

Effect of COVID-19 Pandemic on Over the Counter Drugs use and its Associated Factors among Adults of an Urban Slum in Hyderabad: A Cross Sectional Study

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Abstract

Background: Over the counter (OTC) drugs are the drugs that are legally allowed to be sold 'Over the counter', i.e., without the prescription of a registered medical practitioner. Self-medication represents a global healthcare epidemic.

Objectives: To assess the usage of OTC medication among study subjects. To determine the factors associated with use of OTC medication.

Materials and Methods: A cross-sectional study was conducted among adults of urban field practice area attached to department of community medicine, Mamata Academy of Medical Sciences, Hyderabad during the months of July and August 2022. Adults aged 18 years and above, who were willing to participate were interviewed. Simple random technique was used for sampling. Data was entered in Microsoft excel and analysed in SPSS version 20.

Results: It was found that there was significant increase in the use of OTC drugs from the COVID-19 pandemic as compared to before. Major source of OTC drugs was found to be Medical shops. Most common symptoms for which self medication was taken were fever and body pains. The most common reason for opting OTC was mentioned as convenience. Statistically significant association was found between Social class and OTC drug usage (p value 0.001, $X^2=11.456$, OR=7.4) and also between education status of the OTC drug users and checking expiry date and reading label (p value 0.000).

Conclusion: OTC drugs usage among the study subjects was increased from the COVID-19 pandemic as compared to before and risky behaviour was found in around half of the subjects.

Key words: Over the counter drugs, self medication, COVID-19 pandemic

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Introduction

Over the counter (OTC) Drugs or Non-prescription drugs are the drugs that are legally allowed to be sold 'Over the counter', i.e., without the prescription of a registered medical practitioner. [1] Self-medication is gaining the popularity globally. In developing countries it depicts a global healthcare epidemic, often driven by economic and social motivations. [2-4] Self medication is prevalent in all the age groups and its extent varies from person to person and region to region. Its prevalence ranged from 11.2 to 93.7%, representing that a large proportion of the world's population uses drugs without consulting a doctor or healthcare professional. [5,6]

The National Health Service (NHS) resources were facing burden due to use of higher cost health care for minor ailments, so people with minor ailments prefer Selfcare. [7,8] Though it was previously considered unnecessary, responsible self-medication is regarded as an important aspect of self-care. [9] The use of OTC drugs is associated with many benefits, such as decreased hospital visits, easy of getting medicines, less absentees from work with self-management of minor ailments and utilization of available resources. Self medication is associated with negative health consequences as well, like misuse of OTC drugs can result in adverse reactions, drug interactions, overdosing, and other medication-related issues. [10-12] Vulnerable people like children, elderly, pregnant and lactating mothers, and patients with co-morbidities can have serious implications (including deaths) with improper use of OTC drugs for self medication. [13-15]

Lack of adequate knowledge about OTC medications may directly lead to adverse outcomes, such as overuse or non-compliance to treatment programs. [16] Inappropriate use of OTC medication is associated with several potential risks such as the risk of adverse drug reactions, wrong use of drugs, missing the diagnosis, drug dependence, drug-drug, drug-food, drug-disease interactions, and overuse or toxicity. [17,18]

Due to paucity of literature on OTC in India, this study was under taken to assess the burden of OTC medication use which might cause antimicrobial resistance in the present scenario.

Objectives:

1. To assess the effect of COVID-19 pandemic on the usage of OTC medication among study subjects
2. To determine the factors associated OTC medication use among study subjects
3. To evaluate the reasons for using OTC medication
4. To study the risky behaviour among study students and its association with the socio-demographic variables

Methodology

Study design: A community based cross sectional study.

Study setting: Urban field practice area attached to department of community medicine, Mamata Academy of Medical Sciences, Hyderabad

Study Period: 10th July 2022 to 31st August 2022.

Study subjects: Adults aged 18years and above who were willing to participate in the study

Sample size: The sample size was calculated using the formula Z^2pq/L^2 , taking prevalence of self medication as 80% from the previous study from Telangana state, with precision of 5%, the calculated sample size was 400. [19]

Sampling technique: Simple random technique

Ethical permissions and informed consent: Ethical permission was obtained from the institutional ethics committee and informed consent was taken from all the respondents.

Data collection Method: After explaining the purpose of the study and taking verbal consent, pre-designed semi structured questionnaire was used to collect data by face to face interview.

Data tools: Age, gender, education, socio-economic status, use of over the counter drugs, source of over the counter drugs, reason for opting over the counter drugs, symptoms for which medication was taken, type of medication and practice of checking expiry date and reading the label.

Data Analysis: Data was analysed using MS excel and IBM SPSS version 20. Descriptive analysis was

used to depict baseline characteristics of the study participants. Chi-square test was deployed to assess the statistical association between socio-demographic

factors and OTC drugs usage. P value less than 0.05 was considered significant.

Findings:

Table 1: Use of over the counter medication before and from the COVID-19 pandemic (n=400)

Before the COVID-19 pandemic	From the COVID-19 pandemic		Total	X ² =158.869 P value= 0.000
	Yes	No		
Yes	260	8	67	
No	56	76	33	
Total	316	84	400	

It was observed that OTC drugs use has been increased from the COVID-19 pandemic as compared

to before and the increase was statistically significant. (X² =39.717, P value = 0.000)

Table 2: Use of OTC medication and socio-demographic variables (n=400)

Variable	OTC medication usage (316)	OTC medication non usage (84)	Chi Square P value
Gender			
Male	204 (77.2)	60 (22.8)	1.396
Female	112 (82.4)	24 (17.6)	0.247
Education			
Illiterate	44 (78.6)	12(21.4)	31.825 0.000
Primary	40 (100)	0 (0)	
High school	64 (94)	4(6)	
Intermediate	68 (77.2)	20 (22.8)	
Graduation & above	100 (67.6)	48 (32.4)	
SES			45.825
APL	296(84)	56(16)	<0.0001
BPL	20 (41.6)	28 (58.4)	(OR=7.4)

On statistical analysis it was found that there was a significant association of literacy status, socio economic status with the over the counter drug usage.

On regression analysis it was found that OTC drug use was 7.4 times higher in BPL families as compared to APL families.

Table 3: Factors associated with OTC drugs use among the study subjects (n=400)

Variable	Frequency (%)
Source of OTC drugs	
Medical shops	192 (61)
Old prescriptions	140 (44)
RMP	128 (40)
Friends and family	116 (37)
Known medication	64 (20)
Social media	28 (9)

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Symptoms	
Fever	284 (90)
Pain	224 (71)
Cough & cold	228 (72)
Ear/Eye problems	124 (39)
GI symptoms	100 (32)
Medication used	
Analgesics	276 (87)
Antipyretics	232 (73)
Antihistamines	216 (68)
Antacids	192 (61)
Ear/eye drops	128 (40)
Antibiotics	56 (18)
Multivitamins	16 (5)
Reasons for opting OTC drugs	
Easy to get	224 (71)
Known medicines	152 (48)
Lack of knowledge	80 (25)
Lack of affordability	16 (5)

*All Multiple responses

Source of OTC was found as medical shops followed by old prescriptions and Quacks. Fever, pain, cold & cough were the common symptoms for which OTC drugs were taken. Analgesics, antipyretics and antihistamines were the highly consumed drugs. Most common reasons for opting OTC drugs were convenience, known medicines, followed by lack of knowledge.

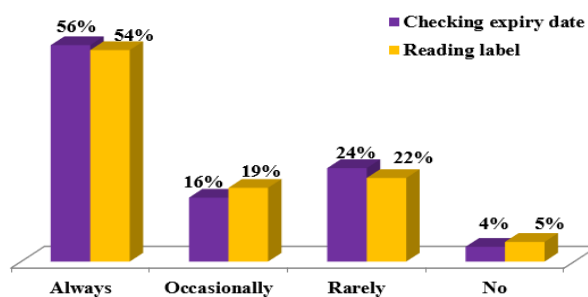


Fig 1: Practice of checking expiry date and reading label (n=316)

Table 4: Socio demographic variables and risky behaviour (n=400)

Variable	Checking expiry date				Chi Square & p value	Reading label				Chi Square & p value
	Always	Occasional	Rarely	Never		Always	Occasional	Rarely	Never	
Gender	Male	116	36	44	8	108	44	36	16	15.049 0.002
	Female	60	16	32	4	64	16	32	0	
Education	Illiterate	8	4	24	8	12	4	24	4	248.256 0.000
	Primary	0	4	36	0	4	0	36	0	
	High school	28	24	12	0	36	20	4	4	
	Intermediate	48	16	0	4	32	28	0	8	
SES	Graduation & above	92	4	4	0	88	8	4	0	1.190 0.755
	APL	164	48	72	12	156	60	68	12	
	BPL	12	4	4	0	16	0	0	4	20.621 0.000

56% of the respondents check expiry dates while purchasing OTC drugs and 54% read the label always. It was found that for checking expiry date statistically significant association was found only with gender where as for reading label the association was significant with gender, literacy status and also with socio-economic status.

Discussion

In the present study 79% of the study subjects were practicing self medication with OTC drugs from the COVID-19 pandemic as compared to 67% before the pandemic. The reason for increase of OTC drug usage can be attributed to fear of acquiring infection and death especially during the COVID-19 pandemic and the false information on the prophylaxis for prevention of drugs has lead to unnecessary consumption of many drugs like Paracetamol, Azithromycin, Doxycyclin, HCQ and other drugs.

In this study among the OTC drug users males were 66% and females 34% where as Tesfamariam et al. found that 93.7% of their respondents practiced self-medication with OTC drugs which includes 65.1% males and 34.9% females. [6] On statistical analysis it was found that there was a significant association of literacy status, socio economic status with the over the counter drug usage. In the study conducted by the Shrotri et al analgesics were the most common over the counter mediations dispensed by pharmacists the findings of which were similar to the present study. [20] Source of OTC drugs helps in intervening to promote safe self medication practices and the communication gap between pharmacists and the OTC drug users should be bridged. Most common symptom for OTC medication was pain similarly in the study by Nagaraj et al most common complaint for the use of OTC drugs was pain (26.80%). [21]

The reason for opting OTC medication was observed as convenience and known medication similar findings were found in a study by Ganapa P et al. [19] 56% of the respondents check expiry dates while purchasing OTC drugs and 54% read the label always which is very less in this study and it depicts that the individual were at risk of negative health consequences. It was found that for checking expiry date statistically significant association was

found only with gender where as for reading label the association was significant with gender, literacy status and also with socio-economic status.

It was also observed that inappropriate use of steroids and other medicines was more during the pandemic as quacks have exploited this health crisis to make money which had ultimately lead to over and misuse of over the counter medication. Escalation of Black market during medical catastrophes is also one of the reasons for misuse of OTC medication.

Strengths:

Study on the global public health emergencies like COVID-19 pandemic itself is the strength of the study.

Limitations:

Sample size is small to generalize the results of the study. There could be under estimation of the burden as we have not used any validated questionnaire to measure the OTC medication usage.

Conclusion

OTC drugs usage among the study subjects was increased from the COVID-19 pandemic as compared to before. On statistical analysis it was found that there was a significant association of literacy status, socio economic status with the over the counter drug usage. Major source of OTC drugs was found to be Medical shops. Most common symptoms for which self medication was taken were fever and body pains. The most common reason for opting OTC was mentioned as convenience. Risky behaviour was found in around half of the subjects.

Recommendations:

Awareness should be created among the public regarding the harmful effects of over the counter drugs and to promote responsible self care.

Regulation of OTC drug availability should be done to prevent misuse of the drugs.

Conflict of Interest: NIL

Source of Funding: NIL

Ethical Clearance: Obtained

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