

A STUDY ON DISPENSING PATTERN OF OTC (OVER THE COUNTER) MEDICATION AMONG COMMUNITY PHARMACIST IN KALABURAGI CITY

Aswathi Kurian*¹, Faiza Tasneem², Feroz Ahmed³, Gourishankar.S⁴

¹Department Of Pharmacy Practice, Rajiv Memorial Education Society's College of Pharmacy, Kalaburagi -585102, Karnataka, India

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Corresponding Author:

Dr. Aswathi Kurian

Email:

Aswathikurian1023@gmail.com

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ABSTRACT

Purpose: Over the counter drugs (OTC) are sold without the prescription of a registered medical practitioner. There are reports that OTC drug market in India is on the rise. This is attributed to the rising cost of healthcare, difficulty in accessing healthcare, and an alarming tendency to self-manage symptoms. The outcome of this is OTC related adverse effects, abuse and hospitalizations.

Subjects and Methods: The primary objective was to assess the knowledge of drug dispensing pattern of community pharmacists. The secondary objective was to assess the knowledge regarding drug related problems of over the counter medication. The tertiary objective was to find out whether the pharmacists involving in counselling activities. A community based, observational study was conducted among community pharmacist in Kalaburagi city, to find out knowledge on dispensing pattern of OTC medication. All the community pharmacist participated in the study were provided with a data collection form including self-structured questionnaires. One week after pre-test all the community pharmacist were educated regarding OTC drugs by means of providing information leaflets about OTC drugs. Post-test has been taken after 15 days of education by means of same questionnaires. Data were entered into Excel and analyzed using SPSS software. Pre and post intervention data were compared using student's t-test.

Results: Among 110 pharmacist, males 98 (89.1%) were more compared to females 12(10.9%). The mean knowledge scores on drug dispensing pattern of community pharmacist in pre-test were 57.0% and post test is 87.6%.

Conclusions: Among 110 pharmacist, males 98 (89.1%) were more compared to females 12(10.9%). The mean knowledge scores on drug dispensing pattern of community pharmacist in pre-test were 57.0% and post test is 87.6%.

INTRODUCTION

Over the counter drug (OTC) means a drug that is sold without prescription of a registered medical practitioner. They are also known as non-prescription medicines (Shroti & Rajput, 2011). According to World Health Organization (WHO), Self-medication (SM) is defined as the use of medication by a patient on his own initiative or on the advice of a pharmacist or lay person instead of consulting a medical practitioner (Pentareddy et al., 2017). Self-medication with non-prescription medicine represents a growing issue in the daily counselling practice of community pharmacies (Seiberth et al., 2020). The use of OTC medications has been

reported to be on the rise internationally. The OTC drug market in India currently ranks 11th in the global OTC market. This trend is increasing and is expected to reach 9th position within next 5 years (Suresha & Sooraj, 2020). Since Indian patients have a huge tendency of self-treatment, the Indian market is characterized by a huge demand for OTC drugs. In India, though the OTC phrase has no legal recognition, all the drugs that are not included in the list of prescription drugs are considered as non-prescription drugs. Prescription drugs are those that fall under two schedules of the drug and cosmetic rules 1945: schedule H and schedule X.

Schedule H and X are drugs which can be sold only on the prescription of a registered medical practitioner. This legal requirement is made to prevent self-medication of drugs. Self-medication with OTC analgesics such as paracetamol among children and adolescents is increasing. This constitutes an important public health concern. Various studies have shown that the use of OTC drugs is twice as common as that of prescribed medication. Also, it has been observed that self-medication is often used along with prescribed medication. OTC related emergency room visits increased by 70% from 2004 to 2008 (Nagaraj & Srinivas, 2015; Benotsch et al., 2014). In a recent New Mexico study of deaths from unintentional drug poisoning, 0.9% was from OTC medications. A study in California showed that 8.5% admitted to abusing prescription drugs and 16.2% admitted to abusing OTC medications, mostly ephedrine and other stimulants (Sharma et al., 2017).

A study by Phalke et al. reported prevalence of self-medication in rural population of state of Maharashtra in India to be 81.5%. However, in Tamil Nadu, only 23% of the rural population resorted to self-medication. The prevalence of self-medication in Urban Delhi was found to be 92.8%, whereas a study conducted at Berhampur in Odisha found the prevalence of OTC medication use to be 18.72%. Overall, 52% Indians were estimated to self-medicate in India according to a web portal-based survey of 20000 people across 10 cities (Marathe et al., 2020). Before the Food and Drug Administration (FDA) existed in the United States, all medications were allowed to be self-medicated; alcohol, cocaine, marijuana, and opium were included in some OTC products without notification to users. For example, in the United States of America, products containing over 80 active ingredients of different therapeutic groups were switched from prescription-only to OTC (Status between 1976 and 2000).

In 2007, a new law in United States of America became effective that required companies to report serious adverse drug events (ADE) associated with OTC medications, from there the law and regulation of OTC medications was issued. People mostly reach for self-care products to help themselves their common health problems which include fever, body pains, diarrhea, vomiting, cough, indigestion and (UPRI) upper respiratory tract infections. This is because it is considered easier, more cost-effective, timesaving, or the problem may seem too unimportant to require making an appointment with a healthcare profession (HCP) and in other cases, they may have few or no other options (Aziz, 2019). The contributing factor to the high prevalence of self-medication include: ease of access to medicines, lack of healthcare knowledge excessive marketing, inadequate enforcement of regulatory policies, poor accessibility to healthcare providers, and lack of public healthcare facilities.

The most commonly dispensed OTC medications were analgesics, antibiotics, anti-diarrheal agents, antihistamines, antipyretics, cough suppressants, tonics and vitamins (Azis et al., 2018; Basak & Sathyanarayana, 2010). OTC medication offers advantages like easy access to medicines, self-management of minor ailments with the involvement of pharmacists, and utilization of available resources. However, it is not always safe and has been associated with negative health consequences. Self-medication with OTC analgesics such as paracetamol among children and adolescents is increasing. This constitutes an important public health concern. Various studies have shown that the use of OTC drugs is twice as common as that of prescribed medication. Also, it has been observed that self-medication is often used along

with prescribed medication. Exposure to OTC Ibuprofen and other OTC non-steroidal anti-inflammatory drugs (NSAID) is substantial and leads to increased risk of gastrointestinal bleeding. OTC related adverse effects are predominantly gastrointestinal complaints, allergic reaction, psychosis, tachycardia, seizures dizziness leading to increase in the number of hospital admissions.

There are reports that Phenylpropanolamine (PPA) is the major ingredient in more than 70 over the counter preparations. PPA has been recently associated with neurological manifestations including psychosis, seizures and intracerebral haematoma (Nagaraj & Srinivas, 2015; Benotsch et al., 2014). Some interact with other medicines, supplements, food and drinks and some causes problem for people with certain medical conditions (Sharma et al., 2017). The ready availability of OTC drugs places the weakest individuals at greatest risk these are the patients from low socioeconomic strata, the elderly and others taking multiple medications, and some illiterate individuals who are incapable of evaluating safety information mentioned on the drug label (Marathe, 2020).

Several studies on the subject indicate that there are risks such as misdiagnosis, drug resistance, and use of medications in excessive amounts, use of expired medications, prolonged duration of use, and medication interactions (Aziz & Abdulla, 2019). It reverts some risks to human consumers may incur significant financial costs; excessive antimicrobial use can lead to pathogen resistance; many adverse events and drug-drug interactions can occur; and life expectancy can shorten (Aziz et al., 2018; Basak & Sathyanarayana, 2010). According to WHO, it has been estimated that more than 50% of the antibiotics worldwide are sold without medical prescription. In addition, high resistance rates are noted in communities where antibiotic sales without prescription are common practices (Torres & Middleton, 2020). Pharmacies are licensed to sell both prescription-only medicines (POMs) as well as over-the-counter medicines (Kagashe, 2011).

Broad Therapeutic Classes of OTC Medications

1. Analgesics and antipyretics
2. Cold, cough, and allergy products
3. Night-time sleep-aids
4. Gastrointestinal products
5. Dermatological products

Over-the-counter (OTC) medications may seem risk-free – after all, you don't need a doctor's prescription to buy them. Just because they are readily available doesn't mean you don't need to follow an OTC drug's directions carefully. Some OTC medicines show risks for people with certain medical conditions, as well as for pregnant women. Some drugs can interact adversely with other medications, food, or drinks. And if you take too much medication, use it for too long a period of time, or otherwise misuse the medication, you face other risks. Here's what you need to know about the most common types of OTC medicines.

Pain Relievers: - OTC pain relievers are typically used for mild pain or fever. The active ingredients in these medications are either acetaminophen or 1 of the nonsteroidal anti-inflammatory drugs (NSAIDs) – aspirin, ibuprofen, or naproxen sodium. These drugs are generally safe and free of side effects when taken as directed, but you need to be aware of several risks. First risk is liver damage from taking too much acetaminophen. Ibuprofen and naproxen can cause kidney damage or stomach bleeding in certain situations. Children and teens should not take aspirin for fever or flu because it increases the risk for an illness called Reye syndrome.

Laxatives: - Laxatives show some risks if used improperly, but the most common problems that stem from laxatives are because of overuse. Typically, OTC laxatives are not recommended for people with mild constipation. For chronic constipation, your doctor may

recommend 1 for a short period of time. If you use a laxative frequently, you may become reliant on laxatives to have a bowel movement. You may also need to take an increasing dose of a laxative to achieve the same effect.

Heartburn Remedies: - Traditional OTC drugs for heartburn are antacids with familiar household names, such as Rolaids, Tums, and Maalox; they work by neutralizing acid in the stomach. Newer remedies, such as H2 blockers and proton pump inhibitors, literally halt the production of acid in the first place. Traditional antacids are typically made up of some combination of salts, which may cause diarrhea or constipation in some people. They may also interfere with absorption of some prescription medications. The H2 blockers and proton pump inhibitor drugs are generally free of these side effects, but they don't work for everyone, and they can interact with some prescription medications.

Sleep aids: - OTC sleep aids don't cause "sleepwalking," as some prescription sleep medicines do, but they still have some risks. Some OTC sleep aids longer efficacy than 8 hours, which means you may still be drowsy after using the drug to sleep through the night. Another warning about OTC sleep aids, you shouldn't use them for longer than 2 weeks. A guideline that many people ignore to used. Most experts agree that if you still have sleeping problems after 2 weeks, you should see your doctor.

Cough, Cold, and Allergy Remedies: - Common OTC options include decongestants, antihistamines, cough suppressants, and expectorants. Make sure to select a drug that closely matches your symptoms and use it as directed. Some of these drugs do show risks for certain people. For example, if you have high blood pressure or heart disease, talk with your doctor before using OTC decongestants. Some older antihistamine medications, commonly called "first generation" antihistamines, cause drowsiness, as well as eye and mouth dryness, abdominal pain, and headaches. These side effects are much less common with some of the newer, "second generation" antihistamines, which often are labelled "no drowsy" on their package. The FDA and the American Academy of Pediatrics advise parents not to give OTC cold and cough medication to infants or small children younger than 4 years old because of life-threatening side effects (Reyad & Biswas, 2014). Globally medical and drug practices vary by region. Pharmacists have dispensing rights in some developing countries but not in others. However, in some Asians nations dispensing right to the physician portrays a different situation in terms of supply of medicines to the community. In most developing nations, a shortage of pharmacy personnel, poor implementations of pharmaceutical drug policies, and lack of supervision by regulatory authorities are some of the main factors that favour the non-prescription sale of drugs. Nevertheless, the community pharmacist is considered the main professional responsible for the safe delivery of medicines to consumers. By law pharmacists are not authorized to dispense antibiotics and other drugs that may need supervision after administration (Khan & Ibrahim, 2013). Proper use of OTC medications can improve the status of health care system. Pharmacists can play major role in proper use of OTC medication by giving information about instruction and possible side effect of drugs (Shakya, 2021; Halila et al., 2015). Identifying, solving and preventing drug related problems (DRPS) for the purpose of achieving optimal patient outcomes and quality of life (Wilbur & Mohammadi, 2010). Good Pharmacy Practice (GPP) guidelines have been prepared by the WHO and international pharmaceutical federation, to encourage all countries to develop pharmacy practice minimum standards (Paes & De, 2018). It is recognized that pharmacy practice varies from country to country and between different areas within a country despite the existence of GPP guidelines by a recognized body (Stone, 1997). GPP guidelines have been framed and implemented in India to achieve a standard practice. However, the quality of dispensing provided seems to be way below the acceptable levels of GPP. The guidelines states that the pharmacists have to provide professional counselling regarding the use of

medicines, their side effects, and precautions if any (Paes & De, 2018; Hussain & Ibrahim, 2011).

Need For the Study

Since Indian populations have a huge tendency of self-medication hence the use of OTC (Over the Counter) medications has been reported to be on the rise. Most of the patients were unaware of the contraindications or undesirable effects of the OTC drugs, of which the pharmacist should have enlightened them. And this does not happen in most of the present scenario cases either it due to lack of knowledge or negligence. To improve awareness of pharmacists about OTC drug dispensing, we have chosen this topic.

Literature Review

Shrotri R et al. (2011). conducted study on “A study on over the counter drugs in retail pharmacies in Indore city” 180 pharmacies were selected randomly from Indore city, using simple random sampling technique and the response were obtained from 127 pharmacies only. Amongst the visited pharmacies that is 180, only 127 pharmacists or shopkeepers took part in the study (n=127). The demographic profile of pharmacists and consumers according to the information obtained. Among 127 shopkeepers of retail pharmacies only 48% are having their education in pharmacy field, over the counter drug made by consumer is 73.2% cases and 26.7% in case of pharmacist. Clinical history of consumers was taken by 81.1% of pharmacists or shopkeepers before giving OTC drugs, while only 18.9% do not. The pharmacists or shopkeepers selling the over counter drugs were much aware (68.5%) about the adverse effect or side effect of drug than the consumers. The pharmacists (42.5%) change the brand written by physician. Forty seven percent of the pharmacists believe that such medications need prescription while others do not. The prevalence of use of OTC drugs was alarmingly high in Indore city. NSAIDs were the drugs most commonly used over the counter. Few people consult pharmacists on drug information. There is need for authorities to be proactive regarding over the counter, prescribed and non-prescribed drugs so as to ensure rational sale.

Pentareddy MR et al. (2017) has conducted a study on “comparison of pattern of self-medication among urban and rural population of Telangana state”, India. Among the group of drugs used antibiotics were the common drugs used in rural area (74%) and cough suppressants (50%) in urban area. Rural individuals preferred self-medication with the opinion of saving time and urban people felt that it was less expensive.

Seiberth MJ et al. (2020) have conducted a study on “What is the attitude towards and the current practice of information exchange during self-medication counselling in German community pharmacies”. An assessment through self-report and non-participant observation. In the self-report, all parameters were rated by more than 76% of 1068 participants has important. Concurrent medication was determined to be the most difficult parameter to address (54%). During observation, the information gathering parameters were each addressed between 8 to 63% in the consultations, parameters of information provision between 3 to 34%.

Aim & Objective

To assess the knowledge of the community pharmacists on dispensing of OTC medications. To assess the knowledge of drug dispensing pattern of community pharmacists. To find out the impact of education to registered community pharmacist regarding dispensing pattern of OTC medications. To find out whether pharmacists involving in counselling activities.

METHODOLOGY

Plan Of the Study

Study Design

A community based prospective interventional study.

Source Of Data

Data collection form, Self-structured questionnaire, Textbooks, Research and review articles.

Study Subjects

This study was conducted among caesarean sections at Al-Wahdah Teaching Hospital, which was available during the period of data collection which was one month “March 2021” and the total number of caesarean sections was 218.

Inclusion Criteria

Retail registered community pharmacy practitioners of Kalaburagi city, Registered Pharmacist with experience not less than 6 months.

Exclusion Criteria

Non-registered pharmacists, Hospital pharmacists.

Duration Of Study

Study was conducted for period of 06 months (January-2021 to June-2021).

Study Site

Various community pharmacies of Kalaburagi city.

Study Procedure

Phase-1

The study was initiated after getting approval from IRB and was carried out for a period of six months. All the participants were given Informed Consent Form which are duly signed by them, after explaining the importance of the study. The participant’s data was collected using self-designed data collection form, questionnaires were validated during IRB and given to participants which they filled or select the right answer or wrong answer. After the completion of pre-test all the participants were given information leaflet on OTC medication, which consist all the safety aspects of OTC medications.

Phase-2

After the gap of 2 weeks again the same questionnaire was given to the participants to fill. The questionnaires were then evaluated by providing marks i.e., correct answer was given 1mark whereas wrong answers were given 0 marks. All the data collected was entered into the Microsoft excel sheet for the data analysis.

Phase-3

Statistical analysis was carried out by using SPSS software. Pre and post intervention data were compared using student T-test. Standard deviation and confidence of interval will be assessed for hypothesis testing.

RESULTS AND DISCUSSION

We have enrolled 117 community pharmacists out of which 07 were not included because of follow up / Dropouts. Hence for further analysis we have considered 110 community pharmacists.

Demographic Characteristics of Community Pharmacists

The present study included community pharmacists of both genders that is male 98(89.1%) and female 12 (10.9%). The participants were divided into 04 age groups of 10 years interval.

Table 1: Depicting age and gender wise distribution of community pharmacists.

Age in years	Males		Females		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
21-30	45	45.9	7	58.3	52	47.3
31-40	40	40.8	4	33.3	44	40.0
41-50	7	7.1	1	8.4	8	7.3
>50	6	6.2	0	0.0	6	5.4
Total	98	100.0	12	100.0	110	100.0

Figure no.1 (A): Graphical representation of age and gender wise distribution of community pharmacists

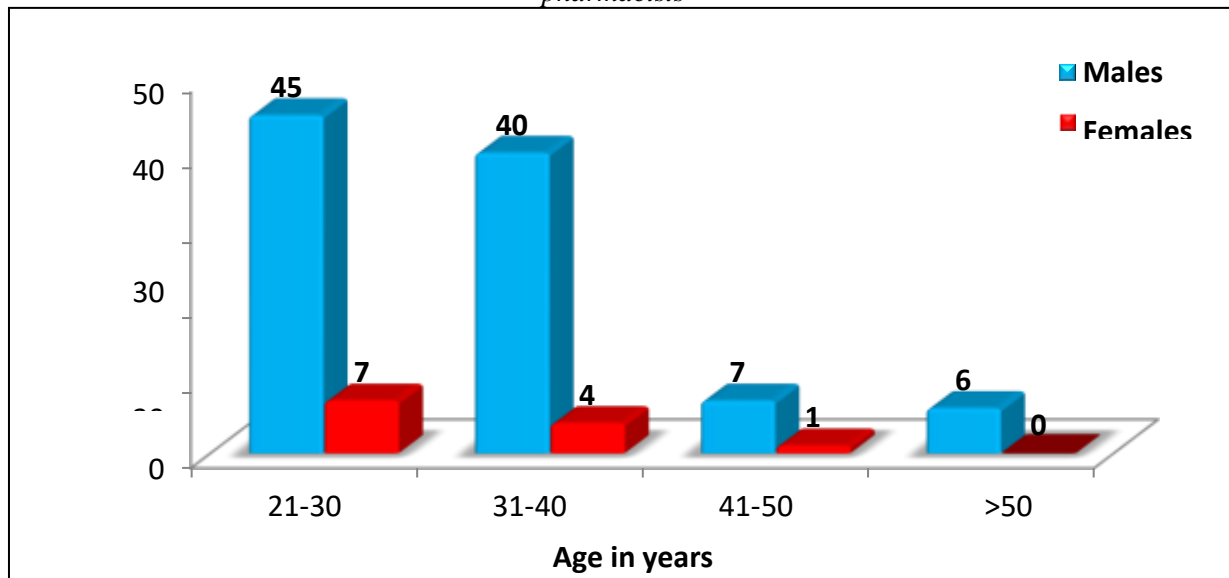
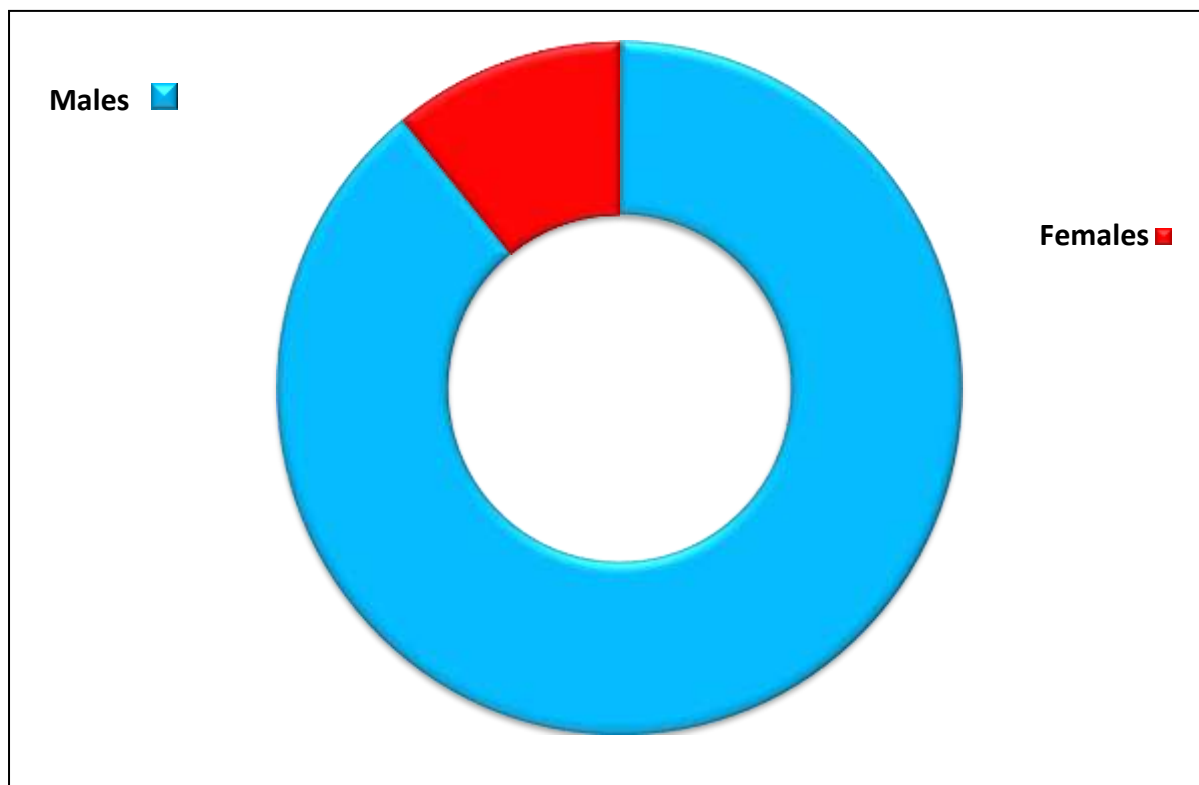


Figure no.1 (B): Pie diagram representing gender wise distribution of community pharmacists

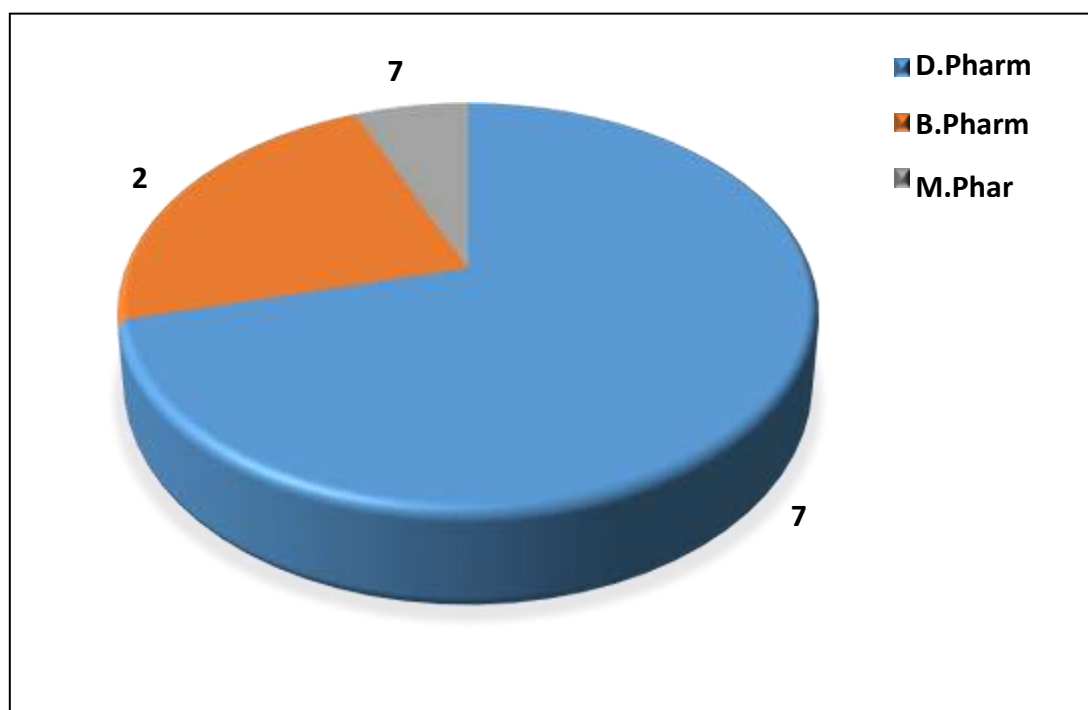


We have also categorized the pharmacist as per their qualification that is D.Pharm holders were 49(44.5%), followed by B.Pharm were 54 (49.1%) and M.Pharm were 7 (6.4%).

Table No.2: Qualification wise distribution of community pharmacists.

Qualification	Number	Percentage
D Pharm	78	70.9
B Pharm	25	22.7
M Pharm	7	6.4
Total	110	100.0

Figure no.2: Pie diagram representing qualification wise distribution of community pharmacists



Based on their experience we grouped the community pharmacists into 4 categories with minimum of 5 years of experience and >20 years' experience as highest.

Table No.3: Depicting experience wise distribution of community pharmacists

Experience in years	Number	Percentage
1—5	38	34.5
6—10	34	30.9
11—15	21	19.1
16—20	8	7.3
>20 years	9	8.2
Total	110	100.0

Figure No.3: Graphical representation of experience wise distribution of community pharmacist



Distribution of Respondents According to Pre and Post-Test Scores

Table No.4: Depicting drug dispensing pattern of community pharmacists in pre and post-tests.

Drug dispensing pattern	Pre-test scores	Percentage	Post- test scores	Percentage
Knowledge	6.84 ± 1.47	57.0	10.51 ± 1.05	87.6

In our study the knowledge scores on drug dispensing pattern of community pharmacists in the pre-test was 57.0%, in the post-test knowledge score was 87.6%.

Figure no.4: Graphical representation of drug dispensing pattern of community pharmacists in pre and post-tests

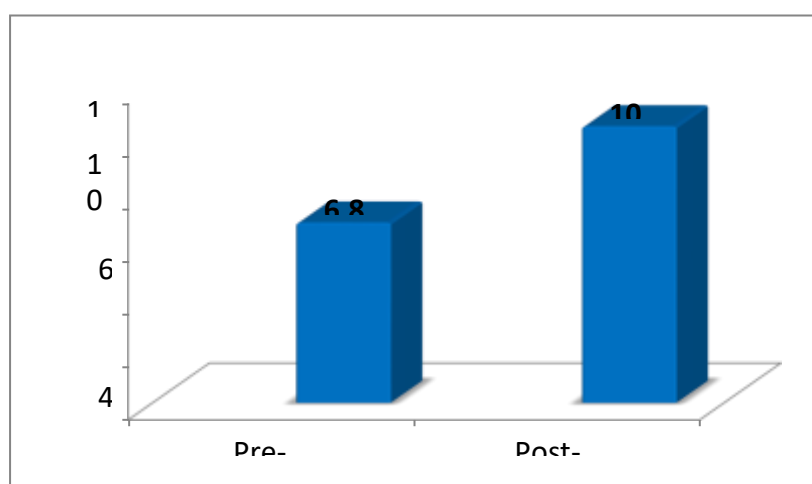


Table No.5: Comparison of knowledge scores on drug dispensing pattern of community pharmacists in pre and post-test.

Drug dispensing pattern	Pre-test scores	Post- test scores	Differencescore (%)	t-test value	P-value & significance
	Mean ± SD	Mean ± SD			
Knowledge	6.84 ± 1.47	10.51 ± 1.05	3.67 (30.6%)	t = 24.29	P = 0.000, VHS

Our study shows that, there was statistically very highly significant difference of mean knowledge scores on drug dispensing pattern of community pharmacists between pre and post-test (P<0.001). The mean knowledge scores on drug dispensing pattern of community pharmacist in post-test was significantly high as compare to pre-test mean knowledge score, the post-test knowledge score was significantly increased 30.6% The intervention that was the structured health education regarding drug dispensing pattern of community pharmacist was significantly effective.

Distribution Of Respondents According to Attitude of Community Pharmacists Towards Drug Dispensing Pattern

Table No.6: Comparison of attitude scores on drug related problems of Over the Counter medication of community pharmacists in pre and post-test intervention

Questions	Pre-Test			Post-Test		
	Agree No. (%)	Disagree No. (%)	No opinion No. (%)	Agree No. (%)	Disagree No. (%)	No opinion No. (%)
Do you think OTC drugs encourage self-medication among patients	98 (89.1%)	7 (6.4%)	5 (4.5%)	105 (95.4%)	3 (2.7%)	2 (1.9%)
According to you is their age restriction necessary for obtaining OTC	59 (53.6%)	36 (32.7%)	15 (13.7%)	109 (99.1%)	1 (0.9%)	0 (0.0%)
Do you think it is necessary to periodically update drug information	55 (50.0%)	24 (21.8%)	31 (28.2%)	110 (100.0%)	0 (0.0%)	0 (0.0%)
Are you concerned about the misuse of OTC	83 (75.5%)	27 (24.5%)	0 (0.0%)	105 (95.4%)	5 (4.6%)	0 (0.0%)
OTC medication brings more margins in sale	41 (37.3%)	34 (30.9%)	35 (31.8%)	98 (89.0%)	2 (1.9%)	10 (9.1%)
OTC medication under advice will give better outcome	56 (50.9%)	32 (29.1%)	22 (20.0%)	107 (97.2%)	2 (1.9%)	1 (0.9%)
All OTC drugs are free of adverse effects	44 (40.0%)	54 (49.1%)	12 (10.9%)	9 (8.2%)	100 (90.9%)	1 (0.9%)
Do you consider other system of medicines (ayur, homeo) as OTC	57 (51.8%)	53 (48.2%)	0 (0.0%)	36 (32.7%)	74 (67.3%)	0 (0.0%)

The following table no.7 and graph no.7 depicts the community pharmacists' response when they were asking "Do you think it is necessary to periodically update drug information?" and their response recorded before and after pre-test as follow.

Table No.7: Depicting subjects' response regarding Q.15 - Do you think it is necessary to periodically update drug information?

Question	Pre-Test			Post-Test		
	Agree No. (%)	Disagree No. (%)	No opinion No. (%)	Agree No. (%)	Disagree No. (%)	No opinion No. (%)
Do you think it is necessary to periodically update drug information	55 (50.0%)	24 (21.8%)	31 (28.2%)	110 (100.0%)	0 (0.0%)	0 (0.0%)

Figure No.5: Graphical representation of subject's response regarding Q.15 - Do you think it is necessary to periodically update drug information

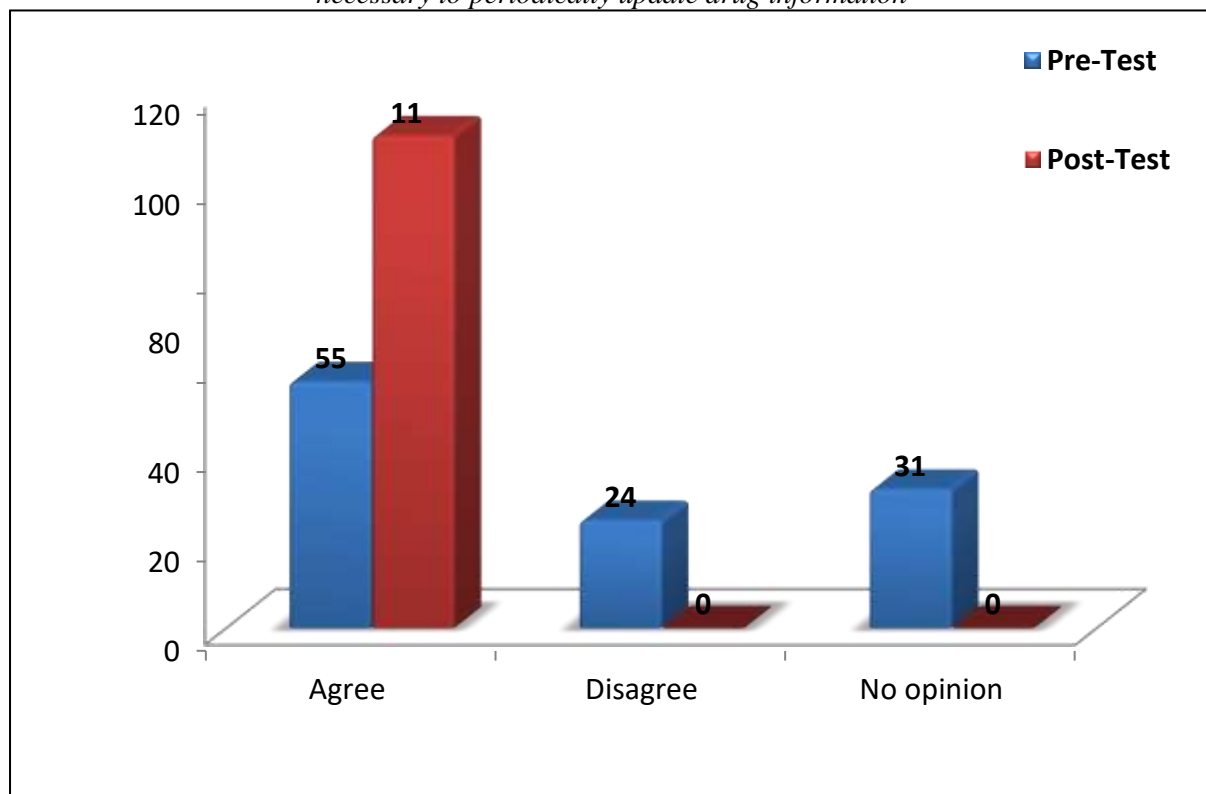


Table No.8: Depicting subjects' response regarding Q.17 – OTC medication brings more margins in sale?

Question	Pre-Test			Post-Test		
	Agree No. (%)	Disagree No. (%)	No opinion No. (%)	Agree No. (%)	Disagree No. (%)	No opinion No. (%)
OTC medication brings more margins in sale	41 (37.3%)	34 (30.9%)	35 (31.8%)	98 (89.0%)	2 (1.9%)	10 (9.1%)

Figure No.6: Graphical representation of subject's response regarding Q.17 - OTC medication brings more margins in sale?

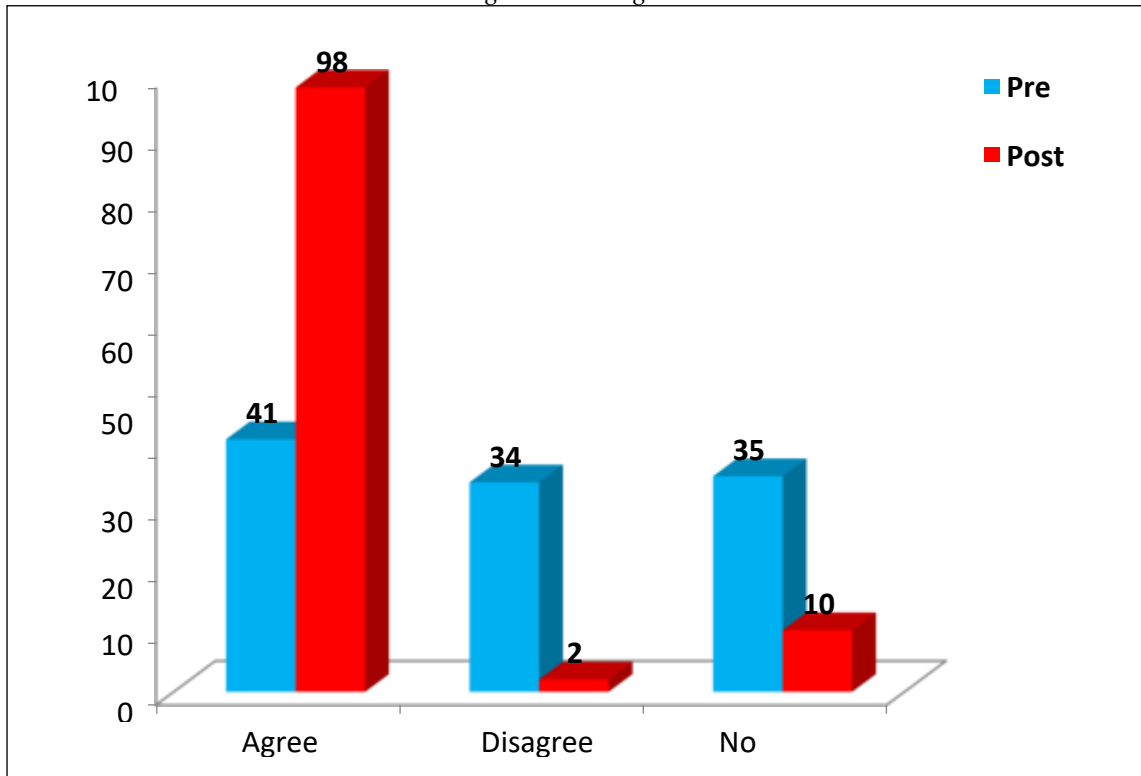
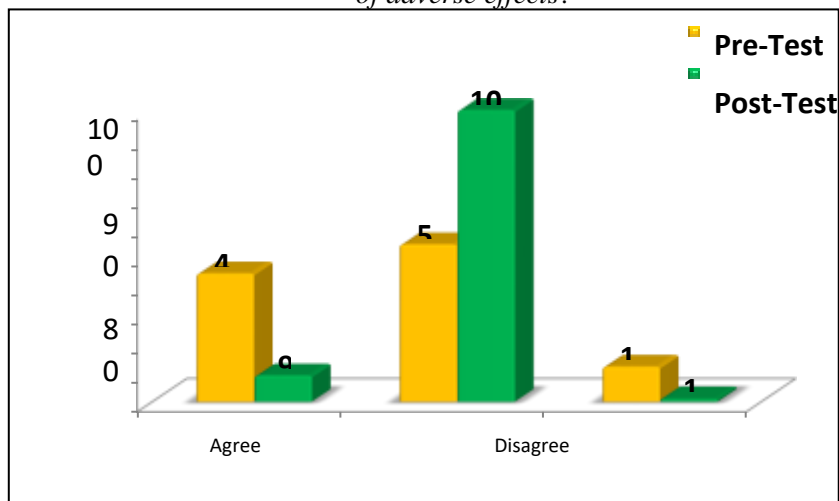


Table No.9: Depicting subjects' response regarding Q.19 – All OTC drugs are free of adverse effects?

Questions	Pre-Test			Post-Test		
	Agree No. (%)	Disagree No. (%)	No opinion No. (%)	Agree No.(%)	Disagree No. (%)	No opinion No. (%)
All OTC drugs are free of adverse effects	44 (40.0%)	54 (49.1%)	12 (10.9%)	9 (8.2%)	100 (90.9%)	1 (0.9%)

Figure No.7: Graphical representation of subject's response regarding Q.19 - All OTC drugs is free of adverse effects?



Distribution Of Respondents According to Practice of Community Pharmacists Towards Drug Dispensing Pattern

Table No.10: Comparison of Practice scores on involving in counselling activities of community pharmacists in pre and post-test intervention

Questions	Pre-Test			Post-Test		
	Yes / Agree No. (%)	Disagree / No No. (%)	No opinion No. (%)	Yes/Agree No. (%)	Disagree/ No. (%)	No opinion No. (%)
Do you ask for prescription before dispensing OTC drugs	92 (83.6%)	18 (16.4%)	0 (0.0%)	109 (99.1%)	1 (0.9%)	0 (0.0%)
Is it safe to dispense OTC medicines to pregnant woman	65 (59.1%)	45 (40.9%)	0 (0.0%)	14 (12.7%)	96 (87.3%)	0 (0.0%)
Can all painkillers be dispensed as OTC medicines	72 (65.5%)	22 (20.0%)	16 (14.5%)	28 (25.4%)	75 (68.2%)	7 (6.4%)
Do you counsel the patients/customer if you suspect misuse/abuse of OTC	29 (26.4%)	0 (0.0%)	81 (73.6%)	108 (98.1%)	2 (1.9%)	0 (0.0%)
Do you take history systematically before recommending medicines	75 (68.2%)	35 (31.8%)	0 (0.0%)	103 (93.6%)	7 (6.4%)	0 (0.0%)
Have you dispensed any injection or IV fluids without prescription	61 (55.5%)	49 (44.5%)	0 (0.0%)	9 (8.2%)	101 (91.8%)	0 (0.0%)
Do you check the expiry date before dispensing the medication	83 (75.5%)	27 (24.5%)	0 (0.0%)	110 (100.0%)	0 (0.0%)	0 (0.0%)
Do the customer clarify about medicines with you before purchase	86 (78.2%)	24 (21.8%)	0 (0.0%)	105 (95.4%)	5 (4.6%)	0 (0.0%)

Table No.11: Depicting subjects' response regarding Q.22 – Is it safe to dispense OTC medicines to pregnant & breast-feeding woman?

Questions	Pre-Test		Post-Test	
	Yes Number. (%)	No Number. (%)	Yes Number. (%)	No Number. (%)
Is it safe to dispense OTC medicines to pregnant & breast-feeding woman	65 (59.1%)	45 (40.9%)	14 (12.7%)	96 (87.3%)

Figure No.8: Graphical representation of subject's response regarding Q.22 - Is it safe to dispense OTC medicines to pregnant woman

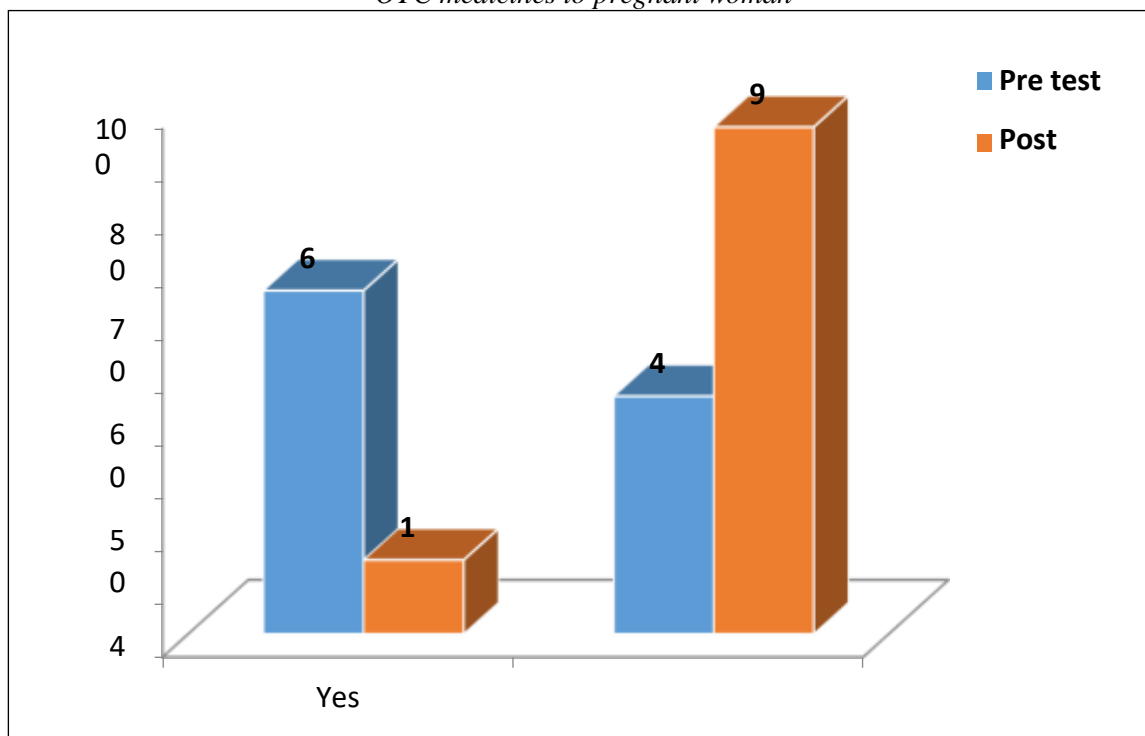


Table No.12: Depicting subjects' response regarding Q.23 – Can all painkillers be dispensed as OTC medicines?

Questions	Pre-Test			Post-Test		
	Agree No. (%)	Disagree No. (%)	No opinion No. (%)	Agree No. (%)	Disagree No. (%)	No opinion No. (%)
Can all painkillers be dispensed as OTC medicines	72 (65.5%)	22 (20.0%)	16 (14.5%)	28 (25.4%)	75 (68.2%)	7 (6.4%)

Figure No.9: Graphical representation of subject's response regarding Q.23 - Can all painkillers be dispensed as OTC medicines?

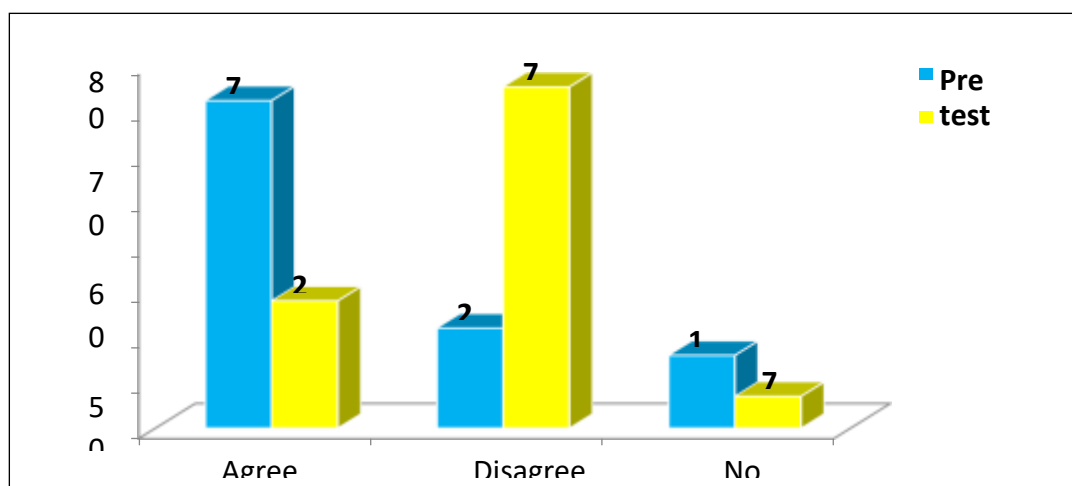


Table No.13: Depicting subjects' response regarding Q.24 – Do you counsel the patients / customer if you suspect misuse / abuse of OTC?

Questions	Pre-Test			Post-Test		
	Agree No. (%)	Disagree No. (%)	No opinion No. (%)	Agree No. (%)	Disagree No. (%)	No opinion No. (%)
Do you counsel the patients/ customer if you suspect misuse/abuse of OTC	29 (26.4%)	0 (0.0%)	81 (73.6%)	108 (98.1%)	2 (1.9%)	0 (0.0%)

Figure No.10: Graphical representation of subject's response regarding Q.24 - Do you counsel the patients / customer if you suspect misuse / abuse of OT

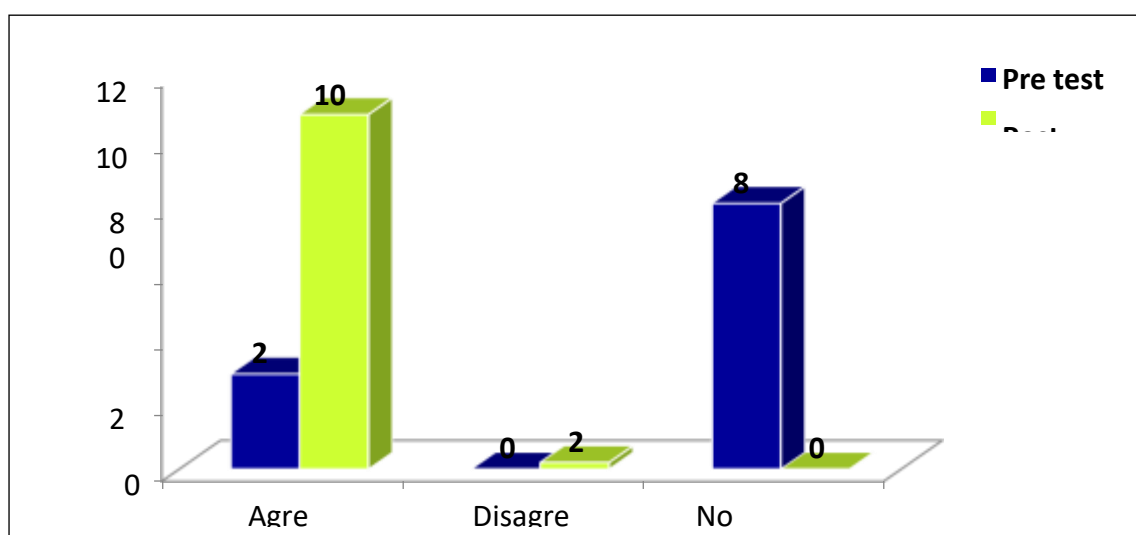
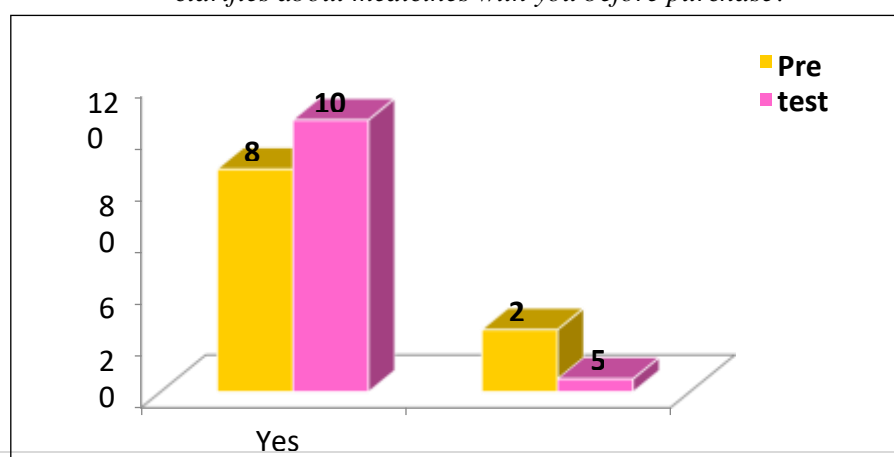


Table No.14: Depicting subjects' response regarding Q.28 – Do the customer clarify about medicines with you before purchase?

Questions	Pre-Test		Post-Test	
	Yes Number. (%)	No Number. (%)	Yes Number. (%)	No Number. (%)
Do the customer clarify about medicines with you before purchase	86 (78.2%)	24 (21.8%)	10 (95.4%)	5 (4.6%)

Figure No.11: Graphical representation of subject's response regarding Q.28 - Do the customer clarifies about medicines with you before purchase?



Statistical data analysis: Statistical data was analyzed by IBM SPSS 20.0 version software. Collected data were spread on excel sheet and prepared master chart. Through the master chart tables and graphs were constructed. For quantitative data analysis paired and unpaired t-test was applied for statistical significance. If P-value was less than 0.05 considered as significant.

Discussion

In the present study, we have enrolled 110 community pharmacists working in various community pharmacies in Kalaburagi city. In our study males 98 (89.1%) were more when compared to females 12 (10.9%) which was identical to the study conducted by (Meher & Pugazhentni, 2018). We have categorized the participants age into 4 groups of 10-year interval, each comprising of 21-30 years which is 52 (47.3%), followed by 31- 40 years include 44 (40.0%), 41-50 years 8 (7.3%) of pharmacist and 6 (5.4%) of pharmacist belonged to the age group of >50 year. In our study, the participants qualification are as follows D Pharm 78 (70.9%), B Pharm 25 (22.7%) and 7 (6.4%) M Pharm.

We also considered experience of pharmacist which has been categorized with an interval of 5 years, 38 (34.5%) community pharmacist had their work experience of 1- 5 years, followed by 34 (30.9%) 6 - 10 years, 21 (19.1%) 11 - 15 years, 8 (7.3%) 15—20 years and 9 (8.2%) > 20 years. The assessment for knowledge of pre and post scores of community pharmacist on drug dispensing pattern of OTC was 57.0% and 87.6%, which were replicable to previous study conducted by (Meher et al., 2018a). Revealed that only two-thirds of pharmacists in their study were aware of schedule H drugs, but in a study done in Goa, all pharmacists had corrected knowledge regarding schedule H drugs. The majority of participants in their study (79%) raised the issue of misuse of OTC medications. Similar observations have also been reported in other studies. It was found out that, only 4% respondents were aware that schedule H drugs can only be sold with a valid prescription from a registered medical practitioner but in a study done in Bengaluru, 50% participants had correct knowledge regarding schedule H.

When we asked our participants regarding updating of drug information, 55 (50.0%) were opined that, it is necessary to periodically update the drug information in pre-test whereas, 110 (100.0%) participants in the post test and 83 (75.5%) participants were concerned about the misuse of OTC in pre-test and it increased to 105(95.4%) in post-test. Our study findings were contrast to the study conducted by Meher RB et al., in Puducherry large number of participants (74%) felt the need to periodically update the knowledge about OTC drugs but very few (17%) were doing that and (86%) were concerned about the misuse of OTC. Some other studies under taken among pharmacist have also made similar observations. This misuse of OTC is more prevalent these days among the youth because of the advancement in technology. In our study, 92 (83.6%) participants were asked for prescription before dispensing in pre-test and 109 (99.1%) were in post-test, which was in line to a study conducted by Meher RB et al. (2018) in Puducherry, and it is contrary to some other studies done in India and outside, where dispensing without prescription was quite high.

The present study observed that 73 (66.4%) pharmacists counsel the patients in pre-test and it increased to 108 (98.1%) in post-test. The same fact has also been reported in previous studies conducted by Meher RB et al. (2018) in Puducherry, (Meher et al., 2018). It is in accordance with the guideline of Good Pharmacy Practice (GPP). As we analysed the study scores of pre-tests and post-test, overall knowledge about OTC medications was low among the community pharmacist during the pre-test, but at the time of post-test there was an increase in knowledge. Especially on OTC side effects, dosage, and reason for uses, which in term, increases the risk of OTC adverse effect on the consumers. The years of working in

pharmacy did not contribute to increasing their knowledge level about OTC, which is probably due to using same system during all working years. Pharmacists have to remain up-to-date in their knowledge; to make such practice is safe and useful. Drug regulatory authorities.

CONCLUSION

It is a sustainable fact that OTC use is not illegal, but it might be associated with safety and other issues and may lead to potential health hazards. The study revealed that, majority of the registered community pharmacist were diploma holders followed by graduates and post graduates, had basic knowledge regarding OTC drugs, but practice of community pharmacy profession needs to be improved. Customers depend more on pharmacists and it reflects that pharmacists are not meant only in dispensing medications but also have knowledge about safe use of medications, where we can create more awareness to the public about safe use of medications. Our study findings have shown that many pharmacists were not indulged in any form of update of knowledge. Apart from that, pharmacist lacks the knowledge regarding safety of dispensing OTC medications to pregnant women and lactating mothers. The study also emphasized that most of the pharmacist were not involved in counselling to the consumers. Hence, the study concludes that improving pharmacist's practices about OTC can improve the rational use of non-prescription (OTC) drugs. Pharmacists have to remain updated in their knowledge; to make such practice is safe and useful. Drug regulatory authorities in India should enforce stringent policies in respective states so that practicing community pharmacists should only dispense safe medications as OTC drugs.

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