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The impact of legal awareness among independent physicians on compliance with prescription regulations in accordance with the 2019 national formulary in Banyumas Regency

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ABSTRACT

Background: Drug prescription is a core competency that must be performed by licensed medical practitioners, including general practitioners and medical specialists or subspecialists. Among physicians, certain drugs or categories of medications can only be prescribed by specialists in accordance with established pharmaceutical guidelines. Despite these regulations, some general practitioners continue to prescribe medications beyond their authorized scope of practice. Given this concern, it is essential to evaluate the legal awareness of independent medical practitioners regarding their prescribing practices.
Objectives: To analyze the relationship between the legal awareness of independently practicing physicians and their compliance with prescription standards as outlined in the national formulary.
Methods: Employed a descriptive correlational design with a cross-sectional approach. The study population consisted of independent general practitioners practicing in Banyumas Regency. Data were collected through a google forms questionnaire, and analysis was conducted using Kendall's tau-b correlation test.
Results: The findings revealed a significant relationship between the legal awareness of independently practicing physicians and their compliance with prescription regulations as stipulated in the national formulary. Furthermore, the level of legal compliance demonstrated by practitioners was found to depend on their degree of legal awareness.
Conclusion: A significant relationship between the legal awareness of independently practicing doctors and their legal compliance in drug prescribing in accordance with the national formulary.

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INTRODUCTION

Physicians, as medical service providers, possess a range of professional competencies, one of which is the prescription of medications—a task that may only be performed by licensed doctors(1). Competence is defined as a physician's ability based on knowledge, skills, and professional attitudes to perform medical practice, whereas authority refers to the authorization granted by a competent body that allows a physician to carry out such practice(2). However, not all drugs can be freely prescribed, particularly by general practitioners. Certain drugs must be prescribed exclusively by specialists or subspecialists in accordance with their respective competencies and the prevailing national formulary. Despite these existing regulations, there remain instances of general practitioners prescribing drugs that exceed their professional authority(3).

One case occurred in Banyumas regency in 2023, where a general practitioner in independent practice prescribed an anxiolytic drug that should only be prescribed by a psychiatrist. This prescription enabled patients easily to obtain the drug without undergoing proper psychiatric examination. Such actions constitute a misuse of psychotropic drug prescribing and are considered legal violations. Instances like these suggest that some physicians may fail to adhere to prescription regulations due to a lack of legal awareness regarding the laws governing medical prescriptions(4).

Independent general practitioners must therefore be equipped with adequate legal awareness to uphold professional integrity(5). Accordingly, this study seeks to observe the level of legal awareness among independently practicing general practitioners in prescribing medications. Based on this issue, the research question can be formulated as follows: How do general practitioners demonstrate compliance in implementing prescription regulations, particularly those outlined in the national formulary?

Legal awareness refers to the understanding—individual or collective—of the laws and regulations that govern society(6). It plays a vital role in maintaining social order, peace, harmony, and justice within any community structure(7). Legal awareness encompasses not only knowledge and recognition of the law but also an understanding of its significance in regulating societal dynamics. It reflects the comprehension of the rule of law, its fundamental principles, and the alignment between legal supremacy and the sense of security expected within a community (8).

Legal awareness also involves the recognition that the legal system serves as a foundation for regulating individual behavior and social interaction. This understanding highlights the law's role as a mechanism for achieving justice, maintaining social order, protecting human rights, and promoting societal welfare. Moreover, legal awareness entails an appreciation of the consequences associated with violating the law—both on an individual and societal level. Compliance is the outcome of acquired knowledge, manifested as a positive attitude driven by motivation. Awareness arises once a matter is understood; once understanding is established, attitudes and actions begin to take shape. Training, habituation, achievement, and identification form the foundation of compliance(9).

Indicators of legal awareness serve as metrics to describe the degree of legal consciousness demonstrated by individuals or communities, which include :

1. Legal Knowledge
   Refers to general understanding of laws among individuals or the public, encompassing knowledge of different legal systems, procedures, organizations, rights, and obligations.
2. Legal Understanding
   Involves the ability to interpret and explain legal principles, norms, and their relevance to daily life, viewing the law as a practical and essential aspect of social living(10).
3. Legal Attitude
   Reflects one's beliefs, values, and perspectives toward the law, including respect for existing regulations and the conviction that compliance and justice are essential.
4. Legal Behavior
   Constitutes actual actions aligned with legal norms, such as obeying laws, engaging in legal processes, and resolving conflicts through lawful means.

Legal awareness is crucial for maintaining social order, justice, and stability. The reasons for fostering legal awareness in society include:

1. Regulating Behavior
   Law provides clear standards for what is right and wrong, reducing unlawful actions and social conflict.
2. Protecting Rights and Freedoms
   Legal awareness ensures the protection of individual rights and the respect of others' freedoms.
3. Resolving Conflicts

The law offers fair mechanisms for dispute resolution, preventing personal retaliation and escalating conflict.

4. Building Trust and Stability
   A strong sense of legal awareness fosters public trust in law enforcement and strengthens social cohesion.
5. Respecting Authority and Governance
   Legal awareness encourages cooperation with authorities and adherence to democratic and lawful governance.

In short, legal awareness serves as a vital social resource that enables communities to function harmoniously, safely, and justly (11).

Competence refers to the combination of abilities and skills acquired through structured education to achieve desired professional outcomes. It can also be defined as a personal attribute that can be developed and used to assess an individual's performance(12). The *Indonesian Medical Competency Standards (SKDI)* are not benchmarks for primary care physicians but rather represent the minimum standards expected of medical graduates. These standards outline the core competencies physicians must apply, including *noble professionalism*, which encompasses *legal awareness and compliance*(13). Physicians who are conscious of their legal and ethical responsibilities adhere to applicable laws and regulations as part of their professional conduct(14). This guidance emphasizes that physicians must exercise caution in handling cases according to their competence level and avoid prescribing medications beyond their scope.

A medical prescription is a written request from a physician to a pharmacist to prepare and dispense a drug in accordance with the physician's instructions for a patient(15). Prescriptions are handwritten on official prescription forms and must comply with the national formulary. The national formulary is a list of drugs compiled by the National Committee on Pharmacy and Therapeutics, based on the most current scientific evidence (16). The formulary serves multiple purposes: as a standard reference for prescribers, a guide for optimal medical services, and a tool for effective drug planning and supply in healthcare facilities. Its primary objective is to improve the quality of healthcare services by promoting rational drug use (17).

The 2019 National Formulary includes lists of drug names, usage restrictions, healthcare facility levels (primary, secondary, and tertiary), and maximum prescription limits. Certain drugs may only be prescribed in tertiary-level facilities by specialists or subspecialists working in major clinics, general hospitals, or specialized hospitals (18). Consequently, general practitioners are prohibited from prescribing such drugs. Any general practitioner who prescribes drugs beyond their authority may be subject to legal sanctions. In accordance with Law No. 17 of 2023 on Health, Article 436 paragraphs (1) and (2), individuals who prescribe drugs without the proper expertise and authority may face a fine of up to IDR 200,000,000, while those who prescribe restricted drugs (*obat keras*) without authority may face imprisonment of up to five years or a fine of up to IDR 500,000,000 (19).

A previous study conducted in 2019 focused on the percentage of prescription conformity among BPJS (National Health Insurance) patients based on the National Formulary, including drug classification, and the use of generic and non-generic medications. The results showed that over 89% of prescriptions were in accordance with the national formulary criteria (20).

A study conducted in 2023–2024 by a research team from the Faculty of Health Sciences at Universitas Indonesia Maju, Jakarta, examined prescription compliance with the National Formulary at Community Health Centers (Puskesmas) in Tangerang Regency. The team interviewed pharmacists at each center as well as the officials responsible for drug procurement at the Tangerang Regency Health Office. The results showed that 1,019 out of 1,519 prescribed medications (across 440 prescription sheets) complied with the National Formulary. All centers received medications that did not comply with the National Formulary through the Health Office's procurement process, and 43% of the centers independently procured medications that were non-compliant. Nevertheless, the overall compliance rate of prescriptions with the National Formulary across all Tangerang Regency centers was 67%, placing it in the "sufficiently compliant" category (16).

METHOD

Study design

The type of research that used in this study was descriptive correlational with a cross-sectional approach.

Population and sample

The population of this study consisted of general practitioners with private practices in the Banyumas Regency area.

Target population in this study consisted of all general practitioners who conducted independent medical practices in Banyumas Regency. Based on data obtained from the Secretariat of the Indonesian Medical Association (IDI) in 2024, the total number of independent practicing general practitioners in Banyumas Regency was 225 doctors. The accessible population included independent practicing general practitioners in Banyumas Regency who could be contacted by the researchers and fulfilled the eligibility criteria of the study.

The sampling technique used in this study was non-probability sampling using purposive sampling. This technique was selected because the study required respondents with specific characteristics, namely general practitioners who actively conducted independent medical practice in Banyumas Regency and met the predefined inclusion and exclusion criteria. The sample size was determined based on the study design, which was a correlational cross-sectional study. Therefore, the sample size calculation was based on the expected correlation coefficient, significance level (α), and statistical power.

The sample size was calculated using the formula for correlation analysis:

$n = [(Z\alpha + Z\beta)^2 / (0.5 \ln((1+r)/(1-r)))^2] + 3$

The expected correlation coefficient was determined based on previous research with similar methodological characteristics. Aryani et al. (2016) investigated the relationship between knowledge level and drug management among healthcare personnel in Banyumas Regency using a cross-sectional analytical design and Spearman correlation analysis. The study reported a correlation coefficient of r = 0.355. Therefore, this study used an expected correlation coefficient of r = 0.35 as the basis for sample size calculation. The calculation resulted in a minimum sample size of 62 respondents (21).

The sample criteria included both inclusion and exclusion criteria.

Inclusion criteria:

a. General practitioners who actively conducted independent medical practice in Banyumas Regency.
b. Had an active medical practice license (SIP).
c. Were registered as independent practicing general practitioners based on IDI Banyumas data.
d. Were willing to participate in the study and provide informed consent.
e. Completed the research questionnaire.

Exclusion criteria:

a. General practitioners who were no longer actively practicing independently.
b. General practitioners who could not be contacted during the data collection period.
c. Respondents who did not complete the questionnaire.
d. Respondents who withdrew from the study.
e. Specialist doctors.

Data collection

The research was conducted in October 2026. Research data were collected using a Google Form questionnaire available at https://forms.gle/a3pB8jCKRmdKBwc58. The study was conducted on 64 general practitioners (respondents) who practiced independently. Each respondent completed a google form questionnaire consisting of several questions related to doctors' legal awareness and legal compliance in drug prescribing.

A limitation of this study is inability to directly observe the prescribing practices of general practitioners in their private practices. Direct observation would require a significant amount of time and effort to travel between the various private practices located throughout a single regency. Furthermore, errors in medication prescribing do not occur in every instance, and it is impossible to predict when such errors might arise. For this reason, a questionnaire was employed, with the aim of analyzing the legal awareness and legal compliance of general practitioners regarding medication prescribing in their private practices. The researcher distributed a Google Form questionnaire via personal mobile phone/WhatsApp numbers and/or doctors' group chats. The researcher also specified that respondents completing the questionnaire must meet the inclusion criteria.

Data analysis

Subsequently, a Spearman test was conducted based on the data type in which are ordinal. The data were processed and analyzed using the SPSS software program.

Ethical statement

This research had received ethical approval from Komisi Etik Penelitian Kedokteran dan Kesehatan (KEPKK) Fakultas Kedokteran Universitas Muhammadiyah Purwokerto with Number: KEPKK/FK/009.1/IX/2026. Consent was obtained from the participants because: they had received an explanation from the researcher regarding the study; they understood the research procedures to be carried out, as well as the objectives and benefits of the study; they were given the opportunity to ask questions and engage in discussions with the researcher; and the participants' individual data would not be disclosed to professional organizations, healthcare facilities, regulatory bodies, or any other parties for the purpose of disciplinary or professional assessment of the respondents.

RESULTS

Questionnaire was based on the 2019 National Formulary, which includes aspects related to legal awareness and compliance in drug prescribing. The total number of statements in the questionnaire is 15, consisting of 5 legal awareness questions and 10 legal compliance questions. The scoring system for the legal awareness and legal compliance questionnaires each uses a maximum value scale of 100.

Legal Awareness

The legal awareness questionnaire was quoted and developed from several points of statements in Decree of the Minister of Health regarding National Formulary and general understanding of National Formulary drug list regarding the presence or absence of usage restrictions and maximum prescribing limits, as well as a partial list of medications that general practitioners are not permitted to prescribe. Each statement is worth 20 points if answered correctly. The answer choices are true and false. These statements include:

1. The National Formulary is a list of selected medicines that are required and used as a reference for prescribing during the delivery of healthcare services.
2. In cases where the required medication is not listed in the National Formulary, other medications may be used without restriction, subject to the approval of the Head or Director of the local hospital.
3. There are no restrictions on use of drug in the National Formulary, and it may be used at all levels of healthcare facilities.
4. Maximum medication prescribing limits are regulated in the National Formulary.
5. In National Formulary, all general practitioners are permitted to prescribe the listed medications.

Ad 1: It shows every doctor who prescribes medication must have an official reference from the National Formulary and this is a requirement in providing services to patients.
Ad 2: It shows shows that doctors should know that there are several other drugs outside the National Formulary that may be needed in medical services but are limited and have approval from the local Health Service or Hospital Director.
Ad 3: It shows that doctors should be able to understand that there are restrictions on drug use and that not all drugs can be used at all levels of health facilities.
Ad 4: It shows that doctors must also understand that drugs cannot be prescribed at random and that this is regulated in the National Formulary.
Ad 5: It shows that general practitioners, in particular, must know and understand that not all drugs listed in the National Formulary can be prescribed by general practitioners, because some drugs may only be prescribed by certain specialist doctors and at certain levels of health facilities.
Score categories:

a. Score < 40 → Poor. If there is one correct answer or all wrong.
b. Score 40-59 → Less. If there are two correct answers.
c. Score 60-79 → Sufficient. If there are three correct answers.
d. Score ≥ 80 → Good. If there are four to five correct answers.

Tabel 1. Legal Awareness

Number of Respondents	Percentage (%)	Score	Description
7	10.94	< 40	Poor
15	23.44	40-59	Less
22	34.38	60-79	Sufficient
20	31.25	≥ 80	Good
64	100		

Seven respondents (10,94%) got null until one correct answer; 15 respondents (23,44%) got two correct answers. In total, 22 respondents (34,38%) with poor and less scores were considered to have low legal awareness. 22 respondents (34,38%) got three correct answers, they were considered to have moderate legal awareness. 28 respondents (31,25%) got four to five correct answers, indicating high legal awareness.

Among the 22 respondents with low legal awareness in prescribing drugs in independent practice, this was mainly due to the perception that:

a. Other drugs may be used without restriction based on the approval of the hospital director or head when the required drug is not listed in the national formulary.
b. There are no restrictions on drug use, and drugs can be used at all levels of healthcare facilities.
c. All registered drugs in the National Formulary can be prescribed by general practitioners.

In fact, there are restrictions on the use of alternative drugs not listed in the national formulary, and such use must be approved by the hospital director—which does not apply to independent practices, as such drugs may only be prescribed in hospitals. The National Formulary clearly defines usage restrictions, and not all registered drugs can be prescribed by general practitioners.

Legal Compliance

The legal compliance questionnaire was quoted and developed from the List of Drugs in the 2019 National Formulary which includes therapeutic class, therapeutic subclass/generic name/preparation/strength and restrictions on use, and maximum prescription. This questionnaire refers to whether doctors prescribe drugs in accordance with the 2019 National Formulary, which includes:

1. The maximum prescription amount per month or per case.
2. Prescribing drugs according to indication.
3. Prescribing drugs considering age limitations.
4. Prescribing drugs according to competence and level of healthcare facility.

Each statement is worth 10 points if answered correctly. The answer choices are yes and no. These statements include:

1. I prescribe ibuprofen maximum 50 tablets per month.
2. I prescribe ketoprofen to patients with moderate to severe pain.
3. I have prescribed ketorolac injections to patients with moderate to severe pain.
4. I prescribe gemfibrozil along with statins in patients with hyperlipidemia.
5. I prescribed risperidone to patients for routine psychiatric check-ups.
6. I prescribe a maximum of 100 tablets of chlorpromazine per month.
7. I prescribe a maximum of 15 ampoules of diazepam injection per patient.
8. I prescribe tetracycline to children under 6 years old.
9. I prescribe ergotamine not only for patients with acute migraine attacks and cluster headache.
10. I prescribed oral atropine for a patient experiencing morphine induced respiratory depression.

Ad 1: Ibuprofen is a NSAID frequently used in self-medication, particularly to treat patients with fever or muscle aches. However, this medication should not be used indiscriminately for long periods, whether in tablet or suspension form. Therefore, the use of ibuprofen is a topic worthy of mention in this questionnaire (22).
Ad 2: Ketoprofen is a non-narcotic NSAID used to treat moderate to severe pain. It can only be used and prescribed by specialist physicians or dentists in private clinics and hospitals. This information is also important to include in questionnaires, especially for general practitioners, to help them understand which NSAID are and are not permitted to be prescribed in private practices (23).

Ad 3: Ketorolac is an NSAID used to alleviate moderate to severe acute pain; it is commonly administered by injection, particularly for postoperative pain. Injectable ketorolac may only be stocked and prescribed within specialist care settings such as private clinics and hospitals by medical or dental specialists; it must not be prescribed by general practitioners in independent practice settings. This restriction exists because the injectable form carries a high risk of adverse effects, including gastrointestinal bleeding, and falls into a category of injectable medications not permitted for use in independent practice. It is essential for general practitioners to be aware of this requirement (24).
Ad 4: Doctors in private practice may sometimes prescribe both medications for a single condition; however, it is essential to know which drugs can or cannot be combined. Gemfibrozil and statin are both antihyperlipidemic agents, yet they should not be used in combination because this can trigger severe muscle toxicity manifesting as myopathy and rhabdomyolysis (muscle tissue breakdown) which may ultimately lead to kidney failure. Naturally, it is important for doctors in private practice to be aware of and apply this knowledge (25).
Ad 5: In accordance with National Formulary, risperidone is not used in general practitioner private practice. Risperidone is an antipsychotic medication that may only be provided in clinics, psychiatric specialist services, or hospitals. General practitioners need to be aware that not all psychotropic medications may be provided or prescribed in private practice settings (26).
Ad 6: Not all chlorpromazine dosage forms may be prescribed by general practitioners in private practice. According to the National Formulary, the permitted dosage is 25 mg for patients with mild psychotic disorders. Private practices do not treat patients with severe psychotic disorders. It is important for general practitioners to be aware of this and to apply it (27).
Ad 7: Private practices also handle cases involving seizures; therefore, diazepam must be available in both ampoule and tube forms. A crucial point for general practitioners to note is that injectable diazepam (5 mg/ml ampoules) is subject to maximum prescribing limits, given that private practice settings are not intended for patients experiencing relatively severe seizures (28).
Ad 8: One fundamental and important point for general practitioners in private practice to be aware of concerns antibiotics such as tetracycline; this medication is contraindicated for children under the age of six because it can cause permanent tooth discoloration turning teeth yellow, brown, or gray and may even interfere with bone growth (29).
Ad 9: This statement is also significant for general practitioners, as many patients visiting private practices present with complaints of unilateral headaches. Ergotamine can be prescribed in private practice settings but is intended solely for acute migraine and cluster headache attacks in accordance with clinical indications and the National Formulary and not for other conditions such as chronic migraine (30).
Ad 10: Atropine is a medication that can be prescribed in private practice settings as an antidote for poisoning; however, it cannot be used to treat respiratory depression caused by opioids or morphine. If such symptoms occur, the patient must be immediately rushed to the nearest hospital. General practitioners should also adhere to this practice (31).
Score categories:
a. Score < 40 → Poor. If there are one to three correct answers or all wrong.
b. Score 40-59 → Less. If there are four to five correct answers.
c. Score 60-79 → Sufficient. If there are six to seven correct answers.
d. Score ≥ 80 → Good. If there are eight to ten correct answers.

Tabel 2. Legal Compliance

Number of Respondents	Percentage (%)	Score	Description
7	10.94	< 40	Poor
16	25.00	40-59	Less
21	32.81	60-79	Sufficient
20	31.25	≥ 80	Good
64	100		

Seven respondents (10,94%) got null until one to three correct answers, 16 respondents (25,00%) got four to five correct answers, making a total of 23 respondents (35,94%) with low legal compliance. 21 respondents (32,81%) got six to seven correct answers, they were considered to have moderate legal awareness. 20 respondents (31,25%) got eight to ten correct answers, they were considered to high legal compliance.

Among 23 respondents with low legal compliance in applying the 2019 national formulary regulations. Low level of implementation the 2019 National Formulary regulations may be attributed to a lack of knowledge and/or experience among respondents regarding:

- The maximum prescription limits for the quantity of medication that may be stocked and used in an independent private practice within a one-month period apply to the following: the oral analgesic-antipyretic ibuprofen, the oral antipsychotic chlorpromazine (at specified dosages), and the injectable anticonvulsant diazepam (at specified dosages).
- Prescribing of medications for specific clinical indications, including oral ergotamine and atropine.
- The prescription of certain medications must take age restrictions into account; for instance, oral tetracycline antibiotics must strictly not be administered to children under six years old.
- The prescribing of certain medications is subject to the prescriber's scope of competence and the level of the healthcare facility; this includes the non-steroidal anti-inflammatory drugs (NSAIDs) ketoprofen and ketorolac. Although these may be prescribed by general practitioners, they are permitted to be prescribed only within level II and III healthcare facilities. The same applies to the antipsychotic medication risperidone, which is generally prescribed only by psychiatrists at secondary and tertiary healthcare facilities.
- Prescribing guidelines for primary classes within a specific drug category detailing which combinations are permitted or prohibited based on clinical indications—apply here to the class of antihyperlipidemic agents, which includes gemfibrozil and statin. These two primary classes must not be combined; therefore, they cannot be prescribed together for patients with hyperlipidemia.

Tabel 3. Kendall's tau-b Test

		Legal Compliance
Legal Awareness	Correlation Coefficient (r)	0.890
	Sig. (p)	0.000 (2.64×10^{-19})
	n	64

Kendall's tau-b test result yielded $p = 0.000$ ($p < 0.05$), and the correlation coefficient between legal awareness and compliance is $r = 0.890$, indicating a significant relationship between the legal awareness of independently practicing doctors and their legal compliance in drug prescribing. A positive correlation coefficient value indicates that the relationship between the two variables is unidirectional, meaning that the higher the legal awareness, the higher the level of compliance tends to be, and on the contrary. Based on the correlation strength criteria, the value of $r = 0.890$ is included in the strong correlation category, so it can be concluded that legal awareness has a strong relationship with compliance(32).

DISCUSSION

Summaries, legal compliance can be achieved effectively when existing laws are well-known, understood, and properly applied. General practitioners with good legal awareness tend to be more careful in prescribing drugs according to their competencies and the healthcare facility level at which they practice—thus demonstrating high legal compliance with the 2019 national formulary. Conversely, doctors with poor or low legal awareness may tend to prescribe drugs beyond their competence and inconsistent with the facility level where they practice.

Previous studies had focused solely on the extent to which prescriptions issued by physicians in community health centers (Puskesmas) and hospitals align with the prevailing National Formulary; they had not yet explored the relationship between the legal awareness of general practitioners in private practice and their legal compliance regarding the prescription of medications in accordance with the National Formulary. Generally, physicians working in community health centers and hospitals are expected to adhere to strict standards in providing medical services including prescription of medications—in line with established operational procedures, which likely fosters a higher level of legal awareness and compliance. In contrast, for general practitioners in private practice, such disciplinary requirements are often less stringent; consequently, there is a possibility that these physicians may prescribe medications outside their scope of competence or in a manner inconsistent with the guidelines of the National Formulary.

International research regarding prescription compliance among general practitioners in private practice in countries other than Indonesia may not yet have been extensively explored. One such study, however, examines medication adherence from the patient's perspective. Patient adherence is closely linked to

the information provided by the doctor regarding prescriptions; any changesvsuch as a dosage increase must be communicated to the patient to help maintain their commitment to the prescribed treatment regimen (33).

Legal compliance in medication prescribing can also be influenced by the governance of the prescribing process. Medication prescribing governance encompasses a series of processes, including medical decision-making, writing prescriptions, preparing and dispensing medications, and monitoring patient medication use. These processes are implemented to ensure patient safety, therapeutic effectiveness, rational medication use, and adherence to professional standards and applicable laws and regulations. Such governance applies not only in hospitals but also in independent practice settings. Effective implementation of this governance fosters good legal compliance among physicians regarding medication prescribing (34).

Significant medicolegal risks can arise from a physician's non-compliance with prescribing guidelines, as the prescription itself serves as an official legal document reflecting the physician's responsibility for patient safety. Physicians may face legal action on ethical, criminal, civil, or administrative grounds. Prescribing practices that deviate from the National Formulary may be deemed medical negligence, as they can result in patient harm. Prescribing medication without a clear indication may violate a patient's right to safety, as the patient fails to receive safe and rational treatment. Medical prescription also serves as valid evidence in court; consequently, if an error occurs in writing prescription or if a doctor prescribes medication outside their scope of competence the doctor’s position becomes vulnerable or jeopardized in the event of a legal dispute. Doctors may face claims for material damages if a patient suffers severe side effects or disability due to non-compliant prescribing practices. In cases where non-compliant prescribing leads to more severe symptoms or even death, doctors may face criminal sanctions under Article 360 of the Indonesian Criminal Code and/or Article 440 of Law No. 17 of 2023 concerning Health. Prescribing medication that deviates from the National Formulary can also exacerbate a patient's symptoms, thereby conflicting with the ethical principle of non-maleficence. Doctors may be subject to ethical sanctions, ranging from reprimands and mandatory retraining at an educational institution to the temporary or permanent revocation of their Certificate of Registration and Practice License (35).

As previously explained in data collection subsection, a limitation of this study is the inability to conduct direct observations at the private practices of general practitioners. Carrying out such observations would have required visiting 64 separate private practice locations, which are often geographically distant from one another—a process that would demand a significant amount of time and effort. Furthermore, the likelihood of encountering errors in prescription writing or instances where prescriptions fall outside the scope of a general practitioner’s professional competence cannot be predicted; even spending several days observing at a single private practice does not guarantee that such errors will occur or be identified.

CONCLUSION

There is a significant relationship between legal awareness of independently practicing doctors and their legal compliance in drug prescribing in accordance with the National Formulary. The level of a person’s legal compliance with regulations is associated with degree of their legal awareness. A higher level of legal awareness among physicians in private practice leads to greater legal compliance in prescribing medications in accordance with the National Formulary, thereby helping them avoid medicolegal risks—which may otherwise entail administrative, ethical, disciplinary, or legal sanctions (both criminal and civil). Drug prescriptions by doctors at every level of healthcare facility (including independent practices) must refer to the National Formulary.

CONFLICT OF INTEREST

None

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DATA AVAILABILITY

Not available

SUPPLEMENTAL DATA

Not available

AUTHOR CONTRIBUTIONS

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Abdul Hakim Nitiprodjo	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
Prima Maharani Putri	✓			✓		✓	✓	✓	✓	✓	✓			
Arif Budiman	✓		✓	✓			✓			✓	✓		✓	

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

DECLARATION OF USING AI IN THE WRITING PROCESS

We didn't use AI in the writing process.

LIST OF ABBREVIATIONS

Not available

ETHICAL APPROVAL *(if applicable)* (10 PT)

This study involved human subjects. The entire methodology complied with all relevant national regulations and institutional policies in accordance with the principles of the Declaration of Helsinki and was approved by Komisi Etik Kedokteran dan Kesehatan (KEPKK) Fakultas Kedokteran Universitas Muhammadiyah Purwokerto.

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