Original Research Article

Study on usage of over the counter medication among college students in Telangana: a cross sectional study

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ABSTRACT

Background: The use of over the counter medications (OTC) has been reported to be on rise internationally. The OTC drug market in India currently ranks 11th in the global OTC market. Since Indian patients have a huge tendency of self-treatment, the Indian market is characterized by a huge demand for OTC drugs. Hence the current study is undertaken to know the practices of over the counter medication among college students.

Methods: Institutional based cross sectional study carried out in Pharmacy College and all interested students were included with sample size of 141. Data was collected by interview method by using questionnaire. Results were presented in percentages using SPSS statistical package version 23.

Results: Subjects were opting for the over the counter medication. Most common drugs dispensed were cough remedies (52.4%) followed by antibiotics (38.2%). Most (47.5%) common source of medication was parents.

Conclusions: Majority of the students were opting for the over the counter medication and it is need of the hour to improve the knowledge regarding its adverse effects and about rationale use of drugs and drug resistance.

Keywords: Over the counter medication, Students, Antibiotics, Drug resistance

INTRODUCTION

‘Over the counter (OTC) Drugs’ means drugs legally allowed to be sold ‘Over the counter’, i.e., without the prescription of a registered medical practitioner. In India, though the phrase has no legal recognition, all the drugs that are not included in the list of ‘prescription drugs’ are considered as non-prescription drugs (or OTC drugs). Prescription drugs are those that fall under two schedules of the Drug and Cosmetics Rules, 1945: Schedule H and Schedule X.¹ OTC medication abuse for the purpose of this review is defined as the use of non-prescription medications for non-medical purposes.²

Abuse is often intentional, unlike OTC medication misuse, which may be medication used for medical purposes but used incorrectly, for example, incorrect dosage, lack of interactions knowledge, inappropriate medication use and incorrect duration of use.³ The use of higher cost health care settings for minor ailments places a substantial burden on scarce National Health Service (NHS) resources. Many people with minor ailments prefer selfcare.⁴⁵

Intentional drug abuse of prescribed and OTC medicines has climbed steadily. Data from the 2016 National survey on drug use and health demonstrated that 6.2 million (2.3%) people aged twelve or older had used prescription drugs for nonmedical reasons during the past month. Of these, 3.3 million used pain relievers, 2 million used tranquilizers, and 1.7 million used stimulants and 497,000 (0.5 million) misused prescription sedatives.⁶
The use of OTC medications has been reported to be on the rise internationally. The OTC drug market in India currently ranks 11th in the global OTC market. Since Indian patients have a huge tendency of self-treatment, the Indian market is characterized by a huge demand for OTC drugs. Published literature mentions that the mean age for the purchase of OTC drugs in India is 32.7 years with female preponderance.

OTC medication offers advantages like easy access to medicines, self-management of minor ailments with the involvement of pharmacists and utilization of available resources. However it is not always safe and has been associated with negative health consequences. Exposure to OTC Ibuprofen and other OTC non-steroidal anti-inflammatory drugs is substantial and leads to increased risk of gastrointestinal bleeding. OTC related adverse effects are predominantly gastrointestinal complaints, allergic reaction, psychosis, tachycardia, seizures and dizziness leading to increase in the number of hospital admissions. Hence the current study is undertaken to know the practices of over the counter medication in college students. Current study aimed to study the usage of over the counter medication in college students, to study the commonly reported illnesses for taking OTC drugs and to find out reasons for opting over the counter medication.

**METHODS**

**Study design**

Institution based cross sectional study.

**Study setting**

Pharmacy College located in Nalgonda town of Telangana state.

**Study population**

All the four academic years’ pharmacy students.

**Inclusion criteria**

All the four academic years pharmacy students who were interested to participate in the study.

**Exclusion criteria**

Pharmacy students who were absent on the day of data collection were excluded.

**Sample size**

Out of 231 total pharmacy students, 30 had participated in the pilot study, 34 students were absent on the day of data collection and 26 students were not willing to participate in the study. Hence a total of 141 students were included after taking consent, hence sample size was 141.

**Study period**

This study was carried out from August 2018 to September 2018.

**Study tool**

A pre-tested pre-designed semi-structured questionnaire. Pilot study was conducted on 30 students initially for standardization of the questionnaire. Questionnaire consists of socio demographic information, categories of drugs, symptoms for which medication is prescribed, source of medicine and other information.

**Method of data collection**

After explaining the importance of the study, questionnaire was administered and data was collected by face to face interview method.

**Statistical analysis**

Data was entered in Microsoft excel and analysis was done using SPSS statistical package version 23. Results were presented as proportions.

**RESULTS**

Out of the 141 participants, 55 (39%) were males and 86 (61%) were females. Mean age 19.1±0.7. Majority of the study population were Hindus (83.6%) and urban residents (75.8%) (Table 1).

|                      | Frequency |
|----------------------|-----------|
| Age distribution     |           |
| 18-19                | 101 (71.6)|
| 20-22                | 40 (28.4) |
| Sex                  |           |
| Males                | 55 (39)   |
| Females              | 86 (61)   |
| Religion             |           |
| Christian            | 14 (9.9)  |
| Hindu                | 118 (83.6)|
| Muslim               | 9 (6.5)   |
| Residence            |           |
| Urban                | 107 (75.8)|
| Rural                | 34 (24.2) |

Majority of the students were opting for the over the counter medication (80.8%) at least once in a year (Table 2).
Table 2: Study population taking over the counter medication (n=141).

| Over the counter medication | Frequency  |
|----------------------------|------------|
| Yes                       | 114 (80.8) |
| No                        | 27 (19.2)  |

For majority of the study population source of medication was parents (47.5%) followed by chemist (33.3%) and peer group (7%) (Table 6).

Table 3: Different categories of over the counter drugs dispensed.

| Type of medication     | Frequency  |
|------------------------|------------|
| NSAIDs                 | 30 (21.2)  |
| Antibiotics            | 54 (38.2)  |
| Cough remedies         | 74 (52.4)  |
| GI drugs               | 21 (14.8)  |
| Anti-allergic drugs    | 4 (2.8)    |
| Ear/eye drops          | 22 (15.6)  |
| Urogenital medication  | 3 (2.1)    |

*Total percentage exceeds 100 because of multiple responses.

Most common drugs dispensed over the counter were cough remedies (52.4%) followed by antibiotics (38.2%) (Table 3).

Table 4: Different symptoms for which over the counter medications are taken.

| Symptoms                    | Frequency |
|-----------------------------|-----------|
| Pain                        | 34 (24.1) |
| Fever                       | 79 (56)   |
| Cough/cold                  | 82 (58.1) |
| Ear/eye symptoms            | 10 (7)    |
| GI symptoms                 | 10 (7)    |
| Insomnia                    | 0 (0)     |
| Skin diseases               | 7 (4.8)   |

*Total percentage exceeds 100 because of multiple responses.

Most common symptom for which over the counter medication were taken was cough and cold (58.1%) followed by fever (56%) and pain (24.1%) (Table 4).

Table 5: Frequency of taking over the counter medication (n=141).

| Frequency of taking medication | Frequency |
|-------------------------------|-----------|
| Weekly                        | 16 (11.3) |
| Monthly                       | 25 (17.7) |
| 2-6 months                    | 32 (22.6) |
| 6-12 months                   | 68 (48.9) |

Majority of study population were taking over the counter medication over the duration of 6-12 months (48.9%) (Table 5).

Most common symptoms for which over the counter medication were taken were poor access to health care (9.9%), lack of affordability to reach health care (4.9%), and convenience (50.2%) (Table 7).

Table 6: Source of the over the counter medicine (n=141).

| Source | Frequency  |
|--------|------------|
| Chemist| 47 (33.3)  |
| RMP    | 8 (5.6)    |
| Peer   | 10 (7)     |
| Parent | 67 (47.5)  |
| Relatives | 5 (3.5) |
| Others | 7 (3.1)    |

Most common reason for preferring over the counter medication was convenience (50.2%) followed by others reasons like life style factors, already knowing the drugs etc. (35%) (Table 7).

Table 7: Reasons for preferring over the counter medication (n=141).

| Reason                                          | Frequency |
|------------------------------------------------|-----------|
| Poor access to health care                     | 14 (9.9)  |
| Lack of affordability to reach health care     | 7 (4.9)   |
| Convenience                                   | 71 (50.2) |
| Others*                                        | 49 (35)   |

*Life style factors, already knowing the drugs.

DISCUSSION

In the current study, 55 (39%) were males and 86 (61%) were females. Mean age 19.1±0.7. Majority of the study population were Hindus (83.6%) and urban residents (75.8%). In the study conducted by the Shroti et al, 92.9% were males. Mean age was 37.4 years. In the study done by Nagaraj et al it was observed that 70.8% of study population were males and 28.2% were females.

Majority of the students were opting for the over the counter medication (80.8%) at least once in a year. Most common drugs dispensed over the counter were cough remedies (52.4%) followed by antibiotics (38.2%), NSAIDS (21.2%), ear and eye drops (15.6%), GI drugs (14.8%), anti-allergic drugs (2.8%) and urogenital medication (2.1%). In the study conducted by the Shroti et al analgesics were the most common over the counter medications dispensed by pharmacists. In the study by Nagaraj et al most common dispensed drugs were analgesics (26.8%) followed by antihistamines (15.2%), antacids (14.8%), antibiotics (10%), antipyretics (7.8%), OC pills (5.09%), and miscellaneous (20%). A study done by Gazibara et al, showed that analgesics were the most commonly dispensed OTC drugs.
Most common symptom for which over the counter medication was prescribed was cough and cold (58.1%) followed by fever (56%), pain (24.1%), eye and ear symptoms and GI symptoms (7%) and skin diseases (4.8%). In the study by Nagaraj et al most common complaint for the use of OTC drugs was pain (26.8%) and other complaints were respiratory infections (24.50%), GIT problems (22.22%), gynaecological problems (5.00%), headache (6.01%), dermatological problems (5.09%), and others (10.18%). In study conducted by Ngado et al, showed that frequent reported reason for buying antibiotic was cough in urban setting and fever in rural setting. In this study, antibiotics were mainly dispensed for fever, cough and dental infection.

Majority of study population were taking over the counter medication over the duration of 6-12 months (48.9%), followed by those taking 2-6 months (22.6%), monthly (17.7%), and weekly (11.3%). NSAIDs were the most common drugs used daily. For majority of the study population source of medication was parents (47.5%) followed by chemist (33.3%), peer group (7%), RMP (5.6%), relatives (3.5%) and others (3.1%). 113 (80.8%) perceived side effect after taking medication.

Study population preferred over the counter medication because of convenience (50.2%) followed by others reasons like life style factors, already knowing the drugs etc (35%), poor accessibility to health care (9.9%) and lack of affordability of health factors (4.9%).

CONCLUSION

The current study revealed that higher proportion of students opted over the counter medication and antibiotics were one of those drugs which were commonly bought over the counter. Antimicrobial resistance poses a serious threat to the global public health and this can be attributed to increasing usage of over the counter drugs. The present study highlights that it is the need of the hour to bring the awareness among students regarding the adverse effects of over the counter medication and particularly about rationale use of antibiotics and drug resistance who in turn can take the message to the community.

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REFERENCES

1. Bhagale V. International Marketing Conference on Marketing and Society, IIMK; 2007: 397-402.
2. Cooper RJ. I can’t be an addict. I am. Over-the-counter medicine abuse: a qualitative study. BMJ Open. 2013;3(6):e002913.
3. Hall GC, Sauer B, Bourke A, Brown JS, Reynolds MW, LoCasale R. Guidelines for good database selection and use in pharmaco epidemiology research. Pharmacoepidemiol Drug Saf. 2012;21(1):1-10.
4. Rennie L, Porteous T, Ryan M. Preferences for managing symptoms of differing severity: a discrete choice experiment. Value Health. 2012;15:1069-76.
5. Porteous T, Ryan M, Bond CM, Hannaford P. Preferences for self-care or professional advice for minor illness: a discrete choice experiment. Br J Gen Pract. 2006;56:911-7.
6. Ahn Zbrak R, Bose J, Hedden SL, Lipari RN, Lee EP. Key Substance Use and Mental Health Indicators in the United States: Results from the 2016 National Survey on Drug Use and Health. HHS; 2017: 17-5044.
7. Shroti R, Nayak N, Rajput MS. A study on over the counter drugs in retail pharmacies in Indore city. Der Pharmacies Lettre. 2011;3(3):133-8.
8. Bertoldi AD, Camargo AC, Silveira MP, Menezes AM, Assenciao MC, Goncalves H, et al. Self-medication among adolescents aged 18 years: the 1993 pelotas (Brazil) Birth cohort study. J Adolesc Health. 2014;55(2):175-81.
9. Bentosch EG, Koester S, Martin AM. Intentional misuse of over the counter medication, mental Health and Polysubstance use in young adults. J community Health. 2014;39(4):688-95.
10. Nagaraj MS, Chakraborty A, Srinivas BN. A Study on the Dispensing Pattern of Over the Counter Drugs in Retail Pharmacies in Sarapur Area, East Bangalore. J Cin Diagnos Res. 2015;9(6):FC11-3.
11. Gazibara T, Nurkovic S, Kiscic-Tepavcevic D, Kurtagic I, Kovacevic N. Pharmacotherapy and over the counter drug use among adolescents in Belgrade, Serbia. Geriatr Neuurs. 2013;34(6):486-90.
12. Ngado TT, Chuc NT, Hoa NP, Nguyen NT, Loan HT, Toan TK, et al. Antibiotic sales in rural and urban pharmacies in northern Vietnam: an observational study. BMC Pharmacol Toxicol. 2014;15(1):6.
13. Abasaeed AE, Abuellkhair MA, Andrajati R, Elnour AA. A comparative study between prescribed and over the counter antibiotics. Saud Med J. 2013;34(10):1048-54.

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