Though 62.1% of respondents had previously switched from branded to generic medications, 70.4% perceived quality differences between them. The educational background of consumers significantly impacted medicine choices, with most information about medications (71.5%) coming from doctors or pharmacists. Regarding regulatory awareness, 63.6% of participants were knowledgeable about generic drug regulations, while 62.1% understood branded medicine regulations. Hypothesis testing confirmed consumers' awareness of regulations governing both medicine types and validated that many had switched from branded to generic equivalents. This study shows the need for enhanced consumer education about generic medication quality and efficacy.

Keywords: Consumer behavior; Drug price; Brand perception; Generic medicine; Healthcare; Affordability.

1. Introduction

The pharmaceutical market is characterized by the availability of both branded and generic medicines, presenting consumers with choices that significantly impact healthcare expenditure and treatment outcomes. Generic medicines contain identical active ingredients, dosage forms, strengths, and routes of administration as their branded counterparts while meeting equivalent quality and performance standards [1]. After patent expiration of branded drugs, generic versions enter the market at substantially lower prices, offering cost-effective alternatives for consumers [2]. Despite their bioequivalence, generic medicines face persistent skepticism from healthcare professionals and consumers regarding their effectiveness, quality, and safety [3]. This perception gap often results from inadequate information, marketing practices that favor branded products, and entrenched prescribing habits [4]. In India specifically, pharmaceutical companies frequently manufacture both branded products (advertised and promoted through doctors) and branded-generics (promoted by retailers) for the same molecule [5].

The rising costs of healthcare globally have prompted increased attention to generic medicines as a means of reducing pharmaceutical expenditure without compromising treatment quality [6]. Knowledge about consumer perceptions and preferences regarding medicine choices is essential for developing effective policies that promote rational drug use and accessibility [7]. However, research on consumer segmentation based on medicine perceptions remains limited, particularly in emerging economies like India [8]. This work aims to study the consumer preferences and perceptions regarding generic and branded medicines in Bhimavaram Town, analyzing the factors that influence these choices. [9]

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2. Methodology

2.1. Study Design

This cross-sectional, descriptive study was conducted in Bhimavaram Town, a moderately populated urban center in Andhra Pradesh, India. The research used a quantitative approach using a structured survey to assess consumer preferences and perceptions towards generic and branded medicines. The study protocol received ethical approval from the institutional review board. Participation was voluntary, and respondents could withdraw at any time. No personal identifiers were collected, ensuring data anonymity [10]

2.2. Sampling

Stratified random sampling was utilized to ensure representative geographic coverage of the town. The population was divided into four strata based on major educational institutional roads (KGRL College Road, CSN College Road, Vishnu College Road, and DNR College Road), with 63 respondents selected from each stratum, yielding a target sample of 252 valid responses from an initial pool of 300 participants (response rate: 84%).

2.3. Data Collection

A structured questionnaire was developed [11] based on previous literature and modified to address the specific research objectives. The instrument contained four sections:

- Demographic information (age, gender, education level)
- Medicine preference and information sources
- Perceptions regarding medicine quality, safety, and effectiveness
- Awareness of pharmaceutical regulations

The questionnaire underwent pilot testing with 20 respondents to assess clarity, comprehensibility, and content validity [11]. Based on feedback, minor modifications were made before final administration.

2.4. Data Collection

The survey was conducted between November 2023 and January 2024. Digital questionnaires were administered through a Google Forms link (<https://tinyurl.com/58puhrfy>), supplemented by face-to-face interactions with consumers at local pharmacies and healthcare facilities. Participants were briefed about the study purpose, and informed consent was obtained prior to data collection. Confidentiality and anonymity were maintained throughout the process [13].

2.5. Statistical Analysis

Data were analyzed using statistical software. Descriptive statistics including frequencies, percentages, means, and standard deviations were calculated to summarize demographic characteristics and response patterns. Hypothesis testing employed one-tailed z-tests with a significance level of 0.05 to validate key findings regarding consumer awareness and perceptions [14]. Five hypotheses were tested to examine regulatory awareness, switching behavior, and perceived differences between medicine types.

3. Results

3.1. Demographic characteristics

The demographic profile of respondents is presented in Table 1.

Table 1. Demographic Characteristics of Respondents (N=252)

Characteristic	Category	Percentage (%)
Age (years)	18-30	93.3
	30-40	5.9
	>50	1.0
Gender	Male	34.8
	Female	64.8
Education Level	No Education	0.0
	SSC	2.7
	Undergraduate	60.5
	Graduate	36.8

The majority of participants (93.3%) were between 18-30 years of age, with females comprising 64.8% of the sample. Educational background analysis revealed that most respondents were either undergraduates (60.5%) or graduates (36.8%), with only 2.7% having completed SSC education [15].

3.2. Medicine Information Sources and Preferences

Table 2 summarizes respondents' information sources and medication preferences. Healthcare professionals (doctors/pharmacists) emerged as the primary information source (71.5%), followed by friends/family (19.4%) and online resources (6.3%). A clear preference for branded medicines (66.4%) over generic alternatives (33.6%) was observed, with safety (40.7%) and effectiveness (32.8%) cited as the main factors influencing these choices.

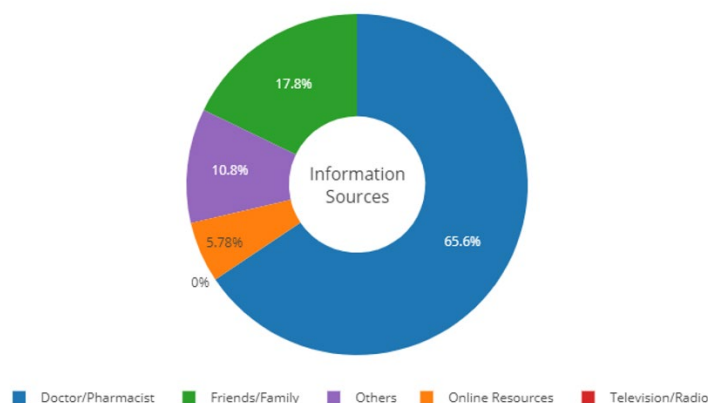


Figure 1. Primary sources of information about medications reported by consumers in Bhimavaram Town

Table 2. Medicine Information Sources and Preferences (N=252)

Variable	Category	Percentage (%)
Medicine Preference	Branded	66.4
	Generic	33.6
Reasons for Preference	Effectiveness	32.8
	Safety	40.7
	Price	15.4
	Brand Reputation	8.7
	Others	2.4

3.3. Medicine Switching Behavior

Table 3 presents data on medicine switching behavior and quality perceptions. A majority of respondents (62.1%) reported having switched from branded to generic medications at some point. However, the frequency of generic medicine purchases varied considerably, with only 15.4% "always" purchasing generics compared to 37.9% doing so "sometimes" and 25.7% "rarely." Notably, 70.4% of participants perceived quality differences between branded and generic medications. Among those noting differences, 54.5% believed effectiveness was the primary differentiating factor, while 26.5% cited concerns about adverse drug reactions.

Table 3. Medicine Switching Behavior and Quality Perceptions (N=252)

Variable	Category	Percentage (%)
Switched from Branded to Generic	Yes	62.1
	No	37.9
Perceived Quality Difference	Yes	70.4
	No	29.6
Experienced Side Effects from Generics	Yes	37.2
	No	62.8

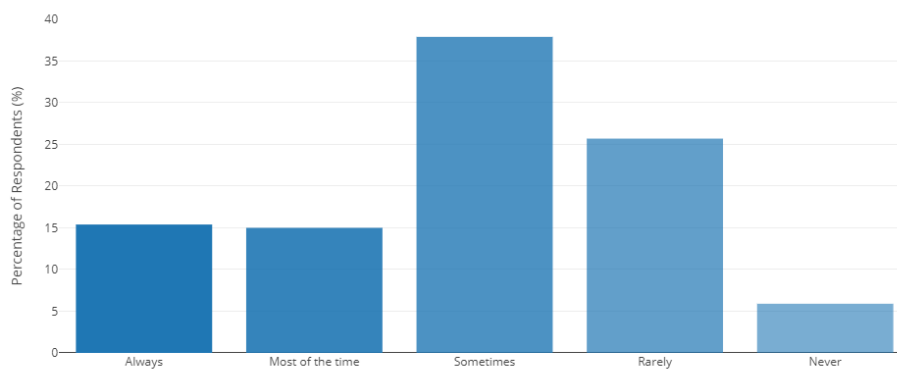


Figure 2. Frequency of generic medicine purchases among survey respondents

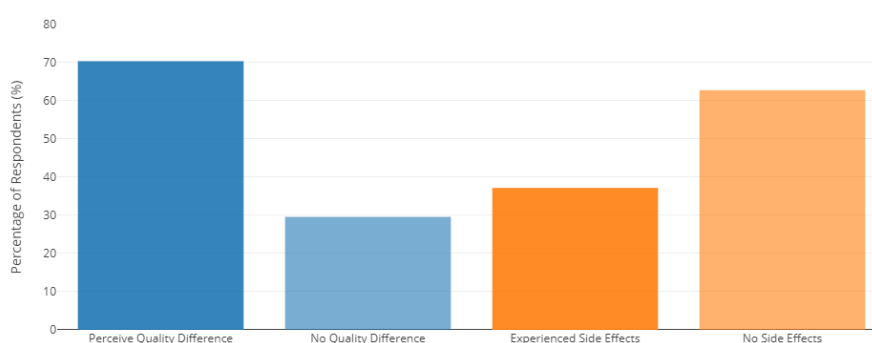


Figure 3: Consumer perceptions regarding quality differences between medicine types and reported side effects from generic medications.

3.4. Brand Loyalty and Satisfaction

Data regarding brand loyalty and satisfaction with branded medicines are presented in Table 4. Consumer attention to pharmaceutical advertising showed a nearly even split, with 53.4% not paying attention to advertisements for branded medicines. Similarly, brand loyalty based on quality reputation was divided, with 49.8% reporting they tend to stick with particular brands due to perceived quality.

Regarding satisfaction with branded medicines, responses were distributed across "neutral" (35.6%), "very satisfied" (35.2%), and "somewhat satisfied" (28.5%), with minimal dissatisfaction reported. Safety emerged as the predominant factor (66.4%) contributing to satisfaction with branded medicines, followed by effectiveness (42.7%).

Table 4. Brand Loyalty and Satisfaction with Branded Medicines (N=252)

Variable	Category	Percentage (%)
Attention to Advertisements	Yes	46.6
	No	53.4
Brand Loyalty Due to Quality	Yes	49.8
	No	50.2

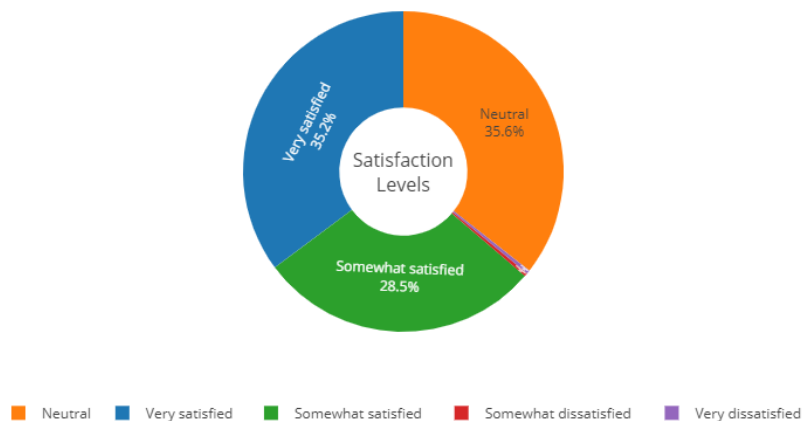


Figure 4. Satisfaction levels with branded medicines among survey respondents

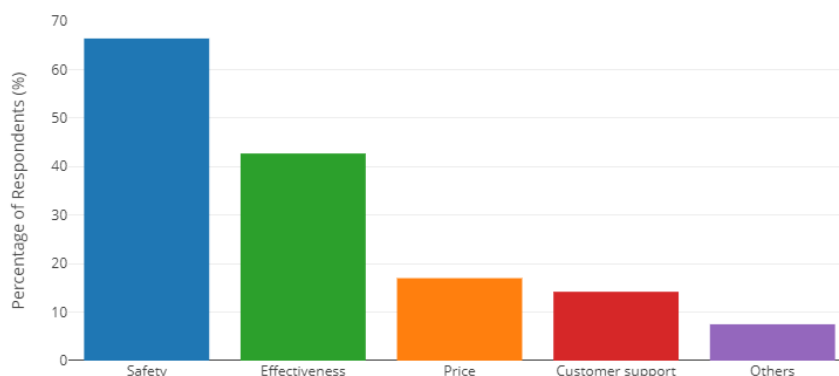


Figure 5. Factors contributing to satisfaction with branded medicines

3.5. Awareness about Pharmaceutical Regulations

Table 5 presents data on respondents' awareness of pharmaceutical regulations. A majority of participants reported awareness of regulations governing both generic (63.6%) and branded (62.1%) medicines, indicating reasonably informed consumer behavior in the pharmaceutical market [16].

Table 5. Awareness of Pharmaceutical Regulations (N=252)

Variable	Category	Percentage (%)
Aware of Generic Drug Regulations	Yes	63.6
	No	36.4
Aware of Branded Drug Regulations	Yes	62.1
	No	37.9

3.6. Hypothesis Testing

Five hypotheses were tested using one-tailed z-tests with a sample mean of 252 and significance level of 0.05. Table 6 summarizes the testing results, with all hypotheses accepted at 95% confidence level.

Table 6. Hypothesis Testing Results

Hypothesis	Test Description	Mean	SD Value	Z-Test Value	Result
H1	Awareness of branded medicine regulations	0.246	15.729	-0.046	Accepted
H2	Awareness of generic medicine regulations	0.252	15.728	-0.052	Accepted
H3	Switching from branded to generic medicines	0.246	15.729	-0.046	Accepted
H4(1)	Generic medicines as effective as branded	0.130	11.431	-0.144	Accepted
H4(2)	Generic medicines as safe as branded	0.161	12.734	-0.085	Accepted
H5	Perceived quality differences between medicine types	0.279	16.747	-0.091	Accepted

4. Discussion

This study provides important information about consumer preferences and perceptions regarding generic and branded medicines in Bhimavaram Town. The findings show the dynamics influencing medication choices and highlight several key areas for consideration by healthcare policymakers, pharmaceutical companies, and healthcare providers.

4.1. Influence on Medicine Choices

The predominance of younger, educated respondents (93.3% aged 18-30 years; 97.3% with undergraduate or graduate education) suggests that the findings primarily reflect the perceptions of a relatively young, educated demographic. This demographic profile is significant as education level has been identified in previous research as a determinant of medicine preferences and health literacy [10]. The gender distribution, with female respondents comprising 64.8% of the sample, may also influence the results, as women often play a central role in healthcare decision-making for themselves and family members [11].

4.2. Information Sources and Their Impact

The strong influence of healthcare professionals on medication choices, with 71.5% of respondents citing doctors or pharmacists as their primary information source, aligns with findings from other studies highlighting the crucial role of healthcare providers in shaping patient perceptions [12]. The limited impact of online resources (6.3%) contrasts with global trends showing increasing reliance on internet-based health information [13]. This suggests potential opportunities for developing targeted digital information campaigns in this region to improve health literacy regarding generic medicines.

4.3. Preferences and Perceptions

The clear preference for branded medicines (66.4%) over generic alternatives (33.6%) reflects persistent concerns about generic medication quality, despite bioequivalence requirements. Safety (40.7%) and effectiveness (32.8%) emerged as primary concerns, consistent with previous studies identifying these factors as key determinants of medicine choices [14]. The perception that branded medicines offer superior safety profiles represents a significant barrier to generic medicine acceptance.

While 62.1% of respondents reported having switched from branded to generic medications at some point, the frequency of generic purchases remains relatively low, with only 15.4% consistently choosing generics. This discrepancy suggests that while consumers may try generic alternatives, sustained preference for these products remains limited, possibly due to the quality concerns expressed by 70.4% of participants who perceived differences between medicine types. The specific quality differences identified by respondents—primarily effectiveness (54.5%) and concerns about adverse reactions (26.5%)—highlight areas where targeted educational interventions could address misconceptions. Previous research has found that proper education about bioequivalence standards can significantly improve willingness to use generic medicines [15].

4.4. Brand Loyalty and Satisfaction

The almost even split regarding pharmaceutical advertising attention (46.6% yes, 53.4% no) and brand loyalty (49.8% yes, 50.2% no) indicates a consumer base that is somewhat divided in its relationship with pharmaceutical branding. This presents both challenges and opportunities for increasing generic medicine acceptance. The relatively high satisfaction levels with branded medicines (35.2% very satisfied, 28.5% somewhat satisfied) create a baseline expectation that generic alternatives must meet to gain consumer confidence. Safety emerged as the predominant factor (66.4%) contributing to satisfaction with branded medicines, reinforcing the importance of addressing safety perceptions in generic medicine promotion strategies.

4.5. Effect of Pharmaceutical regulations

The moderately high level of awareness regarding pharmaceutical regulations (63.6% for generics, 62.1% for branded medicines) suggests a reasonably informed consumer base. This awareness provides a foundation upon which educational efforts can build to increase understanding of the rigorous approval standards for generic medicines. Previous studies have demonstrated that enhanced awareness of regulatory standards correlates with greater willingness to accept generic alternatives [16]. The acceptance of all tested hypotheses confirms key findings regarding consumer awareness, switching behavior, and perceived differences between medicine types. Of particular interest is the acceptance of hypotheses H4(1) and H4(2), which validate that consumers generally recognize generic medicines as being as effective and safe as branded alternatives, despite the preference many still express for branded products. This cognitive dissonance could be addressed through targeted educational interventions.

4.6. Limitations

Several limitations should be acknowledged when interpreting these findings. The geographic scope was limited to Bhimavaram Town, potentially restricting generalizability to other regions. The sample's demographic composition, with a predominance of younger, educated respondents, may not fully represent the perceptions of older or less educated populations. Additionally, the study relied on self-reported data, which may be subject to recall bias or social desirability effects

5. Conclusion

This research work provides valuable information about consumer preferences and perceptions regarding generic and branded medicines in Bhimavaram Town. Despite awareness of generic medicines and regulatory familiarity, a significant preference for branded products persists, primarily driven by safety and effectiveness concerns. While many consumers have experimented with generic alternatives, sustained preference remains limited by quality perceptions that favor branded products. The findings highlight several opportunities for improving generic medicine acceptance. Educational interventions should focus on addressing misconceptions about quality differences, particularly regarding effectiveness and safety profiles. Healthcare professionals, identified as the primary information source for medication choices, could play a pivotal role in promoting evidence-based understanding of generic bioequivalence. Policy initiatives that improve consumer confidence in generic medicines could potentially reduce healthcare expenditure while maintaining treatment quality and accessibility. Pharmaceutical companies marketing generic products should address consumer concerns about quality through transparent communication about manufacturing standards and bioequivalence data.

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Author's Short Biography

Mrs. Lakshmi Tulasi D. D

Mrs. Lakshmi Tulasi is currently working as an Assistant Professor in the Department of Regulatory Affairs at K.G.R.L College of Pharmacy, Bhimavaram, Andhra Pradesh. With a Master's degree in Regulatory Affairs along with MBA, she is dedicated to preparing students for careers in pharmaceutical development. Her teaching philosophy emphasizes practical, industry-relevant knowledge and hands-on learning experiences. She actively fosters industry connections through student projects and facility visits, helping bridge the gap between academic theory and industrial application.

**Mr. Rehman Sk**

Rehman Sk is a final-year Bachelor of Pharmacy student at K.G.R.L College of Pharmacy. He has developed a strong foundation in pharmaceutical sciences throughout his academic journey, with particular enthusiasm for pharmaceutical technology and regulatory affairs. His keen interest in pharmaceutical research shows his commitment to advancing his knowledge in these specialized areas.

**Miss Pramila Ch**

Miss Pramila Ch is a final-year undergraduate pharmacy student at KGRL College of Pharmacy with a keen interest in pharmaceutical research and drug development. Her academic focus includes drug regulatory affairs and pharmacology. She has participated in several research projects under faculty supervision.

**Miss Niraja G**

Miss Niraja G is a dedicated pharmacy student at K.G.R.L College of Pharmacy, Bhimavaram, where she is pursuing her Bachelor of Pharmacy degree. She has shown particular enthusiasm for drug regulatory affairs and pharmacy practice throughout her studies. Working closely with faculty members, she actively participates in research projects and lab work. Her strong academic performance and involvement in college activities showcase her genuine passion for learning.

**Miss Swathi Priya J**

Miss Swathi Priya J is a final-year B.Pharm student at K.G.R.L College of Pharmacy with a strong foundation in pharmaceutical regulatory affairs. She has demonstrated exceptional interest in pharmaceutical research, particularly in pharmaceutical regulatory affairs. Her hands-on research experience includes multiple faculty-guided projects, where she has developed strong analytical and technical skills in drug development processes.

**Miss Vineela M**

Miss Vineela M is an undergraduate pharmacy student at KGRL College of Pharmacy with a focus on regulatory affairs and drug development. She has participated in several conferences, seminars and has strong laboratory skills. Her academic interests include pharmacy practice and drug development.

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Dr. Raghava D serves as the Principal of K.G.R.L. College of Pharmacy in Bhimavaram, India. An accomplished pharmacy professional, he holds a Ph.D. and Master's degree in Pharmaceutical Organic Chemistry. With 15 years of combined experience in pharmaceutical industry and academic teaching, he brings valuable expertise to his leadership role. His diverse background spans both educational and industrial sectors of pharmacy, enriching the institution's academic environment.

**Dr. Nageswara Rao K**

Dr. Nageswara Rao Kavala, *M.Pharm., Ph.D* from Andhra University having 22 years of experience in Pharma Industry in India. He worked as a Community Pharmacist in abroad for 9 years, kingdom of Saudi Arabia and 17 years of teaching in Bhimavaram. He served in various capacities of many reputed multinational companies like Rallis India Ltd., Raptakos, Brette & Co. Ltd., Mumbai

