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Factors Impacting Preference to Generic Medicines in India

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Abstract

Recently Government mandate was issued in India, which asks physicians to prescribe only generic medicines. However, the implementation of the mandate is facing challenges from different fronts. Meanwhile it is important to understand if people in India prefer generic medicines over branded medicines. The main aim of this paper is to check the attitude of common people in India towards generic medicines, their perception of government initiatives and their impact on preference to generic medicines. A structured questionnaire was adapted from past studies and used to collect responses in Pune, India. The data was analyzed in Smart PLS 3.0. The findings suggested that attitude towards generic medicines and perception of government role in encouragement of generic medicines both have significant impact on Preference to generic medicines in India.

Key Words- *Generic medicines, preference to generic medicines, healthcare affordability, perception of generic drugs in Pune, Government role in promoting generic medicines*

Introduction

In 2020, the Indian prescription drug market had a value of approximately 20 billion U.S. dollars within the nation. It was projected that this sector would experience growth, reaching a value of 27 billion U.S. dollars by the year 2023. This expansion was primarily fueled by a notable increase in the prevalence of chronic illnesses in recent times (Statista 2023). However, the proportion of generic medicines is very negligible in the prescribed medicines so far. That is why (branded) medicines are sometime beyond affordability of a common man in India. Therefore, government is promoting sales of generic medicines which are generally 80-90% cheaper than branded medicines. To improve healthcare affordability government of India has recently come with a mandate which says Physicians must prescribe medicines only in generic names and not in branded names. However, this mandate could not be implemented as of now, since national association of Physicians in India requested defer the mandate giving the reference to the challenge it will pose on physicians in ensuring patient safety and treatment efficacy. The practical execution of this mandate encounters obstacles due to India's comparatively lax standards for drug quality, which could result in inconsistent drug quality and effectiveness across different manufacturers. This requirement might transfer the responsibility of selecting a drug manufacturer from doctors to pharmacists, who may not possess sufficient qualifications or may not prioritize patient safety and drug efficacy in their decision-making. In such environment, little study has been done on perception of patients or buyers of medicines about generic medicines. Scarce of research on this issue particularly in India, motivated researchers to take up this study. The main aim is to check the attitude of common people in India towards generic medicines, their perception of government initiatives and their impact on preference to generic medicines.

Literature Review

Patients generally believe that generic medications are more affordable, offer better value for money, and are equally safe compared to brand-name drugs. However, despite 56 percent of respondents expressing the opinion that Americans should opt for generics more often, only 37.6 percent actually prefer taking generic medications

themselves. This study delves into the perceptions regarding how patients communicate with healthcare providers about generics, their willingness to accept generic substitutions, and the role policymakers play in promoting the use of generic drugs. These findings highlight the significant challenge that healthcare providers, insurers, and policymakers encounter in encouraging the cost-effective utilization of medications Shrank et al (2009).

The primary objective of (Ladeira, 2011), the research paper is to examine the interrelationships among various factors related to the prescription of medical drugs in Brazil. The study involved surveying 232 medical doctors practicing in Brazil, and data were gathered through a structured questionnaire. The study formulated five hypotheses concerning the factors influencing drug prescription and validated these constructs using a series of techniques related to structural equation modeling. The study revealed that factors such as the characteristics of the drug and the information available about a drug had the weakest impact, while the cost-benefit ratio of a drug showed a moderate level of influence on medicine prescription practice. In contrast, the brand of the drug and the associated advertising exerted the most substantial influence on prescription practices. These findings underscore the efficacy of specific advertising strategies and brand development in pharmaceutical marketing efforts targeted at Brazilian physicians.

A study (Gasteiger et al 2020) involving ninety-six patients with rheumatic diseases who were currently using an originator biologic medication was conducted. These patients were divided into four groups, each receiving a different explanation about biosimilars: one group received a positive explanation with an analogy, another had a positive explanation without an analogy, a third group received a negative explanation with an analogy, and the fourth group had a negative explanation without an analogy. After receiving this information, the researchers measured the patients' willingness to switch to a biosimilar, their perceptions of biosimilars, and how effective they found the explanation. The results indicated that the positive framing of biosimilars led to a higher percentage of participants (67%) expressing willingness to switch compared to those exposed to negative framing (46%). The type of framing significantly predicted the willingness to switch to a biosimilar, with participants in the positive framing group being 2.36 times more likely to consider switching. Additionally, the positive framing group reported a greater perceived effectiveness of biosimilars and found the explanation to be more convincing. Interestingly, the use of an analogy did not have a significant impact on the willingness to switch or improve understanding. In conclusion, the study suggests that presenting biosimilars in a positive light can improve patients' perceptions of biosimilars and increase their willingness to switch from originator biologic treatments.

The adoption of generic drugs is on the rise in many countries due to their lower cost while maintaining the same effectiveness as their brand-name counterparts. However, concerns have arisen due to a lack of understanding about the concept of bioequivalence and the marketing efforts of manufacturers, which sometimes lead consumers to revert to using branded medications. The study's findings revealed that the most influential factor for participants when buying medications was the role of the pharmacist. Conversely, the least significant factor affecting medication choice was a lack of knowledge about the drugs' effectiveness. Additionally, the price of the medication and trust in brand-name drugs had a statistically significant impact on medication selection. Generic drugs appear to be a favorable option for patients, but a shift in people's mindset is needed to fully accept this reality. This transformation can be achieved by promoting educational interventions that increase consumer and healthcare system confidence in the effectiveness of generic medications in treating chronic diseases (Hajleh 2021).

The primary reason for opting for generic medicines in Jordan is the exorbitant price of pharmaceuticals. Additionally, patients hold favorable views regarding generic medications. Engaging patients in the decision-making process for their treatment is expected to enhance adherence and overall health outcomes. The information acquired from patients in this research will prove valuable for healthcare organizations and policymakers as they work on developing a comprehensive generic drug policy aimed at cost-effective medication utilization in Jordan (Dahiyat and Kayyali, 2013).

Approximately 24% of individuals believed that generic medications were of lower quality compared to brand-name drugs, while 18% thought that generics were not as effective as their brand-name counterparts. About 30% of patients were under the impression that generics were produced with lower manufacturing standards, and 29% assumed that their lower cost was indicative of inferior quality. Nearly 90% of patients indicated they would be willing to take a generic medicine if their General Practitioner prescribed it. Among those surveyed, 50%

expressed the need for informative materials, such as leaflets, that provide clear, understandable, and accessible information about generic medications. Despite overall support for the broader use of generic drugs, concerns were raised about their safety, clinical effectiveness, and manufacturing quality (Dunne et al 2014).

The utilization of generic medications is on the rise globally, and this trend is particularly evident in Greece, where efforts to cut pharmaceutical costs are being emphasized. Nearly half of patients are aware of generic drugs, and the most widely recognized attribute associated with them is their lower cost. In the decision-making process of switching to a generic medication, it appears that the doctor primarily, and then the pharmacist, play crucial roles for patients (Skaltsas and Vasileiou, 2015).

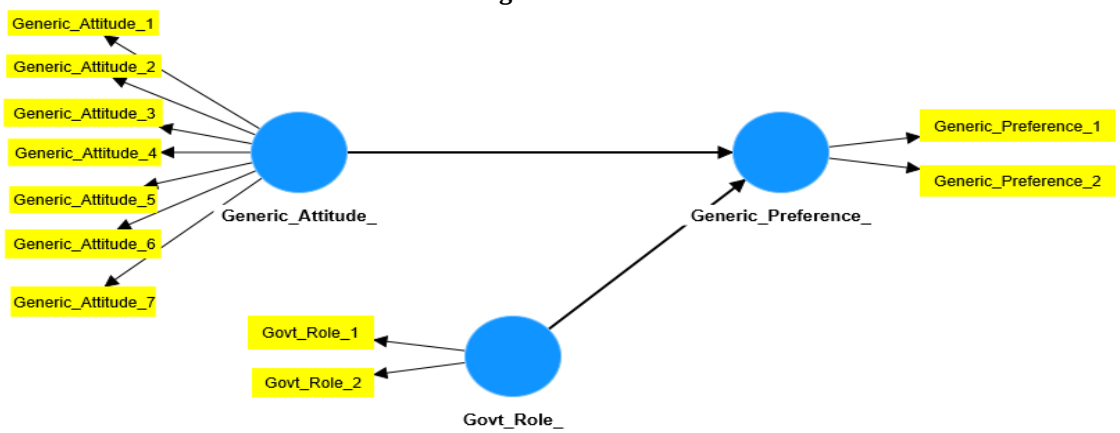
The study (Hatem et al 2023) participants expressed a lack of trust in generic drugs, with many believing they were less effective (36.9%), of lower quality (38.5%), or had more side effects (38.4%) compared to brand-name medications. Approximately 52% stated they would never purchase a generic drug, and nearly two-thirds (68.6%) preferred brand-name drugs over generics. When adjusting for socio-demographic factors, having a higher income, knowing that both brands and generics contain the same active ingredients, and understanding that brands and generics are equally effective, emerged as the most significant independent predictors for the willingness to buy generic drugs. The study highlights the need to address knowledge gaps and misconceptions about generic medications, as they pose limitations on their utilization.

Research findings reveal that a majority of respondents (56.6%) believe that the unified medical prescription system preserves the physician's authority to select the medication. In contrast, only 39.5% of physicians believe that this system encourages the prescription of generic drugs, and approximately 42% acknowledge that it reduces medical costs for patients. In conclusion, the primary aim of implementing the unified medical prescription system is to reduce pharmaceutical expenses and enhance medication accessibility for individuals with lower socio-economic status. However, according to Lebanese physicians, this tool has not fully achieved its intended objective but has made progress in reducing medical costs for patients and promoting the use of generic medications (Hatem et al 2022).

Research Methodology

The study was conducted in Pune City in India. Samples were selected from the entire city area using convenient non-probabilistic sampling method. Sample were contacted at big hospitals in the city. Primarily people who were buying medicines for themselves or for someone else were interviewed using the structured questionnaire. The questionnaire is adopted from the past study (Shrank et al 2009). The questionnaire included 3 variable constructs namely- Attitude towards generic medicines, preference to generic medicines and role of govt. in encouraging usage of generic medicines. Questions were also included to collect the demographic information of the respondents. All the question items in each of these constructs were rated on 5 point Likert's scale. Total 450 people were approached however 396 people agreed to respond to the questionnaire. Their responses are analyzed using Smart PLS 3.0. The proposed research model is shown below in the fig 1.

Fig 1- Research Model



Source- *Own research work*

Based on this model following hypotheses were developed.
H_1- Attitude towards generic medicines impacts the preference to generic medicines significantly
H_2- Role of Govt. in encouragement of generic medicines impacts preference to generic medicines significantly

Results

Table 1 Demographic Profile of the respondents

Demographic characteristics		**Frequency**	**Percent**
Age	20-25 years	54	13.64
	26-30 years	123	31.06
	31-35 years	98	24.75
	36-40 years	83	20.96
	51 Years and above	38	9.60
	Total	396	
Gender	Male	201	50.76
	Female	195	49.24
	Total	396	
Occupation	Salaried	185	46.72
	Self-employed	67	16.92
	Business	64	16.16
	Home maker	59	14.90
	Other	21	5.30
	Total	396	
Family Income per annum	less than 3 lakh	98	24.75
	3-5 lakh	79	19.95
	5-8 lakh	57	14.39
	8-11 lakh	32	8.08
	11-13 lakh	43	10.86
	13-16 lakh	63	15.91
	more than 16 lakh	24	6.06
	Total	396	

The research model depicted in Figure 1 was analyzed using Smart PLS (version 2.0), a Partial Least Squares (PLS) Structural Equation Modeling (SEM) tool (Ringle, Wende, & Will, 2005). Smart PLS assesses the psychometric properties of the measurement model (i.e. the reliability and validity of the scales used to measure each variable), and estimates the parameters of the structural model (i.e. the strength of the path relationships among the model variables).

The Measurement Model

Reliability results from testing the measurement model are reported in **Table 2**. The data indicates that the measures are robust in terms of their internal consistency reliabilities as indexed by the composite reliability. The composite reliabilities of the different measures in the model range from .83 to .93, which exceed the recommended threshold value of 0.70 (Nunnally, 1978). In addition, consistent with guidelines promulgated by Fornell and Larcker (1981), the average variance extracted (AVE) for each measure well exceeds 0.50 (the minimum AVE is 0.56).

Table 2 Construct Reliability

Construct	Composite reliability (rho_a)	Average variance extracted (AVE)
Attitude toward Generic Medicines	0.891	0.556
Preference to Generic Medicines	0.926	0.863
Govt. Role	0.830	0.709

Table 3 reports the results of testing the discriminant validity of the measure scales.

Table 3 Discriminant Validity HTMT Matrix

	Attitude toward Generic Medicines	Preference to Generic Medicines	Govt. Role
Attitude toward Generic Medicines	-	-	-
Preference to Generic Medicines	0.680	-	-
Govt. Role	0.811	0.748	-

Since the HTMT matrix values are less than .85, which is most conservative critical HTMT matric value, we can say that the validity has been established for the model.

We tested convergent validity using Smart-PLS by extracting the factor loadings (and cross loadings) of all indicator items to their respective latent constructs. These results, presented in Table 8, indicate that all items loaded: (1) on their respective construct (i.e. the bolded factor loadings) from a lower bound of 0.70 to an upper bound of 0.93. A common rule of thumb to indicate convergent validity is that all items should load greater than 0.7 on their own construct (Yoo & Alavi, 2001), and should load more highly on their respective construct than on the other constructs. Furthermore, each item's factor loading on its respective construct was highly significant ($p < 0.0001$) as indicated by the T-statistics of the outer model loadings in the Smart PLS output. These T-statistic values ranged from a low of 9.5 to a value of 41.80. The constructs' items' loadings and cross loadings presented in Table 8, and the highly significant T-statistic for each individual item loading, serve to confirm the convergent validity of these indicators as representing distinct latent constructs in the research model.

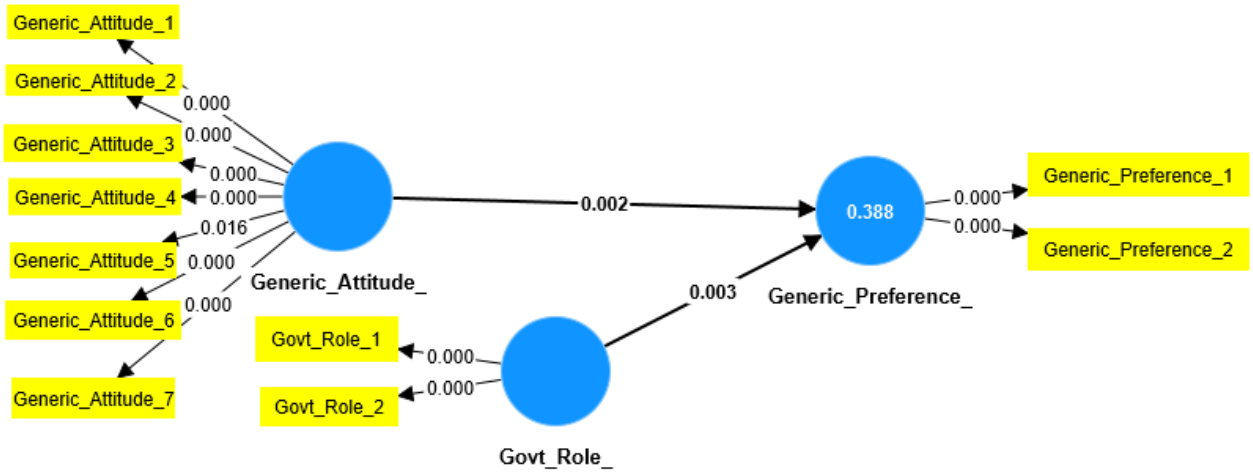
Table 4 Factor Loadings

	Attitude toward Generic Medicines	Preference to Generic Medicines	Govt. Role
Generic_Attitude_1	0.742		
Generic_Attitude_2	0.829		
Generic_Attitude_3	0.859		
Generic_Attitude_4	0.856		
Generic_Attitude_5	0.823		
Generic_Attitude_6	0.702		
Generic_Attitude_7	0.785		
Generic_Preference_1		0.929	
Generic_Preference_2		0.929	
Govt_Role_1			0.842
Govt_Role_2			0.842

The Structural Model and Hypotheses Testing

Figure 2 presents the results of the structural model. The beta values of the path coefficients, indicating the direct influences of the predictor upon the predicted latent constructs, are presented. The path coefficient for effect of attitude toward generic medicines-→preference to generic medicines is .399 at a significance level of less than .05 (p=.002). Hence we accept H_1. The path coefficient for Perception of Govt. role → preference to generic medicine was found to be .305 at significance level less than .05 (p=.003). Hence we accept H_2. The R square value is .388, indicating that around 38.8% variance in preference to generic medicines are explained by attitude towards generic medicines and role of government in promoting generic medicines together.

Fig- Structural Model



Implication and Future Research

The research found that patient's or user's positive attitude of generic medicines in India and the perception of Government roles in promoting generic medicines both, positively affect their preference to generic medicines. The findings suggest that Indian consumers are willing to prefer generic medicines over standard (branded) medicines. This can be a threat to branded medicines. Their sales may drop in coming years. Branded medicine manufacturer or marketers need to come up with strategy in order to combat this situation in India. Government is also promoting generic medicines by encouraging medical outlets of generic medicines in every town. In coming years branded medicines especially for treating chronic diseases may see drop in demand. Future research may study the effect of Doctor's prescription practices along with other constructs discussed in this study, on patient's perception of generic medicines. National Council of Medicines in India I also coming up with policies to discourage Doctors from prescribing standard names of medicines instead of generic names. This can further the challenges of branded medicine manufacturers and marketers.

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