Level Of Doctor Compliance In Writing Prescriptions For Outpatient Patients Against Hospital Formulary Suitability At Sunan Kudus Hospital

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Abstract. A well-functioning formulary will facilitate drug management and improve medication administration to patients. However, many hospitals still encounter obstacles. Obstacles in hospital services include doctors prescribing medications outside the formulary, doctors being unwilling to substitute prescribed medications with those available, and the pharmacy department being unable to contact the doctors. Non-compliance with the formulary can lead to shortages or gaps in medication, while on the other hand, there will be excess medication stocks. This study aims to determine the level of doctor compliance in writing prescriptions according to the Islamic Hospital Sunan Kudus Formulary. This research is a non-experimental quantitative study with a descriptive design. Data was collected retrospectively from prescriptions gathered at IFRS for January – December, with a total sample of 408 prescriptions meeting the inclusion criteria using a random sampling method. The results of this study show that 92.9% of medications available in the hospital can be considered compliant, while 77.71% of prescriptions can be said to be non-compliant with the formulary. The availability of medications is related to prescription compliance, as the significance value (2-tailed) is 0.000 < 0.05.

Key words: [Hospital Formulary, Doctor Compliance, Drug Availability, Sunan Kudus Islamic Hospital.]

INTRODUCTION

Health efforts are activities aimed at maintaining and improving health to achieve optimal health levels for the community. The concept of health efforts unity serves as a guideline and reference for all health facilities, including hospitals in Indonesia (Satibi, 2015). A hospital is a health service institution that provides comprehensive personal health services, including inpatient care, outpatient care, an emergency room, a polyclinic, and a pharmacy (Permenkes, 2020).

According to the Minister of Health Regulation Number 47 of 2021 concerning the Organization of the Health Sector, pharmaceutical services in the Pharmacy Installation include the management and provision of drugs (Permenkes, 2021). Medications are essential for the recovery of patients to provide health services to receive good, effective, and efficient treatment, which must be supported by collaboration among healthcare professionals (doctors, pharmacists) and good formulary management (Johnson et al., 2021).

The formulary runs well, so it must be continuously updated, fully involving full-time doctors in the pharmaceutical and therapy committee (PFT) because doctors are the users and implementers in the field, and the usage must be evaluated (Aritonang, 2017). A well-functioning formulary will facilitate drug control and improve the provision of medication to patients (Susilowati, Winarni & Saroja, 2007).

Many hospital services encounter several obstacles, including doctors prescribing medications outside the formulary, doctors unwilling to replace medications with those available, and pharmacy installations unable to contact the doctors, resulting in patients not being able to receive medications on time, as they have to seek third-party assistance (Djatmiko & Sulastini, 2008). Non-compliance with the formulary can lead to shortages or stockouts of medications, while on the other hand, there may be excess stock of medications. The investment is greater if the variety of medications exceeds the standard, service times become longer, there are rejected prescriptions, medication prices become expensive, ongoing medication will be disrupted, and the total cost of treatment becomes high (Azwar, 2010).

The cause of the discrepancy between the prescription writing and the formulary above is that the medication is not fully complete (Anhar, 2017; Nurfikri & Sadinanti, 2021). The required medication is not included in the formulary list, so the needed medication is not available at the pharmacy (Arif & Budiati, 2021). Sunan Kudus Islamic Hospital is one of the type C public hospitals in the city of Kudus. The types of services available at Sunan Kudus Islamic Hospital include outpatient services consisting of general polyclinics and specialist polyclinics, inpatient services, emergency services, maternity services, medical support services, operating room services, and pharmaceutical services.

Based on the background above, it is necessary to conduct research on the level of compliance of doctors in writing prescriptions by the hospital formulary at the outpatient pharmacy installation of Sunan Kudus Islamic Hospital.

METHODS

This research is a type of non-experimental quantitative research. Data collection is conducted retrospectively, adjusted to the patients' prescriptions.

Type of research

This research is classified as a non-experimental quantitative study, meaning it is a systematic empirical study where the independent variables do not need to be controlled directly because they have already occurred, using a descriptive observational research design aimed at describing an event.

Research Design

The research design uses Cross Sectional. Data collection is conducted retrospectively.

Location and Time of Research

This research was conducted at the Islamic Hospital (RSI) Sunan Kudus, located at Jl. Raya Kudus Permai No.1 Tersono, Garung Lor, Kaliwungu District, Kudus Regency, Central Java 59332. The study was carried out from January to March 2024.

Population and Research Sample

Population and Sample of the Research The population used in this research is all prescriptions of outpatient patients at the Outpatient Pharmacy Installation of RSI Sunan Kudus. The sampling technique was conducted using the Random Sampling method. The research sample used in this study is the outpatient patient records that meet the inclusion criteria.

Research Instruments and Data Collection Techniques

The tools used in this research are supporting journals related to the occurrence of doctors' compliance in writing prescriptions. The materials used in this research are patient medical record data containing patient data during their stay at RSI Sunan Kudus. Meanwhile, the data collection techniques include: Preliminary Study, ethical clearance, permits, implementation, and data processing.

RESULTS AND DISCUSSION

The results of this study obtained a total of 408 patient prescriptions taken from the patient prescription records. The profile of patient prescriptions at the Islamic Hospital Sunan Kudus for the period of January to December is presented in the table below as follows:

Table 1. Availability of Medicine

Indicator	Number of medicine items	Number of drug items that match the formulary	The number of drug items that do not comply with the formulary	Compliance Score
January	55	51	3	94,1 %
February	54	52	2	97,1 %
March	53	51	2	100 %
April	61	57	4	91,2 %
May	43	42	1	100 %
June	54	50	4	91,2 %
July	50	46	4	91,2 %
August	61	55	6	70,6 %
September	56	54	2	97,1 %
October	43	42	1	100 %
November	58	54	4	88,2 %
Desember	54	51	3	94,1 %
Amount	**642**	**605**	**37**	**Average 92.9%**

Data Source: Primary Data

The research results shown in Table 1 indicate that the average percentage of drug availability in the Pharmacy Installation of the Islamic Hospital from January to December is 92.9% due to the complete availability of drugs. This aligns with the research by Anhar (2017), which states that drug

availability is considered complete if it is >90%. Some drugs that are not yet available include Cendo Xytrol eye ointment, Tebokan, Arduim, Telfast OD, Braxidin, and Duloxta, which have not yet been included in the hospital formulary. This is because doctors are not familiar with the brands of drugs available at the Sunan Kudus Islamic Hospital, or the formulary information has not been disseminated evenly, causing doctors to prescribe medications based on the brand names they remember. Additionally, this is also due to collaboration between medical representatives and doctors, leading doctors to write these products into their prescriptions.

Table 2. Prescription Compliance Percentage

Indicator	Number of Prescriptions	Number of prescriptions according to the formulary	Number of incorrect prescriptions	Compliance Score
January	34	28	6	82,4 %
February	34	29	5	85,3 %
March	34	24	10	70,6 %
April	34	22	12	64,7 %
May	34	33	1	97,1 %
June	34	22	12	64,7 %
July	34	22	12	64,7 %
August	34	21	13	61,8 %
September	34	27	7	79,4 %
October	34	32	2	94,1 %
November	34	26	8	76,5 %
Desember	34	31	3	91,2 %
Amount	**408**	**317**	**91**	**Average 77.71%**

Data Source: Primary Data

The research results shown in Table 2 indicate that the average percentage of prescription writing compliance at the Islamic Hospital Pharmacy Installation from January to December was 77.71%, which can be considered non-compliant because, according to Anhar (2017), the compliance standard states that compliant prescription writing should be ≥ 80%, while non-compliant is < 80%. The same point was also made by Mutmainah & Rahmawati (2010), stating that compliance in writing prescriptions for certain medications is 95.7% by the hospital formulary, while 4.3% of prescriptions do not comply with the hospital formulary. Non-compliance was noted from various doctors, including doctors AZ, OD, SP, AH, IF, KHS, ST, BN, DDK, HYP, A, RA, HNR, and ES. The least compliant doctor in prescription writing was one doctor, namely OD. This was due to the doctor not being familiar with the brands of medications available in that hospital; therefore, the doctor arbitrarily wrote down a medication brand even though there were available medications with the same active ingredient but different brands, or the medications were not listed in the hospital formulary.

Table 3. Test for Data Normality

Variable	*Sig*	Standard	Explanation
Availability of Medicine	0,000	< 0,05	Not normally distributed
Prescription Compliance	0,000	< 0,05	Not normally distributed

Data Source: Primary Data

The normality test of the data in this study used the Kolmogorov-Smirnov test because the sample size is 408 > 50. Based on Table 3 of the normality test of the data between drug availability and prescription compliance, a significance value of 0.000 < 0.05 was obtained, meaning the data is not normally distributed.

Table 4. Homogeneity Test

Variable	*Sig*	Standard	Explanation
Availability of Medicines & Prescription Compliance	0,000	< 0,05	Not homogeneous

Data Source: Primary Data

The homogeneity test of the data in this study used the Levene Statistic test because the sample size is 408 > 50. Based on Table 4 of the homogeneity test of data between the availability of drugs and prescription adherence, a significance value of 0.000 < 0.05 was obtained, which means the data is not

normally distributed.

Table 5. The relationship between prescription compliance and medication availability

Variable	*Sig*	Tightness	Standard	Explanation
Prescription Compliance & Drug Availability	0,000	516**	< 0,05	The existence of a strong relationship

Data Source: Primary Data

Based on Table 5, the results of the Spearman Rank test indicate a significance of 0.000 with a rank of 0.516**, meaning there is a strong relationship between the availability of drugs and the compliance of doctors in prescribing outpatient prescriptions by the hospital formulary at Sunan Kudus Islamic Hospital. The positive result indicates a direct relationship whereby if the availability of drugs at Sunan Kudus Islamic Hospital is complete, the compliance of doctors in writing outpatient prescriptions by the hospital formulary at Sunan Kudus Islamic Hospital will increase.

CONCLUSION

Based on the research that has been conducted, it can be concluded that the average availability of medication from January to December was 92.9%. And the compliance of doctors in writing prescriptions was 77.71%. There is a relationship between the availability of medication and prescription compliance at Sunan Kudus Islamic Hospital, with a significance value (2-tailed) of 0.000 < 0.05.

REFERENCES

Anhar, A. (2017). Tingkat kepatuhan dokter dalam menuliskan resep pasien rawat jalan berdasarkan formularium di rumah sakit biomedik periode januari-maret tahun 2016. Pharmaceutical & Traditional Medicine, 1(1), 1–6.

Arif, R., & Budiati, N. (2021). Persentase kepatuhan dokter dalam penulisan resep sesuai formularium obat obat tertentu di rsu al-islam h.m mawardi periode oktober desember 2018. 4(4), 519.

Aritonang, J. 2017. Analisis formularium rsud cimacan tahun 2017. Jurnal Administrasi Rumah Sakit Indonesia, 3(2), 88–99.

Azwar, A., (2010). Pengantar administrasi kesehatan. Jakarta : Binarupa Aksara

Djatmiko, M., & Sulastini, R. (2008). Formularium rumah sakit di rsud ungaran kabupaten semarang tahun 2008. Jurnal Ilmu Farmasi dan Farmasi Klinik, 7(2).

Johnson, S. T., Gosser, R. A., Kier, K. L., Anderson, K. C., Douglas, J. S., Heindel, G. A., Majerczyk, D., Manian, R., & Thornby, K. A. (2021). Formulary management challenges and opportunities: 2020 and beyond - an opinion paper of the drug information practice and research network of the American College of Clinical Pharmacy. JACCP Journal of the American College of Clinical Pharmacy, 4(1), 81–91.

Mutmainah, N., & Rahmawati, M. (2010). Persentase kepatuhan dokter dalam penulisan resep sesuai formularium obat obat tertentu di rsu al-islam h.m mawardi periode oktober-desember 2018. Pharmacon, 11(2), 51–56.

Nurfikri, A., & Sadinanti, S. P. (2021). Tingkat kepatuhan dokter dalam menuliskan resep berdasarkan formularium tahun 2019. Jurnal Kesehatan Vokasional, 5(4), 253.

Permenkes. (2020). Klasifikasi dan perizinan rumah sakit. Jakarta: Kementrian Kesehatan Republik Indonesia.

Permenkes. (2021). Penyelenggaraan bidang perumahsakitan. Jakarta: Kementrian Kesehatan Republik Indonesia.

Satibi. (2015). Manajmenen obat di rumah sakit. Yogyakarta: Gadjah Mada University Press.

Susilowati, S., Winarni, & Saroja. (2007). Evaluasi kepatuhan penulisan obat dalam kartu obat penderita rawat inap ruang kutilang terhadap formularium rumah sakit di RSUP Dr. Kariadi semarang periode 2007. 10, 6-10.