

A Survey on the Consumption of OTC drugs & Self-Medication Practices.

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ABSTRACT

Aim: To study the OTC drug consumption pattern and self-medication practices in India during the COVID-19 pandemic.

Method: A virtual questionnaire was circulated amongst people belonging to the age group of 18-50yrs with formal educational background.

Participants: 100 respondents from India. (67-Female, 33- Male)

Results obtained: The frequency of OTC drug consumed in the past 6-months during the pandemic by the majority of participants was 1-6 times. The main causes for consumption of these drugs were headache and body ache, followed by cough and cold. Respondents majorly relied on visiting their doctor or practising traditional home remedies to treat their ailment. Traces of Covid-stress syndrome was also observed based on the responses collected.

Conclusion: A wise consumption of OTC drugs was observed with people experiencing minimum to no side effects. There was also no irrational drug abuse seen, implying responsible behaviour.

KEYWORDS: OTC drugs, Self-medication, COVID-19, COVID Stress scale

I. INTRODUCTION

In India, practising self-medication by consumption of non-prescribed drugs is generally the first response to treating an ailment. These drugs are easily available at the community pharmacists and hence are a part of every household's medical kit. Community pharmacists are one of the healthcare professionals who have the potential of responding to an individual's ailment by recommending appropriate drugs. The drugs recommended by community pharmacists without a doctor's prescription are called as over the counter drugs (OTC drugs). The practise of consumption of these medicines based on self-recognized symptoms to treat an ailment is termed as self-medication by the World Health Organization.^[1] Apart from medicines

recommended by the community pharmacists, drugs utilized based on previous prescriptions also come under the umbrella term of self-medication. COVID-19, the global pandemic has further led to a multi-fold increase in reliance of the common masses on self-medication.

COVID-19 has brought the world into absolute confinement. With a surge in cases and various measures in place, the healthcare sector is still burdened with newer challenges. During this time community pharmacists, one of the healthcare professionals are playing a key role in reducing the burden of healthcare sector. As they are easily accessible, they have been of great help in solving issues concerning COVID-19 for the local public by providing them with reliable information. The main focus of the healthcare sector is to deal with patients suffering from COVID-19, but people are still prone to developing non-COVID symptoms and conditions that would require medical attention.^[2] Based on the severity of the disease, these conditions are dealt and properly handled with the help of community pharmacists.

Practising self-medication has its own pros and cons. If properly practised, it can help treat minor ailments without doctor's intervention however, it also has the potential to cause drug abuse. In a developing country like India, self-medication is a preferred and a common practise as it serves as a low-cost alternative. Also, an increase in media exposure and increased advertising of OTC drugs has greatly influenced self-medication practices in India.^[3] OTC drugs are consumed to alleviate a variety of symptoms like headache, body ache, gastrointestinal issues, to relieve pain arising due to dental emergencies and more. Non-steroidal anti-inflammatory drugs are majorly consumed as a pain reliever. In a research conducted by Nie, et al^[4], the efficacy and side effects of NSAIDs for treatment of dysmenorrhea were studied using meta-analysis. Commonly used drugs, such as analgesics also have the ability to cause adverse side-effects like liver or kidney damage and

intestinal bleeding, they are also one of the widely used pills in suicide attempts in younger population. [5] The pandemic has taken a great toll on the mental health of the population. Many people have experienced stress, anxiety and challenges due to strong emotions. Restrictions and guidelines such as social distancing has further led to isolation of an individual, causing loneliness and increased stress [6], which are potential triggers for drug abuse. Government from all around the globe have had different responses to the virus outbreak, however the general three step guideline followed, includes- declaring public health emergency, isolation of individual and ceasing of social & economic activities. [7] These guidelines have led to emergence of new introverted behaviour and fear amongst the public, which has also triggered self-medication practices to avoid a visit to the healthcare facility.

The purpose of the survey was to study about the dependence of Indian population on over the counter (OTC) drugs and how effective it was in treating their ailment during the pandemic. Also, the survey helped in gathering further insights about the awareness of the people with regards to consumption and utilization of over the counter drugs. A total of 100 responses of people belonging to the age group of 18-50 yrs. were collected by circulating a virtual questionnaire. The sample was collected at random and analysed using statistical methods.

II. LITERATURE REVIEW

Drugs are substances used frequently for treating various ailments. In developing countries like India, these drugs are purchased with or without prescription for treatment and are stored at home. [8] Prescription drugs are usually for current use and if left unused get expired, making it unviable for self-medication. Stocking of over the counter drugs, and storage of it under inappropriate conditions leads to wasting of resources and if consumed without consultation for a long duration may lead to development of much serious health conditions. [9]

Dangers associated with long term consumption of OTC drugs are: [10]

- Resistance to disease causing pathogens
- Addiction and drug abuse.
- Instant relief maybe assisted with long term side-effects.
- Self-determined dosage levels can have lethal effects.
- Incorrect diagnosis

- Increased unnecessary drug expense

Apart from the above-mentioned problems, self-medication has been widely accepted as an important part of the healthcare system. Successful self-medication is influenced by numerous factors like an individual's knowledge, level of education and socio-economic status. Non-prescription drugs, across the globe include a wide set of drugs like histamine receptor antagonist, non-steroidal anti-inflammatory drugs and nicotine preparations as a solution for anti-smoking. These drugs were previously classified as prescription drugs, now have been reclassified based on scientific data under non-prescription drugs. [11] Studies have shown that self-medication has a prevalence of about 32.5-81.5% worldwide. [11] Media plays a key role in spreading misinformation regarding the self-medication practices. Knowledge of self-medication for COVID-19 has been majorly received by people from relatives, friends, media and pharmacist. [12]

As an effective treatment against COVID-19, Indian healthcare sector has been emphasizing on adopting an integrative approach. [13] Integration of ayurvedic medicines with allopathic treatment options have been widely used. Of all the immunity boosting measures suggested by the Ministry of AYUSH, AYUSH Kadha was maximally propagated and recommended. However, some allopathic doctors have seen in their patients' certain undesirable effects due to excessive consumption of this decoction. Major effects seen includes- gastritis, lowering of normal blood pressure and a rise in thyroid hormone. [14] One of the reasons for people to resort to self-medication is also based on the underlying fear and anxiety associated with pandemic. It has been greatly studied that many people have exhibited stress or anxiety related responses during the pandemic. [15] A COVID Stress scale has been developed taking into consideration 36 items that can trigger stress amongst the population. [16] 5 major factors were identified corresponding to COVID related stress and anxiety. These include the following:

1. Fear of contamination
2. Xenophobia
3. Fear of financial instability
4. Compulsive checking and reassurance seeking
5. Traumatic stress because of COVID-19. [16]

People who are fairly less anxious about the viral outbreak are less prone to engage and follow the guidelines laid. As compared to that, people who are excessively anxious are more likely to show socially disruptive behaviour like panic

buying and unnecessarily visiting hospitals and clinics when they misinterpret the symptoms of a minor ailment.^[16] Irrational drug usage especially antibiotics can often result into a condition where the body becomes susceptible to diseases and treatment of the disease becomes difficult, as pathogens tend to develop immunity against the drug that is administered more than what is required.^[17] In a study conducted to evaluate the trend of self-medication practices prevalent in India, it was observed that 73% of the population of Punjab resorted to self-medication for the treatment of health problems ranging from minor to chronic. The report suggested that even after the diagnosis of an ailment, patients considered themselves to be competent enough to manage and maintain their own health without consulting a physician. This trend demonstrated a lack of understanding and insufficient knowledge about the use of antibiotics as well as other drugs.^[18]

III. MATERIALS AND METHODS

An online survey was conducted by circulating a questionnaire. The questionnaire was made using Google forms and the link for the same was circulated via different messengers. The survey was shared in English language and circulated for a total of 9 days from 31st March to 8th April, after which the responses were closed and no longer accepted. The questionnaire consisted of 20 questions broadly divided into three sections. At the beginning of each section, description pertaining to clinical terms was mentioned, so that the respondents were made completely aware of the questions asked and could answer honestly. The sections present were as follows; Personal details, pandemic induced OTC drug consumption and

lastly self-medication and awareness. The survey was circulated randomly with only the basic requirement specified that is the age of the respondents should be over the age of 18 and the individual should have acquired basic formal education. The responses obtained have been analysed with the help of statistics.

IV. RESULTS AND DISCUSSIONS

A total of 100 responses were collected. Personal details of the respondents collected included their name, age, gender and stream of education. Majority of the respondents belonged to the age group of 18-24 yrs., classified as young adults and of the 100 responses, 67 were from female and the rest were from male respondents. With regards to educational background- 71 respondents belonged to science-based background and the remaining 29 belonged to non-science background. These questions belonged to the first part of the survey which was followed by two separate sections majorly focusing on the purpose of the survey.

People consume OTC drugs to treat a variety of ailments- from headache to vitamin supplements. Similar to the results obtained by Jain et al,^[19] majority of the respondents consumed OTC drugs to treat headache and body ache. (Table 1) One of the reasons for this, is easy availability of NSAIDs in community pharmacies in developing countries like India. These drugs are widely promoted via television advertisements, hence promoting the consumption of non-prescribed drugs. As COVID-19 has symptoms similar to common flu, 40 respondents consumed the OTC drug to alleviate their cough and cold symptoms.

Ailments	No of respondents
Headache/Body ache	63
Dental Problems	7
Gastrointestinal issues	28
Cough and Cold	40
ENT	6
Vomiting	12
Dysmenorrhea	6
Allergies	14
Vitamin supplements	19
None of the above	11
Other	2

Table 1: Causes for consumption of OTC drugs

During the pandemic, for a period of six months, as per responses collected, most

respondents have consumed OTC drugs 1-6 times. (Table 2) The frequency of OTC drugs consumed

by people belonging to different age groups was studied by using chi square test of independence at 5% level of significance. Based on the results obtained after substituting the values into the formula, it was observed that the null hypothesis of the parameters being independent was accepted. (X^2 Cal= 2.41, X^2 tab= 5.99) Thus, it can be

concluded that the frequency of OTC drugs consumed during the pandemic is independent of the age of the respondent. Similarly, in order to study the influence of gender on consumption of OTC drugs, yet another chi-square test was performed and it was observed that the parameters are independent.

Frequency of OTC drug consumed	No of respondents
1-6 times	63
7- 12 times	4
> 12	6
None	12

Table 2: Frequency of drugs consumed

With regards to the consumption of drugs being related to drastic changes in lifestyle, it was seen that 60% did not consume the drug because of new-normal lifestyle. The correlation of the consumption pattern and gender was tested with the help of 2x2 test, it was concluded that they are independent. However, for the people who experienced lifestyle related OTC drug consumption pattern, lack of exercise and changes in lifestyle proved to be the main factor for the same.

For 73% respondents who consumed OTC drug irrespective of the frequency of the consumption, they were asked to rate the efficacy of the drug in treating their ailment on a scale of 1-5. It was observed that most of the respondents, found it as effective as 4 on the scale, although statistically this wasn't the mean efficacy of the drug for the population, as the z-test performed was rejected. It was observed that the mean efficacy was 3.6 on the scale based on the observations of the sample obtained. Covid stress syndrome, is the anxiety related to the pandemic. Taylor et al,^[16] has developed a Covid stress scale to detect the level of anxiety. Few of the triggers as stated by the author of the paper were given as an option to check if the reason for self-medication at the time of flu-like

symptoms was indeed influenced by anxiety triggers. And as expected, most of the respondents avoided a visit to the doctor out of fear of getting infected by visiting the healthcare facility (45%), there were 33% who decided to wait and watch for the symptoms. The decision of tracking a symptom has its own cons- the possibility of worsening the treatable disease and in cases of highly virulent and contagious disease like COVID-19, the possibility of infecting other individuals is inevitable. 33% decided to visit the doctor, this can be considered as a responsible behaviour.

Even with suggestions and remedies circulating around for self-medication during COVID- 19, majority of the respondents (57%) decided to responsibly visit their doctor and get treated for their ailment, 52% respondents opted for traditional remedies as a treatment, 34% isolated the concerned individual and only 26 % consumed paracetamol.

Awareness of OTC drugs and its dosage is crucial as an overdose of a drug can lead to chronic illnesses and addiction. When asked about how the respondents determined the dosage of the OTC drug, 63% replied by saying they consulted their family doctor for determining the dosage, followed by 22% who self-determined it by tracking the

symptoms and 13% consulted their community pharmacists for the same. The adverse effects of the drugs only arise when the drugs are misused. Side effects of the drugs range from- headache, nausea, pruritus, fatigue to kidney malfunctions. It was surprising to note that 85% individuals reported no side-effects, the possible reasons are either the individuals were unaware of the side-effects that they were experiencing while consuming the drugs or there has been some discrepancy in answering the question. There also is a strong possibility that the respondents were well-aware of the side-effects and hence consumed the drug in minor quantities and only when there arose an absolute necessity for the same.

Of the total respondents, 63% had packet reading habit while only 58% were aware of the associated side effects. 15% were unsure of the side effects and 27% were absolutely unaware of the side effects of the drug they were consuming. A test of independence was also performed to determine if there was a possible correlation between educational background and awareness of the drug, the two parameters after analysis were found to be dependent. As most of the science based especially biology individuals, tend to have the basic understanding of drugs and its effects, they are prone to be more aware of the impact and side effects than the rest. Yet another, responsible drug consumption practise was observed in the group of respondents as 94% reported to have a habit of checking the date of expiry before consumption. The source of information for consumption of an OTC drug can be community pharmacists, old prescriptions, advertisements, social media and more. As long as the source is reliable, it is alright to consume the drug as suggested. It was observed that 61% gained information about an OTC drug via their community pharmacists, similarly 61% received information from old prescription, 24% followed recommendations given by the peers, 17% from advertisements and 7% from social media. The lesser portion of the sample relying on social media for their medication is a sign of relief, as majority of the rumours are circulated via these social media platforms.

V. CONCLUSION

Irrational drug usage is emerging as a potential threat in the therapeutic world, as it has led to resistant strains of bacterial species making the treatment ineffective. It was observed that the respondents of the survey showed a sense of

awareness and practiced responsible self-medication practices. This might be partly because of the healthcare scenario that has drastically affected the lives of near and dear ones, making one act wisely out of fear. And also, as the respondents were all educated, they seem to be immune to herd mentality. COVID-19 has made the general population aware of the fragile situation, thus influencing their habit of OTC drug consumption. Overall, the results provided from the survey can be used to conclude that the Indian urban population is aware of OTC drugs but there still is room for improvement and awareness, as 44% and 37% of the respondents strongly agreed and agreed respectively, to the need of spreading the awareness on irrational OTC drug consumption. This awareness can be spread by leveraging the power of social media, so that every other individual is made aware of the merits and demerits associated with non-prescription drugs and self-medication practices. The information obtained from the current research can further be used as the basis for future survey- based research. Some suggestions for future research include: A survey on OTC drug consumption pattern before and after the rise of coronavirus, A literature review on self-medication practices: Past, present and future prospects, Comparative study of OTC drug consumption during COVID-19 across different age groups belonging to different geographical locations and a comparative study of traditional remedies and OTC drugs consumed during COVID-19.

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