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Original Research Article

Analysis of Self-medication practices and patterns among the healthcare professionals in a tertiary care hospital

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ABSTRACT

Background & Objectives: Over recent days self medication has become much prevalent among general population as well as medical fraternity and can cause serious implications such as financial cost, wastage of resources, drug resistance and adverse effects. More than 50% of general population have been found to implicate practice of self medication. Due to the nature of their work, the health care workers have a good idea about drug dosages and frequently indulge in self medication.

Materials and Methods: This observational, questionnaire based study was conducted in a tertiary care hospital after obtaining approval from IEC. Questionnaire comprising of 20 questions pertaining to self-medication such as drugs administered, the reasons for self-medications, the diseases and adverse reactions was distributed to the staff nurses, nursing assistants, lab technicians and theatre assistants. Out of 170 healthcare professionals 150 responded

Results: Of the 90 participants who had illness 73 participants (81.1%) self-medicated. The main reasons for self-medication were availability of the old prescription (32.9%), triviality of illnesses (19.2%), familiarity with the drugs (19.2%) and long distance to reach the doctor (15.1%). The drugs used were analgesics and antipyretics (NSAIDS) (78.6%), anti-ulcer drugs (20%), anti-histamines (11.4%) and antibiotics (10%). The symptoms were headache (61.4%), fever (17.1%), acidity (17.1%), cough and cold (14.3%), body pain (12.9%) and GIT (5.7%).

Interpretation & Conclusion: Self medication practice among health care workers was proved to be high since they are closely related to doctors and drugs.

The high prevalence has to be reduced since it could lead to drug resistance and unwanted side effects.

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1. Introduction

Over recent days self medication has become much prevalent among general population as well as medical fraternity. According to the WHO, self-medication has been defined as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent diseases or symptoms. ¹ Self-Medication can also be simply explained

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by the traditional definition which depicts as "the taking of drugs, herbals or any home remedies on one's own initiative, or on advice of another person, without consulting a doctor.²

Hence practice of self medication may be an integral part of patients' self-care which is in fact the first choice when an individual encounters common health problems that do not require doctors' visit. This is being followed worldwide regardless of the prescription cost and outline of the healthcare system.³ Many reasons have been cited in literature for popularity and high prevalence of self

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medication worldwide. Some of the reasons can be of self-reliance in preventing or relieving the symptoms, rapid and direct access of the drugs, improving person's active role in ones' own health and the economic advantages. Some researchers feel that lack of medical facilities and healthcare knowledge, the ease of free accessibility of over-the-counter (OTC) drugs in the local market, excessive marketing of the drugs, poor accessibility to healthcare providers and the impoverished national drug regulatory policy can also play role in making self medication a prevalent practice.

Even though the OTC drugs are believed to be safe, its irrational or inappropriate use can cause serious implications. Many studies state that unregulated / unrestricted availability of OTC drugs are the main reasons for the misuse of these drugs. Moreover, extraction of much information from online sources, magazines or periodicals also make people courageous about treating their own illness.

Even though the self-medication helps to reduce the cost of the treatment and travel time, the major alarming problems related to self-medication are the risks of incurring significant financial cost and wastage of resources. Apart from these deleterious social effects, health hazards are increasingly reported such as drug resistance, masking of serious illnesses, drug-drug interactions, adverse effects, dependence and abuse .Irrelevant and irrational use of antibiotics in self medication leads to growing prevalence of drug resistance which leaves physicians helpless in treating many infections. Self-medication with a drug that is ineffective against the causative organism or with an inappropriate dosage may increase the risk of resistant organisms that are difficult to eradicate. The resistant organisms may then be transferred into the community which is revealed by the prevalence of resistance in the community and is positively correlated with using drugs obtained without prescriptions.⁶

Studies show that most of countries have reported that more than 50% of general population have been found to implicate practice of self medication. In Iran the overall prevalence of self-medication among the general population based on the random effect model was estimated to be around 53%.7 European countries have reported prevalence of 68%. 8 Higher prevalence of 92% have been found from studies in Kuwait.8 In India, only 31% have been found to practice self medication. ⁹The prevalence of self-medication in some countries like USA, Denmark, Spain and Lithuania is very low (17%, 3%, 11% and 22%) respectively. These countries are well developed with advanced health care, adequate health care personnel compared with developing countries. 10 This difference in prevalence can be attributed to strict legislation regarding prescription, restricted availability of OTC drugs and stringent health care system in well developed countries. In countries with high prevalence of self medication it may be

due to poorly organized health care system, free availability of drugs and lack of confidence over health care personnel.

On the other hand, self medication practice is not without advantages to human population. If done appropriately, it can readily relieve acute medical problems, can save the time spent in waiting to see a doctor, may be economical and can even save lives in acute conditions. This is especially important when it comes to health care workers, who may be exposed to a larger amount of pathogens as compared to a lay man. Among the health care workers, the staff of tertiary care hospitals, where more drugs are freely available, have very easy access to a large number of medications. Health care professionals such as staff nurses, nursing assistants, lab technicians, operation theatre technicians and pharmacists are the people closely associated with the medical practitioners and drugs. Due to the nature of their work and the work environment, they also have a good idea about drug dosages, indications and contraindications. Being employed in an urban tertiary care hospital, they are aware of the different brands of common generic drugs. Hence, self-medication amongst them has a different prevalence as compared to the general population. 11 If more awareness can be created among these health care workers regarding its deleterious effects, they may engage in self medication less frequently. In turn, if this behavioral change is implicated properly it may certainly make the health care personnel educate general population on improper self medication. Ultimately our society will be much benefited by moving away from improper, irrational and illicit use of drugs during the practice of self medication.

So this study was undertaken to analyze prevalence and pattern of self-medication practices among the healthcare professionals excluding doctors in a tertiary care hospital. This study was also planned to assess the reason behind this practice pattern of drugs chosen by them and adverse reactions experienced if any.

2. Materials and Methods

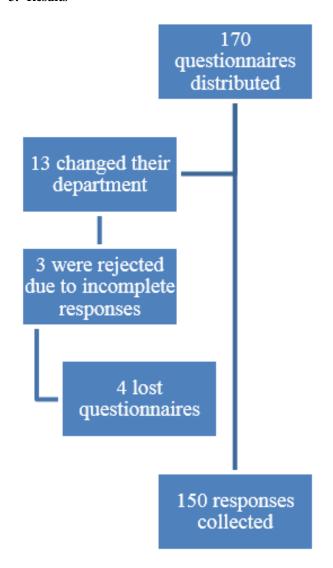
This prospective, observational, questionnaire based study was conducted in a tertiary care hospital of South Tamil Nadu after obtaining approval from the Institutional Ethics Committee in the period of July-August 2019. Due to accessibility and feasibility, all health care workers excluding doctors posted in Department of General medicine and General surgery were included in the study.

The study questionnaire used comprised of 20 questions such as history of past illnesses in the recall period of last one year, whether indulged in self-medication or not, drugs administered, the reasons for self-medications, the diseases for which self-medications taken, awareness about the side effects, habit of reading the instructions before self administering the drugs, adverse reactions if experienced and the measures taken after that reaction, and the knowledge about the dosage of the drugs. Finally

the availability of the drugs in the pharmacies without prescription was also questioned to the participants.

After obtaining informed consent, the questionnaire was distributed to the staff nurses, nursing assistants, lab technicians and theatre assistants. Out of 170 healthcare professionals, 150 responded and returned the questionnaires back. After completing data collection, data analysis was done and the results were obtained.

3. Results



Of the 150 participants, there was 107 staff nurses, 12 lab technicians, 8 were female nursing assistants, 8 pharmacists, 8 nursing superintends, 1 male nursing assistant, 3 theatre technicians and 3 hospital workers. From the analysis of the data collected from the participants, out of 150 participants, 90 participants (60%) had illnesses in the last 1 year whereas 60 participants (40%) did not have any illness in the last one year. Of the 90 participants who had illness in the past one

year 73 participants (81.1%) self-medicated whereas 17 did not self-medicate (18.9%).

The main reasons for which self-medication practices administered were found to be availability of the old prescription (24 participants - 32.9%), triviality of illnesses (14 participants - 19.2%), familiarity with the drugs (14 participants -19.2%) and long distance to reach the doctor (11 participants-15.1%). Other reasons were advice from family/peers (10.9%), poor affordability (1.4%), and fear of approaching the doctor (1.4%) (Table 1).

Out of the 73 participants, 56 participants (76.7%) used single class of drugs while 17 participants (23.3%) used multiple drugs. Among the participants who used single drug as self medication (76.7%), the common drugs were analgesics and antipyretics (NSAIDS) (75%), antibiotics (7%) followed by the anti-ulcer drugs (3.6%), then by antihistamines (3.6%) (Figure 1).

The symptoms for which the self-medication was used were headache (61.4%), fever (17.1%), acidity (17.1%), cough and cold(14.3%), body pain (12.9%) and others such as vomiting, diarrhea and stomach pain (5.7%).(Figure 2) Rarely few health staff were found to self medicate for chronic illnesses such as diabetes and hypertension.(2%). The source of the drugs were pharmacies [both from the government hospital and private drug stores] (93.1%), hospital wards (4.1%) and family, friends (2.7%) (Figure 3).

The choice of the particular drug for self-medication was based on the old prescription (58.9%), previous experience (26%), referring pharmacists (6.8%), and other reasons like their knowledge about the drugs (2.7%), getting family/peer/colleagues advice (2.7%) and others (2.7%). Of the 73 participants who self-medicated, 12.9% experienced adverse effects due to the drugs while 87.1% had no complaints (Figure 4).

Among the 73 self-medicated participants only 80.8% of them had the knowledge of adverse reactions caused by the drugs and read & understood the instructions about the drugs before self-medicating. 12.9% did not know the consequences caused by self-medicating .The knowledge about the dosage of the drugs self administered were obtained from their previous experience (57.5%), by referring pharmacists (19.2%), self knowledge as a pharmacist and staff nurse (13.7%) and from referring family members/peers/colleagues (4.1%) and others. (Figure 5). Our study revealed that 47.9% of self-medicated participants conveyed that drugs were not available without prescription, 36.9% says that only few drugs are available in the pharmacies without prescription but, 15.1% of the participants said that all the drugs are easily available in the pharmacies without any doctor's prescription.

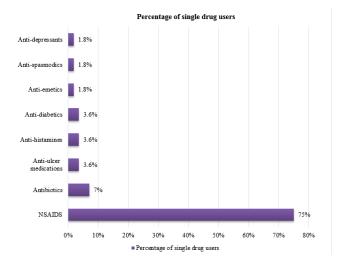


Fig. 1: Drugs used in self medication

Symptoms forwhich self medication done

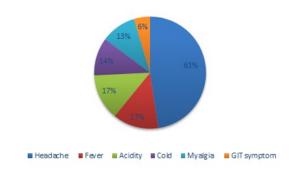


Fig. 2: Symptoms for which drugs were taken

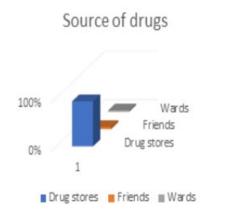


Fig. 3: Source for self medication drugs

Table 1: Reasons for self medication

Reason	% of participants
Availability old prescription	33
Trivial illness	19
Familiarity of drugs	19
Long distance to reach doctor	15
Advice from family/peer	11
Fear of doctor	1

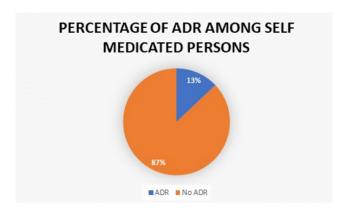


Fig. 4: Persons suffered adverse drug reactions after self medication

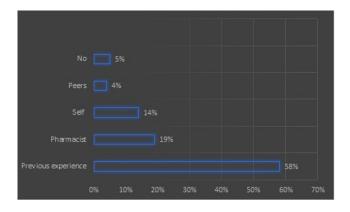


Fig. 5: Source of knowledge on dosage

4. Discussion

Self medication can be considered as double edged sword. Self medication can be approved in certain conditions but it is not without disadvantages or drawbacks. Irrational use, intake of drugs beyond stipulated duration and improper dosage can be much hazardous to patients apart from economic loss. Self medication practice is being found prevalent among health care and general population. The prevalence of this practice was reported as 75.5% in general population in a study by Mensur et al. where as another study done by S A Alganimrevealed 35.4% of self use of drugs in general population. ^{12,13} Among the health care workers variable prevalence has been reported by various studies in variety of countries. High prevalence of 76%

was found out among health science students in a study done by James H et al in Bahrain. ¹⁴ Fatimah alialbusalih et al found prevalence of 49% among health care in Saudi Arabia. ¹⁵ Considering self use of drugs without prescription in health care population, several studies have proved that higher prevalence was observed on comparison with general population. A study by Mohamed f. Ghaieth et al has confirmed this fact by showing difference of prevalence between medical students (43%) and non-medical students (31%). ¹⁶ Another study has reported marginal difference between health care and non health care group (93% and 92%). ¹⁷

Our study revealed prevalence of 81% among health care workers in contrast to the finding of 53% expressed by Nalini et al in Karnataka. But similar high prevalence of 88% was also reported by Manjusha et al in a study done among medical students in Puneand 88.24% by Gupta et al among nursing students in North India. 9.20 This high prevalence among persons related to health care system could be due to close association with doctors and easy availability of prescription. More over they are familiar with illnesses and drugs since they are very closely observing the prescription of doctors.

Several reasons have been cited by the participants of our study in order to substantiate or favour the self medication practice. Availability of old prescription and triviality of the illness are the top reasons (33% and 19%) among the several for self medication cited in our study. In contrast study done among nursing students in North India cited easy availability of drugs as the most common reason for self use of drugs. 20 This high prevalence of trivial illness as a reason for self medication was also observed in a study done by ZalikaKlemenc-Ketis et al in Slovenia among health care students. 21 Similar finding has also been expressed in Nigerian study among health care workers. 22 Even in general population, milder illness has been found as the top reason as mentioned in an Indian study and Arabian study. 13,23 This shows that health care persons and general population possess wrong and dangerous attitude of approaching doctors only when severity of illness is high. This may end up in tragic incidents such as permanent disability, even death and can incur high treatment costs. Hence awareness has to be created regarding this stigma of not approaching doctors for milder illness. Surprisingly, availability of old prescription, the top reason in our study, stimulates the health care person to indulge in self medication has not been found in any other studies. Making one time prescription and online prescription available only to pharmacy may help reduce this practice.

Self medication is being practiced mainly because of availability of drugs over the counter (OTC). OTC drugs are classified into ten categories according to WHO Anatomical Therapeutic Chemical (ATC) which are Analgesic, laxatives, anti-histamines, antithrombotic, antacids, anti-diarrheal, dermatological, cold & cough preparations, throat and nasal preparations. ⁴

Analysis of pattern of drug usage in self medication practice in our study revealed that analgesics and antipyretics were used more commonly. This goes in accordance with finding expressed by Henry jamesshailendras et al and Fatimah alialbusalih et al where analgesics have been reported as the most frequently used drugs among health care students. 15,24 South west Nigerian study done among health care workers also has come out with similar higher usage of analgesics among all the drugs. 22 NASAIDs especially paracetomol has also been found to top the list of drugs in self medication in two other studies done among health science students. 12,20 Frequent use of analgesics without prescription may be due to easy availability of these drugs in OTC and also due to low cost. Lack of awareness of ADR and seeking immediate relief for pain can be cited as other reasons for frequent use of analgesics in self medication practice. Advertisement of some of antipyretic drugs in media can also stimulate the patients to take the drug without prescription.

Though less frequent, use of antibiotics without proper prescription, has found a indeligible place in self mediation practice. Two studies done among students of health care science revealed frequency of 26% and 27% for antibiotics. 17,20 In contrast to this, our study indicated low prevalence of 10% for antibiotics. Similar such lower prevalence (19%) was also observed in a study done by Oluwole Adeyemi Babatunde et al among health care workers. 22 But higher prevalence of self use of antibiotics has been found among general population. Prevalence as high as 48% was found for use of antibiotics in general population in a study done in Sudan.²⁵ A study done by Mohamed F. Ghaieth et al in Libya showed 43% non medical students self medicated with antibiotics. 16 Though prevalence is variable, practice of self medication with antibiotics is certainly to be prohibited since we are moving towards dangerous era of antibiotic resistance. Many pathogens have become resistant to most of the commonly used antibiotics which were previously used with high sensitivity. This worse and fearsome fact can be attributed to wrong and irrational use of antibiotics due to self medication practice. Stringent law or strict prohibition of OTC is the need of the hour to ban this dangerous practice of self medication with antibiotics. If we fail in making this aspect possible wemay become helpless in treating many of the pathogens in future medical practice.

Regarding source of drugs for self medication, our study has identified pharmacy as the predominant one from where health care workers found easy to obtain the drugs they want (91%). This same source has been reported as prime one in studies done by S.a. alghanim1 et al (74%), Henry jamesshailendras et al (85%), goel d (51%). ^{13,20,24} Apart from pharmacy being identified as the main source for

drugs, other interesting sources such as books, internet websites and advice from friends have also been noted in some studies. ^{17,20}

Regulation of OTC in pharmacy, proper licensing of pharmacist and strict implementation of prescription based sales can reduce the magnitude of pharmacy being the prime source of drugs for self medication practice.

Our study showed headache as the commonest followed by fever and cough illness for which health care workers engaged in self medication practice. Similar findings were also observed in two other studies done by Henry jamesshailendra s in his study among medical students (70%) and Goel d and Gupta s in a study among nursing students(41%). ^{20,24} These findings reveal that health care workers may think headache as trivial illness which does not warrant medical advice. Since fever is commonly seen among health care workers due to exposure, they may take it with ease and indulge in self medication without any advice or prescription from doctors. In general population also, headache has been reported as the foremost reason for self medication. ¹²

Though several reasons are being discussed as the disadvantages of self medication, main reason for advising against self use of drugs is the incidence of adverse drug reactions. In general population or health care population, lack of awareness of side effects of drugs may propel them towards this practice. Having known the side effects of drugs patient or health care worker will not dare to take medicine without any proper prescription. Study done by Manjushasajith et al in Pune revealed only 30% of health care students who engaged in self medication had knowledge on adverse reactions. 19 Goel D in his study showed 59% of nursing students had some knowledge on side effects of the drugs. 20 (reference)In our study, 80% of participants agreed with knowledge on dose and side effects of the drugs. However, on further questioning on source of knowledge on side effects it was found that only 30% had authenticated source of knowledge such as drug card or pharmacist.

5. Conclusion

Self medication practice among health care workers was proved to be high since they are closely related to doctors and drugs.

The high prevalence has to be reduced since it could lead to drug resistance and unwanted side effects.

Since pharmacy has been the primary source for self medication, OTC has to be regulated by stringent laws.

More awareness has to be created among health care workers on disadvantages of self medication.

6. Conflict of Interest

The authors declare that there are no conflicts of interest in this paper.

7. Source of Funding

None.

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