

## Analysis of dispensing pattern of OTC drugs in community pharmacy outlets, Sri Lankan perspectives; a pilot study

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### Abstract

The usage of over-the-counter (OTC) drugs all over the world is high, despite many regulatory guidelines. Therefore, this study was conducted to quantitative and qualitative analysis of the dispensing pattern of OTC drugs. A cross-sectional study was carried out for seven days at selected pharmacies and data was recorded using data sheets available at outlets. During the study period, 75 registered medicines were dispensed as OTC drugs. Of them, 40% were dispensed in age below 25, 35% in age category 25-45, 16% in the age category 45-65, and 9% over 65 years. Analgesics (15%), and multivitamins (15%), and others such as dental care products (15%) were dispensed in equal percentages. Only 1% of non-steroidal anti-inflammatory drugs were dispensed as OTC drugs. The highest OTC drugs dispensed in age over 65 years were analgesics and antitussives (29% each) following antipyretics (25%) between 65-45 years age category and analgesics (15%) and antacids (15%) between 45-25 years age category. The most prescribed OTC analgesic was Paracetamol. This study recommended further qualitative analysis of patients' decisions in the usage of OTC drugs related to symptoms.

**Keywords:** Over-the-counter drugs, analgesics, antitussives, antipyretics

### Introduction

Over-the-counter (OTC) drugs are medicines that can be sold directly to a consumer without a prescription from a healthcare professional. The individuals who take OTC drugs act as active participants in their health and the treatment of illness. The sale of OTC drugs from pharmacies can help individuals self-manage symptoms as well as

time and money. The range of OTC drugs available is often more restrictive compared to prescribed medications and there are often limitations for indications and doses as well [1]. Analysis of OTC drug usage can be beneficial for many parties including medical practitioners, patients as well as drug manufacturing companies. Furthermore, analysis of OTC drugs has an impact both socially and economically. OTC medicines yield significant savings to both consumers and the health care system by reducing the number of physician visits for self-treatable conditions [2]. Literature shows that 81% of adults use OTC drugs as a first response to minor ailments because of their convenience and immediate response. [3]. Elderly people can be identified as the usual OTC drug takers according to related research [4]. Although it is easily accessible for patients, safe use of these drugs requires knowledge, common sense, and responsibility. Inappropriate self-medication with OTC drugs can have serious implications including deaths, especially in extremes of ages (pediatrics and geriatrics), pregnant and lactating mothers [5]. These kinds of effects and OTC drug addiction can be reduced by monitoring the usage of OTC drugs [6]. Both prescriptions only drugs and OTC drugs should need the attention of the consumer's knowledge.

Medication knowledge assessment is used to assess a person's knowledge and ability to read and understand information necessary for appropriate medication use [7]. It will help to ensure the safe and appropriate usage of OTC drugs and early intervention to minimize the risks. This research was carried out to determine the most dispensed OTC drug categories and to analyze the percentage usage of OTC drugs among different age groups. The general objective was to qualitative and

quantitative analysis of the dispensing pattern of OTC drugs.

**Research Methodology**

This research was conducted as a cross-sectional study. Data were collected from four community pharmacies located in the areas of Aguruwella, Balangoda, Alawwa, and Warakapola. Patients' entries with OTC drugs were recorded for a period of seven days. A data entry sheet was maintained which included the name of the drug, quantity/volume of the specific drug, disease condition, and the age of the patient. Record books of pharmacists and pharmacy databases were also used to record the data. After the data collection, OTC drugs were categorized into 12 categories, and each was divided according to four age categories. Percentages of each dispensed OTC drug were calculated to determine the most frequently dispensed OTC drugs among four age categories. All data obtained were analyzed using the SPSS statistical package.

**Result and Discussion**

A total of 75 patients' entries were recorded with OTC drugs dispensed at above mentioned community pharmacies.

water, and mouthwash. Antihistamines, multivitamines and analgesics were dispensed 17% each. Antiseptic, antiworm, and antitussive were the least dispensed drug categories among this age group (3% each) (Figure 1).

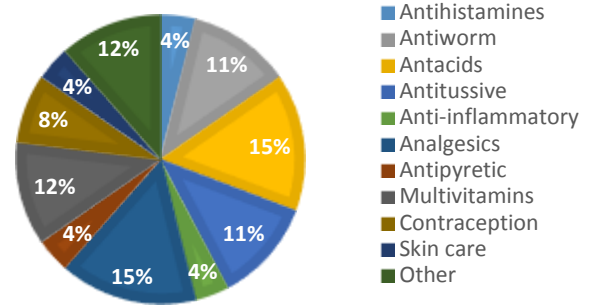


Fig. 2 Percentages of dispensed OTC drugs among those aged between 25- 45 years

Antacids and analgesics were the most dispensed drugs in this age group (15%) following antiworm and antitussives in similar percentages (11%). Other category drugs and multivitamins were dispensed 12% each. The skin care, antihistamines, antipyretic and anti-inflammatory medicines were the least dispensed among this age group (4% each) (Figure 2).

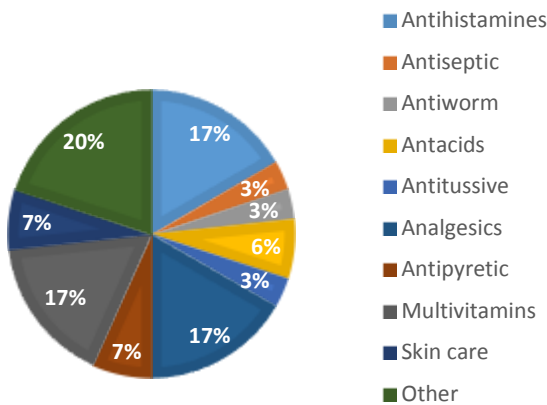


Fig. 1 Percentages of dispensed OTC drugs among individuals below 25 years

The drugs categorized as other (20%) were the most dispensed OTC drug category among this age group. This category includes Samahan, gripe

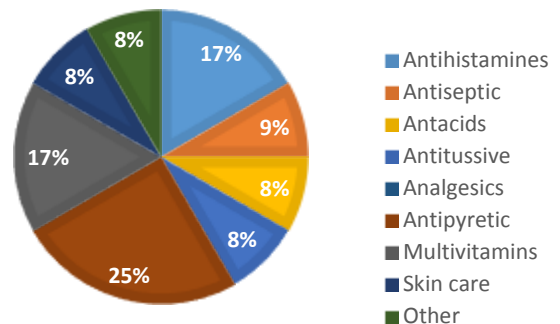


Fig. 3 Percentages of dispensed OTC drugs among those aged between 45-65 years

Antipyretics were the mostly dispensed drugs (25%) among this age group. Multivitamins and antihistamines were dispensed in similar percentages (17%). Skincare, antitussives, antacids, and other category were the least dispensed (8% each) (Figure 3).

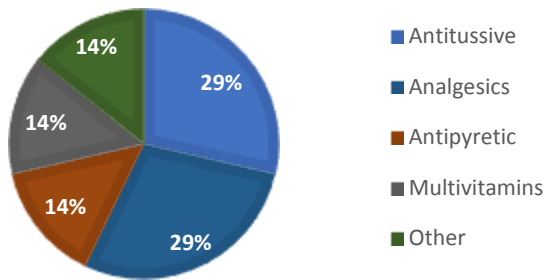


Fig. 4 Percentages of dispensed OTC drugs among age over 65 years

Antitussives and analgesics were the most dispensed drugs in age over 65 years (29%). In other categories, multivitamins and antipyretics were the least dispensed (14% each) (Figure 4).

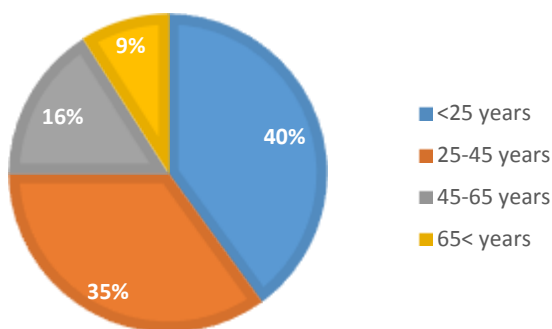


Fig. 5 OTC drugs usage by different age categories

The highest percentage of (40%) OTC drug consumption was within the age group below 25 years, followed by 25-45 years (35%), 45-65 years (16%), and above 65 years (9%) (Figure 5).

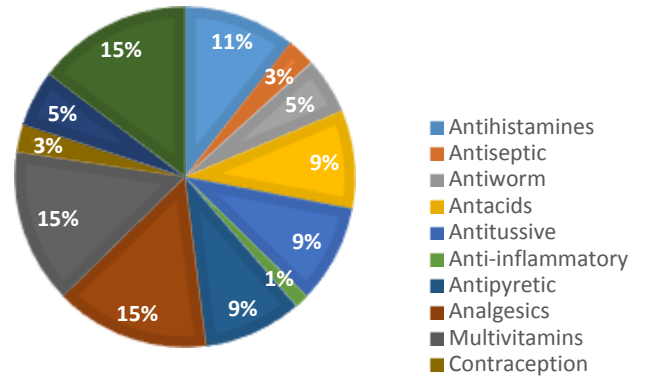


Fig. 6 totally dispensed OTC drugs comparison

This indicates analgesics, multivitamins & other category were the mostly dispensed and obtained with the same percentage (15%). Anti-inflammatory was the least dispensed OTC drug (1%). Antitussives, antipyretics, and antacids were dispensed in equal amount (9%) (Figure 6).

Patients who bought OTC drugs were divided into four age groups to analyse the OTC drugs dispensing pattern. Most OTC drugs were directly purchased by patients mentioning the brand name. Besides, some OTC drugs were listed in the prescriptions as well. The drugs which categorized as other category were the mostly dispensed OTC drug category (20%) among the age below 25 years. This category includes children and infants, and they were used these drugs to prevent minor symptoms like stomach-ache, runny nose etc. This may be probably because of their playful activities. Heartburn, headache, and gastritis were the main symptoms reported by the patients between 25 – 45 years age category, who bought mostly the antacids and analgesics. Skin care, antihistamines, antipyretics, and anti-inflammatory drugs were not much used among the age group between 25 -45 years (4%).

Among the 45 – 65 years age category, antipyretic medicines were the mostly dispensed. Unlike the age below 45 years, the usage of antiworm drugs was not seen among the age category between 45-65 years. When looking at the dispensing pattern of OTC drugs among age over 65 years, most of them were reported by suffering from a sore throat, joint

pain, and headache. Therefore, antitussives and analgesics were the most dispensed drugs within this age group. According to the previous studies similar OTC drug categories were dispensed for similar symptoms in elderly patients [3] [4]. When considering the overall dispensing pattern of OTC drugs among all age groups, it can be predicted that young age people are more likely to consume OTC drugs and it may be due to the occurrence of minor ailments more frequently. Analgesics, multivitamins & other category OTC drugs were the most dispensed drug categories among all the age groups, and as a percentage, those were equally 15%. Paracetamol which belongs to analgesics is more likely to dispense at community pharmacies mainly for the reasons of minor ailments like fever & pain among each age group. Similar results were indicated in the previous study done by A. Mourya *et al* [7]. In addition, Samahan and gripe water were highly used by patients among each age group, and thereby it may account for gaining a high percentage as compared with the other OTC drug categories. Anti-inflammatory was the least dispensed OTC drug category among each age group. As a percentage, it was 1%. The reason for obtaining this much of low percentage may be due to the availability of most anti-inflammatory medicines as prescription-only medicines.

Doctors and pharmacists play a very important role in creating awareness about self-medication by educating the patients. Before suggesting any OTC drug, pharmacists should thoroughly assess the nature and extent of the patient's condition and recommend that they seek expert care when needed. Hence it is suggested that public education is mandatory on the type of illnesses for self-diagnosis and its medication, along with the implementation of stringent rules and regulations on their use. It is also essential to highlight the dangers of OTC drugs on their misuse. [8].

### Recommendation

Since the sample size taken for this study was too small, it is a limitation of this study. Therefore, it is recommended to further develop this study for qualitative analysis of usage of OTC drugs by patients relate to their symptoms in all age categories.

### Conclusion

According to the results we have obtained, the most dispensed OTC drug categories were analgesics and multivitamins. The most dispensed OTC drug was paracetamol which belongs to the category of analgesics. The age category below 25 years was identified with high consumption of OTC drugs.

### Declarations

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