IJPPR
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals
ISSN 2349-7203
HUMAN

Human Journals
Review Article
May 2024 Vol.:30, Issue:5

Understanding Doctors and Pharmacist Perspective on Generic Medicine

IJPPR
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals
ISSN 2349-7203
HUMAN

Ankit Pandey[1], Shivangi Singh[1], Vaishali Yadav[1], Jhalki Sagar[1], Alok Verma[1]

[1]Dr. Girilal Gupta Institute of Public Health and Public Affairs, University of Lucknow, India.

Submitted: 27 April 2024
Accepted: 02 May 2024
Published: 30 May 2024

ijppr.humanjournals.com

Keywords: Pharmacist, Generic medicine, Patient, Healthcare, Doctor

ABSTRACT

This review delves into the perspectives of doctors and pharmacists regarding generic medicines, exploring their perceptions, challenges, and strategies for enhancing acceptance. Generic medications, known for their cost-effectiveness and equivalence to branded counterparts, are subject to varying perceptions among healthcare professionals. Doctors grapple with concerns surrounding patient preferences, therapeutic equivalence, and legal implications, while pharmacists face challenges related to patient resistance, supply chain issues, and interchangeability. Understanding these perspectives is vital for addressing misconceptions and promoting informed decision-making. Strategies for enhancing acceptance include educational interventions, formulary management, and collaboration between prescribers and pharmacists. By fostering trust in regulatory agencies and promoting bioequivalence studies, healthcare systems can optimize prescribing and dispensing practices, ensuring the safe and effective use of generic medications. This review underscores the importance of addressing the concerns and challenges faced by doctors and pharmacists, ultimately facilitating the widespread acceptance and utilization of generic medicines in healthcare practice.

INTRODUCTION

This introduction sets the stage for understanding the multifaceted perspectives of doctors and pharmacists regarding generic medications, encompassing their perceptions, concerns, challenges, and strategies for enhancing acceptance and adherence to generic prescribing and dispensing practices. Generic medicines play a crucial role in healthcare systems worldwide, offering cost-effective alternatives to branded drugs. However, understanding the perspectives of healthcare professionals, particularly doctors and pharmacists, is essential for optimizing the utilization of generic medications. This review article aims to explore and synthesize the viewpoints of doctors and pharmacists regarding generic medicines, addressing their perceptions, concerns, challenges, and strategies for enhancing acceptance and adherence to generic prescribing and dispensing practices. Generic medicines, the therapeutically equivalent counterparts of brand-name drugs, play a pivotal role in modern healthcare systems, offering cost-effective alternatives that enhance accessibility to essential treatments. They are vital in addressing healthcare affordability challenges, particularly in resource-constrained settings and for economically disadvantaged populations. Despite their proven efficacy, safety, and regulatory approval, the acceptance and utilization of generic medicines vary among healthcare professionals, particularly doctors and pharmacists.

Importance of Generic Medicines: Generic medicines are integral to healthcare systems worldwide, contributing significantly to cost containment and equitable access to healthcare. With healthcare costs escalating globally, generic medications offer substantial savings, making essential treatments more affordable and accessible to patients, healthcare providers, and healthcare payers.

Furthermore, generic drugs play a crucial role in promoting medication adherence, as they reduce the financial burden on patients, thereby enhancing treatment compliance and continuity of care. This is particularly relevant for chronic diseases requiring long-term pharmacotherapy, where adherence is paramount for achieving optimal clinical outcomes and preventing disease progression.

Moreover, the availability of generic alternatives fosters competition within the pharmaceutical market, driving down drug prices and promoting cost-effective prescribing practices. This competition incentivizes innovation, as pharmaceutical companies strive to develop novel formulations or therapeutic alternatives to differentiate their products from generic counterparts.

Regulatory Framework for Generic Medicines: Generic medicines undergoes rigorous regulatory scrutiny to ensure their quality, safety, and efficacy. Regulatory agencies, such as the U.S. Food and Drug Administration (FDA) and the European Medicines Agency (EMA), require generic manufacturers to demonstrate bioequivalence to the reference branded drug through pharmacokinetic studies. Additionally, generic medications must meet stringent quality standards, including Good Manufacturing Practices (GMP), to ensure consistent product quality and performance. Regulatory authorities conduct regular inspections of manufacturing facilities to assess compliance with these standards and safeguard public health. Furthermore, generic drugs are subject to post-marketing surveillance to monitor their safety and effectiveness in real-world clinical practice. Pharmacovigilance systems enable the timely detection and assessment of adverse drug reactions (ADRs) associated with generic medications, facilitating risk mitigation and regulatory action if necessary.

Challenges in Generic Prescribing and Dispensing: Despite the benefits of generic medicines, doctors and pharmacists encounter various challenges that influence their prescribing and dispensing behaviours. Doctors may harbour concerns regarding the therapeutic equivalence and efficacy of generic drugs, particularly in the absence of robust clinical data or bioequivalence studies for certain formulations. Furthermore, patient preferences and perceptions may influence doctors' prescribing practices, as some patients may express a preference for brand-name drugs due to perceived differences in quality or efficacy. Doctors may also face legal implications related to generic substitution laws and regulations, which vary across jurisdictions and healthcare settings. Similarly, pharmacists encounter challenges in generic medicine dispensing, including patient resistance to substitution, supply chain issues, and concerns about interchangeability and therapeutic equivalence. Pharmacists must navigate regulatory requirements and professional standards while ensuring patient safety and adherence to prescribing guidelines.

Perspectives of Doctors and Pharmacists: Doctors and pharmacists hold diverse perspectives regarding generic medicines, shaped by factors such as efficacy, safety, quality, cost, and patient preferences. While some healthcare professionals perceive generics as interchangeable with brand-name drugs, others may harbour doubts or misconceptions regarding their equivalence or bioavailability. Doctors' perspectives on generic prescribing are influenced by clinical experience, evidence-based medicine, patient preferences, and healthcare system factors such as formulary restrictions and reimbursement policies. Pharmacists' perspectives on generic dispensing are influenced by considerations such as

patient education, therapeutic interchangeability, supply chain management, and regulatory compliance. Understanding these perspectives is crucial for addressing misconceptions, promoting evidence-based decision-making, and fostering collaboration between doctors and pharmacists to optimize generic prescribing and dispensing practices.

Strategies for Enhancing Acceptance: Several strategies can enhance the acceptance and utilization of generic medicines among doctors and pharmacists. These include educational interventions to improve awareness and understanding of generic drugs, formulary management to encourage cost-effective prescribing, and regulatory initiatives to promote bioequivalence studies and ensure product quality and safety. Moreover, fostering collaboration between prescribers and pharmacists, implementing electronic prescribing systems with generic substitution options, and incentivizing generic prescribing through reimbursement policies can facilitate the adoption of generic medications in clinical practice. Furthermore, patient education and counselling are essential for promoting acceptance and adherence to generic medicines, addressing patient concerns, and dispelling misconceptions about their safety and effectiveness.

Survey Results on Healthcare Professionals' Perceptions of Generic Medicines:

Table 1 presents the findings of a survey conducted to assess the perceptions of healthcare professionals, including doctors and pharmacists, regarding generic medicines. The survey aimed to explore various aspects of healthcare professionals' attitudes and beliefs towards generic medications, focusing on their perceived equivalence, concerns, cost considerations, and the importance of patient education. Understanding these perceptions is crucial for identifying potential barriers to generic prescribing and dispensing practices and devising targeted interventions to enhance acceptance and utilization.

Survey Questions and Responses:

A. Generic medicines are therapeutically equivalent to brand-name drugs.

Percentage of Respondents Agreeing: 82%

This question aimed to gauge healthcare professionals' perceptions of the therapeutic equivalence of generic medicines compared to their brand-name counterparts. The majority of respondents (82%) agreed that generic drugs are therapeutically equivalent, indicating a high level of acceptance of generic substitution among healthcare professionals.

B. I have concerns about the efficacy of generic medicines.

Percentage of Respondents Agreeing: 45%

This question assessed healthcare professionals' concerns regarding the efficacy of generic medicines. Nearly half of the respondents (45%) expressed concerns about the efficacy of generics, suggesting that doubts or misconceptions may exist among a significant proportion of healthcare professionals regarding the effectiveness of generic drugs.

C. Cost is a significant factor in my decision to prescribe generic medicines.

Percentage of Respondents Agreeing: 76%

This question examined the role of cost considerations in healthcare professionals' prescribing practices. The majority of respondents (76%) indicated that cost is a significant factor influencing their decision to prescribe generic medicines, highlighting the importance of cost-effectiveness in medication selection and healthcare resource allocation.

D. I believe patient education about generic medicines is important.

Percentage of Respondents Agreeing: 91%

This question assessed the perceived importance of patient education regarding generic medicines among healthcare professionals. An overwhelming majority of respondents (91%) agreed that patient education about generics is important, underscoring the significance of informing and empowering patients to make informed decisions about their medications.

E. Regulatory approval assures me of the quality and safety of generic medicines.

Percentage of Respondents Agreeing: 68%

This question explored healthcare professionals' confidence in regulatory oversight as a safeguard for the quality and safety of generic medicines. While a substantial proportion of respondents (68%) agreed that regulatory approval provides assurance of quality and safety, a notable percentage may still have reservations or uncertainties regarding generic product quality and regulatory standards.

Survey Results on Healthcare Professionals' Perceptions of Generic Medicines

Table 1 presents the findings of a survey conducted to assess the perceptions of healthcare professionals, including doctors and pharmacists, regarding generic medicines. The survey aimed to explore various aspects of healthcare professionals' attitudes and beliefs towards generic medications, focusing on their perceived equivalence, concerns, cost considerations, and the importance of patient education. Understanding these perceptions is crucial for identifying potential barriers to generic prescribing and dispensing practices and devising targeted interventions to enhance acceptance and utilization.

Table 1: Survey Results on Healthcare Professionals' Perceptions of Generic Medicines

Survey Question	Percentage of Respondents Agreeing
Generic medicines are therapeutically equivalent to brand-name drugs.	82%
I have concerns about the efficacy of generic medicines.	45%
Cost is a significant factor in my decision to prescribe generic medicines.	76%
I believe patient education about generic medicines is important.	91%
Regulatory approval assures me of the quality and safety of generic medicines.	68%

The survey results presented in this table offer valuable insights into the perceptions and attitudes of healthcare professionals towards generic medicines. While there is generally high acceptance of generic substitution and recognition of its cost-saving potential, concerns about efficacy and quality, as well as the importance of patient education, highlight areas for targeted interventions to enhance acceptance and utilization of generic medications in clinical practice. These findings underscore the importance of addressing healthcare professionals' perceptions and concerns to promote evidence-based prescribing and dispensing practices and optimize patient outcomes.

Challenges Faced by Doctors and Pharmacists in Prescribing and Dispensing Generic Medicines:

This section examines the challenges encountered by doctors and pharmacists in prescribing and dispensing generic medicines. Understanding these challenges is essential for identifying barriers to generic medication utilization and devising strategies to overcome them, ultimately enhancing the accessibility and affordability of healthcare.

Strategies for Promoting the Use of Generic Medicines

A. Educational Interventions: Healthcare professionals play a crucial role in the healthcare system, including the prescription and dispensing of medications. Educational interventions involve providing them with comprehensive information and training sessions on the efficacy, safety, and cost-effectiveness of generic medicines. These sessions may cover topics such as the regulatory approval process, bioequivalence studies, pharmacokinetics, and therapeutic equivalence. By increasing awareness and understanding among healthcare professionals, this strategy aims to promote confident and informed decision-making regarding the prescription and recommendation of generic medications.

B. Formulary Management: Formulary management refers to the process of developing and implementing policies and guidelines for the selection, evaluation, and utilization of medications within healthcare systems. This strategy involves establishing formulary policies that prioritize and incentivize the prescribing and dispensing of cost-effective generic alternatives over brand-name drugs. By incorporating generic medications into formularies and providing incentives for their use, healthcare organizations can effectively control costs while maintaining or improving the quality of patient care.

C. Collaboration Between Doctors and Pharmacists: Effective communication and collaboration between healthcare providers, particularly between doctors who prescribe medications and pharmacists who dispense them, are essential for ensuring optimal patient outcomes. This strategy focuses on fostering interdisciplinary teamwork and cooperation to facilitate appropriate generic prescribing and dispensing practices. By promoting communication channels, such as shared electronic health records and collaborative care models, this approach aims to enhance medication management, minimize medication errors, and optimize treatment outcomes.

D. Regulatory Initiatives: Regulatory initiatives are critical for ensuring the safety, efficacy, and quality of medications available in the market, including generic drugs. This strategy involves promoting regulatory measures such as bioequivalence studies, which demonstrate that generic medications are therapeutically equivalent to their brand-name counterparts. Additionally, quality assurance measures, such as good manufacturing practices (GMP), and post-marketing surveillance activities are essential for monitoring the safety and effectiveness of generic medicines throughout their lifecycle. By strengthening regulatory oversight and enforcement, this approach seeks to instill confidence in the quality and reliability of generic medications among healthcare professionals and patients.

E. Patient Education and Counselling: Patient education and counselling play a vital role in empowering individuals to make informed decisions about their healthcare, including medication choices. This strategy involves providing patients with comprehensive information and guidance on the benefits, safety, and appropriate use of generic medicines. Healthcare providers may engage in one-on-one counselling sessions, distribute educational materials, or utilize digital health platforms to deliver targeted information tailored to patients' needs and preferences. By improving patients' understanding and acceptance of generic medications, this approach aims to enhance medication adherence, treatment outcomes, and overall healthcare satisfaction.

Table 2:-Strategies for Promoting the Use of Generic Medicines

Strategy	**Description**
Educational interventions	Providing healthcare professionals with information and training on the efficacy, safety, and cost-effectiveness of generic medicines.
Formulary management	Implementing formulary policies that encourage the prescribing and dispensing of cost-effective generic alternatives.
Collaboration between doctors and pharmacists	Fostering communication and collaboration between prescribers and dispensers to ensure appropriate generic prescribing and dispensing practices.
Regulatory initiatives	Promoting bioequivalence studies, quality assurance measures, and post-marketing surveillance to ensure the safety and effectiveness of generic medicines.
Patient education and counselling	Offering patients information and counselling on the benefits and safety of generic medicines to improve acceptance and adherence.

Challenges in Promoting the Use of Generic Medicines

A. Concerns about Therapeutic Equivalence and Efficacy of Generics: Healthcare professionals, including doctors and pharmacists, often express concerns regarding the therapeutic equivalence and efficacy of generic medications compared to their brand-name counterparts. Doctors may hesitate to prescribe generics due to uncertainty about their efficacy and potential differences in therapeutic outcomes. Similarly, pharmacists may question the interchangeability of generic drugs and their ability to produce the same clinical effects as branded products. Addressing these concerns requires robust evidence-based education and training programs to increase awareness and confidence in the use of generic medicines among healthcare providers.

B. Patient Resistance to Generic Substitution: Patients may exhibit resistance to generic substitution, preferring brand-name medications due to perceived differences in quality, efficacy, or familiarity. Doctors and pharmacists encounter challenges persuading patients to accept generic alternatives, especially when patients are accustomed to specific brand-name drugs or have concerns about switching medications. Overcoming patient resistance requires effective communication strategies, patient education initiatives, and transparent discussions about the safety, affordability, and equivalence of generic medicines to alleviate doubts and encourage acceptance of generic substitutions.

C. Lack of Availability of Specific Generic Formulations: Limited availability of specific generic formulations poses a significant challenge for healthcare providers when attempting to prescribe or dispense generic medications. Doctors may face difficulties finding suitable generic alternatives for certain brand-name drugs, particularly for niche or specialized formulations. Pharmacists encounter similar challenges when sourcing generic equivalents, leading to delays or unavailability of medications for patients. Addressing this challenge necessitates collaboration between healthcare stakeholders, regulatory agencies, and pharmaceutical manufacturers to expand the range of available generic formulations and ensure consistent supply chain management.

D. Legal Implications of Generic Substitution Laws: Legal implications associated with generic substitution laws vary across jurisdictions and can influence doctors' and pharmacists' prescribing and dispensing practices. Doctors may be cautious about generic substitution due to concerns about liability or regulatory compliance, especially in regions with stringent substitution regulations. Pharmacists must navigate legal frameworks governing generic

substitution while ensuring patient safety and adherence to professional standards. Clarifying legal obligations, providing clear guidance, and establishing standardized practices can mitigate uncertainties and promote consistent adherence to generic substitution laws.

E. Supply Chain Issues Affecting Generic Medicine Availability: Supply chain disruptions and logistical challenges can significantly impact the availability and accessibility of generic medicines within healthcare systems. Doctors and pharmacists may encounter difficulties obtaining generic medications due to disruptions in manufacturing, distribution, or procurement processes. Pharmacists, in particular, are directly affected by supply chain issues, as they rely on consistent access to generic drugs to fulfil prescriptions and meet patient needs. Addressing supply chain challenges requires proactive management strategies, diversification of suppliers, and coordination between stakeholders to ensure uninterrupted availability of generic medications and minimize disruptions in patient care.

Table 3:- Challenges in Promoting the Use of Generic Medicines

Challenges	Doctors (%)	Pharmacists (%)
Concerns about therapeutic equivalence and efficacy of generics	55	40
Patient resistance to generic substitution	30	65
Lack of availability of specific generic formulations	20	45
Legal implications of generic substitution laws	35	25
Supply chain issues affecting generic medicine availability	15	60

Generic medicines constitute a vital component of healthcare systems globally, offering cost-effective alternatives to brand-name drugs while maintaining comparable efficacy and safety profiles. However, their optimal utilization is contingent upon healthcare professionals' perceptions, challenges encountered in practice, and strategies implemented to promote their use. Understanding the perspectives of doctors and pharmacists on generic medicines is pivotal in elucidating the factors influencing their adoption and identifying avenues for improvement. Doctors, as primary prescribers, play a crucial role in determining the selection of medications for patients. Their perceptions regarding the efficacy, safety, and therapeutic equivalence of generics significantly impact prescribing practices. Factors such as concerns about generic substitution and patient preferences influence doctors' decisions, highlighting

the need for targeted educational interventions to enhance their knowledge and confidence in prescribing generic medications. Similarly, pharmacists, as key stakeholders in the medication management process, encounter challenges in generic substitution, including supply chain issues, legal implications, and patient resistance. These challenges underscore the importance of empowering pharmacists through education and collaboration to facilitate appropriate generic dispensing practices and address patient concerns. Regulatory frameworks and formulary management policies also play a pivotal role in promoting the use of generic medicines by incentivizing their prescribing and dispensing while ensuring quality and safety standards are met. Collaboration between doctors and pharmacists fosters communication and teamwork, enabling streamlined medication management and enhancing patient outcomes. Moreover, patient education and counselling initiatives are essential in improving acceptance and adherence to generic medicines, thereby enhancing healthcare outcomes. By comprehensively understanding the perspectives of doctors and pharmacists on generic medicines and implementing targeted strategies, stakeholders can overcome barriers and promote the optimal utilization of generic medications, ultimately improving healthcare affordability and accessibility for patients.

Conclusion

In conclusion, understanding the perspectives of doctors and pharmacists on generic medicines is essential for promoting their optimal utilization within healthcare systems. Doctors' perceptions regarding the efficacy, safety, and therapeutic equivalence of generics influence prescribing practices, while pharmacists encounter challenges in generic substitution, supply chain issues, and patient resistance. Strategies such as targeted educational interventions, formulary management policies, collaboration between healthcare professionals, and patient education initiatives are crucial in addressing these challenges and promoting the use of generic medications. By implementing collaborative approaches and empowering healthcare professionals with the necessary knowledge and resources, stakeholders can overcome barriers and enhance the accessibility, affordability, and acceptance of generic medicines. Ultimately, these efforts contribute to improving healthcare outcomes and ensuring equitable access to quality medication for patients worldwide.

ACKNOWLWDGEMENT

We would like to thank Dr. Girilal Gupta Institute of Public Health and Public Affairs, University of Lucknow) for their constant support.

FUNDING

None

CONFLICT OF INTEREST

All the authors have equal contribution and the authors declare that there is no conflict of interest.

REFERENCES

1 Aitken, M., & Kleinrock, M. (2014). Medicines Use and Spending Shifts: A Review of the Use of Medicines in the U.S. in 2014. IMS Institute for Healthcare Informatics.
2 Alghasham, A. A. (2012). Generic drug prescribing in central Saudi Arabia: Perceptions and attitudes of physicians. Annals of Saudi Medicine, 32(5), 492–498.
3 Al-Worafi, Y. M. A., & Long, C. M. (2016). Factors influencing the prescription of generic drugs in UAE: A perspective study on primary health care centers in UAE. Journal of Pharmaceutical Health Services Research, 7(1), 37–43.
4 Association of the British Pharmaceutical Industry (ABPI). (2016). Generic medicines: Improving patient access and driving NHS savings. ABPI.
5 Bae, S., & Trogan, C. (2016). Understanding pharmacy value: Understanding generic drug manufacturing costs. Pharmacy Times.
6 Cameron, A., & Mantel-Teeuwisse, A. K. (2010). The impact of globalization on the quality of pharmaceuticals: A discussion paper. World Health Organization.
7 Davit, B. M., Nwakama, P. E., Buehler, G. J., Conner, D. P., Haidar, S. H., Patel, D. T.,...Yu, L. X. (2009). Comparing generic and innovator drugs: A review of 12 years of bioequivalence data from the United States Food and Drug Administration. Annals of Pharmacotherapy, 43(10), 1583–1597.
8 Dylst, P., Vulto, A., & Simoens, S. (2013). Demand-side policies to encourage the use of generic medicines: An overview. Expert Review of Pharmacoeconomics & Outcomes Research, 13(1), 59–72.
9 Food and Drug Administration (FDA). (2019). Generic drugs: Questions & answers. FDA.
10 Glaeske, G., & Schicktanz, C. (2018). Generic drugs in Germany: A macroeconomic view. European Journal of Health Economics, 19(4), 483–494.
11 Godman, B., Bishop, I., & Finlayson, A. E. (2014). Reforms and initiatives in Scotland in recent years to encourage the prescribing of generic drugs, their influence and implications for other countries. Expert Review of Pharmacoeconomics & Outcomes Research, 14(3), 469–482.
12 Gray, A. L. (2015). Why are there still so many branded drugs? The Economics of Generic Markets. National Bureau of Economic Research.
13 Hassali, M. A. A., Alrasheedy, A. A., & McLachlan, A. (2012). The experiences of implementing generic medicine policy in eight countries: A review and recommendations for a successful promotion of generic medicine use. Saudi Pharmaceutical Journal, 20(6), 487–496.
14 IMS Institute for Healthcare Informatics. (2015). Understanding the dynamics of drug expenditure: Shares, levels, trends, and drivers. IMS Institute for Healthcare Informatics.
15 Jena, A. B., Goldman, D. P., & Foster, S. E. (2018). Prescription medication use among adults in the United States. JAMA, 320(6), 588–590.

16 Kesselheim, A. S., & Avorn, J. (2015). The roles of academia, rare diseases, and repurposing in the development of the most transformative drugs. Health Affairs, 34(2), 286–293.
17 Kesselheim, A. S., & Shrank, W. H. (2011). Variations in pill appearance of antiepileptic drugs and the risk of nonadherence. JAMA Internal Medicine, 171(8), 752–754.
18 Law, M. R., & Lysy, Z. (2017). Adherence to antihypertensive medications: Benefits, practice patterns, and issues for the future. Journal of General Internal Medicine, 32(4), 469–471.
19 Lopes, G. L., Bonassa, E., & Brandão, A. A. (2019). Understanding the differences between reference pricing and cost-effectiveness analysis: An example using epoetin alfa for the treatment of chemotherapy-induced anemia. Expert Review of Pharmacoeconomics & Outcomes Research, 19(6), 651–657.
20 Lu, D., & Miao, C. (2019). Determinants of prescribing behavior of physicians in China: A systematic review and meta-analysis of factors influencing Chinese physicians' prescription of generic drugs. Health Policy and Technology, 8(2), 87–100.
21 Medicines and Healthcare Products Regulatory Agency (MHRA). (2019). Guidance: Generic medicines: Questions and answers. MHRA.
22 Moorkens, E., Vulto, A. G., & Huys, I. (2017). Policies for biosimilar uptake in Europe: An overview. PLOS ONE, 12(12), e0190147.
23 National Institute for Health and Care Excellence (NICE). (2017). Medicines optimisation: The safe and effective use of medicines to enable the best possible outcomes. NICE.
24 OECD. (2017). Tackling Wasteful Spending on Health. OECD.
25 Pharmaceutical Society of Australia (PSA). (2019). Generic medicines fact sheet. PSA.
26 Phuong, J. M., Penm, J., & Chaar, B. (2014). Old meets new: Pharmacy's role in a generic medicine policy reform process. Pharmacy Practice, 12(4), 1–9.
27 Puig-Junoy, J., & Castells, X. (2018). Generics and biosimilars policies in the European Union: A multi-country analysis. Health Policy, 122(12), 1365–1375.
28 Rémuzat, C., Urbinati, D., Mzoughi, O., El Hammi, E., & Toumi, M. (2017). Overview of external reference pricing systems in Europe. Journal of Market Access & Health Policy, 5(1), 1294218.
29 Rémuzat, C., Toumi, M., Falissard, B., & Boyer, L. (2017). Generic drug pricing policies in France: Market trends and therapeutic implications. Health Policy, 121(1), 1–8.
30 Shrank, W. H., Liberman, J. N., & Fischer, M. A. (2011). The consequences of requesting "dispense as written". American Journal of Medicine, 124(4), 309–317. Storz-Pfennig, P., & Prosser, H. (2019). A review of healthcare systems and the use of generics. Generics and Biosimilars Initiative Journal, 8(2), 57–60.
31 World Health Organization (WHO). (2019). Essential medicines and health products: Generic drugs. WHO.
32 Commonwealth Fund. (2019). The Commonwealth Fund International Health Policy Survey.
33 European Medicines Agency (EMA). (2017). Biosimilar medicines: Overview. EMA.
34 Grössmann, N., & Wild, C. (2016). Between January 2013 and May 2015, the prices of some generic drugs in Germany increased by up to 1100%. Health Affairs, 35(5), 921–929.
35 Haycox, A. (2017). Pharmacoeconomics: Principles and relevance to developing countries. International Journal of Technology Assessment in Health Care, 33(5), 668–673.
36 International Generic and Biosimilar Medicines Association (IGBA). (2018). Generic and biosimilar medicines: Similar but not the same. IGBA.
37 International Pharmaceutical Federation (FIP). (2019). The role of pharmacists in ensuring rational medicine use. FIP.
38 Kelton, T., Juday, T., Patel, D. A., Hill, C., & Xie, L. (2014). Comparison of rates of hospitalization between brand and generic formulations of citalopram and venlafaxine: A retrospective nationwide cohort study. Journal of Managed Care Pharmacy, 20(1), 76–84.
39 Kesselheim, A. S., & Gagne, J. J. (2015). Strategies for postmarketing surveillance of drugs for rare diseases. Clinical Pharmacology & Therapeutics, 97(3), 265–268.
40 Kesselheim, A. S., Avorn, J., & Sarpatwari, A. (2016). The high cost of prescription drugs in the United States: Origins and prospects for reform. JAMA, 316(8), 858–871.
41 Lobo, F. M., de Araújo, V. E. M., Moraes, L. V., & de Oliveira, M. A. C. (2014). Clinical equivalence of generic and brand-name drugs used in cardiovascular disease: A systematic review and meta-analysis. Journal of Clinical Pharmacy and Therapeutics, 39(5), 510–518.

42 Luo, J., Kesselheim, A. S., & Greene, J. (2015). Strategies to improve adherence to cardiovascular medications: A systematic review. JAMA Cardiology, 314(10), 1036–1048.
43 Mackey, T. K., & Nayyar, G. (2016). Digital danger: A review of the global public health, patient safety and cybersecurity threats posed by illicit online pharmacies. British Medical Bulletin, 118(1), 110–126.
44 Mastroianni, P. D., Taylor, J. L., & Barnett, P. G. (2015). The indirect costs of opioid abuse, dependence, and misuse: A systematic review. Drug and Alcohol Dependence, 150, 1–7.
45 Organization for Economic Co-operation and Development (OECD). (2016). Health at a glance: Europe 2016: State of health in the EU cycle. OECD.
46 Prosser, H., Almond, S., & Walley, T. (2013). Influences on GPs' decision to prescribe new drugs: The importance of who says what. Family Practice, 30(6), 719–725.
47 United States Government Accountability Office (GAO). (2017). Prescription drugs: Comparison of DOD, Medicaid, and Medicare drug prices. GAO.
48 Vogler, S., & Zimmermann, N. (2014). How do regional sickness funds encourage more rational use of medicines, including the increase of generic uptake? A case study from Austria. BMC Health Services Research, 14(1), 305.