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Prescription monitoring as a teaching tool for Second Professional MBBS students in a Medical College at Dehradun.

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Abstract

Background: Undergraduate training in medical school must vigilantly include learning the importance of rational prescribing pattern for assuring the quality of healthcare in future. Prescription analysis studies pave a way for reasonable prescription writing.

Objectives: To teach undergraduate medical students the rational prescribing methods and their significance and adaptation of the reasonable prescribing trends in their practice as future doctors.

Material and Methods:230 prescriptions were collected by 2nd Prof MBBS students at SGRRIM&HS, Dehradun as a part of their training program. Prescriptions were analysed in Pharmacology department according to WHO drug use indicators and evaluated using suitable statistical tools.

Results: 1257 drugs were given in 230 prescriptions of which antimicrobials 320(25.46%) were the most commonly prescribed medicines followed by 203(16.15%) gastrointestinal drugs 191(15.19%) NSAIDs, 168(13.37%) CVS drugs, 133(10.58%) CNS drugs, 72(5.73%) multivitamins and 170(13.52%) other drugs (which included genitourinary drugs, corticosteroids, respiratory and antidiabetic drugs). 841(66.9%) drugs were administered orally, 394(31.34%) parenterally, 12(0.9%) by topical route and 10(0.7%) by inhalational route. 43(3.42%) were fixed drug combinations and 771(61.34%) belonged to National Essential medicine list 2018. All drugs were prescribed by their brand names.

Conclusion: Prescriptions revealed polypharmacy and discussions over detailed aspects of prescription writing helped in enhancing student's practical prescription writing skills and encouraged them to adapt rational prescribing skills in their future practice.

Keywords: Rational prescribing, drug utilisation study, polypharmacy, WHO drug use indicators.

INTRODUCTION:

Pharmacology is a crucial branch of the medical college curriculum, endowing medical students with knowledge about drugs. It is imperative that medical students appreciate the importance of pharmacology and apply that knowledge appropriately in their future practice as doctors (1).

Acquiring adequate knowledge about drugs is one of the preliminary steps in preparing the medical student for future practice. It is important that the students appreciate the importance of pharmacology and learn to apply that knowledge appropriately in a given clinical context. Undergraduate pharmacology teaching should stress the principle of rational evaluation of therapeutic alternatives and developing a personal formulary on the basis of a rational comparison which can affect their ability to prescribe rationally (2). Rational prescribing is a mammoth of a task for all the medical practitioners as it involves a mixture of knowledge, skills and attitudes integrated into the complex social context of the clinical workplace. It has been reported that rational prescribing education via interactive teaching methods such as problem-based learning at the medical schools might be effective at preventing irrational prescribing habits in the future for the budding medical graduates (3-5).

Future medical professionals have to be prepared appropriately in order to face the challenges of antimicrobial use in everyday clinical practice in order to prevent antimicrobial resistance (6, 7).

Rational use of drugs must be taught to undergraduate medical students in order to develop clinical prescribing skills among them. Training of students through such research will give an orientation to them which have a bearing on their further training in final professional and internship. This will further be helpful in improving quality of health and medical care for patients and the community as a whole (8).

Prescription analysis studies play a vital role of the training process involved in shaping the skills of undergraduate medical students by including the concept of rational use of medicines. Keeping this in mind, a prescription monitoring study was conducted as a part of teaching methodology amongst second professional MBBS students in a Medical College at Dehradun.

MATERIAL AND METHODS:

The present cross-sectional study was conducted for a period of 6 months from January to June 2019 after getting approval from Institutional Ethics Committee. Second

Professional MBBS students (2017 batch) were provided with the case record forms from the department of Pharmacology as a part of their undergraduate teaching program. 150 undergraduate students were instructed to collect 2 prescriptions each from different OPDs of Shri Guru Ram Rai Institute of Medical and Health Sciences. The students collected 300 prescriptions from different OPDs which were then analysed and checked for their completeness in the department of Pharmacology. Out of 300 prescriptions, 70 prescriptions were excluded from analysis due to incomplete information. As a result, a total of 230 prescriptions fulfilled the criteria for the study. Students were then divided into small groups and each prescription was discussed in detail and feedback was subsequently provided. The prescriptions were evaluated on the basis of the following WHO drug use indicators like average number of drugs per prescription, average number of antimicrobials per prescription, percentage of drugs prescribed by generic name, percentage of injectables prescribed and percentage of drugs prescribed from Essential medicine list.

RESULTS:

A total of 230 prescriptions were collected by Second Professional MBBS students of 2017 batch of Shri Guru Ram Rai Institute of Medical and Health Sciences as a part of their undergraduate training program. Out of a total of 230 prescriptions, there were 145(63.05%) males and 85(36.95%) females (Figure1).

The prescriptions were further distributed in different age groups. Majority of the patients 56(30%) were in 46–60-year age groups followed by 56(24.35%) in 16-30 age group (Figure 2). A total of 1257 drugs were prescribed in 230 prescriptions. Antimicrobials 320(25.46%) were the most commonly prescribed medicines followed by 203(16.15%) gastrointestinal drugs 191(15.19%) NSAIDs, 168(13.37%) CVS drugs, 133(10.58%) CNS drugs, 72(5.73%) multivitamins, 69(5.48%) genitourinary drugs, 42(3.34%)corticosteroids and 31(2.47%) respiratory drugs and 28(2.2%) antidiabetic drugs (Figure3). Amongst antimicrobials, Cephalosporins (16.87%) were the most frequently prescribed antimicrobials. The prescriptions were further evaluated on the basis of drug formulations. 841(66.9%) drugs were administered orally, 394(31.34%) parenterally, 12(0.9%) by topical route and 10(0.7%) by inhalational route (Figure 4). Only 43(3.42%) fixed drug combinations were used. Out of a total of 1257 drugs, 771(61.34%) were given from National Essential Medicine List (2018). All the drugs were prescribed by their respective brand names.

The average drugs prescribed per prescription were 5.47. The average antimicrobials per prescription were 1.39. The percentage of injectables prescribed were 31.34%.

The 2nd professional MBBS students were divided into small groups and feedback was provided to them regarding WHO drug use indicators and their role in rational prescribing of medicines.

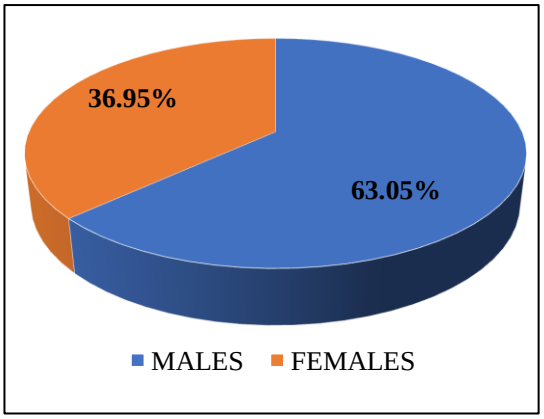

Figure1: Demographic Profile

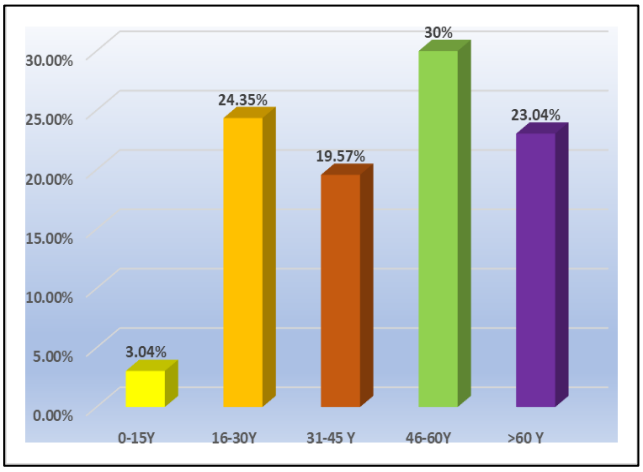

Figure 2: Age wise distribution of patients

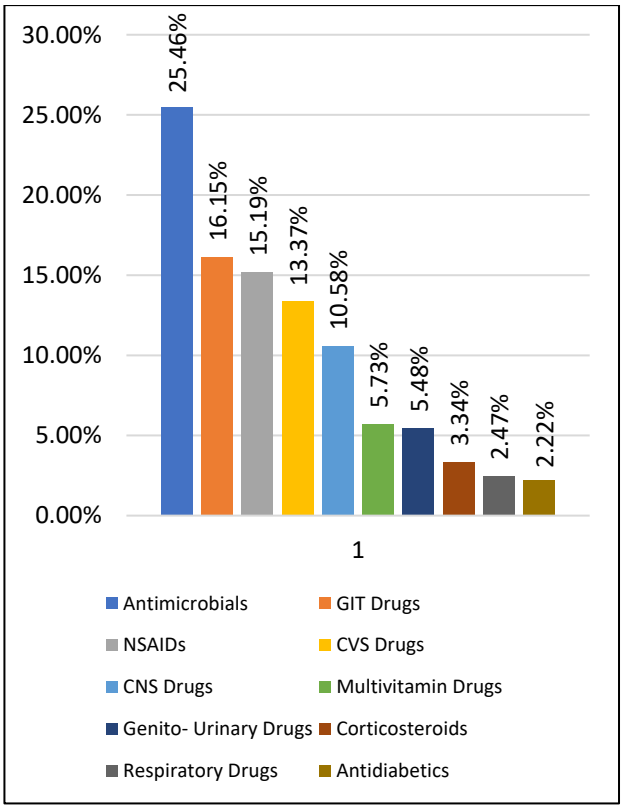

Figure 3: Classes of drugs prescribed

DISCUSSION:

Prescription pattern analysis is an instrument of importance for drug utilization studies, which help provide an in-depth insight into the disease profile of patients and prescribing behaviour of clinicians.**(**9). Incorporation of time-to-time analysis elevates the clinical standards of the practitioners and refines the learning skill of the undergraduate medical students.

In our study out of the 230 prescriptions, 63.05% were those of males. Most of the prescriptions belonged to the age-group of 46-60years (30%) which could have be due to the alarming deterioration of lifestyle in this age group and improvement of healthcare facilities for the elderly.

Polypharmacy is an enormous challenged faced by the prescribers as it compromises the medication adherence especially with complicated regimens that exceed patient's ability to cope (10). Hence it is of utmost importance to prescribe only the drugs which are required. In our study, 1257 drugs were prescribed in total. Present study has detected the prescription rate of antibiotics as 25.46%. It was at par with the WHO standard of ≤ 30%. Mishra S et al, have found it to be 17.48% and Sudarsan M et al, have found it to be 39.4% (11-14).Amongst antimicrobials cephalosporins were the most commonly prescribed drugs in our study which was similar to the study conducted by Thiruthopu N S et. al (15).Oral route was seen to be the most common route, followed by the injectable route of drug administration. In our study, 3.42% of total drugs prescribed were fixed drug combinations, which was seen to be 1.44% in study conducted by Kaur S et.al (16). The average drugs prescribed per prescription were 5.47, which is many folds compared to the range of 1.6-1.8 as suggested by WHO(17). It is though comparable to 5.85 which was calculated by Shrestha B et al. in their study (18).The drugs from National Essential Medicine List (NEML) were found to be 61.34% which was in contrast to the WHO standard of 100% drugs from NEML (11**).** Saha et.al and Prasad P S et.al in their study depicted52.86% and 95.6% respectively the incidence of drugs from NELM (11, 19) No generic drugs were prescribed in the prescriptions whereas the WHO norm is of 100% prescription of generic drugs. It was found to be 69.26% by Sudarsan M. et al, and 73.4% by Karande S. et al.(14, 20)

The practical aptitude of a budding doctor is shaped by the exercises he performs and discusses them thereafter. To make sure smoothening of the learning process of undergraduate medical students, this study was undertaken where the students were given critical analysis of the prescriptions and a feedback of each was shared by the teachers and queries answered. This also promoted involuntary embedding of WHO indicators and conditioning of undergraduates towards becoming the future treating physicians.

The limitations of the study include the non-inclusion of patient care indicators and facility-specific indicators in the study. There could have been a greater number of prescriptions under analysis but due to tight curriculum of the undergraduates, the number was limited. Improvement could have been also made by converting it to a follow-up study so as to keep a tab on the progress, adverse drug reactions or any other effect of drug on the patient.

CONCLUSION:

The present study was attempted to inculcate rational prescribing skills amongst undergraduate MBBS students which would further by helpful in improving their clinical aptitude as future practitioners.

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Conflict of interest: There was no conflict of interest.

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