

Knowledge, Attitude, Medication Adherence and Self Medication Practices Among Healthcare Students from the Metropolitan City of South India.

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Abstract:

Background: Self-Medication is the use of medicines without consulting a healthcare professional. Among healthcare students, medical knowledge and easy access to medicines may influence their medication use. Understanding their knowledge, attitude, medication adherence, and self-medication practices is important to promote safe and responsible medicine use.

Objectives: The study aims to assess healthcare students' knowledge, attitude, self-medication practices, and medication adherence, and to compare these aspects among different groups of healthcare students.

Methods: A prospective observational study was conducted among 200 final-year healthcare students from Pharmacy, Nursing, Physiotherapy and AHS. The study was conducted over 5 months from May to September 2026. Data were collected using a structured 40-question Google Form assessing knowledge, attitude, medication adherence and self-medication practices. Data were analysed using Google Form Spreadsheet and interpreted accordingly.

Result: A total of 200 students were analysed. Pharmacy students had the highest knowledge score (349, 69.8%) and medication adherence score (332, 66.4%), while Nursing students had the highest practice score (304, 60.8%) and AHS students had the highest attitude score (330, 66%).

Conclusion: The study concluded that knowledge, attitude, medication adherence and self-medication practices varied among healthcare students. Pharmacy students showed better knowledge and medication adherence, while Allied Health Sciences students had a more positive attitude. Nursing students demonstrated better self-medication practices. These differences may be associated with variations in academic background and clinical exposure. Regular educational and awareness programmes are needed to promote safe and rational use of medicines.

Keywords: Knowledge, Attitude, Medication Adherence and Self Medication Practices.

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I. Introduction

Self-Medication

Self-medication has become a rapidly expanding component of modern healthcare behaviour and is widely recognized as a significant public health concern across the globe.¹ It refers to the use of medicinal products by individuals to treat self-recognized illnesses or symptoms without consultation with a qualified healthcare professional.² Self-medication includes the selection, purchase, and administration of medicines without prescription.³ It also involves the reuse of previous prescriptions for similar illnesses, the use of leftover medicines from previous treatments, and sharing medicines among family members and friends.¹ The increasing trend of self-medication is influenced by the easy availability of over-the-counter medicines, rising health awareness, accessibility of medical information through digital platforms, and time constraints associated with seeking professional healthcare services.⁴ The World Health Organization recognizes self-medication as an important element of self-care. Responsible self-medication can contribute to efficient healthcare utilization and may reduce the burden on healthcare systems when used appropriately.² However, irrational and unsupervised medication use can lead to adverse drug reactions, antimicrobial resistance, incorrect treatment outcomes, delayed diagnosis and other health complications.¹

Self-medication continues to be recognized as an important component of self-care and has become increasingly prevalent among different population groups worldwide, particularly among medical and health science students because of their growing medical knowledge and easy access to medicines.⁵ Recent studies have demonstrated that self-medication is widely practiced among undergraduate healthcare students across different countries despite continuous efforts to promote the rational use of medicines.⁶ The major reasons reported for self-medication include previous experience with the same illness, convenience, saving time and money, easy availability of medicines, mildness of symptoms and avoiding consultation with healthcare professionals.⁷ Healthcare students represent a unique population because their academic background enables them to acquire substantial knowledge regarding diseases, medicines, and therapeutic interventions at an early stage of their professional education.⁴

Knowledge About Self-Medication

Knowledge regarding self-medication refers to an individual's understanding of the appropriate selection, use, benefits, risks, and limitations of medicines used without direct medical supervision.³ Adequate knowledge enables individuals to make informed decisions when managing minor illnesses through responsible self-medication.⁷ Healthcare and medical students are expected to possess greater knowledge of medicines because of their academic exposure to pharmacology, therapeutics, and disease management.⁸ Knowledge of self-medication includes understanding both the benefits and the limitations of using medicines without direct medical supervision.⁹ Students should understand that not every illness is suitable for self-medication and that persistent or severe symptoms require professional medical evaluation.⁷

Knowledge regarding the correct indication of medicines helps prevent inappropriate drug selection and unnecessary medicine consumption.⁶ Awareness of the dosage and frequency of administration is essential for achieving therapeutic effectiveness and minimizing adverse effects. Understanding the recommended duration of treatment reduces the risk of treatment failure.⁹ Knowledge of possible adverse drug reactions enables individuals to recognize early warning signs and seek medical attention when necessary.⁸ Awareness of potential drug–drug and drug–food interactions contributes to the safe use of medicines during self-medication. Knowledge regarding contraindications is important because certain medicines may not be suitable for individuals with specific diseases or physiological conditions.⁴ Knowledge regarding antibiotic use is particularly important because inappropriate antibiotic consumption contributes to antimicrobial resistance.⁷ Improving knowledge regarding self-medication among future healthcare professionals can promote rational medicine use and improve patient safety within the community.⁹

Attitude Towards Self-Medication

Attitude towards self-medication reflects an individual's beliefs, opinions, and perceptions regarding the use of medicines without direct consultation.¹⁰ Attitude plays a significant role in medicine-use behaviour because it affects how individuals perceive the benefits and risks of self-medication.⁸ Among healthcare and medical students, attitudes towards self-medication are shaped by academic knowledge, previous experiences, accessibility of medicines, and confidence in managing common illnesses.⁶ A positive attitude does not necessarily indicate irrational medicine use, as responsible self-medication can contribute to effective self-care when practiced appropriately.¹⁰ Similarly, a cautious attitude may encourage individuals to seek medical advice whenever symptoms persist or become severe.⁹

Negative attitudes towards self-medication arise when individuals recognize the potential risks associated with the unsupervised use of medicines.¹¹ Healthcare students who possess cautious attitudes generally believe that medicines should not be used without adequate knowledge of their safety and effectiveness.⁷ Concerns regarding incorrect self-diagnosis, adverse drug reactions, drug interactions, antimicrobial resistance, medicine dependence and unnecessary long-term medicine use may encourage students to seek professional guidance.⁹ Students who recognize the importance of evidence-based medicine are less likely to depend on unreliable sources of medicine-related information.¹⁰ Knowledge and attitude are closely related determinants that influence responsible self-medication practices among healthcare students.¹² The combination of knowledge and positive attitudes is considered essential for promoting rational self-medication practices among future healthcare professionals.⁸

Medication Adherence

Medication adherence is a fundamental component of effective healthcare because it determines whether patients obtain the maximum therapeutic benefit from prescribed medicines.¹¹ Medication adherence refers to the extent to which an individual's medicine-taking behaviour corresponds with the recommendations agreed upon with a healthcare provider.¹² Appropriate medication adherence is essential for achieving optimal clinical outcomes, improving quality of life, and preventing disease progression.¹³ Patients who adhere to prescribed treatment plans generally experience better disease control and fewer disease-related complications.¹⁰ Medication adherence represents an individual's commitment to taking medicines according to the prescribed dose, frequency,

timing, and duration. The concept of medication adherence extends beyond simply taking medicines and includes active participation in the overall treatment plan.⁹

Medication adherence involves instructions regarding medicine administration, lifestyle, and scheduled follow-up appointments. Successful adherence depends on the patient's willingness, motivation, and confidence to continue treatment as recommended.⁷ It is influenced by physical, psychological, social, and healthcare-related factors. Forgetfulness, lack of adequate knowledge on medicines, complex medication schedules, fear of adverse drug reactions, financial difficulties, limited healthcare access, inadequate follow-up services, and poor communication between patients and healthcare professionals may contribute to poor medication adherence.⁸ Good communication with healthcare professionals, proper patient counselling, family support, reminder systems and easy access to medicines can significantly improve adherence.¹¹

Practice of Self-Medication

The practice of self-medication has become increasingly common among individuals of different age groups and educational backgrounds worldwide.⁷ Self-medication practice involves the actual use of medicines by individuals to treat self-recognized illnesses without obtaining a current prescription from a qualified healthcare professional.¹⁴ The growing availability of over-the-counter medicines has contributed significantly to the expansion of self-medication practices in many countries.¹¹ Healthcare students frequently practice self-medication because of their familiarity with medicines and confidence in managing common health problems. Self-medication is commonly practiced for the management of minor illnesses such as fever, headache, cough, common cold, sore throat, and gastrointestinal discomfort.¹⁰

Self-medication practice represents the behavioural aspect of medicine use in which individuals independently select and consume medicines for health problems.¹³ The concept includes decision-making related to medicine selection, dosage, frequency, duration of treatment, and discontinuation of therapy.¹⁵ Self-medication practice reflects the application of an individual's knowledge and attitude towards medicine use in real-life.¹⁰ Previous personal experience is one of the most common sources of information influencing self-medication practices.⁷ Community pharmacists are important sources of medicine-related advice, while family members, relatives, the internet and social media also influence medicine-use decisions.¹³ Self-medication practices are shaped by a combination of knowledge, previous experiences, accessibility to medicines, financial conditions and social influences.¹⁶ While responsible self-medication can be beneficial for managing minor illnesses, inappropriate practices may lead to adverse drug reactions, incorrect treatment and antimicrobial resistance.¹⁴ Therefore, improving public awareness and encouraging responsible medicine use are essential to ensure safe and effective self-medication practices.¹¹

Aim:

- To evaluate the knowledge, attitude, medication adherence and self-medication practices among healthcare students.

Objectives:

- To understand the level of knowledge about rational drug use among healthcare students.
- To assess student's attitudes toward medication, use and self-medication.
- To analyse the medication adherence pattern and practices of rational use of medicine among healthcare students.
- To compare knowledge, attitude, practice of self-medication and medication adherence in different group of healthcare students.

II. Methodology

This study was conducted to assess the knowledge, attitude, medication adherence, and practice of self-medication among fourth-year healthcare students of United College. A cross-sectional questionnaire-based survey was adopted for the study. Data were collected using a structured questionnaire prepared in the English language and distributed through Google Forms. The questionnaire consisted of four domains: knowledge, attitude, medication adherence and practice, with 10 questions in each domain. A total of 200 fourth-year healthcare students participated in the study, including 50 Pharmacy, 50 Nursing, 50 Physiotherapy and 50 Allied Health Science (AHS) students. A non-probability convenience sampling technique was used to select the participants. The responses collected through Google Forms were entered into Microsoft Excel for analysis. The findings were presented using tables, graphs, frequencies and percentages to evaluate the level of knowledge, attitude, medication adherence and practice regarding self-medication among the participants.

Study Type:

A Prospective Observational Study.

Study design:

Quantitative Cross-sectional survey.

Study site:

The Study was conducted at different Para Medical Institutions in the Metropolitan City of South India.

Study period:

The study is a prospective experimental study conducting over a period of **5 Months from May 2026 – September 2026**

Study enrolment procedure:

- Undergraduate healthcare students from the different Para Medical Institutions.
- Participants were selected based on Inclusion & Exclusion Criteria.

Inclusion criteria:

- Final year of undergraduate Healthcare Students.
- Students from the Pharmacy, Nursing, Physiotherapy and Allied Health Science (AHS) colleges.
- Students who completed the Google Form questionnaire.
- Students who are willing to participate in the study.

Exclusion criteria:

- Students from other years and other Paramedical courses.
- Incomplete Google Form responses.
- Duplicate responses, if any.

Sample size:

- A total of 200 participants were included in this study.

PHARMACY – 50	NURSING – 50
PHYSIOTHERAPY - 50	ALLIED HEALTH SCIENCE - 50

Data collection:

The questionnaire was prepared using Google Forms and distributed through online to the Final year of healthcare students from different Paramedical Institutions. The responses were collected electronically and organized for analysis.

Study tool:

A structured questionnaire in the English language was used. The questionnaire consisted of following categories,

- ✓ Knowledge – 10 questions
- ✓ Attitude – 10 questions
- ✓ Medication Adherence – 10 questions
- ✓ Practice – 10 questions

Data analysis:

The completed Google Form data were collected from Spread Sheet & used Analytic Statistics methods to draw the tables & graphs & summarise the result & draw the Conclusions.

Study protocol:

- Preparation of the questionnaire.
- Distribution of the questionnaire through Google Forms.
- Collection of responses from Final Year Healthcare students.
- Data analysis using Google Form Spread Sheet.
- Interpretation of the results.
- Preparation of the discussion and conclusion.

III. RESULTS

Scores

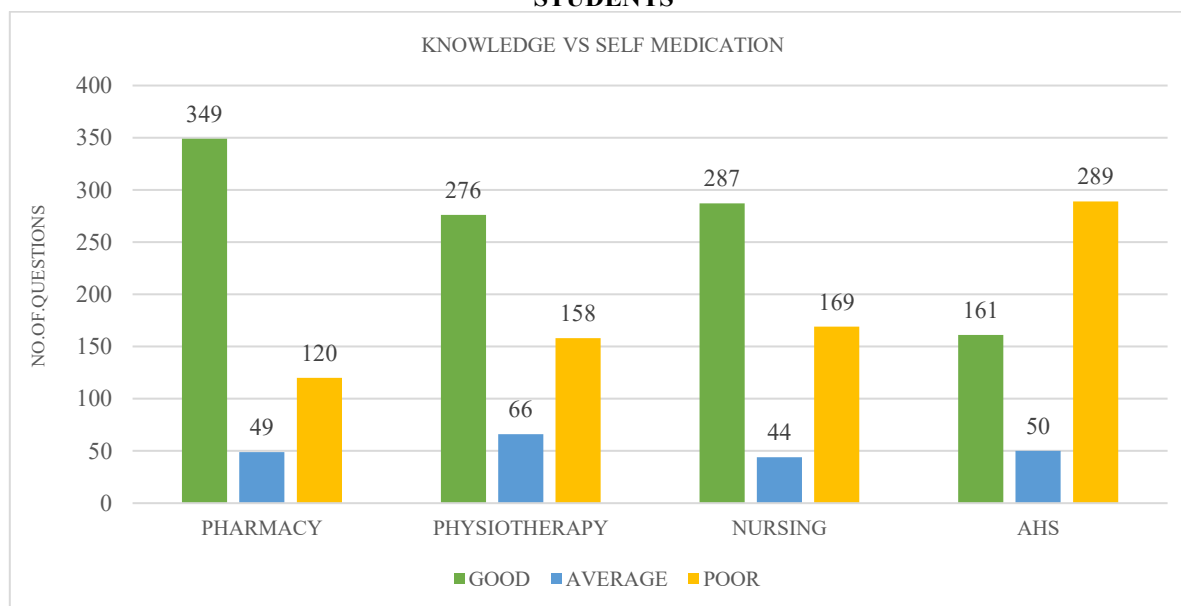
Knowledge scores were assessed based on the participants' responses to the questions. Each response was scored according to its accuracy: 2 points for a correct answer (good), 1 point for a partially correct answer (average), and 0 points for an incorrect answer (poor).

TABLE- 1 COMPARISON OF KNOWLEDGE VS SELF MEDICATION AMONG HEALTH CARE STUDENTS

KNOWLEDGE LEVEL	PHARMACY	PHYSIOTHERAPY	NURSING	AHS
GOOD	349	276	287	161
AVERAGE	49	66	44	50
POOR	120	158	169	289
TOTAL QUESTIONS RESPONSE	500	500	500	500

Data shows the comparison of knowledge among four departments of health care students. Pharmacy students had the highest good knowledge score (349; 69.8%), followed by Nursing (287; 57.4%), Physiotherapy (276; 55.2%), AHS (161; 32.2%). AHS students recorded the highest poor knowledge score (289; 57.8%).

FIGURE-1 COMPARISON OF KNOWLEDGE VS SELF MEDICATION AMONG HEALTH CARE STUDENTS



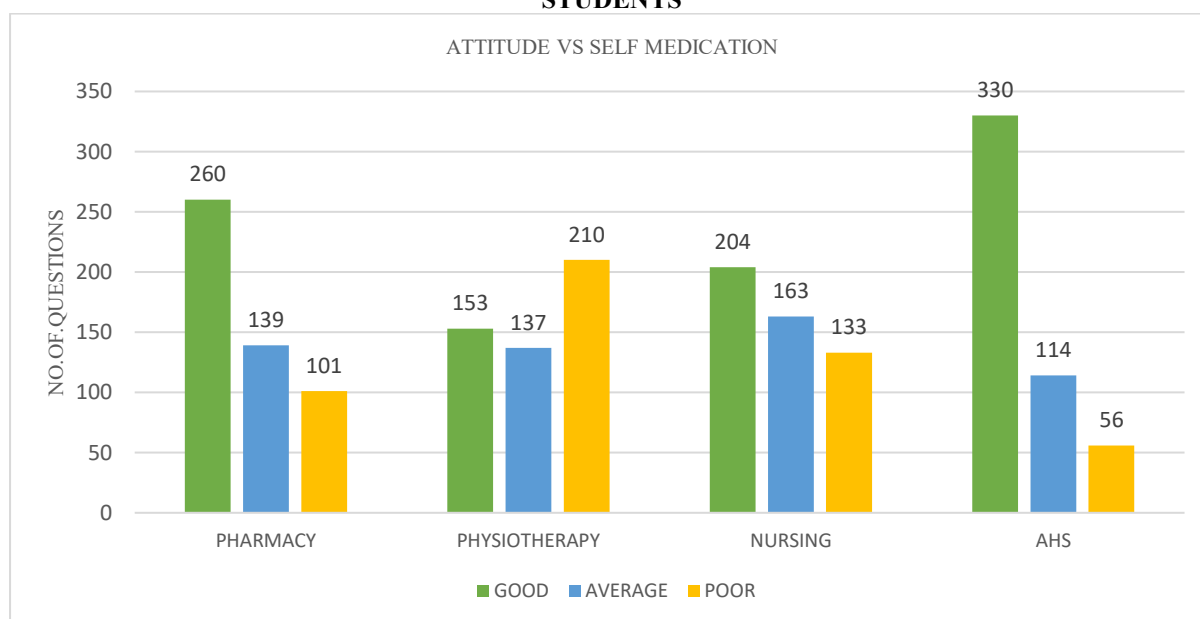
The Graph illustrates the comparison of knowledge among the four healthcare student groups. The graph clearly shows that Pharmacy students had the highest good knowledge score (349; 69.8%), whereas Allied Health Science students recorded the highest poor knowledge score (289; 57.8%).

TABLE-2 COMPARISON OF ATTITUDE VS SELF MEDICATION AMONG HEALTH CARE STUDENTS

ATTITUDE LEVEL	PHARMACY	PHYSIOTHERAPY	NURSING	AHS
GOOD	260	153	204	330
AVERAGE	139	137	163	114
POOR	101	210	133	56
TOTAL QUESTIONS RESPONSE	500	500	500	500

Data shows the comparison of attitude among four departments of Health care students. AHS students demonstrated the highest good attitude score (330; 66.0%), followed by Pharmacy (260; 52.0%), Nursing (204; 40.8%), Physiotherapy (153; 30.6%). Physiotherapy students recorded the highest poor attitude score (210; 42.0%).

FIGURE-2 COMPARISON OF ATTITUDE VS SELF MEDICATION AMONG HEALTH CARE STUDENTS



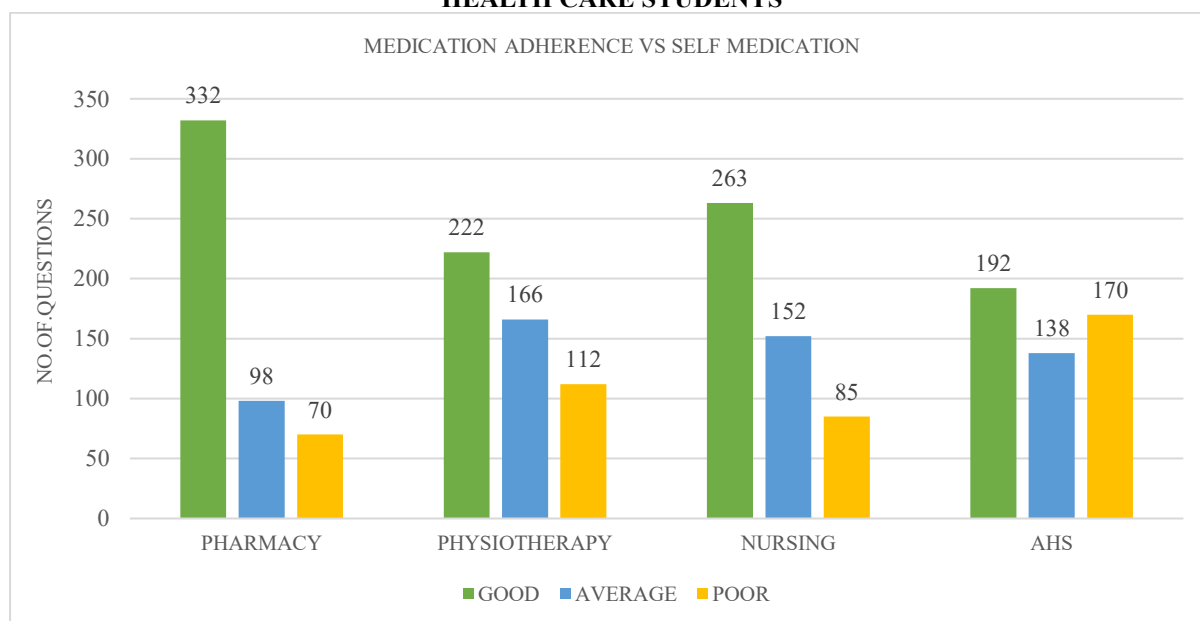
The Graph illustrates the comparison of attitude among the four healthcare student groups. The graph shows that Allied Health Science students had the highest good attitude score (330; 66.0%), while Physiotherapy students recorded the highest poor attitude score (210; 42.0%).

MEDICATION ADHERENCE LEVEL	PHARMACY	PHYSIOTHERAPY	NURSING	AHS
GOOD	332	222	263	192
AVERAGE	98	166	152	138
POOR	70	112	85	170
TOTAL QUESTIONS RESPONSE	500	500	500	500

TABLE-3 COMPARISON OF MEDICATION ADHERENCE VS SELF MEDICATION AMONG HEALTH CARE STUDENTS

Data shows the comparison of medication adherence among four departments of Health care students. Pharmacy students showed the highest good medication adherence (332; 66.4%), followed by Nursing (263; 52.6%), Physiotherapy (222; 44.4%), AHS (192; 38.4%). AHS students recorded the highest poor adherence (170; 34.0%).

FIGURE-3 COMPARISON OF MEDICATION ADHERENCE VS SELF MEDICATION AMONG HEALTH CARE STUDENTS



The Graph illustrates the comparison of medication adherence among the four healthcare student groups. The graph indicates that Pharmacy students achieved the highest good medication adherence score (332; 66.4%), whereas Allied Health Science students recorded the highest poor medication adherence score (170; 34.0%).

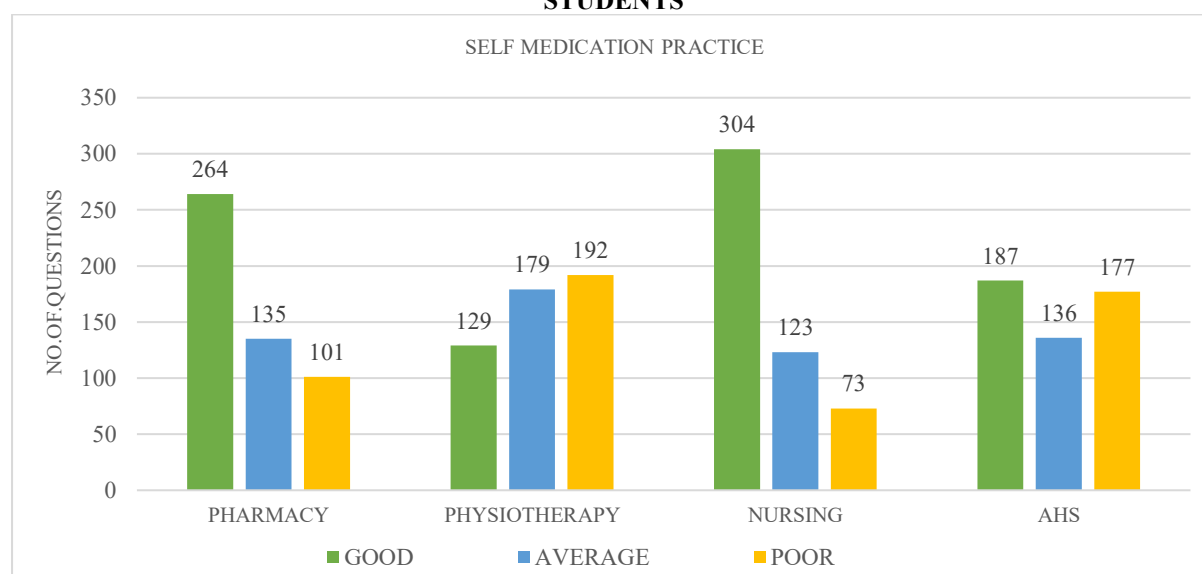
PRACTICE LEVEL	PHARMACY	PHYSIOTHERAPY	NURSING	AHS
GOOD	264	129	304	187

AVERAGE	135	179	123	136
POOR	101	192	73	177
TOTAL QUESTIONS RESPONSE	500	500	500	500

TABLE-4 COMPARISON OF SELF MEDICATION PRACTICE AMONG HEALTH CARE STUDENTS

Data shows the comparison of self-medication practice among four departments of Health care students. Nursing students demonstrated the highest good practice score (304; 60.8%), followed by Pharmacy (264; 52.8%), AHS (187; 37.4%), Physiotherapy (129; 25.8%). Physiotherapy students recorded the highest poor practice score (192; 38.4%).

FIGURE-4 COMPARISON OF SELF MEDICATION PRACTICE AMONG HEALTH CARE STUDENTS



The Graph illustrates the comparison of self-medication practices among the four healthcare student groups. The graph shows that Nursing students had the highest good practice score (304; 60.8%), while Physiotherapy students recorded the highest poor practice score (192; 38.4%).

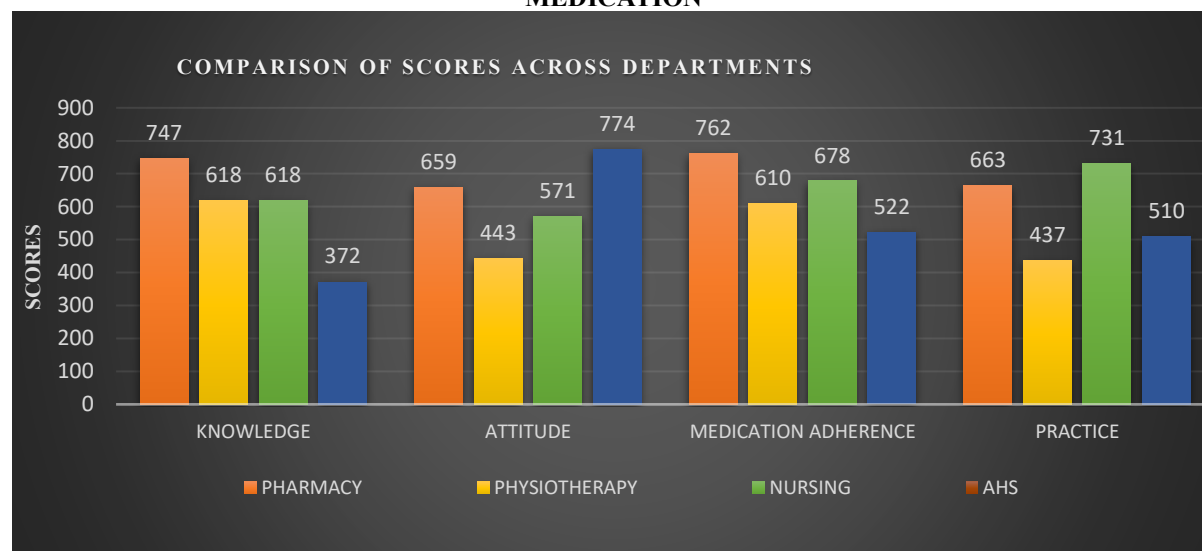
TABLE-5 SCORE WISE DISTRIBUTION OF DIFFERENT DEPARTMENTS THEIR KNOWLEDGE LEVEL, ATTITUDE LEVEL, MEDICATION ADHERENCE AND PRACTICE ABOUT SELF MEDICATION

DEPARTMENTS	PHARMACY	PHYSIOTHERAPY	NURSING	AHS
SCORES				
KNOWLEDGE	747	618	618	372
ATTITUDE	659	443	571	774
MEDICATION ADHERENCE	762	610	678	522

PRACTICE	663	437	731	510
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Data shows the scores of four study domains among students from different health care departments. Pharmacy students had the highest knowledge score (747) and medication adherence score (762).

FIGURE-5 SCORE WISE DISTRIBUTION OF DIFFERENT DEPARTMENTS THEIR KNOWLEDGE LEVEL, ATTITUDE LEVEL, MEDICATION ADHERENCE AND PRACTICE ABOUT SELF MEDICATION



The Graph illustrates the comparison of scores of four study domains among Pharmacy, Physiotherapy, Nursing and AHS students. Pharmacy showed the highest knowledge (747) and medication adherence (762), AHS had the highest attitude (774), Nursing had the highest practice score (731).

TABLE-6 COMPARATIVE ANALYSIS OF KNOWLEDGE, ATTITUDE, MEDICATION ADHERENCE & SELF MEDICATION PRACTICES AMONG THE HEALTH CARE STUDENTS

DIMENSION	PHARMACY		PHYSIOTHERAPY		NURSING		AHS		Pearson X ²	df	P-value	Cramer's V
	n	(%)	n	(%)	n	(%)	n	(%)				
KNOWLEDGE	349	(69.8)	276	(55.2)	287	(57.4)	161	(32.2)	148.268	3	<0.001	0.272
ATTITUDE	260	(52.0)	153	(30.6)	204	(40.8)	330	(66.0)	138.972	3	<0.001	0.264
MEDICATION ADHERENCE	332	(66.4)	222	(44.4)	263	(52.6)	192	(38.4)	88.173	3	<0.001	0.210
PRACTICE	264	(52.8)	129	(25.8)	304	(60.8)	187	(37.4)	148.867	3	<0.001	0.273

INTERPRETATION

1. Knowledge:

There was a statistically significant association/difference in knowledge levels among the four professional groups, $\chi^2(3) = 148.268$, $p < 0.001$.

2. Attitude:

There was a statistically significant difference in attitude among the four professional groups, $\chi^2(3) = 138.972$, $p < 0.001$.

3. Medication adherence:

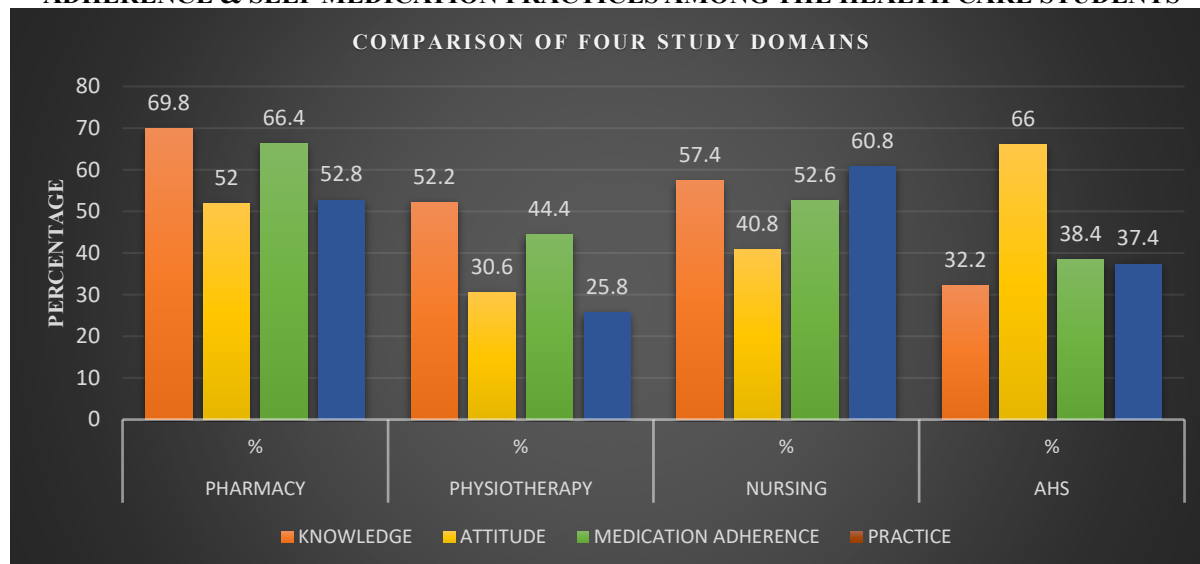
There was a statistically significant difference in medication adherence among the four professional groups, $\chi^2(3) = 88.173$, $p < 0.001$.

4. Practice:

There was a statistically significant difference in practice among the four professional groups, $\chi^2(3) = 148.867$, $p < 0.001$.

Data shows the distribution of knowledge, attitude, medication adherence, and practice among four departments of Health Care students. Pharmacy students had the highest knowledge (349, 69.8%) and medication adherence (332, 66.4%), Nursing students had the highest practice (304, 60.8%), AHS students had the highest attitude (330, 66%).

FIGURE-6 COMPARATIVE ANALYSIS OF KNOWLEDGE, ATTITUDE, MEDICATION ADHERENCE & SELF MEDICATION PRACTICES AMONG THE HEALTH CARE STUDENTS



IV. Discussion

The study revealed noticeable differences among Pharmacy, Nursing, Physiotherapy, and Allied Health Science students in knowledge, attitude, medication adherence, and self-medication practice. These differences indicate that the students' educational background and exposure to medicines may influence their approach to self-medication.

Pharmacy students demonstrated the highest knowledge score (349; 69.8%) and medication adherence score (332; 66.4%). This may be related to their regular academic exposure to medicines, drug actions, adverse effects, and safe medication use.

Allied Health Science students showed the highest attitude score (330; 66.0%), indicating a more favourable attitude towards responsible self-medication. Nursing students achieved the highest practice score (304; 60.8%), possibly due to their clinical exposure and regular contact with patients and medicines.

In contrast, Physiotherapy students showed comparatively lower attitude and practice scores, while Allied Health Science students had lower knowledge and medication adherence. Overall, the findings highlight the need for targeted educational programmes, regular awareness activities, and medication-safety training to promote safe, rational, and responsible self-medication practices among healthcare students.

V. Conclusion

The study conclude that self-medication was commonly practiced among Pharmacy, Physiotherapy, Nursing, and Allied Health Science students, with differences in knowledge, attitude, medication adherence, and practice. Pharmacy students showed the highest knowledge and medication adherence, Nursing students demonstrated the safest practices, and Allied Health Science students had the most positive attitude. Physiotherapy students showed comparatively lower attitude and practice levels. Overall, the findings emphasize the need for regular awareness programmes and medication-safety education to promote responsible self-medication and rational medicine use among healthcare students.

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