



Prospects and Challenges of Generic Medicines Adoption in India: Consumer and Physician Perspectives

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Abstract: The objective of this study was to learn more about consumer's and physician's knowledge, attitudes, and beliefs about generic medicines, as well as the problems in guaranteeing generic medicine acceptance and utilization. The aim of our study was to figure out what would improve physician acceptance and customer acceptance. The study included qualitative research with focus group conversations with physicians from various fields of medicine, as well as a cross-sectional survey with 102 customers in Pune divided into two clusters utilizing a questionnaire. An exploratory factor analysis was performed to see if there were any differences between the components, that support favorable opinions of Generic Medicines and those that support negative perceptions of the same. Customers were positive, about the usage of generic drugs according to the findings. The findings showed a preference to use them on doctor's prescriptions and Government or other regulatory agencies' approval. Physicians also proposed that the government should make it mandatory for generic medicines to be prescribed by doctors and launch a robust public awareness campaign to encourage their use in India. There was an acceptance that, using generic medicine would significantly lower healthcare expenses. The physicians believed that generic bioavailability and bioequivalence were important factors to consider when deciding whether or not to prescribe generics. Clinical trial data and serious adverse event (SAE) data, should also be made available to the medical community so that transparent and independent decisions can be made.

Keywords: Generic Medicines, Healthcare, Pharmaceutical, Physicians, India

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I. INTRODUCTION

A generic drug is a pharmaceutical drug that is equivalent to a brand-name product in dosage, strength, route of administration, quality, performance, and intended use. The term may also refer to any drug marketed under its chemical name without advertising, or to the chemical makeup of a drug, rather than the brand name under which the drug is sold. Although the drugs may not be associated with a particular company, generic drugs are subject to specific government regulations applicable to each country. Generic Drugs are labeled with the name of the manufacturer and the nonproprietary adopted name of the drug. A generic drug must contain the same active ingredients as the original brand-name formulation. The U.S. Food and Drug Administration (FDA) requires that, generics be identical to, or within an acceptable bioequivalent range of, their brand-name counterparts concerning pharmacokinetic and pharmacodynamic properties¹. The right to access and use of essential medicines by most patients in India is still a daunting and uphill task, especially for those who seek treatment for acute and chronic diseases². Add to this, is a sudden hospitalization or surgery and this could lead to patients going bankrupt or being pushed to the brink of poverty^{3,4}. The Government of India (GOI) is planning to introduce a legislative framework, that would require doctors to prescribe generic medicines, which would be cheaper than their equivalent branded drugs to the patients. This is a welcome initiative though not a new one. The Medical Council of India has already notified an amendment in Clause 1.5 of the Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations, 2002. The clause now reads: "Every physician should prescribe drugs with generic names legibly and preferably in capital letters, and he/she shall ensure that there is a rational prescription and use of drugs". The words "legibly and preferably in capital letters" were not there originally. However, though this thought is noble and just it is difficult to implement on the ground. The reason is that, the existing pharmacy stores are authorized to sell the prescription drugs as almost all medicines sold in India have brand names, including generic medicines with brands. Doctors who have traced the pricing of branded vs generic drugs have warned that, the margins for branded generic medicines are sometimes higher than the margins for branded medicines even when procured from the same company. Also, around 40% of the estimated 60,000 drug formulations sold in India are fixed-dose combinations or FDCs from a range of multiple pharmacological ingredients which are only sold through brand names. In a country like India, there is a need for government intervention to make medicines affordable. It is more in the case of poor and vulnerable sections of our society to help the government in objectives of social good and welfare of the general public.⁵ Recent studies on a generic version of an eye drop solution to treat glaucoma, have shown that "significant variations in drug concentrations and physical properties" of generic formulations and branded drug formulations exist, which dissuades the patients from the using generic drug⁶. Experts have opined, that the government should bring a legal framework to ensure "quality" in generic drug testing; generic drugs should work "therapeutically" and ensure "uniform quality" which would ensure confidence in the doctors to prescribe them to the patients without a doubt⁷. The generic medicine industry also needs to work towards ensuring to match quality standards as quite often it has been observed that, the generic version of commonly-used medicines in the

country failed quality tests. The drugs, when evaluated, were found to violate standards on labeling and had an inadequate quantity of ingredients, so ensuring the quality of drugs is a problem in the absence of adequate regulations and shortage of drug inspectors and lab facilities to check the drug quality. Another major factor determining the use of generic medicines over their branded version is the literacy quotient of our population. A large number of patients in our country are illiterate and are not conversant with medical terms and drug compositions. A patient when given a prescription with the details of the composition of the medicine is still dependent on the pharmacist to make the suitable drug choice. Invariably, the pharmacist is not likely to be sensitive to a patient's medical and financial condition and so the efficacy of the proposed legal initiative would hinge on bringing all the stakeholders such as pharmacists and doctors under its ambit. To improve access to generic medicines, the Indian Government had launched the Janaushadhi campaign (people's medicine in Hindi) in 2008 to provide quality and suitably priced generic medicines in the country through a countrywide chain of generic medicine stores. A study was conducted in the Tumkur district of Karnataka in Southern India to address the negative perceptions on the use of generic medicines under the Access to Medicines Research Project implemented by the Institute of Public Health, Bangalore with support from the Alliance for Health Policy and Systems Research, WHO⁸. The study was registered with the Clinical Trials Registry of India. The information gathered showed that, policies and programmes which are focused on making available generic medicines should also ensure their focus on improving quality and government health care facilities to the section of the population who need it most. The percent expenditure on developing pharmaceutical drugs has been on the rise globally as compared to the increase in healthcare spending. This huge chasm has led to inflated national budgets which translate into a large proportion of the population lacking access to basic healthcare facilities and medicines. India is known as a global hub for generic drug manufacturing, attesting to the well-known fact that, the use of generic drugs could bring down the cost of healthcare expenditures. However, this has not translated into the accessibility of trusted affordable generic drugs to the masses. A study carried out by Mathew in 2015 shows that, policy/decision-makers of our country need to realize that the underprivileged and poor struggle with the out-of-pocket expenditure on healthcare which accounts for around 80% and a robust and accountable regulatory framework is the need of the hour to protect the consumers against exploitation⁹. China and India are the major suppliers of generic medicines to markets such as the United States of America, the European Union, Canada, Japan, and Australia¹⁰. Some of the issues plaguing the generic medicine market are bilateral international agreements or free trade agreements; strategic patenting tricks employed by the pharmaceutical industries; litigations against generic manufacturers etc. These have been instrumental for setbacks for the generic medicine industry and governments need to address these issues to improve and increase the use of generic medicines. The sustainability of the generic medicine sector is indeed critical for improving access to essential medicines for the population at large as also globally. A major perceived problem by almost all the stakeholders in India is access to medicines followed by their affordability. The Health Impact Fund (HIF) a yardstick used to compensate pharmaceutical companies based on the global health impact of their drugs was a welcome initiative; however, despite considerable impetus

given to HIF, the major concerns, that exist are again access to medicines that can be addressed if we involve all stakeholders to increase the likelihood of its success¹¹. HIF and other novel drug-related health policies also need to address the current intellectual property rights regime that targets generic and branded drugs including research and development. Gupta et al in their study have spoken about assessment of a very important factor in play viz. understanding the Knowledge, Attitude, and Practice (KAP) of doctors towards the use of generic medicines¹². The ability to convince the medical practitioners that, generic drugs are efficacious and safe would help an empathetic response from them and their perceptions, which would assist in solving the humongous task in scale-up of the use of generic drugs. To assess the awareness and use a study conducted on medical doctors and hospital staff showed that indeed there was mindfulness of availability and inexpensiveness of the generic drugs¹³. There exists scope in improving the prescription and utilization of generic drugs, however, a lot of work needs to be done in improving consumer awareness along with educating the medical fraternity on the access and availability

and efficacy of generic drugs vs branded medicines which could be done through print and online media. Patients continue to believe that these drugs are ineffective compared to the original drugs^{14,15}. Generics are now widely available. These drugs are a cornerstone of modern healthcare economies throughout the world. It has taken time for health authorities to familiarize prescribers, pharmacists, and patients with generics to improve prescription and dispensation rates¹⁶. Trying to persuade individuals that generics are the same and such assurance requires time, which Physicians lack. Some doctors do not want to waste this time and are not confident that the generics are similar, as stated in the article by Drozdowska et al¹⁷. Patients are most concerned about generic drug effectiveness, pharmacists about drug quality, and doctors are most concerned about drug safety, according to the researchers¹⁸. Therefore, if two drug products contain the same active substance(s) qualitatively and quantitatively and have comparable exposure, are expected to reach the same efficacy and safety in treating or preventing the target disease¹⁹.

Generics = API (active pharmaceutical ingredient) + Formulation
Branded = NCE (new chemical entity) + Formulation

After going through the various articles on the subject the following questions needed to be probed for further investigation

the sample representative, the respondents were chosen from different localities in Pune.

2.1 STATISTICAL METHODS

Exploratory Factor Analysis (EFA) was conducted using Kaiser normalization to explore intended constructs. SPSS version 21.0 was used to operationalize EFA which helped explore six underlying constructs. Bartlett's Test of Sphericity was conducted to check sampling adequacy and The test was statistically significant, the p-value was 0. Exploratory factor analysis was used to investigate, if there were any variations between the components, that support positive attitudes toward generic medicines and those that support negative impressions. Exploratory factor analysis was used to see if there were any differences between the components that favor good opinions of Generic Medicines and those that favor negative perceptions of the same. Initially, it was theorized that certain elements could influence how Generic Medicines are seen and that these aspects would be linked.

2.2 Inclusion Criteria

- Age > 18 years for questionnaire respondents
- Pune City in Maharashtra State from two clusters with similar demographics
- Focus Group Discussion (FGD) participants from the cities of Mumbai and Pune
- Practicing Doctors with > 10 years of experience in the age group of 30 years-65 years

2.3 Exclusion Criteria

- Respondents from rural Areas
- Non-Allopathic Physicians
- Physicians working as employees in private clinics / public/private hospitals
- Illiterate respondents

- i. Is it true that generic drugs have a good impact on the respondents' illness conditions?
- ii. Do doctors prefer to treat patients with generic medications rather than branded ones?
- iii. Would lowering the cost of generic medicines boost physician and customer acceptance?
- iv. What effect does it have on overall healthcare costs?
- v. Do customers and patients embrace generic pharmaceuticals in place of branded drugs to treat their illnesses? If so, does the preference exist because it's less expensive?
- vi. Are there any variations in how customers see generic drugs? Whether the same was statistically significant across various client categories or groupings, if so?
- vii. Whether approval of generic pharmaceuticals by regulatory bodies such as the FDA or other agencies would boost acceptance among doctors, physicians, and customers.

The article aims to explore the elements that influence generic pharmaceutical usage and adoption prospects and hurdles. By investigating the viewpoints of patients, doctors, and generic drug consumers in India, the study adds to the existing literature. This study fills a research vacuum in the literature by gathering viewpoints from people who influence the use of generic medications as well as users of generic drugs.

2. METHODOLOGY

The study included qualitative research with focus group discussions with physicians from various fields of medicine, as well as a cross-sectional survey with 102 customers in Pune divided into two clusters utilizing a questionnaire. To keep

Focus groups are a type of group interview used to gather information from a target audience on a certain topic. In this investigation, there were 12 participants. All were from Maharashtra, Doctors from diverse fields were invited to participate in the conversation. One researcher was present, while others devised a semi-structured interview schedule (see Table I) and supervised the focus group discussion. The

conversation was taped and noted, but no identifying information about the individuals was included. The study's researchers meticulously analyzed all transcripts and classified them into areas based on emergent patterns. Table I below shows the topics addressed in the study to find answers to relevant questions on the subject.

Subject	Questions
Consideration of bioequivalence (BE) and bioavailability (BA)	Is the BA and BE data made available to treating physicians by regulatory authorities?
Views on efficacy and safety	Are you convinced about the safety and effectiveness of generic medicines?
The connection between cost and usage of generic medicines	Do usage and administration lower healthcare costs?
Consumer resistance to the usage of generic medicines	Is the customer willing to use generic medicines without reservations?
Trial/Clinical data availability	Is the clinical data made available to the medical community

Key Interview Questions in the survey

1. Whether the respondents were suffering any major disease in the preceding 3 years
2. Awareness and willingness to use generic medicines
3. Preference for usage provided generics were prescribed by physicians and approved by the government or any other appropriate authorities.
4. Does usage of generic drugs reduce their healthcare costs substantially?
5. Were doctors reluctant to prescribe generic drugs and government agencies were promoting generic drugs or not?
6. Whether generic drugs were considered inferior to branded medicines in terms of efficacy?

We further examined and analyzed the elements that favor positive attitudes toward generic medicines and those that favor negative perceptions in the study.

3. RESULTS

3.1 Factor Analysis of Customer Perception of Generic Medicine Data

Initially, exploratory factor analysis was carried out to find out if there are observed variations between the factors that favor positive perceptions towards Generic Medicines and not-so-positive perceptions of the same. It has initially been hypothesized that certain factors might influence the perception of Generic Medicines and the factors are expected to be correlated. Table 2 shows that a factor Analysis with Oblimin Rotation was performed with the data set of 102 observations. However, the analysis extracted initial factor analysis with Principal Component Analysis but failed to obtain Factor Rotation due to convergence failure of data within the standard norm of 25 iterations. The result of the analysis is presented below:

Component		Initial Eigenvalues			Extraction Sums of Squared Loadings		
		Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Dimension 0	1	3.600	21.175	21.175	3.600	21.175	21.175
	2	2.131	12.538	33.713	2.131	12.538	33.713
	3	1.778	10.457	44.170	1.778	10.457	44.170
	4	1.329	7.818	51.988	1.329	7.818	51.988
	5	1.148	6.751	58.739	1.148	6.751	58.739
	6	1.060	6.235	64.974	1.060	6.235	64.974
	7	.936	5.505	70.478			
	8	.805	4.737	75.216			
	9	.704	4.138	79.354			
	10	.666	3.916	83.270			
	11	.626	3.682	86.952			
	12	.527	3.098	90.050			
	13	.465	2.733	92.784			
	14	.398	2.342	95.126			
	15	.311	1.831	96.957			
	16	.298	1.756	98.712			
	17	.219	1.288	100.000			

Extraction Method: Principal Component Analysis.

Table 3: Component Matrix						
	Component					
	1	2	3	4	5	6
Don't go for generic drugs as not aware	-.272	.316	.008	.464	.312	.169
Prefer generic drugs prescribed by doctors.	.244	-.464	-.091	.348	.219	.343
Prefer generic drugs approved by government or FDA.	.591	-.293	-.072	.252	-.031	-.006
Reduce my healthcare cost	.393	-.503	.243	.417	.232	-.038
Increase my accessibility to medical treatment.	.476	-.340	.517	.327	-.092	-.255
Insist upon a doctor to prescribe GD	.098	.105	.239	.251	-.818	.002
Doctors are reluctant to prescribe GD	.453	.450	-.310	.222	-.221	.097
Government not promoting GD	.444	.624	-.188	.219	-.007	-.022
GD inferior to branded medicine in terms of efficacy.	.134	.544	.484	.185	.322	-.137
Generic drugs are low in potency.	.017	.492	.471	.023	-.007	.494
Health insurance policy that promote GD as value addition.	.668	-.247	-.149	-.106	-.216	.092
The medical council of India is not promoting generic drugs.	.471	.148	-.477	.198	.030	.229
Healthcare delivery mechanism revolve around promoting GD	.627	.150	-.125	-.194	.215	-.356
Government make the use of generic drug mandatory	.603	.245	-.330	-.058	.091	-.324
Health insurance companies should encourage GD	.494	-.160	-.092	-.341	.074	.524
Strong awareness campaign should be built to promote GD	.565	.168	.534	-.210	-.019	.035
Cheaper GD would reduce the costs of other healthcare	.564	-.006	.353	-.449	.100	.086
Extraction Method: Principal Component Analysis.						
a. 6 components extracted.						

Table 3 shows the component matrix obtained using the Principal Component Analysis. contains estimates of the correlations between each of the variables and the estimated components.

Though the analysis indicated certain deviations between these perceptions, particularly factor 1, factor 2 and 3 indicated positive and negative perceptions respectively and were not statically significant across a considerable number of questions. However, the different perceptions between these factors suggested that, a cluster analysis may reveal statistically significant variations across a sufficiently larger number of questions. Secondly, Cluster Analysis may also help in understanding the difference in customer behaviors along with their demographic profiles. Accordingly, K-Means Cluster Analysis was done to find out whether the profile of the customers varies significantly among those who favor Generic Medicines and who do not favor them.

3.2 Cluster Analysis of customer perception of generic medicines

Initially, exploratory factor analysis was carried out to find

out if there are observed variations between the factors that favor positive perceptions towards Generic Medicines and not-so-positive perceptions of the same. Though the analysis indicated certain deviations between these perceptions, the factor rotation was not possible due to the sample size. However, this analysis suggested a cluster analysis may reveal certain significant variations along with the group profile of the customers. Accordingly, K-Means Cluster Analysis was done to find out whether the profile of the customers varies significantly among those who favor Generic Medicines and who do not favor them. The analysis clearly distinguished two groups one favoring Generic Medicine and the other not favoring it. Moreover, most of the variables have reasonably higher F values and are statistically significant. Table 4 shows that 66 customers not favoring generic medicines have been grouped in Cluster 1 and 36 customers favoring generic drugs in Cluster 2

Table 4: Number of Cases in each Cluster		
Cluster	1	66.000
	2	36.000
Valid		102.000
Missing		.000

The profiles of the customers favoring Generic Medicines Are Male, with comparatively higher qualifications as against those not favoring are Females with High school passed or Graduates. However, Age and Income do not seem to be differentiating the group, which is surprising. Probably the number of age categories and income groups are more as compared to Educational Qualification and Gender and secondly, the total number of the sample with a valid sample of observations across these multiple categories were also comparatively smaller (102 observations). More importantly, one of the very important reasons for the reason why age

and income groups do not differentiate was that both in the case of Age groups and the income categories, the range was large as we find that age category 2 has the age group from 20 to 50 yrs. and similarly income group 2 also had a large income range of 3 lakhs to 10 lakhs. Hence, most of the members from both groups belong to the same group as the range was longer. Table 5 shows the analysis of results of Final Clusters with two groups one favoring Generic Medicines and the other not favoring given as under:

Table 5: Final cluster centers		
	Cluster	
	1	2
Age	2	2
Gender	1	2
Qualification	2	1
Income	2	2
don't go for generic drugs as not aware	3	4
prefer generic drugs prescribed by doctors.	4	4
prefer generic drugs approved by government or FDA.	5	4
reduce my healthcare cost	4	4
increase my accessibility to medical treatment.	4	4
insist upon a doctor to prescribe GD	4	3
Doctors are reluctant to prescribe GD	4	3
Government not promoting GD	4	3
GD inferior to branded medicine in terms of efficacy.	4	3
generic drugs are low in potency.	3	3
a health insurance policy that promote GD as value addition.	4	3
The medical council of India is not promoting generic drugs.	4	4
Healthcare delivery mechanism revolve around promoting GD	4	4
Government makes the use of generic drug mandatory	4	3
Health insurance companies should encourage GD	4	4
Strong awareness campaigns should be built to promote GD	5	4
cheaper GD would reduce the costs of other healthcare	4	4

Table 6 shows below the factors that are statistically significant with higher F ratio values and are also significant differentiators between the group who favor Generic Medicine and the others who do not favor it.

Table 6: ANOVA						
	Cluster		Error		F	Sig.
	Mean Square	do	Mean Square	do		
Age	.466	1	.323	100	1.441	.233
Gender	.517	1	.245	100	2.110	.149
Qualification	1.576	1	.238	100	6.611	.012
Income	.116	1	.374	100	.312	.578
Don't Go For Generic Drugs As Not Aware	5.306	1	1.350	100	3.930	.050
Prefer Generic Drugs Prescribed By Doctors.	.054	1	.703	100	.076	.783
Prefer Generic Drugs Approved By Government Or Fda.	7.190	1	.604	100	11.905	.001
Reduce My Healthcare Cost	.275	1	.902	100	.304	.582
Increase My Accessibility To Medical Treatment.	1.863	1	.900	100	2.071	.153
Insist Upon A Doctor To Prescribe Gd	3.123	1	.794	100	3.934	.050
Doctors Are Reluctant	31.295	1	.574	100	54.549	.000

To Prescribe GD							
Government Not Promoting GD	16.970		.528	100	32.114	.000	
GD Inferior To Branded Medicine In Terms Of Efficacy.	4.293		.952	100	4.509	.036	
Generic Drugs Are Low In Potency.	.975		.971	100	1.004	.319	
A Health Insurance Policy That Promote Gd As Value Addition.	17.476		.719	100	24.307	.000	
The Medical Council Of India Is Not Promoting Generic Drugs.	8.989		.600	100	14.975	.000	
Healthcare Delivery Mechanism Revolve Around Promoting GD	10.042		.519	100	19.341	.000	
Government Makes The Use Of Generic Drug Mandatory	28.238		.508	100	55.638	.000	
Health Insurance Companies Should Encourage GD	9.508		.523	100	18.178	.000	
Strong Awareness Campaigns Should Be Built To Promote GD	3.342		.434	100	7.707	.007	
Cheaper GD Would Reduce The Costs Of Other Healthcare	4.093		.432	100	9.484	.003	

Because the clusters were chosen to maximize the differences between instances in various clusters, the F tests should only be used for descriptive purposes. Because the observed significance levels aren't adjusted for this, therefore can't be used to test the hypothesis that the cluster means are equal.

4. DISCUSSION

The focus group discussion responses among physicians showed

- The lack of clinical trial data and its availability in the public domain was a concern among all the participants
- Bioavailability(BA) and Bioequivalence(BE) of the generic molecules with branded drugs were sought after by the majority of the group participants to prescribe the generic drugs with confidence.
- Need for efficacy and Serious Adverse Events (SAE) data to be made available by governmental regulatory bodies

The efficacy of generic medicines was important to support the use of generic molecules. 20 percent of the participants trusted generic drugs and thought that the quality of the drug molecules manufactured was questionable. Physicians stressed a ranking of 5 generic drug manufacturers, the BA and BE data made available and should be USFDA approved. Around 20 percent of patients demanded branded drugs only and agreed to the generic version after discussions with the consulting doctors. Patients have questions in their minds about the effectiveness of generics in comparison to branded ones. There was also a concern about the process of manufacturing and the place of manufacturing.²⁰ Around 20 percent of doctors felt switchover studies in patients with branded vs generic drugs needed to be done and information made available in a transparent manner to all concerned. According to a survey done among physicians by Drozdowska, A., and Hermanowski, T. (2015), 75 percent of respondent's felt that generics satisfy bioequivalence norms and embody similar efficacy and adverse effects, and 25 percent of respondents believed that there were differences.²¹ Further the views of physicians on the quality of generic drugs differed from one country to another depending on the development of their nation's healthcare

organization. Developed countries' healthcare systems had better bioequivalence requirements regarding generics.²² Clinical trial data and related studies were available for the branded drugs and similar data for the generic version of the branded drugs were not available to the doctors. Quality control studies, BA, and BE study data were available for generic molecules in the USA but not in India. Nobody was sure about the quality of the generic drugs in terms of bioequivalence and regulatory control in India was debatable. Because generic pharmaceuticals are inexpensive, buyers had a perception of poor quality. As per the paper of Hassali, M. A. et. al (2014)²³, the key difference between high-income nations and low-income countries is that high-income country physicians are more positive about generic drugs, whereas LMIC physicians' opinions are more mixed. Physicians' lack of knowledge of the basis of bioequivalence testing, the cost of generic medicines as an encouraging factor for generic medicine prescribing, physicians' concerns about the safety and quality of generic medicines, and the effect of pharmaceutical sales representatives on generic medicine prescribing were all found to be common among different country income groups.²³ Colgan S. et al (2015) screened literature in their research paper on the perception of generics in various published articles post-1980 and concluded that Generic drugs are seen negatively by a considerable number of doctors, pharmacists, and laypeople. These views are likely preventing generics from being used more widely.²⁴ Fadare, J. O., et al. (2016) did a study to know the attitudes among physicians toward generics in Nigeria and found out that the majority of respondents did not believe that generic drugs were of poorer quality than branded drugs. Therapeutic failure was a key concern for 82.7 percent of respondents, potentially deterring generic prescribing, and the majority (63.9 percent) did not support pharmacists substituting generics. Knowledge gaps, particularly in the perception of generics, have needed to be addressed.²⁵ The perception that if Generic Medicines are prescribed by the Doctors then it would increase the acceptance by the customers was also agreed by the majority in the focus group discussion. Zhao, M. et. al. (2021) in a survey of 1225 physicians in China regarding the use of generics observed that the percentage of physicians who have a favorable attitude about or who prescribe generic medicine was below

50%, which has to increase.²⁶ The survey respondents' data was a mix of socio-economic characteristics. 5 percent were males and 43 females. 66 percent were in the age group of 20 to 50 years. 53 percent had studied beyond graduation. 85 percent of respondents were in agreement when asked whether would use generic medicines provided doctors prescribed the same. 83 percent of the respondents wanted government approvals for the same to decide on usage. 65 percent were of the view that generic medicines lowered their healthcare costs for them. 61 percent felt the doctors were reluctant to prescribe generic medicines. 67 percent were of the view that the government was not promoting generics effectively. 50 percent agreed that there was a perception among people that generic medicines were not as effective as branded medicines. Gupta, Nayak, and Vidyarthi (2015), conducted a survey in south India among doctors in a hospital and concluded a large number of doctors were familiar with generic medications but a sizable percentage

expressed reservations regarding generic medications which were a significant barrier to increasing generic medicine use, as well as higher health-care costs.²⁷ 40 percent of the doctors felt prescribing generics provided no value to them. Prescriptions for branded drugs provided benefits such as sponsoring conferences and meetings, and freebies. Cook A. (1998) in his study on generic drugs in the US Pharmaceutical industry observed that while branded products were more expensive, pharmacy profit margins for generics are higher because low-cost generics may bear higher pharmacy mark-ups.²⁸ Because the brand pharmaceutical business has chosen to retain very high costs for products dispensed through retail pharmacies, payers and retail pharmacies have a strong incentive to switch to generics.^{29,30} Table 7 shows the awareness among respondents and willingness to use generic medicines. Out of 69 respondents, 64 of them were willing to try them and 37 were not sure about deciding out of 102 respondents.

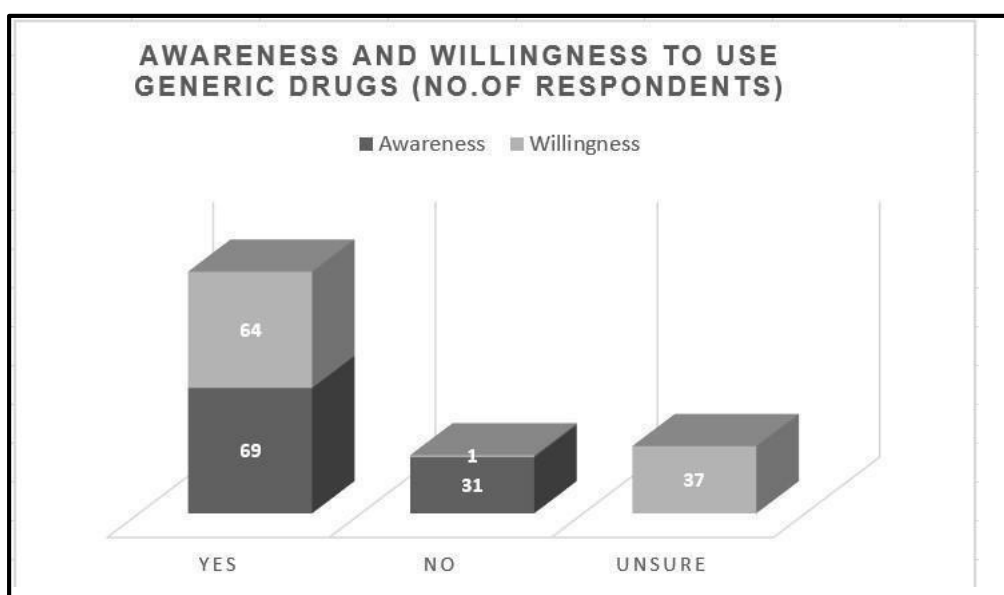


Fig 1: Willingness to use and awareness of generics

As indicated in the above findings, the customers who are favoring Generic Medicines seem to have been positive about the introduction of Generic Medicines as the consumers prefer using them when prescribed by the doctors and approved by the Government or other regulatory agencies. Further, consumers suggested that the Government should make it mandatory to be prescribed by doctors and create a strong awareness campaign to promote the use of Generic Medicine in India. There was an acceptance that, the use of Generic Medicine would reduce the cost of health care significantly. There are very few perception items that were not the differentiating factors among the two groups namely (i) the efficacy of Generic Medicines is inferior and (ii) low in potency as compared to the Branded Medicines. (iii) The perception that, Generic Medicines would reduce the cost of health care was agreed upon by the respondents. A study conducted at a medical institute in India among postgraduate medical students and doctors showed prescribers continue to dispute generic prescribing, and bioequivalence, quality, and safety are still concerns. A large number of doctors were aware of generic medicines, and had a favorable attitude toward their safety, efficacy, and cost-effectiveness, with the majority of them prescribing generic drugs. However, a significant number of people voiced concern about the quality and efficacy of generic medications.³¹ In a study with

physicians, 56 percent of the physicians agreed that generic medicine can be therapeutically equivalent to brand medicine.³² The majority of concerns regarding generics are related to product quality and the fear of losing patients. Other reasons for low patient acceptability are due to a variety of factors such as poor packaging, and a lack of brand promotion initiatives in India, even though India is becoming a lifeline for all developing countries in terms of generic medicine supply. The government and policymakers in India and other developing nations should work to increase physicians' and patients' trust in generic pharmaceuticals that aren't branded. Demand-side management should comprise a diverse approach that addresses the concerns of various stakeholders.^{33,34}

5. CONCLUSION

The study adds to the current literature by looking into the perspectives of patients, doctors, and generic medicine users in India. This study fills a gap in the literature by gathering perspectives from both those who influence the usage of generic medications and those who use them. The capacity to persuade medical practitioners that generic pharmaceuticals are effective and safe, will aid in solving the enormous problem of scaling up generic drug use. Research

of medical professionals and hospital employees was done to measure awareness and use of generic pharmaceuticals, and it revealed that there was awareness of their availability and low cost. There is room to improve generic drug prescription and utilization; however, much work remains to be done in raising consumer awareness and educating the medical community about the accessibility, availability, and efficacy of generic drugs versus branded medicines, which could be accomplished through print and online media. Respondents demonstrated a high level of awareness and readiness to utilize generic medications, according to the survey. The use of generic medications requires a doctor's or government agency's prescription. Unless doctors are encouraged to prescribe them and pharma shops are willing to stock them, adoption will be slow.

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6. AUTHORS CONTRIBUTION STATEMENT

Abhijit Chattoraj, Becky Thomas, and Steward Doss came up with the concept and took part in the survey with respondents as well as focus group discussion participants. The study's theoretical foundations were created by Becky Thomas and Abhijit Chattoraj. Steward Doss worked on the statistical computations as well as contributed to the interpretation of the results. Manoj Pareek expanded the literature review considerably, wrote sections of the manuscript, and edited the manuscript with assistance from all authors.

7. CONFLICT OF INTEREST

Conflict of interest declared none.

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