



SELF-MEDICATION PATTERNS IN PHYSIOTHERAPY STUDENTS IN NORTH INDIA

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ABSTRACT

Background: Self-medication is defined as selection and use of medicines by individuals to treat self-recognized or self-diagnosed conditions or symptoms. Self-medication can lead to various health problems like adverse drug reactions, prolonged suffering, and drug-dependence and increase resistance among various pathogens. Very few studies have evaluated its pattern and prevalence in physiotherapy students.

Material and Methods:

Study setting: A cross-sectional questionnaire-based study was conducted on the second year physiotherapy students of institute of Physiotherapy & Rehabilitation College collaborated with a tertiary care hospital in North India.

Study design: A questionnaire consisting of open and close ended questions related to various aspects of self-medication was distributed to the students. An informed consent was given to them and only the students, who gave consent, anonymously filled the questionnaire and participated in this present study.

Results: A total of 104 students, two incomplete questionnaires were excluded and remaining 102 were analyzed. Practice of self-medication was reported by 98.07% physiotherapy students. The most common ailment for seeking self-medication was common cold and cough (44.11%), sore throat (24.50%), fever (12.74%), pain abdomen, heartburn, diarrhoea, menstrual cramps, gynecological infections (18.62%) are the main factors attributed to predominant ailment which leads them to self medicate. The commonly/frequently used drugs or combination drug therapy included were antipyretics including paracetamol (32.35%), NSAIDs including aspirin(23.52%), antibiotics including antimicrobials (15.68%), Antihistaminics (9.5%), Antifungals including topical ointments/lotions (10.78%), and other miscellaneous accounting for 7.84%. According to our documented results cost effectiveness (65.68%) has emerged as the prominent reason for self medication, followed by time saving (13.72%), further ease (12.74%) for reaching the drug/medicine as considered by participants as the valid point through pharmacy or leftovers. and last but not least learning opportunities (07.84%) were also accounting as the interesting reason for this pattern of self medication.

Conclusions: Our study concludes that self-medication pattern is widely practiced among second year physiotherapy students of this institute. As the pattern of self medication is very high as documented in this study thus, there is affirm need to make them aware about the advantages and disadvantages of self-medication in order to ensure optimistic usage of pattern of self medication with reduced errors and wholesome advantages.

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INTRODUCTION

The treatment of self diagnosed disorders or symptoms or continuous/intermittent use of prescribed drug for symptoms or recurrent disease or chronic disease can be defined as self medication. [1, 2] The practice of self medication is very common among educated population. [3, 4] Self medication is not only common in general population but it is also common in health care providers as they are more exposed to the pattern, incidence and knowledge of drugs. According to one study in India, self medication pattern is 92% in medical students as compared to 59% in non-medical students. [5]

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The economically deprived communities, the symptoms of illnesses are treated by self medication. [6, 7]

In India, pharmacists and pharmacy students contributes a crucial role in self medication among general population. [8] The combination preparations of drugs and tonics or food supplements are commonly used in India. [9] Apart from pharmacists and previous prescribed drug, the neighbors, friends, families or suggestions from advertisements in media/social media are among common sources of self medications. The ability and desire of patients/people play an independent, informed and intelligent role not only in terms of decision making, but also in management of prevention, diagnosis and therapeutic strategies which are concerned to them. [10, 11, 12]

The drug resistance to antimicrobials is an increasing global issue [13, 14] and wide prevalent amongst in countries. [15]. In United States several studies suggested the considerable use of leftovers [16, 17, 18] obtained from pharmacy or family member or outside source of country. [19, 20]

The modern consumers (the patients) wants to contributes to maintain their own health and are seemingly competent to manage chronic and recurrent illnesses after proper establishment of medical diagnosis and very often with advice of professional health care provider, e.g. use of oral contraceptive, topical corticosteroid. As such they don't want to revisit the physician or health care provider. [21]

The most commonly used ingredients for self medication includes D-cold total, Korex, Benadryl, Glycodin for cough and cold; analgesics viz. saridon, disprin, Diclofenac, nimesulide, paracetamol, ibuprofen; while antipyretics comprised of calpol, crocin; also antiseptics constitutes dettol, boroplus; lastly antibiotics ingredients includes ciprofloxacin, Norfloxacin, amoxicillin, cefadroxil; further herbal ingredients like dabur chyawanprash was been th choice of ingredient to be used for self medication purposes to improve the zeal for taking care of self health. [22]

The available reasons increase the tendency of self medication among students belonging to health care background. As such these students have easy access to drug information from available well documented literature, drug index, thus intimating them to self diagnose and predisposing them to self medicate. [23]

The number of studies has been performed to study the practice of self medication among students and general population but rarely on physiotherapy students of second year curriculum. To explore the pattern of self medication among second year physiotherapy students in India, the present study is conducted and ensued as such to determine and evaluate the self medication pattern in these students who will participate and demonstrate their pattern of self medication.

MATERIALS AND METHODS

Study setting: This study was conducted in the department of pharmacology on second year undergraduate students of institute of physiotherapy college collaborated with a tertiary care medical college & hospital located in north India. It was a questionnaire based, cross sectional study. The students come for their first theory class on every Thursday (8:30-9:30 am) and second theory lecture on every Saturday (8:30-9:30 am), we have conducted in second theory lecture.

Study design: A questionnaire consisting of both closed and open ended questions was used. The objective of this study and process of filling the questionnaire was well explained to students. The practice of self medication was explained to students as "the use of drugs/medicines for self treatment without consultation of health care professionals." The written informed consent was taken and only students, who gave consent, and completed the questionnaire in lecture theatre were enrolled and returned back the filled questionnaire to us. The questionnaire included the questions seeking the demographic parameters and whether a student has taken self medication in last 6 months. The questionnaire includes the questions seeking for type of medicines used, drug type, name of drug/medicine, type of medicinal system and most

importantly the reason for self medication and sources for self medication.

An institutional ethics committee approval was obtained on 14/02/18 as Project number: 239 from Institutional Ethics Committee (IEC) before commencement of this study.

Statistical analysis used: The data was appropriately collected and put into Microsoft excel sheet and then further analyzed using SPSS version 20.00. The descriptive data was expressed as frequency, percentage and mean±SD. The statistical chi-square test was used for testing the statistical significance of data. A p-value < 0.05 were considered to be used statistically significant.

RESULTS

The total number of physiotherapy students in this batch is 108. The day when we conducted the study only 104 out of 108 was present. All the students were between the age group of 19-21 years. The female students outnumbered males, as the total number of female students who participated in this study was 67(65.69%) and only 35 were male students (34.31%)

A total number of 104 questionnaires were duly distributed, 102 were filled completely and 2 were excluded from study because of incomplete information from female filled questionnaire response. This data gave response rate of 98.07%. The mean age of students was 20±0.00 years. Thus total number of students data analyzed was 102.

Table I Demographic parameters.

Demographic parameters	Total number of students : 102	Percentage (%)
Gender		
Male	35	34.31%
Female	67	65.69%

The present study found that common cold and cough (44.11%), sore throat (24.50%), fever (12.74%), pain abdomen, heartburn, diarrhoea, menstrual cramps, gynecological infections (18.62%) are the main factors attributed to predominant ailment which leads them to self medicate.

The commonly/frequently used drugs or combination drug therapy included were antipyretics including paracetamol (32.35%), NSAIDs including aspirin(23.52%), antibiotics including antimicrobials(15.68%), Antihistaminics (9.5%), Antifungals including topical ointments/lotions(10.78%), and other miscellaneous accounting for 7.84%. (Figure III).

According to our documented results cost effectiveness (65.68%) has emerged as the prominent reason for self medication, followed by time saving (13.72%), further ease (12.74%) for reaching the drug/medicine as considered by participants as the valid point through pharmacy or leftovers. and last but not least learning opportunities (07.84%) were also accounting as the interesting reason for this pattern of self medication. Table II.

The factorial knowledge of drug-drug interactions and adverse effects/reactions/side effects were assessed and findings concluded 59.80 % are aware of drug-drug interactions and 81 % participants were found to be well versed with adverse effects/reactions/side effects.

The most common reported source of drug information was pharmacist (51.43%), followed by prior prescription, experience of prior illness, media including advertisements and social media, friends, medical colleagues, leftover medications and books comprising of literature books and drug appendices. Figure-III

The students knowledge about possible adverse effects and drug interactions of the drugs were also assessed, while 59.66% students had knowledge about possible adverse effects 51.26% students had knowledge about drug interactions.

Table II Self medication pattern in physiotherapy students

Characteristic features	Response rate by respondents	
Students as participants practicing self medication themselves	Total number of participants	Self medication pattern by participants (expressed in percentage)
	102	96
	Female : 67	67(100%)
	Male : 35	35(100%)
Disorders for which self medication is practiced by participants		P=0.045
	Common cold and cough	Frequency(expressed in percentage)
	Sore throat	45(44.11%)
	Fever	25(24.50%)
	Pain-abdomen/Headache/Menstrual cramps/Heartburn/Diarhhoea/Gynecological infections	13(12.74%)
	Cost effectiveness	19(18.62%)
Factors affecting self medication pattern	Time saving	67(65.68%)
	Learning opportunities	14(13.72%)
	Ease	08(07.84%)
Participants awareness for drug-drug interactions	Yes	13(12.74%)
	No	61(59.80%)
Participants awareness for adverse effects/reactions/ side effects	Yes	41(40.19%)
	No	81(79.41%)
	No	21(20.58%)

DISCUSSION

This study shows that the pattern of self medication is widely practiced 98.07% by the second year physiotherapy students of this institute, which in contrast is higher than the study conducted in university students from city of mansouver, Egypt which demonstrates the prevalence of self medication as 62.9% while conducting Abou-ElWafa *et al* a descriptive cross-sectional study while including 1st and last year students of both medical and nonmedical background. As documented in Abou-ElWafa *et al* the background of participants is different somehow in respect of non medical students, which could be the reason of low self medication pattern in their study in contrast to documented high practice of self medication pattern in this present study conducted in this institute.^[24]

Further the practice of Self-medication was reported by 79.9% students in study conducted among medical students in Belgrade, Serbia^[25] by Lukovic *et al* As these students were young and educated, they have reported the use of antimicrobial drugs whilst the practice of self medication, is quite comparable with our study attributed to medical students as there background. Further, the similar study conducted in US and Greece on general population^[26], which concluded that higher educational status corresponds to misuse of drugs also,

while one of the cross sectional study conducted on prevalence of self medication in university students from the city of rio grande, brazil concludes that there were no significant differences in self medication between healthcare and non health care students.^[27]

Although not much of the data is available about self medication among physiotherapy students, but similar studies documented that it had been upto 14% in SA, 8% Italy, 8% in Mexico, 8% in Switzerland,, 9% in Sweden, 9% in UK, 9% in Spain, 11% Germany,11% in Australia, 13% in US.^[28]

In this present study, the pattern of self medication was most commonly practiced for common cold and cough(44.1%) which coincides with the study conducted by Corrêa da Silva *et al*^[27] in which they conducted a cross-sectional study at Universidade Federal do Rio Grande (FURG), state of Rio Grande do Sul, Brazil, 830 students were considered as participants, as although the participant number is quite high because of participation as a whole on university, further 95% filled the questionnaire 789 students. The mean age was 22± 6.17 years, which is quite comparable to our study, as in our study the mean age was 20±0.00 years. Out of 789 participants, 86.4% self-medicated, which is quite comparable to our pattern of self medication in which 98.07% was found to be the self medication pattern. The analyses showed a significant association between self-medication and having a home pharmacy (p<0.001) and adequate medication knowledge (p = 0.01), as these results coincides with our study in which sources/factors affecting self medication was learning opportunities, time saving, ease, pharmacy and time saving. Corrêa da Silva al demonstrated the use of acetaminophen (paracetamol), aspirin as active ingredients used for self medication which just coincides with our study in which paracetamol (32.35%) and analgesics (23.62%) were one of the most commonly used ingredients for self medication.^[27]

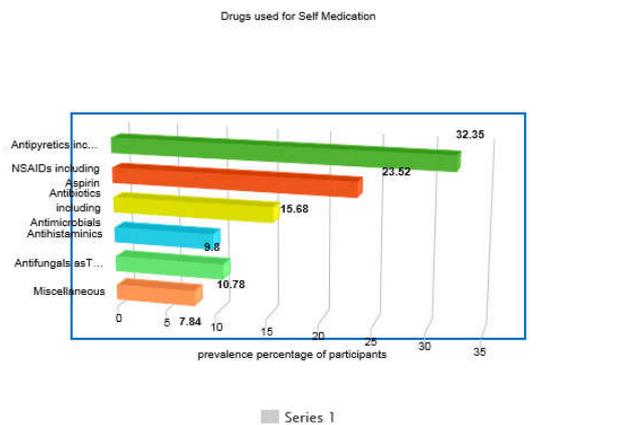


Fig II

The most frequent conditions predisposing for self-medication were cold (70.1%) , sore throat (35.8%), headache (58.9%), intestinal colic (32.2%) which corresponds to our results which concluded that common cold and cough (44.11%), sore throat (24.50%), fever (12.74%) are the main factors attributed to predominant ailment which leads them to self medicate.

The demographic parameters considering mean age 20± 0.7 years and females (78.1%) outnumbering in study were the comparable parameters. The cause of self-medication was “no need to visit the doctor for a minor disease” followed by “knowledge from previous experience” (73.9% and 71.4%) ,which corresponds comparable to our study in which ease,

learning opportunities were some of the reasons for self medication, but the interesting finding in H. S. Abou-ElWafa *et al* was fear of adverse/side effects was the most frequent cause to not imitate self medicate, thus demonstrating that the students were well versed with the adverse effects of drugs while self medicating indicating the need for proper counseling and education for the pharmacology for drugs and also this result for adverse effects was quite comparable to our study in which 59.66% participants concluded yes for awareness for possible adverse effects. H. S. Abou-ElWafa *et al* illustrates that Pharmacists (69.9%), neighbors/family (62.2%) friends/classroom colleagues (0.6%)/ old prescription (33.6%), personal decision 30.2%, Internet constituted 29.4% were sources which are just comparable to our results in which sources were pharmacist (51.43%), followed by prior prescription(11.76%), experience of prior illness(10.78%), media including advertisements and social media(4.9%), friends and medical colleagues (6.86%), leftover medications (7.84%) and books comprising of literature books and drug appendices (18.62%).^[24]

In study conducted by pramood *et al* most common indications were common cold, cough and fever as 33% cough, cold, fever 33% the results of these are comparable to or results with respect to most common indication as common cold and cough (44.11%) and fever (12.74%).^[29]

A study conducted by larissa *et al* concluded that higher educational level, younger age was significantly associated with self-medication and , Similar results were obtained for relationship between demographic characteristics , and thus these results also coincides study conducted by us in capacity of demographic parameters. Further larissa *et al* demonstrated that bronchitis, throat symptom, (sore throat or red), teeth/gum symptoms were most common reasons for self-medication which are quite different reasons, except sore throat finding corresponds to our study.^[26]

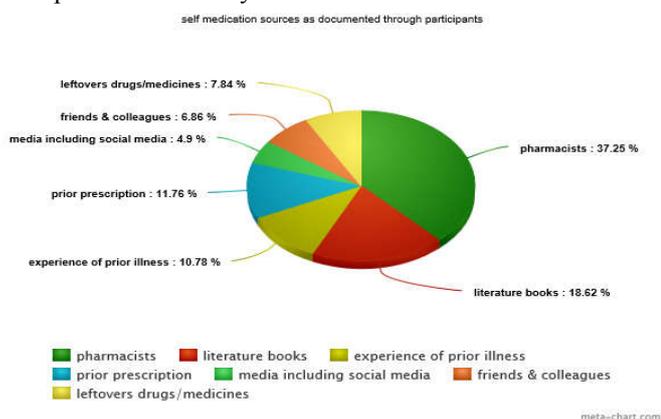


Figure III

Strengths of our study: We focused on physiotherapy students who are the budding pillars of our health-care system, and hence, the most important group to be targeted for sustained improvement in management and rehabilitation programs in future. This present study has highlighted certain weaknesses and challenges in the current self medication practices. The data obtained from this study is comparable to the claimed success of the current self medication. The possible reason may be the awareness of the students regarding the knowledge of drugs used for self medication.

Limitations of our study: Our study is limited by small sample size and the comparable group of other disciplines wide

interdisciplinary courses in this university. Because of small sample size, we were unable to perform subgroup analyses. The authenticity of certain responses obtained could not be validated and there is a need to add some qualitative objectives which could be validated at a later stage. This can be addressed and consolidated by designing further similar like studies with different subgroups analyses.

CONCLUSION

There was a high level of self medication among second year physiotherapy students facilitated by the awareness, ease of availability, media and foremost being healthcare students. Although physiotherapists are much commonly involved in treatment and rehabilitation of individuals and patients, thus they must be aware of advantages and disadvantages of self medication. It is absolute important to aware them of possible adverse effects, drug interactions, and drug resistance. The impact of high level of self medication which we have seen in this study may/must be seen with contrast view in lieu of having some disadvantages that may be attributed to improper lengthy or shorter duration of usage of drugs that may predispose to drug resistance and other drug related issues/drug dependence or may upto drug addiction on pain medications which may alarm the situation of self medication. However proper counseling, education, optimistic role of pharmacists for dispensing of drugs/medicines, and most importantly awareness with collaboration with concerned local and national agencies/authorities may curb the menace of self medication and may lead to wholesome only and only benefits of self medication. The limitation of the study is the sample size ,and comparable group, thus to more affirms these results, more such cross sectional studies are required, so that improved effectiveness and safety in individuals could be translated in achieving and maintaining the target of safe self medication.

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Footnotes

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