

## PILING UP OF MEDICATIONS AT HOME: UNVEILING THE REASONS

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### ABSTRACT

Possessions of unused drugs can lead to situations like self-medication, consumption of wrong drugs and increase the risk of drug misuse. This abstract aims to evaluate the reasons for possession of unused medicines among the general population in Eraviperor Grama Panchayath, Pathanamthitta, Kerala. This is a descriptive cross-sectional survey conducted among 800 respondents in Eraviperor Grama Panchayath, Kerala. Data were collected through interviews using a pre-validated structured questionnaire. Institutional Ethics Committee approval was obtained. Approximately 95% of participants possessed unused medicines at their home. Most households contain 1-5 such drugs. Possession of unused medications was prevalent among

the respondents. These findings call upon the need to prescribe and dispense drugs more cautiously. Moreover, the medication adherence should be closely monitored.

**KEYWORDS:** Unused Medications, Drug misuse, Stockpiling, Medication adherence.

### INTRODUCTION

Unused medicines are drugs that are expired, deteriorated, discontinued, and/or not intended for further use. Possession of unused medicines among people, particularly patients is a common practice. A recent report of World Health Organization (WHO) illustrated that there is only 50 percent adherence to prescribed drugs in long term prescriptions worldwide.<sup>[1]</sup>

Analgesics, antimicrobials, antipsychotics and medicines for chronic conditions were found to be among the most commonly reported unused medicines.<sup>[2]</sup>

The most frequently cited reasons for not utilizing medicines are unpleasant adverse effects, symptoms relieved, forgetfulness, dosage changes or changes in treatment, unclear instructions on medicine use, illness progression, medicines being expired, intention to not waste them or the death of some patients due to life-threatening morbidities while taking medicine.<sup>[3,4]</sup> It can also be due to the high expense of medications, the lack of a proper disposal practice, or the likelihood that they will need them again in the future.

Accumulation of unused medicines at home endanger public health through suicide and poisoning, as well as the environment due to improper disposal procedures.<sup>[5]</sup> One of the main causes of several negative health outcomes, such as unreported adverse drug events, difficulties with clinical diagnosis, drug resistance and delays in seeking medical attention is the sharing of unused medications.<sup>[6]</sup>

The Indian government provides medications to people through various policies. This can be a major reason for the possession of unwanted drugs. Medication misuse is the use of a drug for a purpose other than for which it was given or intended. Despite the legislation, it is more frequent for Air force personnel to test positive for drug misuse after abusing prescription and over-the-counter medications. According to federal legislation, the prescription itself expires six months after it is written. Possession of drugs like painkillers after they have served their intended purpose raises the possibility of breaching this prohibition.

Precautionary steps should be mandatorily implemented to ensure that there is no unused medication left over with the patient. Various approaches such as drug take-back policies, monitoring medication adherence, providing test dose for any adverse reactions and so on should be soon brought forth.

## METHODS

### Study Design, Setting and Recruitment of Respondents

A descriptive cross-sectional study was conducted in Eraviperoor Grama Panchayath, Thiruvalla from November 2022 to April 2023. All participants were considered for inclusion if they were aged over 18 and only those were unable to provide a response were excluded. Ethics committee approval was obtained from Institutional Ethics Committee, faculty of pharmacy practice, Nazareth college of pharmacy, Othara, Pathanamthitta. Written informed consent was obtained from the respondents if they were willing to participate in the study.

### Data Collection

Data were collected through interviews using a semi-structured questionnaire that was used in a previous study. The questionnaire validity was pre-tested on 20 participants. The questionnaire comprised two sections: demographics of the respondents (age, gender, level of education and employment status) and information related to possession of unused medications (whether they have unused medicines at home and the reasons for possession of such drugs).

### Sample Size Calculation

Using the Cochran formula to determine the minimum sample size, a minimum of respondents was required to obtain a 95% confidence interval and a margin error of 0.05. The respondents were then randomly selected from the whole population in that area.

### Data Analysis

Data extracted from the questionnaire are presented in number and proportions. Descriptive statistics were used to categorize the variables.

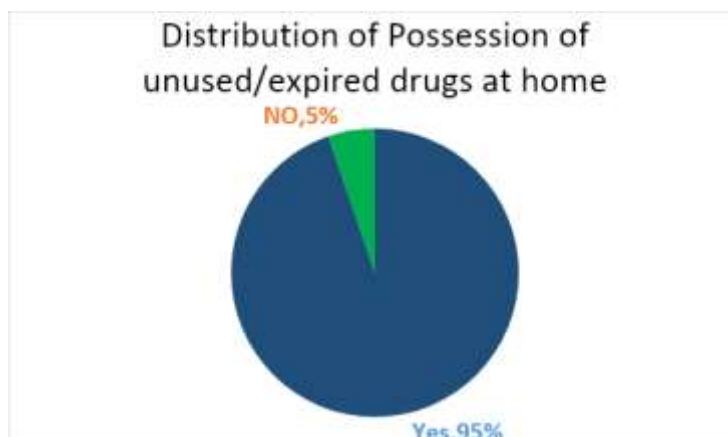
## RESULTS

A total Of 800 respondents completed the questionnaire of which many were males (n=440, 55%) and aged between 51-60 years (n=193, 24.13%). More than half of them completed secondary education (n=454, 56.75%) and a majority of them were employed (n=481, 60.12%).

**Table 1: Shows the Demographic Characteristics of the Respondents.**

SI. NO	DEMOGRAPHIC PARAMETER	CRITERIA	% (n)
1.	AGE	18-4040-60>60	35.74% (286) 44.50% (356) 19.76% (158)
2.	GENDER	MALE FEMALE	55% (440) 45% (360)
3.	EDUCATIONAL LEVEL	SCHOOL COLLEGE POST GRADUATE	30.88% (247) 56.75% (454) 12.37% (99)
4.	EMPLOYMENT STATUS	EMPLOYED UNEMPLOYED	60.12% (481) 39.88% (319)

Out of 800 participants, 95% (758) possessed unused medicines at their home. While only a minority of about 5% (42) participants reported not possessing any unused medicines at their home.



The total population of 800 were divided into 6 groups based on their response on the reason for possession of unused medicines at home. Here 42.16% participants possessed unused drugs as the expiry date of drug is passed, 28.87% possessed drugs due to self-discontinuation of medication after the condition resolved, 16% possessed drug due to changes in the drugs prescribed by their doctor, 7.89% possessed drugs that are left over from previous OTC drug purchase, 4.54% possessed drugs due to experience of adverse effects to prescribed drugs and 0.54% possessed drugs due to other reasons.

S. No.	Reasons	Frequency	Percentage
1	Doctor changed treatment	148	16
2	Self-discontinuation after condition resolved	267	28.87
3	Left over from previous OTC drug purchase	73	7.89
4	Passed expiry date	390	42.16
5	Adverse effect to prescribed drug	42	4.54
6	Others	5	0.54
	<b>Total</b>	<b>925</b>	<b>100</b>

## CONCLUSION

This is a cross-sectional study conducted to evaluate the prevalence of unused medicines at home and the reason for the same. Majority of the respondents possessed a considerable number of drugs in their households. The prevalence of unused medicines is increasing globally. The public, healthcare professionals, the media, and the government are all at blame for pharmaceutical waste, according to the studies we reviewed. Multifactorial non-adherence, patient mortality, pharmaceutical deterioration, medication loss, and stockpiling out of fear of a medicine shortage are a few of the causes that contribute to prescription waste in the general population.

On the other hand, healthcare professionals are held accountable for contributing to the problem of medication wastage by prescribing and dispensing medications repeatedly, using polypharmacy or complex treatment regimens, offering patients insufficient professional support, prescribing lengthy prescriptions and large amounts of medication, and changing therapies. Some people have a propensity to hoard goods like medicines. These medicinal supplies that are built up will probably get thrown out if they are not utilized. Since these can turn into a huge burden to humans as well as the environment, proper steps to minimize the unwanted possession of medicines should be implemented that include monitoring the medication adherence of the patient, dispensing drugs for a short term, recollection of unused drugs by the pharmacy and so on.

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