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## Prescription Patterns of Ayurvedic Medicines among Ayurveda and Allopathy Practitioners in Tertiary Ayurvedic and Allopathic Hospitals in Kathmandu Nepal: A Pilot Study

Bishundayal Prasad Patel,<sup>1\*</sup> Jot Narayan Patel,<sup>2</sup> Sharad Panthi,<sup>3</sup> Puneshwor Keshari,<sup>4</sup> Shyam Babu Yadav,<sup>5</sup> Vasudev Janardhan Upadhyaya<sup>6</sup>

<sup>1</sup>TA & Head; Department of Dravyaguna Vigyan, Ayurveda Campus, Institute of Medicine, Tribhuvan University, Kathmandu, <sup>2</sup>Patan Academy of Health Sciences, Lalitpur, <sup>3</sup>District Ayurveda Health Center, Lamjung, Gandaki Province and <sup>4,5,6</sup> Department of Ayurveda and Alternative Medicine, Teku, Kathmandu, Nepal

### ABSTRACT

**Background:** The use of Ayurvedic medicines is gradually increasing worldwide. Continuous introduction of new proprietary and patent drugs in the field of *Dravyaguna* (Ayurvedic Pharmacology) and *Rasa Shastra and Bhaishjyakalpna* (Pharmaceutics and Pharmacy) requires holistic utilization, effectiveness, and side-effects studies. In addition, inappropriate use of drugs poses a risk of adverse drug reactions (ADRs). Our aims to analyze the prescription pattern in outpatient department of Ayurvedic and Allopathic tertiary level hospitals of Kathmandu, Nepal.

**Materials and Methods:** The study was carried out in 100 patients who visited outpatient departments of the Ayurvedic and Allopathic tertiary level hospitals. The sample was equally divided into two group consisting of 50 patients in each and data was collected for a period of 2 months with simple random method. Patients demographic details, known cases, comorbid conditions, drugs prescribed, classical and proprietary medicines were used to analyze the pattern of drug use.

**Results:** In our study, majority of prescriptions (52 percent) weren't written with final diagnosis. The average number of drugs per prescription was 5.72 which is incompatible with WHO prescribing indicator. In total Ayurveda practitioners prescribed 60 percent, 35 percent and 5 percent of total classical, proprietary and allopathy medicines in prescription respectively. Among all the FDCs, 70 percent was rational and 30 percent was irrational prescription. Polypharmacy was seen in most of the prescriptions (90 percent), but 82 percent of the drugs were from Essential Medicines List of Department of Ayurveda and Alternative Medicines, Government of Nepal.

In total, Allopathy practitioners were prescribed 88 proprietary medicines under 9 categories of the products. Tablet (34.09 percent) was the most frequently prescribed Ayurvedic proprietary medicines followed by syrup.

**Conclusion:** Majority of the drugs were prescribed by generic names and falls in essential medicines list. Trend of polypharmacy was noted. Injudicious use of proprietary and allopathic medicines was seen in Ayurvedic tertiary level hospital; whereas generic drugs were a significant part of the therapy. Need of the hour is to conduct frequent prescription audits to inculcate good rescripting practices.

**Keywords:** Prescription Patterns, Ayurvedic Medicines, Allopathy Practitioners, Tertiary Ayurvedic.

### INTRODUCTION

The popularity of complementary and alternative medicine (CAM), particularly

Ayurveda has gathered increasing recognition in recent years<sup>1-4</sup> with regard to both treatment options and health hazards.<sup>5</sup> This medical system is one of the oldest and most practiced

#### \*Corresponding Author

Bishun Dayal Prasad Patel

Head; Department of Dravyaguna Vigyan, Ayurveda Campus, Institute of Medicine, Tribhuvan University, Kathmandu, Nepal.

drbishun@gmail.com

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traditional medical system of Indian subcontinent since time immemorial fulfilling the medical needs of 80% of the population.<sup>5</sup> Utilization of CAM is a universal phenomenon, both in developing countries as well as in developed countries like USA.<sup>5,6</sup> It utilizes natural substances in the form of herbs, minerals, metals and other animal byproducts in the treatment. Herbs are predominantly used in this science since the initial days of humanity for medical purposes and form the origin of much of modern pharmacotherapy. Herbal medicinal products have immensely contributed in global health care. In the past one to two decades, they have gained the attraction of researchers and drug-regulating authorities and has become popular because of various reasons.<sup>7</sup>

The World Health Organization (WHO) encourages country members to emphasize the regional indigenous medicines by formulating policies and appropriate rules and regulations inculcating it in preventive, promotive and curative aspect of health;<sup>8</sup> and also issued directives regarding financing, research, practice, and use of CAM.<sup>9</sup> WHO secretariat report of India observed that 65 percent and 80 percent of population in India<sup>3</sup> and Asian countries<sup>10</sup> rely on traditional medicines for primary healthcare respectively. It is the first health care choice in some disadvantaged and economically deprived areas and used as alternative to the conventional system of medicine.<sup>11</sup> CAM is being used increasingly worldwide because of patients' perception that these systems are safe as they are from natural sources, effective, more economical, and easily available.<sup>12</sup>

There are various factors affecting on the prescribers to adopt therapeutic regimes such as his or her conceptions regarding the health disease process; the quality of clinical information; the sociocultural and socioeconomic status of the population at hand; the availability of drugs in the facility, the sources of information, and the pressure of the pharmaceutical industry among others.<sup>13</sup> The WHO proposed core prescribing indicators for prescribing audit and drug utilization studies.<sup>14,15</sup> Rational use of medicines requires patients receiving appropriate medications to their clinical needs, adequate doses and period of time and at the lowest cost.<sup>16</sup> Polypharmacy involves the concomitant administration of two or more drugs to a patient for management of his/her presenting health problems. Excessive dosing refers to doses greater than optimal daily dosage of Ayurvedic medicines.<sup>17</sup> Despite extensive research and recommendations as to the optimal prescription of antipsychotics, polypharmacy and excessive dosing are still widely prevalent in clinical practice in Canada<sup>18</sup> East Asia<sup>19,20</sup> and the USA.<sup>19,21,22</sup> Misuse of medicines occurs in all countries. The irrational practices are common and costly in developing countries. Such practices include polypharmacy over use of antibiotics and injections, use of wrong and ineffective medicines, underuse or incorrect use of effective medicines, use of combination products that are often more costly and offer no advantage over single drug products; irrational use of medicines leads to decrease in the quality of drug therapy, wastage of resources,

increased treatment cost, increased risk for adverse drug reactions and emergence of resistance.<sup>12,23</sup> Polypharmacy is strongly associated with excessive dosing.<sup>24</sup>

Drug utilization researches have been tool in ascertaining the impact of drugs and prescribing patterns on healthcare, which are necessary for evidence-based medicine use and healthcare decision making; and also, an essential tool to evaluate functioning of health systems.<sup>25</sup> Prescribing pattern monitoring can help to identify the lacunae and provide feedback to prescribers to create awareness about appropriate use of drugs.<sup>26</sup>

Apart from Allopathic Practitioners, Ayurvedic practitioners also play a significant role; particularly in providing healthcare in rural and slum of urban areas; and use allopathic medicines for their patients instead of using medicines from their own course. In the absence of sufficient training about conventional medicines, its prescription is irrational and results into unwanted effects.

The number of Allopathic practitioners in Nepal is 30133 and Ayurvedic practitioners are 1004.<sup>27,28</sup> In Nepal, traditional medical system includes Ayurveda, Homeopathy, Naturopathy and Yoga, Acupuncture and *Sowa-rigpa*.<sup>29</sup> Among them, Ayurveda healthcare service is the most systematized and delivers from tertiary hospitals in the metropolitan cities and rural dispensaries in the remote all over the country. Ayurveda Campus and Teaching Hospital (ACTH) is one of the tertiary hospitals in Kathmandu, the capital city of Nepal, providing Ayurveda treatment. Paropakar Maternity and Women's Hospital (PMWH) and Bir Hospital (BH) are two tertiary hospitals in the center of Kathmandu city which provide tertiary level surgical and medical facilities to the patients visiting from all over the country.

Still the popularity of Ayurvedic drugs among allopathy practitioners is on rise. There were no previous studies reported on usage of Ayurvedic medicines by Allopathic practitioners working in the tertiary hospitals in Nepal; and has no records and data available to claim it.

**Classical Ayurvedic drugs:** The Ayurvedic medicines having a reference in authoritative Ayurvedic classical text were considered as classical Ayurvedic drugs. These medicines are prepared as per the methods, procedures and composition of ingredients described in the authoritative Ayurvedic literatures and are marketed with labelling the name of the authoritative literatures in parenthesis from where the reference is taken. For the purpose of the study, these medicines are also called as generic because these medicines are essentially marketed with same name and composition by all the manufacturers. These formulations are available in Ayurvedic Formulary of India (AFI). However, it should be understood that using the word generic in the study is not resemblance with classical definition of generic drugs as is adopted in allopathy.

**Proprietary Ayurvedic drugs:** Proprietary drugs in Ayurveda are defined as single or compound formulations not described in authoritative classical Ayurvedic literatures and are developed by manufacturers having a proprietary right on the drug formulation and its marketing. These formulations are not available in AFI.

**Ayurvedic rasa drugs:** Any prescribed medicines having a suffix of rasa at the end of its name is considered as a rasa drug for the purpose of the study. These are usually the herbo-metallic preparations often containing mercury as one essential component.

**Procedures:** Various procedures of bio-purification of the human body is called as *Pancha karma* procedures and recommendation made in the prescription are considered as procedures for the purpose of the study. These include a single or a set of multiple procedures recommended to the same patient in a single prescription. The *Pancha karma* procedure includes procedures that are classified as *Purva karma* (preparatory procedures), *Pradhana karma* (major procedures) and *Paschata karma* (post procedures). Similarly, Under *shalya karma*; *Kshara sutra*, *Kshara karma*, *Agnikarma* and *Marma* therapy are minimal invasive therapy which are frequently applied in surgical patients. *Kshara Sutra* therapy is a minimal invasive Ayurveda para-surgical procedure and time-tested Ayurvedic technique in the management of Anorectal disorders such as fistula in ano, hemorrhoids and other sinus diseases.

**EDL of Ayurveda:** Essential Drugs List (EDL) of Ayurveda as recommended by the Department of Ayurveda and Alternative Medicines (DoAA), Kathmandu, Nepal in year 2013 is considered EDL for the purpose of this study.<sup>30</sup> Instead of evaluating the use of generic drugs, antibiotics, and injections as per the WHO indicator list, classical Ayurvedic drugs, rasa drugs and procedures were evaluated in this study along with essential utilization of the same method as it is recommended in the WHO protocol.

**Fixed dose combination therapy:** In Ayurveda classical prescription, two or more classical preparations (generic preparation) are combined in a fixed proportion of dose administering in patients for a certain period time, duration and route.

Since, there is dearth of data regarding prescribing pattern of Ayurvedic medicines by Allopathic practitioners in the tertiary Allopathic hospitals, and Allopathic medicines by Ayurvedic practitioners in the tertiary Ayurvedic hospitals as well. Therefore, this study, the first of its kind had been designed to carry out to find sociodemographic characteristics, diagnosis and prescription pattern of both Ayurvedic and Allopathic practitioners on Ayurvedic and Allopathic medicines in Ayurvedic and Allopathic tertiary hospitals respectively in Kathmandu, Nepal; and also estimated the availability of Ayurvedic medicines in Ayurvedic dispensaries near tertiary Ayurveda hospital, as well as types of Ayurvedic medicines

in major allopathic dispensaries located around tertiary hospitals in Kathmandu, Nepal.

## MATERIALS AND METHODS

The study was descriptive cross sectional and prospective of mixed type using simple random sampling method, and administrated semi-structured questionnaires among fifty prescription of patients from outdoor patients' department (OPD) of Ayurvedic and Allopathic tertiary hospitals each. The total sample size was 100 for quantitative data and 5 was taken for in-depth interview from Allopathic pharmacists as Key Interview Informant (KII) for qualitative. The study had small samples for both quantitative and qualitative study and government hospitals which couldn't be a representative of prescription patterns across the country.

Following details were recorded from each prescription: 1. patients' demographic details, 2. details about patients' diseases, 3. concomitant medication and 4. treatment details. The use of over-the-counter medicines and self-medication were not evaluated; this accounts for a significant fraction of drug use in South Asia.

The prospective-pilot study was undertaken to evaluate the prescribing pattern of Ayurvedic drugs in OPD of Ayurvedic Campus and Teaching Hospital (ACTH) on the basis of the following WHO prescribing indicators to assess the rationality of these prescriptions;<sup>13,31</sup>

1. Average number of drugs per prescription = total drugs prescribed/prescriptions used
2. Percentage of drugs prescribed by generic name = total generic drugs prescribed/total drugs prescribed x 100.
3. Percentage of prescriptions in which antibiotics were prescribed = prescriptions in which at least one antibiotic was prescribed/total prescriptions x 100.
3. Prescription in which an injection was prescribed = prescription in which at least one injection was prescribed/total prescription x 100.
4. Percentage of drugs prescribed included in the essential medicines list (national list of essential Ayurvedic medicines (EML) = total drugs prescribed included in the EML/total drugs prescribed x 100.

The above formulae adopted in the study after modifying the WHO prescribing indicator for Ayurveda<sup>32</sup> are as follows:

- a. Average number of drugs per prescription = total drugs prescribed/prescriptions used.
- b. Percentage of classical drugs prescribed = total classical drugs prescribed/total drugs prescribed x 100.
- c. Percentage of proprietary drugs prescribed = total proprietary drugs prescribed/total drugs prescribed x 100.
- d. Percentage of *rasa aushadhi* prescribed = total *rasa aushadhi* prescribed/total drugs prescribed x 100.

Table 1: Component of Ayurvedic prescription as a drug use indicators

No.	Component of Ayurvedic prescription	Availability in WHO drug use indicator	Nearest component in WHO drug use indicator	Proposed advantage
1.	Number of drugs in a single prescription	Yes	-	
2.	Number of classical drugs in a single prescription	No	Use of generic drugs	Will help in identification of pattern of classical drug use in Ayurvedic prescriptions
3.	Number of proprietary drugs in a single prescription	No	-	Will help in identification of pattern of proprietary drug use in Ayurvedic prescriptions
4.	Number of rasa preparations in a single prescription	No	Use of Antibiotics	Will help in identification of pattern of rasa drug use in Ayurvedic prescriptions
5.	Number of prescriptions containing procedures prescribed	No	Use of Injections	Will help in identification of pattern of <i>Pancha-karma/Kshara-sutra</i> procedures recommended in Ayurvedic prescriptions.
6.	Number of prescriptions containing Fixed dose combinations (FDCs)	No	Combination of mixture drugs in particular ratio	Will help in identification of pattern of mixture drugs prescription and rational use in Ayurvedic prescription
7.	Ratio of drugs from EDL prescribed in prescriptions.	Yes	Same	Will help in identifying the rationality of prescription on the basis of number of drugs prescribed from EDL.

- e. Percentage of prescriptions in which *rasa aushadhi* were prescribed = prescriptions in which at least one *rasa aushadhi* was prescribed/total prescriptions x 100.
- f. Percentage of prescriptions in which a procedure was prescribed = prescriptions in which at least one

procedure was prescribed/total prescriptions x 100.

- g. Percentage of drugs prescribed included in the EDL = total drugs prescribed included in the EDL/total drugs prescribed x 100.

**Adapting the WHO drug use indicators as per Ayurveda requirements:** WHO drug use indicators are designed to screen the pattern of allopathic drug prescribing patterns of its usage. Utilizing the core concept of drug use indicator, a modification in the WHO drug use indicator to suit it to Ayurveda drug use pattern was attempted. A thorough peer discussion with experts was carried out initially to identify the common components of Ayurvedic prescriptions. On the basis of such discussions, crucial components of Ayurvedic drug prescription were identified. To attempt the modifications in WHO drug use indicators to be used for Ayurveda, these were defined and adopted to render more clarity to various components of the study table 1.

The study was carried out after taking ethical approval from Ethical Review Board (ERB) protocol registration number 231/2020P, Nepal Health Research Council (NHRC) on 2 April 2020. The study was conducted during April-June, 2020 AD. after taking written informed consent from participants. The hospitals, PMWH, BH and ACTH belong to government setup.

The collected data were analyzed using SPSS software version 21.3 and Microsoft Excel. The data analysis was presented in mean plus or minus standard deviation, frequency, percentage, bar and pie chart.

## RESULTS

### Prescription pattern of Ayurvedic medicines at Ayurvedic tertiary level hospital

**Mean age, gender and habitat of the patients:** In the study (n = 50), the minimum and maximum age of the patient on prescription of patients was found 24 year and 83 year respectively. The mean age of the patients was 53.50±29.50 year old *i.e.* approximately 54 year of age shown in table 2. Majority of the patients seeking Ayurvedic treatment were adult and elder age group; and majority of them were male (70 percent), and female was 30 percent female. It was reported that 92 percent patients were visited from urban area, and 8 percent patients from rural area. This result might be because of ACTH being situated in metropolitan city of Nepal (Table 2).

**Known cases:** In the study (n=50), 16 percent of prescription was mentioned of known cases such as *Vatarakta* (Gouty arthritis), *Astibhagna* (Post multiple fracture), *Madhumeha* (Diabetes mellitus), *Sandhigatavata* (Osteoarthritis), *Ashthila* (Benign prostate hyperplasia); 34 percent were new and rest of them were follow up cases.



Table 2: Characteristics of users of Ayurvedic medicines

Indicators	Users n (%)		Users n (%)
	Ayurvedic Practitioners		Allopathic practitioners
Sex			
	Male	35	30
	Female	15	20
Age (years)			
	Minimum	24	30
	Maximum	83	87
	Mean	53.50±29.50	58.50±28.50
Habitat			
	Urban	46 (92%)	40 (80%)
	Rural	4 (8%)	10 (20%)

**Pathological Investigation:** In total, 10 percent of patients were undergone investigation for diagnosis of their diseases whereas 90 percent didn't advise to investigate any alteration in physiological parameters. It might be because of pandemic of coronavirus during the study period.

**Prescription for final diagnosis:** In this study (n=50), 48 percent of patients (n=24) were finally diagnosed as orthopedic disorders like *Sandhigataavata* (Osteoarthritis) and *Amavata* (Rheumatoid arthritis); ano-rectal disorders like *Parikartika* (Fissure in ano), *Raktarsha* (Haemorrhoides), *Arsha* (Piles) and Post fistulotomy; gastro-intestinal tract disorders like *Amlapitta* (Esophagitis) and *Grahani* (Irritable bowel syndrome); urogenital tract disorders like *Ashtheela* (Benign prostate hyperplasia) and *Ashmari* (Nephrolithiasis); head-neck-throat disorders like *Shiroshoola* (Headache) and *Tundikeri* (Tonsillitis); neurological disorders like Peripheral neuropathy, *Pakshaghat* (Hemiplegia) and *Grighrasi* (Lumbar spondylosis) and gynecological disorders like *Raktapradara* (Menorrhagia) and *Sweta Pradara* (Leucorrhea), etc. shown in figure 6. Majority of patients (n=26, 52 percent) didn't diagnosed finally. It was found that diagnosis of diseases was difficult because of lack of diagnostic tools in ACTH.

**Prescription pattern at Ayurvedic tertiary level hospital:** In this study (n=50), in total Ayurveda practitioners prescribed 60 percent, 35 percent and 5 percent of total classical, proprietary and allopathy medicines in prescription respectively shown in figure 1. The prescription of classical medicines was found to be 162 (60 percent) of total drugs prescribed. Among all, 43 (86 percent) of the prescriptions were found containing classical drugs. The maximum number of classical drugs prescribed in a single prescription was 7 and the minimum was 1. Powder drug (42.28 percent) was the most frequently prescribed classical drugs followed by *rasa aushadhi* which was 23.49 percent among total classical drugs. Rest of them were *guggulu* (15.44 percent), *vati* (8.72 percent), *bhasma* (4.70 percent), *tail* (2.01 percent) and others (3.36 percent).

Similarly, the prescription of proprietary medicines was

found to be 95 (35 percent) of total drugs prescribed. Among all, 45 (90 percent) of the prescriptions were found containing proprietary drugs. The maximum number of proprietary medicines prescribed in a single prescription was 4 and the minimum was 1. Tablet (34.74 percent) was the most frequently prescribed proprietary medicines followed by local application (*tail* and ointment) which was 22.11 percent among total proprietary medicines. Rest of them were capsule (21.05 percent), syrup (16.84 percent) and proprietary powder (5.26 percent). Moreover, 7 (14 percent) of the prescriptions were found containing allopathy medicines. Among all of the drugs prescribed, 12 (5 percent) was found to be Allopathic medicines. The maximum number of Allopathic medicines prescribed in a single prescription was 4; and the minimum was 1. Vitamins (8 percent) was the most frequently prescribed Allopathic medicines followed by analgesic which was 6 percent. Rest of them were antibiotic (2 percent), local anesthesia (2 percent), proton pump inhibitor (2 percent) and antiprotozoal (2 percent) in the figure 1.

**Average number of drugs per prescription:** In 50 prescriptions screened for the study, average number of drugs prescribed was found to be 5.72 per prescription. The minimum number of drugs prescribed was observed to be 1 whereas the maximum number was found to 9 among the screened prescriptions.

**Prescribing ratio of classical drugs and proprietary drugs:** The average ratio of classical drugs prescription among all drugs prescribed was found to be 3.7. The proprietary drugs were found to be prescribed on an average of 2.02. Approximate ratio of classical and proprietary drugs in screened prescriptions was 1.8:1.

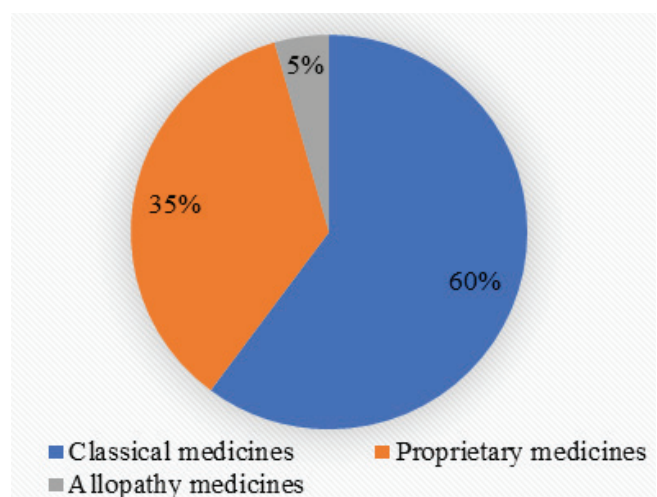


Figure 1: Number of medicines prescribed per prescription.

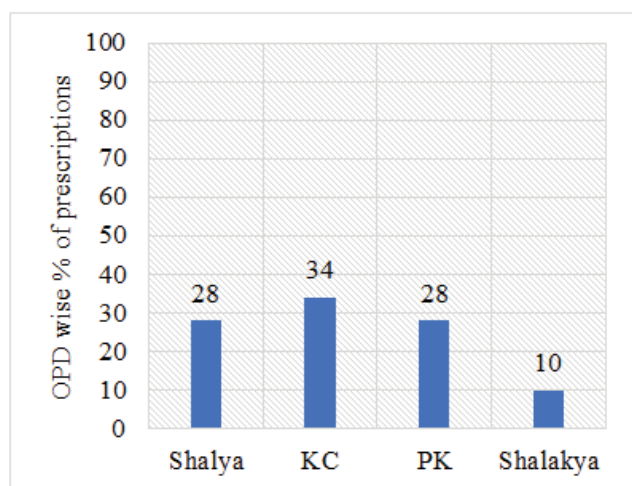


Figure 2: OPD wise number of prescriptions.  
KC = Kaya chikitsa, PK = Pancha-karma

**Total number of prescriptions containing proprietary medicines:** Among all screened prescriptions 45 (90 percent) prescriptions were found to contain proprietary medicines. Minimum number of such medicines in a prescription was 1 whereas the maximum number was 4. Average number of proprietary medicines prescribed in a prescription was 2.02.

**Total number of Rasa aushadhi:** The *rasa aushadhi* prescription was found to be 35 (12.02 percent) of total drugs prescribed. Among all, 20 (40 percent) of the prescriptions were found containing rasa preparations. The maximum number of rasa drugs prescribed in a single prescription was 3 and the minimum was 1.

**Total number of procedures prescribed:** The information wasn't available in the prescription.

**Percentage of drugs prescribed from EDL:** The information on drugs prescribed from essential drugs list of Ayurveda of Nepal was found 82 percent; and 100 percent from the essential drugs list of AYUSH 2013; the availability of the drugs in hospital dispensary was 93.94 percent as per the EDL 2013 of Nepal and 63.64 percent from EDL of AYUSH 2013.

**OPD wise percentage of prescriptions:** In the study (n=50), there were 34 percent, 28 percent, 28 percent and 10 percent of prescriptions from outpatient department of *Kayachikitsa*, *Shalya*, *panchakarma* and *Shalakya* respectively shown in figure 2.

**Fixed dose combination therapy prescription:** Among the total prescriptions (n=50), fifty percent (n= 5) of prescription was found to be prescribed in fixed dose combination (FDCs). Out of FDCs, 70 percent of the prescription was rational; and 30 percent of prescription was irrational prescription shown in figure 4.

Table 3. Observation in the study

No.	Parameter	Observation	%
1.	Total number of prescriptions	100	
2.	Prescriptions generated by Ayurvedic physicians	50	50
3.	Number of prescriptions screened	50	50
4.	Incomplete prescriptions	nil	
5.	Number of prescriptions evaluated	50	
6.	Average number of drugs prescribed per prescription	5.72	
7.	Total number of drugs prescribed	291	
8.	Total number of classical drugs (generic)	185	63.57
9.	Total number of proprietary drugs	95	34.70
10.	Total number of prescriptions containing proprietary drugs	45	90
11.	Total prescriptions having rasa aushadhi	20	40
12.	Total rasa aushadhi prescribed	35	12.02
13.	Percentage of FDC prescribed		50

Most of the prescriptions of combination therapy was prescribed either with *Avipatikar powder* or with *Ashwagandha powder* in the study.

Some *guggulu* preparations like *Kaishor* combined with *Lakshadi*; and *Triphala* with *Kanchanar guggulu* in the study. All of the prescriptions were prescribed with powder drugs except *guggulu* and conventional drugs combination shown in table 4. It indicates that mineral or metallic preparation has always been prescribed with powder drugs considering safety issues of the *rasa-aushadhi*.

#### Analysis of prescription as per WHO Prescribing indicators for Ayurvedic medicines:

Essential Ayurvedic Medicine List (EML) of Department of Ayurveda and Alternative Medicines comprised 82 percent prescription in the study. Average number of drugs per prescription was 5.72. Approximately 86 percent of drugs were prescribed by their generic name; 82 percent and 100 percent of drugs were prescribed from the EML of DoAA<sup>30</sup> and AYUSH<sup>33</sup> respectively. No prescriptions were found with injectable drugs. Among the drugs prescribed, 2 percent was the antibiotics.

Two medicines of generic plus proprietary medicines, generic and proprietary were prescribed in 8 percent, 10 percent and 36 percent of prescriptions respectively. Similarly, three and more than three drugs of generic plus proprietary medicines, generic and proprietary were prescribed in 88 percent, 70 percent and 36 percent respectively suggesting a trend of polypharmacy.

In total, 90 percent of the prescriptions were found to be

under the trend of polypharmacy. Twenty-eight (56 percent) patients received treatment for 2 weeks; 40 percent patients were given for 2 to 4 weeks followed by 14 percent patients, who were prescribed drugs for more than 4 weeks (Figure 3).

**Dosage forms of Ayurvedic medicines:** In the study (n=50), among Ayurvedic classical and proprietary medicines prescribed by Ayurvedic practitioners, the types of preparations of classical medicines were 24 percent of *rasa*, 22 percent of powder, 18 percent of *praval pisti*, 16 percent of oil, 16 percent of *vati*, 14 percent of *guggulu*, 6 percent of *avaleha*, 4 percent of *asarista*, 3 percent of *bhasma*, 2 percent of *satwa*; and proprietary medicines prescribed with 18 percent of tablet, 16 percent of capsules, 6 percent of local application, 2 percent of granules; and 20 percent of allopathic medicines shown in figure 5.

**Follow up:** In the study (n=50), 50 percent of prescription was found to be written with follow up of 2 weeks and followed

by 1 month and 2 months. Among all of the follow up, 44 percent prescription was written with follow up of 2 weeks.

**Advice:** In the study (n=50), 30 percent prescription was found to be written with advice of physiotherapy, sitz bath, gargling, yoga asana and dietary control. Among these all, sitz bath was most frequently advised in the prescription.

#### Pattern of Ayurvedic medicines prescription in Allopathic Tertiary hospital

**Prescription pattern of Ayurvedic medicines:** The quantitative data (n=50) was analyzed and presented below;

**Mean age, gender and habitat of the patients:** In the study (n=50), the minimum and maximum age of the patient on prescription of patients was found 30 year and 87 year respectively. The mean age of the patients was  $58.50 \pm 28.50$  year old i.e. approximately 59 year of age; and majority of them was male (60 percent). The older patients in Allopathic

Table 4: Fixed dose combination therapy prescription

S.N.	Combination medication	No. of prescription
1.	Avipatikar churna 100mg + Sutasekhar rasa 10gm + Arshakuthar rasa 10gm + Giloy satwa 20gm x bd x po x 15 days	9
2.	Ashwagandha churna 100gm + Dashamul churna 100gm + Praval bhasma 10gm x bd x po x 15days	5
3.	Ashwagandha churna 100gm + Dashamul churna 100gm + Guduchi churna 100gm x bd x po x 15 days	4
4.	Ashwagandha churna 100gm + Dashamul churna 100gm x bd x po x 15 days	3
5.	Ashwagandha churna 100gm + Dashamul curna 100gm x bd x po x 15days	2
6.	Amalaki churna 100gm + Guduchi churna 100gm x bd x po x 15 days	1
7.	Ashwagandha churna 100gm + Dashamul churna 100gm + Giloya satwa 10gm	1
8.	Avipatikar churna 100gm + Arshakuthar rasa 10gm + Giloya satwa 20gm + Sutasekhar rasa 10gm + Bolabhadra 10gm x bd x po x 15 days	1
9.	Avipatikar churna 100gm + Dhatri Lauha 10gm + Sutasekhar rasa 10gm + Shankha bhasma 10gm x bd x po x 15 days	1
10.	Avipatikar churna 100gm + Kamdudha rasa 10gm + Shankha bhasma 10gm + Sutasekhar rasa 10gm x bd x po x 15 days	1
11.	Avipatikar churna 100gm + Sankha bhasma 10gm x bd x po x 15 days	1
12.	Avipatikar churna 50gm + Yashti 50gm + Arshakuthar rasa 10gm + Sutasekhar rasa 10gm + Giloya satwa 20gm x bd x po x 15 days	1
13.	Avipatikar churna 50gm + Yashtimadhu churna 50gm + Bilwadi churna 50gm + Sutasekhar rasa 10gm + Giloya satwa 20gm	1
14.	Clavum 625mg x tds x 10days + Flexon 1tab x bd x 10 days + pantop 1tab x od x 10 days + Metron D/F 1tab x tds x 7days	1
15.	Neembadi churna 100gm + Gandhaka rasayan 10gm + Rasamanikya 5gm x bd x po x 15 days Avipatikar churna 100gm + Sutasekhar rasa 10gm + Sankha bhasma 10gm x bd x po x 15 days	1
16.	Sitopaladi churna 100mg + Neembadi churna 100gm x bd x po x 15 days Avipatikar churna 100gm + Sutasekhar rasa 10gm + Giloy satwa 10gm x bd x po x 15 days	1
17.	Triphala guggulu 2tablet + Kanchanar guggulu 2tablet x bd x po x 15 days	1
18.	Kaishor guggulu 2tablet + Lakshadi guggulu 2tablet x bd x po x 15 days	1

tertiary hospitals were prescribed Ayurvedic medicines. It was reported that 80 percent patients were visited from urban area; and only 20 percent from rural area. This result might be because of PMWH and BH being situated in metropolitan city of Nepal shown in table 1.

**Known cases:** In the study (n=50), 30 percent of prescription was mentioned of known cases such as gouty arthritis, post multiple fracture, dementia, insomnia, chronic constipation, osteoarthritis, rheumatoid arthritis, dysmenorrhea, amenorrhea, infertility, uterine disorders; and rest of them (34 percent) were new cases.

**Pathological Investigation:** In total, 95 percent of patients were undergone investigation for diagnosis of their diseases; whereas 5 percent wasn't advised for investigation. It might be because of protocol of diagnosis of diseases.

**Major indication of Ayurvedic medicines prescribed by Allopathic practitioners:** Allopathic practitioners have no choice of some chronic non-communicable diseases like pain related to orthopedic disorders like gouty arthritis, osteoarthritis, rheumatoid arthritis, cervical or lumbar spondylosis; gynecological disorders like dysmenorrhea, amenorrhea, uterine disorders, infertility; urogenital disorders like renal calculi and UTI; neurological disorders like dementia, insomnia; gastro-intestinal disorder like chronic gastritis and constipation; upper respiratory tract problem like chronic cough, bronchitis, rhinitis, sinusitis; and ano-rectal problems like piles, hemorrhoids, fistula and fissure and others.

**Prescription of Ayurvedic medicines prescribed by Allopathic practitioners:** There were approximately 88 products which were available at periphery of tertiary allopathic hospitals of Kathmandu valley. Among them, 34.09 percent of tablet, 30.68 percent of syrup, 7.95 percent of powder, 7.95 percent of oil, 7.95 percent of ointment, 5.68 percent

of capsule, 2.27 percent of cream, 1.13 percent of drop, 1.13 percent of gel and 1.13 percent of sachet were enlisted from their prescription. Tablet was the most frequently prescribed proprietary medicines followed by syrup. Interestingly, *Shilajeet* capsule, *Kasturibhusan* drop, *Avipatkar* powder, *Triphala* powder and *Mahanarayan tail* were also found in some prescription by Allopathic practitioners shown in figure 5. They were indicated for different chronic diseases related to gynecological, neurological, urological, musculoskeletal, orthopedic problems, etc.

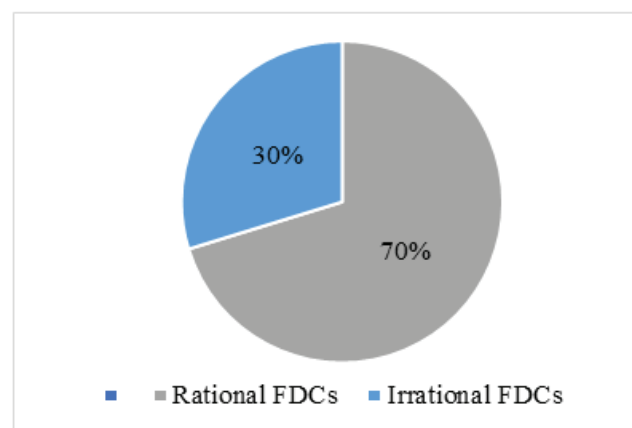


Figure 4: Rational and irrational of Fixed dose combination prescribed by Ayurvedic practitioners

### Qualitative Result

The data was collected from 5 retail pharmacists in front of PMWH and BH hospitals. The open-ended interview questionnaires were used to explore the Ayurveda prescriptions written by Allopathic practitioners by using in-depth interview. The RQDA software was used to analyze the qualitative data. There were total 15 codes created by researcher and compiled it in 3 major themes. The following were the theme of the study.

**Common Use of Ayurveda Medicines by Allopathic Practitioners:** It was included different codes to analyze the data used of Ayurveda medicines. The data was collected in-front of PMWH and BH. The most common Ayurvedic medicines prescribed by Allopathic practitioners were gynecological related disorders.

“At PMWH, mainly the Allopathic practitioners prescribed symptomatic prescription for gynecological disorders. The most commonly prescribed medicines were Regumins, Nephrolizers, Amycordial.” The Allopathic practitioners were prescribed Ayurveda medicines in chronic diseases for better results.

**Human system Related Prescription:** This theme was created to know the prescription pattern of Ayurveda Medicines by Allopathic practitioners in systematic order. It was based on clinical judgement-based prescription. The codes were created for the prescriptions of endocrinological,

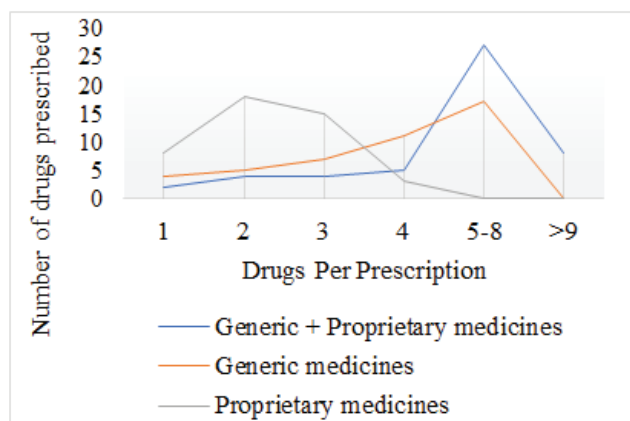


Figure 3: Number of medicines prescribed per prescription



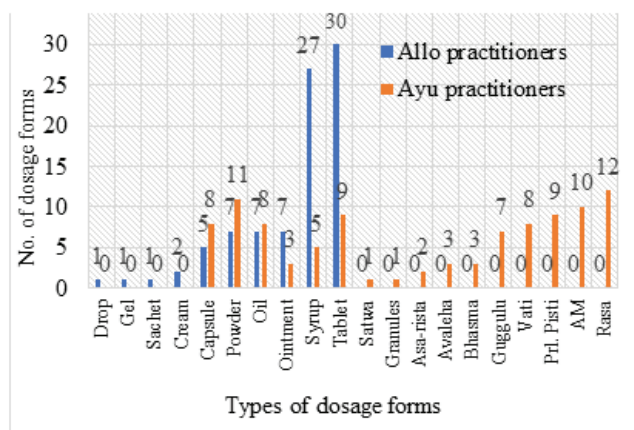


Figure 5: Types of dosage forms prescribed by Allopathic and Ayu practitioners. Gugg= Guggulu, Prl= Praval, AM= Allopathic medicines.

gastro-intestinal (GI), neurological, orthopedic, psychiatric, nephrological, hepatoprotective, reproductive and respiratory diseases.

The endocrine related Ayurveda medicines were prescribed at both PMWH and BH. A chemist from local pharmacy near BH said that “the common use of Ayurveda medicines in BH was related to hepatoprotective like Liv-52.” Another chemist from local pharmacy of PMWH said that “mainly hepatoprotective drugs were prescribed by Allopathic practitioners. Mostly prescribed medicines were belonged to WHO GMP certified companies.” (IDI1)

“Psychiatric Ayurvedic medicines were also prescribed by certain Allopathic practitioners; however, it was in rare cases.” The Allopathic practitioners were also prescribed Ayurveda medicines in infertility cases. “The infertility cases have treated by Ayurveda Medicine and prescribed by Allopathic doctors”. (IDI 1)

The GI related Ayurveda medicines were mostly used at PMWH for constipation in pregnancy cases. One of the local pharmacists in front of PMWH explained that “Ayurveda medicines were also prescribed by Allopathic practitioners like for constipation.” Pilex, both tablet and ointment were prescribed in cases of fissure and hemorrhoids.” (IDI2)

The common prescribed Ayurveda medicines were related with renal and urinary tract infection (UTI) related disorders. Some of APs used Ayurveda medicines for renal stone and some were treated UTI. “Nephrolizers were prescribed by Allopathic practitioners for UTI.” Other Ayurveda medicines like Neeri and Cystone were used in renal stone and prescribed by Allopathic practitioners too. “Amycordial was used to treat gynecological cases.” IDI2

“Allopathic practitioners also prescribed GIT related Ayurveda medicines like Gasofast; both tablet and syrup.” (IDI 3)

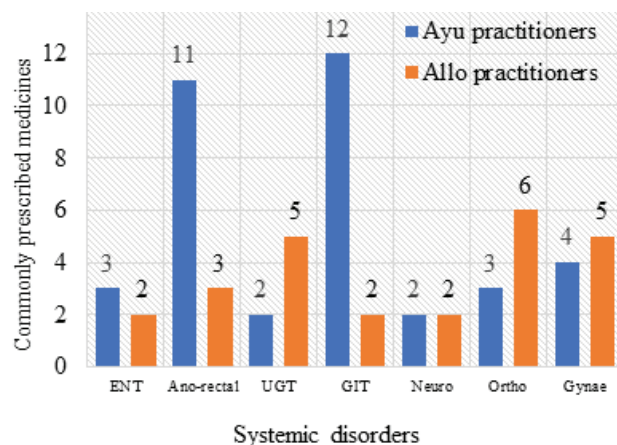


Figure 6: Commonly prescribed medicines in the systematic disorders by Allopathic and Ayu practitioners: ENT= Ear-nose-throat, UGT= Uro-genital tract, GIT= Gastro-intestinal tract, Neuro= Neurological, Ortho= Orthopedics, Gynae= Gynecological.

It was interested to find out the prescription pattern of Ayurveda medicines for neurological diseases, however, there was not found any Ayurveda prescription for it by Allopathic practitioners. A local pharmacist from BH said that “I had not seen any prescription that Allopathic practitioners had prescribed for neurological and cardiac treatment.” (IDI4)

“Some Allopathic practitioners prescribed gynecological related Ayurveda medicines such as Dashmoolarist.” (IDI4)

The Allopathic practitioners also prescribed Ayurveda medicines in respiratory system.

Another pharmacist from local pharmacy near BH added that sometime we found Ayurveda medicine prescribed by Allopathic practitioners for examples Isolax, *Churna*, etc.” (IDI5)

The Ayurveda medicines were more used in orthopedic cases. One of the respondent or pharmacists said that the most common prescription of Ayurveda medicines was orthopedic related disorders.

“Yes, mainly the tropical solution and oil are prescribed by an orthopedic surgeon like Newrolack, Rumoxil, Orthodox.”

“Orthopedic doctors were mostly prescribed Reosto, Rumoxil, Rumagold.” (IDI5)

Some doctors were prescribed Ayurveda medicines for treatment of Psychiatric patients.

The most Ayurvedic tonics were prescribed by APs in menstrual disorders such as Regumin and Tentex which were frequently used medicines in infertility.

Similarly, Allopathic practitioners had prescribed immunity booster preparations in respiratory cases. Most common are Honitus and KOF-D.

**Types of prescription:** It was interested to know Ayurvedic medicines that which types of prescriptions were frequently brought to pharmacies near Allopathic tertiary hospital. It was also interested to identify the prescriber of Ayurveda medicines at Allopathic hospitals. The medicines which were prescribed by Allopathic practitioners were supportive medicines for diagnosed cases to treat the diseases.

It was also needed to know the over prescription of medicines by Allopathic practitioners which wasn't found in the prescription during study.

“Yes, they prescribed Ayurvedic medicines concomitantly with Allopathic medicines for same disease but the properties were different”. (IDI1)

The main prescribers of Ayurvedic medicines at Allopathic tertiary hospitals were physicians. Some slips were found in local pharmacy which were written by nurses or paramedics but they were prescribed to use that medicines in procedure. “It is not sure; however, 10-15 percent of prescription had contained Ayurveda medicines in supportive form.” (IDI2)

“Almost all of the prescriptions were prescribed by Allopathic practitioners of Allopathic tertiary hospitals in the study.” (IDI3)

## DISCUSSIONS

The findings of the prescription pattern study, conducted in Ayurvedic and Allopathic tertiary level hospitals, Kathmandu provide information about the demographic data, prescribing patterns and diagnosis.

In our study, majority of prescriptions was screened from outdoor patient of *Kaya chikitsa* (internal medicine) followed by *Shalya* (surgery) and then *Panchakarma* (bio-purification) of the tertiary level Ayurvedic hospital. Majority of the patients were male, and belonged to middle age which showed considerable male predominance that is in contrary with a study done in Nepal.<sup>34</sup> Studies conducted in Sub-saharan countries reported that traditional medicine users were younger (20-50 years) in urban and semiurban,<sup>35,36</sup> whereas they were older (>55 years) in rural settings.<sup>37,38</sup> The findings of our study are similar to the studies conducted in rural settings of African countries.

Furthermore, 48 percent of prescriptions were written with final diagnosis with rheumatoid arthritis, osteoarthritis, benign prostate hyperplasia, fissure in ano, tonsillitis, haemorrhoids, piles, esophagitis, hemiplegia, irritable bowel syndrome, nephrolithiasis, headache, post fistulotomy, peripheral neuropathy, lumbar spondylitis, etc. Majority of prescription wasn't written with final diagnosis. In contrary to our finding regarding undiagnosed prescriptions was reported by a study done at tertiary level Ayurvedic hospital in India that was written only in 7.23 percent of prescriptions with proper diagnosis; and 64 percent of total prescriptions reflected irrational use of Allopathic drugs.<sup>39</sup> Some findings

from previous studies related to Ayurvedic medicines used in diseases were cancer,<sup>40-43</sup> arthritis,<sup>44</sup> chronic back pain,<sup>45</sup> AIDS(46),<sup>46</sup> gastrointestinal problems,<sup>47</sup> chronic renal failure<sup>48</sup> and indigestion related problems<sup>49</sup> frequently used Ayurveda and other traditional medicinal therapies.<sup>43</sup> Batta et al. (2019) reported that 13.3 percent of patients visiting orthopedics OPD were used Ayurvedic medicines.<sup>12</sup> A household survey study conducted in rural population of Haryana province in India revealed that 48 percent of respondents admitted to use Ayurveda medicines on recommendation of AYUSH physician.<sup>50</sup>

The proprietary medicines were found to be prescribed in higher number of prescriptions than classical drugs, whereas classical drugs were prescribed in the highest number among all categories of medicines. Powder drug was the most frequently prescribed classical drugs followed by *rasa aushadhi*. Rest of them were *guggulu*, *vati*, *bhasma*, medicated oil and others.

Various previous study support uses of above medicines that had reported *guggulu* as an effective medicine for osteoarthritis,<sup>51</sup> rheumatoid arthritis,<sup>52</sup> analgesic, anti-inflammatory<sup>53</sup> and anti-lipidemic<sup>54</sup> effect.

Among proprietary medicines, tablet was the most frequently prescribed Ayurvedic medicines followed by local application (oil and ointment). Rest of them were capsule, syrup and proprietary powder.

A survey conducted at tertiary care hospital in India by Galib et al. (2020) reported that 45.3 percent of diabetic patients used traditional medicines under the supervision of qualified AYUSH practitioners; whereas around 44 percent of diabetes patients were concomitantly using Ayurvedic formulations with prescribed conventional anti-diabetic drugs, and about 83 percent were unaware about the possibility of herb-drug interactions.<sup>55</sup>

In our study, 50 prescriptions screened for the study from Ayurvedic hospital, average number of drugs prescribed was found to be 5.72 per prescription; whereas classical drugs prescriptions were found to be higher than proprietary drugs which was approximately double in each prescription. However, a study in India showed that the prescription of classical drugs among all drugs prescribed was found 79.68 percent; and the proprietary drugs were an average of 20.32 percent.<sup>32</sup> It is some extent similar to the study done by Batta et al. for conventional medicine which was 4.37.<sup>12</sup> A study done by Dabhade et al. reported that MBBS and BAMS doctors prescribe an average of 2.4 and 3.04 medicines per prescription which is some extent near to WHO recommendation.<sup>56</sup> Another previous study in Ayurvedic hospital in India reported that average number of Ayurvedic drugs per prescription was found to be 6.14.<sup>32</sup>

The maximum number of drugs prescribed was nine per prescription. Interestingly, the *rasa aushadhi* had occupied third in the categories of Ayurvedic medicines which was prescribed in 40 percent of prescriptions containing

maximum of 3 per prescription. Ayurvedic practitioners had prescribed more than two medicines in almost all the study sample that suggests a trend of polypharmacy. According to WHO, number of drugs prescribed per prescription should be two; and justification for prescribing more than two drugs would be needed as there is an increased risk of drug interaction.<sup>12,14</sup> However, both the findings are more than the WHO recommendations. The increase in the number of drugs per prescription also increases the cost of prescription resulting in economic burden and nonadherence to the therapy, thereby worsening the said condition and prolonging the treatment. The present study observed that 63.57 percent drugs were prescribed by their generic name. Similar finding was reported by Rastogi (2019) that was 79.68 percent out of total number of 1506 drug prescriptions.<sup>32</sup>

Among the total prescriptions, fifty percent of classical drugs were prescribed in two or more than two drugs in combination which was prescribed irrationally in thirty percent of prescription. A previous study reported that irrational prescribing practices were found to be 37.13 percent in FDCs as compared with 26.92 percent in single drugs.<sup>39</sup> Importantly, irrational prescriptions of Ayurvedic formulations with Allopathic medicines in the chronic diseases such as diabetes management may put the patients at risk.<sup>55</sup>

Among the fixed dose combination therapy, approximately one-fourth of prescription was found to be combined with *Avipatikar powder* with *Sutasekhar rasa*, *Arshakuthar rasa* and *Giloy satwa* which was frequently prescribed in the prescriptions followed by *Ashwagandha powder* with *Dashmul powder* and *Praval bhasma*. *Guggulu* preparation such as *Kaishor* was combined with *Lakshadi*; and *Triphala* combined with *Kanchanar*. All of the prescriptions were prescribed with powder drugs except *guggulu* and conventional drugs. It indicates that mineral or metallic preparation has always been prescribed with powder drugs considering safety issues of the *rasa-aushadhi*. Previous studies support that prescribing drugs by generic name promotes rational use of drugs with regard to safety, efficacy, and cost by permitting identification of the products by its scientific names.<sup>57,58</sup> Generic prescribing not only rationalizes but also decreases the cost of the therapy to a great extent.

Furthermore, in the prescriptions of Ayurvedic practitioners, 82 percent of drugs were prescribed from essential drugs list of Ayurveda of Nepal;<sup>30</sup> and 100 percent from the essential drugs list of AYUSH 2013.<sup>33</sup> The availability of the drugs in hospital dispensary was 93.94 percent as per the EDL 2013 of Nepal and 61 percent as per the EDL of AYUSH in 2013. This is relatively unsatisfactory number. Essential medicines have been shown to improve the quality and cost-effectiveness of healthcare delivery implementing good prescribing practices.<sup>59</sup>

The average ratio of classical drugs prescription among all drugs prescribed was found to be 3.7. The proprietary

drugs were found to be prescribed on an average of 2.02. Approximate ratio of classical and proprietary drugs in screened prescriptions was 1.8:1. A previous study reported higher ratio than our study findings that approximate ratio of classical and proprietary drugs in screened prescriptions was 4:1.<sup>32</sup>

Among all screened prescriptions 45 (90%) prescriptions were found to contain proprietary medicines. Minimum number of such medicines in a prescription was 1 whereas the maximum number was 4. Some extent similar to our finding, the study conducted in India reported 57.14 percent of proprietary medicines prescribed among total samples of the study; which also had 1 minimum and 6 maximum number of proprietary medicines at least in one prescription.<sup>32</sup>

The *rasa aushadhi* prescription was found to be 12.02 percent of total drugs prescribed. Among all, 40 percent of the prescriptions were found containing *rasa* preparations. The maximum number of *rasa* drugs prescribed in a single prescription was 3 and the minimum was 1. Previous study reported that the *rasa aushadhi* prescription was found to be 6.24 percent of total drugs prescribed. Among all, 33.06 percent prescriptions were found containing *rasa* preparations. The maximum number of *rasa* drugs prescribed in a single prescription was 5 and the minimum was 1.<sup>32</sup>

#### **Allopathic medicines in Ayurvedic prescription:**

Ayurvedic practitioners had prescribed allopathy medicines in minimal number. Among all of the prescribed drugs categories, fourteen percent of the prescriptions were found containing allopathy medicines; and vitamins was the most frequently prescribed allopathy medicines followed by analgesic. Rest of them were antibiotic, local anesthesia, proton pump inhibitor and antiprotozoal. Kembhavi et al. (2013) reported that 97.65 prescription of Ayurvedic practitioners contained Allopathic drugs. In the same study, 4.73 percent of prescriptions had combination of Ayurveda and Allopathic drugs. In contrary, Ayurvedic practitioners prescribed a few prescriptions containing Ayurvedic medicines.<sup>39</sup> Multivitamins supplement were also prescribed in a significant number of prescription (10 percent) which is in concordance with the studies done in the past having 28.3 percent of multivitamins.<sup>60</sup> However, injudicious use of these supplements without knowing the levels of these vitamins in the patient is considered inappropriate and is a matter of concern. Screening of these patients should be done before prescribing. According to the studies carried out in Vellore and Hyderabad; nutritional products, vitamins, and analgesics were the most commonly prescribed drugs.<sup>20</sup> The proportion of medicines of these categories was seen to be very high in the prescriptions of unqualified practitioners. A study in India reported that antibiotics, GIT related drugs, analgesics, vitamins and iron preparations were prescribed more commonly.<sup>56</sup>

It was also found that most of the drugs in the prescriptions was advised for 2 weeks followed by upto 4 weeks. Some of



the prescription was found to be advised with physiotherapy, sitz bath, gargling, yoga asana and dietary control. Among these all, Sitz bath was most frequently advised in the prescription.

### Pattern of Ayurvedic medicines prescription in Allopathic Tertiary hospital

**Mean age, gender and habitat of the patients:** In the study, majority of patients were male of average age having mostly adult or elder *i.e.* approximately 59 year of age; and were from urban area. The older patients in Allopathic tertiary hospitals were prescribed Ayurvedic medicines, which was also similar to the prescription in Ayurvedic tertiary hospital and other studies reported from India.

Allopathic practitioners prescribe Ayurvedic proprietary medicine; in case of having no choice of some chronic non-communicable diseases related to orthopedic disorders, gynecological disorders, urogenital disorders, neurological disorders, gastro-intestinal disorders, upper respiratory tract problem, and ano-rectal problems and others. Similar findings were observed in a survey study in India that showed the prescription notes in urban government institutions containing CAM products at least one along with allopathy was 53 percent.<sup>50</sup>

Most of the Allopathic practitioners of government hospitals in Kathmandu prescribed nine categories of proprietary Ayurvedic medicines. Tablet was the most frequently prescribed proprietary medicines followed by syrup. Rest of them were gel, cream, proprietary powder, drop, ointment, oil and sachet. Interestingly, classical drugs like *Shilajeet*, *Kasturibhusan* drop, *Avipatkar* powder, *Triphal* powder and *Mahanarayan tail* were also found in some prescription. The above findings are supported by one of such studies in India that showed that allopathy hospital prescriptions contained 12% Ayurvedic drugs.<sup>61</sup> A study by Dahiya et al. (2022) reported that 8.67 percent of patients used Ayurveda medicines for rheumatoid arthritis visited to Clinic of Lok Nayak Hospital; a tertiary level allopathic hospital in India.<sup>62</sup> Another study in India revealed that a majority of the diabetics (95.9 percent) were taking one or the other form of herbal preparations along with their conventional anti-diabetic drugs and about 44% among them were using these concomitantly.<sup>55</sup> CAM therapies was prescribed in 20 percent of patients to manage chronic problems;<sup>50</sup> particularly immunomodulator (20 percent), gastrointestinal disorders (18 percent), blood purifier (15 percent), nootropic, aphrodisiac, hepatoprotective, upper respiratory disorder, anti-obesity, etc.

The concomitant use of traditional medicines with conventional medicines was found 47.5 percent of patients with hypertension in Nigeria<sup>63</sup> and 14.3 percent patients in Uganda;<sup>64</sup> and 7 percent of patients with diabetes in Kenya.<sup>65</sup>

Hence Ayurvedic practitioners prescribe Allopathic medicines in Ayurvedic tertiary level hospital and Allopathic

practitioners also prescribe proprietary Ayurvedic medicines at Allopathic tertiary level hospitals in Kathmandu, Nepal. It is common practices in developing and undeveloped countries worldwide.

### CONCLUSION

Majority of the drugs were prescribed by generic names of various dosage forms which are essential medicines. Trend of polypharmacy was found and injudicious use of Allopathic medicines by Ayurvedic practitioners *visa-vis* Ayurvedic medicines by Allopathic practitioners were seen. Powder, *guggulu* and *rasa-aushadhi* are a significant part of therapy. It is pertinent to rationalize use of medicines in patients to prevent ADRs, to ensure cost-effectiveness, and to minimize medication errors due to incomplete prescriptions. Regular prescription audits with feedbacks to prescribers can alter prescribing behavior toward good prescribing practices.

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### CONFLICT OF INTEREST

Authors declared no conflict of interest.

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