The Emergence of Retailing of Generic Medicines : An Awareness Study at Kakinada, Andhra Pradesh

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Abstract

Using lower price generic medicines for chronic diseases provides efficacy similar to branded medicines. However, previous studies showed that disadvantaged people, who may particularly benefit from cost savings, have low trust on generics and showed increased reluctance to switch to generics. The rural areas include areas of high poverty and minority communities whose members are at high risk for poor health outcomes. However, whether such beliefs exist in these communities has not been reported. We sought to obtain qualitative insights about awareness and usage of generic medication among the people in urban and rural areas of Kakinada city. This survey showed that there is a gap in consumers' awareness and availability of generic medicines in urban and rural areas of Kakinada. The findings of the study suggest that awareness needs to be spread among the customers about generic medicines. Besides, it is an emerging business opportunity for local medical retailers.

Keywords: **generic medicines, consumers' awareness, retailing, availability, demographics**

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A generic drug is a copy of a brand-name drug. It contains the same active ingredients as the original formulation. In most cases, it is considered bioequivalent to the brand-name counterpart with respect to pharmacokinetics and pharmacodynamic properties. Therefore, a generic drug works in the same way and in the same amount of time as brand-name drugs; it has the same quality, strength, purity, and stability. In addition, generic drugs also share the same risks and benefits as their brand-name counterparts. Generic drugs are cheaper than their brand-name counterparts because they are produced and distributed without patent protection by companies who do not have the funds for developing, testing, and manufacturing them to get a regulatory approval. Without spending substantial amount for its development, overheads are much lower for these manufacturers, so they can afford to make and sell it cheaper (Generic drug, Wikipedia). Hence, the present study mainly focuses on awareness levels of the consumers about generic medicines and also attempts to trace out the marketing opportunities available to the local medical retailers to expand their businesses (even in the rural areas).

Progress of Generic Medicines in India : A Glance

Generic medication is the emerging phenomenon in the retailing of medicines. Generic medicines ensure that consumers have cost viability in terms of cheaper and qualitative medication. India has the second largest population in the world, which was estimated at nearly 1.16 billion in 2009, or 17% of the world's population, and this is also about the same as the total population of Europe. The GDP of India was estimated at $1.3 trillion in 2009, about 8% of the size of Europe's economy. On a per-capita basis, Indian incomes were 3.5% of those in Europe. At the bottom of the income distribution, the differences are even more disproportionate. Most importantly, approximately 317 million Indians are living with incomes below the official poverty line, that is, $12 a month for urban areas and $8 a month for rural areas. Based on the welfare-state policy, the Indian government has recognized the significance of public health. In this regard, the government is taking some positive steps for providing the minimum health amenities to the public by ensuring free medication through government hospitals. Consequently, the Indian government eliminated patents on

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drug products in 1970 (Love, 2011). The quarterly results of Indian pharmacy majors may not be accurately indicative of their long-term future. However, data regarding the demand for generic drugs clearly puts all speculations to rest. Notwithstanding the regulatory hurdles in the West, Indian drug makers have a lot to benefit from the rising share of generic drugs in India too. The increasing spend on generic drugs can by itself bring in a healthy revenue stream to domestic pharmacy majors.

Since there has been a fierce demand for generic medicines in India, this move enabled India to move towards a relatively large domestic market to develop a strong generic drug industry. In 1994, the World Trade Organization negotiated the controversial Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). By doing so, India limited patents in some areas, such as those on new uses or new formulations of drugs, unless they differ greatly in properties related to efficacy. As interpreted by the Indian courts, it is now more difficult for international companies to prevent the manufacturing of generic drugs by making minor changes to the formulation of products or finding new uses for them. India has now become a leading supplier of affordable HIV/AIDS and tuberculosis medications, and is the second-leading provider of medicines distributed by UNICEF in the developing world (Bennett, Bertagnolio, Sutherland, & Gilks, 2008). In this regard, there is a great significance of observing the phenomenon of using the generic medicines besides their availability throughout the country.

The Indian pharmaceutical industry has become an important hub in production of generic drugs from the past few decades. Hannon (2012) said that the total global generic drugs market constituted USD 92 billion and was expected to grow at 11% to reach USD 155 billion in 2012. India is the 4th largest market in terms of production and ranks 13th in terms of consumption value. Moreover, India accounts for 22% of the world market of generic drugs. The Indian pharmaceutical market was USD 13 billion in the financial year 2007, but was expected to grow to USD 34 billion by the financial year 2012. Today, 95% of the country's medical needs are served by the Indian pharmaceutical industry. The Indian pharma sector exports 32% of the manufactured drugs, of which 90% are generic, and marketing growth is about 20% per annum.

Retailing of Generic Medicines : An Emerging Paradigm in Indian Medical Marketing

There are a lot of risks and uncertainties associated with medical retailing in terms of licensing, approval, and reliability. However, there are many initiatives by different organizations, including the government, to make quality generic medicines available in the private sector for open sale. Some of them include the establishment of Jeevandhara stores in Andhra Pradesh, Janatha Bazar generic drug stores in Karnataka State, and Jan Aushadhi Stores of Department of Pharmaceuticals of Government of India. The emerging Indian medical market is now open to the world. There are several multinational pharmaceutical companies like Pfizer, Aventis, Medley, GlaxoSmithKline, and so forth, which have set up operations in India, and are expanding their existing businesses. There are many myths associated with generic medicines like - generics are cheaper due to their quality, using generics mean risking one's life, generics are easy for counterfeiting, and generics are not as safe as branded medicines. The same regulations and regulating bodies regulate both generic and branded medicines. There are no separate regulations for each type.

The pharmaceutical companies spend a good amount of resources to build their brands and hence, branded medicines are costlier than generics. Though the medicines available in the market are expected to be of good quality, there are reports regarding the quality issues for both generic and branded medicines. One of the consumer organizations, after testing several brands of paracetamol tablets, confirmed the availability of poor quality branded products in the open market. The leading brands were reported to be in non-compliance with around 70% of quality parameters specified in the Indian pharmacopoeia. The pharmaceutical manufacturing/marketing companies are responsible for the quality of their products, irrespective of whether the medicines are generics or branded. Often, the same manufacturer produces and markets both branded and generic medicines of the same molecule, and markets them at different prices. Definitely, medicines of the same molecule cannot have two different qualities (Mohanta, Jana, & Manna, 2012).

Legislative Implications on Patented Medicines after the Landmark Judgment Rendered by the Supreme Court of India

The first Indian Patents Act was passed in 1970 by the Indian parliament. Later on, the Indian Patents (Amended) Act, 2005 was proposed to be amended by stating the concerning issues raised with the introduction of pharmaceutical product patent protection. It was also stated that it would be substantial to inhibit the availability of medicines for the population of India and developing countries . The Parliament sought to limit practices that might result in the grant of patents for insubstantial technological contributions (Basheer, 2005). On the other hand, the international legal rules accepted by India, in particular, the WTO TRIPS Agreement, provides sufficient leeway or flexibility in the adoption of patenting standards to allow the approach adopted by the Indian Parliament (Abbott, 2013).

In 1998, Novartis AG ("Novatis") filed a patent application in India for beta-crystalline form of "Imatinib Mesylate," a drug named as “Gilvec” or “Gleevec” used to treat chronic myeloid leukemia (CML), a type of blood cancer. In 2005, the Chennai patent office heard patent oppositions to this application, including one filed by the Cancer Patients Aid Association (CPAA). The CPAA challenge was spurred by great concern over the price Novartis set for its version of the drug (sold as Gleevec) at ₹ 1,20,000 ($2,400) per month as against the generic versions that were available at a cost of around ₹ 8,000 to ₹12,000 per month. In 2006, the Patent Office rejected Novartis's patent application on several grounds, including section 3(d). Novartis immediately challenged the constitutional validity of Section 3(d) before the Madras High Court, arguing that the term "efficacy" was vague (Novartis v. Union of India & Others, Wikipedia). In 2007, dismissing the challenge, the Madras High Court held that the word "efficacy" had a definite meaning in the pharmaceutical field, that is, therapeutic efficacy. In 2009, the Intellectual Property Appellate Board (IPAB) rejected Novartis's appeal against the patent application rejection on the ground that it did not satisfy section 3(d). Novartis then approached the Supreme Court asking for a liberal interpretation of section 3(d) that would allow it to get a patent on “Imatinib Mesylate.” (Grover, 2013). Then, Novartis tried to argue that the physico-chemical properties of the polymorph form of the imatinib molecule, that is, better flow properties, better thermodynamic stability, and lower hygroscopicity resulted in improved efficacy. The Supreme Court firmly rejected this contention holding that in the case of medicines, efficacy means "therapeutic efficacy," and these properties, while they may be beneficial to some patients, do not meet this standard (Banka, 2013). The Supreme Court also held that patent applicants must prove the increase in therapeutic efficacy based on research data in vivo in animals.

Significantly, the decision of the Supreme Court of India generated widespread global news coverage and reignited debates on balancing public good with monopolistic pricing, innovation with affordability, and so forth. The decision also ensured steady availability of low cost generic versions of life-saving drugs based on imatininb or imatinib mesylate polymorphs (Aiyar, 2013).

Empowered Scenario in the Indian Pharmaceutical Industry after Amendment of the Indian Patents Act, 2005

The Indian Patents Act of 1970 was a game changer. It shook up the pharmaceutical industry and altered it irreversibly. The new, empowered scenario was most vividly illustrated during the peak of the HIV/AIDS treatment crisis in the first decade of the 21st century, when countries like Brazil, Thailand, South Africa and, of course, India, took health security into their own hands and legitimately moulded their domestic patent systems to respond to the crises within. The Indian Patents Amendment Act of 2005 gave us the law we have today (Nair, 2008). This time, however, the change might come more slowly. "The Supreme Court judgment is all the more important, for it shows that a new way may be hard and tiresome, but is ultimately possible. However, the decision of the Supreme Court will come as a relief to patients suffering from these dreadful diseases as several Indian companies, including Cipla, Ranbaxy, and Natco can continue marketing Imatinib at a fraction of the cost of the Novartis product," IPA (Indian Pharmaceutical Association) Secretary General DG Shah said in a statement. Expressing similar sentiments, IDMA (Indian Drug Manufacturers Association) Secretary-General Daara B. Patel said the order was in favor of poor patients as, “It is a good judgment. It is in favor of the country's poor patients and is in support of Indian generic companies. Though I feel sorry for Novartis, but I feel happy that rules of the country have prevailed, and this helps the poor patients." Commenting on the development, Cipla Chairman Y.K. Hamied said, "The judgement in the Novartis case is a victory for patients both in

India and around the world. Indeed, this landmark judgment can surly reflect on its benefits to both public health and offer a positive change in the way pharmaceutical innovation works" ("Supreme Court's decision on Novartis to benefit poor patients: Pharma companies", 2013; "Supreme Court to pass landmark judgement on Novartis pharma patents case today", 2013).

Scope of the Study

This study deals with the awareness and usage of generic medications at urban and rural areas of Kakinada City. The city lies in the coastal delta area of Andhra Pradesh. It is located 465 kilometers (289 miles) east of the state capital, Hyderabad. It is also the headquarters of the East Godavari district. Kakinada is one of the famous deep-water sea port cities in India, where the exports and imports are being voyaged to foreign countries like China, Japan, and some other Asian countries with million dollars of turnover since years long. Apart from these, Kakinada is famed for the rapid industrialization through the establishment of the SEZs (Special Economic Zones) and a proposed petroleum, chemical, and petrochemical investment region (PCPIR). The city had an urban population of 376,861 people as per census of 2001, making it the eighth largest city in Andhra Pradesh by population. In addition, the city is surrounded by more than 30 villages having a population of more than 50,000 people approximately (Kakinada, Wikipedia).

Objectives of the Study

This study examines the awareness of the people in urban and rural areas in the Kakinada constituency about generic medicines. The study has the following objectives :

1) To study the awareness of people about generic medicines at urban and rural areas.

2) To know the availability and purchasing patterns of generic medicines at urban and rural areas.

3) To offer suggestions to medical retailers for creating awareness about the usage of generic medicines.

4) To ascertain the business opportunities for the local medical retailers.

Review of Literature

Since so many researchers have been signifying the importance of generic medication worldwide, the present study pertains to establishing a strong awareness regarding the use of generic medicines in urban and rural areas. Past studies in this area signified an other dimension of opportunistic marketing. Gaither, Kirking, Ascione, and Welage (2001) found that the opinion of people about generic drugs varied according to the socio-demographic variables such as ethnicity, educational level, income, and age. Vallès et al. (2003) conducted a Spanish multicentre study on the effect of patient education on acceptability of generics in general practice. The patient education consisted of a session of up to five minutes and included verbal information and providing handout materials on the advantages and disadvantages of generics equivalents and brand-name drugs. A study by Himmel, Simmenroth - Nayda, Niebling, Ledig, Jansen, Kochen, Gleiter, and Hummers-Pradier (2005) found that the primary care patients in Germany were surveyed about their thoughts on generic drug use. One-third of the participants considered inexpensive generics to be inferior to, or different from, more expensive brand-name drugs because of their lower price. Haskins, Tomaszewski, and Crawford (2005) studied two-thirds of the participants who reported concerns about the safety and the effectiveness of generic medicines.

Kjoenniksen, Lindbaek, and Granas (2006) conducted the Norwegian survey which revealed that one third of the participants reported one or more negative experience with generics substitution, for example, more side effects or poorer effects. Palagyi and Lassanova (2008) investigated consumers' attitudes towards, and experiences with, generic drugs in Slovakia. This study revealed that customer attitude was highly significant with reference to trust, lower co-payment, and quality. Shrank, Cox, Fischer, Mehta, and Choudhry (2009) conducted an American survey which reported that one-third of the patients were uncomfortable with substitution to some extent. About 10% believed that generic drugs could cause more side effects than brand-name drugs. Roman (2009) hypothesized that differences in name, appearance, and packaging between brand-name and non-branded drugs would cause anxiety,

confusion, and misperceptions in Dutch patients. Babar et al. (2010) found in a study at New Zealand that by differentiating the 'minor' (such as cold, flu, or hay fever) and 'major' (such as asthma, diabetes, or heart problems) illnesses, the participants claimed to be more prepared to change to generic drugs for the former than for the latter. Moreover, a change was more likely to be accepted if the patient was young, educated, had sufficient knowledge about generic drugs, and/or had previous experience with generics substitution. Gill, Helkkula, Cobelli, and White (2010) conducted the unstructured personal interviews with customers from Australia, Finland, and Italy. The main recurrent theme in these interviews was 'confusion related to why they were being offered something that was different to what their doctor had prescribed'. Confusion and suspicion were associated with poor awareness of generic drugs by the participants when asked whether they were willing to accept substitution by the pharmacy personnel.

Methodology

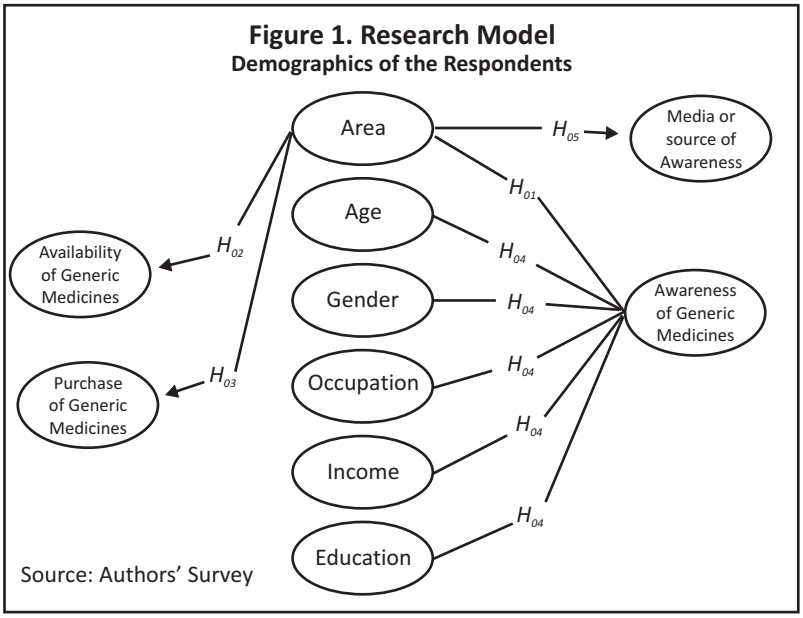
This study is embodied with both primary and secondary data. The primary data was collected from people of various urban and rural areas of Kakinada constituency. The study also embodied a sizeable sample of 100 respondents through personal interviews. Equal number of respondents were selected on the basis of their residential areas (i.e. urban and rural areas) during the year 2011-2012. The selection criteria was based upon the data availability, convenience to access, and the level of participation. Simple random sampling technique was used to select the respondents. This is an analytical study, which is mainly based on a scientifically developed close ended questionnaire. Finally, the researchers tested the gathered respondents' opinion data by administrating statistical tests like chi-square, one-way ANOVA, and Karl Pearson's correlation coefficient by using the statistical package SPSS version 20.0 Software.

Limitations of the Study

The present study has the following limitations:

1) The study was conducted only in Kakinada constituency. Therefore, the derived results of the study are limited to this area.

2) The study is mainly based on the responses of the both generic medicines consumers and non - generic medicines consumers. Hence, it is assumed that the information given by them is unbiased.



Hypotheses

- **H01: There is no significant relationship between area of the respondents and awareness regarding generic medicines.**
- **H02: There is no significant relationship between area of the respondents and availability of generic medicines.**
- **H03: There is no significant relationship between area of the respondents and purchase of generic medicines.**
- **H04: There is no significant relationship between the various demographic factors of the respondents and awareness regarding generic medicines.**
- **H05: There is no significant relationship between area of the respondents and media or source of awareness.**

The Figure 1 depicts the relationship among various prime considered factors pertaining to the awareness about generic medicines among the respondents.

Table 1. Demographic Factors of the Respondents

	Respondents*, %	
Characteristics	**Urban**	**Rural**
Age		
Less than 25 years	14(56)	11(44)
26 years to 30 years	18(50)	18(50)
31 years to 35 years	11(48)	12(52)
Above 35 years	7(44)	9(56)
Gender		
Male	28(54)	24(46)
Female	22(46)	26(54)
Income		
Below ₹ 15000	12(52)	11(48)
₹ 16,000 to ₹ 25,000	19(44)	24(56)
Above ₹ 26,000	10(50)	10(50)
Non earner	9(64)	5(36)
Occupation		
Student	9(64)	5(36)
Private Employee	17(44)	22(56)
Government Employee	6(40)	9(60)
Agriculture	14(54)	12(46)
Other	4(66)	2(33)
Education		
Below +2	11(44)	14(56)
Graduation	32(48)	34(52)
Post Graduation and Above	7(78)	2(22)

Source: Primary Data

*N=100

Results and Discussion

The Table 1 depicts the particulars about the demographics of the respondents at various urban and rural areas of Kakinada city. 25% of the respondents belonged to age group of less than 25 years, 36% of the respondents belonged to the age group of 26 -30 years, 23% of the respondents belonged to the age group of 31-35 years, and 16% of the

Table 2. Opinion of the Respondents about Generic Medicines

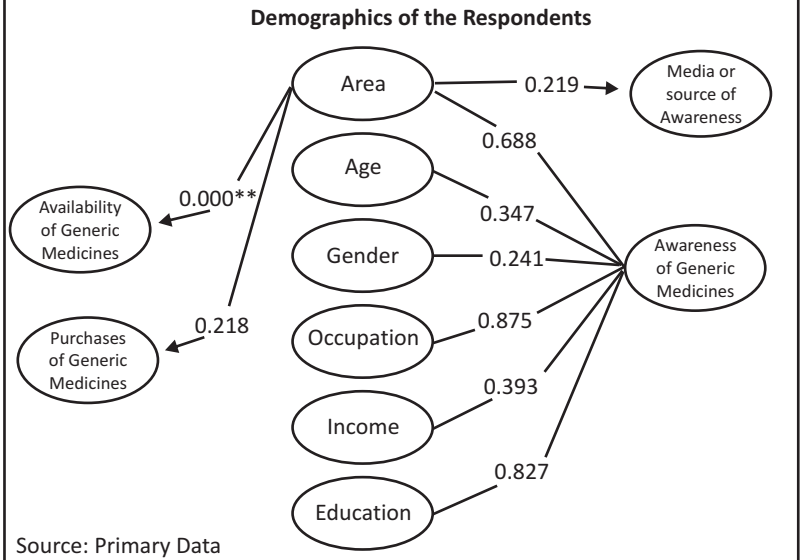
S.No.		Responses, % Yes	No	Test Results F- Test	Pearson Correlation Sig. (2-sided)	P Value	N=100 Hypothesis
1	**Awareness Regarding Generic Medicines**						
	Urban	24(48)	26(52)				
	Rural	22(44)	28(56)	0.158	0.04	0.688	Accepted
2	**Availability of Generic Medicines in vicinity**						
	Urban	11(22)	39(78)				
	Rural	0(0)	50(100)	13.82	0.352*	0.000**	Rejected
3	**Purchase of Generic Medicines**						
	Urban	8(16)	42(84)				
	Rural	4(8)	46(92)	1.508	0.123	0.218	Accepted
4	**Awareness in Age Groups**						
	Less than 25years	13(52)	12(48)				
	26 years to 30 years	17(47)	19(52)				
	31 years to 35 years	7(30)	16(70)				
	Above 35 years	9(56)	7(44)	0.124	0.036	0.347	Accepted
5	**Awareness w.r.t. Gender**						
	Male	21(40)	31(60)				
	Female	25(52)	23(48)	1.366	-0.117	0.241	Accepted
6	**Awareness w.r.t. Occupation**						
	Student	5(35)	9(64)				
	Private Employee	19(49)	20(51)				
	Govt. Employee	8(53)	7(47)				
	Agriculture	11(42)	15(58)				
	Other	3(50)	3(50)	0.052	-0.023	0.875	Accepted
7	**Awareness w.r.t. Income Groups**						
	Below ₹15000	9(39)	14(61)				
	₹ 16,000 to ₹ 25,000	24(56)	19(44)				
	Above ₹ 26,000	8(40)	12(60)				
	Non earner	5(36)	9(64)	0.267	0.052	0.393	Accepted
8	**Awareness w.r.t. Education**						
	Below +2	11(44)	14(56)				
	Graduation	30(45)	36(55)				
	Post Graduation and Above	5(56)	4(44)	0.223	-0.046	0.827	Accepted
9	**Media or source of awareness in different areas**	**Urban**	**Rural**				
	Newspaper and Television	20(83)	14(64)				
	Other sources	4(17)	8(36)	2.326	0.224	0.129	Accepted

Source: Primary Data

*Correlation exists between the variables at 1% level of Significance

**Significant at 5% level of Significance

Figure 2. Establishing a Hypothetical Relationship Among the Factors



Source: Primary Data
**Significant at 5% level of Significance

respondents belonged to age group of above 35 years. 52% of the respondents were male and 48% of the respondents were female. 23% of the respondents had an income level (per month) as below ₹ 15000, 43% of the respondents had an income level between ₹ 16,000 - ₹ 25,000. 20% of the respondents had an income level above ₹ 26,000, 14% of the respondents were non earners. 14% of the respondents were students, 39% of the respondents were private employees, 15% of the respondents were government employees, 26% of the respondents were dependent upon agriculture for their livelihood, and 6% of the respondents were involved in various miscellaneous occupations. The educational level of 25% of the respondents was below +2, 66% of the respondents were graduates, and 9% of the respondents were post graduates and above. Hence, it can be observed that a majority of the respondents were literate.

The Table 2 and Figure 2 depict the significant and the non-significant relations among various factors pertaining to respondents' opinions about awareness of generic medicines, in which the first analysis shows the respondents' opinion on awareness of generic medicines based on their area. 48% of the respondents of urban areas were aware about generic medicines, whereas 28% of the respondents of rural areas had no awareness about the generic medicines. Significantly, 54% of the respondents of both urban and rural areas did not have any awareness about generic medicines. The above analysis shows that there is no significant relationship between the area of the respondents and awareness regarding generic medicines (i.e. $p = 0.688 > 0.005$ and F value 0.158 is less than the Table value of 3.94 at 5% level of significance, having no correlation between the factors). Hence, the null hypothesis (H01) is accepted.

Next, respondents' opinion on availability of generic medicines in urban and rural areas of Kakinada city was analyzed. 78% of the respondents of urban areas revealed the non-availability of generic medicines in their area, whereas, surprisingly, 100% of the respondents of rural areas said that generic medicines were not available in their area. Significantly, 84% of the respondents of both urban and rural areas disclosed the non availability of generic medicines in their vicinity. This analysis proves the significant relationship between the area of the respondents and availability of generic medicines (i.e. $p = 0.000 < 0.005$ and F value 13.82 is more than the Table value of 3.94 at 5% level of significance, having correlation between the factors). Hence, the null hypothesis (H02) is rejected.

Next, the respondents' opinion on purchasing generic medicines at various urban and rural areas of Kakinada city was ascertained. 84% of the respondents of urban areas did not purchase the generic medicines, whereas 92% of the respondents of rural areas had never purchased the generic medicines. Significantly, 88% of the respondents of both urban and rural areas never purchased the generic medicines. The analysis proves that there is no significant relationship between the area of the respondents and purchase of generic medicines (i.e. $p = 0.218 > 0.005$ and F value 1.508 is less than the Table value of 3.94 at 5% level of significance, having no correlation between factors). Hence, the null hypothesis (H03) is accepted.

We next examined the respondents' opinion on awareness of generic medicines with respect of their demographic factors - age, gender, income level, occupation, and education at various urban and rural areas of Kakinada city. 70% of the respondents in the age group of 31 - 35 years of age (in both the areas) did not have any awareness about the generic medicines, whereas 52% of the respondents in the age group of less than 25 years had awareness about the generic medicines. A significant number of respondents (i.e. 54%) of all age groups did not have awareness of generic medicines. The analysis shows that there is no significant relationship between the age group of the respondents and awareness of generic medicines (i.e. $p = 0.347 > 0.005$ and F value 0.124 is less than the Table value of 3.94 at 5% level of significance, having no correlation between factors). Hence, the null hypothesis (H04) is accepted.

Going further, we analyzed the respondents' opinion on awareness regarding generic medicines with respect to their gender at various urban and rural areas of Kakinada city. 60% of the male respondents of both the areas did not have any awareness about the generic medicines, whereas 52% of the female respondents had some awareness about the generic medicines. A significant number of respondents (i.e. 54%) of both the genders did not have any awareness of generic medicines. The analysis shows that there is no significant relationship between the gender of the respondents and awareness regarding generic medicines (i.e. $p = 0.241 > 0.005$ and F value 1.366 is less than the Table value of 3.94 at 5% level of significance, having no correlation between the factors). Hence, the null hypothesis (H04) is accepted.

Next, the respondents' opinion regarding awareness of generic medicines with respect to their occupation at various urban and rural areas of Kakinada city was ascertained. 64% of the students did not have any awareness about the generic medicines, whereas 58% of the agriculture based respondents had no awareness about the generic medicines. Significantly, 53% of the government employees had awareness about generic medicines. However, majority (54% out of 100%) of the respondents did not have any awareness about generic medicines. The analysis reveals that there is no significant relationship between the occupation of the respondents and awareness regarding generic medicines (i.e. $p = 0.875 > 0.005$ and F value 0.052 is less than the Table value of 3.94 at 5% level of significance, having no correlation between the factors). Hence, the null hypothesis (H04) is accepted.

We also analyzed the respondents' opinion on awareness of generic medicines with respect to their income levels at various urban and rural areas. 61% of the respondents who earned up to ₹ 15,000 p.m. were unaware of generic medicines ; 56% of the respondents whose incomes range was between ₹ 16,000 to ₹ 25,000 were also unaware of generic medicines. 60% of the respondents whose income was up to or above ₹ 26,000 had no awareness about generic medicines. Lastly, 64% of the respondents, who were non-earners, also expressed their unawareness about generic medicines. It is clear from the analysis that majority of the respondents did not have awareness about generic medicines, irrespective of their income levels. The analysis shows that there is no significant relationship between the income of the respondents and awareness regarding generic medicines (i.e. $p = 0.393 > 0.005$ and F value 0.267 is less than the Table value of 3.94 at 5% level of significance, having no correlation between the factors). Hence, the null hypothesis (H04) is accepted.

Going further, the respondents' opinion regarding the awareness of generic medicines with respect to their educational level at various urban and rural areas was ascertained. 56% of the respondents who were educated upto the +2 level had no awareness about generic medicines. In addition, 55% of the respondents who were graduates were also unaware about generic medicines. However, 56% of the respondents who were post graduates and above had awareness regarding generic medicines. However, it is clear that majority of the respondents did not have any awareness about generic medicines, irrespective of their educational background. The analysis emphasizes that there is no significant relationship between the educational level of the respondents and awareness regarding generic medicines (i.e. $p = 0.827 > 0.005$ and F value 0.223 is less than the Table value of 3.94 at 5% level of significance, having no correlation between the factors). Hence, the null hypothesis (H04) is accepted.

We also analyzed the respondents' opinion on source of awareness about generic medicines at various urban and rural areas. 84% of the respondents of urban areas expressed their source of awareness to be newspapers and televisions. 17% of the respondents of urban areas got awareness regarding generic medicines through other sources like word of mouth, whereas 64% of the respondents of rural areas expressed their source of awareness as newspapers and televisions. 36% of the respondents of rural areas got awareness regarding generic medicines through other sources. The analysis shows that there is no significant relationship between the media or source of awareness and area of the respondents (i.e. $p = 0.129 > 0.005$ and F value 2.310 is less than the Table value of 3.94 at 5% level of significance, having no correlation between the factors). Hence, the null hypothesis (H05) is accepted.

Findings

1) 54% of the respondents of urban and rural areas did not have any awareness about generic medicines.

2) 100% of the respondents of rural areas revealed that generic medicines were not available in their areas.

3) 84% of the respondents of both urban and rural areas revealed that generic medicines were not available in their areas.

4) 92% of the respondents from rural areas had never purchased any generic medicines.

5) 54% of the respondents of all age groups did not have any awareness regarding generic medicines.

6) 60% of the male respondents from both the areas did not have any awareness about the generic medicines, whereas 52% of the females were aware about the generic medicines.

7) 54% of the respondents belonging to various occupations did not have any awareness about generic medicines.

8) It was observed that most of the respondents did not have any awareness about generic medicines, irrespective of their income levels.

9) 56% of the respondents who were post graduates and above were aware of generic medicines.

10) Most of the respondents expressed that newspapers and televisions were their source(s) of awareness regarding generic medicines.

Suggestions

1) Aggressive advertising and campaigning through the media mix can help in spreading awareness about generic medicines among the consumers.

2) Medical retailers should concentrate on the untapped rural markets in terms of promoting generic medical outlets at various areas.

3) Medical retailers should directly buy the bulk quantity of generic medicines from the various generic medical manufactures, apart from the conventional medical distributors.

4) Medical retailers need to make the private medical practitioners aware of prescribing and promoting the generic medicines to the patients exclusively in the rural areas.

5) Generic medical retailers should be in proximity to the hospitals.

6) Medical retailers should remove the tentativeness and timidity from the minds of the branded medicine consumers about the reliability of generic medicines.

Conclusion

In our study, we mainly examined the critical issues regarding the awareness and consumption patterns pertaining to the generic medicines at urban and various rural areas of Kakinada city. This study proves the significance of marketing opportunities for the conventional medical retailers in various markets. Consumer awareness programmes would reduce the misconceptions, and would equip the consumers with the knowledge they require to make an informed decision about using generic medicines. Especially, aggressive marketing is required in the case of rural people, who are totally ignorant of generic medicines. This study deliberates the significance of consumer awareness about the benefit of generic medicines in terms of cheaper price and curing capacity. Nevertheless, the local and organized medical retailers have to think of marketing and selling the generic medicines by establishing their outlets in rural areas, even in the remote rural areas in the country.

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