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COMPARISON OF KNOWLEDGE ATTITUDE & PRACTICE OF SELF-MEDICATION AMONG MBBS, BDS & BSC NURSING STUDENT IN THE NORTHERN STATE OF INDIA. A DESCRIPTIVE CROSS-SECTIONAL STUDY

[1]Rupendra K. Bharti, [2]Joginder S. Pathania, [3]Vikas Sood, [4]*Pratima Koshewara and [5]Tankeshwar Dewangan

[1]MD (Pharmacology), Late. BRKM Govt. Medical College, Dimrapal, Jagdalpur, Chhattisgarh.

[2]MD (Pharmacology), Indira Gandhi Medical College, Shimla, Himachal Pradesh.

[3]Msc. PhD (Bioscience), Shivalik Institute of Nursing, Shimla Himachal Pradesh.

[4]MS (Obstetrics & Gynecology), Late. BRKM Govt. Medical College, Dimrapal, Jagdalpur, Chhattisgarh.

[4]D Pharma, Late. BRKM Govt. Medical College, Dimrapal, Jagdalpur, Chhattisgarh.

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***Corresponding Author**
Pratima Koshewara
MS (Obstetrics & Gynecology), Late. BRKM Govt. Medical College, Dimrapal, Jagdalpur, Chhattisgarh.

ABSTRACT

Aim: To Compare the awareness of self-medication among MBBS, BDS & BSc Nursing Student in the Northern state of India. **Methods**: The study was a descriptive cross-sectional study carried out at Indira Gandhi Medical College, Shimla, Himachal Pradesh, India. Total of 359 students was enrolled in this study. The majority of the students were females. SPSS v23 was used for descriptive analysis with a chi-square test to find any association. **Result**: we observed that, more than 74% of participants aware of OTC drugs and 45-64% participants self-medicated themselves. Most of our student didn't agree that self-medication saves time to see a doctor and >73% of all participants agreed that self-medication may produce a hazardous effect in the future. We also observed that most of our students check the expiry of drugs before purchasing or consuming but the consumption of cross expiry OTC drugs was also quite higher. Among BSc Nursing student OTC use of Benzodiazepines (71.83%), respiratory drugs (73.71%), multivitamins (48.3%) and GIT medication (62.44%) was higher as compared to MBBS & BDS students. Among MBBS student OTC used of antibiotics was

60.64% while NSAIDs commonly consumed by BDS students. **Conclusion**: The practice of self-medication is quite prevalent among medical undergraduates. It clearly indicates the careless nature of health among these students. It is advocated that early awareness of self-medication among medical undergraduate could reduce the prevalence of unethical use of OTC drugs and dispensing of drugs should be more restrictive to overcome this pattern of practice.

KEYWORDS: Self-Medication, Medical, Undergraduates, Prevalence, Over the counter, Drugs.

INTRODUCTION

Non-prescription or over-the-counter (OTC) drugs are the drugs, which can be purchased by anybody from the medical store. Such drugs are considered to be relatively safe. Few drugs like vitamins, paracetamol, aspirin, antacids, laxatives, etc. These drugs can be sold even by grocery stores.[1] Nowadays, OTC drugs have been considered as a component of self-care.[2] Self- medication is a behavioural response of an individual, treating themselves for self-diagnosed minor elements with the involvement of medicines. In developing countries including in India, there was exponentially rise in people who are treating themselves with the use of OTC drugs.[3] The prevalence of self-medication is higher among urban and rural community, which is ranging from 32.5% to 81.5%.[4-6] The reason can be associated with poor socioeconomical conditions, education and professional status, easy accessibility of drugs, exposure to an advertisement, lifestyle, and greater availability of drugs and its products in many developing countries.[3]

Among doctors & healthcare professionals the practice of self-medication were also highly prevalent. In 2005, as demonstrated by Hem et al. approximately 56% of young Norwegian doctors and health professionals used self-medication for minor elements.[7] In Brazil, ¼ of primary healthcare professionals self-medicated.[8] In 2010, Nalini et al. reported, in the Karnataka state of India, more than 53% of healthcare professionals used antibiotics as self-medication.[9] In 2007, a population-based study conducted in Jordanian household demonstrated that 39.5% of participants used antibiotics without prescription.[10] As per the World health organization (WHO), self-medication can help to combat common illness which doesn't require medical attention but should be supported by appropriate medical information.[11] Adopting self-medication in a correct manner, can be more beneficial & cost-effective, while inappropriate use of OTC drugs may lead to hazardous outcomes.[12,13]

Self-medication also has many drawbacks; (1) The paucity of adequate knowledge about medicines which mostly gathers from advertisement, social media, internet website, family, friends, newspaper, magazine, etc. This inadequate information may jeopardize the wellbeing of an individual (2) uses of OTC drugs or self-medication can delay the diagnosis and treatment may lead to chronicity of disease in the future. (3) Chronic illness and psychological diseases need follow-up apart from medicines. (4) It can be an indicator of neglecting him/her own health even among doctors. (5) Self-medication can be a source for developing tolerance and addiction in the future of any particular drug.[14-19]

Many studies around the globe demonstrated that practice of self-medication among medical students the has significantly higher but negligible study was done to compare knowledge, attitude and practice of self-medication among medical student involving MBBS, BDS and BSc Nursing. This study we tried to compare these students knowledge attitude and practice basis on the well-structured questionnaire.

MATERIAL AND METHODS

Study design & setup: This was a descriptive cross-sectional study carried out at Indira Gandhi Medical College, Shimla, which is a Northern The Himalayan state of India.

Study population & Sample size: MBBS & BDS students who completed pharmacology or at least completed their 2nd semester of pharmacology and BSc Nursing student who was in last semester or completed of pharmacology course in their syllabus were the target population in our study. This study was approved by Institutional Ethical committee. Out of 387 students, 359 gave the consent to participate in this study in which 94 was MBBS, 52 BDS and 213 were BSc Nursing students. All participants were explained in details about the aim of this study and asked to participate without any stress and fear. To demonstrate the knowledge attitude and practice (KAP) of self-medication among MBBS, BDS & BSc Nursing students, ten validated objectives based questionnaire was incorporated in this study. All students were instructed anonymously to indicate the most appropriate option they like the most. The participants were encouraged to furnish their opinion as an independent & unbiased manner. All respondents were also instructed not to provide any personal information, nor to reveal their identity in the questionnaire. Anonymity was maintained.

Data Collection & Statistical Analysis: The data related to participants age, gender, various OTC drug used as self-medication, awareness of self-medication practice, source of

information were gathered. **Statistical analysis:** Data were entered in Statistical Package for Social Sciences (SPSS) version 23 for Chicago Inc. and considered for descriptive analyses. Chi-square test and unpaired student t-test were used for data analysis. A priori p-value of 0.05 was used throughout the analyses and the results were considered statistically significant at $p<0.05$.

RESULT

This study was carried out in 359 medical students, of whom 59.33% (n-213) were BSc Nursing, 26.18% (n-94) MBBS and 14.48% (n-52) BDS students. As illustrated in table-I, most of the students were female even among MBBS (60.2%) and BDS (78.8%). All participants fall under group age 18-28 year and the mean age of female participants was 19.33±1.63 years as compared to male participants 19.0±1.35 years ($p>0.1$). More than 80% of participants residing nearby their institution. Among MBBS students >85% completed their pharmacology course as compare to >68% in BDS students, while >92% BSc Nursing students were in last semester of a pharmacology course.

Table-I. Gender distribution of participants among MBBS, BDS & BSc Nursing.

Characteristics		MBBS (n-94)	BDS (n-52)	BSc Nursing (n-213)	2 tail-significant
Gender	Female	56 (60.22%)	41 (78.85%)	213 (100%)	0.2
	Male	38 (39.78%)	11 (21.15%)	0	

In this study, most of the participants aware of OTC medicines, the higher trend was observed among MBBS (89.62%) followed by BDS (77.89%) then BSc Nursing students (74.68%); $p>0.1$. As illustrated in table-II, 64.89% of MBBS students used drugs without prescription, while a lower percentage observed with BSc Nursing students (45.54%); $p<0.02$. The significant percentage of participants among MBBS (30.85%), BDS (21.15%) & BSc Nursing (40.38%) agreed that, the uses of self-medication saves time to see a doctor ($p<0.04$). In response to the harmful effect of OTC drugs, significantly percentage of participating students among MBBS 82.98%, BDS (90.38%) & BSc Nursing (73.71%) students agreed that the self-medication can lead to hazardous effect (table-2).

The practice of OTC medicines among medical students also varied from all three disciplines. As illustrated in table-II, more than 90% of students of all three disciplines checks the expiry of drugs while buying but before consuming these drugs 9.57% MBBS student and 7.51% BSc Nursing students didn't check the expiry of drugs ($p<0.002$). In response to consuming

cross expiry drugs, significant percentage of participant among MBBS (13.83%), BDS (5.77%) & BSc Nursing (20.66%) students agreed that they consumed drugs which were crossly expired (p<0.009); table-II.

Table-II. Comparison of Self-medication among MBBS, BDS & BSc Nursing students (in percentage).

Characteristics		MBBS (n-94)	BDS (n-52)	BSc Nursing (n-213)	2 tail-significant
Do you know, what is over the counter [OTC] drugs?	Yes	89.62	77.89	74.68	0.1
	No	7.28	17.89	11.83	
	Don't Know	3.1	4.22	13.49	
Did you ever take drugs without prescription?	Yes	64.89	53.85	45.54	0.02
	No	30.85	38.46	48.83	
	Don't Know	3.19	5.77	5.63	
	No Answer	1.06	1.92	0.00	
Do you consider self-medication saves time to see a doctor?	Yes	30.85	21.15	40.38	0.04
	No	53.19	73.08	47.89	
	Don't Know	14.89	5.77	10.80	
	No Answer	1.06	0.00	0.94	
Do you think self-medication is harmful?	Yes	82.98	90.38	73.71	0.04
	No	10.64	5.77	12.21	
	No Answer	6.38	3.85	14.08	
Do you check expiry date of medicine before buying?	Yes	92.55	98.08	96.71	0.1
	No	5.32	1.92	3.29	
	Don't Know	2.13	0.00	0.00	
Do you check expiry date of medicine before using it?	Yes	90.43	98.08	92.49	0.002
	No	9.57	0.00	7.51	
	Don't Know	0.00	1.92	0.00	
Did you ever take medicines, which has crossed expiry date?	Yes	13.83	5.77	20.66	0.009
	No	82.98	92.31	69.01	
	No Answer	3.19	1.92	10.33	

As illustrated in table-III, 69.23% BDS, 61.7% MBBS and 50.7% BSc Nursing students agreed that they used OTC drugs for minor ailments followed by quick relief than any major ailments (p<0.01). 64% to 68% of participants from MBBS, BDS & BSc Nursing, purchased drugs from nearby pharmacy store, while 16% to 25% of participants consumed drugs from their family and friends. 10.33% of BSs Nursing students used leftover medicine of previous illness.

Table III: Comparison of reason & sources of Self-Medication among MBBS, BDS & BSc Nursing Students (in percentages).

Characteristics		MBBS (n-94)	BDS (n-52)	BSc Nursing (n-213)	2 tail-significant
You take self-medication for.	Minor ailments	61.70	69.23	50.70	0.01
	Major ailments	7.45	0.00	15.49	
	Quick relief	28.72	19.23	26.76	
	All of the above	2.13	7.69	4.23	
	None of the above	0	3.85	2.35	
	No Answer	0.00	0.00	0.47	
What are the source of getting medicines for self-medications?	Nearby Pharmacy	68.09	69.23	64.79	0.07
	Family /friends	24.47	25.00	16.90	
	Left over medicines of previous illness	5.32	3.85	10.33	
	Others (My decision, Internet)	2.13	1.92	7.98	

In this study, we observed that 71.83% of BSc Nursing student used benzodiazepines such as alprazolam & lorazepam as compared to 43.62% MBBS and 3.85% BDS student ($p<0.0001$); table-IV. Similarly, cough suppressant was significantly used by BSC Nursing student (73.71%) as compare to 71.28% MBBS then 34.62% BDS Students ($p<0.001$). There was a significant percentage of BSc Nursing students used OTC drugs for gastrointestinal ailments and multivitamins as compare to MBBS and BDS student. The OTC use of antibiotics commonly observed with MBBS student (60.64%) as compared to 48% BDS student followed by 45.54% among BSc Nursing students ($p>0.2$). There was a higher trend observed among BDS students (90.38%) as compare to MBBS (75.53%) followed by BSc Nursing student (70.89%) for self-medicating NSAIDs.

Table-IV: Comparison of commonly used OTC drugs among MBBS, BDS & BSc Nursing students (in percentages).

Commonly used OTC drug without prescription	MBBS (n-94)	BDS (n-52)	BSc Nursing (n-213)	2 tail-significant
Sedative & hypnotics	43.62	3.85	71.83	0.0001
NSAIDs	75.53	90.38	70.89	0.06
Antibiotics	60.64	48.08	45.54	0.2
Respiratory drugs	71.28	34.62	73.71	0.001
Multivitamins	34.04	11.54	48.36	0.0001
GIT Medications	53.19	23.08	62.44	0.0001

DISCUSSION

In this study, we tried to demonstrate the pattern and attitude of self-medication among medical undergraduates. The study revealed that self-medication is very popular among medical undergraduates. OTC drugs are commonly used by medical undergraduates for minor ailments such as pain relief, flu symptoms, insomnia, and anxiety.

The prevalence of self-medication in this study varying from 45% to 64%. The significantly higher percentage was observed with MBBS student followed by BDS then BSc Nursing students. In 2018, Alshogran et al. reported over 97.2% of medical students used OTC drugs for minor ailments as compared to 96.5% non-medical students in Jorden. Similarly, many studies also demonstrated that the prevalence of self-medication was higher among medical students.[7,9,21] Most of our undergraduates did not consider that, taking OTC drugs save the time to visit a doctor ($p<0.04$). In 2015, a similar observation was demonstrated by Ali et al, where approximately 56.5% among medical and 32.4% non-medical students did agree with similar to our findings.[22] Considering self-medication can produce a hazardous effect in future, 73% to 90% of our medical undergraduates concurred with the use of OTC drugs. Similar observation demonstrated by other authors.[3,22-24]

Before buying or administrating OTC medicines, it is better to check their expiry date. It should be made a common practice for anyone whether it's a medical professional or non-medical individual. In this study, we found that most of our medical undergraduates checked the expiry date of every drug before buying ($p>0.1$) and consuming ($p<0.002$). While the administration of cross expiry medicine among these students was quite high among BSc Nursing (20.66%) followed by MBBS (13.83%) students ($p<0.009$). Many other studies demonstrated that the majority of participants checked the expiry date of OTC drugs before purchase or administration, but none of them reported, the prevalence of cross-expiry drugs consumption among their research.[25,26]

OTC drugs are commonly associated with quick relief and symptomatic improvement for minor ailments whether it is medical or non-medical individuals. Similarly, in our study also 50% to 61% of medical undergraduates from all three disciplines, self-medicated themselves for minor ailments such as headache, flu, cough, fever, anxiety, insomnia, tiredness, etc. and 19% to 21% of these students used OTC drugs for quick relief. Many authors also concurred with our results.[3,20,21,23,24,26] In India, the major source of procuring drugs is pharmacy stores, similarly in our study too over 64% of medical undergraduates purchased drugs from

pharmacy store, while more than 16% participants take drugs from their family & friends. It is quite interesting that about 10% of BSc Nursing students used medicines from previous illness (p>0.07). A similar observation was demonstrated by Kasulkar et al.[3]

Among 359 medical undergraduates, we observed that, the consumption of benzodiazepines, cough suppressant, GIT medications and multivitamins were significantly higher among BSc Nursing students (n-213) than the other two disciplines. There was a higher trend observed with OTC use of antibiotics among MBBS (n-94) students, and NSAIDs by BDS (n-52) students. In 2010, Nalini et al, reported, 53% of healthcare professional self-medicated antibiotics in the Karnataka state of India.[9] Hem et al, reported the use of higher prevalence of self-medication of antibiotics, sedatives & hypnotics, pain medication, etc. among interns and post-graduates in Norwegian medical schools.[7] Other authors also coherent with our study.[3,20,23,24]

CONCLUSION

The practice of self-medication is quite prevalent among medical undergraduates. The main reason behind it, the easy availability & accessibility of drugs without prescription. It clearly indicates the careless nature of health among these students although the commonest reason for OTC drugs use was minor ailments. It is advocated that early awareness of self-medication among medical undergraduate could reduce the prevalence of unethical use of OTC drugs and dispensing of drugs should be more restrictive to overcome this pattern of practice.

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