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Drugs Prescribing Trends in Three Polyclinics in Benghazi-Libya 2020

Salma Abdelkerim Bukhatwa, Ali Ateia Elmabsout, Naseem Easim Jaber, Khalid Munir Tagoeri, Ali Munir Tagoeri, Rana Zgogo, and Aisha Kashbour

ABSTRACT

***Background*: There is an effort made to improve drug prescribing practices in developing countries. The aim of present work was to comparing prescribing indicators, patient care, and missing information on prescriptions and identifying and assessing drug use patterns in three polyclinics in Benghazi city, Libya.**

***Methods*: In this descriptive cross section study a random sample of 1522 prescriptions were selected from three polyclinics include Ras-Ebida, Khalid Ibn-Elwalid and Al-Kish, over 4 months (July-October 2020). The data was collected through predesigned questionnaire. The prescriptions were analyzed for the following indicators: prescribing indicators, patient-care indicators and drug-use indicators.**

***Results*: A total of 1522 prescriptions (average = 507.3/clinic) were collected from the three polyclinics including 2329 prescribed (average = 1.4/prescription) items. Percentage of drugs prescribed with generic name was 0.0%, the percentage of prescriptions with antibiotics was 46.3%. The average of prescriptions of injections was 0.84. The average consultation time is 3.4 min and the average dispensing time was found to be 24 seconds. Major classes of drugs prescribed included analgesics, antibiotics, drugs used in medicine & derma clinics, ophthalmic drugs, minerals & vitamins, anti-inflammatory drugs, antihistaminic and antifungal drugs. The most prescribed analgesic was paracetamol (94.4%) and antibiotic was Augmentin (50.3%). In regarding prescribed drug in medicine clinics was found lisinopril (32.0%) and ophthalmic drug was cusicrom (36.8%). In addition, the majorities of prescribed vitamin were vitamin C (81.0%), for GIT drug was omeprazole (59.3%), and for dermatology was Fucidin (56.3%). While most prescribed anti-inflammatory was aspirin (52.4%), antihistaminic was loratidine (97.0%), for antifungal drug was flagyl (58.0%).**

***Conclusion*: Despite the efforts being made to improve prescribing habits and to rationalize the use of drugs, the obtained results confirm the deficiencies as reported earlier and suggest that methods of intervention should be initiated to improve prescribing trends in these polyclinics.**

Keywords: Benghazi, drugs, indicators, Libya, polyclinic, prescribing.

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S. A. Bukhatwa*
Department of Pharmacology and Toxicology, Faculty of Pharmacy, University of Benghazi, Benghazi, Libya.
(e-mail: salma.bukhatwa@uob.edu.ly)
A. A. Elmabsout
Department of Nutrition, Faculty of Public Health, University of Benghazi, Benghazi, Libya.
N. E. Jaber
PharmD, Faculty of Pharmacy, Libyan International Medical University, Benghazi, Libya.
K. M. Tagoeri
PharmD, Faculty of Pharmacy, Libyan International Medical University, Benghazi, Libya.
A. M. Tagoeri
PharmD, Faculty of Pharmacy, Libyan International Medical University, Benghazi, Libya.
R. Zgogo
PharmD, Faculty of Pharmacy, Libyan International Medical University, Benghazi, Libya.
A. Kashbour
PharmD, Faculty of Pharmacy, Libyan International Medical University, Benghazi, Libya.

****Corresponding Author***

I. Introduction

A prescription is an order for medication issued by a physician, dentist, nutritionist, or other properly licensed medical practitioner. A designated Prescriptions of specific medication and dosage to be administered to the patient at a specified time [1]. The prescription order is a part of the professional relationship between the prescriber, pharmacist, and patient. The responsibility of this relationship involved the pharmacists to provide the medication needs of the patient [1].

The prescription may be written by the specialists and given to the patient for presentation at the pharmacy. Furthermore, the purpose of the prescription to gain maximum beneficial from the use of drugs while minimizing their adverse side effects [2]. In addition, the prescribing is focal point of contacts between doctors and patients and also it is an indicator of the quality of medical care given [2], [3]. In recent years the efforts have been made to improve drug use practices and prescribing behaviors in developing countries [4], [5]. On the communities level several drug utilization studies were conducted [6]-[12]. These studies pointed that invariably results to the rational prescribing of drugs. However, there is an urgent need to review and limit prescribing [13], [14]. WHO is an organization made an action program on essential drugs (APED) in collaboration with the international network on rational drug use (INRUD) developed a standard selected drug use indicators [15]. This program set of drug-use indicators can be used to evaluate the

problems of clinically or economically inappropriate drug uses and identify poor pattern of drug use [4]. There was scarce information regarding drugs prescribed pattern in Benghazi, therefore this study aims to comparing prescribing indicators, patient care, and missing information on prescriptions from three polyclinics in Benghazi, identifying drug use patterns in three polyclinics and assessing drug use patterns in three polyclinics.

II. Methods

A. Study Design

Descriptive cross-sectional study was conducted on prescriptions collected from three clinics (Ras-Ebida, Khalid Ibn-Al-Walid and Al Kish) in Benghazi. Prescriptions were collected over 4 months (July-October 2020).

B. Sample Collected

Prescriptions were carefully collected by predesigned questionnaires and analyzed for,

(I) prescribing indicators including: average number of drugs prescribed, percentage of drugs prescribed by generic name and percentage of prescriptions with antibiotics,

(II) patient-care indicators including: average consultation time and average dispensing time,

(III) missing information on prescriptions (name of patient, age of patient, signature of doctor, dose of drug, period of treatment, sex of patient, diagnosis, date and name of health institution) and

(IV) classification and quantification of drugs prescribed.

Consultation time: is the time that the patient spends with the doctor and is calculated from the time the patient enters the consultation room until she or he comes out.

Dispensing time: is the time that a pharmacist spends with the patient and is calculated from the time of handing the prescription to the time the patient moves away from dispensing window.

Missing information were expressed as percentage of prescriptions without the information.

C. Ethical Approval

This study was approval by the local Ethics Committee of the Libyan international medical university (LIMU). Informed written consent was obtained through a consent form that was given to the participants along with the questionnaire.

D. Data Analysis

The data from the questionnaires was entered using Excel. Data set was exported to SPSS v.22 and Epi-info and analyzed as described in [16]. Statistical analysis was carried out for the complete sample which were created according to measurements in which frequencies and percentages were used. To determine the differences regarding each categorical variable in the groups, Chi-square test was performed and $p \leq 0.05$ was considered to be statistically significant.

III. Result

A total of 1522 prescriptions (average = 507.3/clinic) were collected from the three polyclinics including 2329 prescribed (average = 1.4/prescription) items (Table I). Percentage of drugs prescribed with generic name was 0.0%, the percentage of prescriptions with antibiotics was 46.3%. Furthermore, the averages prescriptions of injections was 0.84 (Table I), the average consultation time was 3.4 min, and the average dispensing time found 24 seconds (Table II). The percentage of missing information on prescriptions from the three polyclinics were shown in (Table III). Comparisons of prescribing and patient-care indicators of this study to local of six previous studies shown in Table IV. The major classes of drugs prescribed included analgesics, antibiotics, drugs used in medicine & derma clinics, ophthalmic drugs, minerals & vitamins, anti-inflammatory drugs, antihistaminic and antifungal drugs (Fig. 1). The most prescribed analgesic was paracetamol (94.4%) (Fig. 2). The most prescribed antibiotic was augmentin (50.3%) (Fig. 3). In regard prescribed drug in medicine clinics was lisinopril (32.0%) (Fig. 4), for the prescribed ophthalmic drug was cusicrom 4% (36.8%) (Fig. 5), and for prescribed vitamin was vitamin C (81.0%) (Fig. 6). Approximately 59.3% of prescribed GIT drug was omeprazole (Fig. 7) and 56.3% of drug prescribed in derma clinics was Fucidin (Fig. 8). The most prescribed analgesic was paracetamol (94.4%) (Fig. 2) and anti-inflammatory was aspirin (52.4%) (Fig. 9). In Fig. 10 the loratidine most prescribed antihistaminic (97.0%) and for prescribed antifungal drug was flagyl (58.0%) (Fig. 11). Other prescribed drugs included l-thyroxine and lidocaine as shown in Fig. 12.

TABLE I: Comparison of Prescribing Indicators in the Three Polyclinics

Prescribing indicator	Ras-Ebida	Khalid Ibn-Al-Walid	AL-Kish	Total (T) or average(A)
Total number of prescriptions	566	809	147	T=1522 A=507.3
Total number of drugs prescribed	922	1239	168	T=2329
Average number of drugs prescribed per prescriptions	1.6	1.5	1.14	A=1.4
% Drugs prescribed with generic name	0	0	0	A=0
% Prescriptions with antibiotics	32.8%	50.3%	55.8%	A=46.3
% Prescriptions with injections	1%	0.86%	0.680%	A=0.84

TABLE II: Comparison of Patient-Care Indicators in the Three Polyclinics

Patients care indicator	Ras-Ebida	Khalid Ibn-Al-Walid	AL-Kish	Average
Consultation time (min)	4.9	2.5	2.9	3.4
Dispensing time (sec)	105	*	120	155

*No data was obtained from Khalid Ibn-Al-Walid polyclinic

TABLE III: COMPARISON OF PERCENTAGE OF MISSING INFORMATION ON PRESCRIPTIONS FROM THE THREE POLYCLINICS

Missing information	Ras-Ebida	Khalid Ibn-Al-Walid	AL-Kish	Average
% Missing name of patient	28.4%	1.9%	13.6%	14.6%
% Missing age of patient	55.8%	81%	74.8%	70.5%
% Missing six of patient	100%	100%	99.3%	99.7%
% Missing signature of a doctor	78.8%	57.6%	99.3%	78.5%
% Missing date	97.3%	100%	94.5%	97.2%
% Missing diagnosis	58.4%	44.9%	100%	67.7%
% Missing name of health institution	0.35%	9.88%	1.36%	3.86%

TABLE IV: COMPARISON OF PRESCRIBING AND PATIENT-CARE INDICATORS IN SEVEN LOCAL STUDIES

Drug use indicators	1991	1994	1996	1997	2002	2009	2020
Total number of prescriptions	320	140	890	1500	1500	600	1522
Average Number of drugs prescribed per prescription	3	4	2.70	2.6	2.20	1.53	1.53
% Prescription with antibiotics	42	57	47	55.6	45.6	33.3	46.3
% Missing name of patient	11	0	1.3	2.5	5.6	6	14.6
% Missing age of patient	8	3.5	17	23.6	27.9	35.8	70.5
% Missing sex of patient	100	28	100	89.4	99.4	99.6	99.7
% Missing signature of doctors	7	0	1	14.8	7.5	55.6	78.5
% Missing dose	5	0	1	7.7	3.50	47.1	-
% Missing diagnosis	-	-	-	98.9	98.7	99.8	97.2
% Missing date	-	-	-	51.0	32.9	64	67.7
% Missing name of health institution	-	-	-	39.7	-	95.33	3.86
% Missing period of treatment	96	100	73	80.1	48.1	52.5	-
Consultation time (min)	-	-	5.3	4	3	2.13	3.4
Dispensing time (sec)	-	-	54.3	28	25.61	24	155

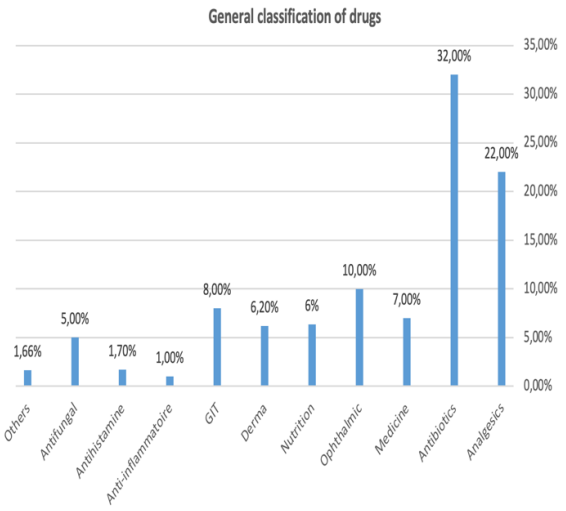

Fig. 1. Major classes of drugs prescribed in the three polyclinics.

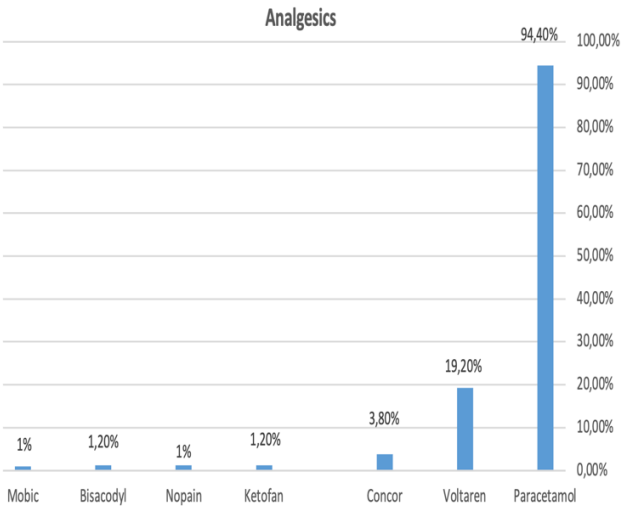

Fig. 2. Analgesics prescribed in the three polyclinics.

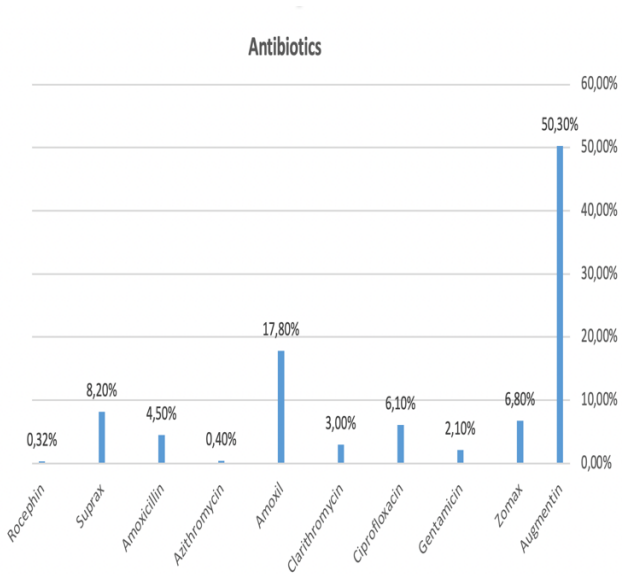

Fig. 3. Antibiotics prescribed in the three polyclinics.

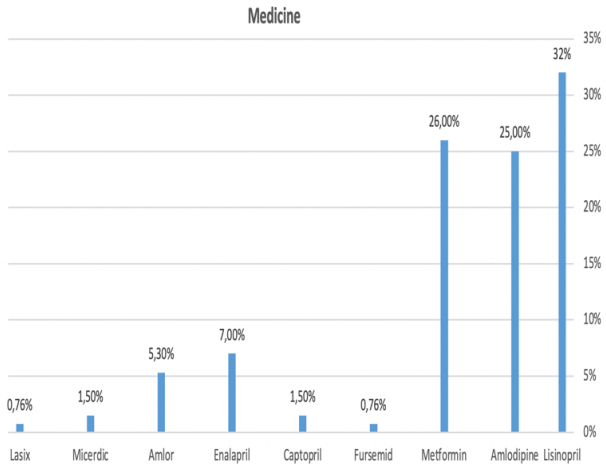

Fig. 4. Commonly prescribed drugs in the medicine clinic in the three polyclinics.

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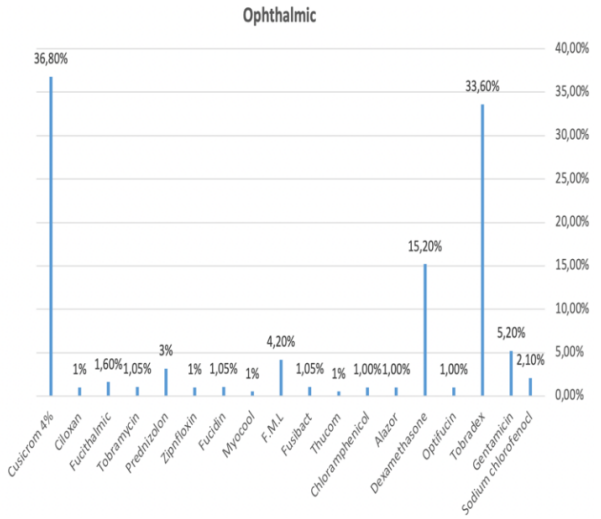

Fig. 5. Ophthalmic drugs prescribed in the three polyclinics.

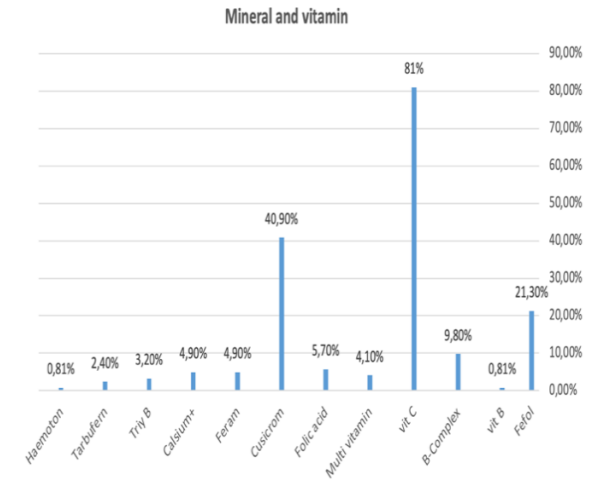

Fig. 6. Minerals and vitamins prescribed in the three polyclinics.

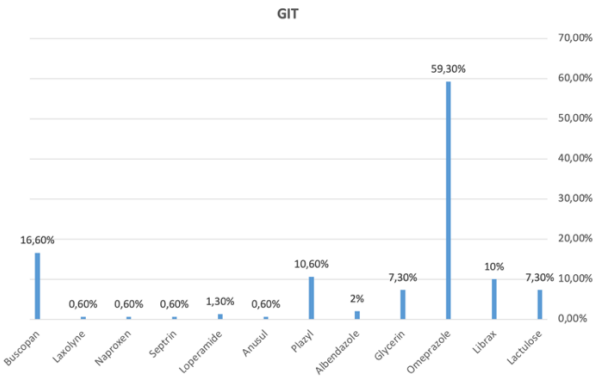

Fig. 7. GIT drugs prescribed in the three polyclinics.

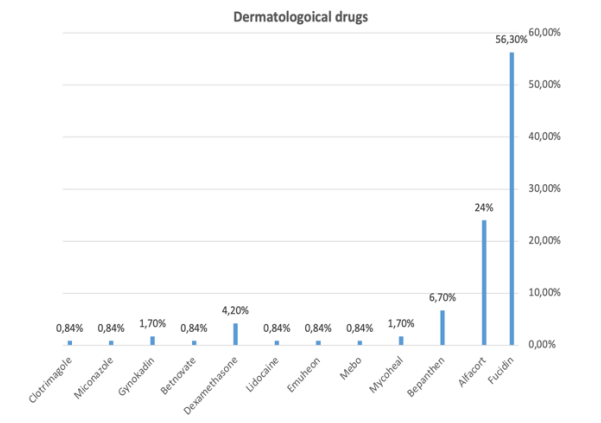

Fig. 8. Drugs prescribed in the derma clinics in the three polyclinics.

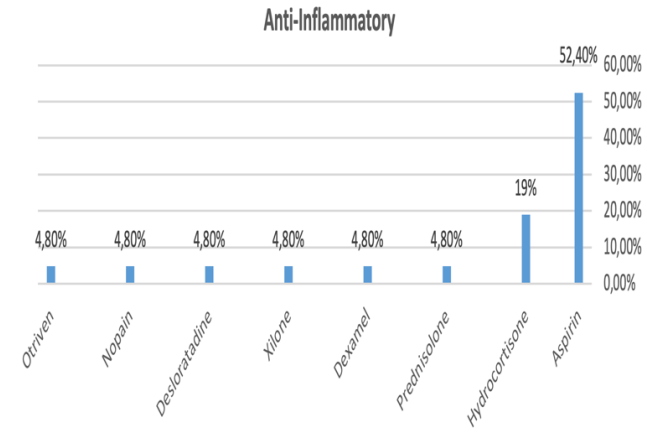

Fig. 9. Anti-inflammatory drugs prescribed in the three polyclinics.

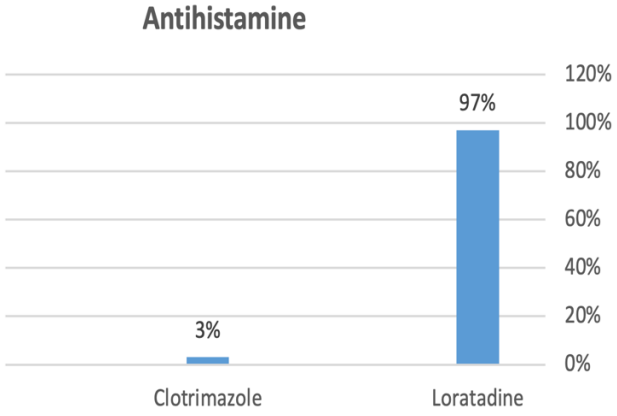

Fig. 10. Antihistaminic drugs prescribed in the three polyclinics.

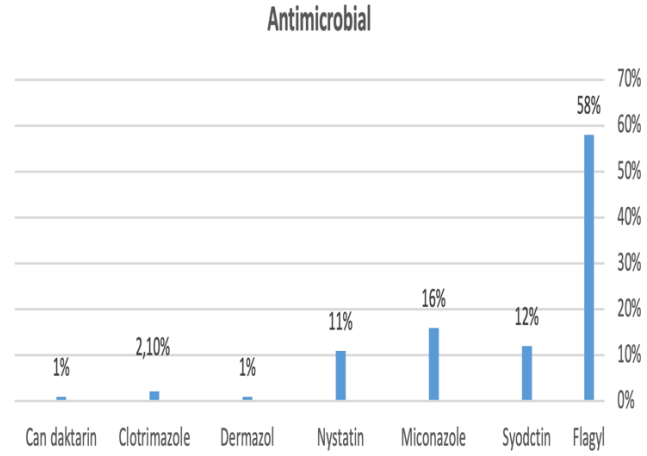

Fig. 11. Antifungal drugs prescribed in the three polyclinics.

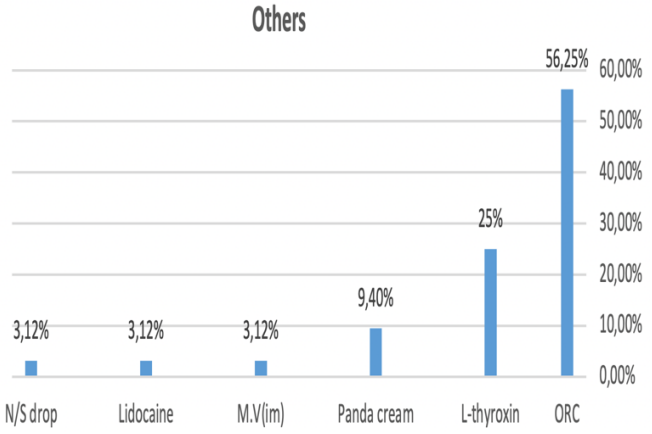

Fig. 12. Miscellaneous drugs prescribed in the three polyclinics.

IV. Discussion

The data of this study indicated that, the total number of prescriptions were much higher than previous local study conducted in 2009 [17] and finding of this study was comparable to the study conducted between years 1997-2002 by which referring to dramatic changes in prescribing medicines trend in the public sector noting that average number of drugs per prescription was less than the current work [13].

In compared to previous local studies an average consultation time is as twice as before but it could be still too short to get patient history, to examine the patient, to decide about drugs needed to be written on the prescription or to give advice to the patient [17].

The result of present study found that, the average dispensing time found six time more than the previous work [13] in which may refer to the presence of pharmacists in those clinics to provide pharmaceutical services which were provided by non-pharmacists for a long time due to shortage in pharmacists.

The antibiotics prescribed in this study increased compared to previous local studies that referring to continued poor prescribing trends of antibiotics in Benghazi and may be in the whole country [6], [14].

The most essential information in this study was that missed on the prescriptions in a dramatic way compared to all previous studies [6]-[14]. Even though the dose and period of treatment were not missed in any single prescription. Furthermore, the percentage of missing name of health institution showed that a dramatic decrease in which disagree compared to previous works [8], [9]. This could be due to the availability of official forms of prescriptions which were not available since long time or could be due to changes in administration system of those polyclinics. The present study also revealed missing signature of doctor increased compared to previous local studies [7], [8], which reflects the carelessness of doctors and a continued attitude of not taking the responsibility for their prescriptions.

In the present study, major classes of drugs prescribed were antibiotics, analgesics, which were the same major groups of drugs prescribed in Summoro work [18]. Paracetamol and Vitamin C were the most prescribed analgesic and vitamin respectively, and this is obviously because of COVID-19 pandemic [19].

Overall, the present study indicated that there were increasing trending in prescription of some medication, with missing essential information during drug prescribing.

V. Conclusion

Despite many efforts have been made to improve prescribing habits and to rationalize the use of drugs. The results present study revealed that confirm the deficiencies reported earlier and suggest that a more direct method of intervention in the form of meetings with prescribing physicians, or even distributing some circulars could be of benefit. This type of studies is of great benefit to increase awareness of the problems of prescribing and identify priorities of action and quantify the impact of intervention.

Acknowledgments

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Conflict of Interest

Authors declare that they do not have any conflict of interest.

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