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Research Article

A CROSS-SECTIONAL STUDY TO ASSESS THE PATTERN OF SELF-MEDICATION USED FOR DIARRHEA AMONG MEDICAL STUDENTS IN TERTIARY CARE TEACHING HOSPITAL OF CENTRAL INDIA

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ABSTRACT

Objective: The objective of the study is to assess the drug usage pattern, personal hygiene, and sanitation practices among day scholars and hosteller medical students.

Methods: A questionnaire-based cross-sectional study was conducted at MGM Medical College and M.Y. Hospital, Indore. Undergraduate and postgraduate medical students who experienced episodes of diarrhea in the past 6 months were included in the study. Diarrhea occurring due to organic causes was excluded. Data were collected using a Google or physical form and were analyzed using descriptive statistics.

Results: 254 students who suffered from diarrhea in the past 6 months participated in the study, out of which 56% were hostellers. Commonly used drugs were ofloxacin, metronidazole, etc. 50.2% of them took self-medication; the majority of them were hostellers. Students were found to eat outside at least once a week. Personal hygiene and sanitation were more compromised among hostellers than day scholars.

Conclusion: Personal hygiene and sanitation practices should be improved among medical students, especially hostel students. These students, despite being from medical backgrounds, still take irrational medication. Therefore, there is a need for increased awareness regarding drug usage, and self-medication should be discouraged.

Keywords: Diarrhea, Hygiene, Medical students, Self-medication, Drug usage pattern.

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INTRODUCTION

Diarrhea is the most common condition in all age groups. It defines the World Health Organization as the passage of three or more loose or liquid stools per day (or more frequent passage than is normal for the individual). Diarrheal disease is a leading cause of child mortality and morbidity worldwide, mostly resulting from contaminated food and water sources [1-5]. Nearly 1.7 billion cases of diarrheal diseases are reported annually, making it a significant global public health challenge, especially in developing nations [1,5]. The prevalence of diarrhea has been reported to be approximately 9.2% in developing countries, which might be due to a lack of knowledge, awareness, and practices regarding diarrheal disease management, of which a lack of unhygienic practices and sanitation is one of the leading causes [2]. In 2019, diarrheal disease was responsible for the deaths of 370,000 children under 5 years old [6].

Diarrhea is a symptom of infection of the intestinal tract, which can be caused by a variety of bacterial, viral, and parasitic organisms [7-13]. The infection usually spreads through contaminated food, drinking unfiltered and untreated water, or from person to person as a result of poor hygiene [1]. Most acute diarrhea episodes are self-limiting, but many people take over-the-counter medications to relieve symptoms [4].

Diarrhea is usually caused by an infection in the intestinal tract, which can be due to the transmission of a variety of bacterial, viral, and parasitic organisms that spread through contaminated food or drinking unfiltered and untreated water, or from person to person as a result of poor hygiene [7,8]. However, most acute diarrhea episodes are self-limiting [9]. But still, it is found that many people take over-the-counter medication to relieve symptoms, and frequently, medical students self-administer medicine for the treatment of diarrhea without any consultation from the physician. Medical students in developing countries, such as India, often resort to self-administering medications without proper medical supervision, as indicated by a study in PMC [10,11].

Self-medication can be defined as the use of medication to treat an individual disease or symptom or the regular use of medication to treat a chronic or recurrent disease or symptom [12]. Self-medication with traditional medicine is also common, driven by factors such as affordability and accessibility [13]. However, self-medication can have negative consequences, including misdiagnosis, inadequate dosage, adverse drug reactions, and the development of antibiotic resistance [14]. Many factors influence self-medication among medical students, like the increased potential to manage certain illnesses through self-care, the over-the-counter availability of most medicines, exposure to advertisements, education, and socioeconomic factors [15-18]. Medical students may choose self-medication when they believe that their condition does not require a physician visit, when they are familiar with treatment options, or when they lack time or access to a primary physician [19]. Practicing self-medication is indeed becoming very common among health professional students, who have a higher exposure to the knowledge of different drugs during their training period than the general population. Studies have shown that self-medication has a higher prevalence among medical students [20-23]. They have easy access to information from

various sources to self-diagnose and self-medicate [24]. Leftover drug at home also provides easy access when one experiences similar symptoms [25]. This is concerning because self-medication can lead to serious consequences [26].

Therefore, this study aimed to assess the drug usage pattern for diarrhea, personal hygiene, and sanitation practices among day scholars and hostellers of undergraduate (UG) and postgraduate (PG) medical students in a tertiary care hospital in Indore MP, India.

METHODS

A cross-sectional, single-center study was conducted in the Department of Pharmacology, Mahatma Gandhi Memorial Medical College, and Maharaja Yashwantrao Hospital, Indore, MP, after receiving approval from the ethics committee. Informed consent was obtained from all the participants. Undergraduate and PG medical students who experienced episodes of diarrhea in the past 6 months were included in the study. Diarrhea occurs due to organic causes such as tumors, celiac disease, irritable bowel syndrome, and chronic inflammatory bowel diseases, for example, Crohn's disease and ulcerative colitis were excluded. The data collection was done using Google Forms or physical forms. Many medical students were approached, of whom 254 filled out and submitted the form, of which 182 were UG and 72 were PG. An online questionnaire-based session was held through smartphones to collect data regarding the self-medication practice of antibiotics among medical students. A pilot study was done to validate the questionnaire before the study. The final questionnaire consisted of 25 questions in four sections. The first section consisted of the demographic information of the participants, and the second, third, and fourth sections consisted of questions on eating patterns, personal hygiene practices, and the practice of self-medication for diarrhea, respectively (Table 1). Then, the collected responses were analyzed and compared using percentages, mean graphs, tables, and appropriate statistical methods.

RESULTS

A total of 254 medical students were enrolled in the study, of which UGs were 182 and PGs were 72. The mean age of students was 20. In the study, demographic data reveal a balanced gender distribution among the participants, with 53.7% being male and 46.3% female. In terms of accommodation, a significant majority, accounting for 75.1%, resided in hostels or rented accommodations, while 23.9% were day scholars. Regarding the academic status, a predominant 76.9% were UGs, with the remaining 23.1% pursuing PG studies (Table 2).

Evaluation of dietary habits among medical students

In our questionnaire-based study, participant responses were analyzed using p-values to discern significant patterns in eating behaviors among UG and PG students, specifically focusing on various aspects of their dietary practices. When examining the section related to procuring daily meals, significant disparities were found between UG students residing in hostels and day scholars. In addition, the PG of hostel and day scholars was also found to be significant $p<0.001\%$. Conversely, in the analysis of eating outside frequency, no significant differences emerged among UG students, whether they resided in hostels or locally, and the same trend was observed for PG students, regardless of their accommodation status. Regarding meal-skipping habits, UG students living in hostels and localities exhibited significant variations, while PG students, both hostel residents and localities, did not show significant differences. Furthermore, our responses to the questionnaire on the water source revealed significant distinctions among UGs, while non-significant findings were observed in PGs. These findings illuminate specific eating patterns and behaviors within the studied student population, contributing valuable insights to a broader understanding of their dietary practices.

Assessment for the adherence to personal hygiene routines among medical students

In this particular section of our study, we collected responses from participants about their hygiene patterns. Our analysis, employing p-values, aimed to discern the significance of these patterns among UG and PG students, with a specific focus on various aspects of personal hygiene. When evaluating hand-washing practices, we found that UG students did not exhibit significant differences in comparison to both hostellers and day scholars, a trend similarly observed among PG students.

In the questionnaire about the way of cleaning hands before meals, significant differences were revealed between UG students living in hostels and localities, as well as among PG students. Conversely, when considering hand-washing practices after defecation, both UG and PG students, regardless of accommodation type, demonstrated significant adherence to hygiene standards.

Furthermore, the allowance of shoes inside the eating area revealed a highly significant difference between UG and PG students. Likewise, the maintenance of nail hygiene exhibited high significance among both UG and PG students of both hostels and day scholars. These findings provide valuable insights into the personal hygiene patterns and practices within this student population, shedding light on areas of significance and common practices in maintaining hygiene standards.

Evaluation of instances of diarrheal episodes and medication practices for diarrhea among medical students

In this specific section of our study, we collected responses from participants concerning their experiences with diarrheal episodes and the medications taken during such occurrences. The frequency of diarrheal episodes per day among UG and PG students did not exhibit significant differences in comparison to both hostellers and day scholars. Regarding the nature of the stool, notable differences were found among UG students residing in hostels and localities, as well as among PG students, regardless of their accommodation status. Furthermore, the analysis of purchasing or taking medication without a prescription revealed significant trends among UG students in both hostels and localities. In the column of antibiotic usage, both UG and PG students residing in hostels and localities demonstrated highly significant trends. This suggests a common practice of antibiotic intake during diarrheal episodes. In addition, when assessing the duration of antibiotic usage, significant differences were noted among UG students in hostels and localities, indicating potential variations in the duration

Table 1: Questionnaire details based on knowledge of eating patterns, personal hygiene practice, and practice of self-medication for diarrhea construct in the survey among medical students

Eating pattern	Personal hygiene	Diarrheal episode	Medication/management
Stay (Hostel/Home)	Hand wash (Yes/No)	Episodes in the last 6 months	Use of medication
Get a meal (Outside/Home-made)	Hand wash before the meal	Frequency of episode	Inclusion of antibiotics
Frequency of eating outside	Cleaning of hands (water/soap/hand sanitizer)	Other symptoms	Frequency of antibiotics
Source of drinking water	Hygiene maintenance in the cleaning area	Nature of stool	Non-pharmacological measures
			Recovery days
			Need of hospitalized
			Discharge duration (if hospitalized)

of antibiotic treatments between UG and PG students. Finally, the incidence of hospitalization during diarrheal episodes did not yield significant differences among UG and PG students of both hostellers and day scholars. Similarly, PG students did not show significant variations in this aspect, emphasizing a consistent lack of distinction in hospitalization rates between the groups.

The majority of respondents were UGs, constituting 77.16% of the surveyed population who used medication for diarrhea. Among them, 56.69% were hostellers, and 20.47% were day scholars. On the other hand, PGs made up 22.83% of the participants, with 19.68% residing in hostels and 3.14% being day scholars (Table 6).

50.2% of the participants engaged in self-medication (not prescribed) practices. Among UGs, 39.2% practiced self-medication, with 24.2% among hostellers and 15% among day scholars. In the PG category, 10.8% practiced self-medication, comprising 6.2% of hostellers and 4.6% of day scholars. Conversely, 49.8% of the respondents chose not to practice self-medication. Among UGs, 30.6% refrained from self-medication, including 23.6% of hostellers and 7% of day scholars. In the PG group, 19.2% avoided self-medication, with 12.8% among hostellers and 6.4% among day scholars, as shown in Table 7.

In our study, students have commonly used drugs for treating diarrhea, with antibiotics being the most prevalent choice at 48.2%. Among antibiotics, metronidazole was used by 13% of respondents, followed by ofloxacin (12%), norfloxacin (9%), ciprofloxacin (4.5%), levofloxacin (4%), doxycycline (3.4%), and amoxicillin (2.3%). For anti-motility, loperamide was used by 15% of participants, while diphenoxylate was used by 1%. Anti-secretory drugs, such as racecadotril (2.9%) and octreotide (1%), were also utilized by some. Drotaverine, an anti-spasmodic medication, was reported as being used by 10.4% of respondents. Probiotics, including home-based options such as curd and buttermilk (14.3%), as well as specific strains such as Lactobacillus sporogenous (7.2%), were preferred by a substantial portion. Oral rehydration solution (ORS) was used by 20% of respondents as an essential treatment for managing diarrhea, which was also the most common concomitant therapy used in our study (Table 8).

Table 2: Demographic data of students suffering from diarrhea in the past 6 months (n=254)

Gender (%)	
Male	53.7
Female	46.3
Accommodation (%)	
Hosteller/Rented	75.1
Day scholar	23.9
Batch (%)	
Undergraduate	76.9
Postgraduate	23.1

Among the entire participants, 50.2% engaged in self-medication, predominantly opting for monotherapy. However, some of them utilized irrational combinations, specifically ofloxacin+ornidazole (9%) and norfloxacin+tinidazole (8.5%) (Table 8).

In terms of personal hygiene and sanitation, a higher percentage of hostellers (75%) were surveyed in comparison to day scholars (25%). Among hostellers, 32% were observed to maintain proper hygiene, while 43% did not uphold these standards. On the other hand, among day scholars, 16% were noted for maintaining hygiene, while 9% were found not to maintain adequate sanitation practices, as shown in Fig. 1.

DISCUSSION

The pattern of self-medication for diarrhea among medical students is a topic of significant interest and concern within the health-care community. Understanding the self-medication practices of medical students in managing diarrhea is essential, as it not only reflects their health behavior but also highlights potential gaps in their education and awareness regarding appropriate medication usage.

Several studies have highlighted a concerning trend among medical students, revealing a significant percentage engaging in self-medication practices for diarrhea. This pattern raises critical questions about the knowledge, awareness, and health-care decision-making skills within this demographic. Addressing these findings is vital for developing targeted interventions, educational initiatives, and policies to promote responsible medication use and ensure the well-being of future health-care professionals [27-29].

Thus, through this study, we aimed to assess the drug usage pattern for diarrhea, personal hygiene, and sanitation practices among day

Table 3: Evaluation of dietary habits among medical students

Eating pattern	**Frequency (n) and p-value (n=254)**			
Exposure category	**Undergraduate 182 (76.9%)**		**Postgraduate 72 (23.1%)**	
	Hosteller (128)	**Day scholar (54)**	**Hosteller (55)**	**Day scholar (17)**
1. Where do you procure daily meal?				
1. Home	3	50	1	16
2. Mess	98	4	35	4
3. Tiffin center	7	0	18	0
p-value	<0.001%		<0.001%	
2. Frequency of eating outside				
1. Once a week	29	12	38	9
2. Twice a week	32	9	41	8
3. More than twice	19	11	38	8
p-value	0.396% (NS)		0.935% (NS)	
3. Do you skip your meal?				
1. Never	23	24	10	4
2. Sometimes	99	16	41	10
3. Mostly	8	3	13	2
p-value	0.014% (S)		0.587% (NS)	
4. What is the source of your drinking water?				
1. RO water (cane/bottle)	24	27	45	15
2. Filtered water	59	17	29	13
3. Tap water	6	3	13	4
p-value	0.002% (S)		0.756% (NS)	

NS: Non-significant, S: Significant

Table 4: Assessment of adherence to personal hygiene routines among medical students

Personal hygiene	Frequency (n) and p-value (n=254)			
	Undergraduate 182 (76.9%)		Undergraduate 182 (76.9%)	
	Hosteller (128)	Day scholar (54)	Hosteller (55)	Day scholar (17)
1. Do you wash your hands before meals?				
1. Yes	99	43	45	14
2. No	4	1	2	1
3. Sometimes	9	7	14	7
4. Don't care	1	1	3	1
p-value	0.608% (NS)		0.846% (NS)	
2. How do you clean your hands before meals?				
1. By water only	45	28	31	11
2. By soap and water	10	7	13	3
3. By hand sanitizer	8	3	6	1
4. Don't care	13	28	24	1
p-value	0.009% (S)		0.375% (S)	
3. Do you wash your hands after defecation?				
1. Yes	55	29	32	2
2. No	11	6	11	3
3. Sometimes	9	3	7	2
4. Don't care	12	30	25	10
p-value	0.007% (S)		0.075% (S)	
4. Are shoes allowed inside the eating place?				
1. Yes	84	21	48	11
2. No	15	26	7	19
3. Maybe	6	2	5	7
p-value	<0.0001% (HS)		<0.0001% (HS)	
5. Do you maintain nail hygiene regularly				
1. Yes	81	30	45	15
2. No	16	27	6	20
3. Maybe	7	3	4	8
p-value	<0.0001% (HS)		<0.0001% (HS)	

Table 5: Evaluation of instances of diarrheal episodes and medication practices for diarrhea among medical students

Diarrheal episode and medication	Frequency (n) and p-value			
Exposure category	Undergraduate 182 (76.9%)		Postgraduate 72 (23.1%)	
	Hosteller (128)	Day scholar (54)	Hosteller (55)	Day scholar (17)
1. What was the frequency of diarrheal episodes per day?				
1. <3 times per day	49	13	33	7
2. 3–5 times per day	21	13	12	7
3. <5 times per day	8	3	7	3
p-value	0.191% (NS)		0.685% (NS)	
2. What was the nature of the stool?				
1. Water	82	28	35	3
2. Mucus	10	8	7	4
3. Bloody	8	3	3	1
4. fatty	0	0	2	0
p-value	0.014% (S)		0.026% (S)	
3. Have you purchased/taken medication without a prescription?				
1. Yes	98	3	35	16
2. No	4	50	1	0
3. Sometimes	7	0	18	4
p-value	<0.001%		<0.001%	
4. Have you been prescribed/taken antibiotics?				
1. Yes	80	26	7	11
2. No	16	21	48	19
3. Maybe	6	2	5	7
p-value	<0.0001% (HS)		<0.0001% (HS)	
5. For how many days did you take antibiotics?				
1. 1 day	12	15	7	5
2. 2 days	17	15	10	5
3. 3 days	28	10	12	2
4. >3 days	12	2	5	1
p-value	0.0017% (S)		0.387% (NS)	
6. Did you get hospitalized during the diarrheal episode?				
1. Yes	8	7	13	3
2. No	110	45	50	10
p-value	0.157% (NS)		0.844% (NS)	

Table 6: Medication used for diarrhea among students

Undergraduate	77.16%
Hostellers	56.69%
Day scholars	20.47%
Postgraduate	22.83%
Hostellers	19.68%
Day scholars	3.14%

Table 7: Practice self-medication for diarrhea

Practicing self-medication	50.2%
Undergraduate	39.2%
Hostellers	24.2%
Day scholars	15%
Postgraduate	10.8%
Hostellers	6.2%
Day scholars	4.6%
Not practicing self-medication	49.8%
Undergraduate	30.6%
Hostellers	23.6%
Day scholars	7%
Postgraduate	19.2%
Hostellers	12.8%
Day scholars	6.4%

Table 8: Commonly used medication

Antibiotics (%)	
Metronidazole	13
Ofloxacin	12
Norfloxacin	9
Ciprofloxacin	4.5
Levofloxacin	4
Doxycycline	3.4
Amoxycillin	2.3
Anti-motility	
Loperamide	5
Diphenoxylate	1
Anti-secretory	
Racecadotril	2.9
Octreotide	1
Anti-spasmodic	
Drotaverine	10.4
Probiotics	
(Home-based like curd, buttermilk)	14.3
(*Lactobacillus*, sporogenous)	7.2
ORS	20
FDC	
Ofloxacin+ornidazole	9
Norfloxacin+tinidazole	8.5

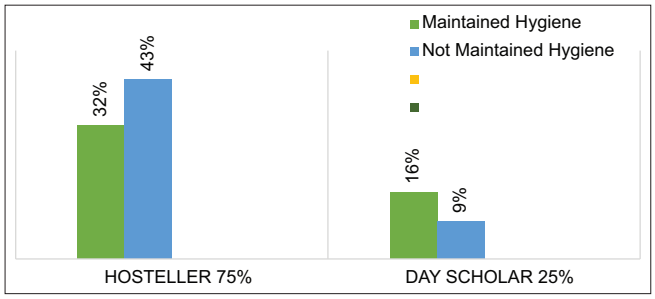

Figure 1: Personal hygiene and sanitation practice (hostellers versus dayscholars)

scholars and hostellers of medical students in a tertiary care hospital in Indore MP for the first time, including a sample size of 254 participants.

In the study, the participants displayed a balanced gender distribution, with a slight majority of males and a notable presence of females. Accommodation data indicated that a significant portion resided in hostels or rented accommodations, while a smaller fraction were day scholars. Academic status revealed a higher percentage of UGs compared to PGs. The majority of respondents who self-medicated for diarrhea were UGs, with a significant portion being hostellers. Postgraduates constituted a smaller proportion of the participants, with some residing in hostels and a few as day scholars.

Self-medication, although common, can be risky, especially when it involves conditions like diarrhea. Inappropriate use of medications, including antibiotics and anti-diarrheal drugs, can lead to antibiotic resistance, treatment failure, and adverse reactions. 50.2% of participants engaged in self-medication practices. Among UGs, 39.2% of participants practiced self-medication, with a higher proportion among hostellers compared to day scholars. In the PG category, a smaller percentage practiced self-medication, with a similar pattern observed between hostellers and day scholars. Conversely, a considerable number of respondents chose not to self-medicate. Among UGs, a substantial fraction refrained from self-medication, with a higher percentage among hostellers. In the PG group, a smaller but significant proportion avoided self-medication, with a comparable pattern between hostellers and day scholars.

This report aligns with previous research conducted by Das and Gohain, which reported that 89.23% of UG medical students practiced self-medication for diarrhea [28].

We found that a variety of drugs were commonly used to treat diarrhea, with antibiotics being the most prevalent choice. 48.2% of antibiotics and other medications are employed for treating diarrhea. This is similar to the study by Gillani *et al*., in which, out of 583 students, 45% confirmed the use of antibiotics [30].

As per the study by Vidyavathi and Srividya, ciprofloxacin was found to be the highest-selling drug because of its cost-effectiveness and its empirical use [31]. In this study, among the antibiotics, metronidazole was notably utilized, followed by ofloxacin, norfloxacin, ciprofloxacin, levofloxacin, doxycycline, and amoxicillin. This is similar to the study by Gillani *et al*., in which metronidazole was the most frequently self-medicated antibiotic (48%) [27]. In one of the studies, 89% of all research participants believed that self-medication with antibiotics was a good or acceptable practice [32].

Participants also turned to anti-motility drugs, primarily loperamide, along with a smaller usage of diphenoxylate. Some respondents opted for anti-secretory medications such as racecadotril and octreotide. In addition, drotaverine, an anti-spasmodic medication, was reported among users. Probiotics improve viability in physiological conditions and real-time storage conditions [33]. It was chosen by a substantial portion of the participants. Furthermore, ORS emerged as a crucial choice for managing diarrhea in our study. Similar reports were quoted by Devy et al. [34] and Sylvia et al. [35] that ORS is commonly used for the self-medication of diarrhea.

Medical students, being future health-care professionals, are expected to have a good understanding of rational drug use and evidence-based medicine [36]. In our study, a considerable percentage of participants engaged in self-medication practices, primarily employing monotherapy. However, an observed subset of participants resorted to irrational combinations, specifically ofloxacin+ornidazole and norfloxacin+tinidazole, indicating a deviation from rational pharmacotherapeutic practices. Several studies have highlighted the use of such combinations for self-medication. In a study by Kadir et al., some of the commonly used irrational drug combinations include antibiotics combined with other antibiotics, such as ampicillin+cloxacillin [37]. In the study by Jadav et al., case of diarrhea, two specific combinations have been identified: ofloxacin+ornidazole and norfloxacin+tinidazole [38]. A study conducted in India found that combination therapy was irrational in 79.67% of cases, with injection ceftriaxone being the

most common antibiotic resulting in adverse drug reactions, followed by tablet azithromycin [30]. Another study found that the use of the norfloxacin+metronidazole combination can lead to adverse effects commonly associated with norfloxacin, such as mild nausea, vomiting, and diarrhea [35]. Fixed dose combinations (FDCs) can improve patient compliance and decrease pill burden, but irrational prescribing of FDCs is a major health concern [40]. A case study reported the use of different fixed-dose combinations of fluoroquinolone-nitroimidazole for self-treatment, which induced recurrent fixed-drug eruptions [41].

Regarding personal hygiene and sanitation, hostellers exhibited a higher prevalence in the study compared to day scholars. A proportion of hostellers demonstrated adherence to hygiene practices, while a notable percentage did not meet the required standards. Similarly, among day scholars, a segment maintained adequate hygiene, but a proportion did not uphold proper sanitation practices.

In our study, we meticulously analyzed the dietary habits, personal hygiene routines, and responses related to diarrheal episodes and medication practices among medical students. When analyzing dietary habits (Table 3), significant disparities were found in the section related to procuring daily meals and skipping meals between UG students residing in hostels and day scholars. Moreover, PG students residing in hostels and day scholar accommodations exhibited similar significant differences. Interestingly, we did not observe significant differences in the frequency of eating outside among both UG and PG students, indicating diverse practices within the student population.

Moving on to personal hygiene routines (Table 4), we observed noteworthy trends. UG students in hostels and localities demonstrated significant differences, reflecting diverse hygiene practices. Variations were observed, like the stool, indicating diverse experiences during diarrheal episodes. Notably, the practice of purchasing or taking medication without a prescription was significantly prevalent among UG students residing in hostels and localities. Furthermore, the widespread usage of antibiotics during diarrheal episodes was highly significant among both UG and PG students, indicating a common approach to managing such situations. Moreover, differences in the duration of antibiotic usage were noted among UG students in hostels and localities, suggesting potential variations in the treatment duration between these groups.

In summary, our study highlights significant patterns in drug usage for diarrhea, personal hygiene, and sanitation practices among day scholars and hostellers of UG and PG medical students and also illuminates the dietary habits, personal hygiene practices, and responses related to diarrheal episodes and medication usage among medical students. These findings provide valuable insights into the behaviors and practices within this student population, aiding in the formulation of targeted interventions to improve hygiene standards and healthcare practices among medical students.

CONCLUSION

The study highlights the need for awareness programs focused on rational drug use. Medical education curricula should be rethought to include targeted awareness programs, emphasizing the side effects of self-medication and the risks associated with antibiotic virus abuse.

Furthermore, our findings highlight the importance of promoting healthy dietary practices and personal hygiene practices among medical students. Addressing these aspects is important to promote a healthy student body and prevent the spread of diseases.

Thus, interventions should be designed to address identified gaps in knowledge and practice and to foster a culture of responsible self-medication, healthy eating, and the practice of personal hygiene with the proper encouragement. Educational institutions and health authorities should collaborate to implement targeted interventions, raise awareness, and redefine educational approaches. When students are empowered with knowledge, it contributes greatly to their overall health and their effectiveness as future health professionals.

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AUTHORS' CONTRIBUTIONS

Conceptualization: Dr. Pooja Mishra, Dr. Avina Kharat; Methodology: Dr. Pooja Mishra, Dr. Ashutosh Tiwari, Dr. Meghna Shinde, Dr. Avina Kharat; Formal Analysis: Data collection; Writing–Original Draft Preparation: Dr. Avina Kharat, Dr. Ashutosh Tiwari, Dr. Meghna Shinde; Final Review: Dr. Pooja Mishra, Dr. Ashutosh Tiwari, Dr. Meghna Shinde, Dr. Avin Kharat.

CONFLICT OF INTEREST

The author declares no conflict of interest.

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