Abstract

Introduction: Self-care is increasingly being realized as the need of the hour across the globe. One of the essential components of self-care is Self-medication. The factors that favor the adoption of self-care and self-medication are present in India too. However, the big question is “are Indians ready for such a change”? Hence, a study on the profile of medication use was done among households in a village in Kanyakumari district.

Methods: A cross-sectional study was conducted during January and February 2016. A total sample of 100 households was selected by simple random sampling. A pretested structured questionnaire was used to collect data. The quantitative variables were expressed in frequencies and percentages and associations tested using Chi-square or Fisher’s exact test.

Results: Among the 100 households studied, 28 had drugs that were not being used currently. Paracetamol was the single most commonly stocked medicine (60.7%). 49% of the households have practiced self-medication, i.e. used over the counter (OTC) medication in the past one year. The majority of the instances of self-medication were for simple ailments such as fever, cough, etc. Only 59% of households have the practice of always checking the expiry date of drugs before they consume them. Only 28% have the habit of always checking the names and doses when they buy drugs at the pharmacy. 36% of households usually keep the drugs in paper covers given at the pharmacy.

Conclusion: Self-medication to a certain extent is already being practiced by the general population. However, after examining the practice of medication use and storage, we conclude that the general public in our study area is not ready to employ self-medication to the fullest extent of its intended use.

Keywords: Drugs, OTC, Self-medication, Storage, Use
**Introduction**

According to the definition provided by the World Health Organization (WHO), self-care is what people do for themselves to establish and maintain health, prevent and deal with illness. With the increase in the number of diseases and people affected by them and also the perpetual shortfall in resources to treat them, self-care is increasingly being realized as the need of the hour across the globe. One of the essential components of self-care is self-medication, which is the term used to describe the use of medicines/drugs designed specially for use without medical supervision for the treatment of common health problems. Drugs that are used in self-medication are known as ‘over the counter’ (OTC) or ‘non-prescription’ drugs and, ordinarily, they can be obtained in a pharmacy without a doctor’s prescription. In some countries they can be bought in supermarkets or even in corner stores. The proper practice of self-medication requires compliance as well as proper awareness among the patients regarding the use of drugs, including correct dosage, proper storage, etc.

The government of India launched the “Jan Aushadhi” project in 2008 to provide quality medicines at affordable prices that is accessible to all particularly to those in rural area through Jan Aushadhi stores. In September 2015, the project was revamped as “Pradhan Mantri Bhartiya Janaushadhi Pariyojana”. Both OTC and prescription drugs are sold through Janaushadhi centres. The government plans to increase the number of drugs available as OTC. Consequently, access to drugs is improving across the country and is set to increase in the coming years. According to WHO, factors like growing social empowerment, increased availability and access to drugs, the demographic transition to elderly and changing disease patterns favours the adoption of self-care and self-medication as viable methods to achieve universal health coverage. All of these factors are present in India too and consequently, our country may need to shift towards self-care and self medication in the near future. However, the big question is are Indians ready for such a change?

Improper use of drugs has led to many problems, some of them potentially fatal. Some drugs have the potential to be addictive. Irrational use of drugs has impacts like an augmented chance of adverse drug reactions, antibiotic resistance, increased health care costs. Irrational use of antibiotics has resulted in widespread resistance to them. Antibiotic resistance is now a major threat to public health. It is the resistance of a microbe to an antimicrobial medication that used to be effective in treating or preventing an infection caused by a microbe. Consumption of wrong drugs can have many adverse effects and may even lead to death. The overuse, underuse or misuse of drugs such as poly-pharmacy or inappropriate and inadequate dose and duration of medication results in wastage of scarce resources and increasing health care costs. This leads to an increase in the burden on the patients, their family and subsequently the country as a whole. Throughout the world, drugs that are prescribed, dispensed and are sold irrationally, accounts for more than 50% of all the drugs. Moreover, 50% of patients fail to adhere to the prescriber’s advice and not take them correctly.

Storage of drugs, quality of drugs stored and the type of drugs in households have been studied across various countries. Various reports across the globe revealed that, there is wastage of drugs and unnecessary holding of drugs, including those that were expired. Expired drugs may not give the potential cure expected, consequently increasing the duration of morbidity. Improper storage of drugs can lead to potential loss of effectiveness. At this time when healthcare systems across the globe are gearing up to promote self-care and self-medication, it is essential to understand the current drug use profile among the population. Tamilnadu is ranked third in the country in terms of Health index and has been one of the leading states in the country when it comes to health care delivery. Kanyakumari district is the leading district in tamilnadu in terms of literacy and is ranked second in terms of HDI and GDI. Therefore, Kanyakumari district will be an ideal setting to study the drug use profile and to check if self-medication can be introduced as a viable part of health care delivery system. Any policy advocated in India needs to be suitable to a village as a large proportion of India’s population lives in villages. Hence a study with the objective of understanding the profile of medication use was done among households of a village in Kanyakumari district.

**Materials and Methods**

A cross-sectional study was conducted among the households of Marapadi village situated in Kanyakumari district of Tamilnadu, South India. The study was carried out over a period of 2 months, from January to February 2016. All the households in the village were included in the study. Institution ethical committee clearance was obtained. The study sample was calculated as 82 by using the formula $N = \frac{4pq}{d^2}$. The value of $p$ was taken as 71 based on the prevalence of self-medications. Value of $q$ was 100- $p$ i.e. 29 and $d$ is the absolute precision of 10%. This was rounded up to 100. Hence a total sample of 100 households was selected by simple random sampling. One adult member, preferably the head of the family of each household was interviewed. Households where no adult member capable of attending the interview was available during the period of data collection, were excluded from the study.

An informed written consent was obtained from all the participants. A pretested structured questionnaire was used as the data collection tool for the study. Information on types of drugs found in household, storage of drugs and
medicines left from the past treatment were collected by the investigators by visual inspection. Id numbers were issued to each household to ensure confidentiality.

**Statistical Analysis**

Data was entered into Microsoft Excel and analysis was done using Gnu pspp version 1.0.1. The quantitative variables were expressed in frequencies and percentages and Chi-square test and Fisher’s exact test were used to test the associations.

**Results**

### Table 1. Drugs stored, but not in current use

| Drugs       | No of households | Percentage (%) |
|-------------|------------------|----------------|
| Paracetamol | 17               | 60.7           |
| NSAIDs      | 6                | 21.4           |
| Antihistamines | 2             | 7.1            |
| Antibiotics | 4                | 14.3           |
| Calcium     | 1                | 3.6            |
| MVT         | 1                | 3.6            |
| Others      | 2                | 7.1            |

Looking at the socio-economic status of the study population based on B.G Prasad’s classification, of the 100 households, Upper-lower class formed the majority (45%) followed by Lower-middle class (27%) and Upper-middle class (24%). Hypertension and Diabetes Mellitus were the predominant chronic diseases present in the households for which regular drugs were being consumed (42% and 28% respectively) followed by diseases of the musculoskeletal system (10%).

Of the 100 households, 88 were using allopathic medicine while the rest i.e. 12% were found to be currently using one of the Indian systems of medicine. Also, it was found that 8% of the households always utilize Indian systems of medicine for any ailment, while 33% households occasionally do so for certain ailments.

Among the 100 households visited, 60 had drugs that they were being used currently. Among the drugs currently used, anti-hypertensives and anti-diabetic drugs were the most commonly found drugs (37 households and 22 households respectively). There were 28 households that had drugs that were not being used currently. Paracetamol was the single most commonly stocked medicine (60.7% households) among the households studied (Table 1).

49% of the households have practiced self-medication, i.e. used over the counter (OTC) medication in the past one year. The majority of the instances of self-medication was for simple ailments such as fever, cough, etc. Moreover, for simple ailments such as fever, cough, etc, only 44% households tend to visit to a doctor at first, while 21% of the households solicits the advice of a pharmacist and 15% of the households try home remedies.

Only 59% of households have the practice of always checking the expiry date of drugs before they consume them, while 28% of households usually do not check the expiry date. Out of 100 respondents, only 28% have the habit of always checking the names and doses when they buy drugs at the pharmacy, while 39% never check the name and dose of the medications that they buy (Figure 2).

![Figure 1. Habit of checking expiry dates](image1)

Pie chart showing the percentage of households with regard to the habit of checking expiring date before taking medication.

![Figure 2. Habit of checking medicines on purchase](image2)

Doughnut chart showing the percentage of households with regard to the habit of checking the name, expiring date etc. of medicines while purchasing from pharmacy.

Out of 100 persons interviewed only 36% had the practice of completing the full course of a drug as prescribed. Also, 12% of the households had the practice of keeping the leftover drugs for future consumption. 25% of respondents also revealed that they usually tend to repeat prescriptions without consulting a doctor if their problems does not settle by the completion of the course prescribed.

Among the households visited, it was found that medications were stored separately in boxes or cupboards among 40% of the households. 36% households usually keep the drugs in paper covers given at the pharmacy itself.
The study also showed that the socio-economic status of the household did not have any association with the various aspects of usage and storage of drugs.

Discussion

Our study revealed that 8% of the households always use an Indian system of medicine for any ailment, while 33% households occasionally do so. A study in Navi Mumbai reported that an Indian system of medicine was always used by 2.6% and sometimes by 46.5%. Thus, almost one-third of the households use more than one system of medicine. If these systems are utilized simultaneously it might lead to potential harmful effects in the body. This could be a major problem in self-medication.

Among the households visited, 60 had drugs that were being used currently and 28 had drugs that were not in use at the time of data collection. A study by Kumar et al. in Kabirpur, Haryana showed a similar situation where 54.6% of households had drugs and 30.96% of drugs are not used. Among the drugs currently used, anti-hypertensives and anti-diabetic drugs were the most commonly found drugs (37% and 22% respectively). A similar finding was observed by Deviprasad and Laxman, where anti-hypertensives (46%) and anti-diabetics (39%) were the most common drugs found in households.

Our study revealed that 49% of the households had practiced self- medication in the past one year. Keshari et al. reported a higher prevalence i.e. 69.6% of self-medication within 1 year period. Phalke et al. study in rural Maharashtra revealed that 48.78% were practicing self-medication for the last 5 years. According to Kumar et al., 32% of households in Chittoor district of Andhra Pradesh(AP) were self-medicating. In a study done in Kabirpur, Haryana by Kumar et al., around 30% of medicines found in households was not prescribed by a doctor.

Moreover, for simple ailments like fever, cough, etc., only 44% households tend to go to a doctor at first, while 21% consult a pharmacist and 15% of the households try self-remedies at home. Therefore, it would seem that, households in our study area are more comfortable with self-medication when dealing with simple ailments that usually form the bulk of disease incidence in a community. Selvaraj et al. also reported that Fever and headache were most common illnesses, where self-medication is being used in urban Puducherry. Similarly, a study in a rural area of Uttar Pradesh showed that most of the patients were seeking self-medication for headache and other pains. Self-medication was most frequently used in the case of a common cold (73.02%) according to the study by Varadarajan et al. in Chennai.

In our study, 59% of households had the practice of always checking the expiry date of drugs. Prabhu et al. found that only 42.5% of the population had the practice of checking the expiry dates in a study in southern Karnataka.

Our study found that only 36% have the practice of completing the full course of a drug as prescribed. This is similar to the findings of the study by Prabhu et al. were 31% compliance was reported in southern Karnataka. In our study, 12% of the households had the practice of keeping the leftover drugs for future use. This was much lower when compared to the Navi Mumbai population where 55% of households prefer to keep the leftover drugs for the anticipated future use. Kumar et al. reported findings similar to our study in Chittoor, AP where 8% of the households keep the drugs for their future use. One-fouth i.e. 25% of respondents also revealed that they usually tend to repeat prescriptions without consulting a doctor if their problems do not settle by the end of the course prescribed.

Our study found that 4% of the households usually keep the drugs in paper covers given at the pharmacy, while 39% never check the name and dose of the medications that they buy. Thus, only one-third of the respondents had the correct practice of checking that the pharmacy, while 39% never check the name and dose of the medications that they buy. Thus, only one-third of the respondents had the correct practice of checking that

Paper covers are also more prone to wear and tear and tablets that are given in loose without protective covering. The cover made of paper might lead to the ravages of the climatic conditions, especially in case of tablets that are given in loose without protective covering. This might lead to damage or loss of drugs.
Conclusion

Self-medication to a certain extent is already being practiced by the general population. However, the practice of checking the expiry date of medications, verifying their drug purchases from the pharmacy, etc. are still not satisfactory. Moreover, the storage of drugs in a significant proportion of households was also poorly done. Hence, we conclude that the general public in our study area is not ready to employ self-medication to the fullest extent of its intended use. The study was limited to households of a single village and was more focused on the profile of drug usage. Further research on the knowledge and attitude of the community regarding self-medication is needed preferably in larger populations. Furthermore, before policymakers can actively encourage self medication among the general public, extensive behaviour change communication (BCC) might also be needed.

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