



A Systematic Review of Knowledge and Perception Regarding Generic Medicines Among Indonesians

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Abstract

Generic medicines are a type of medicine with an official name that has been assigned to the efficacious substance it contains. Generic medicines have the same effectiveness as patented medicines. Many people think that generic medicines are of low quality, so they prefer branded generic medicines or patented medicines. This systematic review aims to report the results of a search for previously reviewed studies that focus on the level of public knowledge and perception of generic medicines. The research method used is a literature study method using journal data from the last 10 years. Journal collection was carried out by searching online journal databases indexed in Google Scholar, and PubMed using Mesh (Medical Subject Headings) with a focus on the keywords "knowledge", "perception", and "generic medicines". The results of this research are that the level of Indonesian people's knowledge of generic medicines is quite good but not evenly distributed, especially among groups of people who have a strong belief that cheap medicines are of lower quality. Acceptance of generic medicines tends to be higher in communities with higher levels of education. Communities with low socio-economic conditions generally have a low level of education so they tend to have greater distrust of generic medicines. This research concludes that it is important to provide information about generic medicines aggressively and continuously to the public to increase public trust in generic medicines. In addition, prescribing generic medicines by physicians is the main thing to eliminate public distrust about generic medicines.

Introduction

Medicine has brought tremendous benefits to human life. Medicine has reduced mortality and morbidity rates by saving and reducing the number of patients and improving the level of health. Medicine is irreplaceable in terms of health services. Two types of medicines are circulating in the community, namely generic and patent medicines.

Generic medicines follow the official International Non-proprietary Names (INN) specified in the Indonesian Pharmacopoeia or other standard books (Depkes RI, 2010). Meanwhile, a patented medicine is a new medicine produced and distributed by a pharmaceutical company, and protected by patent rights. Based on Law No. 14 of 2001 concerning patents, the patent rights are valid for 20 years. During this time, a pharmaceutical company has the exclusive right to produce patented medicines, which cannot be produced by other pharmaceutical companies without permission. The discovery of patent medicines goes through a series of research and clinical trials under international regulations before they can be mass-produced. In addition, the exclusive right of a company to carry out the production and marketing process

of patented medicines requires quite large costs, so patented medicines tend to be more expensive.

Generic medicines are divided into two parts, namely logoed generic medicines, which are generic medicines that include the logo of the pharmaceutical company that produces them, and branded generic medicines, which are medicines that are circulated and sold using a trade name according to the wishes of the medicine manufacturer. Branded generic medicines are often mistaken for patent medicines. Despite having the same medicine content, branded generic medicines are generally more expensive because they require higher production and promotion costs than regular generic medicines. Meanwhile, the selling price of branded generic medicines has been set by the government and equalized with all pharmaceutical companies, so the selling price will also be cheaper.

Generic medicines are underestimated due to the lack of public knowledge about generic medicines. Due to their low price, generic medicines are often considered to be of poor quality and do not have the same capabilities compared to patented medicines. This misperception is due to the lack of education and explanation from both medical personnel and the government in the distribution of generic medicines to the public. Another cause of the problem is the element of financial incentives, so that medical personnel prescribe patent medicines rather than generic medicines (Abdullah et al., 2019).

Public ignorance of generic medicines is the cause of bad perceptions about generic medicines and this bad perception causes bad recommendations which affect the patient's healing experience. People do not consume generic medicines if they think that generic medicines are low-quality medicines and people will not have a good experience if they never consume them (Fitriah et al., 2019). This is in line with other research which states that the lack of public knowledge about generic medicines is due to the perception that generic medicines are of low quality. On the other hand, people have the perception that patented medicines are quality medicines compared to generic medicines (Nur Alim, 2018).

Based on the background above, this review article will discuss the knowledge and perception of the Indonesian people of generic medicines. This research will look for factors that can increase public trust in generic medicines and possible support from stakeholders related to distributing generic medicines to the public.

Methods

The research method used is a literature study with library data collection methods, analyzing and reviewing selected literature from various official sources which can be used as a conclusion. The source for this review article comes from national and international journals with full-text ISSN online which were published in the last 10 years, namely 2014-2024 with topics related to the level of public knowledge and perception of generic medicines. Journals were obtained from searches via Google Scholar and PubMed using MeSH (Medical Subject Headings) to capture as many search results as possible. The keywords used are "knowledge", "perception", "public", "patient", "people" and "generic medicines".

Result and Discussion

The results of research on the description of knowledge and use of generic medicines from several journals reviewed are as follows:

Table 1. Journal Review Results on Knowledge and public use of logoed Generic Medicines

Title/Author/Journal	Focus	Research Result
"The Relationship between Characteristics and the Level of Knowledge of Generic Medicines in the Community of RW 003, Pabuaran	Relationship between Characteristi	The level of public knowledge in the good category is 62.2%, the sufficient category is 22.2, and the level of public knowledge in the poor category is 15.6%. There is no relationship between respondent

<p>Mekar Village, Cibinong District in 2023"</p> <p>Dita Anjey Lestari, La Ode MA, <i>Medical Health Scientific Journal Drg. Suherman Vol.05 No.02 December 2023</i></p>	<p>cs and Level of Community Knowledge</p>	<p>characteristics (gender, age, education level, occupation, and monthly income) and level of knowledge (Lestari et al., 2023).</p>
<p>"Population Knowledge Profile of Generic, Brand and Patent Medicines"</p> <p>Nabila Ayu P, Mexsi Mutia Rissa, <i>Indonesian Pharmaceutical Research Journal Vol.05 No.1 2023</i></p>	<p>Knowledge level</p>	<p>There were 45 respondents (64.70%) who had knowledge in the sufficient category and 25 respondents (35.70%) who had knowledge in the insufficient category Rissa & Puspita, 2023).</p>
<p>Knowledge of the Use of Generic Medicines in Patients at the Puspita Clinic, South Tangerang City</p> <p>Pranoto, Muhamad Eko <i>INNOVATIVE: Journal Of Social Science Research, Vol.3 No.4 2023</i></p>	<p>Community Knowledge</p>	<p>The research results show that in each dimension, public understanding is 51.25% about the meaning of generic medicines, 55% about their benefits, 58.12% about regulations, and 53.75% about classification (Pranoto, 2023).</p>
<p>"Analysis of the Level of Knowledge and Attitudes of Pharmacists towards Generic Medicines in the Banyumas Regency Area"</p> <p>Nur Fauzi Selifani, Hening Pratiwi, Ika M, <i>Journal of Pharmaceutical Science and Clinical Research, 2022.02</i></p>	<p>Pharmacist Knowledge Level</p>	<p>Results of research involving 67 pharmacists as respondents. Pharmacists have good knowledge of generic medicines (59.7%), and the rest have sufficient or poor knowledge. Pharmacists have a positive attitude towards generic medicines (98.5%), the rest are negative. There is no significant relationship between gender, length of practice experience, and level of education (with the pharmacist's level of knowledge. There is a significant relationship between the level of education and attitudes towards generic medicines, but there is no significant relationship between gender, age length of practice experience, and attitude There is no significant relationship between all characteristics and the level of knowledge and only the level of education has a significant relationship with attitudes towards generic medicines (Selifani et al., 2022).</p>
<p>"Overview of the Level of Public Knowledge of Generic Medicines and Trademark Medicines in Medan City District Pharmacies",</p> <p>Nini Tiatira T, Maya Sari M <i>Journal Health and Science Vol.6 No. April 1, 2022</i></p>	<p>Knowledge level</p>	<p>The results obtained from 192 people in Medan Kota District pharmacies, the level of knowledge in the good category was 33 respondents (17.2%), the level of knowledge in the sufficient category was 134 respondents (69.8%), and the level of knowledge in the poor category was 25 respondents. (13%) (Puspita & Rissa, 2023).</p>
<p>"Analysis of the Level of Knowledge and Community Attitudes towards Generic Medicines in the North Purwokerto Region"</p> <p>Pratiwi, Hening, and Ika Mustikaningtias. Pharmaceutica Indonesiana Media Journal Vol.4 No.1 June 2022</p>	<p>Community Knowledge Level</p>	<p>The results of this research show that the level of public knowledge regarding generic medicines is mostly poor (56.4%). As many as 75.8% of respondents had a positive attitude towards generic medicines. There is a significant relationship between gender, education, and the level of knowledge of generic medicines, but there is no significant relationship between the aspects of age and employment. There is no significant relationship between gender, age, education occupation, and people's attitudes toward generic medicines. Most of the people of North Purwokerto have less knowledge but have a positive attitude towards generic medicines. Characteristics that are related to the level of knowledge are gender and education (Pratiwi & Mustikaningtias, 2022).</p>

"Level of Knowledge of Pharmaceutical Technical Personnel Regarding Patented Medicines and Generic Medicines in the Mentawai Islands" Verawaty, Irene PD, Anugrah K <i>Simplicia Pharmaceutical Scientific Journal, Vol.1 No.1, June 2022</i>	Knowledge Level	The research results show that the level of knowledge of pharmaceutical technical personnel (TTK) regarding patented and generic medicines in the Mentawai Islands is in a good category at 75.5% (Verawaty et al., 2022).
"Level of Understanding of Pharmaceutical Technical Personnel regarding Patented Medicines and Generic Medicines in Padang City" Verawaty, Irene PD, Fanny MK <i>Indonesian Pharmaceutical Research Journal Vol.4 No.1 2022</i>	knowledge level	The research results showed that the level of understanding of Padang City pharmaceutical technical personnel regarding patented and generic medicines was categorized as sufficient (74.5%) (Verawaty et al., 2022).
"The Relationship Between Characteristics and Level of Knowledge About Generic Medicines in BKM Ali Maksum Clinic Patients" Sukmawan, Zaskya Aulia Nuraeni Syfa Putri. <i>Pharmacy Medical Journal Vol.5 No.2, 2022</i>	Knowledge level and the relationship between characteristics	The research results showed that patients at the BKM Ali Maksum Clinic had less knowledge of generic medicines by 65.1%. There is a significant relationship between work and knowledge about generic medicines in patients Sukmawan, 2022).
"Analysis of the Relationship between Knowledge and Attitudes towards the Use of Generic Medicines for Self-Medication by Pharmacy Students at the Mahaganেশha College of Pharmacy" Ni Putu Ariska, Mahadri Dhrik <i>Mahaganেশha Scientific Journal, Vol 1 No.1, January 2022</i>	Knowledge and Attitude	The level of good knowledge regarding generic medicines was 64.76%, the attitude response was quite good at 90.48% and the behavior was quite good at 61.9% (Wulandari & Dhrik, 2022).
"Evaluation of the Level of Knowledge, Perception, and Experience of the Use of Generic Medicines in Medical Students at Malahayati University" Ade Maria Ulfa, Bayu Nurtanto <i>Journal Of Pharmacy and Tropical Issues, Vol 1, No.3, September 2021</i>	Knowledge Level and Public Perception	Level of Knowledge of Generic Medicine Use Poor 27.0%, Fair (42.6%, Good 29.4%. Perception level of Generic Medicine Use is Poor 14.4%, Fair 51.6%, Good 33.0%. Experience Level of Generic Medicine Use Poor 20.5%, Fair 15.5%, Good 63.0 %, More than half of the respondents had experience using generic medicines, received education, and felt cured after use (Maria Ulfa & Nuryanto, 2021).
Description of the Knowledge Level of Tanjungpura University Faculty of Medicine Students Regarding Generic Medicines Vina Veronika, Eka Kartika <i>West Kalimantan Pharmacy Journal 2021 Vol 5 (1)</i>	Knowledge level	Univariate analysis is used to describe the distribution of respondents for each variable. The research results show that in general students have a sufficient level of knowledge (50.1%). The majors that have the best level of knowledge are pharmacy, medicine, and nursing, and a higher level of education does not indicate a better level of knowledge (Veronika et al., 2021).
Level of Patient Knowledge of Generic Medicines at the Moncobalang Community Health Center, Barombong District, Gowa Regency, 2019 Suhartini, Haidir Z <i>Yamasi Makassar Health Journal (2020) 4(2) 113-124</i>	Knowledge level	The level of patient knowledge is general knowledge of types, packaging, efficacy, and price. The data obtained shows that the level of patient knowledge of generic medicines is relatively high, namely 61 respondents (66.3%) know about generic medicines and 6 respondents (6.6%) do not know about generic medicines (Suhartini & Haidir, 2020).
"Overview of the Level of Public Knowledge About Generic Medicines	Knowledge Level	Based on the results of research conducted through questionnaire tests on 100 respondents to assess the

in Keraton Village, Martapura District, Banjar Regency" Rahmawati Fitriah, Mahriani, Ika Maulida. <i>Pharmascience Journal, Vol.06 No. 02, October 2019</i>		public's level of knowledge about generic medicines, from the total sample it was found that 45 people (45%) of respondents had a level of knowledge in the "medium" category (Fitriah et al., 2019).
"Overview of the Level of Public Knowledge About Generic Medicines in Sepuluh Koto District, Nagari Singgalang, Tanah Datar Regency" Abdullah D., Annisa M., Dewi NP. <i>Health & Medical Journal Vol.1 No.2 July,2019</i>	Knowledge Level	The results of this research were 56 people in the low category of knowledge (93.3%) and 4 people in the high category (6.7%). Conclusion: It can be concluded that the level of public knowledge about generic medicines is relatively low, namely 93.3% (Abdullah et al., 2019).
"Level of Public Knowledge About Generic Medicines and Medicines with Trade Names at Apotek K24 Bawakaraeng Makassar" Muhammad Azis <i>Pelamonia Pharmaceutical Journal in 2018</i>	Knowledge Level	From the research results, the level of public knowledge about generic medicines and medicines with the trade name Apotek K24 Bawakaraeng Makassar is 15%, very unaware, 40% not aware, 25% knowledgeable, and 20% very knowledgeable (Muhammad Azis, 2018).
"Level of Public Knowledge About Generic Medicines and Patent Medicines in Sajoanging District, Wajo Regency" Nur Alim <i>Journal of Pharmaceutical Science and Herbal Technology Vol.3 No.1 July 2018</i>	Knowledge Level	The data obtained was processed and analyzed so that the results obtained were 18 people in the sufficient category (36%) and 32 people in the insufficient category (64%). So it can be concluded that the level of public knowledge about generic and patented medicines in Sajoanging District is relatively low, namely 64% (<75%) (Nur Alim, 2018).
"Analysis of the Level of Knowledge and Perception of the People of Singkawang City towards Generic Medicines " Forid Morison, Eka K. Untari, Inarah Fajriaty <i>Indonesian Journal of Clinical Pharmacy, March 2015, Vol 4 No.1</i>	Knowledge level and public perception	Research shows that 76 respondents (53.5%) have inadequate knowledge and 123 respondents (86.6%) have a good perception of generic medicines. There is a significant relationship between ethnicity and information sources and the level of knowledge about generic medicines (Morison et al., 2015).
"Assessment of Knowledge, Attitudes, and Factors Influencing the Selection of Students of Generic Medicine" Muhamed N. Al Arifi. <i>Frontiers in Public Health, Vol. 9, December 2021</i>	Knowledge, attitudes, and Factors in choosing generic medicines	Findings revealed that most pharmacy students possess sufficient knowledge of generic medicines, although knowledge in some aspects remains lacking (Al Arifi, 2021).
Physicians' Knowledge, Attitude and Practice of Generic Substitution in China: A Cross-Sectional Online Survey Zhao M, Zhang L <i>International Journal of Environmental Research and Public Health 2021 18(15)</i>	Knowledge, attitudes, Practice of Generic Substitution	A total of 1225 physicians were included in the final analysis, and only 330 (26.94%) of them scored 4 or above in the knowledge part, which means that the physicians have a good knowledge of generic substitutions. Of the total, 586 (47.83%) agreed or strongly agreed that generic medicines could be substituted for originator medicines and 585 (47.75%) always or often prescribed generic medicines. The percentage of physicians with a positive attitude toward or that practice prescribing generic medicine is below 50%, which needs to be improved in China (Zhao et al., 2021).
Knowledge, attitude, and practice of pharmacy professionals on generic medicines in Eastern Ethiopia: A cross-sectional study Mohammed, Ammas Siraj	Knowledge, attitude, and practice	Among 80 community pharmacists' approached, 74 completed the survey, providing a response rate of 92.5%. Sixty-seven percent of the respondents knew that generic medicines are bioequivalent to brand medicines and claimed generic medicines are cheaper (86.5%). Nearly half (48.6%) of

<p><i>PLOS ONE, 15 (7) July 2020</i></p>		<p>participants believe that generic medicines are less effective and slower in the onset of action (58.1%). More than half (54.1%) of study participants revealed their lack of belief in generic medicine as a factor hindering the selection and dispensing of generic medicines. In multivariate logistic regression, experience in community pharmacy practice was significantly associated with knowledge and attitude toward generic medicines, respectively. (Mohammed et al., 2020)</p>
<p>Generic substitution for prescribed brand medicines in Ethiopia: knowledge, attitude, and practice among pharmacy professionals in community medicine retail outlets</p> <p>Alemu, Sintayehu, Tadesse, Natnael <i>BMC Health Services Research, December 2022 Vol. 22 (1)</i></p>	<p>Knowledge, attitude, and practice</p>	<p>Our study found that pharmacy professionals working in community medicine retail outlets in Jimma town had a lack of knowledge about generic substitution. Conversely, an enormous amount of participants had a positive attitude toward generic substitution and nearly half of them had practiced generic substitution. The year of experience had a significant effect on knowledge and practice of generic substitution. (Alemu et al., 2022)</p>
<p>Greek students' attitudes, perception and knowledge regarding generic medicines in times of economic crisis: a cross-sectional study</p> <p>Domeyer, Philippe J. Katsari, Vasiliki <i>BMC Medical Education, December 2018 Vol. 18(1)</i></p>	<p>attitudes, perception, knowledge</p>	<p>This study demonstrated a mixed attitude of students regarding generic medicines. Trust and knowledge emerged as key factors shaping the students' attitude towards generics. Among students, pharmacists exhibited a distinct response pattern. This study underlines the importance of addressing and correcting health management students' misbeliefs about generics' quality and utility. (Domeyer et al., 2018)</p>
<p>Knowledge, Experience, and Perceptions of Generic Medicines among Middle-Aged Adults and their Willingness-to-Pay: A Nationwide Online Survey in Japan</p> <p>Ito Y, Hara K <i>The Tohoku Journal of Experimental Medicine 2021 Vol. 255(1)</i></p>	<p>Knowledge, experience perception</p>	<p>Of the 1,005 respondents, over half perceived generic medicines as having the same level of efficacy and safety as brand-name medicines. While willingness to pay was dispersed among respondents, two factors were associated with small willingness to pay: (a) perceiving generic medicines as having the same level of efficacy and safety as brand-name medicines and (b) perceiving that promoting the use of generic medicines is important for controlling medical expenditures. Our findings suggest that certain parts of the population still have a high willingness to pay for brand-name medicines, and strategic communication to alter perception could be effective in promoting the use of generic medicines among those who are price-inelastic(Ito et al., 2021)</p>
<p>Public knowledge, perception, and experience with generic medications in Saudi Arabia</p> <p>Almohammed, Omar A. Aldwihi, Leen A. <i>Saudi Medical Journal, 2020 Vol.41 (4)</i></p>	<p>Knowledge, experience perception</p>	<p>A total of 397 participants have completed the survey. Only 40.5% of participants had adequate knowledge and 60% of them had a positive perception of generics. There is a general lack of knowledge while having a positive perception of generic medications among the general public in Saudi Arabia. (Almohammed et al., 2020)</p>
<p>Assessment of knowledge and perceptions toward generic medicines among basic science undergraduate medical students at Aruba</p> <p>Shankar, Ravi. Herz, BurtonL</p>	<p>Knowledge, perception</p>	<p>Fifty-six of the 85 students (65.8%) participated. Only three respondents (5.3%) provided the correct value of the regulatory bioequivalence limits. The mean total score was 43.41 (maximum 60). There was a significant knowledge gap about the regulatory bioequivalence limits for generic medicines. Respondents' level of knowledge about</p>

<i>Indian Journal of Pharmacology 2016 Vol.48 (7)</i>		other aspects of generic medicines was good but could be improved.(Shankar et al., 2016)
A nationwide survey exploring physicians' and pharmacists' knowledge, awareness, and perceptions regarding generic medicines in China Qu, Jinghan; Zuo, Wei <i>BMC Health Services Research August 2022 Vol. 22 (1)</i>	Knowledge, perception	The majority of physicians and pharmacists identified a lack of trust regarding the efficacy and safety of generic medicines and the difficulty of changing patients' preferences as top challenges in generic substitution. Both physicians and pharmacists surveyed had adequate knowledge of generic medicines and held positive attitudes towards generics and generic substitution. (Qu et al., 2022)
Knowledge, perception, and acceptance of generic medicines in the general Lebanese population: A cross-sectional survey among adults Hatem, Georges; Itani, Rana <i>The Journal of Medicine Access (2023) 7 275508342211477</i>	Knowledge, perception	The participants reported a distrust towards generic medicines; they either said that they were not as effective as the brand (36.9%), were of less quality than the brand (38.5%), or had more side effects than the brand (38.4%). Around 52% said they would never buy a generic medicine, and two-thirds (68.6%) preferred using a brand medicine over a generic one. A lack of knowledge and misperceptions about generic medicines limited the use of generic medicines and therefore must be addressed. (Hatem et al., 2023)
Generic switching: Do future physicians in Jordan have enough knowledge and a positive attitude? Al Zoubi, Sura; Gharaibeh, Lobna <i>Frontiers in Pharmacology (2022) 13</i>	Knowledge, Attitude	Almost half of the participants believe that pharmacists should not be given the right to do generic switching and only 16% stated that they would choose generic medicines if they needed treatment in the future. Multivariate linear regression analysis showed that significant predictors of knowledge were gender, GPA, and family income. No correlations were found between participants' knowledge scores and their attitudes towards giving pharmacists the right to independently switch medicines, or whether they would accept a substitute from pharmacists rather than having to refer to the physician. Medical students in Jordan lack sufficient knowledge about generic switching. (Al Zoubi et al., 2022)
A comparative Study on perception and use of generic medicines between public and Private Health practitioners Priyadarsini, R. Maheswari, Y. Nisha <i>Journal of Family Medicine and Primary Care 2023 Vol.12(12)</i>	Perception	about 80% of the participants in both groups agreed that generic medicines contain the same active ingredients as brand-name medicines, are less expensive, and are available in the Indian market. Nearly 84% of government physicians and only 64% of private physicians believed that generic medicines are just as effective and secure as branded medicines. The majority of physicians from both groups concurred that there is a lack of quality checks in generic medicine manufacturing, and they require more information about bioequivalence studies. In both categories, about 75% of participants preferred generic medications for their patients. However, in both groups, more than 50% of physicians were concerned about therapeutic failure and expressed reluctance to prescribe generic medications in life-threatening situations (Priyadarsini et al., 2023).

In this study, journals found to be relevant to knowledge of generic medicines came from Indonesia (No. 1-18), Saudi Arabia (19.25), China (20.27), Ethiopia (21.22), Greece (23), Japan (24), Netherlands (26), Lebanon (28), Jordan (29) and India (30). The theme of the article

is mostly about the relationship between characteristics and knowledge, knowledge, perceptions, attitudes, and experiences towards generic medicines. Researchers try to analyze research results, interpret, present, and discuss research findings. The chosen approach was to identify a unifying theme. Which consists of themes, subthemes, and examples of journal contributions. The following is presented in Table 2.

Table 2. Unifying themes and contributing sub-themes from papers

Theme	Sub theme	Examples of contributing journals
Trust and knowledge of Generic Medicines	a. Have no knowledge or information about generic medicines b. Doubts about the quality, appearance, and efficacy of generic medicines due to low prices	1,2,3,5,6,9,11,12,14,15,16,17,18,19,23,28 1,2,3,5,6,9,11,12,14,15,16,17,18,19,23,28
People's experiences using generic medicines	a. Not completely negative, even positive	11,13,18,19,27
Factors influencing the use of generic medicines	a. Education/income/employment level b. Gender c. Age	1,4,6,12 6 24
Support for increased use of generic medicines	a. Substitution of generic medicines by pharmacists b. Promotion by pharmaceutical staff c. Prescription of medication by a physician	4,21,22,27,29 8,9 20,27

Knowledge of quality, benefits, effectiveness, safety, desire for generic drugs, and costs might indicate people's views about generic medicines. Other knowledge factors include generic medicine efficacy similarities to patented medicines, generic/branded generic/patented medicine categories, and widely used generic medicines (Pratiwi & Mustikaningtiyas, 2022).

Nur Alim (2018) found that only 42% of respondents can tell generic and patented medicines apart by packaging, 36% think cheap medicines are still good and high quality, 34% know why patented medicines are more expensive than generic medicines, and 28% know that generic medicines are the same quality as patented medicines. Pratiwi & Mustikaningtiyas (2022) found that the public is unaware of generic drugs but has a good attitude toward them. Similar study by Abdullah et al. (2019) found low public understanding of generic drugs at 93.3%. Sukmawan (2022) at the BKM Ali Maksum clinic discovered that 65.1% of the population knew nothing about generic drugs. Higher education, kind of employment, and income level affect patient knowledge. Patients with higher education obtain more knowledge than those with intermediate and low education. Rahmayanti (2019) and Pratiwi & Mustikaningtiyas (2022) found a correlation between education and generic medication knowledge. Sukmawan (2022), Morison et al. (2015), and Lestari (2023) found no correlation between education and generic medication knowledge.

Rahmayanti (2019) and Sukmawan (2022) found a correlation between employment type and generic drug knowledge. Lestari (2023) and Morison (2015) found no correlation between employment type and generic medication knowledge. According to these investigations, job rank does not boost generic medication knowledge. Morison et al. (2015) and Lestari (2023) found no correlation between income and generic medication knowledge. According to Puspita & Rissa (2023), only 33 (17.2%) of 192 Medan Kota District pharmacy residents had strong

community knowledge, with 130 (67.7%) having attended a pharmacy study college. This reveals that expertise is not the sole element influencing community generic drug choice.

The Reasons Why People Choose Branded Generic And Patented Medicines Over Generic Medicines

Knowledge and internal and external circumstances affect how people choose products and services. This is closely related to customer choice. The phases of consumer behavior include initial need and desire, pursuit of the desired object, consumption, and post-purchase contentment or discontent. According to Kotler and Armstrong (2012), cultural, social, personal, and psychological aspects affect consumer behavior. Culture includes socioeconomic status, religion, nationality, and location. Culture determines behavior because people need it to operate in society. Cultural norms include several behaviors. Different social groups have different cultural trends.

Family, role, status, and reference groups are social. Reference groups are social circles or collectives that may influence an individual's product and service selection behavior directly or indirectly. Consumers often follow these groups' actions. Including media and influential people. Patients' cooperation and lack of inquiry about the doctor's prescription make the doctor the strongest referrer. Reference sources are intimately linked to knowledge and perceptions. Pharmacists, doctors, nurses, and pharmacy techs provide drug information. Family, the strongest and longest-lasting social group, also impacts an individual's viewpoint and behavior. Status and role are the last social factors, with status referring to an individual's actions within a group. For instance, folks with higher expertise should understand medicine choices better. Personal characteristics include age, life cycle stage, personality, profession, and income. Occupation affects consumption habits. Economic circumstances, disposable income (level, stability, and temporal pattern), savings and assets, debt, financing capability, and spending and saving attitudes all affect product choices. Brands with personalities that match consumers' may affect their purchase habits.

Cognitive and emotional factors including motivation, perception, learning, and memory influence consumer behavior. Motivation is necessity inspiring action. Most present criteria are inadequate to force a person to behave at a given time; encouragement and persuasion are needed. Perception, on the other hand, involves interpreting, organizing, and constructing sensory facts into a mental picture. Generic drugs are seen as cheap and low-quality, thus education and marketing are needed from several sources. Learning drives experience-driven behavior change. Learning is common, even if most human activity is unplanned. Learning involves nudges, inputs, clues, reactions, and reinforcement. Drive is an internal sensation that motivates. The information and experiences people gain throughout their lives may be preserved in long-term memory. Public brand knowledge is memory made up of brand-related ideas, attitudes, emotions, perceptions, and experiences (Kotler & Armstrong, 2008).

During development, pharmaceutical businesses establish strategies to enter the market and compete with others. Product strategies are affected by quality, packaging, and brand. Brands are names, terms, signs, symbols, or designs that differentiate one or more vendors' products or services from rivals'. A strong brand identity boosts product success. The process of wrapping a product is called packing. Packaging design may attract customers. Kotler and Armstrong (2012) describe product quality as the last factor. It includes durability, dependability, precision, ease of use and maintenance, and more.

Personal experience influences generic drug attitudes, which may be favorable or negative. Consumers choose well-known, popular products with good reputations to lessen purchasing risk. The brand is intrinsically linked to product quality and value. Brands may impact stable emotions. Strong identities may overcome commercial and cultural limitations. Consumer engagement rises with brand strength. If brand associations are many and good, this possibility

will boost the brand's image. Some people choose patented or branded generic drugs due to pharmaceutical firms' product plans and marketing.

According to many journal sources, people like generic drugs notwithstanding their ignorance. This is because information and external circumstances like intensity, repetition, novelty, and widely important issues affect perception. Generic medications may be better understood via community education and socialization. Health counseling by healthcare experts and government legislation will eventually change the public's opinion of generic medicines as the best alternatives since they work as well as patented or branded drugs.

Responsibilities Of Pharmacy Professionals Toward Generic Medicines In Pharmacy

Selifani et al. (2022) found that 59.7% of Banyumas pharmacists knew generic drugs well, while the remainder knew enough. 98.5% of pharmacists like generic drugs, the remainder dislike them. Verawaty et al. (2022) found that 75.5% of pharmaceutical technical personnel in the Mentawai Islands have good knowledge of patented and generic medicines, and 74.5% understand them.

Healthcare staff are the key sources of generic drug education and marketing. Health personnel are essential since numerous branded generic drugs are entering the pharmaceutical market to replace generics. People who feel branded generics are more effective will pick them over logoized generics. Some proprietary drug users switch to cheaper branded generics. In community pharmacies, pharmacists and pharmacist assistants need generic pharmaceutical knowledge. Few individuals are eager to switch to generic drugs. Pharmacists and Pharmacist Assistants at widely spread, community-based pharmacies help the community utilize medicines successfully.

Supporting generic drug prescription and replacement strategies requires pharmacists and pharmacist assistants to know and like generic medicines. Patients at the pharmacy must know that drug efficacy does not rely on pricing. Pharmacists must inform self-medicating patients. With physician or patient clearance, pharmacists may substitute generic drugs for proprietary ones. Greater community access to pharmacy services. Pharmacies also analyze how lucrative it will be if most individuals use generic drugs. In the BPJS Health program, generic drugs are in great demand, so pharmacists may stock up without worrying about sales. Fast product turnover boosts drug profits. Besides that, a pharmacist may start a pharmacy with less money and more generic drugs.

Physician Participation In Generic Medicine Prescribing

The Ministry of Health of the Republic of Indonesia requires the writing of prescriptions and the use of generic medicines in government health service facilities to prevent high medicine prices. This regulation was reaffirmed by the issuance of HK.02.02/MENKES/068/I/2010. The policy allows generic prescriptions.

Tanner (2011) found that RSUD outpatient BPJS patients get generic medication prescriptions. Dr. R.M. Djoelham averaged 74.49%. Another Tanner (2015) research found that Prof. DR. The information above shows that government agencies or services prescribe more generic medication each month, but not 100%. Similar studies in other countries have shown a shortage of generic drug prescribers.

Some problems often result in prescriptions for branded medicines even though cheaper generic medicines are available with the same efficacy due to physician, patient, and pharmaceutical company factors. Combination drugs make generic prescription problematic, thus doctors don't write them. Patients also encourage doctors to prescribe branded drugs owing to a lack of information. The enormous number of pharmaceutical firms selling their goods to doctors encourages them to prescribe brand-name drugs. This raises costs substantially above generics. Tanner (2015)

The patient's condition, diagnosis, marketing mix, pharmaceutical industry influence, patient economic situation, knowledge, and physician motivation may influence physicians' prescriptions for generic/branded generic/patent medicines. Hartono et al. (2014) found that 63% of 160 general practitioners and specialists with >5 years of practice prescribed branded generic medicines most often, 23% generic medicines more often, and 14% patented medicines. Since PMDN firms are more active in their advertisements and there are over 200 companies in Indonesia, branded generic pharmaceutical goods still dominate. Physicians prefer them. This research shows that doctors still follow medical ethics while prescribing drugs. Physicians may prescribe generic, branded generic, and patented drugs. Due to pharmaceutical marketing, various factors are considered. (2014) Hartono et al.

Physicians must follow professional ethics, government rules, and established procedures while treating patients. However, doctors deserve recognition for their talents, expertise, and drive. Pharmaceutical businesses work with doctors to distribute their medications. Physicians are crucial to medication prescription decisions. Manchanda & Honka (2005) distinguish pharmaceutical marketing from product marketing. Pharmaceutical corporations cannot interact with patients. Pharmaceutical company advertisements, restrictions, and patient buying power affect directly or indirectly.

From the 2024 APBN, the government allotted IDR 187.5 T for health, 5.6 percent of the state budget. One of the primary national health sector strategies is enhancing health technology and domestic pharmaceutical independence and sharpening JKN program benefits based on fundamental health requirements. With the JKN program expanding, generic pharmaceutical prescriptions should rise and the public will get more acquainted with them.

Generic Medicine Production Support from Pharmaceutical Companies

With the expansion of the JKN program, the demand for generic medicines in Indonesia has increased from year to year. This encourages the pharmaceutical industry to win the e-catalog auction competition. The pharmaceutical industry that offers cheaper medicine prices can have a great chance of winning the e-catalog. By winning the e-catalog of generic medicines, pharmaceutical companies can make an optimal contribution to the company's revenue. This is because there is certainty of production during the specified time. This is very beneficial because the benefits obtained are large and there is certainty in the company's income.

Some of the challenges in the production of generic medicines are that pharmaceutical companies need equipment with large capacities because of the large-scale production of medicines. The large scale of production requires the pharmaceutical industry to be able to provide complete raw materials in one production time. In addition, the company must guarantee the quality to meet the requirements. Generic medicines have the same quality standards as branded medicines. This will be a big challenge because the company produces on a large scale with high-quality demands, unlike if the company only produces on a small scale, it will be easier to guarantee high quality. This requires a large investment in research and development.

In addition, another challenge is in processing the approval of generic medicine distribution licenses, which have the same regulations and procedures as current branded medicines. Although a country has exclusive rights over the sale of a new medicine during its patent term, increased regulation leads to additional costs and longer development time resulting in delays in bringing the product to market. As such, some pharmaceutical companies consider producing branded medicines over generics, as it takes the same amount of time to obtain approval for the marketing license.

In 2017, with the development of the National Health Insurance program, generic medicine sales were able to support 20-25% of the total value of the pharmaceutical industry, which amounted to around US\$5 billion. As the state budget for health increases from year to year, it

is certain that generic medicine e-catalog tenders can increase every year. Despite the production challenges, there are great opportunities in generic medicine production because generic medicines everywhere play a vital role in a country's health system.

Conclusion

The level of public knowledge regarding generic medicines is still lacking and not evenly distributed in Indonesia. Meanwhile, the level of knowledge of pharmacists and pharmaceutical technical personnel regarding generic medicines is quite good. Likewise, the level of generic medicine prescribing in government installations, the results are quite good too. Most people have a positive attitude towards generic medicines despite a lack of knowledge. Therefore, Health Personnel such as Physicians, Pharmacists, and Pharmaceutical Technical Personnel, whether in government agencies or not, have an important role to play in increasing public trust in generic medicines. Prescribing generic medicines by physicians is the main thing to eliminate public doubts about generic medicines. The government's efforts to aggressively disseminate generic medicines need to be carried out in the media and easily accessible places so that information about generic medicines can be accessed by the wider public. This requires the role of all parties, including the government, health workers, the community, pharmacies, pharmaceutical companies, and other sectors related to the distribution of medicines, to be able to popularize generic medicines without looking at other aspects such as profit, but the aspect from the patients needs to be prioritized.

References

- Abdullah, D., Annisa, M., & Dewi, N. (2019). Gambaran Tingkat Pengetahuan Masyarakat Tentang Obat Generik di Kecamatan Sepuluh Koto, Nagari Singgalang, Kabupaten Tanah Datar. *Health & Medical Journal*, 1(2), 39–43. <https://doi.org/10.33854/heme.v1i2.239>
- Al Arifi, M. N. (2021). “Assessment of Knowledge, Attitudes, and Factors Influencing the Selection Student of Generic Medicine.” *Frontiers In Public Health*, 9.
- Al Zoubi, S., Gharaibeh, L., Al-Masri, B., Alsahele, A. B., & AL-Masaeid, B. (2022). Generic switching: Do future physicians in Jordan have enough knowledge and a positive attitude? *Frontiers in Pharmacology*, 13. <https://doi.org/10.3389/fphar.2022.1037112>
- Alemu, S., Tadesse, N., Mulugeta, T., & Assefa, D. (2022). Generic substitution for prescribed brand medicines in Ethiopia: knowledge, attitude, and practice among pharmacy professionals in community drug retail outlets. *BMC Health Services Research*, 22(1), 926. <https://doi.org/10.1186/s12913-022-08330-6>
- Depkes RI. (2010). *Peraturan Menteri Kesehatan RI Nomor HK.02.02/MENKES/068/I/2010 tentang Kewajiban Menggunakan Obat Generik di Fasilitas Pelayanan Kesehatan Pemerintah*. Departemen Kesehatan RI.
- Domeyer, P. J., Katsari, V., Sarafis, P., Aletras, V., & Niakas, D. (2018). Greek students' attitudes, perception and knowledge regarding generic medicines in times of economic crisis: a cross-sectional study. *BMC Medical Education*, 18(1), 262. <https://doi.org/10.1186/s12909-018-1379-8>
- Fitriah, R., Mahriani, I. M. N., & Nurrahma, I. M. (2019). Gambaran Tingkat Pengetahuan Masyarakat Tentang Obat Generik di Kelurahan Keraton Kecamatan Martapura Kabupaten Banjar. *J Pharmascience*, 6(2), 120-128.
- Hartono, S., Sumarwan, U., & Budi Suharjo, H. (2014). Analisis Marketing Pharmaceutical Dalam Keputusan Dokter Meresepkan Kategori Obat. *Jurnal Manajemen*, 18(2), 191-205. <https://doi.org/10.24912/jm.v18i2.505>

- Hatem, G., Itani, R., Ajrouche, R., Abbas, N., Farah, R., Goossens, M., & Awada, S. (2023). Knowledge, perception, and acceptance of generic drugs in the general Lebanese population: A cross-sectional survey among adults. *The Journal of Medicine Access*, 7, 275508342211477. <https://doi.org/10.1177/27550834221147789>
- Ito, Y., Hara, K., Sato, H., & Tomio, J. (2021). Knowledge, Experience, and Perceptions of Generic Drugs among Middle-Aged Adults and their Willingness-to-Pay: A Nationwide Online Survey in Japan. *The Tohoku Journal of Experimental Medicine*, 255(1), 9–17. <https://doi.org/10.1620/tjem.255.9>
- Kotler, P., & Armstrong, G. (2012). Prinsip-prinsip Pemasaran. Edisi 13. Jilid 1. Erlangga: Jakarta. *Principles of Marketing Global*.
- Kotler, P., & Armstrong, G. (2008). Prinsip-prinsip pemasaran, Edisi kedua belas. Jakarta: Erlangga.
- Lestari, D. A. (2023). Hubungan Karakteristik Terhadap Tingkat Pengetahuan Obat Generik Pada Masyarakat RW 003 Kelurahan Pabuaran Mekar Kecamatan Cibinong Tahun 2023. *Jurnal Ilmiah Kesehatan Medika drg. Suherman*, 5(2).
- Manchanda, P., & Honka, E. (2005). The effects and role of direct-to-physician marketing in the pharmaceutical industry: an integrative review. *Yale J. Health Pol'y L. & Ethics*, 5, 785.
- Maria Ulfa, A., & Nuryanto, B. (2021). Evaluasi Tingkat Pengetahuan, Persepsi dan Pengalaman terhadap Penggunaan Obat Generik Pada Mahasiswa Medis di Universitas Malahayati. *Journal Of Pharmacy and Tropical Issues*, 1(3), 75–80. <https://doi.org/10.56922/pti.v1i03.176>
- Mohammed, A. S., Woldekidan, N. A., & Mohammed, F. A. (2020). Knowledge, attitude, and practice of pharmacy professionals on generic medicines in Eastern Ethiopia: A cross-sectional study. *PLOS ONE*, 15(7), e0235205. <https://doi.org/10.1371/journal.pone.0235205>
- Mohammed, O. A., Aldwihi, L. A., & Alhifany, A. A. (2020). Public knowledge, perception, and experience with generic medications in Saudi Arabia. *Saudi Medical Journal*, 41(4), 413–420. <https://doi.org/10.15537/smj.2020.4.24992>
- Morison F, Untari, & Fajriaty. (2015). Analisis Tingkat Pengetahuan dan Persepsi Masyarakat Kota Singkawang terhadap Obat Generik. *Jurnal Farmasi Klinik Indonesia*, 4, 39–48.
- Muhammad Azis. (2018). Tingkat Pengetahuan Masyarakat Tentang Obat Generik Dan Obat Dengan Nama Dagang Di Apotek K24 Bawakaraeng Makassar. *Jurnal Farmasi Pelamonia*, 60–66.
- Nur Alim. (2018). Tingkat Pengetahuan Masyarakat Tentang Obat Generik dan Obat Paten di Kecamatan Sajoanging Kabupaten Wajo. *Journal of Pharmaceutical Science and Herbal Technology*, 3(1), 47–55.
- Pranoto, M. E., Imansari, A. N. R., Nurhasanah, S., & Utami, A. (2023). Pengetahuan Penggunaan Obat Generik Pasien Di Klinik Puspita Kota Tangerang Selatan. *Innovative: Journal Of Social Science Research*, 3(4), 4248-4258. <https://doi.org/10.31004/innovative.v3i4.3948>
- Pratiwi, H., & Mustikaningtias, I. (2022). Analisis Tingkat Pengetahuan dan Sikap Masyarakat Terhadap Obat Generik di Wilayah Purwokerto Utara. *MPI (Media Pharmaceutica Indonesiana)*, 4(1), 65-74.
- Priyadarsini, R., Maheswari, Y. N., Prabha, M. L., & Ramya, J. E. (2023). A comparative study on perception and use of generic drugs between public and private health practitioners.

- Puspita, N. A., & Rissa, M. M. (2023). Tingkat Pengetahuan Masyarakat Tentang Obat Generik, Obat Bermerk, Dan Obat Paten. *Jurnal Farmasi Higea*, 14(2), 141-150.
- Qu, J., Zuo, W., Took, R. L., Schafermeyer, K. W., Lukas, S., Wang, S., Du, L., Liu, X., Gao, Y., Li, J., Pan, H., Du, X., Mei, D., & Zhang, B. (2022). A nationwide survey exploring physicians' and pharmacists' knowledge, awareness, and perceptions regarding generic medicines in China. *BMC Health Services Research*, 22(1), 1069. <https://doi.org/10.1186/s12913-022-08438-9>
- Rissa, M. M., & Puspita, N. A. (2023). Profil Pengetahuan Penduduk Terhadap Obat Generik, Merek Dan Paten. *Jurnal Riset Kefarmasian Indonesia*, 5(1), 56-67.
- Selifani, N. F., Pratiwi, H., & Mustikaningias, I. (2022). Analisis Tingkat Pengetahuan dan Sikap Apoteker terhadap Obat Generik di Wilayah Kabupaten Banyumas. *J Pharm Sci*, 2, 224.
- Shankar, Pr., Herz, B., Dubey, A., & Hassali, M. (2016). Assessment of knowledge and perceptions toward generic medicines among basic science undergraduate medical students at Aruba. *Indian Journal of Pharmacology*, 48(7), 29. <https://doi.org/10.4103/0253-7613.193309>
- Suhartini, & Haidir, Z. (2020). Tingkat Pengetahuan Pasien Terhadap Obat Generik di Puskesmas Moncobalang Kecamatan Barombong Kabupaten Gowa Tahun 2019. *Jurnal Kesehatan Yamasi Makassar*, 4(2), 113–124.
- Sukmawan, Z. A. N. S. P. (2022). Hubungan antara karakteristik dan tingkat pengetahuan tentang obat generik pada pasien klinik BKM Ali Maksum. *Jurnal Farmasi Medica/Pharmacy Medical Journal (PMJ)*, 5(2), 7-14. <https://doi.org/10.35799/pmj.v5i2.43502>
- Tanner, A. E. (2015). Evaluasi pelaksanaan pelayanan resep obat generik pada pasien bpjs rawat jalan di RSUP. Prof. Dr. RD Kandou Manado periode januari-juni 2014. *Pharmacon*, 4(4).
- Verawaty, V., Dewi, I. P., & Kota, F. M. (2022). Tingkat Pemahaman Tenaga Teknis Kefarmasian terhadap Obat Paten dan Obat Generik di Kota Padang. *Jurnal Riset Kefarmasian Indonesia*, 4(1), 24-33. <https://doi.org/10.33759/jrki.v4i1.230>
- Veronika, V., Untari, E. K., & Nurbaeti, S. N. (2021). Gambaran Tingkat Pengetahuan Mahasiswa Fakultas Kedokteran Universitas Tanjungpura Tentang Obat Generik. *Jurnal Farmasi Kalbar*, 5(1), 1–11.
- Wulandari, N. P. A., & Dhrik, M. (2022). Analisis Hubungan Pengetahuan dan Sikap terhadap Penggunaan Obat Generik untuk Swamedikasi oleh Mahasiswa Farmasi Sekolah Tinggi Farmasi Mahaganesha. *Jurnal Ilmiah Mahaganesha*, 1(1), 36-42.
- Zhao, M., Zhang, L., Feng, Z., & Fang, Y. (2021). Physicians' Knowledge, Attitude and Practice of Generic Substitution in China: A Cross-Sectional Online Survey. *International Journal of Environmental Research and Public Health*, 18(15), 7749. <https://doi.org/10.3390/ijerph18157749>