

# A Survey on Home Storage of Medicines in South India

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**Abstract:** Medicines are kept in households worldwide for first aid, treatment of minor ailments such as cold, fever, headache, diarrhoea, pain, and minor wounds and injuries. These medicines are either prescribed by health professionals or obtained over-the-counter in the communities. The presence of medicines in households is a risk factor for irrational drug use mainly due to the easy access. In most communities of developing countries, there is limited knowledge among the population on the safety of drugs commonly in homes. In addition to this, controlling the use of drugs stored at home is a great task especially from unintentional users such as children which increases the risk of accidental poisoning. Moreover, presence of medicines at home has also been associated with sharing of drugs which further increase the risk of inappropriate drug use and hence the emergence of antimicrobial resistance. The burden of increasing diseases especially in developing countries, desire for quick recovery from illness and the acceptance of self-medication among communities influence home storage of drugs. Challenges in healthcare delivery such as inadequate access, lack of medical personnel and frequent drug stock outs common in developing countries may also influence communities to store drugs in homes. Many studies in Africa identified a high prevalence of drug storage at home. In Sudan, about 98% of investigated families had at least one drug product stored at home. Study conducted in Uganda also showed that about 40% of the surveyed households kept medicines at home and 30% of identified anti-bacteria's found in surveyed households were kept for future use. In Ethiopia, a study conducted almost two decades ago in Addis Ababa revealed that 20% of the studied households were found hoarding drugs, and drug sharing was practiced by 17% of the respondents. Apart from this study, little has been done to characterize drugs stored in households in south India. Therefore, this study aimed at generating data on the prevalence and factors associated with home storage of medicines in south India. The challenges of having medicines in homes include poor storage conditions such as humidity, and temperature are not regulated. This increases the risk of deterioration and expiry of medicines. Due to lack of capacity to detect expired drugs in households; these medicines are in most cases taken by the residents, increasing the risk of adverse effects. People are not mainly aware of storage of the medicines, they may keep the medicines everywhere not at particularly defined places which may cause drug deterioration. Health professionals often focus on giving patients information on medicine use with limited information offered on storage and their disposal. The medicines that inevitably remain after most treatments are disposed in various ways such as throwing in garbage pits and latrines/toilets. This inappropriate disposal of medicines poses danger to the community and the environment.

**Keywords:** Medicine Box, home storage, clinical pharmacist

## 1. Background

Medicines are kept in households worldwide for first aid, treatment of minor ailments such as cold, fever, headache, diarrhoea, pain, and minor wounds and injuries. These medicines are either prescribed by health professionals or obtained over-the-counter in the communities. The presence of medicines in households is a risk factor for irrational drug use mainly due to the easy access. In most communities of developing countries, there is limited knowledge among the population on the safety of drugs commonly in homes. In addition to this, controlling the use of drugs stored at home is a great task especially from unintentional users such as children which increases the risk of accidental poisoning. Moreover, presence of medicines at home has also been associated with sharing of drugs which further increase the risk of inappropriate drug use and hence the emergence of antimicrobial resistance.

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## 2. Methodology

**Study protocol:** The study protocol prepared before initiation of survey in the department of Pharmacy Practice, VIPS by the investigator during college hours between 2.00 PM to 4.30 PM except on Saturday, Sunday and general holidays. Information searched by using the key words i.e. medicine box, home medicine box, storage of medicine in home, pharmacist role in storing of medicine from primary, secondary and tertiary resources. Read, understand and printed the relevant information and prepared protocol which contained of background information, objectives, methodology, literature review and references. It was used whenever needed or demanded to explain and demonstrate to doctors, nurses, pharmacists, general population at the time of personnel interview at the tie of questionnaire filling by the public at hospital, community pharmacy, college, and home.

**Study setting:** This study conducted in two settings namely 1. VIPS 2. SAI Super Speciality Hospital, Rajahmundry.

**Study design:** It was a prospective, survey study.

**Study period:** It was conducted for a period of six months from January 2016 to June 2016.

**Study procedure:** Investigator visits the homes with protocol, questionnaire. Met household, asked them to fill the questionnaire. Clarify any doubts and difficult in filling questionnaire. Extract and enter all the information collected into Excel Sheet. Calculate the average of group data.

**Study questionnaire:** Questionnaire on storage of medicine in homes: Considering various parameters needed for the study by the consideration with other health care professionals. This questionnaire is used to assess the storage of medicine in their homes. It contains demographic details of respondents such as age, gender, occupation, education, no. of members in household and details on storage of medicines such as name of the medicine, dosage form, and storage locations household members in use.

## 3. Results

**Socio-demographic characteristics:** A total of 99 households, were visited during the data collection period from November to December 2016. The majority of respondents 68.68% (62/99) in the households were females. A proportion of the respondents reported not to be engaged in any formal employment while 32.32% (32/99) were males.

## 4. Conclusion

This study concludes that the Clinical Pharmacist designed and developed a medicine box by considering the need and utmost satisfaction in terms of size, shape, colour and affordability from the regional feedback from the local population.

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