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KNOWLEDGE ABOUT POLYPHARMACY AMONG PHARMACY STUDENTS

SHREERAAM J[1], NIRENJEN S[2], SYED FADIL MOHAMMED[3] AND M. VIJEY AANANDHI[4]

1, 2, 3: School of Pharmaceutical Sciences, Vels Institute of Science Technology and Advanced Studies (VISTAS), Chennai, India

4: Department of Pharmaceutical Chemistry and Analysis, School of Pharmaceutical Sciences, Vels Institute of Science Technology and Advanced Studies (VISTAS), Chennai, India

*Corresponding Author: Dr. M. Vijey Aanandhi: E Mail: hodpchemistry@vels.univ.ac.in

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ABSTRACT

Polypharmacy is defined as repeated use of at; east medications is generally common in older adults and small age people at risk and develops the risk of adverse medical results. The aim of the study is to assess the knowledge about polypharmacy among pharmacy students. The objective of this study isto develop a brief instrument for academic pharmacists to use the knowledge of polypharmacy. The main objective is to reduce the risk of side effects and interactions.

To decrease polypharmacy, we explain a methodical, review approach to find highest-risk drugs and drug-therapy problems. Polypharmacy is communal and recurrently shows dealings with problems such as falls, hospitalizations, and death, nevertheless of which medicines are involved. A Questionnaire to evaluate the Knowledge, Attitude and Practices on polypharmacy. Around 270 participants responded to the study questionnaire. Out of which, last 52 participants responses were excluded as the calculated sample size for the study was 218. The opportunity of this study is to ensure knowledge about polypharmacy among pharmacy students and with the results we can clearly see that many future pharmacists are having good knowledge about polypharmacy and are capable of dropping the possible adverse effects and drug interactions. The conclusion of this study is achieved by safeguarding the knowledge about polypharmacy among pharmacy students with the help of the study questionnaire and moreover with the results, we can clearly see that many upcoming student

pharmacists are having proper knowledge about polypharmacy and are capable of dropping the possible adverse effects and drug interactions.

Keywords: polypharmacy, Pharmacy students, Drug interactions

AIM:

To assess the knowledge about polypharmacy among pharmacy students.

OBJECTIVES:

- To develop a brief instrument for academic pharmacists to use the knowledge of polypharmacy.
- The main objective is to reduce the risk of side effects and interactions.

PLAN OF THE STUDY

The entire study was planned to be carried out for a period of 6months (November 2020–April, 2021). The proposed study was designed as given below:

Task	DurationinMonths				
	1	2	3-4	4-5	5-6
Review of Literature	✓				
Designing Proforma		✓			
Ethical Approval		✓			
Participant inclusion and Datacollection		✓	✓	✓	
Follow-up and data collection			✓	✓	
Statistical Analysis				✓	
Publication of the work					✓
Dissertation of Thesis					✓

METHODOLOGY

Study Design: Community based Cross-sectional study using questionnaires

METHOD INVOLVED:

This is a Cross-sectional study which involves pharmacy students.

Study Instruments: A Questionnaire to evaluate the Knowledge, Attitude and Practices onpolypharmacy.

Sample size: Sample size is calculated using Raosoft online sample size calculator. For a random sampling of a population of 100 persons with a confidence interval of 95%, the sample size is found to be 80 with a 5.75 % margin of error.The following formula is used to calculate the size of the required sample

$$\mathbf{n = (Z)^2 \times p\,(1 - p) / d^2}$$

Where;

n = sample size

Z = reliability co-efficient with 95% confidence level = 1.96

p = population variance available from previous data (q = 1 - p)

d = degree of precision or margin of error = 0.05

$n = 1.96^2 \times 0.5\,(1 - 0.5) / 0.05^2 = 384.16$

S.S = 384 students.

New S.S = S.S / 1+ (S.S-1)/Pop

S.S=384, Pop=500

New S.S=218.

PATIENT SELECTION:

Inclusion Criteria:

- Pharmacy Under graduates final years and Post graduate pharmacy students
- Students willing to give consent

Exclusion Criteria:

Students who are not interested to take part.

STUDY PROCEDURE

The questionnaire consists of Knowledge (5 questions), Attitude (5 questions) and Practice (5 questions) sections related to the topic Polypharmacy. All questions in the Knowledge, Attitude and Practice sections were close-ended which are having one correct answer for each question.

A scoring system was applied to assess the level of knowledge, attitude and practice of each participant: 1 point was given for each correct answer and zero for incorrect answer.

Total score for each section was 5.

The study participants were grouped into two categories according to their obtained scores for each section: Adequate and Inadequate

Age group, Gender, Department of work and Area of Residence were the independent variables and Knowledge, Attitude and Practice were the dependent variables.

The questionnaire was prepared using Google forms via docs.google.com/forms.

The Google form link of the questionnaire was sent to the participants via e-mail and other social media platforms.

Upon clicking on the link, it shows the details of the study objective and assured the confidentiality of the study participation and stated that the study participation was completely voluntary. No incentive was given.

Only the principal investigator had access to the data and it was collected and analyzed to determine frequency and percentage using SPSS Software version 17.0.

STATISTICAL ANALYSIS:

Data wereimplied and recorded in the MS Excel spreadsheet database. The obtained data were statistically examined with the help of SPSS Software version 17.0. Continuous data were summarized as mean ± standard deviation. Categorical variables were provided as percentages.The data collected were collated, tabulated and summarized. Results were depicted in the form of tables and graphs. Categorical values were assessed by using Chi - square test. P value < 0.05 was considered to be statistically significant.

Completed questionnaires were coded, reviewed for accuracy; the data were entered into Epidata 3.1 and exported to SPSS version 24 and analyzed using descriptive statistics and logistic regression. The knowledge scores were calculated by

Mean (± SD).

SPSS Output items, typically tables and charts, are easily **copy-pasted** into other programs. For instance, many SPSS users use a word processor such as MS Word, OpenOffice or GoogleDocs for reporting. Tables are usually copied in rich text format, which means they'll retain their styling such as fonts and borders.

RESULTS

Around 270 participants responded to the study questionnaire. Out of which, last 52 participants responses were excluded as the calculated sample size for the study was 218.

Table 1 reveals that the male participants (51.37%) are predominantly more in number than females (48.63%) in this study.

Figure 1 depicts the female participants (48.63%) are less in number than male (51.37%) in this study.

Table 2 shows that most of the population were B.Pharm (55.96%) followed by Pharm.D (37.62%).

Figure 2 depicts that M.Pharm (06.42%) were the least in number and the B.Pharm (55.96%) were predominantly more in number in this study.

Table 3 shows that the question K4 (92.2%) has the highest number of correct responses in the knowledge section.

Figure 3 depicts that the question K3,K5 has the lowest number of correct responses (69.7%) and the question K4 has the highest number of correct responses (92.2%) in the knowledge section.

Table 4 shows that the question A1 (78.9%) has the highest number of correct responses in the attitude section, followed by the question A2 (72.9%).

Figure 4 depicts that the question A4 has the lowest number of correct responses (38.9%) and the question A1 has the highest number of correct responses (78.9%) in the attitude section.

Table 5 shows that the question P3 (89.4%) has the highest number of correct responses in the practice section, followed by the question P5(70.2%).

Figure 5 depicts that the question P2 has the lowest number of correct responses (41.7%) and the question P3 has the highest number of correct responses (89.4%) in the practice section.

Table 1: Gender distribution

Gender	Number of participants (%) (Total n = 218)
Male	112 (51.37%)
Female	106 (48.63%)

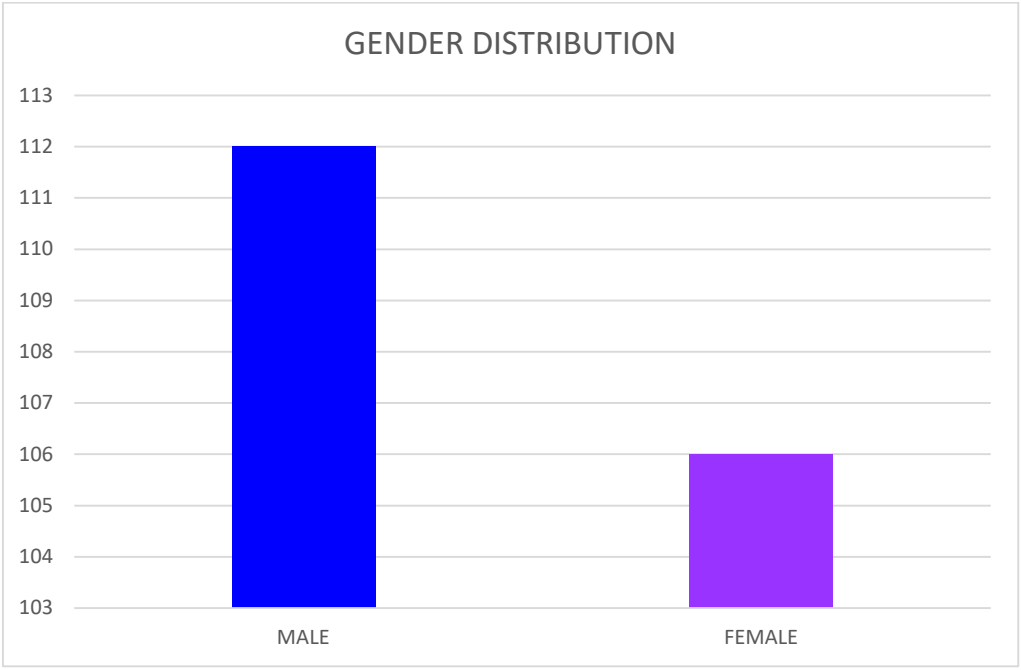

Figure 1: Gender distribution

Table 2: Population Distribution

Profession	Number of participants (%) (Total n = 218)
B.Pharm	122 (55.96%)
M.Pharm	14 (06.42%)
Pharm.D	82 (37.62%)

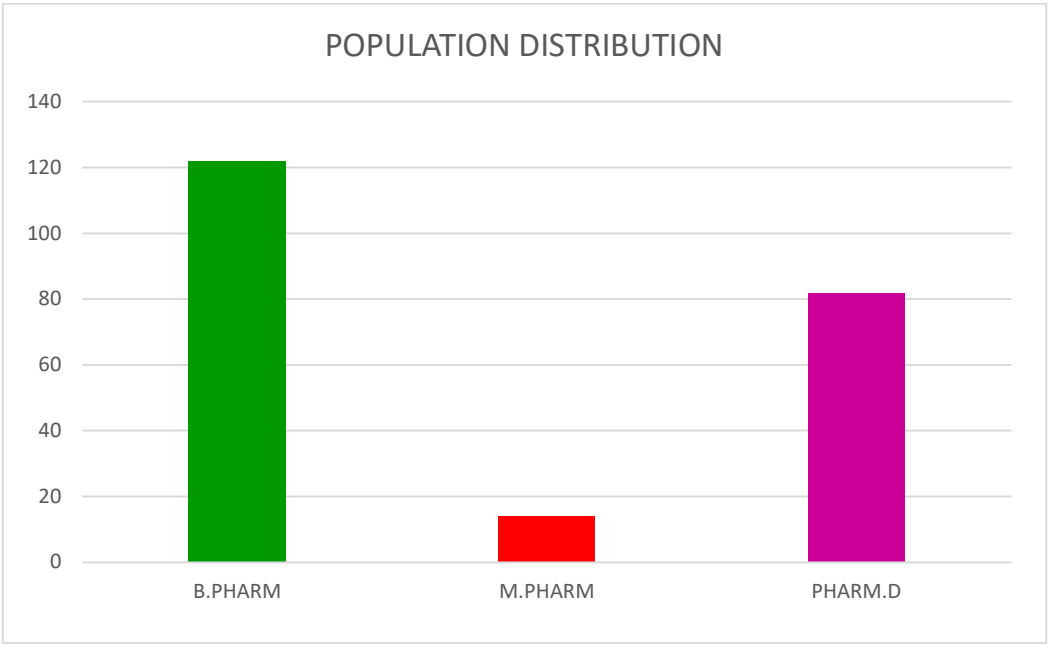

Figure 2: Population Wise Distribution

Table 3: Frequency and percentage of participants' with correct responses to the knowledge items on the questionnaire

Questionnaire items	Frequency (%)
K1. In general, polypharmacy has been defined as	164 (75.2%)
K2. Does polypharmacy increases risk of side effects?	188 (86.2%)
K3. Which age category will be affected more by polypharmacy?	152 (69.7%)
K4. Who plays important role on identifying polypharmacy in clinical practice?	201 (92.2%)
K5. Which of the following is NOT one of the major categories of ADRs?	152 (69.7%)

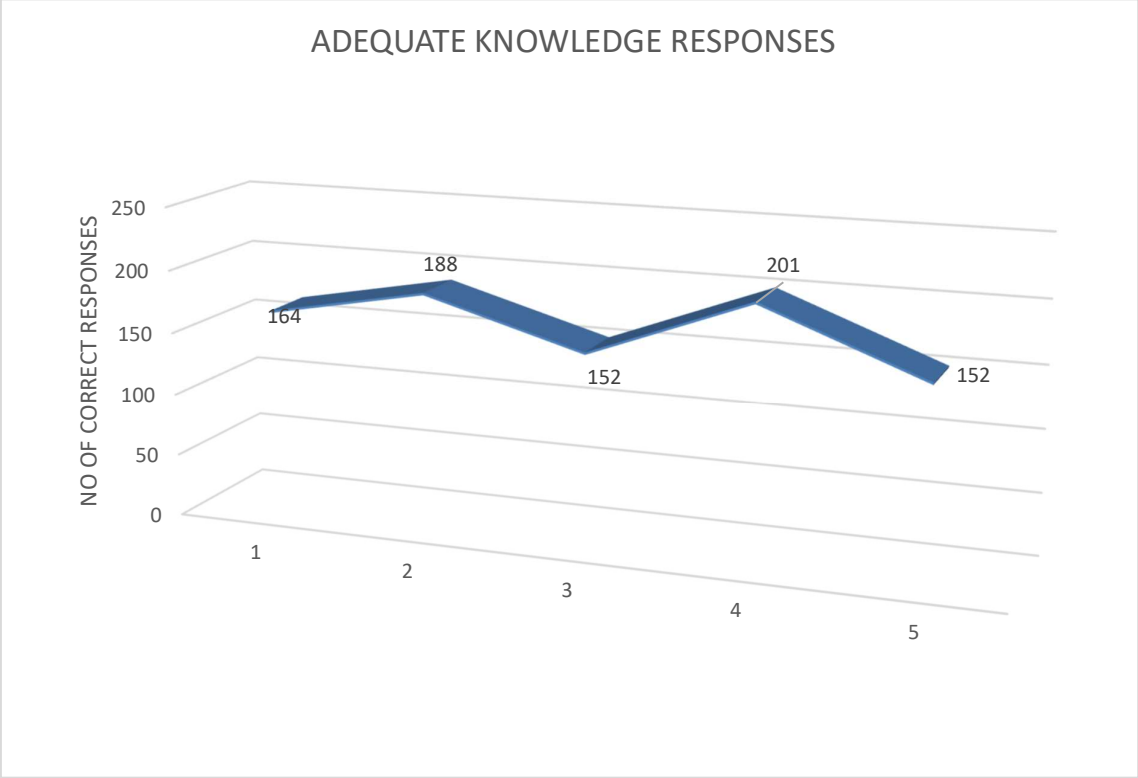

Figure 3: Frequency and percentage of participants' with correct responses to the knowledge items on the questionnaire

Table 4: Frequency and percentage of participants' with positive responses to the attitude items on the questionnaire

Questionnaire items	Frequency (%)
A1. The single most important thing we can do as healthcare providers to prevent polypharmacy is	172 (78.9%)
A2. When recommending deprescribing of alprazolam 0.5mg four times daily in patient of 65 years of age, which of the following is the BEST initial approach?	159 (72.9%)
A3. What is a universally applicable prevention and treatment strategy that can improve sleep quality for those with and without a specific sleep disorder?	121 (55.5%)
A4. Which of the following is correct about age-related changes?	85 (38.9%)
A5. The screening tool of older persons potentially inappropriate prescriptions (STOPP) criteria are organized according to	156 (71.5%)

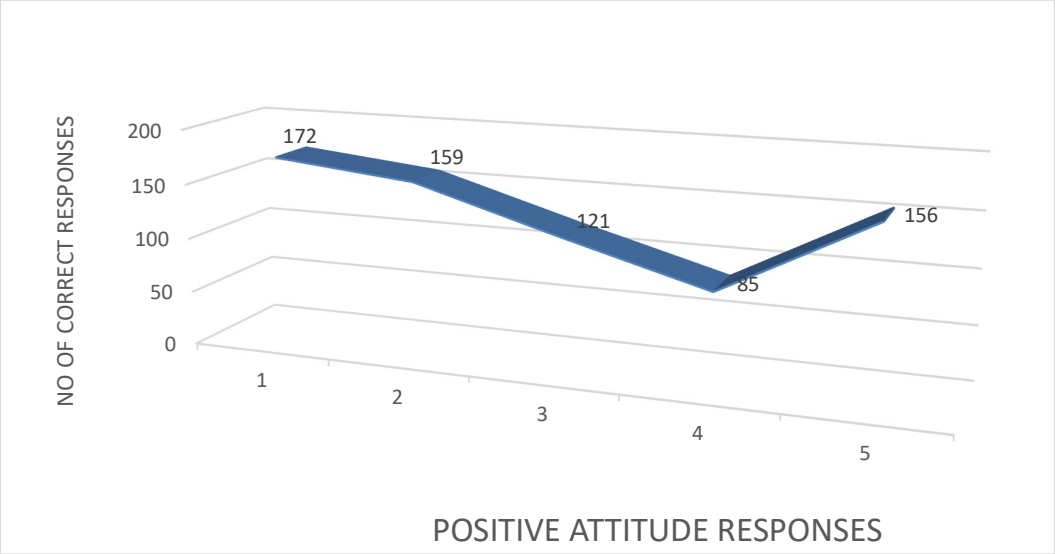

Figure 4: Frequency and percentage of participants' with positive responses to the attitude items on the questionnaire

Table 5: Frequency and percentage of participants' who were practicing appropriately based on responses to the items on the questionnaire

Questionnaire items	Frequency (%)
P1. For an older patient who complains of chronic mild low back pain, which of the following medications would you NOT target for deprescribing from their regimen?	123 (56.4%)
P2. In a patient recently discharged home from the hospital where he was in the intensive care unit for 2 weeks, which of the following strategies should be used to deprescribe omeprazole 40mg daily which was started for stress ulcer prophylaxis?	91 (41.7%)
P3. Adverse Drug Reaction(ADR) often involves	195 (89.4%)
P4. Antipsychotics should not be used on older patients with dementia. Which of the following is the rationale behind this black box warning?	139 (63.7%)
P5. The U.S Food and Drug Administration (FDA) has issued a black box warning for warfarin regarding the risk of:	153 (70.2%)

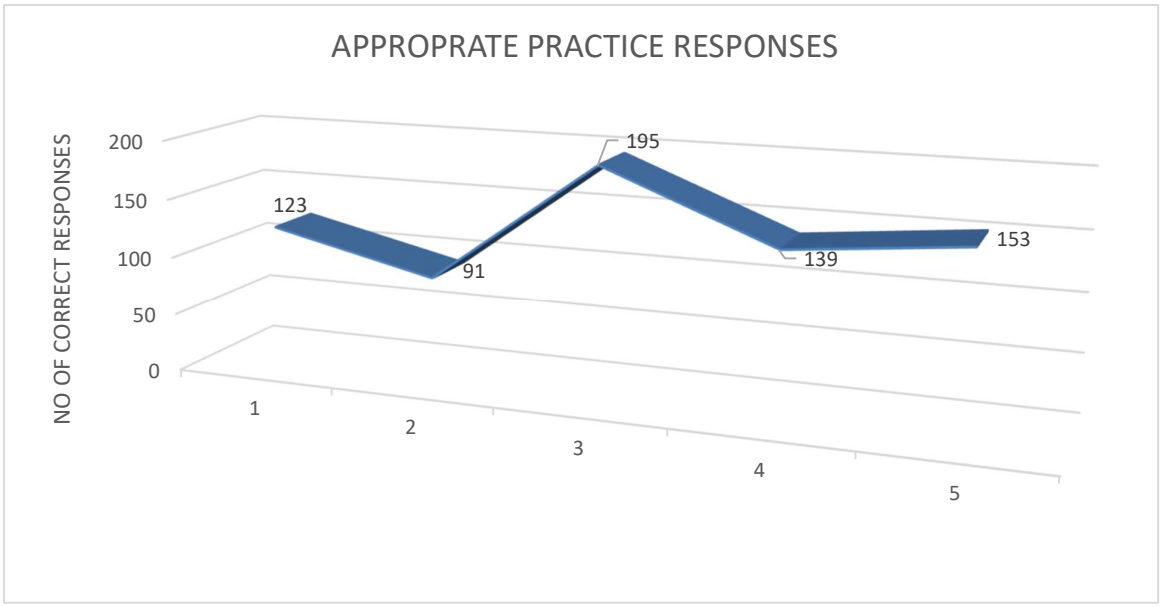

Figure 5: Frequency and percentage of participants' who were practicing appropriately based on responses to the items on the questionnaire

DISCUSSION

Despite increasing alertness of adverse reactions related to multidrug introduction, the prevalence of polypharmacy remains great in older adults. The most worrying concern of polypharmacy is not only the amount of adverse drug reactions but also the effects on the patients' value of life and increased medicine costs.Although prescribing many drugs to patients with comorbid reasons can improve their health status and clinical state, PP also can increase the danger of adverse drug interactions, e.g., hyponatremia or postural hypotension with diuretics or antihypertensive drugs. These side effects can sometimes be suitably severe to necessitate hospital admission and sometimes even result in death. Such differences in the prose could be due to variations in physicians' prescription attitude toward different sex who may also have alterations in educational and socioeconomic conditions. The association between sex and polypharmacy may need more elaboration in coming research.

Medication nonadherence surges the risk of suboptimal medicine treatment and its further consequences. Other studies also stated that polypharmacy was associated with poor adherence. The opportunity of this study is to ensure knowledge about polypharmacy among pharmacy students and with the results we can clearly see that many future pharmacists are having good knowledge about polypharmacy and are capable of dropping the possible adverse effects and drug interactions.

CONCLUSION

A minor majority of Pharm. D students stated deprescribing exposure in their curriculum. Less than half of students felt that their moral training adequately prepared them for deprescribing in the study setting. Student's approaches toward deprescribing were usually positive, but there was more variability in their perceptions of their ability and confidence in deprescribing. Students who were bare were more likely to decide that their school's curriculum organized them to deprescribe and that patients were prepared to deprescribe. This study shows areas for improvement in the combination of deprescribing into professional pharmacy syllabus.The expected outcome is ensured that the proper knowledge about polypharmacy among pharmacy students is achieved to reduce the risk of side effects and drug interactions.

As shown by this study, polypharmacy was associated with duplicated treatment and contraindicated drug combinations. Improved communications amongst seniors, physicians, and pharmacists is essential to minimize adverse significances of polypharmacy.

The conclusion of this study is achieved by safeguarding the knowledge about polypharmacy among pharmacy students with the help of the study questionnaire and moreover with the results, we can clearly see that many upcoming student pharmacists are having properknowledge about polypharmacy and are capable of dropping the possible adverse effects and drug interactions.

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