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Determinants of Public Trust and Willingness to Use Generic Drugs in Saudi Arabia: A Cross-Sectional Study

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ABSTRACT

Background: Generic drugs are bioequivalent to brand-name medications and represent a key strategy in reducing pharmaceutical expenditure. Despite clinical evidence supporting their safety and effectiveness, public skepticism and misconceptions continue to limit their acceptance in many regions, including Saudi Arabia.

Objective: This study aimed to assess public awareness, perceptions, and behavioral tendencies related to the use of generic versus brand-name drugs in Saudi Arabia, with a focus on factors such as familiarity, perceived efficacy and safety, cost considerations, provider influence, and regulatory trust.

Methods: A cross-sectional survey was conducted using a structured, self-administered online questionnaire targeting adult residents across Saudi Arabia. A total of 799 valid responses were collected. Descriptive statistics summarized demographic characteristics and perception metrics. Chi-square tests and logistic regression were employed to explore associations between trust in regulatory systems and cost-based decision-making.

Results: While 80.9% of participants reported at least slight familiarity with generic drugs, only 28.9% correctly identified generics as equivalent in safety and efficacy. Perceptions of effectiveness and safety were mixed, with 36.5% and 34.2% respectively viewing generics as equal to brand-name drugs. Cost was an influential factor for 60.6% of respondents, and 52.2% expressed willingness to use generics if assured of quality. Notably, 48.7% reported high trust in drug regulatory authorities. A significant association was found between trust in regulation and cost sensitivity ($\chi^2 = 1643.87$, $p < 0.001$).

Conclusion: The study reveals considerable misconceptions and mixed attitudes toward generic drugs among the Saudi public. Trust in regulatory bodies and healthcare providers plays a pivotal role in shaping medication choices. Educational campaigns, enhanced provider-patient communication, and regulatory transparency are essential to promoting the rational use of generics and supporting national cost-containment goals.

Keywords: Generic drugs, brand-name drugs, public perception, Saudi Arabia, cost sensitivity, regulatory trust, medication safety, health communication.

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INTRODUCTION

The increasing cost of prescription medications is a major global public health challenge, particularly in chronic disease management and long-term pharmacotherapy. Many healthcare systems have promoted the use of generic drugs—medications bioequivalent to brand-name counterparts in dosage form, safety, strength, quality, and therapeutic effect.[1] Generic medications can reduce drug-related expenditures by 30–80%, making them vital in cost-containment strategies[2] Nevertheless, public skepticism and negative perceptions often limit their uptake, despite robust clinical evidence supporting their efficacy.

Several psychological and informational factors shape consumer attitudes toward generics. Shrank et al. reported that misconceptions regarding quality, effectiveness, and side effects negatively affect patients' willingness to use generics.[3] Dunne and Dunne found that brand loyalty is reinforced by marketing, perceived physician preference, and prior experiences.[4] In Saudi Arabia, Alrasheedy et al. noted that trust in regulatory oversight and physician guidance strongly influences consumer choices.[5] Similarly, Alghadeer et al. found that many Saudi participants mistakenly believed generics to be inferior in efficacy and safety.[6]

A systematic review by Colgan and Faasse emphasized that high health

literacy does not necessarily lead to generic drug acceptance, as beliefs and emotions often override factual knowledge.[7] Similar skepticism has been reported in other Middle Eastern countries.[8,9] Hassali et al. demonstrated that targeted educational interventions significantly improved perceptions and acceptance of generics among Malaysian consumers,[10] indicating that attitudes can be modified.

Most existing research is concentrated in Western contexts or clinical settings. Few studies integrate public awareness, cost sensitivity, brand loyalty, trust in healthcare systems, and actual medication use, particularly in Saudi Arabia, where cultural, regulatory, and prescribing practices differ.

This study examines public awareness and perception of generic versus brand-name drugs in Saudi Arabia, focusing on familiarity, perceived safety and effectiveness, cost considerations, brand loyalty, healthcare provider influence, and trust in regulatory systems. The findings aim to inform educational campaigns, regulatory initiatives, and clinical communication strategies to promote rational use of cost-effective medications.

METHODS

Study Design

This study employed a cross-sectional observational design to investigate public awareness, perceptions, and behavioral factors related to the use of generic versus brand-name drugs in Saudi Arabia. This design enabled the simultaneous assessment of multiple variables—such as familiarity, trust, cost sensitivity, and brand preference—across a broad population sample without manipulating exposures or outcomes.

Data Sources and Participants

Data were collected through a structured, self-administered online questionnaire distributed between 9 May 2025 and 23 June 2025 via social media platforms, university mailing lists, and community networks. The sampling strategy was non-probabilistic and voluntary. A total of 799 complete responses met the inclusion criteria and were analyzed.

Inclusion criteria were: (1) adults aged 18 years or older, (2) current residency in Saudi Arabia, and (3) provision of electronic informed consent. Respondents who did not complete the full questionnaire or did not meet these criteria were excluded.

Measures and Instruments

The questionnaire was adapted from previously validated instruments to suit the local context and consisted of four sections:

Demographic and socioeconomic characteristics (age, gender, education level, employment status, and income)

Familiarity and perception items, including perceived safety and effectiveness of generics, brand loyalty, and trust in healthcare providers and regulatory authorities

Cost considerations and medication choice behaviors, assessing the influence of cost on decision-making

Behavioral factors, including consultation with physicians or pharmacists before switching medications

A panel of subject matter experts reviewed all items to ensure face and content validity. The instrument was pretested with 30 participants to confirm clarity and reliability.

Data Analysis

Quantitative data were analyzed using IBM SPSS Statistics version 26. Descriptive statistics (frequencies, percentages, means, and standard deviations) summarized participant characteristics and responses. Chi-square tests examined associations between categorical variables (e.g., trust level vs. cost consideration). A binary logistic regression model was constructed to identify predictors of high trust in generic drug regulation, adjusting for demographic covariates such as age, gender, education, and employment status. Statistical significance was defined as $p < 0.05$.

Table 1. Demographic Characteristics of Participants (N = 799)

Variable	Response	n (%)
Age	18–29 years	349 (43.7%)
	30–39 years	124 (15.5%)
	40–49 years	166 (20.8%)
	50 years and above	160 (20.0%)
Gender	Female	483 (60.5%)
	Male	316 (39.5%)
Education Level	Bachelor's degree	513 (64.2%)
	High school or equivalent	198 (24.8%)
	Master's degree or higher	54 (6.8%)
	Other	20 (2.5%)
	No formal education	14 (1.8%)
Employment Status	Employed (full-/part-time)	414 (51.8%)
	Student	204 (25.5%)
	Unemployed	101 (12.6%)
	Retired	42 (5.3%)
	Self-employed	21 (2.6%)
	Other	17 (2.1%)
Monthly Income	Average	415 (51.9%)
	Prefer not to disclose	210 (26.3%)
	Below average	110 (13.8%)
	Above average	64 (8.0%)

Reproducibility and Validity

The full questionnaire, coding scheme, and analysis syntax are available from the corresponding author upon request. The survey was administered in a standardized digital format with controlled skip logic and response validation to minimize data entry errors. Analytical procedures followed established protocols for cross-sectional survey research.

Ethical Considerations

The study received approval from the appropriate institutional ethics committee. All participants provided electronic informed consent before accessing the survey. Participation was voluntary, with the option to withdraw at any time without penalty. Data were collected anonymously and stored on secure, password-protected servers in accordance with applicable data protection and confidentiality standards.

RESULTS

A total of 799 individuals participated in the study. The majority were aged 18–29 years (43.7%), followed by 40–49 years (20.8%), 50 years and above (20.0%), and 30–39 years (15.5%). Most respondents were female (60.5%). Regarding education, 64.2% held a bachelor's degree, 24.8% had a high school diploma or equivalent, 6.8% held a master's degree or higher, 1.8% reported no formal education, and 2.5% had other educational backgrounds.

In terms of employment, 51.8% were employed full- or part-time, 25.5% were students, and 12.6% were unemployed. The remaining participants were retired (5.3%), self-employed (2.6%), or reported "other" employment statuses (2.1%). Monthly income was most commonly reported as average (51.9%), while 26.3% preferred not to disclose, 13.8% reported below average, and 8.0% reported above average income (Table 1).

Participants' familiarity with generic drugs varied: 42.6% were slightly familiar, 26.0% somewhat familiar, 11.5% very familiar, 10.8% quite familiar, and 9.1% not familiar at all.

When asked about equivalence awareness, 28.9% believed that generic drugs contain the same active ingredients and are equally safe and effective as brand-name drugs. However, 24.4% believed they may differ in quality, 21.0% perceived them as completely different, and 25.7% were unsure.

Regarding safety perceptions, 34.2% considered generic drugs equally safe, 14.6% perceived them as slightly safer, and 0.9% as much safer. In contrast, 20.0% believed they were slightly less safe, 14.0% much less safe, and 16.3% were unsure.

Perceptions of effectiveness showed a similar distribution: 36.5% considered generics equally effective, 11.9% slightly more effective, and 3.0% much more effective. Conversely, 24.8% believed they were slightly less effective, 8.6% much less effective, and 15.1% were unsure (Table 2).

Cost was considered moderately important by 32.9% of participants, extremely important by 27.7%, slightly important by 21.3%, very important by 13.9%, and not important at all by 4.3% (Figure 1)

In terms of brand loyalty, 34.2% preferred generic drugs, 26.8% preferred brand-name drugs but occasionally chose generics, and 24.0% had no preference. Only 8.3% always chose brand-name drugs, while 6.8% consistently selected generics.

Healthcare provider influence was reported as moderate by 32.2% of participants, strong by 24.0%, and significant by 21.8%. Slight influence was reported by 12.9%, and 9.1% indicated no influence (Table 3).

Almost half of the participants (48.7%) reported high trust in the regulatory standards for generic drugs. A further 25.2% somewhat trusted, 17.4% were unsure, 5.3% reported little trust, and 3.5% reported no trust at all (Figure 2).

More than half of the participants (52.7%) reported no negative experiences with generic drugs, while 33.9% reported such experiences and 13.4% were unsure.

Regarding future use, 52.2% indicated they would definitely use generics if assured of their quality, 29.7% expressed

Table 2. Knowledge and Perceptions about Generic Drugs

Variable	Response	n (%)
Familiarity with Generics	Slightly familiar	340 (42.6%)
	Somewhat familiar	208 (26.0%)
	Quite familiar	86 (10.8%)
	Very familiar	92 (11.5%)
	Not familiar at all	73 (9.1%)
Equivalence Awareness	Same ingredients, equally safe/effective	231 (28.9%)
	Same ingredients, but differ in quality	195 (24.4%)
	Generics are completely different	168 (21.0%)
	Not sure	205 (25.7%)
Safety Perception	Equally safe	273 (34.2%)
	Slightly safer	117 (14.6%)
	Much safer	7 (0.9%)
	Slightly less safe	160 (20.0%)
	Much less safe	112 (14.0%)
	Not sure	130 (16.3%)
Effectiveness Perception	Equally effective	292 (36.5%)
	Slightly more effective	95 (11.9%)
	Much more effective	24 (3.0%)
	Slightly less effective	198 (24.8%)
	Much less effective	69 (8.6%)
	Not sure	121 (15.1%)

possible willingness or uncertainty, 13.6% were hesitant, and 4.5% would definitely not use them (Table 4).

A multivariable logistic regression model was used to identify predictors of definite willingness to use generic drugs. The model included sociodemographic factors and perceptions related to trust in regulation, cost importance, familiarity, equivalence, and safety.

The overall model was statistically significant (Likelihood Ratio $\chi^2(27) = 228.74$, $p < 0.001$), with a pseudo R^2 of 0.2071. High trust in regulation (OR 5.73; 95% CI 2.56–12.83), being quite familiar with generics (OR 6.15; 95% CI 2.15–17.59), and age over 40 years were strong positive predictors. Perceiving generics as much less safe (OR 0.22; 95% CI 0.09–0.53) and rating cost as less important were negative predictors (Table 5).

DISCUSSION

This study examined public trust and willingness to use generic versus brand-name drugs in Saudi Arabia, identifying notable gaps in knowledge and confidence. Although more than 80% of participants reported some familiarity with generic medicines, fewer than one-third correctly recognized them as equivalent to brand-name products in terms of active ingredients, safety, and efficacy. This limited awareness reflects broader concerns about medication safety and rational use in the Kingdom, as previously observed in studies on high-risk behaviors toward prescription painkillers[11] and insufficient public understanding of medication toxicity.[12]

Trust emerged as a critical determinant of willingness to use generics. Participants with higher confidence in Saudi regulatory authorities were more likely to consider cost in their medication decisions, suggesting that strong regulatory credibility can mitigate hesitancy toward lower-cost or unfamiliar brands. This aligns with evidence from Europe[23] and Southeast Asia[24] indicating that acceptance of generic substitution increases when patients trust the systems responsible for product approval and quality oversight.

Internationally, persistent misconceptions about generics continue to shape patient choices. Common concerns include reduced therapeutic effectiveness, higher risk of adverse effects, and lower manufacturing quality,[15,16] despite clear regulatory definitions establishing generics as bioequivalent to branded medicines.[17] Even individuals with high health literacy may resist generics due to negative past experiences, emotional beliefs, or brand loyalty.[18] In the present study, over one-third of respondents reported negative experiences with generics, consistent with reports from South Africa[21] and Malaysia.[22]

Healthcare providers also play a pivotal role in shaping public perceptions. In our findings, more than three-quarters of respondents reported moderate to high influence from physicians and pharmacists on their medication choices. This is consistent with evidence

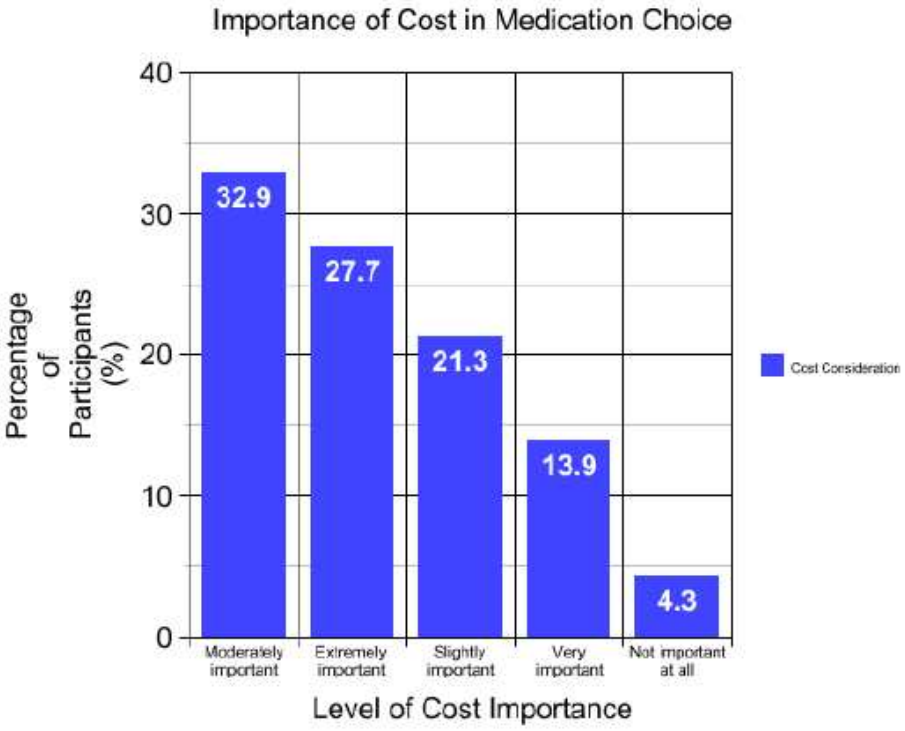

Figure 1. Distribution of Participants' Perceptions on the Importance of Cost When Choosing Between Generic and Brand-Name Medications

Table 3. Preferences and Influences on Generic Drug Use

Variable	Response	n (%)
Brand Loyalty	I prefer the generic drug	273 (34.2%)
	Prefer brand-name, but sometimes choose generic	214 (26.8%)
	No preference	192 (24.0%)
	Always choose brand-name	66 (8.3%)
	Always choose generic	54 (6.8%)
Healthcare Provider Influence	Moderate influence	257 (32.2%)
	Strong influence	192 (24.0%)
	Significant influence	174 (21.8%)
	Slight influence	103 (12.9%)
	No influence	73 (9.1%)

showing that prescriber preferences can significantly impact patient acceptance of generics.[26,27] However, provider hesitancy to recommend generics—whether due to personal bias or patient pressure—remains a barrier to wider adoption.[28]

Affordability was another prominent factor, with over 60% of participants identifying cost as an important driver of choice, consistent with global trends linking lower prices to increased generic use.[29] Yet, our results suggest that cost alone is insufficient to drive substitution; perceptions of quality and trust in oversight remain decisive.

Encouragingly, over half of participants indicated they would be willing to use generics if assured of their quality. This finding mirrors evidence that pharmacist-led counseling, targeted education campaigns, and transparent regulatory communication can shift public opinion positively.[31] Such interventions may be particularly impactful in Saudi Arabia, where strategic engagement with both patients and healthcare providers could address misconceptions and promote confidence in generic medications.

Although the study offers valuable insights, its generalizability is limited by the demographic profile of respondents—primarily younger, educated individuals with internet access. Nevertheless, these groups may serve as influential change agents in promoting evidence-based medication choices within their communities.

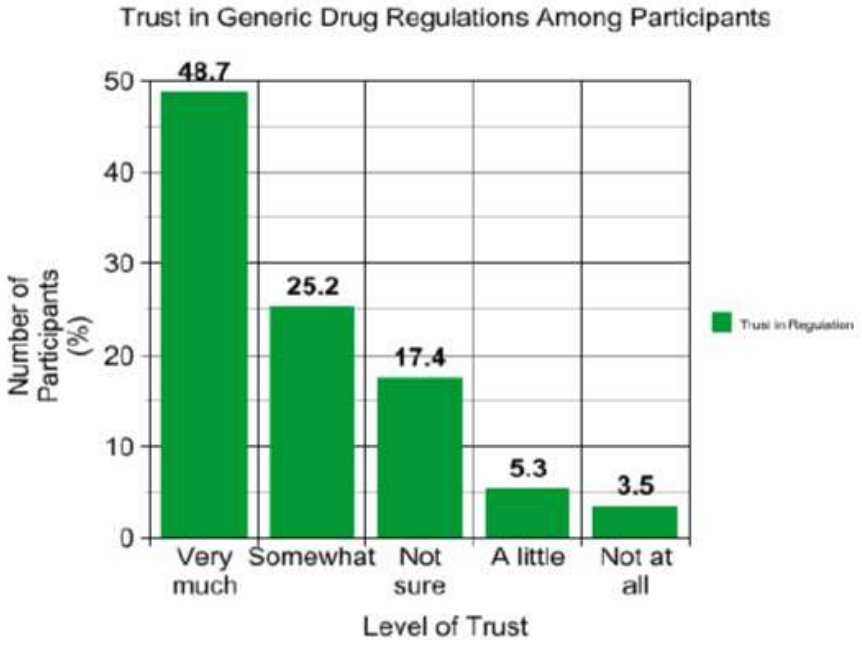

Figure 2. Participants' Levels of Trust in Generic Drug Regulations

Table 4. Experience and Willingness to Use Generic Drugs

Variable	Response	n (%)
Negative Experience with Generics	No	421 (52.7%)
	Yes	271 (33.9%)
	Not sure	107 (13.4%)
Willingness to Use Generics	Definitely yes	417 (52.2%)
	Maybe yes / Not sure	237 (29.7%)
	Maybe not	109 (13.6%)
	Definitely no	36 (4.5%)

Table 5. Multivariable Logistic Regression Predicting Willingness to Use Generic Drugs (N = 798)

Predictor	Odds Ratio (OR)	95% CI	p-value	Interpretation
High trust in regulation	5.73	2.56–12.83	<0.001	Strong positive predictor
Quite familiar with generics	6.15	2.15–17.59	0.001	Strong positive predictor
Generics perceived as much safer	1.72	1.01–2.93	0.045	Positive predictor
Generics perceived as much less safe	0.22	0.09–0.53	0.001	Strong negative predictor
Cost "slightly important"	0.22	0.11–0.42	<0.001	Strong negative predictor
Cost "moderately important"	0.33	0.19–0.58	<0.001	Negative predictor
Cost "not important at all"	0.29	0.13–0.64	0.002	Negative predictor
Age 40–49 years	1.89	1.18–3.04	0.008	Positive predictor
Age 50+ years	2.07	1.27–3.35	0.003	Positive predictor
Same ingredients but differ in quality	0.6	0.36–1.00	0.048	Negative predictor
Gender, education, other equivalence and familiarity levels	–	–	>0.05	Not significant

Strengths and Limitations

A key strength of this study lies in its focus on an important yet underexplored area of public health in Saudi Arabia—trust and willingness to use generic drugs. By recruiting a relatively large and diverse sample, the study provides insights relevant to various demographic and socioeconomic groups. The use of a structured, pretested questionnaire ensured clarity and consistency in data collection, while the inclusion of multiple predictors allowed for a more nuanced analysis of factors influencing public attitudes. The findings also contribute to the growing regional literature on medication perceptions, complementing both local and international evidence.

Nonetheless, several limitations should be considered. The cross-sectional design limits the ability to infer causality between the identified predictors and willingness to use generic drugs. The reliance on self-reported data introduces the possibility of recall bias and socially desirable responses. While the sample included participants from different age groups and educational backgrounds, online data collection may have excluded individuals with limited internet access, potentially underrepresenting rural and older populations. Finally, the study focused on perceptions and self-reported behaviors rather than objective measures of actual medication use, which may not fully reflect real-world practice.

CONCLUSION

This study highlights the ongoing challenges surrounding public perceptions of generic drugs in Saudi Arabia. Although the majority of participants reported some degree of familiarity with generics, misconceptions regarding their safety, effectiveness, and quality remain widespread. Trust in regulatory oversight and the influence of healthcare providers were shown to significantly impact attitudes and medication choices, indicating that confidence in institutions and clinical recommendations are essential in driving acceptance.

While cost considerations were important to many respondents, financial factors alone were insufficient to overcome skepticism. Instead, attitudes were shaped by a combination of cognitive understanding, emotional beliefs, prior experiences, and institutional trust. Encouragingly, more than half of participants expressed willingness to use generic drugs if assured of their quality, underscoring the potential for targeted interventions.

To support the rational use of generics and improve public confidence, policymakers and healthcare leaders should prioritize public education campaigns, reinforce regulatory transparency, and empower prescribers and pharmacists to advocate for evidence-based medication use. Strengthening these efforts will be critical to ensuring cost-effective, equitable access to medications across Saudi Arabia—particularly as the country advances its healthcare transformation goals under Vision 2030.

ETHICAL APPROVAL

This study received prior approval from an institutional ethics committee. Participation was voluntary and anonymous. Informed consent was obtained electronically before the survey, and participants were informed of their right to withdraw at any time. No identifiable personal information was collected.

AUTHOR CONTRIBUTIONS

(CREDIT Taxonomy)

Conceptualization: AA[1]
Methodology: AA[1], AAo[2], RA[3], RAl[4]
Validation: LA[4], HA[5]
Formal analysis: AA[1], RA[3], RAl[4]
Investigation: RA[3], RAl[4], LA[4], HA[5], RAs[6], RAb[7], SA[8], EA[9], AAsh[2], KA[4], AH[10], FA[4], WA[4]
Data curation: RAs[6], RAb[7], SA[8], EA[9], AAsh[2], KA[4], AH[10], FA[4], WA[4]
Writing – original draft preparation: AA[1], RA[3], RAl[4]
Writing – review and editing: AA[1], LA[4], HA[5]
Visualization: AA[1], RA[3]
Supervision: AA[1]
Project administration: AA[1]
All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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SELF-CITATION DECLARATION

The authors confirm that relevant previously published work by the corresponding author has been cited where appropriate to support the study background and contextualize findings. These citations were included based on their relevance and scientific merit, not to inflate citation metrics.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

USE OF GENERATIVE AI TOOLS

No generative AI tools were used in the preparation of this manuscript, except for language editing and proofreading purposes.

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