



**DISPENSING PATTERN AND KNOWLEDGE, ATTITUDE & PRACTICE REGARDING
OVER THE COUNTER MEDICATIONS AMONGST PHARMACISTS IN MANDYA CITY**

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Article Received on 10/09/2022

Article Revised on 30/09/2022

Article Accepted on 20/10/2022

ABSTRACT

Background: Over-the-counter (OTC) drug is a medicine that is available without a prescription, and hence also referred to as a “non-prescription drug”. The class of OTC drugs includes vitamins, tonics, iron preparations, analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), cough mixtures, skin care products, sore throat products, antipyretics, and laxatives. **Objectives:** The main objective of our study is to assess the Knowledge, Attitude, and Practice (KAP) of OTC drugs among dispensers working in retail pharmacies and to determine the drug dispensing pattern of pharmacies of OTC medications. **Methodology:** It is a community-based cross-sectional study conducted in community pharmacies in Mandya city. The Data were collected from a questionnaire form which is distributed to the registered community pharmacists in pharmacies of Mandya city. **Results:** A total of 75 Pharmacists working in different pharmacies were willing to participate in this study voluntarily, and gave written informed consent forms. The majority of the pharmacists interviewed were of age group 26-44 years, 42(56%) participants were male which belonged to the majority category. It was observed that 42(56%) pharmacists had 5 or less than 5 years of experience. The mean score of dispensers was 6.8(68%), 3.74(37.4%), and 4.92(49.2%) for knowledge assessment, attitude-based assessment, and practice-based assessment respectively. It was observed that among the dispensed drugs medicines for GIT 75(100%), were more commonly dispensed. **Conclusion:** This study showed that many dispensers were aware of OTC drugs. They were not aware to which schedule OTC drugs have been included. There was enthusiasm to periodically update OTC drugs but it was observed that most of the pharmacists assumed there is major changes in therapeutic effect between generic drugs and branded drugs

KEYWORDS: OTC drugs, Community Pharmacy, Pharmacist.

INTRODUCTION

An Over-the-counter (OTC) drug is a medicine that is available without a prescription, and hence also referred to as a “non-prescription drug”. The class of OTC drugs includes vitamins, tonics, iron preparations, analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), cough mixtures, skin care products, sore throat products, antipyretics, and laxatives.^[1] In India, the poor socio-economic status and unaffordable fees of doctors make people rely on self-medication advised by family members, friends, and pharmacists.^[2]

Medicinal products for self-medication may be defined for our current setup as those which do not require a medical prescription and which are distributed, produced, and sold with the main intention, that they will be used by consumers on their own initiative and

responsibility when they consider such a use appropriate. The term “over-the-counter (OTC) medicines” is widely used to describe this class of products. The packing, package size, labelling, and product information will generally be designed and written to ensure appropriate self-medication.

It ought to be realized that the difference between self-medication products and prescription medicines isn't a pointy one; variations in the indefinite amount and/or indications will result in variations in classification. For example, ibuprofen is sold only on prescription at a high dose for the treatment of arthritis and over the counter at low doses for the treatment of headaches and other minor pain. It is sometimes the practice that smaller packages are available as self-medication.^[3]

Pharmacists and drug dispensers are the final linkage between medication and patients. Sometimes public finds pharmacists to be an easily accessible and acceptable source of advice and suggestion.^[4-5] Considering the importance of the judicious use of OTC drugs and the role of drug dispensers in fostering that practice among patients, we carried out this study to assess KAPs of OTC drugs among pharmacists working in retail pharmacy.

METHODOLOGY

The study is a cross-sectional study design and was conducted for a period of 6 months by the pharmacists working in the community pharmacy in Mandya city. There are 388 pharmacies in Mandya city and a sample size of 75 pharmacists were taken in the study. The inclusion criteria are based on all registered pharmacists who are willing to participate in the study. In our present study, descriptive statistical analysis has been carried out. Simple percentage calculations will be conducted to arrive at the conclusion of our study. Data will be entered in Microsoft Excel and Word has been used to generate graphs, tables, etc.

RESULTS

This study was a cross sectional questionnaire based study carried out in the retail pharmacies of Mandya city. A total of 75 dispensers working in different pharmacies, and willing to participate in the study voluntarily, and who gave informed consent for the same were included in the study. This study was commenced after getting approval from Institutional Ethics Committee.

Demographic categorization of pharmacists

Table 1: Demographic categorization of participants.

Variables	Number (%)
AGE(YEARS)	33.92 ± 11.28
Gender	
Male	42(56)
Female	33(44)
Experience(Years)	
</= 5	42 (56)
> 5	33(44)
Qualification	
D Pharm	48 (64)
B Pharm	26 (34.66)
Pharm D	1 (1.33)

In the above table, the demographic categorization of participants is shown accordingly. Out of the total medical dispensers, the majority of the pharmacists interviewed were of age group 26-44 years (52%) who belong to the adult group.

Among the 75 voluntary participants 42(56%) were males and 33(44%) were found to be females. It was also observed that 42 (56%) pharmacists had 5 or less than 5 years of experience and 33 pharmacists had more than 5 years of experience in the dispensing of medications in a retail pharmacy.

In our study the participants were also grouped and categorized based on their qualification, the pharmacist who were interviewed fell into one of the 3 major groups. There were a total of 48(64%) pharmacists who had a diploma in pharmacy and the second category had about 26(34.66) number of pharmacists who had completed their B pharmacy. the third category had only 1(1.33%) participant who held a pharm D degree. Majority of the interviewed participants belonged to the 1st category who had diploma in pharmacy.

Pharmacists distribution based on age

All the pharmacist interviewed were categorized into 4 groups based on their age as 18-25 years (young adult), 26-44 years (adult), 45-59 years (middle age), > 60 years (old age). Our study revealed that, out of the total 75 participants, the majority of the pharmacists interviewed were of age group 26- 44 years.

Table 1: Pharmacist distribution based on age (n=75).

Age (years)	No. of pharmacists	Percentage(%)
18 – 25	21	28
26 – 44	39	52
45 – 59	14	18.66
>60	1	1.33

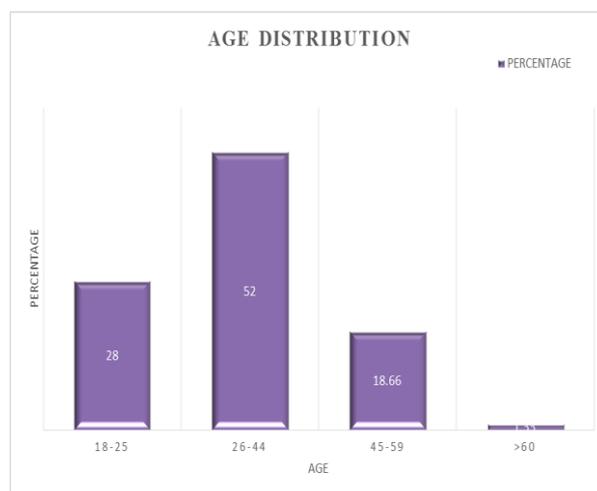


Fig. 1: Pharmacist distribution based on age.

Pharmacists distribution based on gender

Among the 75 voluntary participants it was observed that 42(56%) were males and 33(44%) were females.

Table 2: Pharmacists distribution based on gender.

Sex	No of pharmacists	Percentage(%)
Male	42	56
Female	33	44

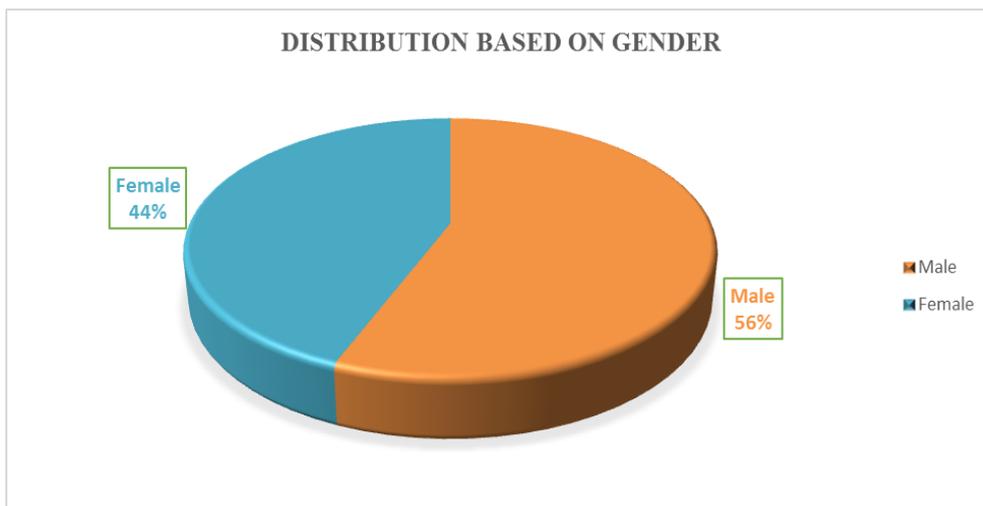


Fig 2: Pharmacists distribution based on gender.

PHARMACISTS DISTRIBUTION BASED ON EXPERIENCE

Our study revealed that, 42 (56%) pharmacists had 5 or less than 5 years of experience and 33 pharmacists had more than 5 years of experience in the dispensing of medications in a retail pharmacy.

Table 3: Percentage distribution based on experience.

Experience(years)	No. of pharmacists	Percentage(%)
<=5	42	56
>5	33	44

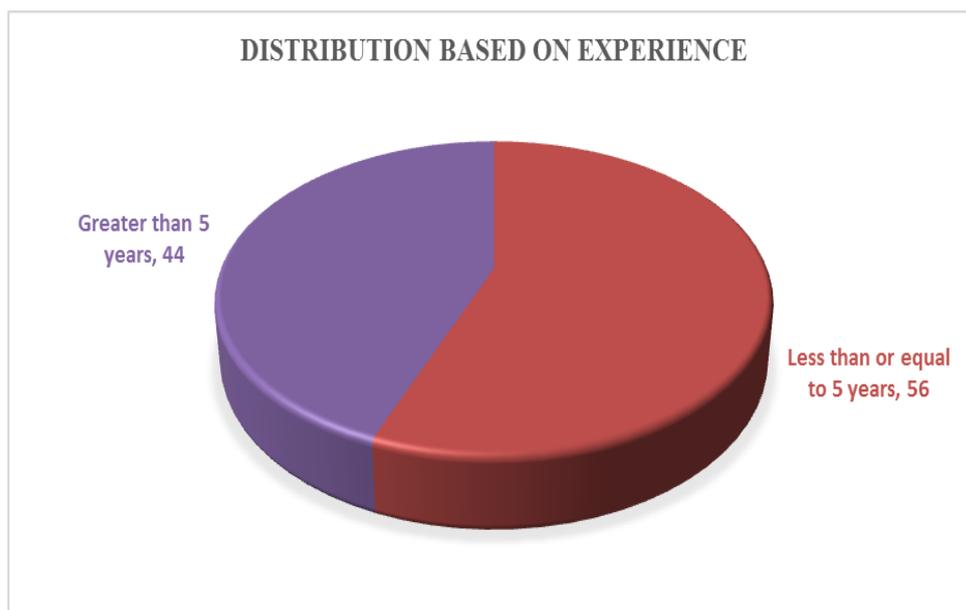


Fig 3: Pharmacists distribution based on experience.

Pharmacists distribution based on educational qualification

In our study the participants were categorized based on their qualification, the pharmacist who were interviewed fell into one of the 3 major groups. There were a total of 48(64%)

pharmacists who had a diploma in pharmacy and the second category had about 26(34.66) number of pharmacists who had completed their B pharmacy. the third category had only 1(1.33%) participant who held a pharm D degree.

Table 4: Percentage distribution of pharmacists based on educational qualification.

QUALIFICATION	NO. OF PHARMACISTS	PERCENTAGE (%)
D Pharm	48	64
B Pharm	26	34.66
Pharm D	1	1.33

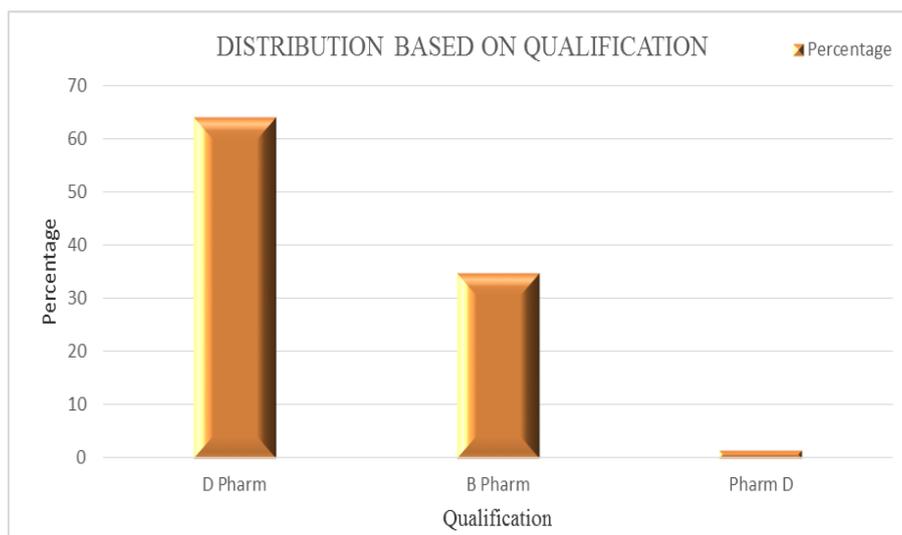


Fig 4: Percentage distribution of pharmacists based on educational qualification.

Knowledge, attitude and practice

The instrument for our study was a self-administered, structured pre-tested questionnaire adopted from previously conducted similar studies and modified to fit with our current, a total of 22 questions were prepared.

Questionnaire consisted of two major parts. First part had questions pertaining to sociodemographic details of dispensers and second part, 2A had categories of OTC drugs commonly and frequently dispensed, and second sub group 2B contained 22 questions which belonged to knowledge, attitude and practice questionnaire. (10, 6, and 6 in number for the assessment of KAP about OTC respectively).

Questionnaire was distributed to 83 pharmacies but only 75 returned with completely filled forms. so, our response rate of our study was 90.36%.

The questionnaires were handed over to the participants after explaining the purpose of the study. Any doubt regarding questionnaires was clarified by investigators. Approximately 15-25 minutes time was given for filling the questionnaire. A score of 1 was allocated for each correct answer or positive response and score 0 was allocated for wrong, or negative response and also for questions marked as do not know. Only completely filled questionnaire were selected for final data analysis.

Table 6: Knowledge assessment questionnaire and results.

Q No.	Knowledge assessment questionnaire (yes/no/do not know)	No. of correct answers	Percentage (%)
1.	In medical terms, does OTC means over the counter ?	74	98.66
2.	In India, there is no legal recognition for OTC.	34	45.33
3.	Can drugs categorized under Schedule H can be sold without a prescription?	45	60
4.	Do generic drugs have more side effects.	41	54.66
5.	Do generic drugs work slower than branded drugs?	33	44
6.	Do you think all OTC drugs are safe and effective?	38	50.66
Q No.	Knowledge assessment questionnaire (with options)	No. of correct answers	Percentage (%)
7.	OTC drugs are used usually for treating diseases like: A) Chronic illness B) Minor illness and injury C) Do not know	65	86.66
8.	While using OTC drugs, caution should be taken mostly during: A) Pregnancy B) Lactation C) Adolescent D) Elderly E) Children F) All of the above	50	66.66
9.	Can OTC drugs cause side effects?	41	54.66

	A) Mostly B) Never C) Sometimes D) Do not know		
10.	If suspected side effects(s) are seen then one should: A) immediately stop using the drug B) Take low dose until side effect(s) subside C) Continue taking the drug regardless of the side effects. D) Report to a doctor	75	100

Most of the pharmacists were aware of OTC drugs (74,98.66%). Only about 34(45.33%) of the pharmacist knew whether there was any legal recognition in India or not. More than half of the pharmacist were not aware if drugs which were under schedule H could be sold as OTC (45, 60%). only 41(54.66%) were aware that generic drugs and branded drugs have similar side effects and 33(44%) participants were aware that generic and branded drugs had similar action and gave therapeutic effect similarly when administered to the same

individual.

About 65(86.66%) were aware that it was okay to use OTC drugs for minor ailments and 50(66.66%) were aware that caution should be taken in special groups like pregnancy when using OTC drugs. 41(54.66%) dispensers were aware that OTC drugs can also cause side effects alone, and all the pharmacists (75,100%) were aware of what to do if side effects was caused while using OTC drugs.

Attitude assessment

Table 7: Attitude assessment questionnaire and results.

Question No.	Attitude assessment questionnaire (yes/no/don't know)	No..of correct answers	Percentage (%)
1)	Is it necessary to update the information about OTC periodically?	70	93.33
2)	Do you agree that OTC drugs support self-medication in patients?	44	58.66
3)	Do you contemplate that antibiotics should be made available as OTC?	41	54.66
4)	OTC, drugs are cheaper and more convenient. Do you think so?	34	45.33
5)	Is it okay to share OTC medication with others?	42	56
6)	Is it appropriate to treat minor ailments like a common cold with OTC medications?	48	64

The questions were yes or no or do not know type, where, for correct answer or positive answer they were marked right and given '1' marks, and for negative or wrong answer or do not know, they were marked as wrong and given '0' marks.

It was seen in our study that the pharmacist was enthusiastic to update their knowledge on OTC drugs periodically (93.33%). About 44(58.66%) pharmacist agreed that OTC drugs support self-medication. 41(54.66%) pharmacists were concerned about antibiotics being made OTC available. 34(45.33%)

pharmacists agreed that OTC drugs were cheaper and more convenient to treat smaller ailments, but also gave opinions that this can be misused.

More than half of the interviewed pharmacists were okay with sharing of OTC drugs if similar ailments were seen in the patients, only 42(56) pharmacists were against this notion.

About 48(64%) agreed that it was okay to use OTC drugs for small ailments like common cold etc.

PRACTICE ASSESSMENT

Table 8: Practice assessment questionnaire and result.

Q No.	Practice assessment questionnaire	No. of correct answers	Percentage (%)
1.	Do you dispense drugs after receiving a prescription?	71	94.66
2.	Do you dispense an alternative brand in case of unavailability of the prescribed brand without consulting the concerned physician?	49	65.33
3.	Are you updating your knowledge about OTC?	66	88
4.	Do you recommend patients consult a doctor when they approach you with any ailments instead of providing them medicines yourself?	53	70.66

5.	If you suspect about the abuse/ misuse of OTC will you counsel the customers/ patients?	62	82.66
6.	What do you do, if OTC drugs show a change in shape, color, and or odor will you discard them?	64	85.33

Out of the 75 participants, 71(94.66%) dispensed drugs after receiving prescription and about 49 (65.33%) did not dispense alternative drugs without consulting the doctor first. 66(88%) participants gave a positive response to updating of their knowledge about OTC drugs. only 53(70.66%) recommended patients to

physicians for major ailments instead of providing medicines themselves. About 62(82.66%) counselled consumers if they suspected or made aware of any misuse of medicines. About 64(85.33%) dispensers knew what to do in case of changes in OTC drugs.

Mean knowledge, attitude and practice assessment of the participants

Table 9: mean score of KAP.

DOMAINS	MEAN CORRECT ANSWERS	PERCENTAGE (%)
KNOWLEDGE (Maximum score 10)	6.8±1.73	68%
ATTITUDE (Maximum score 6)	3.74±1.32	37.4%
PRACTICE (Maximum score 6)	4.92±1.08	49.2%

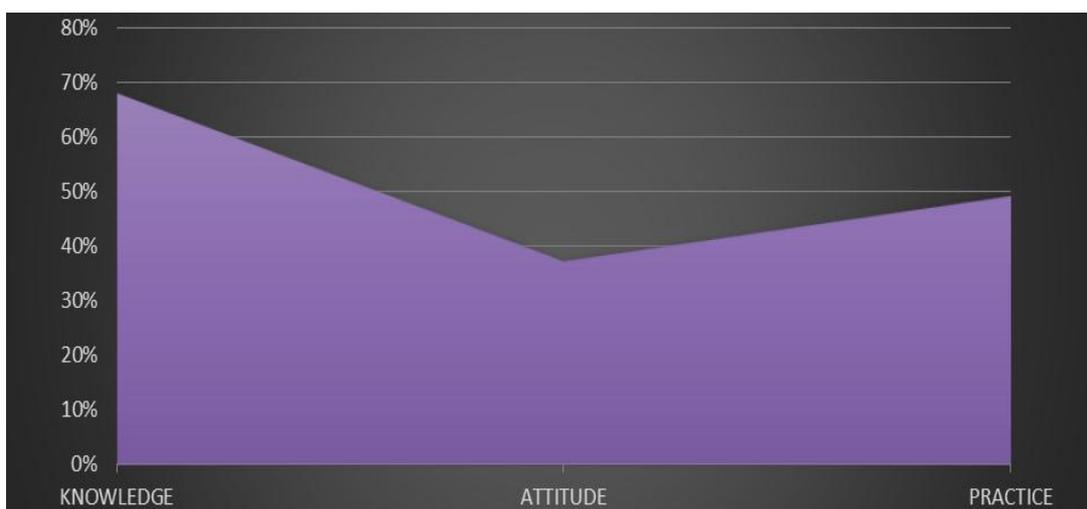


Figure no. 5: KAP assessment of the participants.

Among the 75 participants the KAP assessment was carried out based on the response to the questionnaire.

For the knowledge assessment the pharmacists scored a mean score of 6.8(68%), for attitude based assessment they scored a mean of 3.74(37.4%) and for practice based assessment, pharmacists scored a mean of 4.92(49.2%).

Dispensing pattern of OTC drugs

The following table contains the second part the questionnaire, 2A. Here, the most common OTC drugs dispensed by the pharmacist was recorded.

The data was collected based on the information provided by the pharmacist to the investigators.

The pharmacist gave information about the most common drugs or medications which were dispensed

from their retail pharmacies on a daily basis.

Based on the information and data collected, the drugs commonly dispensed were categorized into mainly 7 groups namely, Anti -infective, medicines for GIT, vitamins and nutritional supplements, analgesics and antipyretics, antidiabetics, antibiotics and miscellaneous.

It was observed that 69(92%) pharmacists dispensed Anti –infective as OTC drugs, 75 (100%)of the individuals dispensed medicines for GIT, 74(98.66%) dispensers dispensed vitamins and nutritional supplements, 71(94.66%) pharmacists dispensed analgesics and antipyretics, 25(33.33%) participants sold antidiabetics as OTC, about 33 retail pharmacists dispensed (44%)antibiotics and 70(93.33%) participants dispensed miscellaneous products like ketacanazole shampoos, ORS and oral contraceptives to name a few.

Table 10: Dispensing pattern of OTC drugs.

Commonly dispensed OTC drugs	Number of OTC drugs Dispensed	Percentage (%)
Anti-infectives	69	92
Medicines for GIT	75	100
Vitamins and nutritional supplements	74	98.66
Analgesics and antipyretics	71	94.66
Anti -diabetics	25	33.33
Antibiotics	33	44
Miscellaneous	70	93.3

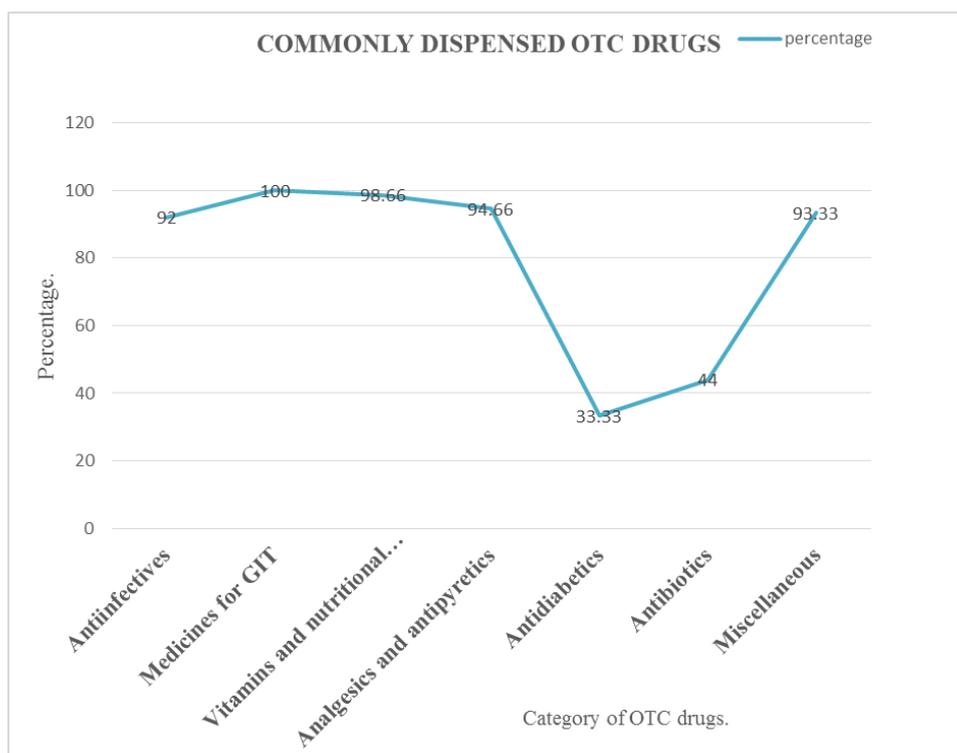


Fig 6: commonly dispensed OTC drugs.

DISCUSSION

At the community level, improper self-medication could result in an increase in drug-induced disease and in wasteful public expenditure. When used properly, OTC drugs and products are very effective in treating a number of common ailments. Recommendations from pharmacists enable patients to make educated choices regarding the use of OTC products.^[6]

There are few studies done to search through into the perception of dispensers/ pharmacists working in community pharmacies about OTC drugs. In our study, it was noted that pharmacist were aware of OTC drugs and most of the interviewed pharmacists were not aware if drugs under schedule H can be sold as OTC. For the knowledge assessment, the pharmacists scored a mean score of 6.8(68%), for the attitude-based assessment they scored a mean of 3.74(37.4%), and for the practice-based assessment, pharmacists scored a mean of 4.92(49.2%). There was enthusiasm to periodically update OTC drugs but it was observed that most of the pharmacists were seen to differentiate between generic drugs and branded

drugs, they assumed that generic drugs had more side effects and took more time to show therapeutic effects. Our study was similar to the study of **Bikash Meher *et al.***,^[7] This study showed that many dispensers were not much aware of OTC drugs as well as in which schedule, the OTC drugs were included.

In our study, the participants were categorized based on their qualifications, and the pharmacist where interviewed fell into one of the 3 major groups. There were a total of 48(64%) pharmacists who had a diploma in pharmacy and the second category had about 26(34.66%) pharmacists who had completed their B Pharmacy, the third category had only 1(1.33%) participants who held a Pharm D degree; and it was observed that 69(92%) pharmacists dispensed Anti-infectives as OTC drugs, 75(100%) medicines for GIT 74(98.66%), vitamins and nutritional supplements, 71(94.66%), analgesics and antipyretics, 25(33.33%) anti-diabetics as OTC, (44%) antibiotics and 70(93.33%) are found to be miscellaneous products like ketoconazole shampoos, ORS and oral contraceptives to name a few.

Our study was similar to *Abinaya Ravichandran and Basavareddy et al.*, it was observed that 97.3% of the pharmacist were certified with D Pharm/ B. Pharm degree holders. Among the OTC dispensed, common were analgesics (75%), antacids (48%), antihistamines (40%) and, others 35%.^[8]

6.0 CONCLUSION

The findings of the study showed that the majority of the pharmacists had basic knowledge regarding OTC drugs, but the practice of the clinical pharmacy profession needs to be improved. It is recommended that need for health education interventions such as pamphlets and awareness programs about the hazards of misusing drugs target both the general public as well as pharmacists thereby promoting the appropriate use of drugs.

Hence, the study concludes that improving pharmacists' KAP about OTC can improve the rational use of non-prescription (OTC) drugs.

REFERENCES

1. Abraham B, Sreeraj AP, Divya S, Sona S. Study on self-medication patterns and perspectives of over-the-counter (OTC) drugs. *Int J Pharma Res Rev.*, 2015; 4: 30-4.
2. Rekha MS, Roopashree, Rekha MB, Purushotham N. A study on use of over the counter drugs among 1st year medical students in a tertiary care teaching hospital. *Res Rev J Pharmacol Toxicol Stud.*, 2015; 3: 4-20.
3. WHO; created in 2000; Guidelines for the regulatory assessment of medicinal products for use in Self-medication; last accessed on September 12, 2022; Available: <http://aap.who.int/medicine docs/pdf>.
4. World Health Organization: The role of the pharmacist in self-care and self-medication. Report of the 4th WHO Consultative Group on the Role of the Pharmacist. The Hague, 1998. <http://www.who.int/medicines/library/dap/whodap-98-13/who-dap-9813.pdf> (Last accessed on 2022 Oct 10).
5. Svarstad BL, Bultman DC, Mount JK. Patient counseling provided in community pharmacies: effects of state regulation, pharmacist age, and busyness. *J Am Pharm Assoc*, 2004; 44: 22-29.
6. Yvette C.Terrie, BSP Pharm, RPh Yvette C.Terrie, BSP Pharm, RPh, created on June 1, 2007, *Proper Selection of OTC Products: The Role of the Pharmacist*, last accessed on sep 2022; Available: https://www.pharmacytimes.com/view/otc_2007-06_4794.
7. Bikash Meher, SakthiBalan, Elambirai Pugazhentni. A study on Knowledge, Attitude and Practice of Over the Counter Drugs among Dispensers Working in the Retail Pharmacies of a South India City-A Cross-sectional Questionnaire Based Study, *Journal of clinical and diagnostic research*, 2018; 12(1): FC01-FC04.
8. S Abinaya Ravichandran, Asha Basavareddy.

Perception of pharmacists regarding over the counter medication: A survey. *Indian Journal of Pharmacology*, 2016; 48(6): 729-732.