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Prevalence of Self-medication and it's Perception among medical students during COVID 19 pandemic

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ABSTRACT
Background *:Self-medication is defined as the selecting and utilizing medications to treat self-recognized symptoms or ailments without consultation from a physician.*
Objectives*:*
1.To Estimate the prevalence of taking self-medication among medical students during COVID 19 pandemic
2.To Assess the perception of self-medication among undergraduate medical students .
3. To Identify the contributing factors of practising self-medication among medical students during COVID 19 pandemic
Methods :*A cross sectional study was carried out using a semi structured peer reviewed questionnaire and the data was collected using google forms which was circulated among undergraduate students of Sree Narayana Institute of Medical Sciences during July and August 2022.the sample size was 202.*
Results *: The prevalence of self-medication was 78.6% among the study population. The major reasons for seeking self-medication are their symptoms being mild and to avoid unwanted hospital visits. Common symptoms for opting self-medication were fever (73.2%) and cold (68.8 %). 66.1% of the study subjects were aware about side effects of drugs they were using.53.6% of students were infected with COVID 19. 52.6 % had taken medication for their symptoms during the covid pandemic and post vaccination symptoms.*
Conclusion: *Prevalence of self-medication was high among the undergraduate students despite majority being aware of its harmful effects. Being the clinician in the making they can do a lot better if they are guided correctly and made well aware of the consequences that can happen due to inadequate dose,overdose,drug interactions and OTC. There is an urgent need to educate them to ensure safe practices.*
Key words: *Self-medication , Undergraduate Medical students, COVID 19*

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I. Introduction:

Self-medication is common practice in young as well as adults.According to The World Health Organization; Self-medication is defined as the selecting and utilizing medications to treat self-recognized symptoms or ailments without consultation from a physician[1]. It is an easy process of prescribing to oneself without waiting for doctor's appointment. Includes the usage or re-usage of previously prescribed or unused drugs, direct purchasing of prescription drugs without consultation, and irrational use of over-the-counter (OTC) drugs [2]. It is widely practiced worldwide in urban and rural population including developing countries like India because many drugs are dispensed over-the-counter without prescription and it provides a low-cost alternative for people [3]. This might be due to number of factors like socioeconomic status, lifestyle, ready access to drugs, and greater availability of medicinal products which are existing in developing countries [4]. Often it is associated with risks such as misdiagnosis, use of excessive drug dosage, prolonged duration of use, drug interactions, hypersensitivity, drug allergy and polypharmacy. Hence, we can say it's a major factor leading to antibiotics overuse, misuse and resistance [5].

Medical students are the clinicians in training. And at times they consider themselves equally qualified and knowelagble like a Registered Medical Practitioners. Once they finish learning about drug and its actions, they feel they are eligible to prescribe medicines. In spite of lacking clinical experiences, they take medicines for minor ailments and have a habit of prescribing the same to their family and friends.

The coronavirus disease 19 (COVID-19) is a highly transmittable and pathogenic viral infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which emerged in Wuhan, China and spread around the world [7-9]. India was also unfortunately hit by this pandemic wave and as of on 26 April India saw the highest daily tally of new SARS-CoV-2 infections ever recorded in the world is 360 960, taking its pandemic total to 16 million cases, second only to the US, which has led to more than 200 000 deaths[10].With

no current specific medication to treat this deadly viral infection , a random of drugs and even antibody cocktails is being used .One of the prevalence studies done among medical students in Maharashtra revealed self- medication prevalence among medical student is 85.59% [16]. This study is taken up to know the knowledge and awareness among the undergraduate medical students and to see if at all surge is observed while taking self- medications during this COVID Pandemic.

II. Materials and Methods

A Cross sectional study was conducted among the undergraduate medical students of Sree Narayana Institute of Medical Sciences,Ernakulam for a study duration of 2 monthsthat is in July and August 2022. Following the clearance from the institutional ethics committee the study was commenced.

Sample size Estimation[11]:
215

Based on the previous literature for an outcome variable on prevalence of self-medication among the students at 76.6% in the study domain of cross-sectional survey study 95% confidence Interval with relative margin of error of 10% and 10% adjusting for non-response rate, the sample size of 202 .

$$N = \frac{Z^2_{\alpha/2} * p*(1-p)*d}{e^2}$$

p-Prevalence or proportion of event of interest for the study.
e-Precision (or the margin of error) with which a researcher wants to measure something.
$Z_{\alpha/2}$ =1.96
d=Design effect

Selection criteria
Studentswho were selected on the basis of following inclusion criteria and exclusion criteria.

Inclusion criteria:
1. Medical students who are willing to participate in the study and who have given the informed consent.
2. Medical students between the age group 18-26 years
3. Those who have completely filled the google forms.

Exclusion criteria:
1.Students who have not responded and not given consent.
2.Those who have sent incomplete google forms.

Study procedure:
Data were collected using a semi structured peer reviewed questionnaire that was circulated among the study participants with the help of google form.The google form comprised of 4 sections. Section 1 comprised of the participant information sheet in which details regarding the study were mentioned.Section 2 had the informed consent form. The demographic details were in Section 3.Section 4 consisted 26 questionsfor evaluating participants practice and perception to self-medication.
Questions 1-19 were assessed using frequencies and percentages.
Question 20-26 at the end were made in 5 point Likert scale and the scoring was as follows: 1 = Strongly Disagree , 2 = Disagree , 3 = Neither Agree nor Disagree , 4 = Agree , 5 = Strongly Agree

Statistical analysis
Collected Data were compiled in MS Excel and analysed using SPSS 22 software.Prevalence and perception were evaluated.Data were analysed using frequencies and percentages.

III. Results

The study revealed that prevalence of self- medication among our undergraduate students were 78.6%.
The majority participants were the second year students(41.4%).

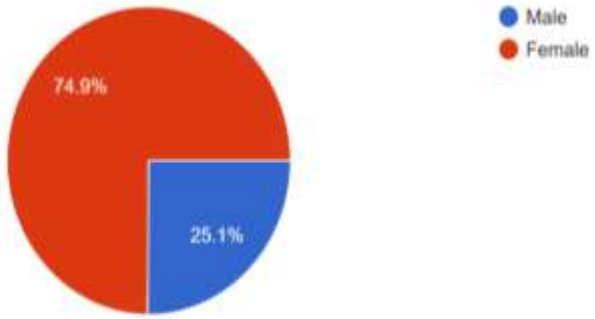


Figure 1:Gender wise distribution of the study participants

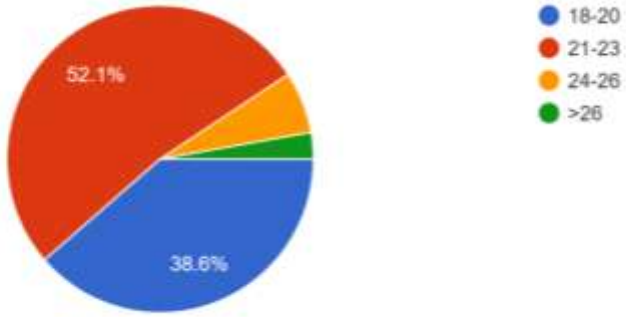


Figure 2:Age wise distribution of study participants

Table 1:Year and Gender wise distribution of study participants (n=215)			
	Male	Female	Total
First year	10	51	61
Second year	26	63	89
Third year	11	24	35
Fourth year	5	17	22
House surgeons	1	7	8
Total	53	162	215

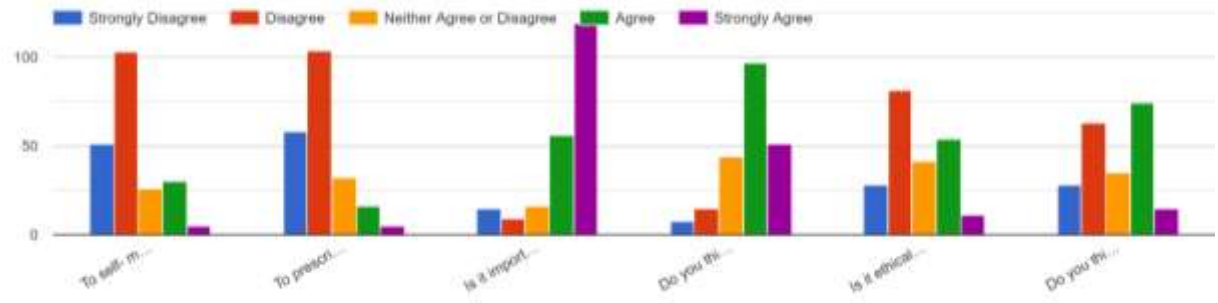
The main indication for the practice wasfever(91.7%),cold(85.7 %) and headache(79.8%) .Antipyretics (75 %) and Analgesics (70%) were the most commonly used medication. Main reason for opting for self-medication were mild symptoms (95.8%) and to avoid unwanted hospitalappointment (76 %). The prime source of information to opt for self-prescribing was from their academic knowledge(75.7 %) as well as from prior experience(73.3 %).

Table 2:Consequences of self-prescribing(n=169)	
Relief of symptoms	166
Recurrence	64
Side effects experienced	32
Worsening of condition	26
Drug interactions	22

Perception related to various aspect of self-medication

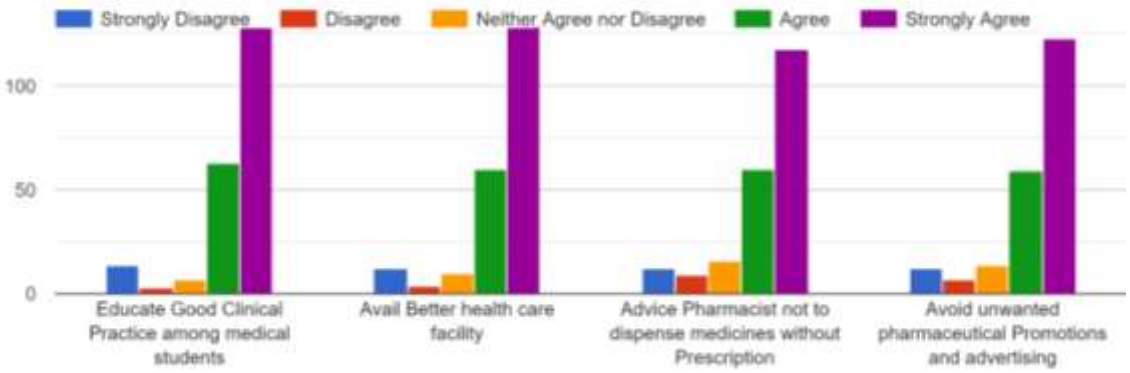
Table 3:Estimation of various terms related to self-medication(n=215)		
	Aware	Not aware
Expired drugs	207	8
Side effects	165	50
Over The Counter drugs	160	55
Generic drugs	133	82
Schedule H drugs	127	88

Among those who practiced self-medication ,81.9 % knew the standard dose of the drug.
When asked whether it was ethically correct for an undergraduate to prescribe, the result obtained are mentioned in the below figure



a. To self- medicate or do online consultation when they are sick during this COVID-19 pandemic
b. To prescribe for their family members, friends or relative when they are sick during COVID 19 pandemic
c. Is it important to know the dosage even if you are prescribing for self .
d. Do you think self-medication can lead to Hospitalization
e. Is it ethical to self-medicate if you are tested positive for COVID .
f. Do you think it is fine for you to treat COVID 19 post vaccination symptoms?

Among our undergraduate students 117 (54 %) were affected by Covid -19, in which 114(53%) had taken medication for your post covid vaccination symptoms.
Preventive measures that can limit the self -medication practices are shown in the below figure



IV. Discussion

Prevalence of Self-medication and its Perception among medical students during COVID 19 pandemic is the first online cross-sectional study conducted during the covid 19 outbreak. The study population selected where the medical undergraduates belonging to Sree Narayana institute of medical sciences. Our study had more female students (74.9%) participation when compared to the male students(25.1 %). Highest respondents (41.4 %) were second year medical students. Among the 215 students' prevalence of practicing self-medication was found to be 78.6%. A Cross sectional study done by johora et al in 2021 showed that in 916 students, half of the respondents practiced self-medication in the period of pandemic with a wide range of drugs. [12]

Prevalence of practicing self-medication among the medical students in Nagpur private medical college in Nagpur in 2015 was 71.7 %. [13]

The consequences of self-medication practices by our study participants were relief of symptoms, recurrence of symptoms, side effects, drug interactions and worsening of symptoms.

A study conducted by Patil SB et al in 2014 among 448 undergraduate students in a Mahadevappa Rampure Medical College Karnataka stated that most common consequence of self-medication among students were adverse drug reaction followed by wrong medication, disease aggravation and drug interactions.[14]

In our study it was noted that the aid for such practice was from their academic books(75.7 %) and prior experience(73.3 %).

There has been a rise in public interest in online google search engines regarding self-medication between 7 January 2020 and 1 June 2020.[15]

Among those who practiced self-medication ,60.9% our participants believed its unethical for an undergraduate to self-medicate during the covid times.

The strength of the study were that we could evaluate the perception of all our study participant in spite of whether they practiced self -medication or not.All of the questionnaire was collected in a single day.Our estimated sample size was 202, but we got 220 responses in which 215 participants fulfilled the selection criteria. Recall bias could be reduced as it had a short recall period.

Limitation: Sample size is small. Participation by the first years was less To know the external validity study has to be done in larger populations. we could study only the point prevalence as covid cases are still being reported.

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