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KNOWLEDGE, AWARENESS AND ATTITUDES REGARDING THE RATIONAL USE OF MEDICINES BETWEEN COMMUNITY PHARMACISTS AND PHARMACY STUDENTS

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ABSTRACT

Background: Rational Drug Use (RDU) is crucial in ensuring safe and efficient medication practices, but awareness levels between healthcare practitioners might differ. **Objective:** The objective of this research was to evaluate and contrast the knowledge, awareness, and attitudes towards RDU among final-year or internship-level pharmacy students and community pharmacists regarding self-medication, implications of terminating medication, and reading medicine labels. **Methodology:** Three-month prospective observational study in May 2025 in pharmacy colleges and community pharmacies with participation of 176 students and pharmacists (96 students and 80 pharmacists) excluding nurses working in multispecialty, medical college hospitals, and nursing homes. **Result:** Pharmacists showed higher awareness about RDU (76.25%) compared to students (40.63%), most likely because of exposure to field experiences, and pharmacists were more aware of risk related to self-medication (65%) than students (52%). Instruction reading was somewhat more prevalent among students, and pharmacists (61.25%) were better trained in dealing with medicines compared to students (48.75%). Pharmacists were also better informed regarding antibiotic resistance. The paper concludes that both groups need enhanced education on safe use of medicines to support the health of the community.

KEYWORDS: Rational drug use, Pharmacy students, Pharmacists, Awareness.

INTRODUCTION

In today world, especially in developing countries such as India, irrational use of medicines has emerged as a serious public health concern. Medicines are often prescribed or marketed in improper, unsafe, or unwarranted manners, which not only adversely affects patient health but also adds to the economic burden on families and the healthcare system as well. High levels of prescriptions are marked by acts like polypharmacy, where several medications are prescribed without proper need, incorrect usage of antibiotics, and preferring high-priced branded drugs over equally effective generic ones.[1] These trends lead to ineffective treatment, undue delay in recovery, and more hospital visits, putting additional pressure on already strained medical facilities.[2]

Among the key reasons for this issue is the overall unawareness by the patients, as they think that more medication will result in faster recovery. Most people also take leftover medicines and share them with others without realizing the dangers involved, especially with antibiotics, which may develop drug resistance and lose their effectiveness.[3] Adding to this is the lack of strong regulation in the private health care industry, where most clinics stand alone with minimal regulation and profit interests at times superseding patient wellness.[4]

While government hospitals adhere to some norms of prescribing, the absence of across-the-board uniform regulation paves the way for mass abuse in the private sector. As a reaction to this increasing issue, global institutions such as the World Health Organization have highlighted the significance of Rational Drug Use, giving rise to national policies such as India's National Action Plan (2014–2017), which was designed to ensure that the right drug is prescribed for the right condition, in the right dose, for the right duration, and at a reasonable price.[5]

Even with such initiatives, irrational prescribing persists, most commonly due to inadequate awareness of current treatment guidelines among medical professionals or pressure from patients seeking unnecessary drugs. Such aggressive marketing by drug firms also affects physicians in prescribing expensive or inappropriate medicines.[6] Most medical professionals are not well-trained in rational prescribing practices and do not have wide exposure to continuing education, particularly in remote regions where even the health system is poorly developed.[7]

The dearth of highly qualified pharmacists in minor cities also exacerbates the problem. While city hospitals can avail themselves of pharmacy experts who offer follow-up and counseling, these facilities are not available in tier 2 and tier 3 cities.[7] Moreover, inadequate communication between doctors, pharmacists, and patients renders people unaware of how to take their medication, and thus it is misused, doses are missed, or treatment is abandoned too early.[8]

METHODOLOGY

Study Type: A Prospective Observational Study.

Study Period: Three months was conducted (From April – June 2025)

Study Site: The study was conducted in pharmacy colleges (for students) and community pharmacists (for practicing pharmacists).

Study population: A total of 176 peoples took part in this study. There are (96 - pharmacy students) and (80-community pharmacists)

STUDY CRITERIA

Inclusion criteria

- Final-year or internship-level pharmacy students
- Registered pharmacists working in regular (community) pharmacies

Exclusion criteria

- Pharmacist in nursing home,
- Multispecialty hospitals,
- Medical college hospital

STUDY PROCEDURE

The study was carried out by giving a set of questions to pharmacy students and community pharmacists to understand their knowledge and awareness about Rational Drug Use (RDU). The students were from the final year or internship level, and the pharmacists were those working in regular community pharmacies. Before starting, the purpose of the study was explained, and their willingness to take part was confirmed. The questions were given directly, and each person answered them on their own. Their answers were collected carefully on the same day. Later, the information from all participants was brought together and checked to see the level of awareness among students and pharmacists.

STUDY ANALYSIS

Data were entered in Excel and analyzed using frequency and percentage. Chi-square test was applied to compare awareness levels between students and pharmacists. Results were presented in tables, bar charts, and pie charts for clear understanding.

OBSERVATION AND RESULT

Gender and Occupation –wise distribution

A total of 176 participants took part in the survey. Among pharmacy students, 62 were male and 34 were female, while among community pharmacists, 58 were male and 22 were female.

Table 1: Gender and Occupation –wise distribution

Gender and Occupation –wise distribution	Frequency	Percentage (%)	Chi-square
Pharmacy students			
a) Male	62	64.58	0.18
b) Female	34	35.41	0.39
Community pharmacists			
a)Male	58	72.5	0.21
b)Female	22	27.5	0.46

The table shows that males are higher number than females among both students (64.58% - male & 35.41% - female) and pharmacists (72.5% - male & 27.5% - female).

Awareness Level of Rational Drug Use (RDU)

The collected responses were analyzed using frequency and percentage to describe the awareness on RDU. A chi-square test was applied to compare the difference between pharmacy students and community pharmacists.

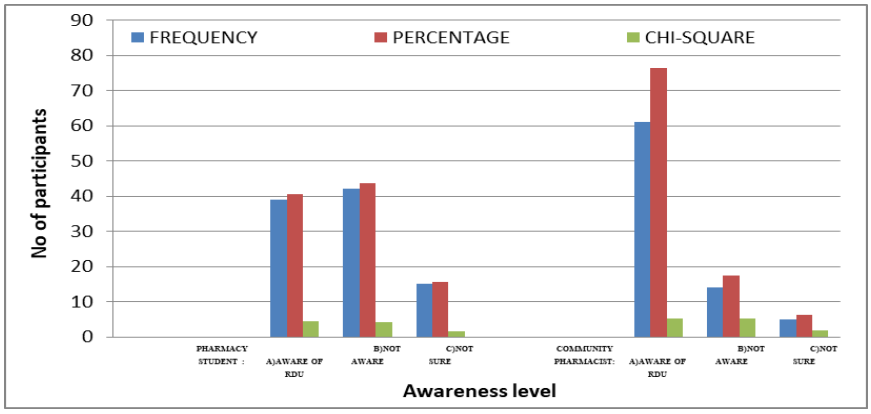

Figure 1: Awareness Level of Rational Drug Use (RDU).

The graph shows community pharmacists 61(76.25%) are more aware of rational drug use compared to pharmacy students 39 (40.62%).

Awareness about Stopping Medication

The data were analyzed using frequency and percentage. Chi-square test was used to compare the awareness of stopping medication between pharmacy students and community pharmacists.

Table 2: Comparison of awareness about stopping medication

Awareness about Stopping Medication	Frequency	Percentage	Chi-square
Pharmacy students :			
a) Yes	50	52.08	0.76
b) No	24	25	1.61
c) Not sure	22	22.91	0.07
Community pharmacists :			
a) Yes	52	65	0.91
b) No	19	23.78	1.94
c) Not sure	09	11.25	0.09

The table shows community pharmacists 52(65%) are more awareness about stopping medication compared to pharmacy students 50 (52.08%).

Risk of Self-Medication

The risk of self-medication was summarized using frequency and percentage. A pie chart was used to give a clear visual comparison between pharmacy students and community pharmacists.

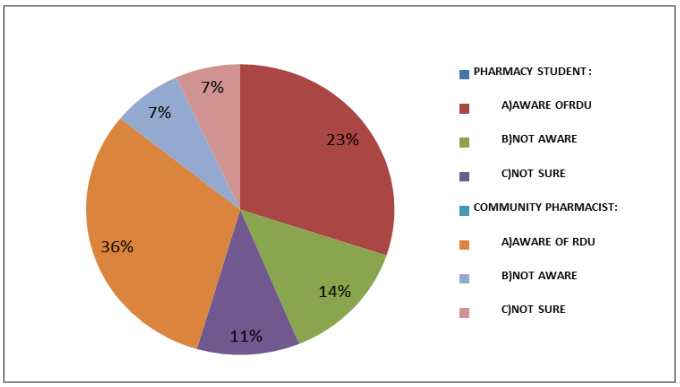

Figure 2: Risk of Self-Medication.

Community pharmacists (36%) shows a higher awareness compared to pharmacy students (23%), reduce the risk of self medication.

Reading Instructions before Taking Medication

In this table, most participants reported that they read the instructions before taking medicines. A higher percentage was observed among community pharmacists pharmacy students compared to pharmacy students, and the difference was tested using chi-square analysis.

Table 3: Comparison of reading instruction before taking medication

Reading Instructions Before Taking Medication	Frequency	Percentage	Chi-square
Pharmacy students :			
a) Always	44	45.83	0.07
b) Sometimes	50	52.08	0.49
c) Never	2	2.08	1.72
Community pharmacists :			
a) Always	40	50	0.08
b) Sometimes	33	41.25	0.59
c) Never	7	8.75	2.06

Both groups mostly read instructions before taking medication, but community pharmacist shows a slightly higher rate of “always” reading, while students tend to read “sometimes”.

Education or Training on Handling of Prescription

The responses on education or training in handling prescriptions were calculated as frequency and percentage. A pie chart was used to clearly show the difference

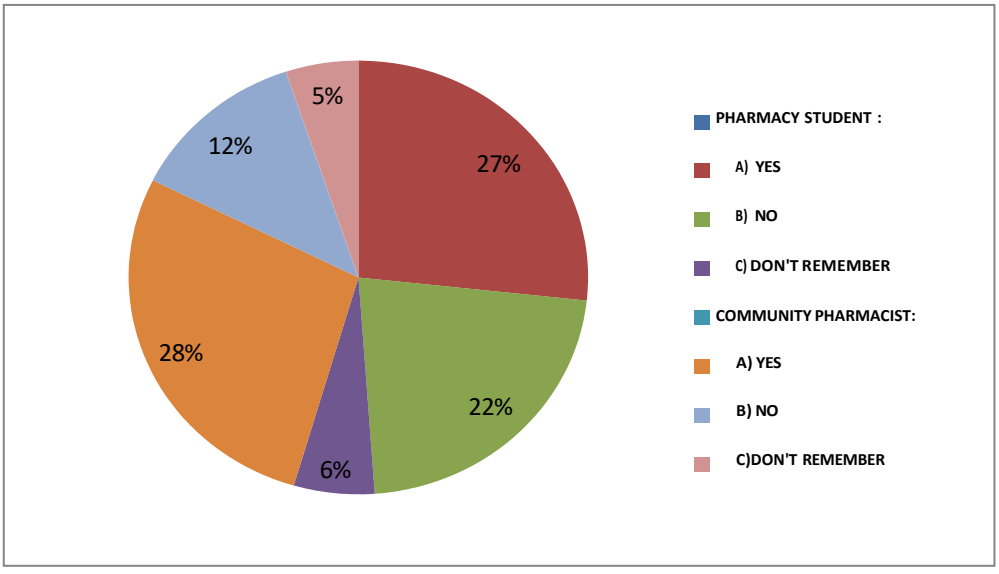

Figure 3: Education or Training on Handling of Prescription.

Community pharmacist (28%) shows slightly higher training exposure compared to pharmacy students (27%).

Responsibility for RDU and Awareness of Antibiotic Resistance

The data on responsibility of RDU and antibiotic resistance were analyzed using frequency and percentage. A line graph was used to compare the response patterns between pharmacy students and community pharmacists.

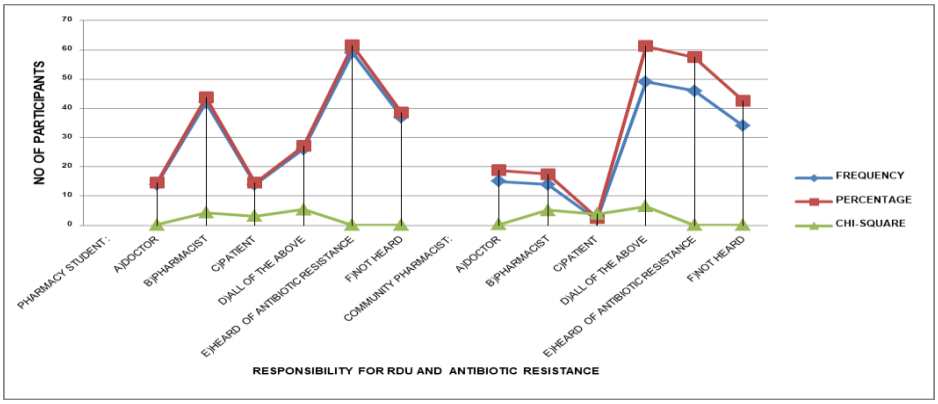

Figure 4: Responsibility for RDU and Awareness of Antibiotic Resistance.

Pharmacy students mostly assign responsibility for RDU to pharmacists (43.75%), while community pharmacists believe it lies with all the above (61.25%). Awareness of antibiotic resistance was 61.45% in students and 57.5% in pharmacists, while non-awareness was 38.54% and 42.5% respectively.

DISCUSSION

In our study, males were more in number among both students (64.6%) and pharmacists (72.5%). But in a study from UAE, more females (51.8%) were working as pharmacists. This shows that gender differences vary from place to place.[9]

In our survey, fewer students (40.6%) knew about RDU compared to pharmacists (76.2%). In Thailand, a study found that 74.4% of students were already aware of RDU. This means students in our setting had less awareness than students in other countries.[10]

More than half of our students (52.1%) knew about stopping medicines correctly, but only 38.7% of pharmacists knew this. In China, only 44.5% of students followed proper steps when stopping medicines. Our students did slightly better, but pharmacists showed weaker awareness.[11]

We found that 65.6% of students and 50% of pharmacists were aware of the risks of self-medication. In Saudi Arabia, only 39% of students knew the risks, even though many practiced it. This means awareness was higher in our group compared to that study.[12]

Most students (45.8% always, 52% sometimes) and 50% of pharmacists read instructions before taking medicines. In another study from Riyadh, only 42% of patients read instructions. Our participants showed better practice than the general public.[13]

In our study, 59.3% of students and 48.7% of pharmacists said they had training for handling prescriptions. In India, less than half of pharmacists had such training. Both studies show that training is not enough and needs improvement.[14]

Our results showed that students mostly gave responsibility to pharmacists (43.7%), while most pharmacists (61.2%) said “all of the above.” Awareness of antibiotic resistance was also higher in students (61.4%) than pharmacists (57.5%). In Tanzania, 68.9% of pharmacists said responsibility should be shared by doctors, pharmacists, and patients. Both results agree that teamwork is important in controlling antibiotic resistance.[15]

CONCLUSION

In this Studies on community pharmacists and pharmacy students generally find mixed results regarding their knowledge, awareness, and attitudes toward the rational use of medicines (RUM). While many are aware of basic RUM principles, there are significant gaps, particularly in patient counseling, side effects, medication compliance, and drug interactions. Pharmacy students often show strong understanding of clinical aspects and OTCs but require further education on safety standards and labeling. Continuous educational efforts and targeted interventions are needed to enhance both pharmacist and student competency in promoting rational drug use.

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