

Rational Drug Use Based on World Health Organization (WHO) Patient Care Indicators: A Review

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Abstract:

Background: Rational drug use is the use of drugs based on clear indications and benefits, while irrational drug use can be seen from drug prescriptions without clear indications and dosage determination, as well as incorrect methods and duration of administration. A drug that is said to be irrational is likely to have a greater negative impact on the patient. Appropriate patient treatment is the goal of achieving the desired therapeutic target. The form of pharmaceutical services is not only in achieving therapeutic results but also in providing quality services and achieving patient satisfaction which can be seen from the waiting time for prescriptions as one of the patient satisfaction indicators. The waiting time for prescription services can reflect the quality of service.

Objective: The purpose of this review article is to describe the rational use of drugs based on the WHO patient care indicators.

Materials Methods: This article review was conducted by searching for bibliographies from databases such as PubMed and Google Scholar from January 2011 to 2021. The research included in this review was the research that assessed rational drug use based on WHO patient care indicators.

Results: Based on the results of the 11 articles used, the average consultation time is 6.02 minutes, the average percentage of drug preparation time is 391.64 seconds, the percentage of drugs actually prescribed is 88.53%, the percentage of drugs with adequate labeling is 58.59% and the percentage of patients who understand the drug regimen is 58.82%.

Conclusion: It can be concluded that there are indicators for assessing patient care that are still below WHO standards.

Keywords: Rational drug use, patient care indicators, hospitals, health centers

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I. Introduction

Rational drug use is the use of drugs based on indications whose benefits are clearly visible and predictable (evidence-based therapy). These benefits are assessed by considering all the written evidence of clinical trials contained in the literature that are based on a very thoughtful evaluation. Considering the benefits and risks is not always easy to do. Irrational use of drugs is prescribing drugs without clear indications, determining the wrong dose, method, and duration of administration, and prescribing expensive drugs. The aforementioned are some examples of the irrationality of prescription. The use of a drug is said to be irrational when the possibility that the negative impact received by the patient is greater than the benefits.²

Every individual has the right to get a decent life both in terms of personal and family health, as well as getting quality health services such as in hospitals, pharmacies, and health centers. As recommended by WHO, health services are in charge of pharmaceutical services which aim to increase rational use of drugs, improve drug use safety and drug cost efficiency and improve the quality of life of patients in accordance with good pharmaceutical service practices (Good Pharmacy Practices)³.

Appropriate patient treatment is the goal of achieving the desired therapeutic target. The form of pharmaceutical services is not only in achieving therapeutic results but also in providing quality services and achieving patient satisfaction, one of which can be seen through waiting time for prescriptions. The waiting time for prescription services can reflect the quality of the service.⁴

The main indicator of drug use according to WHO 1993, is used to measure three general areas that are closely related to the level of rationality of drug use in a health facility, namely the practice of prescribing by service providers or specifically doctors (prescribers) of patient care, both in clinical consultations and dispensing pharmacy, and the availability of health facilities that support the rational use of drugs. Thus, that it can be said that the main indicators for the use of drugs in accordance with WHO 1993 consisted of prescribing indicators, indicators of patient care, and indicators of health facilities⁵.

There are five parameters in WHO patient care indicators. Parameter 1 is the average time of consultation to measure the time spent by medical personnel with patients in the consultation and prescribing process, parameter 2 is the average time of drug preparation to measure the average time spent by officers dispensing drugs with patients, parameter 3 is the percentage of prescribed drugs to measure the extent to which health facilities are able to provide prescribed drugs, parameter 4 is the percentage of drugs with sufficient labeling to measure the extent to which officers record important information on the packaging of the drugs they buy and parameter 5 is the percentage of patients who understand the drug regimen to measure the effectiveness of the information provided to patients about the dosage schedule of the drugs they receive ⁵.

1.1 Table of parameters patient care World Health Organization (WHO) ⁶

No	Name parameter	Reference value WHO
1	Average Consultation Time	30 minutes
2	Average Drug Preparation Time	60 seconds
3	Percentage of Drugs Actually Prescribed	100 %
4	Percentage of Drugs with Sufficient Labeling	100 %
5	Percentage of Patients Who Understand the Drug Regimen	100 %

II. Methods

This review article is written by searching for bibliographies using databases, namely PubMed and Google Scholar. The keywords used in the PubMed database were "rational drug use (AND) WHO patient care indicators". On Google Scholar the keywords used were "rational drug use (AND) WHO patient care indicators". The keywords were used to expand or define the search, making it easier to determine articles or journals. The articles taken are articles published in 2011-2021, the selection of articles that are included in the review is carried out with (title, abstract, and full text) inclusion criteria, including research that assesses rational drug use based on World Health Organization (WHO) patient care indicators. After searching according to the title and abstract, proceed with collecting data on the results and discussing the research articles that will be reviewed, and then continued with writing using the narrative method.

III. Result

3.1 Table of rational drug use based on World Health Organization (WHO) patient care indicators.

Reference	Average Consultation Time (minutes)	Average Drug Preparation Time (seconds)	%Percentage of Drugs Actually Prescribed	%Percentage of Drugs with Sufficient Labeling	%Percentage of Patients Who Understand the Drug Regimen
⁷	3.64	556	99.16 %	48.33%	58.33%
⁸	7.49	1104	99.04%	98.06%	85.42%
⁹	4.32	1098	94.54%	100%	47.58%
¹⁰	1.65	264	97.18%	100%	17.07%
¹¹	8.24	708	95.89%	99.66%	90.00%
⁶	4.57	175.8	83.82%	0%	67.7%
¹²	12.27	84.47	88.58%	58.26%	59.55%
¹³	1.57	47	82.6%	22.7%	74.67%
¹⁴	2,2	38	90.9%	100%	62.1%
¹⁵	15	192.6	65%	0%	68%
¹⁶	5.35	40.24	77.17%	17.5%	16.7%
Average	6.02	391.64	88.53%	58.59%	58.82%

IV. Discussion

There are five care parameters assessed with regard to rational drug use based on World Health Organization (WHO) patient care indicators, namely, average consultation time, average drug preparation time, percentage of drugs actually prescribed, percentage of adequately labeled drugs, and the percentage of patients who understand the drug regimen.

1. Average Consultation Time

The average consultation time is the time required by doctors to convey information to patients¹⁰. The total average consultation time in this study is 6.02 minutes, the highest average consultation time in this study is 15 minutes and the lowest average consultation time in this study is 1.57 minutes while in accordance with the World Health Organization (WHO) indicators the recommended standard is 30 minutes. In this study, the average number of consultations obtained is lower than the recommended standard by World Health Organization (WHO). The mean value obtained regarding the consultation time that is less than the World Health Organization (WHO) standard may be related to the workload of the prescriber, the number of patients visiting the institution, and also the number of staff which can affect the consultation time, so that the institution shortens the consultation time¹⁶.

The fast consultation time can make the information received about treatment not clear enough for the patient⁷. The limitations of providing drug information can increase errors in how to use drugs and cause the desired therapeutic effect not to be achieved optimally¹⁰. Meanwhile according to World Health Organization (WHO), insufficient consultation time causes patients to not have complete examinations and further rational therapy¹⁴.

In achieving rational use of drugs, consultation time with a doctor is important to explore detailed records of the main complaint, history of current illness, past medical and medication history, social and family history, socioeconomic status, occupational history, etc., which is equally important with the drug because it affects the treatment regimen. If the consultation time is short due to the low doctor-to-patient ratio, this could also affect treatment⁶.

Minister of Health Regulation Number 73 of 2016 also states that there is a number of basic information that must be provided when conveying information about drugs so that the consultation time that is less than the recommended one is feared to cause the patient to not understand basic information that must be received¹⁰.

2. Average Drug Preparation Time

The average time for drug preparation and drug delivery is the duration required by pharmacists starting from receiving prescriptions to delivering drugs to patients⁹. The total average drug preparation time in this study is 391.64 seconds, the highest average drug preparation time in this study is 1104 seconds and the lowest average drug preparation time in this study is 38 seconds while the recommended time by World Health Organization (WHO) is 60 seconds. In this study, in terms of the average drug preparation time, some are lower than that recommended by World Health Organization (WHO), but some are higher than that recommended by World Health Organization (WHO).

Based on Minister of Health Regulation No. 73 of 2016 concerning Pharmaceutical Service Standards in pharmacies, the length of time for prescription services at pharmacies is 15–30 minutes^{10,17}. The varying timing of drug administration can be influenced by differences in human resources, the number of patients who need to be served, the arrangement of the drug preparation room, the ease of access of workers to the required materials (drugs, compounding needs) and supporting equipment available at the pharmacy. In addition, the difficulty level of a prescription can also affect the time of drug preparation¹⁰.

The level of difficulty in question is the difficulty in formulating prescriptions because it is not only about preparing drugs but also calculating drug doses, weighing the ingredients to be used, taking how much medicine is needed according to the required dose, and also having to pay attention to mixing the types of medicinal ingredients and then dispensing the medicine. and changing stocks⁹. Longer drug preparation times should help patients to obtain more complete information about the medications they receive from pharmacists⁷. And it can be said that the time of drug administration and the consultation time provided are examples of the description of the level of service in an installation¹⁰.

3. Percentage of Drugs Actually Prescribed

The percentage of drugs actually prescribed is an indicator of drugs that can be delivered with the aim of measuring the extent to which health facilities are able to provide prescribed drugs¹⁰. The total average percentage of drugs actually prescribed in this study is 88.53%, the highest percentage of drugs actually prescribed in this study is 99.16% and the lowest percentage of drugs actually prescribed in this study is 65%

while the recommended standard by World Health Organization (WHO) is 100%. In this study, in terms of the average percentage of drugs actually prescribed, some are lower than the average recommended by World Health Organization (WHO) and some are close to those recommended by World Health Organization (WHO).

The actual dispensing of drugs shows that all prescribed drugs can be given to the patient⁹. While the average percentage of drugs actually prescribed in this study is lower than the standard and some were close to the World Health Organization (WHO) recommendation, the percentage that was close to the World Health Organization (WHO) recommendation could be seen from the adequate supply of drugs in the pharmacy warehouse at each institution⁷. Whereas the main reason involved for the low percentage of drugs actually being dispensed may be due to inadequate availability of drugs in stock¹⁴.

Based on WHO (1993), calculating the proportion of drugs given is conducted by calculating the number of drugs given divided by the total drug items written in the prescription⁹. Usually, the mismatch in the amount of medicine can occur due to several things, namely, the supply of drugs and substitute drugs run out at the same time and the prescribed drugs are forgotten to be handed over, perhaps due to the inaccuracy of the officers when working on prescriptions⁷. There are also other causes for the low percentage of drugs that are actually prescribed, usually, the drug procurement process is the cause of delays in drug supply⁶.

Therefore, the principal pharmacist must make an indent for the drugs needed in the previous year (based on the previous census). This order should be verified by two or three authorities and then the bill should be passed. Then the central drugstore will provide the medicines. So there will never be a delay in the provision of emergency medicines and essential classes⁶.

4. Percentage of Drugs with Sufficient Labeling

The percentage of drugs with adequate labeling is a measurement of the accuracy of labeling which is carried out through direct observation of drug labels that are handed over to patients¹¹. The total average percentage of drugs with adequate labeling in this study is 58.59%, the highest percentage of drugs with adequate labeling in this study is 100% and the lowest percentage of drugs with adequate labeling in this study is 0% while the recommended standard by World Health Organization (WHO) is 100%. In this study, in terms of the average percentage of drugs with adequate labeling, some are lower than the average recommended by World Health Organization (WHO), some are close to those recommended by World Health Organization (WHO) and some even meet the World Health Organization (WHO) recommendation criteria.

According to World Health Organization (WHO) 1993, the minimum information components that must be listed on a drug label are the patient's name, the name of the drug, the date the drug was delivered, and the method/rules for using the drug¹¹. In this study, the average obtained is 0%, while the recommended standard by World Health Organization (WHO) is 100%, which is very far from that recommended by World Health Organization (WHO). This is due to the availability of packaging materials in the health facilities studied which are still inadequate, therefore, only verbal information is given to patients¹⁵.

Adequate information is the right of a patient as the accuracy of drug labeling is closely related to ensuring patient safety in drug use⁹. Drugs with insufficient labeling can result in patients taking the wrong medication and allow unexpected drug effects to occur⁷.

Inadequate labeling may also be due to high patient numbers, work pressure, or pharmacist negligence. Inadequate labeling results not only in poor information about drug use but also poor adherence to dosing regimens¹². So that the work of pharmacists becomes less than optimal and there is a lack of education regarding drug labeling for pharmacists⁷.

Meanwhile, correct labeling is the responsibility of pharmaceutical installation management to ensure the safety of patient drug use⁸. The percentage of correctly labeled drugs is 100%. Correct labeling ensures that the drug given to the patient is the right dose and time for effective drug administration¹⁰.

5. Percentage of Patients Who Understand the Drug Regimen

The percentage of patients who understand the drug regimen is the patient's knowledge about the use of the dose obtained after asking several questions to the patient after the patient redeems the drug at the Pharmacy Installation⁹.

The total average percentage of patients who understand the drug regimen in this study is 58.82%, the highest percentage of patients who understand the drug regimen in this study is 90.00% and the lowest percentage of patients who understand the drug regimen in this study is 16, 7% while the recommended standard by World Health Organization (WHO) is 100%. In this study, in terms of the average percentage of patients who understand the drug regimen, some are lower than the average recommended by World Health Organization (WHO), and some are close to that recommended by World Health Organization (WHO).

According to World Health Organization (WHO) 1993, interviews that must be carried out include when and what dose the patient should take for each drug item obtained¹¹. Because some of the patients interviewed were elderly patients and some people with low levels of education thus did not understand the

information provided by the officers⁸. Therefore, efforts should be made in the form of education about the proper use of drugs by pharmacists on duty⁷. Education and training strategies can be applied, not only for the community but also for health workers who work in installations to encourage the rational use of drugs⁷. Patient knowledge about the correct dose is very important to avoid overuse and misuse of drugs, as well as to prevent unwanted events that ultimately affect the patient's health¹⁴. Therefore, a lack of knowledge about the dosing regimen can affect the outcome of therapy as well as the safety of the treatment. The desired therapeutic results may not be achieved, and may even lead to an increased risk of toxicity. Knowledge of this dosage regimen is very important in an effort to avoid overdose or prevent unwanted side effects by the patient¹⁰.

The reason for the decreased knowledge of patients about the drugs given to them may be due to inadequate counseling and labeling. This can affect patient adherence to their medication which can result in poor therapeutic outcomes¹⁶. Patients with chronic diseases have good knowledge about their medicines because of their daily use. However, patients with their first visit to the hospital or for acute conditions or pediatric patients expressed difficulty in knowing the correct dose of medication¹³. Therefore, a pharmacist must provide sufficient and appropriate information to ensure the effectiveness, safety, and accuracy of drug use¹⁰. So that the placement of a pharmacist in the puskesmas (local health centers) is very necessary in order to improve pharmaceutical services⁷.

V. Conclusion

It can be concluded from 11 research articles that study rational drug use based on World Health Organization (WHO) patient care indicators, some health institutions are in accordance with the indicators recommended by World Health Organization (WHO), some are close to the indicators set by World Health Organization (WHO), and some are not at all appropriate. with what has been determined by World Health Organization (WHO). The results obtained are as follows: the average percentage of consultation time is 6.02 minutes, the average percentage of drug preparation time is 391.64 seconds, the percentage of drugs that are actually prescribed is 88.53%, the percentage of drugs with adequate labeling is 58.59% and the percentage of patients who understand the drug regimen is 58.82%.

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