Evaluation Of Medicine Prescription At A Pharmacy In Medan City

Syilvi Rinda Sari[1*], Kiki Rawitri[2], Sri Wahyuni[3]

[1,2,3] Faculty of Pharmacy, Universitas Muslim Nusantara Al Washliyah Medan, North Sumatera 20147, Indonesia
* Corresponding Author:
Email : syilvirindasari@umnaw.ac.id

Abstract.
Pharmacy is a pharmaceutical service facility carried out by pharmacists by providing services directly and responsibly to patients related to pharmaceutical preparations in order to achieve definite results to improve the quality of life of patients. However, currently irrational treatment still often occurs, one of which is with inappropriate prescribing. This will have a negative impact on society. The purpose of this study was to evaluate drug prescribing in one of the pharmacies in the city of Medan. This is a descriptive evaluative research. The data was collected retrospectively and concurrently. Then the raw data was categorized into quantitative data and it was represented in tables to compare the data visually. Meanwhile, qualitative data was collected by observation and interview with the interviewees. The results showed that some indicators of prescribing drugs to patients in one of the pharmacies in Medan city still did not meet the standards, namely the average number of drug items per prescription sheet in 2021 was 3.63 and the percentage of prescribing drugs with generic names in 2021 was 80.9 %. While the prescribing indicators that are in accordance with the standards are the percentage of prescribing antibiotics for 2021 at 6.47%, the percentage of drugs that can be delivered is 90%, and the percentage of drugs that are completely labeled 100%. Based on the results of the study, it was concluded that there were still indicators of prescribing drugs carried out in one of the pharmacies in the city of Medan that did not meet the standards.

Keywords: *evaluation, medicine, prescription and pharmacies.*

I. INTRODUCTION

Pharmacy is a means of direct and responsible pharmaceutical services to patients carried out by pharmacists with the aim of improving the quality of life of patients [1]. Rational treatment is a treatment that based on the diagnostic and not just based on the symptoms. Therefore rational drug use is an important indicator to assess the benefit of treatment that was given to patient in hospital [2,4].WHO mentioned that more than 50% of drugs prescription were made improperly[12]. Many unnecessary drugs were written in prescription although the patient did not need them. Irrational drug use will cause many negative impacts, such as high burden of medical cost, the increasing risk of antimicrobial resistance, adverse drugs effects, harmful and improper drug interactions that may reduce the efficacy of the drugs and even may cause death. Therefore, drug use evaluation will become one of the indicator in assessing health program [9,11].

WHO developed indicators for drug use evaluation activity. This indicator is useful to evaluate the suitability of the real data with the criteria in indicators (6). Not only WHO [12], but also Indonesia's Ministry of Health (2008) developed the indicators for drug use. The indicator consist of several points such as the average amount of drug items per prescription sheet, the percentage of generic drugs, antibiotics, injection drugs prescribed, the percentage of drugs that suited to hospital formularies, the percentage of drugs distributed, and the percentage of drugs labeled completely. Therefore, considering the importance of rational use of drugs based on prescription, it is necessary to evaluate drug prescribing in one of the pharmacies in Medan to improve the quality of health services so that maximum results are achieved to improve the quality of life of patients.

II. METHODS

The materials in this research were the prescription sheet for patient at Pharmacy in medan city in 2021. The tools for this study was WHO prescription indicators.Drugs prescriptions from doctors were analyzed by using some indicators from WHO for drug use evaluation. The indicators were average amount of drugs per prescription sheet, percentage of generic drugs, antibiotics, the percentage of drugs distributed

well, and the percentage of drugs labeled completely. Data collection was served in the tables, and then it was calculated based on the WHO prescription guideline [12].

III. RESULT AND DISCUSSION

The result of this research was served in the table below.

Table 1. Real data compared to WHO prescription indicators

Indicator	Standard	Result (2021)
Average amount of drugs per prescription sheet	1,3-2,2	3,63
Generic drugs prescribed	82-94%	80,90%
Antibiotics prescribed	≤22,70%	6,47%
		2022 *(cocurrent)*
Percentage of well distributed drugs	76-100%	90%
Percentage of completely labeled drugs	100%	100%

Average amount of drugs per prescription sheet

The calculation of average drugs amount per prescription sheet was aimed to assess polypharmacy level in prescribing drugs [12]. Data was collected retrospectively in 2021. The result for this indicator were from the total of drugs items divided by total prescription sheets. Based on that calculation, it was known that average of drug items amount per prescription sheet was 3.63 in 2021 respectively.The result showed that average drug items amount at pharmacy in medan city was above the WHO standard established for developing countries which is 1.3 to 2.2 drugs per sheet. The result of this study described that there is a tendency for polypharmacy, which is quite high. Compared to the research conducted by WHO in Indonesia, that study showed that maximum amount of drugs per sheet was 3.3 [8]. It means that based on those evidence, pharmacy in medan city did not meet the standard for this indicator. From the interview with pharmacist at pharmacy in medan city, it was concluded that this high polypharmacy tendency was difficult to be avoided in making prescription.

Percentage of Generic Drugs Prescribed

The calculation was conducted by collecting the data in 2021 retrospectively. Then the percentage was resulted from the total of generic drugs item was divided by total number of drugs prescribed multiplied by 100% [11]. Based on this calculation, it was known that the percentage of generic drugs at pharmacy in medan city was not suited to WHO standard for this indicator in 2021 respectively. Based on the interview with pharmacist representatives, this result was caused by multifactor, such as many doctors preferred to prescribe branded drugs rather than generic one. Moreover, there are some drugs that commonly used but they don't have generic products available in public (e.g.Ventolin®, Pulmicort®, Levemir®, etc.).

Percentage of antibiotics prescribed

The aim of measuring this indicator is to identify antibiotic use as the drugs that highly potential to be used improperly. WHO recommended that antibiotic prescription should be lower than 22.7%. This number was resulted from total number of prescription with one and more antibiotics per sheet divided by total number of drugs prescribed then multiplied by 100%. From this research, it was known that pharmacy in medan city had achieved WHO standard in 2021 with percentage below than 22.7%. It showed that in this pharmacy, antibiotic use was rational. This rational antibiotic use was very useful in preventing the risk of antibiotic resistance and the risk of spending unnecessary cost.

Percentage of drugs that well distributed

Data collection was conducted concurrently, then it was calculated by divided the total drug items distributed well with total amount of drugs prescribed multiplied by 100%.The result for this indicator showed that 90% of drugs well distributed in patient setting.When compared with the research of Pudjaningsih and WHO which gave a figure of 76%-100%, the number of drugs served by one of the pharmacies in the city of Medan has met existing standards so that it can be said to be efficient in service [7,12].

Percentage of drugs that completely labeled

Data collection was conducted concurrently in the outpatient pharmacy. The percentage for this indicator was calculated by dividing the total completely labeled drugs item prescribed with total amount of drugs prescribed multiplied 100%. Based on this result, it showed that the 100% of drugs prescribed for

patient was completely labeled. It described that pharmacy staff had given information to the patient about the types of drugs they received to respect the patient right

IV. CONCLUSION

Based on the result of drug use evaluation, it showed that the average amount of drugs item per prescription sheet were not achieved the standard of WHO indicator and prescription guideline.

REFERENCES

[1] Ministry of Health of the Republic of Indonesia. *Pharmaceutical service standards in pharmacies*, Ministry of Health of the Republic of Indonesia. 2016.

[2] Dianingati, R. A., Praetyo, S. D. *Analysis of the Conformity of Prescriptions for Patients with National Health Insurance with the 1993 WHO Prescribing Indicators at the Outpatients Pharmacy Installation at the Ungaran Hospital for the January-June 2014 Period*, **UGM Pharmacy Magazine, 2015.**

[3] Fakhriadi, A., Marchaban., dan Pudjaningsih D. *Analysis of drug management in the Pharmacy Installation of PKU Muhammadiyah Hospital Temanggung in 2006, 2007, and 2008*. ***Journal of Pharmacy Management and Services 1(2),*** 2011, pp. 94-102.

[4] Jacob, P., Balasubramanian, A., and Ramalingam, K. *A Review On Step Involved in Drug Utilization Review*. ***International Journal of Research in Pharmaceutical Sciences, 11(3),*** 2020, pp. 4095-4098.

[5] Management Sciences for Health and World Health Organization. 2017. *Drug and Therapeutics Committee Training Course.* Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health, 2017.

[6] Pratiwi, A., Khairinnisa, M. A. and Alfian, S. D. *Prescribing Off-Label Drugs in Pediatric Patients aged 0 to 2 years at a Bandung City Phamacy*. ***Indonesian Journal of Clinical Pharmacy, 2(2)***, 2013.

[7] D. Pudjaningsih, *Development of Drug Management Efficiency Indicators in Pharmacy Installation Hospital*. Yogyakarta.1996.

[8] Quick, J.D. *Managing Drug Supply*. 2nd Ed. Kumarian Press, USA, 1997, pp.117.

[9] Ramalingam, K., Gigi, A., Thomas, A. S., Mootaparambil, A. M., and Balasubramanian, A. *Drug Utilization Pattern and Risk Factor Assesment on Abnormal Uterine Bleeding in Reproductive Aged Women in a Tertiary Care Hospital****. International Journal of Research in Pharmaceutical Sciences, 10(4),*** 2019, pp. 2687-2690.

[10] Sasongko, H., dan Octadevi, O. M. *Overview of Drug Management on Procurement Indicators in Sukoharajo Hospital Central Java*. ***Journal of Pharmaceutical Sciences and Clinical Research,*** 2016, pp. 21-28.

[11] Shalini, S. *Drug Utilization Studies – An Overview*. ***International Journal of Pharmaceutical Sciences and Nanotechnology,*** 3(1), 2010, pp. 803-810.

[12] World Health Organization. 1993. *How to Investigate Drug Use in Health Facilities, Selected Drugh Use Indicator*, Action Program on Essential Drug, WHO, Geneva, 1993, pp. 46–52.