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Original Research Article

Assessment of Knowledge, Attitude, and Practices Regarding Rational Drug Utilization among Undergraduate Medical Students at Government Medical College Suryapet, Telangana

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Abstract:

Introduction: Rational drug use refers to the precise administration of medications, including appropriate dosage, duration, clinical relevance and affordability. This study aims to assess the Knowledge, Attitude, and Practice (KAP) related to the rational utilization of medications.

Methods: The study involved 300 undergraduate medical students from Government Medical College Suryapet. Demographic information and KAP regarding medicine use were gathered through a structured questionnaire. Descriptive statistics, including percentages and frequencies, were used for data analysis.

Results: Socio-demographic data featured 18-20 years (60%), 20-23 years (30%), and >23 years (10%) age groups. Gender distribution was 45% male and 55% female. Year of study distribution was 30% 2nd year, 40% 3rd year, and 30% 4th year. Knowledge: Seventy percent of students familiar with over the counter (OTC) medicines, only 40% were aware of OTC medicines can be safely taken with prescriptions, and 55% acknowledged price disparities among different brands of the same medicine. Notably, 65% knew precautions for geriatric medicine use. Approximately 75% were informed about medicine expiry periods. Attitude: Sixty percent disagreed that costlier medicines are superior to cheaper ones, and 55% disagreed that medicines from foreign multinational companies are better. 70% disagreed that mass communication is ineffective for educating people about medicines, while 15% believed doctors can solely rely on pharmaceutical industry-provided information. Practice: Eighty percent sought medical consultation before discontinuing medication, while 70% followed doctor's advice diligently. Merely 10% acquired medicines through direct-to-consumer advertising, and 15% reused prescriptions for comparable ailments in others.

Conclusion: The evaluation unveiled varying KAP levels concerning rational medicine use among undergraduate medical students. Thus, results emphasize the need for curriculum improvements and interventions to address gaps in their understanding and behaviours, contributing to better patient care.

Keywords: Rational use of medicines, undergraduate medical students, knowledge, attitude, practices, over the counter, medications.

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Introduction

According to the World Health Organization (WHO), rational use of medicines entails ensuring that patients are provided with medications that align with their clinical requirements, prescribed at dosages tailored to their individual needs, administered for the necessary duration, and at a cost that is minimally burdensome for both the individual and their community. [1]

Effective healthcare infrastructure should be designed to meet the needs of individuals and communities alike, ensuring that the right medications, characterized by quality, safety, and efficacy, are readily accessible, affordable, and promoted appropriately. [2] The concept of 'Rational use' of medications has, at times, been substituted with alternative phrases such as 'responsible use of medications' or 'effective prescribing. [3]

The surge in irrational medication utilization can be attributed to a multitude of factors. These include misconceptions or deceptive beliefs, lack of awareness among consumers, demands from patients for specific prescriptions, profit-driven practices among healthcare providers, aggressive marketing strategies by the pharmaceutical industry, and inadequate regulatory enforcement. [4] The consequences of this trend are manifold, encompassing escalating treatment expenses,

resource wastage, undesirable side effects, and the alarming emergence of antibiotic resistance, which collectively underscore the urgency of promoting rational drug utilization. [5]

Understanding the perspectives of medical students, who are the future prescribers and practitioners, on the rational utilization of drugs is of paramount importance. Their insights can significantly contribute to addressing this critical issue in healthcare. Therefore, a comprehensive evaluation of their Knowledge, Attitude, and Practices (KAP) concerning the rational use of medications is imperative to identify areas that require attention and improvement.6 Notably, there is a notable scarcity of research dedicated to exploring this specific aspect among medical students, highlighting the pressing need for such a study to bridge the existing knowledge gap and enhance our understanding of this vital subject. [6-7]

Methodology

Study Design: This study employed a cross-sectional survey design to assess the knowledge, attitudes, and practices (KAP) related to the rational utilization of medications among undergraduate MBBS students at Government Medical College, Suryapet, India.

Study Participants: The study included a total of 300 MBBS students who were currently enrolled in the 2nd, 3rd, and 4th years of their medical program at Government Medical College, Suryapet. The selection of participants was based on their availability and willingness to participate in the survey during the study period, which spanned from May 2024 to July 2024.

Data Collection Instrument: A standardized questionnaire was developed for data collection. The questionnaire was divided into several sections, including:

Demographic Information: This section collected data on participants' age, gender, year of study, and other relevant demographic factors.

Knowledge: Questions in this section assessed the participants' understanding of rational drug utilization, appropriate dosages, indications, contraindications, and potential adverse effects.

Attitude: This section explored the attitudes and perceptions of the participants towards responsible medication use, healthcare ethics, and their role as future healthcare professionals.

Practice: Questions in this section focused on the practical aspects of prescribing and administering medications, including following guidelines, patient education, and adherence to ethical standards.

Data Collection: Trained surveyors administered the questionnaire to the selected participants during the study period. Participants were informed about the purpose of the study, and their informed consent was obtained before data collection. Confidentiality and anonymity of the responses were assured to encourage honest and unbiased answers.

Data Analysis: The collected data were analysed using descriptive statistics. Percentages and frequencies were used to summarize the responses in each section of the questionnaire. This analysis aimed to provide a comprehensive overview of the knowledge, attitudes, and practices of the medical students regarding rational drug utilization.

Ethical Considerations: This study adhered to ethical guidelines, ensuring the privacy and confidentiality of participants' responses. Informed consent was obtained from all participants, and the study was approved by the relevant institutional ethics committee.

Result

A total of 300 students actively participated in this study. Table 1 provides an overview of the sociodemographic characteristics of the participants. The age distribution revealed that the majority of respondents fell within the 18-20 years age group (60%), followed by the 20-23 years age group (30%), with a smaller proportion exceeding 23 years (10%). In terms of gender, the study cohort was fairly balanced, with 45% being male and 55% female. Regarding the distribution of academic years, 30% of participants were in their 2nd year of study, 40% in their 3rd year, and the remaining 30% in their 4th year.

Table 1: Sociodemographic data

S. No	Question	Options	percentages
1.	Age	18-20 years 20-23 years >23 years	(60%) (30%) (10%)
2.	Gender	Male Female.	45% 55%
3.	Year of study	2nd year 3rd year, 4th year.	30% 40% 30%

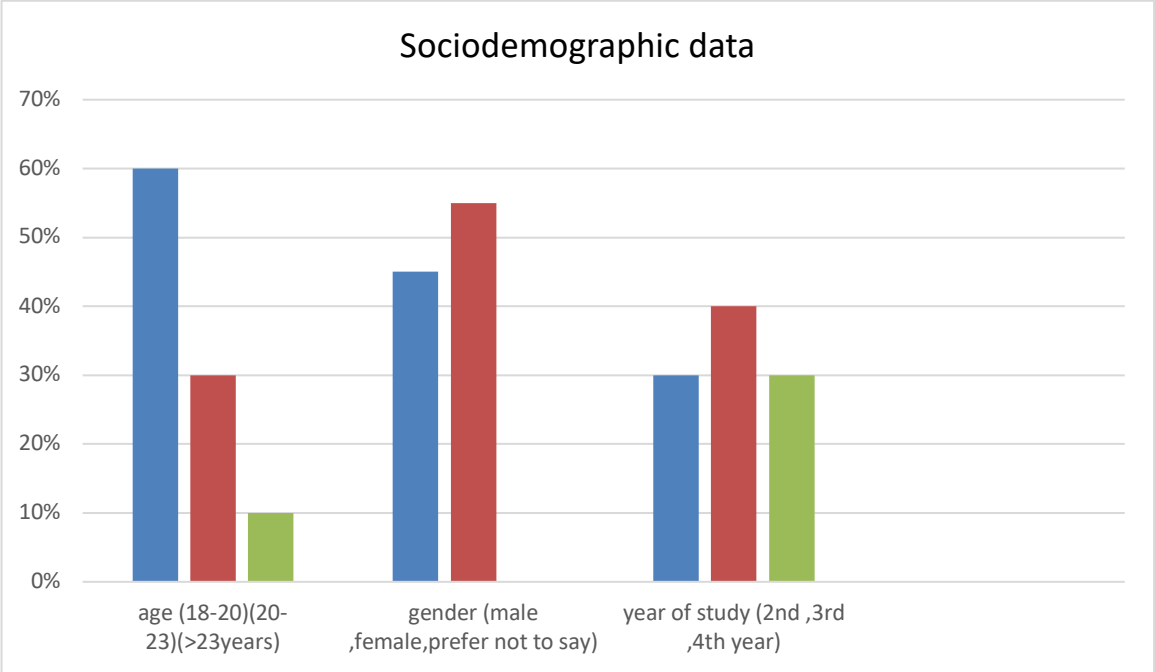

Figure 1: Sociodemographic data

Table 2 presents the respondents' knowledge regarding the rational use of medicine. Notably, 70% of the students exhibited familiarity with over-the-counter (OTC) medicines. However, only 40% were aware that prescription medications available over-the-counter could be taken without associated risks. Additionally, 55% of the respondents recognized the existence of price disparities among different brands of the same medicine. It is noteworthy that 65% of the participant's demonstrated knowledge of precautions associated with geriatric medicine use. Moreover, a significant majority, approximately 75%, were well-informed about medicine expiry periods.

Table 2: Evaluation of respondent's knowledge about medicine use

S. No	Question	options	answers
1.	Aware about OTC medicines	a) yes b) No c) Not aware	70% (210) 24% (72) 6% (18)
2.	Over the counter can be safely taken with prescription medicines	a) yes b) No c) Not aware	40% (120) 45% (135) 15% (45)
3.	Are you aware of the substantial price differences between several brands of the same medication.	a) yes b) No c) Not aware	55% (165) 33% (99) 12% (36)
4.	Are you aware of the safety measures to be taken while administering drugs to the elderly.	a) yes b) No c) Not aware	65% (195) 27% (81) 8% (24)
5.	Are you aware about the expiry date of medicines	a) yes b) No c) Not aware	75% (225) 19% (57) 6% (18)

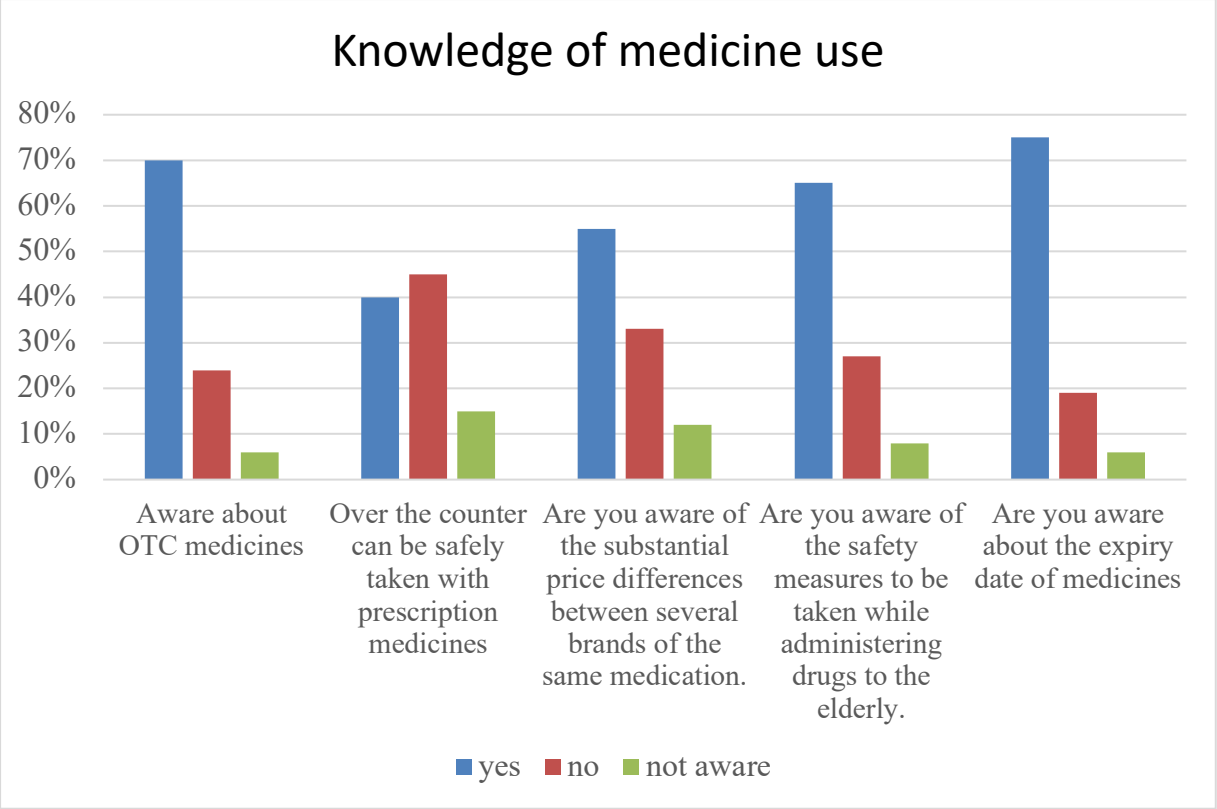

Figure 2: Knowledge of medicine use

Table 3 illustrates the respondents' attitudes towards the rational use of medicine. Notably, 60% of the participants disagreed with the notion that more expensive medications are superior to less expensive ones.

Similarly, 55% expressed disagreement with the idea that medications manufactured by overseas multinational corporations are preferable.

Regarding the role of mass communication in medicine education, a substantial 70% of respondents disagreed with the statement suggesting that mass communication is ineffective for educating people about medicines.

Conversely, only 15% believed that doctors could rely solely on information provided by the pharmaceutical industry.

Table 3: Evaluation of respondent's attitude of medication use

S.No	Question	options	answers
1.	Costlier medications are superior to less expensive ones.	a) yes b) No c) Not aware	31% (93) 60% (180) 9% (27)
2.	Does overseas multinational companies produce better medicines	a) yes b) No c) Not aware	38% (114) 55% (165) 7% (21)
3.	Mass communication is not an effective way to educate people about medicines.	a) yes b) No c) Not aware	26% (78) 70% (210) 4% (12)
4.	Doctors can rely entirely on the information about medicines given by the pharmaceutical industry.	a) yes b) No c) Not aware	15% (45) 26% (78) 59% (177)

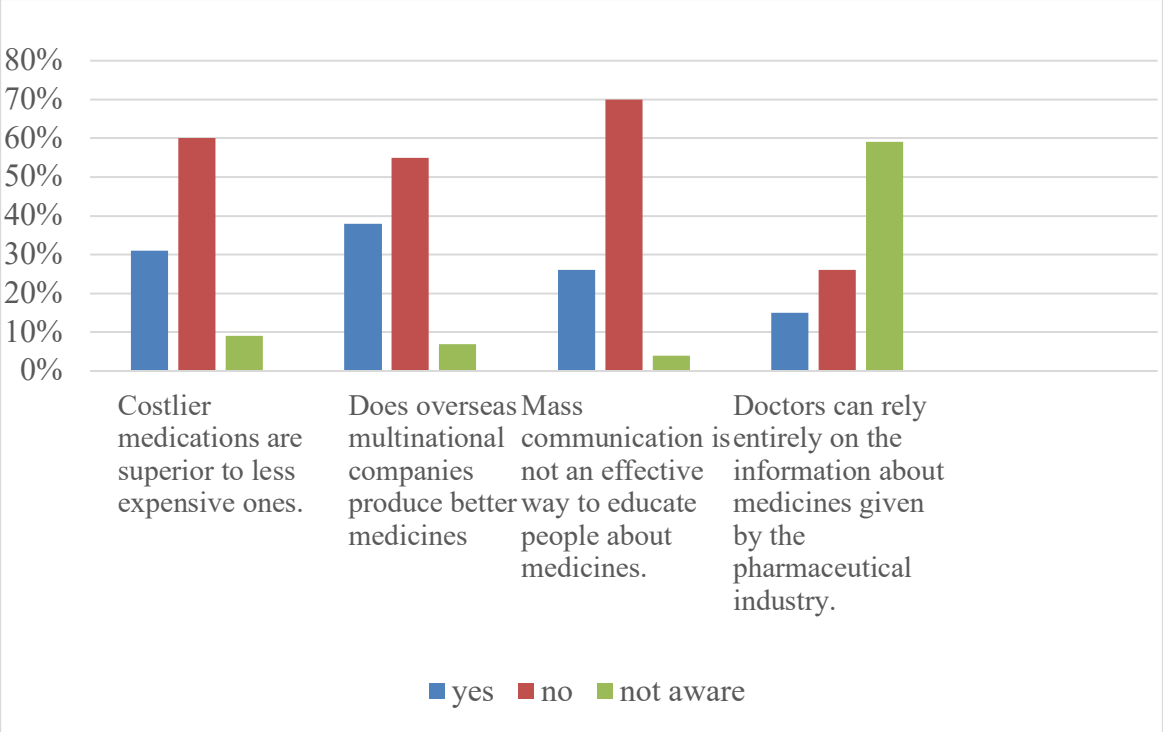

Figure 3: Attitude of medication use

Table 4 provides an evaluation of the respondents' practices related to medicine use and rationality. Notably, a substantial 80% of the participants indicated that they sought medical consultation before discontinuing any medication. Additionally, a significant 70% of respondents reported diligently following their doctor's advice in matters related to medication. However, only a small proportion, specifically 10%, acquired medicines through direct-to-consumer advertising.

Furthermore, 15% of the respondents acknowledged reusing prescriptions for similar ailments in other individuals.

Table 4: evaluation of respondent's practice of medicine use

S.No	Question	options	answers
1.	consult a physician before discontinuing medication	a) yes b) No c) Not aware	80% (240) 20% (60%) 0%
2.	Follow the doctor's recommendations and instructions	a) yes b) No c) Not aware	70% (210) 37% (81) 3% (9)
3.	Do you ever buy medications via direct-to-consumer advertising	a) yes b) No c) Not aware	10% (30) 90% (270) 0%
4.	Do you give a different person a doctor's prescription for a similar ailment?	a) yes b) No c) Not aware	15% (45) 73% (219) 12% (36)

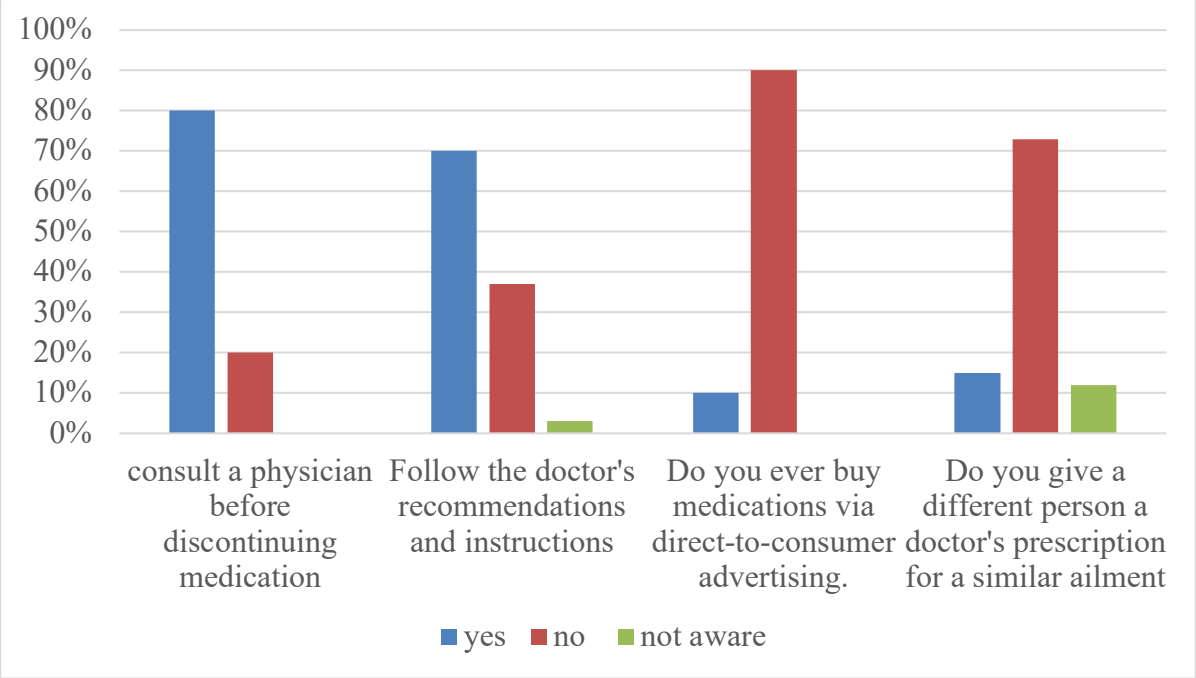

Figure 4: Practice of medicine use

Discussion

In alignment with the guidelines set forth by the World Health Organization (WHO), the National Rural Health Mission recommends an essential step in the pursuit of rational drug use policy: the integration of rational drug use education into the curriculum for medical students. The effectiveness of educating future healthcare professionals about rational drug use hinges on a profound understanding of their existing knowledge, attitudes, and competencies. Students, in their formative learning phase, are susceptible to a myriad of influences that can either positively or negatively impact their judgment.

In the context of this study, we evaluated the comprehension, attitudes, and practices related to rational drug use among second, third, and fourth-year medical students. Encouragingly, most of the issues covered in the questionnaire were familiar to the majority of respondents.

However, it is imperative to provide comprehensive education to these students, who will soon be entrusted with the responsibility of prescribing medications. Notably, only 40% of participants were aware that over-the-counter drugs can be safely used with a prescription, 19% were unaware of the inadvisability of using expired drugs, and 65% recognized the importance of cautious medication use in the elderly population.

Teaching hospitals bear a moral responsibility to champion the cause of rational drug utilization, and their faculty members are best positioned to in still this critical concept in the minds of budding medical professionals. Medical students, at this stage of their education, exhibit a high degree of receptiveness to new ideas and perspectives, making it an opportune time to in still the principles of rational drug use. The insights garnered from this study have the potential to catalyse targeted interventions for this group of medical students, who play a pivotal role in promoting rational drug use. While doctors constitute a significant portion of global prescribers, the issue of irrational medication use persists and is on the rise, contributing to prescription errors and the ensuing human and economic toll, as evidenced by existing literature. Therefore, focusing on the education and training of future physicians in the nuances of rational drug use is paramount to addressing this pressing global concern. [12-16]

Conclusion

The assessment of knowledge, attitudes, and practices (KAP) related to rational drug use among undergraduate medical students has revealed disparities in their levels of understanding and behaviour. These findings underscore the importance of implementing curriculum enhancements and targeted interventions to bridge the identified gaps. Such initiatives hold the potential to significantly improve the quality of patient care delivered by these future healthcare professionals.

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