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A SURVEY ON THE MANAGEMENT AND USAGE OF MEDICINES IN PHARMACY.

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ABSTRACT

The misuse of medication is a major ordeal in the Indian society till date. The purchase of medication either over the counter or prescription happens quite frequently in modern society as many feel that doctors are costly or unavailable at their convenience.

This causes an increase in patient's self-medication by simply purchasing over the counter pills or syrups at their convenience. Thus, in turn, leading to dependence of pain killers either psychological or physical, adverse effects to which they may be unaware of may be caused due to the drugs, and in the worst-case scenario an accidental overdose of medication.

This survey was conducted via an online questionnaire system called survey monkey and the information was analyzed via basic statistics. The survey consisted of students and professors of varying age and was spread via online social media and word of mouth.

KEY WORDS: misuse, prescription, OTC, self-medication, adverse effects, drugs.

INTRODUCTION:

Medicine, also referred to as a pharmaceutical drug, according to the World Health Organization, a drug is any substance or product that is used to modify or explore physiological systems or pathological states for the benefit of the recipient. In the context of medicine, it means any chemical used in the prevention, diagnosis, treatment or cure of a disease.

Drugs are purchased from any medical care facility which may include hospital pharmacies, retail pharmacies and many others. The misuse of medication is a major ordeal in the Indian society till date, the purchase of medication either over the counter or by prescription happens quite frequently in modern society as many feel that doctors are costly or unavailable at their convenience. Thus, the prevalence of the trend of self-medication.

The increase in patients self-medicating simply by purchasing OTC or prescription drugs leads to a psychological or physical manifestation of dependence over the drugs and hence it was decided to conduct a survey over the misuse of medicine. Despite the knowledge that most drug do not consist of addiction potential, it was observed that many believed that they are dependant or in some way in the need of drugs and hence the use of the word psychological dependence.

This survey will be used to discuss a majority of issues associated with the use, misuse, adverse effects, tolerance, dependence, the number of people that agree with self-medication, the frequency at which the medicine is being used, their reason for self-medication, their knowledge of side effects of medicine, whether or not an individual has shifted towards prescription drugs over OTC and the purchase of medicine with or without a prescription and lastly the preferred choice of medicine. It will also be used to identify patterns of self-medication in Maharashtra, Pune, to measure the correlation between gender, age and educational status to the use of self-medication. The survey will also focus on discussing the need to enforce dispensing regulations and reassess the list of OTC medication and the importance of a community pharmacist.

Method:

The survey was carried out on an online site called survey monkey and consisted of a total of 666 responses with a completion rate of 95%. The duration of the survey was from the 22nd of July 2018 to the 12th of August 2018. All the data collected was analyzed through a mathematical formula through the site itself and upon compilation the data was compiled and analyzed.

A total of 13 questions were set up so as to obtain information on the use, age, gender, knowledge of medicine, self-medication, side effects and frequency of medication.

The first 4 questions were set up so as to determine the gender, age, educational status and their residing state. A majority of the survey recipients were male with 57.06% and female with 42.94% and 0.00% transgender, the major age group was identified as 18-24, 25-34 and 35-50 with a percentage of 51.59%, 15.56% and

25.11% respectively. It was also observed that the highest percentage of the recipients were educated consisting of undergraduate and postgraduate levels of education at 43.72% and 39.33% respectively, and the state over which the survey was conducted was Maharashtra.

The 5th, 6th and 7th questions were arranged to determine the information about the self-medication, their reason for self-medication and the category of medicine they use; out of all this it was observed that 51.13% agree and undergo self-medication and 48.87% do not agree with self-medication. Out of the given option for self-medication 39.52% selected the fact that physicians were unavailable while 35.37% selected drug dependence as their reason and 25.11% suggested other reasons. The seventh question dealt with the category of drugs being used.

The 8th, 9th and 10th questions deals with the frequency of administration, side effects if observed, and the use of medicine in the absence of symptoms. Here it was found that 60.95% take medicine less than a few time a month while 4.13% of 666 people choose to take the drug every day. 6.36% selected yes when asked on whether they experience side effects upon taking the drug while 93.64% did not experience any side effects and it is also to note that 163 recipients of the survey chose to skip this question. 6.33% of people agreed to using medicine in the absence of any symptoms while 93.67% do not.

The 11th and 12th questions deal with the purchase of prescription drugs without a prescription and the shift from self-medication to prescribed drugs by a physician. A percentage of 60.93% selected yes when asked on whether they had purchased medicine without a prescription and 39.07% said no and it was also observed that 65.58% had decided to shift from self-medication to medicine prescribed by a practitioner while 34.42% have yet not.

The 13th and last question was asked to distinguish which type of medication people generally prefer. Here the data collected allowed us to determine that 59.23% prefer allopathic medicine, 14.29% Ayurveda, 13.00% homeopathic and 13.48% would rather go for home-remedy.

There is a vast amount of literature available on the list of drugs collected, their adverse effects, chronic administration and their consequences along with similar levels of reviews available on the effects of addiction, dependency and usage of medicine on both national and international levels however a majority of the amount shift outside the scope of this review.

Data Analysis:

A number of demographic factors were set up in the survey to help to explore the trend of self-medication and its improper usage and upon the collection and analysis of the information a number of reliable points were drawn up.

Gender, age, educational status and residing state

The onset of the survey began with a series of simple questions ranging from gender, age, educational status and residing state. The vast majority of the survey was conducted over the state of Maharashtra with an increasing number of males over female percentage respectively 57.06%, 42.94% and 0.00% trans. The main age group of focus over the survey will consist of 18-24 yrs, 25-34 yrs and 35-50 yrs at 51.59%, 15.58% and 25.11% respectively and a highly educated majority of the survey recipient being holders of undergraduate and postgraduate levels of education.

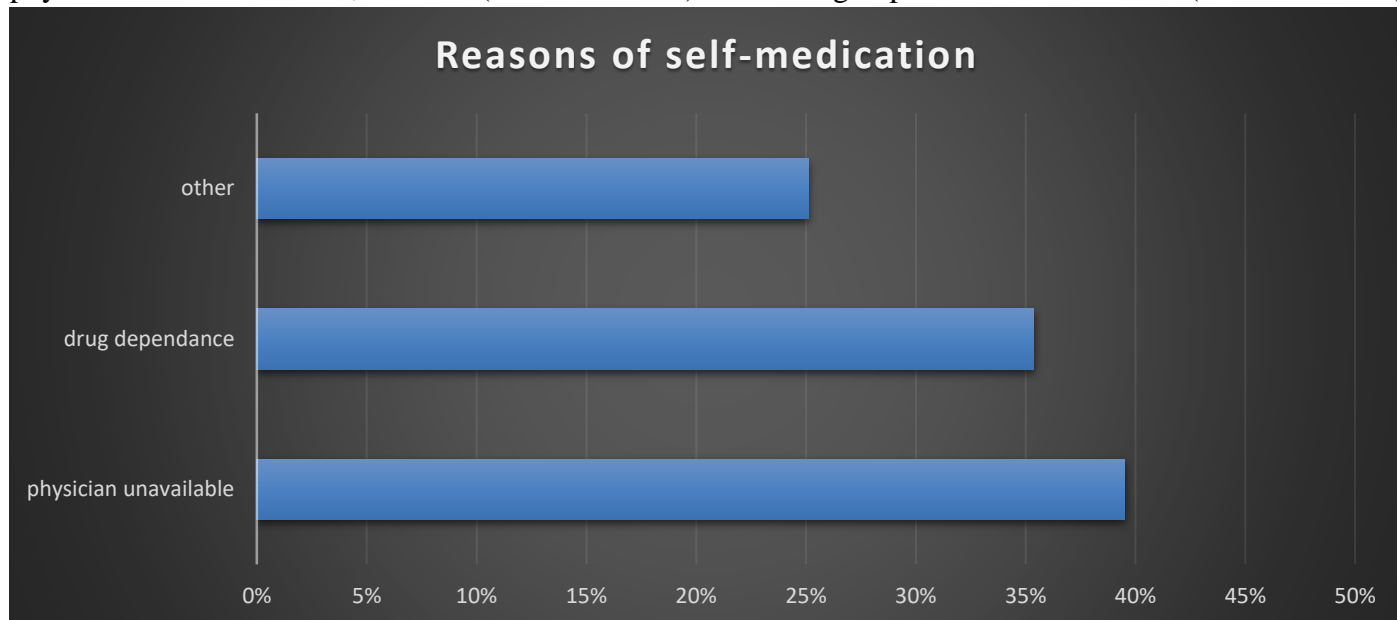
Self-medication and its reasons

Despite the high educational status, it was observed that more than 50% of the candidates for the survey undergo self-medication. Self-medication is the treatment of common health problems with medicines especially designed and labelled for use without medical supervision and approved as safe and effective for such use. Medicines for self-medication are often called 'non-prescription' or 'over the counter' (OTC) and are available without a doctor's prescription through pharmacies. In some countries OTC products are also available in supermarkets and other outlets. Medicines that require a doctor's prescription are called prescription products (Rx products).

Self-medication is widely practiced worldwide and often considered as a component of self-care. However, unlike other components of self-care, self-medication has the potential to do good as well as cause harm since it involves the use of drugs. The World Health Organization (WHO) has appropriately pointed out that responsible self-medication can help to prevent and treat diseases that do not require medical consultation and provides a cheaper alternative for treating common illnesses. The practice of self-medication must be based on authentic medical information otherwise irrational use of drugs can cause wastage of resources, increased resistance of pathogens, and can lead to serious health hazards such as adverse drug reaction and prolonged morbidity. In developing countries like India, self-medication is a common practice as it provides a low-cost alternative for people who cannot afford the high cost of clinical service and also as many drugs are dispensed over the counter without prescription from a registered medical practitioner.

However, the problem arises due to the increase in common practice. A majority of the Indian people tend to self-administer medicine based on information obtained from internet sources which at times although may be correct but not accurate enough to produce a well worth diagnosis for a patient to be treated and cured.

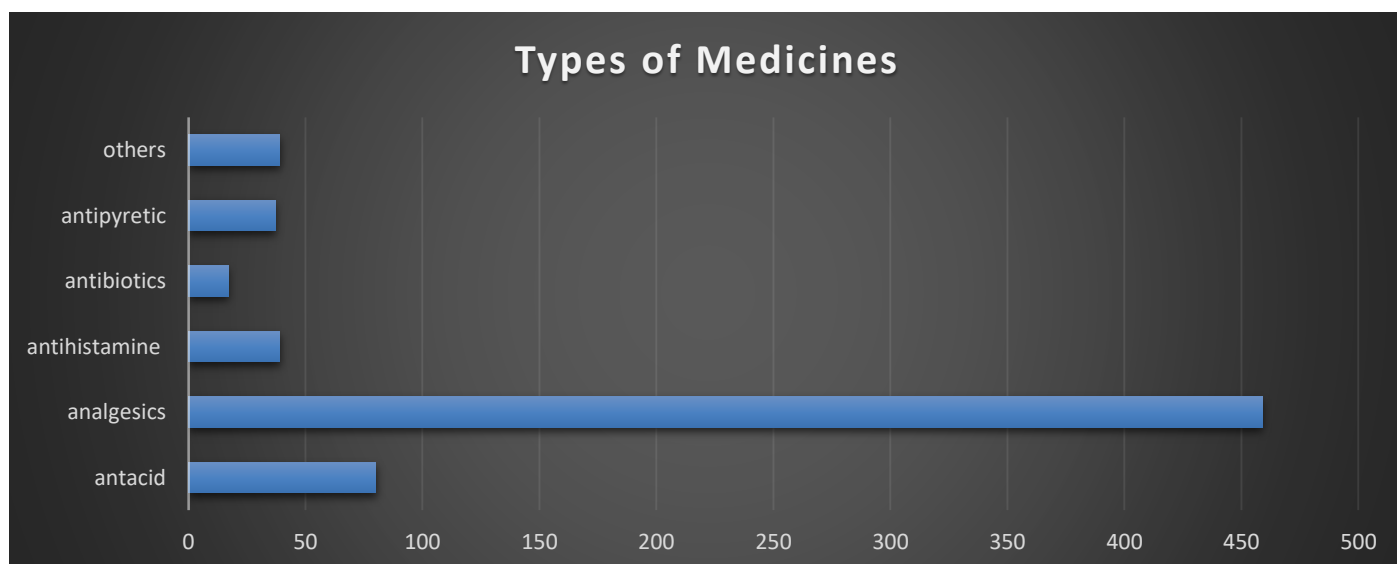
When candidates were asked for their reason of self-medication outside the scope of the survey responses obtained ranged from high cost of treatment, unavailability of a physician at their convenience, drug dependency and the lack of time to visit a doctor. 39.52% of the candidates (181 out of 666) chose that a physician was unavailable, 35.37% (162 out of 666) chose drug dependence and 25.11% (115 out of 666)



chose other options. Out of the majority however 208 candidates chose to skip the question.

Choice of medication

Due to the wide range of drugs available, the drugs were organized according to their classification so as to simplify to an extent the amount of responses obtained. The drugs were classified as antibiotics, antipyretics, analgesics, antacids, antihistamines and others.



The report provided an insight as to the amount of medicines being used and the type of medication provided, majority of which was observed to be analgesics/NSAID's class of drugs like ibuprofen, nimesulide, diclofenac, aceclofenac etc. these drugs based on the frequency of usage can at times be extremely harmful due to their multiple side-effects.

Ibuprofen another similar drug belonging to the NSAID class, is often sold in combination with paracetamol in India under the brand name combiflam which consisted of 191 responses from the total analgesic count and one of the highest reported drugs used according to responses obtained from the survey. Side-effects of ibuprofen consist of stomach bleeding, liver problems, kidney problems, ringing in your ear, rash formation etc. one such extreme scenario would be the induced toxic epidermal necrolysis which can be due to drugs or infections. Fixed dose combination (FDC) of Ibuprofen plus Paracetamol is commonly used as an analgesic and antipyretic over the counter (OTC) in India, however in certain scenarios can do more harm than good. Hence, awareness must be made at the level of consumers and health care professionals regarding occurrences of such rare but potentially serious side effects associated with such combinations.

Paracetamol is another common drug and is one that is often commonly or accidentally ingested by children and unlike the situation in adults, death and hepatotoxicity in children from paracetamol poisoning are exceedingly uncommon events. Some of the side effects observed in paracetamol is the darkening of urine, clay colored stool, jaundice etc. Paracetamol is often administered in doses of 500mg or 650mg and are used to help reduce a fever, and hence are classified as antipyretics i.e. prevent pyretic action which is the increase in body temperature. Some of the most common brand names of paracetamol include Calpol and Dolo.

Antacids are substances which neutralize stomach acidity and is used to relieve heartburn, indigestion or an upset stomach. Some of the most common antacids used based on the responses from the survey consist of omeprazole and pantoprazole both of which are classified as proton pump inhibitors (PPIs) they act by reducing acid secretion via inhibition of H₂ receptors. The most common use of antacids is during acidity, gas, nausea, burning sensations in the stomach and their side effects include vomiting, diarrhea, stomach pain, headaches etc. and in some cases severe adverse reactions may occur which can cause whole body rashes, diarrhea, oliguria. Antacids are often given adjuvant with NSAIDs and antipyretics to ease the discomfort they may in some cases produce, as mentioned above due to the chemical nature of the drug. One can never know the extent to which an adverse response can occur hence awareness must be made of the drug in regards with the patient and the healthcare professional.

Antibiotics are another harmful class of drugs that are used to help treat bacterial infections. The most commonly mentioned antibiotic is azithromycin, a macrolide class, commonly sold under brand names azee, zithrin, azithral etc. side effects include mild gastric upset, abdominal pain, headache and dizziness. Despite

the safety of azithromycin and its convenient once a day usage granted by its high efficacy and acid stability, the reason for controlling its consumption is direr due to the understanding of antibiotic resistance and has already been discussed earlier in the survey.

Antiallergy drugs, they are antihistamines characterized by their antagonistic action on H1 receptors. Side effects include drowsiness, dry mouth, dryness of the nose, throat dryness which are less severe and chronic trouble sleeping, throat irritation confusion, excessive sweating, visible water retention etc. which are infrequent and slightly severe.

The reason for the raise in awareness is so as to create a sense of urgency in the occurrence of an unknown physiological response. Once a patient has understood the severity of those issues, they can take the necessary steps to deal with any unprecedented accidents of any nature. Rather than ignoring the change until the last minute. One of the questions proposed in the survey consisted of the presence of side-effects and whether or not an individual has continued taking the medication despite the side-effects, this point is further discussed in the survey.

Frequency of use and side-effects

Based on the degree to which self-medication occurs (51.13%) a question was raised to determine the frequency of usage of medication to which 60.95% suggested a less than few times a months' worth of usage (consisting of less than 2 times a month), 31.20% a few times a month (2-4 times a month), 3.72% almost once every five days, and 4.13% undertake almost every day.

Appropriate self-medication can be helpful, it can be used to treat, cure and prevent diseases in acute conditions, nevertheless, in contrast to the usage of self-medication as predicted by the survey (51.13%) and the frequency of its usage is quite alarming in today's society. For example, anti-biotic resistance, the threat is real; the rapid emergence of resistant bacteria is endangering the efficacy and therapeutic effect of drugs that are used today to help save millions of lives. The Centre of Disease Control (CDC) has already prepared and displayed a list of bacteria and has classified them as presenting urgent, serious and concerning threats, many of which have already begun to put a dent into the US health care system, patients and their families. The issue of antibiotic resistance is but one of the reasons that self-medication must be taken into control and why pharmacists should help guide and direct patients to use medicine in right manner and warn them to not use or suggest any non-OTC drug without consulting a registered physician.

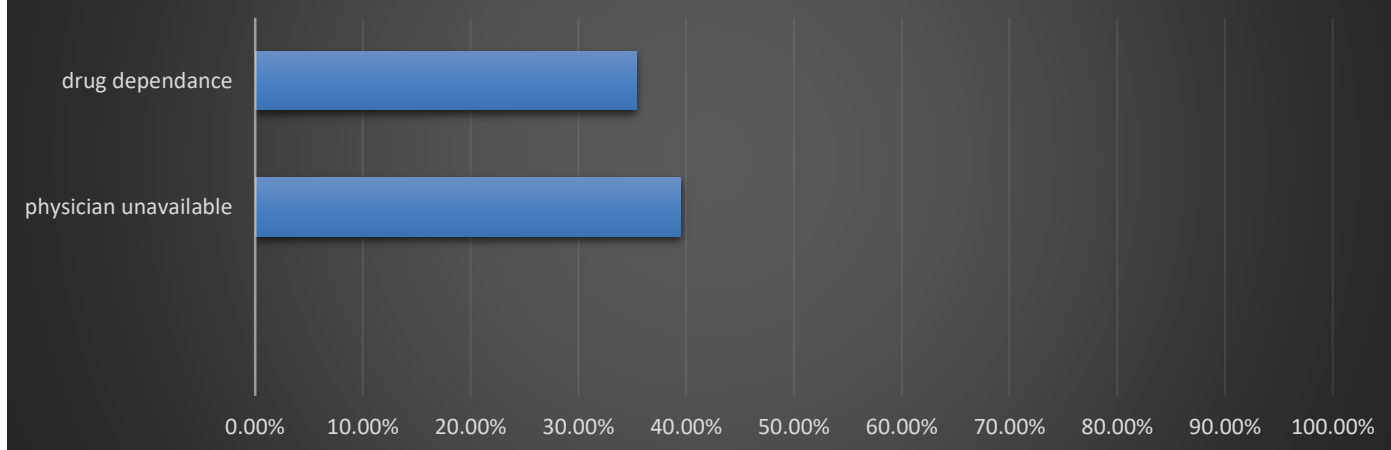
In regard with further evaluating the trend of self-medication its adverse-effects had been taken into account where 6.36% had experienced side effects from the medication that had consuming and 93.64% did not experience any form of side effects from the medication, however, 163 candidates had opted to skip this

question. This could have been due to a lack of knowledge of what side effects were of the drugs they were taking, unwillingness to disclose that information or they may have been hesitant to give the answer. This was an assumption made due to the following question proposed in the survey which asked whether the individuals had continued to take the medication despite not experiencing any of the symptoms of a particular disease, where 6.33% said yes, 93.67% said no and only 50 candidates had chose to skip this question the information received from this section of the survey was contradicted due to the fact that many had chosen that they had stopped taking the medication upon experiencing side effects.

Prescription

A prescription is an order for medication for use by a patient that is issued by a physician or other licensed practitioner who is authorized to prescribe medication or by their agent via a collaborative practice agreement. A prescription is usually written on a single sheet of paper that is commonly imprinted with the prescriber's name, address and telephone number. A medication order is similar to a prescription but it is written on the patient chart and intended for use by a patient in an institutional setting.

Shift from OTC to prescription drugs



A written prescription order is required for substances listed in schedule G, H, H1 and X. prescription substances listed in H such as alprazolam (**stresnil, restyl**), Ibuprofen (**combiflam**), albendazole (**bandy, ABD**), anti-biotics (**amoxiclav**), Budesonide (**budecort**), chlorzoxazone (**acemiz S, ciplox**) are never refillable and any prescription with no indications of refills is never refillable.

This trend is observed despite the high level of education observed in most of the candidates (**UG - 43.72% & PG - 39.33%**) and mature age group (**18-24 yrs – 51.59% & 35-50 yrs – 25.11%**). Thus leading to the irrational use of medicine which further leads to treatment failure in one's time of need, antimicrobial resistance, economic burden on the patient and on the country to further speed up the development of new, potent and riskier drugs for treating the disease.

The shift of self-medication to prescribed medicine from a registered physician, 65.58% shifted from OTC medicine towards medicine obtained via a prescription and 34.42% did not. A majority of the drugs administered fall into the category of schedule G, H and H1. Initial visitation to a physician gives a patient the base knowledge required for the drugs available, this followed by an online search provides with further base knowledge that they later use to continuously treat themselves either by purchasing them from a community pharmacy or via ordering them online through E-Pharmacies. Options are a multitude and regulations are lax. Hence the continuity and never-ending loop of repetition of the medicines obtained. A patient with a sore throat would rather treat himself with a week's course of antibiotics out of fear of getting sick for reasons as menial as losing time of work rather treat himself properly by visiting a general physician. This gives rise to the issue of antimicrobial resistance, and a number of other issues as has been mentioned previously in this report.

CONCLUSION:

From the analysis of the survey indicates that individuals would much rather undergo self-medication than visit a doctor at the risk of their health due to a lack of knowledge of the dangers of self-medication and the risks the drugs pose.

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