

Evaluation of Awareness, Perception and Influences that Help Students to Decide on the Generic Medicine

Dr. T. Sreenivas

Vice Principal, YVU College, Yogi Vemana University, Kadapa, Andhra Pradesh

G. Jayakar Johnson

Research Scholar, Head of Placements, Ashoka Women's Engineering College, Kurnool, Andhra Pradesh

Article Info

Page Number: 8417 - 8423

Publication Issue:

Vol 71 No. 4 (2022)

Abstract

Expenses associated with modern healthcare are rising, especially the selling price of drugs. In spite there is proof to advise that certified pharmacists around the globe now routinely substitute generic medications for branded ones, drug consumption has been identified as a significant contributor to the rising costs of medical services. Pharmaceutical goods known as generic medications have physical and chemical properties that are bioequivalent to those of name-brand medications. By 2023, it is anticipated that worldwide medication spending will exceed US \$1.5 trillion. The estimated cost of pharmaceuticals in South India, as per available reports, is closer to US \$8 billion. Even though the market's potential to level the demand for medications, the prevalence of both communicable and non-communicable diseases has increased. South India is not an exception to this Universal trend, which raises the expense of medicine to patients and the health care industry. latest statistics report that 36% of adult population over 20 are obese, 18.5% of them are disabled, and over 23% have hypertension. The cost of healthcare in South India has been noticed to increase rapidly in most recent years, and this trend is presumed to continue. To boost pharmaceutical products, lot of initiatives, investments have, started in recent years as such, as part of a well-planned strategy to produce at least 40% of all medications domestically in the long run.

Article History

Article Received: 15 September 2022

Revised: 25 October 2022

Accepted: 14 November 2022

Publication: 21 December 2022

Background

According to numerous reports, using generic medications instead of branded ones has allowed people to save money without sacrificing the standard of their healthcare. It was discovered that pharmacists' approach and awareness played a role in encouraging this generic substitution. Several earlier research assessed pharmacists' approach and awareness about the prescription of generic medications at the national and globe levels. Earlier research has evaluated the opinions and approach of neighbourhood pharmacists and other medical specialists concerning generic medications, including in South India and other foreign nations. Additionally, earlier research

among working healthcare professionals, including pharmacists, found that generic medications were similarly effective to branded medications and had therapeutic equivalence. Though the research among pharmacy students given an outcome with harmful sentiments. In South India, in a prior study by few students revealed negative approach and perceptions that generic medications are ineffective compared to branded medications. Similar findings were found in another study by few more students, which revealed that generic medications were perceived negatively as inferior, less effective, and producing more side effects than branded medications. Another study among Delhi students studying medicine found that they had favourable opinions and understanding of dispensing generic medications. Numerous reports evaluating the opinions of practising pharmacists in South India have been published. Nevertheless, there are still a lack of studies involving pharmacy students. Determining pharmacy students' opinions on generic prescriptions is important because they represent our future pharmacists vital in increasing the use of generic medications. In this study, we assessed the awareness, approach, and potential influences on generic medicine choice among pharmacy students.

Methods

The South India colleges of Pharmacy hosted this descriptive, different sectional study, which involved Pharm-D students, over the course of three months, from January to March 2021. Self-administered Google Forms surveys were used to obtain the data. Participants who met the study's inclusion criteria had to be enrolled in the South India colleges of Pharmacy and be at the entrance level (second or third year) of their studies. The study excluded students who are seniors, other programmes students, from other South Indian universities.

Following an exhaustive assessment of comparable research published in other nations, the questionnaires for this study were created. The R&D unit, which included the researcher and a professor, checked and perused the questionnaires' initial shortfalls. 10 questions with binary (Yes/No) answers in the first portion tested the students' awareness of generic medications. A total of 14 items on a 5-point Likert scale, from "strong agree" to "strong disagree," comprised the attitude questions in the survey's second segment. The third portion included inquiries that were adapted from a prior study about potential obstacles or elements that might affect the prescription of generic medications in South India.

Assuming a population of 300 students who are currently enrolled in the colleges and are pursuing their second and third years of study with a confidence level of 95% and a present margin of error of 5%, the sample size was computed, yielding a sample of 169 people. Because we are unsure of what to anticipate for each question's findings, we anticipated that the response distribution would equal 50% for each. To increase the sample size for this study, we employed a response distribution of 50%.

After speaking with the course instructor in person, the data were procured through online surveys. The pupils were given the link to the online survey that we constructed using Google Forms. Before completing the survey link's questionnaire, there was an introduction that discussed the study's goals and importance. The students have been communicated that their participation was solely voluntary and anonymous, and those who read and consented to the next page were forwarded to the research questions, which was deemed to be their agreement. But this survey was carried out in accordance with the CHERRIES (Checklist for Reporting the Results of Internet E-Surveys)

requirements. The questionnaires were examined by the Professor and Researcher, who gave their consent to carry out the study. The study got institutional ethical approval from the R&D team.

Analysis

SPSS Version 26 (IBM, Armonk, New York, United States) for Windows was used to analyse the data. For each variable, descriptive statistics were computed, including percentages and frequency distribution. The mean values for the age variable were shown.

Results

The online survey was self-administered by 182 PharmD students in total. The pupils were 21.05 years old on average (SD = 1.03). Table 1 displays the PharmD students' familiarity with generic drugs. Over half of the students (123/182, 64.4%) and more than 70% of the pupils (134/182, 70.2%) were able to define bioequivalence and generic medicine, respectively. Between 89 and 65% of the students who responded to the study said that generic pharmaceuticals must meet the same quality, efficacy, and safety standards as the original, branded products. However, more than 70% of students (138/182, 72.3%) agreed that when two drug products are bioequivalent, it means that they work in the same way. More than half of the students (108/182, 56.5%) lacked understanding regarding the pharmacokinetic parameters of generic drugs. It means that the anticipated C_{max} and area under the curve (AUC) ratios can vary by 20–25% depending on the formulation. Last but not least, the majority of students (126/182, 66%) correctly recognised that if a generic drug is bioequivalent to a branded drug, it means that the drug is restoratively similar.

Knowledge Items						
S.No.	Parameter	Total responses	Correct	% of correct	Incorrect	% of correct
1	A generic medication is one that is offered by the non-proprietary name of the drug or a different brand name.	182	121	66.48	61	33.52
2	Generic products must be bioequivalent to the innovator brand before they may be granted a marketing authorization.	182	118	64.84	64	35.16
3	Product quality information is NOT mandatory prior to the registration of a generic product in countries that need bioequivalent data.	182	159	87.36	23	12.64
4	If a generic product satisfies the criteria for bioequivalence and product quality, it is believed that its efficacy, quality, and safety are comparable to those of the original branded product.	182	122	67.03	60	32.97
5	If two pharmaceutical medications are pharmaceutically equal and their bioavailability is almost identical, their effects can be anticipated to be largely similar in terms of efficacy and safety.	182	117	64.29	65	35.71

The most significant factors influencing the choice of generic drugs, according to students, were lower costs to patients (153/182, 80.1%), the cost-effectiveness of generic medicines (137/182, 72%), the availability of policies, laws, and regulations (133/182, 69.6%), and legal implications (126/182, 66%). (Table 2).

Influencing factors on unbranded medicine selection								
S.No.	Variable	Total Responses	Least important factors	% of least imp factors	Important factor	% of Imp factors	Neutral	% Neutral
1	Unconfidence in generic medications	182	28	15.38	65	35.71	89	48.90
2	Regulations, laws, and policies are easily accessible.	182	16	8.79	124	68.13	42	23.08
3	Effects on the law	182	15	8.24	121	66.48	46	25.27
4	Customer costs are lower	182	15	8.24	147	80.77	20	10.99
5	No other option is available.	182	26	14.29	104	57.14	52	28.57
6	The appearance or nationality of the customer	182	116	63.74	28	15.38	38	20.88

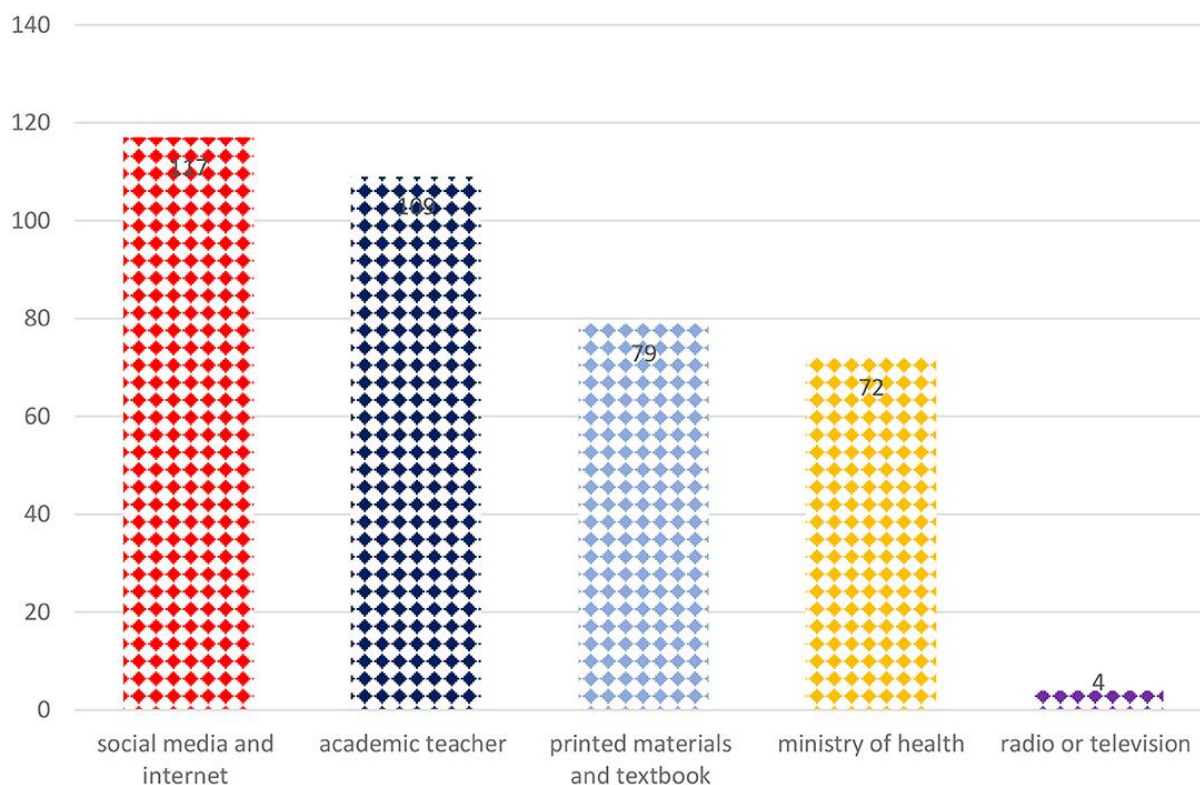
According to our findings, the majority of students (122/182, 85%) indicated that they would favour generic medications over brand-name ones in every situation where a generic is available. More than half of the students (99/182, 66.7%) agreed that less money would be needed for the development of new pharmaceuticals as a result of the increased use of generic medications. Furthermore, the majority of students (75/182, 64%) concur that using generic medications will reduce government spending on healthcare. Most students (116/182, 82.7%) who were asked about therapeutic equivalence agreed that all items approved as generic medications by the states of South India's health authorities can be thought of as therapeutically equivalent to their branded counterparts; 69% (101/182) disagreed. The majority of the students felt that they should write prescriptions for generic substitutes, especially for South Indians without access to prescription drug benefits, because the cost gap between generic and branded medications is frequently so considerable.

In response to a question about the specifications for generic medications, 113/182 (86.4%) of the students agreed that health authorities should put into place rules requiring bioequivalence data before a generic medicine is released. 87/182, or 60.4%, of the students said that pharmacists should be able to substitute generic medications without first seeing a prescribing physician. In contrast, about 62% (92/182) of the students agreed that pharmacists should be required to consult the prescribing physician when substituting certain categories of drugs with narrow therapeutic indices. Only slightly more than half (75/182, 48%) of the students agreed that they should consult doctors before prescribing generics to patients. Table 3 provides more information about South Indian PharmD students' opinions on generic substitutes.

Perception on utilization of unbranded medicine							
S.No.	Variables	Total Responses	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral
1	I always choose generic versions of brand-name drugs when one is readily available.	182	55	68	9	5	45
2	As the use of generic medications increases, less money will be spent on the research and development of innovative pharmaceuticals.	182	33	58	32	15	44
3	The Saudi government will spend less on healthcare if generic medications are used more frequently.	182	19	55	44	12	52
4	Changing a patient from a branded to a generic medication can affect how well the drug works.	191	16	36	64	21	54
5	The therapeutic success rate of the majority of generic drugs is high.	191	19	43	47	20	62
6	All drugs that Saudi Arabia's health authorities have approved as generics are therapeutically equivalent to their brand-name counterparts.	191	47	69	14	4	57

Social media and the internet were the most popular sources of information for the students on generic medications, accounting for 117 (60%), followed by academic teachers (109, 55.9%), printed materials and textbooks (79, 40.5%), the ministry of health (72, 36.9%), and radio or television (4, 2.7%). (Refer to Figure 1).

Various sources for generic medicines



Discussion

Male pharmacy students' replies were gathered for this study, but those of female students were not included. This is probably because Islam predominates in South India, where it is against the law for men to contact with women and coeducation is outright forbidden. In this study, about 65% of the students felt that generic products are comparable to brand-name products in terms of quality, efficacy, and safety. These results were comparable to earlier research from Ethiopia (67%) (20), but they were also greater than those of James et al. (55%) (21), Belay et al. (52.9%) (22), Toklu et al. (46.1%) (23), and Al Hussain et al. (42.2%) (24). However, compared to earlier investigations by Grover et al. (70%) and Wajid et al. (72.2%), our findings were still less favourable among neighbourhood pharmacists (3, 25). One research of Yemeni pharmacy students at private colleges found that they believed generic medications to be inferior and less effective than branded medications, which could result in more side effects (14). The fact that the majority of respondents in the current survey are currently undergraduates and entry-level students without prior work experience or training in pharmacy environments may be the cause of the disparity in understanding about generic medications.

A lower percentage of students (44%), compared to the previous survey (55.2%) among Yemeni students, correctly identified the requirement that the pharmacokinetic parameters of generic medications must fall within the range of 90-110% of those of their branded counterparts with a

90% confidence interval (14). According to the most recent research, South India students may not have understood the full implications of the term "bioequivalence" and its limitations for generic drugs. In this survey, the majority of the students consulted social media before turning to academic instructors and printed materials as sources for generic medications. The current research shows how common internet use is among students and how rapidly it can provide information on medicine and pharmaceuticals at any time. This could explain why students had an excellent understanding of generic drugs and substitutes.

This study's findings, which are in line with those of other surveys conducted among pharmacists and pharmacy students, show that 85% of the students favour generic replacement and that 67% think that generic medications are less expensive. The majority of students (80%) understood what generic medications were, which is comparable to other surveys conducted among students in Pakistan and Yemen (14, 15). According to this research, the majority of students and practising pharmacists were knowledgeable with the prescription of generic medications, possibly as a result of the numerous hospital and community outlet rotations and training that were necessary before they received their degrees. The findings of the current study were also in line with those of a prior study conducted by Pakistani pharmacy and medical students, which found that both groups of students believed that the usage of generic medications to lower healthcare costs compared to expensive name-brand medications (15). A little under half of the students in our study believed that prescribing generics reduced expenditures for both the government and the patients. The majority of the students in this study agreed that all pharmaceuticals approved as generic drugs by the South Indian health authorities can be regarded as therapeutically equivalent to their branded counterparts and disagreed that therapeutic failure is a significant issue with the majority of generic products. These findings also demonstrated that students had favourable approach regarding generic medications, which is consistent with past research from many nations

Previous research claimed that pharmaceutical company bonuses were primarily responsible for the availability of generic medications in pharmacies, and that this was a potential motivating factor for prescribing generic medications and increasing pharmacy earnings (14, 15, 17). This earlier discovery demonstrates that healthcare workers, including pharmacists, are equally susceptible to drug marketing. As a result, they need to be taught how to critically assess pharmacological information provided by manufacturers (14, 15, 17).

Students in this study determined that having no other options and having the lowest cost to patients, along with the cost-effectiveness of generic medications, the availability of rules, laws, and legal ramifications, were all possible influencing factors in the choice of a generic drug. However, earlier research discovered that it was necessary to make the quality control tests of generic drugs known since they were comparable to the quality of branded medicines in order to raise awareness and encourage the prescription of generic medications in the public healthcare system (26). Furthermore, Almangour et al. demonstrated that educational programmes were most effective in enhancing students' and practising pharmacists' understanding of generic medications (27). Additionally, the distribution of funds and effective patient-healthcare professional contact can enhance the effectiveness of generic drugs both in the minds of the healthcare system and patients. Despite certain restrictions, the study's findings cannot be applied to the entire population of South India because it only included male pharmacy students from one university. Second, junior-level pupils who are presently enrolled in their second and third years of the PharmD programme were

included in the study. The study's cross-sectional design made it impossible to identify the variables influencing generic drug awareness. We advise conducting additional research on pharmacy students with a larger sample size in order to increase understanding of generic drugs in South India and other states.

Conclusion

According to the current study, junior Pharm D students from a single South Indian university have adequate awareness about generic medications. For students who fall short in their understanding of some facets of the pharmacokinetics of generic medications, the issue of the cost and quality of generic medications needs to be brought to their attention. Government healthcare officials can improve the use of generic pharmaceutical substitution in South India through educational intervention and policy creation.

References:

1. *he-Global-Use-Of-Medicine-in-2019-and-Outlook-to2023-* (By IQVIA) (Page2#). Available online at: <https://www.iqvia.com/insights/the-iqvia-institute/reports/the-global-use-of-medicine-in-2019-and-outlook-to-2023> (accessed April 4, 2021).
2. USFDA. *Generic Drugs Facts*. Available online at: <https://www.fda.gov/drugs/generic-drugs/generic-drug-facts> (accessed April 4, 2021).
3. *Health Affairs: Rising Cost of Drugs: Where Do We Go From Here*. Available online at: <https://www.healthaffairs.org/doi/10.1377/hblog20150831.050265/full/> (assessed March 23, 2021).