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Understanding and Prescribing Preference of Generic Medicines Among Doctors in Odisha

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Abstract

This study aimed to assess the knowledge, perceptions, and prescribing preferences of doctors in Odisha regarding generic medicines and locally manufactured pharmaceutical products. A cross-sectional survey was conducted among 96 physicians selected through convenient sampling from four government hospitals in Odisha. Data were collected using a structured self-administered questionnaire and analyzed using Fisher's Exact Test to examine the association between demographic variables and physicians' perceptions toward generic medicines. The findings revealed inadequate awareness among physicians regarding the therapeutic equivalence, safety, and regulatory standards of generic medicines. Only a limited proportion of respondents recognized that generic medicines are clinically equivalent to branded drugs and comply with the same quality and safety requirements. Negative perceptions were also observed, with many physicians believing that generic medicines are of inferior quality and associated with greater side effects compared to branded medicines. Despite these concerns, a majority of doctors expressed willingness to prescribe affordable medicines to reduce the financial burden on patients. However, many physicians remained reluctant toward pharmacist substitution of branded prescriptions with generic alternatives. The study concludes that misconceptions and limited awareness continue to influence prescribing behavior among doctors in Odisha. Strengthening educational initiatives, professional training, and awareness programs may improve physicians' confidence in generic medicines and promote their wider acceptance in healthcare practice.

Keywords: *Generic Medicines, Perceptions, Attitude, Knowledge, Physicians*

I. Introduction

The rising cost of healthcare has become a major concern across the world, particularly in developing countries such as India. One of the major contributors to increasing healthcare expenditure is the high cost of medicines. Pharmaceutical expenses account for a large portion of overall healthcare spending, making medicines unaffordable for many people belonging to economically weaker sections of society. In India, where a significant percentage of the population lives below the poverty line and lacks health insurance coverage, access to affordable medicines remains a major challenge. More than seventy percent of the Indian population lives in rural areas where healthcare facilities are limited. Patients often pay for medical consultation and medicines directly from their own income. Due to financial difficulties, many people avoid treatment or depend on unqualified practitioners. The cost of branded medicines in India is comparatively high, making healthcare inaccessible to a large section of society. Therefore, affordable alternatives are necessary to reduce the economic burden on patients.

Generic medicines have emerged as an important solution for reducing healthcare costs while ensuring effective treatment. Generic drugs contain the same active ingredients, dosage form, strength, and therapeutic effects as branded medicines. However, they are sold at much lower prices because manufacturers of generic medicines do not spend heavily on research, development, and marketing activities. As a result, generic medicines are significantly cheaper than branded medicines. The Government of India has taken several initiatives to promote the use of generic medicines. The Department of Pharmaceuticals and the Ministry of Chemicals and Fertilizers introduced the Jan Aushadhi scheme to provide quality medicines at affordable prices. Jan Aushadhi stores have been established across different parts of the country to improve accessibility to low-cost medicines. The government has also encouraged doctors to

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prescribe medicines using generic names instead of brand names. Despite these efforts, the utilization of generic medicines in India remains limited. One of the major reasons is the perception and attitude of doctors towards generic drugs. Many doctors believe that generic medicines are less effective, less reliable, and inferior in quality compared to branded medicines. Concerns regarding manufacturing standards, bioequivalence, and safety have also contributed to the negative perception of generic drugs among healthcare professionals.

Doctors play a very important role in influencing patients' medicine choices. Their prescribing practices directly affect the acceptance and utilization of generic medicines. Therefore, understanding doctors' awareness, perceptions, and attitudes toward generic medicines is essential for improving healthcare affordability. The present study was conducted to assess the understanding, perception, and attitude of doctors regarding generic medicines in Odisha. The study also examines whether factors such as gender and years of professional experience influence doctors' opinions regarding generic drugs.

II. Review of Literature

Generic medicines are defined by the Food and Drug Administration (FDA) as medicines that are bioequivalent to branded medicines in dosage form, strength, route of administration, quality, safety, and therapeutic effectiveness. Generic drugs become available after the patent protection of branded medicines expires. They contain the same active ingredients and are expected to produce the same clinical outcomes.

Several researchers have highlighted the economic benefits of generic medicines. Studies have shown that generic medicines are usually 30–60% cheaper than branded medicines. The lower cost of generic drugs helps patients maintain better adherence to treatment because medicines become more affordable. Research conducted in different countries has demonstrated that increasing the use of generic medicines can significantly reduce national healthcare expenditure. Generic prescribing is therefore encouraged by governments and healthcare organizations around the world.

However, despite the advantages of generic medicines, many doctors continue to possess negative attitudes towards them. Previous studies have revealed that doctors often doubt the quality, safety, and efficacy of generic medicines. Some physicians believe that generic medicines produce more adverse effects and do not comply with Good Manufacturing Practice (GMP) standards.

Studies conducted in the United Kingdom reported resistance among physicians regarding the substitution of branded medicines with generic alternatives. Similar findings were observed in studies conducted in Pakistan, Nigeria, and Iraq. In many developing countries, physicians continue to prefer branded medicines due to concerns regarding quality control and patient satisfaction. In India, doctors play a major role in medicine prescribing because patients generally rely on physicians' recommendations. In Odisha, where many patients belong to lower socioeconomic groups and pay for medicines directly from their own income, affordable medicines are extremely important. Previous studies have also shown that younger doctors tend to have more favorable attitudes toward generic medicines compared to older doctors. Younger practitioners are often more exposed to recent educational reforms and awareness programs promoting generic medicines.

Although several studies have been conducted in different parts of the world, limited research is available regarding doctors' understanding and attitudes toward generic medicines in Odisha. Therefore, the present study aims to bridge this gap by objectively examining doctors' perceptions, awareness, and prescribing practices related to generic medicines.

III. MATERIALS AND METHODS

(a) Methodology and setups: This study is a cross-sectional investigation that was carried out over the course of five months, from June to December 2025. The convenience samples were collected from the following five public hospitals in Odisha and its surrounding areas: Puri Hospital, Cuttack City Hospital, District Headquarters Hospital, and Jaipur Hospital. These hospitals are considered to be the key hospitals in the region because they are located

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on all of its borders.

(b) Participants: It was possible to take into account participation from any type of specialist physician working in either a public or a private hospital or clinic who was willing to assist with the study. The doctors who operate in private clinics were selected for this study because compared to public (governmental) sector physicians, they have greater latitude and alternatives when it comes to prescribing medication. In the course of the study, participants agreed to take part if they were daytime physicians of any subspecialty who ran a private clinic. After receiving permission from the attending physicians, a set of self-prepared survey questions was distributed and filled out by everyone.

(c) Survey: In this part of the study, we made use of the questionnaire that was included in the Jamshed et al, 2012 research (Jamshed et al., 2012). As a direct consequence of this, the study questions have been validated in the past. The questionnaire has five distinct sections all together. In the first part of the report, information was provided on the socio-demographics of the participating doctors. The following section had a total of twelve claims. These addressed the physicians' awareness of the substitutability, security, reliability, and efficiency of generic pharmaceuticals. The latter part of the article consisted of fourteen claims that discussed the views of medical professionals on the usefulness, trustworthiness, and safety of generic pharmaceuticals. In part 4, there were twelve questions that evaluated doctors' perspectives on the distribution of generic medications, taking into account the patient's living levels, wishes, and the effect of health workers. Interview questions that are limited to yes or no are common in the academic world. Perceptual and perceptual domains each have their own sets of questionnaire items based on the Likert scale, with 1 representing disagreement, 2 representing neutrality, and 3 representing agreement (Jamshed et al., 2012).

(d) Numerical inquiry - Descriptive statistics on the participants, including percentages, frequencies, standard deviations, and means, were generated for the research. On the one hand, the Fisher's Exact test was used to evaluate the association between the number of years of work experience a doctor has and their gender, and on the other hand, the elements of awareness and comprehension. In every instance, the responses to research questions were "yes," "no," and "I don't know." According to a previous research that was carried out in the Netherlands, replies such as "I don't know" were found to be unsuitable (Ellen et al., 2018). A Likert scale of three points was used to rate the respondents' awareness and mentality towards the topic (agree, neutral, disagree). A p-value of 0.05, which is considered to be quite acceptable, was utilized.

IV. RESULTS AND DISCUSSION

This research included a maximum of 96 doctors (52 men and 44 women). Doctors ranged in age from 30 to 60 years old, with a mean of 38.6 ± 5.2 years. Table 1 shows the characteristics and occupational profiles of the involved doctors.

Table 1: The Doctor's professional characters and demographic profile

Item	Subcategory	Frequency (N)	%
Credential	GP	22	22.8
	Consultant	8	11.4
	Specialist	66	66.09
Experience Years	> 10	42	43.69
	05-Dec	36	37.45
	01-Jul	18	18.88
Specialty	General Practitioner	22	22.89
	Cardiologist	29	30.15
	Dermatologist	1	1.08
	Gastroenterologist	6	6.18
	Gynecologist	8	8.23
	Internal Medicine	26	16.42
	Pediatrician	4	22.23
Gender	Female	44	45.76

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		Male	52	54.15
Item	**Std. Deviation**	**Mean**	**Minimum**	**Maximum**
Patients available in a day	5.9	9.6	4	38
Age	5.2	38.6	30	60
Visits of Medical representatives in a day	2.9	2.9	1	19

Whenever questioned about fundamental knowledge concerning generic pharmaceuticals, the number of participants responded erroneous responses to nine out of twelve items (Figure 1 and Table 2).

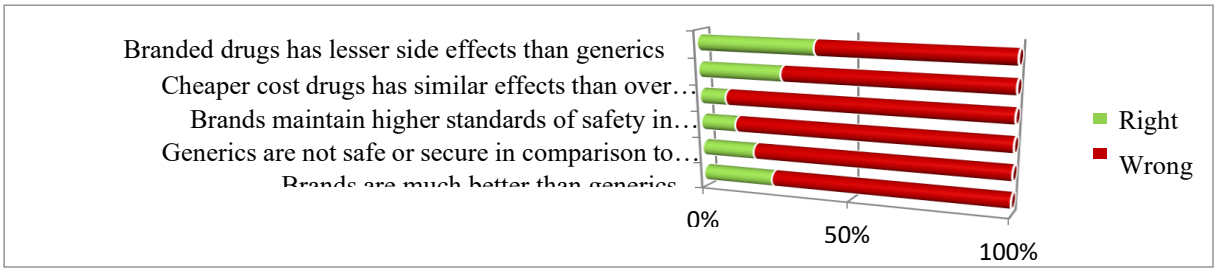

Figure 1: Chosen understanding elements with the highest percentage of wrong answers.

Branded are label medications; generics are generic medications.

Table 2: Doctor understands on Generic Medicines through Fisher's Exact test

		Response number and (%)				**(P-value)**	
	Understanding Factors	**Correct**		**Incorrect**		**Gender**	**Experience ⁑**
		No.	**%**	**No.**	**%**		
1	Generic drugs are taken to assist take the place of branded medicines.	3	29.17	**93**	**70.83**	0.516	0.166
2	Generic drugs produced by a reputable company have been proven to be risk-free. Both branded and generic medicines have been shown to be very effective.	22	22.92	**74**	**77.08**	0.716	0.401
3	The same dosage form must be used for both generic and brand-name medications.	17	17.71	**79**	**82.29**	0.117	0.112
4	It is generally accepted that branded pharmaceuticals are safer than their generic equivalents.	**57**	**59.38**	39	40.63	0.517	0.15
5	In opposed to generic drugs, branded pharmaceuticals are held to stricter quality control guidelines.	22	22.92	**74**	**77.08**	0.117	0.115
6	Generic versions of several medications can be found in Odisha's local markets.	6	6.25	**90**	**93.75**	0.617	**0.001***
7	Comparatively speaking, branded drugs are superior than their generic counterparts.	**81**	**84.38**	15	15.63	0.266	0.264
8	Medicines that are labelled and those that are generic can be interchanged.	9	9.38	**87**	**90.63**	0.771	0.446
9	After the patents on the innovator or original medications have run out, generic versions of those drugs are created.	**69**	**71.88**	27	28.13	0.672	0.255
10	In compared to branded medicines, generic drugs are associated with a greater risk of adverse effects.	39	40.63	**57**	**59.38**	0.672	0.16
11	Both branded and generic drugs are functionally equivalent in every major way.	31	32.29	**65**	**67.71**	0.66	**0.006***
12	Generic drugs are taken to assist take the place of branded medicines.	18	18.75	**78**	**81.25**	0.165	0.544

*The option set for Fisher's exact test was in No, Yes, I don't know where I don't know isaccepted as

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incorrect. With At 5 % significance level

‡ Experience: 3 groups: (>10), (6-10), (1-5)years

The test of Fisher's exact revealed any substantial variation (p-value > 0.05) in doctors' understanding (right vs wrong responses) based on gender (Table 2). The test of Fisher'sexact also assessed differences in medical understanding based on years of experience.Different expertise questions differed considerably among doctor years of experience. When dealing with young era doctors (with even less than five years of experience), the older era doctors gave considerably more inaccurate insights concerning brand name drugs meaning lower adverse events and satisfying greater security standards (Table 2).

Table 3 the doctor's perceptions towards generic medicines through Fisher's Exact test

		N (%)						(P-value)	
Perception Categories		**Disagree**	**%**	**Neutral**	**%**	**Agree**	**%**	**Experience ‡**	**Gender**
1	In comparison to branded medications, I feel that generic ones are of a worse quality. I also believe that many generic drugs sold in India do not adhere to the required minimum GMP requirements.	21	21.88%	18	18.75%	**57**	**59.37 %**	0.951	0.977
2	I attest that the quality of my references is highly valued by medical representatives. I agree that generic versions of branded drugs work just as well as their more expensive counterparts.	18	18.75%	16	16.67%	**62**	**81.258%**	0.554	**0.017***
3	I believe that generic drugs are associated with a greater number of adverse effects than branded ones. I also believe that many generic medicines	**39**	**40.63%**	21	21.88%	36	37.50 %	0.459	0.705
4	In comparison to branded medications, I feel that generic ones are of a worse quality. I also believe that many generic drugs sold in India do not adhere to the required minimum GMP requirements.	**54**	**56.25%**	24	25.00%	18	18.75 %	0.497	0.557

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5	I attest that the quality of my references is highly valued by medical representatives. I agree that generic versions of branded drugs work just as well as their more expensive counterparts.	32	33.33%	21	21.88%	**43**	**44.79 %**	**0.009***	0.197
6	I believe that generic drugs are associated with a greater number of adverse effects than branded ones. I also believe that many generic medicines	22	22.92%	35	36.46%	**39**	**40.63 %**	0.501	0.179
	producers are really reputed innature								
7	My research has shown that locally produced drugs are not as effective as branded medicines.	23	23.96%	19	19.79%	**54**	**56.25 %**	0.59	0.495
8	I am aware that branded medications are easier to keep track of, but I believe that patients should be confident in their ability to take generic medications.	22	22.92%	19	19.79%	**55**	**57.29 %**	**0.004***	0.497
9	In my opinion, a great number of physicians have a need to be aware about the cost of various medications.	15	15.63%	30	31.25%	**54**	**56.25 %**	0.777	0.791
10	In my opinion, medical professionals ought to be rewarded in some way for prescribing generic medications.	4	4.17 %	6	6.25 %	**86**	**89.58 %**	0.707	0.154
11	In a nutshell, I'm saying that only the impoverished should use generic pharmaceuticals.	**42**	**43.75%**	17	17.71%	37	38.54 %	0.074	0.454
12	My research has shown that locally produced drugs are not as effective as branded medicines.	**52**	**54.17%**	21	21.88%	23	23.96 %	0.504	0.774

*GMP=Good manufactured practice and according to Fisher's Exact Test, at 5 % significancelevel.

Experience: (1-5); (6-10); (>10) years

A large number of doctors have voiced negative opinions toward generic pharmaceuticals, such as the belief that they are not as effective as label drugs

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(59.37 percent), or that they have a larger number of negative affects (44.79 percent) (Table 3). The vast majority of medical professionals (89.58%) believe that they should be taught more about the cost of various drugs. In addition, more than half of the respondents (57.29 percent) stated that a medicine with a label was easier to remember, and 56.25 percent of the respondents indicated that restricted pharmaceuticals have not been as secure as over-valued drugs. When compared to female physicians, a much larger percentage of male physicians (n=52, 54.17 percent) stated that domestic businesses were continuously profitable than female physicians.

maintaining adherence to the GMP guidelines (table 3). When it comes to the amount of years of experience, significantly more senior age doctors (those with more than ten years of practise) claimed that generic drugs have larger unfavourable consequences than label pharmaceuticals (Table 3).

Table 4 The doctor's attitude in participating in favour of generic drugs through Fisher's Exact test

		N (%)						(P-value)	
	Attitude factors	**Disagree**	**%**	**Neutral**	**%**	**Agree**	**%**	**Experience**	**Gender**
1	In my practice I Recommend lowcost drugs	6	6.25 %	12	12.50%	**78**	**81.25 %**	0.129	0.777
2	I am alert for significant failure of locally manufactured drugs	9	9.38 %	21	21.88%	**66**	**68.75 %**	0.479	0.407
3	I feel reluctant to recommend low- cost drugs to a high status patients in my practice	11	11.46%	19	19.79%	**66**	**68.75 %**	0.074	0.944
4	I can sense that patients are biasedtowards my recommendation due to the socio economic factors	4	4.17 %	8	8.33 %	**84**	**87.50 %**	**0.017***	0.799
5	I recommend products that arelocally manufactured	**48**	**50.00%**	24	25.00%	24	25.00 %	0.704	0.77
6	In my opinion often self-experience towards medications affects my decisions for prescribing	4	4.17 %	8	8.33 %	**84**	**87.50 %**	0.729	0.894
	In normal case my prescriptions areaffected due to patient's demand for medicines	21	21.88%	17	17.71%	**58**	**60.42 %**	**0.027***	0.814
8	I expect that medical representatives are the best source forproviding information	**42**	**43.75%**	21	21.88%	33	34.38 %	0.724	0.949

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9	My prescribingbehaviors are influenced on the gifts offered by pharm companies	**78**	**81.25%**	9	9.38 %	9	9.38 %	0.449	0.727
10	In my opinion locally made drugsundergo less quality check	10	10.42%	19	19.79%	**67**	**69.79 %**	0.947	0.98
11	I have no issue if chemist change my recommend drugs	**78**	**81.25%**	12	12.50%	6	6.25 %	0.079	0.97
12	I prefer to prescribegeneric medicines	8	8.33 %	37	38.54%	**51**	**53.13 %**	0.449	0.197

* Fisher's Exact Test., At 5 % significance level

Experience: (1-5); (6-10); (>10) years.

In order to evaluate the opinions of practising physicians towards generic drugs, a total of twelve items were used (Table 4). Although around one third to one half of doctors (81.25%) have reported being happy to recommend minimum drugs, only approximately half of doctors (53.13%) have recognised supplying generic prescriptions to their patients. In addition, more than half of these physicians (68.75 percent) were not inclined to provide drugs that were inexpensive. In addition, about two-thirds, or 81.25 percent, reported feeling apprehensive about the possibility of the pharmacist switching generic prescriptions for specific items (Table 4).

On the other hand, there was no significant difference (p-value > 0.05) in the beliefs held by doctors on gender. When it came to the prescription of pharmaceuticals, older age doctors (those with more than 10 years of experience) appeared to be much less influenced by the socioeconomic situation of their patients, in contrast to younger doctors who had just ten years of experience. In a similar vein, medical practitioners who had more than 10 years of experience were much less influenced by patients' clinical demands (Table 4).

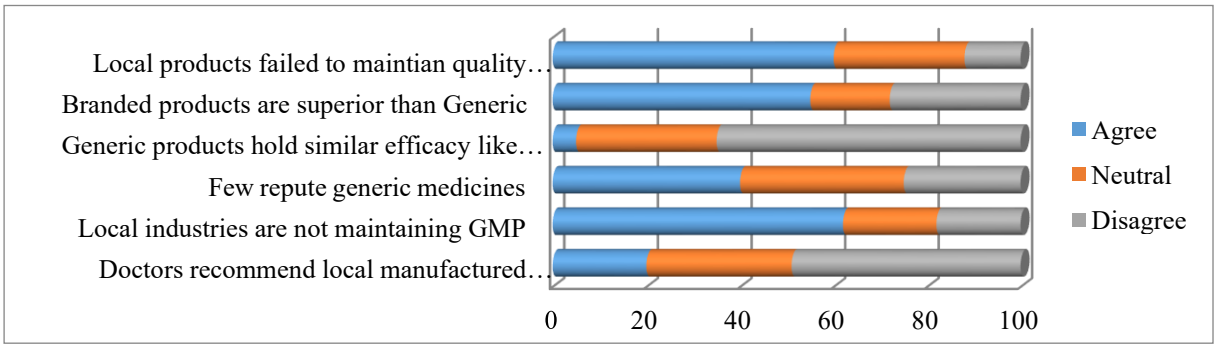

Figure-2 Understanding and perception of doctors about locally made drugs

On the other hand, the vast majority of physicians held negative attitudes about medications that were developed locally (Figure 2). Many people were under the impression that generic pharmaceuticals were not as potent as branded treatments and were not as valuable. As a consequence of this, the bulk of the time, medical professionals will advise their patients to purchase branded medications. Despite this, a number of medical professionals held the belief that generic medications are significantly cheaper than branded pharmaceuticals (Figure 2).

V. Discussion

The findings of the present study indicate considerable knowledge gaps among doctors regarding generic medicines. Many physicians lacked proper understanding of bioequivalence, therapeutic equivalence, and quality standards associated with generic medicines.

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The study revealed that misconceptions regarding generic medicines remain common among medical professionals. A large number of doctors believed that generic medicines are inferior in quality and effectiveness compared to branded medicines. Such negative perceptions can influence patients' trust and reduce the utilization of generic medicines.

One possible reason for these misconceptions is inadequate education regarding generic medicines during medical training. Medical curricula may not sufficiently address topics related to generic prescribing, bioequivalence, and regulatory quality standards.The findings also suggest that pharmaceutical marketing practices continue to influence doctors' prescribing behaviour. Medical representatives remain an important source of drug-related information for many physicians. The influence of pharmaceutical companies may contribute to preference for branded medicines.Socioeconomic factors were also found to influence prescribing behaviour. Since many patients in Odisha lack health insurance coverage and pay for medicines directly, doctors often consider affordability when prescribing medicines.

However, despite recognizing the economic benefits of generic medicines, many doctors still hesitate to prescribe them because of concerns regarding quality and safety.Negative attitudes toward locally manufactured medicines were another important finding of the study. Many doctors doubted the ability of local pharmaceutical companies to maintain GMP standards. Such perceptions discourage doctors from recommending locally produced generic medicines.The study also found that older doctors possess more negative attitudes toward generic medicines compared to younger practitioners. Younger doctors are likely more familiar with modern guidelines supporting generic prescribing.

VI. Conclusion

The present study highlights significant gaps in doctors' knowledge, perceptions, and attitudes regarding generic medicines in Odisha. Although generic medicines offer an affordable alternative to branded drugs, many doctors continue to question their quality, safety, and effectiveness.

Negative perceptions regarding locally manufactured medicines and concerns about GMP standards continue to influence prescribing behaviour. Older doctors were found to possess more unfavourable attitudes toward generic medicines compared to younger practitioners.

Since doctors play a central role in influencing patients' medicine choices, improving physicians' awareness regarding generic medicines is essential. Educational workshops, awareness campaigns, and professional training programs should be organized to provide accurate information about generic medicines, bioequivalence, and quality standards.

Government authorities should also strengthen regulatory monitoring systems to ensure the quality and safety of generic medicines available in the market. Increasing confidence among doctors and patients can improve the acceptance and utilization of generic medicines, thereby reducing healthcare expenditure and improving access to affordable healthcare in India.

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