



Exploring Physicians' Awareness, Beliefs, Barriers, and Practices in the Use of Generic Medicines

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Abstract:

This study explores the knowledge, attitudes, beliefs, and prescribing practices of Registered Medical Practitioners (RMPs) in Bilaspur city concerning generic medicines. Using a cross-sectional Knowledge, Attitude, and Practice (KAP) survey model, data were collected from 100 RMPs across government and private sectors to identify factors influencing generic prescribing patterns. The survey results revealed that positive perceptions of generics, such as efficacy and equivalency with branded drugs, were associated with higher prescribing rates. However, barriers such as limited availability of generics and concerns about quality standards were identified, along with influences from peer suggestions, patient socio-economic status, and interactions with pharmaceutical companies. The study concludes that while most RMPs recognize the cost-effectiveness of generics, misconceptions and practical constraints still impact their adoption. Addressing these barriers through targeted education and policy support may enhance the acceptance and prescription of generic medicines.

Keywords: Generic medicines, RMPs, prescribing practices, awareness, healthcare costs, barriers to generics, KAP survey.

Introduction:

Generic medicines play a vital role in modern healthcare by offering cost-effective alternatives to brand-name drugs, making essential treatments more accessible to a wider population. Despite their efficacy and safety, which are typically on par with branded medications, the adoption of generics in clinical practice can be influenced by various factors. Physicians' beliefs about efficacy, safety, and quality, alongside awareness levels, can significantly shape their prescribing habits and perceptions of generic medicines.

In India, the cost of branded medicines is, on average, approximately 2.6 times higher than that of their generic counterparts [1]. In some regions, this price difference can exceed a tenfold increase. With the rising costs of healthcare, compounded by limited insurance coverage (with less than 17% of the population insured), high out-of-pocket (OOP) expenses for medical treatment push nearly a quarter of India's population into poverty [2,3]. Drug costs alone account for approximately 80% of the total OOP healthcare expenditure in India [4]. In response, the public sector generally procures unbranded generic medicines to make essential treatments more accessible; however, surveys highlight poor availability of these medicines in public healthcare facilities. Consequently, low-income patients often face the burden of purchasing

expensive branded medicines from the private sector or forgoing treatment altogether [5,6].

The influence of aggressive branding and marketing also contributes to the higher price of branded medicines. Studies reveal that interactions with medical representatives can affect physicians' prescribing patterns, sometimes creating cognitive dissonance among prescribers[7]. Unethical practices, such as incentives from pharmaceutical companies to healthcare providers, further drive up prescription rates for branded drugs, rendering essential medications unaffordable for many. Despite guidelines promoting generic prescriptions, most prescriptions continue to favor branded medicines, with doctors often citing concerns over the quality and efficacy of Indian-manufactured generics.

Despite government initiatives aimed at promoting generic medicine use, many Indian doctors remain hesitant, doubting their quality and efficacy [7]. This study employs a Knowledge, Attitude, and Practice (KAP) survey model to examine the beliefs, barriers, awareness, and actual prescribing practices of Registered Medical Practitioners (RMPs) in Bilaspur city regarding generic medicines [8-9]. By exploring these perspectives, this research seeks to identify actionable insights to encourage broader adoption of

generics in Indian healthcare, enhancing access and affordability for all.

Understanding the barriers to prescribing generics is essential for improving healthcare outcomes and ensuring equitable access to medications. Factors such as the availability of reliable information, patients' perceptions, and institutional policies can either facilitate or hinder the transition to generic medicines. This study aims to explore the beliefs, perceived barriers, level of awareness, and actual prescribing practices of doctors regarding generic medications, shedding light on the key factors that influence physicians' decisions and their role in promoting the widespread adoption of generics in healthcare.

Review Of Literature:

A study [10] in Maharashtra found that 67.1% of ASHA workers were uninformed about contraception methods and did not refer children with diarrhea. Despite training, significant information gaps remained regarding child morbidity and death. Study [11] evaluated the Janani Suraksha Yojana's implementation in rural and urban slums of Uttarakhand. The study found that 78.42% of women were registered with healthcare personnel, with the majority in urban slums. However, the adoption of JSY in rural regions was low, indicating the need for improved IEC activities and ASHA performance oversight. Study [12] by evaluates community participation in Ghana's CHPS initiative, highlighting the need for increased community involvement and resources for improved health programs. Study [13] performed an operational research study on maternal mortality resulting from puerperal sepsis in the Irepodun Local Government Area of Kwara State, Nigeria. The research employed 10 focus group discussions (FGDs) in two districts, collecting perspectives from customers, providers, and community decision-makers.

The research highlighted the pressing necessity for three essential measures to enhance maternity care: community health education, establishment of healthcare facilities, and community involvement in delivering supplementary services, including transportation. Study [14] underscored the importance of formulating strategies that affect staff motivation to deliver high-quality health care services. Their research shown that although financial incentives are essential, they are inadequate by themselves to improve employee performance. To enhance staff motivation, it is crucial to prioritize rewards that convey appreciation and respect. This can be accomplished by performance management strategies including supervision, training, performance evaluation, career development, and community feedback. Study [15] emphasized that service quality in the hospital sector is essential for

securing a sustainable competitive edge and preserving consumer confidence. Service quality is regarded as a crucial principle in the hospitality sector. [16] studied the decrease in childhood stunting in Chhattisgarh, India, from 2006 to 2016, revealing that factors such as improved health and nutrition services, household resources, and sanitation contributed to 66% of the decrease. The study highlighted the importance of a unified vision, political stability, effective bureaucracy, state-level innovations, and community involvement. Study [17] conducted in Aurangabad District, Maharashtra, involving 659 female respondents and 26 Accredited Social Health Activists, found a significant correlation between prenatal care promotion and delivery location. Hospital deliveries increased among those attending frequent check-ups. No significant annual disparity existed between home and hospital deliveries in villages lacking ASHAs compared to those with ASHAs. However, a rising trend in hospital deliveries was noted from 2007 to 2012. The study recommends increasing ASHAs' knowledge and awareness through training programs on ANC, postnatal care, newborn care, local food, and emergency referral.

Study [18] developed a rubric using the Plan, Do, Check, Act cycle to rank measures for enhancing healthcare access in rural areas. The rubric was used by the Robert Wood Johnson Foundation and a rural community Access to Care Workgroup. The study concluded the need for consistent plan outline and stakeholder engagement. [19] examines the application of behavioral economics principles to comprehend and affect patient behavior. Factors influencing patient decision-making, including cognitive biases and social effects, are examined. [20] indicated that the Australian Government executed many measures to enhance the accessibility of health care for the community. This encompasses delivering local services, facilitating transportation to healthcare facilities, ensuring appointment flexibility, integrating home visits into a comprehensive engagement strategy, augmenting services that do not necessitate co-payment, and enhancing access to private health insurance and services.

Research Methodology

A cross-sectional Knowledge, Attitude, and Practice (KAP) survey was conducted using a 26-item questionnaire to investigate the beliefs, barriers, awareness, and practices of Registered Medical Practitioners (RMPs) regarding generic medicines. The survey targeted 100 RMPs practicing allopathic or integrated medicine in Bilaspur city, evenly split between the government (50) and private sectors (50), selected randomly. Data collection involved in-person visits to each practitioner.

Initially, 130 RMPs responded to the questionnaire; however, 30 responses were excluded due to incomplete information, resulting in a final sample of 100 responses. The questionnaire consisted of three sections: (1) six items capturing demographic information of the RMPs, (2) eight items assessing knowledge and awareness of generic medicines, and (3) twelve items five point Likert-scale statements exploring beliefs and barriers regarding prescribing generic medicines. Reliability analysis showed a Cronbach's alpha coefficient of 0.722 for the third section, indicating acceptable internal consistency.

Data were entered and organized using Microsoft Excel, and analysis was performed in GraphPad Prism. Fisher's exact test was applied to identify significant associations between variables, with a significance level set at $p < 0.05$ and a 95% confidence interval.

Objective

- 1 To explore doctors' knowledge and awareness related to generic medicines.
- 2 To assess doctors' attitudes and beliefs toward the use of generic medicines.
- 3 To identify the barriers that prevent doctors from prescribing generic medicines and the factors influencing these challenges.

Data Analysis And Interpretation

Table 1: Demographic characteristics of participants and its influence over generic prescribing

Characteristics	No. of RMPs (%)	Actively prescribing generic medicines?		P-Value
		Yes (%)	No (%)	
Total participants	100	(46%)	(54%)	
Institution of practice				
Government	(43%)	(60%)	(40%)	0.004*
Private	(57%)	(35%)	37 (65%)	
Gender				
Male	(78%)	(46%)	(54%)	1.013
Female	(22%)	(45%)	(55%)	
Age (years)				
≤30	(36%)	(47%)	(53%)	0.234
31-40	(38%)	(47%)	(53%)	
41-50	(15%)	(33%)	(67%)	
>50	(12%)	(58%)	(42%)	
Years in practice				
≤10	(69%)	(46%)	(54%)	0.678
11-20	(17%)	(41%)	(59%)	
21-30	(9%)	(56%)	(44%)	
>30	(5%)	(50%)	(50%)	
Education				
MBBS ± PG ± Super speciality	(83%)	(47%)	(53%)	0.245
BDS ± PG	(5%)	(27%)	(73%)	
BAMS ± PG	(8%)	(50%)	(50%)	
BHMS ± PG	(4%)	(25%)	(75%)	

1. Institution of Practice

Government RMPs (43%): A majority (60%) actively prescribe generic medicines, compared to 40% who do not. This suggests that government-employed RMPs are more inclined toward prescribing generics, possibly due to policy encouragement or resource limitations. The p-value (0.004) indicates a statistically significant difference in prescribing habits between government and private practitioners.

Private RMPs (57%): Only 35% of RMPs in the private sector prescribe generics, while 65% do not. This trend may reflect a greater influence of branded drug promotions in private practice settings.

2. Gender

Male RMPs (78%): The proportion of male RMPs who prescribe generics is nearly balanced, with 46% prescribing generics and 54% not. The p-value (1.013) suggests no statistically significant difference in prescribing behavior based on gender.

Female RMPs (22%): Similarly, 45% of female RMPs prescribe generics, while 55% do not. Gender does not appear to significantly influence the likelihood of prescribing generics among the RMPs.

3. Age

≤30 years (36%): Among younger RMPs, 47% prescribe generics, while 53% do not. The p-value (0.234) indicates that age does not significantly influence generic prescribing within this group.

31-40 years (38%): Similarly, 47% in this age group prescribe generics, suggesting moderate adoption of generics as they gain experience.

41-50 years (15%): Only 33% of RMPs in this age group prescribe generics, while 67% do not, suggesting a possible preference for branded drugs among this group.

>50 years (12%): RMPs over 50 show a higher tendency toward prescribing generics, with 58% in this category doing so. Experience and exposure to healthcare policies favoring generics may contribute to this trend.

4. Years in Practice

≤10 years (69%): Newer RMPs have a balanced view, with 46% prescribing generics and 54% not, showing a mixed attitude among less experienced practitioners.

11-20 years (17%): Only 41% of mid-career RMPs prescribe generics, possibly due to established habits and preferences toward branded medications.

21-30 years (9%): RMPs with 21-30 years of experience are more inclined toward generics, with 56% prescribing them, suggesting that greater

exposure over time may increase acceptance of generics.

>30 years (5%): Experienced RMPs tend to prescribe generics (50%), indicating a balanced approach among those with long-term practice experience.

5. Education

MBBS ± PG ± Super Speciality (83%): Among the most qualified group, 47% prescribe generics, while 53% do not. The p-value (0.245) indicates that educational level does not significantly impact generic prescribing.

BDS ± PG (5%): Only 27% of dental RMPs (BDS ± PG) prescribe generics, suggesting that dental professionals may have limited inclination toward generics.

BAMS ± PG (8%): Half of the practitioners with an Ayurvedic background (BAMS ± PG) prescribe generics, showing an openness to generic medicines.

BHMS ± PG (4%): Among homeopathic practitioners, only 25% prescribe generics, indicating a relatively low preference for generics in this category.

Table 2: Influence of RMPs knowledge and beliefs regarding generics over practice of generic prescribing.

Variable	Actively Prescribing Medicines?	Generic		P Value
	Yes n (%)	No n (%)		
Perception regarding generic medicines?				
Duplicate/Substandard/Lower therapeutic efficacy	16 (19.3%)	67 (80.7%)		0.003*
As efficient as branded medicines	55 (60.3%)	36 (39.7%)		
Knowledge of laws and regulations?				
Yes	34 (54.8%)	28 (45.2%)		0.007*
No	29 (37%)	49 (63%)		
Knowledge of availability of generics in locality?				
Yes	30 (54.5%)	25 (45.5%)		0.024*
No	22 (37.7%)	36 (62.3%)		
Prefer generics for family or personal use?				
Yes	40 (65.8%)	21 (34.2%)		0.001*
No	18 (29.7%)	40 (70.3%)		

1. Perception Regarding Generic Medicines

"Duplicate/Substandard/Lower Therapeutic Efficacy": Only 19.3% of RMPs with this perception actively prescribe generics, while 80.7% do not. This indicates that those who view generics as inferior are far less likely to prescribe them, with a significant p-value (0.003) suggesting a strong correlation between negative perceptions and lower prescription rates.

"As Efficient as Branded Medicines": Among RMPs who believe that generics are as efficient as branded medicines, 60.3% actively prescribe generics, compared to 39.7% who do not. This shows a positive association between favorable perceptions of generics and prescribing behavior.

2. Knowledge of Laws and Regulations

Yes: RMPs with knowledge of laws and regulations regarding generics are more likely to prescribe

them, with 54.8% doing so compared to 45.2% who do not. The p-value (0.007) indicates a statistically significant link, suggesting that familiarity with relevant regulations may encourage the prescribing of generics.

No: Only 37% of RMPs without this knowledge prescribe generics, while 63% do not, highlighting that a lack of regulatory knowledge is associated with lower generic prescribing rates.

3. Knowledge of Availability of Generics in Locality

Yes: RMPs aware of generic availability in their area are more inclined to prescribe them, with 54.5% actively doing so. This suggests that awareness of availability plays a positive role in influencing RMPs' prescribing practices, with a significant p-value (0.024).

No: Among those unaware of generics in the locality, only 37.7% prescribe them, while 62.3% do not, indicating that unawareness of local availability may be a barrier to prescribing.

4. Preference for Generics for Family or Personal Use

Yes: RMPs who prefer generics for their family or personal use are much more likely to prescribe them, with 65.8% actively doing so, compared to

34.2% who do not. This shows a strong association between personal endorsement of generics and prescribing behavior, as indicated by a highly significant p-value (0.001).

No: Only 29.7% of RMPs who do not prefer generics personally prescribe them, while 70.3% do not, underscoring that personal preference for generics may heavily influence prescribing patterns.

Table 3: RMPs perceptions regarding generic medicines (response over Likert scaling).

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Generic medicines have same active contents and in equal amounts to its branded counterparts.	28 (28.2%)	40 (40.2%)	15 (14.9%)	15 (15.4%)	1 (1.3%)
2. Manufacturing procedure and FDA standards of generic drugs are equivalent to its branded counterparts.	20 (20.5%)	39 (38.5%)	23 (23.1%)	16 (16.2%)	1 (1.7%)
3. Generic medicines are within standards of bioequivalence to its branded counterparts.	18 (18.4%)	38 (38%)	26 (26.1%)	15 (15.4%)	1 (2.1%)
4. Generic medicines have same efficacy as their branded counterparts.	16 (16.2%)	38 (38%)	24 (24%)	18 (18.4%)	3 (3.4%)
5. Generic medicines produce more side effects.	2 (1.7%)	7 (6.8%)	26 (26.1%)	49 (49.2%)	16 (16.2%)
6. It is preferable to use generics for my family or personal use.	11 (10.7%)	37 (36.7%)	23 (23.1%)	17 (17.1%)	12 (12.4%)

RMPs' Perceptions Regarding Generic Medicines

- "Generic medicines have the same active contents and in equal amounts as their branded counterparts."** A significant portion (40.2%) of RMPs agree, and 28.2% strongly agree, indicating a majority perceive generics as equivalent in active ingredients. Only a small fraction (1.3%) strongly disagrees, suggesting most RMPs trust the content quality of generics.
- "Manufacturing procedure and FDA standards of generic drugs are equivalent to branded counterparts."** While 38.5% agree and 20.5% strongly agree, indicating confidence in manufacturing standards, 16.2% disagree. The high percentage of neutral responses (23.1%) suggests that some RMPs may not be fully aware of or confident in the regulatory standards for generics.
- "Generic medicines meet bioequivalence standards compared to branded drugs."** About 38% agree and 18.4% strongly agree, showing that most RMPs trust generics' bioequivalence to branded drugs. However, 26.1% are neutral, possibly due to a lack of

clear understanding about bioequivalence standards.

- "Generic medicines have the same efficacy as branded counterparts."** Around 38% agree and 16.2% strongly agree, but 18.4% disagree, reflecting a division in perceptions regarding efficacy. This perception gap may stem from varying clinical experiences or exposure to efficacy studies of generics.
- "Generic medicines produce more side effects."** Most RMPs disagree (49.2%) or strongly disagree (16.2%) with this statement, suggesting that the majority do not perceive generics as causing more side effects. A low percentage (1.7%) strongly agree, indicating that concerns about side effects are minimal among RMPs.
- "It is preferable to use generics for my family or personal use."** While 36.7% agree, 10.7% strongly agree, and 23.1% remain neutral, a notable portion (12.4%) strongly disagree. This mixed response indicates that some RMPs may still have reservations about using generics personally, despite their professional endorsement.

Table 4: Factors influencing prescribing patterns of RMPs (response over Likert scaling).

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Unavailability of generic medicines influences my prescribing pattern.	12 (12.4%)	38 (37.6%)	24 (24.4%)	21 (20.5%)	5 (5.1%)
2. Practice and suggestions of my seniors and colleagues influence my prescribing	5 (5.1%)	36 (36.3%)	20 (20.5%)	27 (27.8%)	10 (10.3%)

pattern.					
3. Advertisements by pharmaceutical companies influence my prescribing pattern.	6 (5.5%)	22 (22.2%)	18 (18.4%)	35 (35.5%)	18 (18.4%)
4. Bonuses/gifts offered by pharmaceutical companies influence my prescribing patterns.	3 (3.4%)	8 (7.7%)	13 (13.2%)	39 (38.9%)	37 (36.8%)
5. Patient socio-economic factor influence my prescribing pattern.	24 (23.6%)	50 (50.4%)	9 (9.4%)	10 (9.8%)	7 (6.8%)
6. Pharmacists tend to replace prescriptions for profit-making.	22 (22.2%)	41 (41%)	14 (14.1%)	16 (16.3%)	6 (6.4%)

Factors Influencing Prescribing Patterns of RMPs

- "Unavailability of generic medicines influences my prescribing pattern."** The majority agree (37.6%) or strongly agree (12.4%), suggesting that access issues significantly impact prescribing behavior. Unavailability can be a practical barrier, making branded drugs more likely to be prescribed when generics are not easily accessible.
- "Practice and suggestions of my seniors and colleagues influence my prescribing pattern."** A large percentage (36.3%) agree, while only 5.1% strongly agree. This suggests that while peer influence exists, it is not overwhelmingly strong. However, the substantial neutral response (20.5%) implies that some RMPs may be less impacted by peer opinions in their prescribing choices.
- "Advertisements by pharmaceutical companies influence my prescribing pattern."** Only 22.2% agree or strongly agree, while a considerable 35.5% disagree, and 18.4% strongly disagree. This indicates that advertisements have minimal impact on RMPs' choices, suggesting a professional resistance to marketing influence.
- "Bonuses/gifts offered by pharmaceutical companies influence my prescribing patterns."** A majority disagree (38.9%) or strongly disagree (36.8%), indicating that financial incentives do not significantly sway RMPs' prescribing decisions. Only 7.7% agree, which suggests a strong ethical stance against prescribing based on incentives.
- "Patient socio-economic factor influences my prescribing pattern."** Most RMPs agree (50.4%) or strongly agree (23.6%), indicating that patients' economic backgrounds play a crucial role in whether generics or branded medicines are prescribed. This suggests a strong consideration of affordability in RMPs' decisions.
- "Pharmacists tend to replace prescriptions for profit-making."** A significant portion (41% agree, 22.2% strongly agree) believe pharmacists may replace prescribed medicines,

likely due to profit motives. This could impact the RMPs' confidence in prescribing generics if they feel substitutions might be made without their knowledge.

Conclusion:

The findings indicate that while RMPs generally acknowledge the benefits of generic medicines, several factors influence their prescribing practices. Positive perceptions of generic drugs' efficacy and bioequivalence support higher prescribing rates, especially among government-employed RMPs. However, barriers such as limited availability, concerns about manufacturing standards, and peer influence contribute to reluctance among some practitioners. Additionally, patient socio-economic status significantly impacts prescription decisions, as RMPs consider affordability crucial. The limited influence of pharmaceutical advertisements and incentives reflects a professional stance against external pressures, highlighting an ethical commitment to patient care. Overcoming misconceptions and logistical challenges through increased awareness, policy reinforcement, and availability of generics in both public and private sectors could further facilitate the adoption of generic medicines.

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