

The use of over-the-counter medications and their side effects

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Abstract— Background: Over-the-counter (OTC) medications are widely used by the general public for self-medication, often without adequate knowledge of their potential adverse effect. **Objective:** This study aims to investigate the utilization of OTC medications and their adverse effects, with a focus on identifying risk factors and developing strategies for safe use. **Methodology:** This study will employ a cross-sectional design, utilizing a survey-based approach to collect data from a sample of 400 individuals in Benghazi, Libya. Data will be collected through a specially designed questionnaire for this study. **Results:** The study showed that 70% of participants take over-the-counter (OTC) medications only when necessary, while 30% take them continuously. The most commonly used medications were Panadol (26.5%), followed by cold and headache medications. 84% of participants reported an improvement in their condition after taking the medication, indicating the effectiveness of the medications in treating medical conditions. 86% of participants trust the medical information provided by pharmacists, highlighting the important role of pharmacists in patient education. 84% of participants believe that health education about the use of OTC medications is important, indicating a need for further awareness and education on this topic. **Conclusion:** This study highlights the need for targeted interventions to promote safe use of OTC medications. Educational programs and awareness campaigns can be developed to inform the public about the potential risks associated with OTC medication use and the importance of proper usage

Key words : Over-the-counter medications, OTC drugs, Self-medication, Non-prescription drugs Drug safety

1. Introduction

The general populace has been using prescription medications more frequently lately (Esher and Coutinho, 2017). But there hasn't been any correlation between this rise and better health. The World Health Organization (WHO) reports that about 50% of individuals misuse medications, and over 50% of medications are prescribed or delivered improperly globally, increasing morbidity and mortality (WHO, 2020; Costa *et al.*, 2017). This rise has been caused by a number of causes, including growing older, easier access to medication, and a rise in self-diagnosis and treatment—that is, using all available resources, whether personal or group-based—to manage one's own health (Sansgiry, *et al.*, 2016). The idea of self-medication, which is the choice and use of medications by people and/or caregivers to treat self-recognized or self-diagnosed diseases or symptoms, is included in this self-management of health. Due to erroneous self-diagnosis or an improper dosage intake that may cause unpleasant responses, pharmacological interactions, and side effects (Sansgiry, *et al.*, 2016), self-medication may be dangerous (Ruiz, 2010). According to reports, up to 90% of people in underdeveloped nations self-medicate. Self-medication done improperly raises health care expenses.

Self-medication for the prevention or treatment of symptoms and diseases is influenced by a variety of cultural,

political, and environmental factors, according to studies(Fereidouni, *et al.*,2019).Headache, joint pain, fever, cold and cough, allergy, heartburn, and diarrhea are the most prevalent medical conditions for which self-medication is used(Doomraand Goyal,2020). In the absence of better health literacy, more access to medications raises the possibility of abuse.a variety of over-the-counter medications, some of the most often used medications need a prescription in order to be distributed. The use of over-the-counter medications has increased in various nations, which may result in abuse(Chiappini and Schifano, 2020).Prescription medicine purchases have declined but over-the-counter(OTC)drug use has surged (Sánchez-Sánchez,2021;MSCBS,2020). Additionally, the number of patients using over-the-counter medications rises during economic downturns(Kamekis, *et al.*,2020).

Individuals are self-medicating due to easy access to some medications, like over-the-counter (OTC) drugs, and they base their choices on past prescriptions as well as recommendations from people outside the healthcare system, such as friends, family, online social networks, search engines, etc.(Minsal,2011;Martín Fombellida, *et al.*,2014).The mass media also has a significant impact because it transmits ads for over-the-counter medications directly.

1.1. Aim of study

The aim of our study was to learn about the consumption of OTC drugs, the type of OTCs consumed, and the identification of the groups in the population that are at a higher risk of OTC drug consumption.

1.2. The Research objective

This research targets the study of the behavior of Over-the-counter (OTC) drugs consumers in Benghazi city, in addition to the evaluation of the most commonly consumed OTC medications. Furthermore, this research includes the study of the effects of these drugs on health. And the determination of gaps in the health care system concerning OTC drugs.

2. Methodology

2.1 Study Design

This study will employ a cross-sectional design, utilizing a survey-based approach to collect data from a sample of 400 individuals in Benghazi, Libya.

2.2 Data Analysis

Statistical Analysis: Descriptive statistics and inferential statistics (e.g., regression analysis) will be used to analyze the data. Software: SPSS be used for data analysis. Descriptive

statistics: (frequencies, means, standard deviations) will be used to describe the demographic characteristics of the sample, and to summarize the patterns of OTC medication use. Inferential statistical techniques (chi-square tests, logistic regression) will be used to examine the relationship between OTC medication use and side effects.

2.3 Ethical Considerations

Informed Consent: Participants will be informed about the study and will provide their consent before participating. Confidentiality: Participants' data will be kept confidential and anonymous.

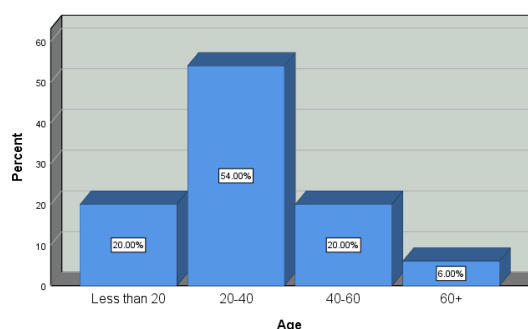
3. Results

3.1 Descriptive Results

Table and Figure (1): we note that the most frequently mentioned age group is 20-40 years, representing 54% of the total sample, while the least frequent age group is those over 60, representing 6%.

Table(1).Age Frequency and Percentage.

Age			
Percent	Frequency		
20	80	Less than 20	Valid
54	216	20-40	
20	80	40-60	
6	24	60+	
100	400	Total	

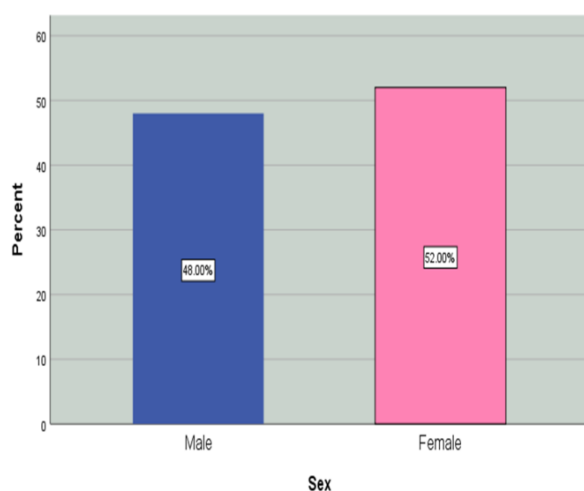


Figure(1).Age Percentage.

Table and Figure (2): there are 192 men, or 48% of the total, and 208 females, or 52% of the total.

Table(2).Sex Frequency and Percentage.

Sex			
Percent	Frequency		
48	192	Male	Valid
52	208	Female	
100	400	Total	

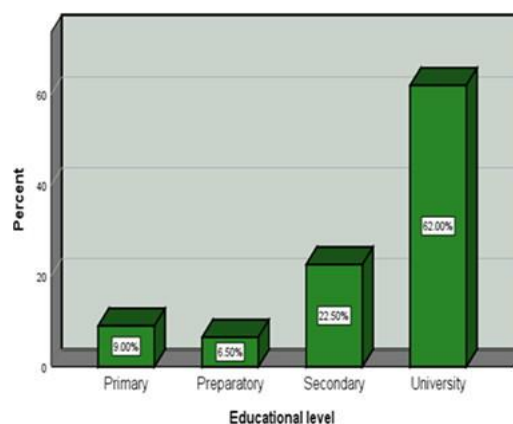


Figure(2).Sex Percentage.

Table and Figure (3): show that 248 of the sample had a university education (62%), 90 had an Secondary education (22.5%), and 36 and 26 had a primary and preparatory education (9% and 6.5%, respectively).

Table(3).Educational level group Frequency and Percentage.

Educational level			
Percent	Frequency		
9	36	Primary	Valid
6.5	26	Preparatory	
22.5	90	Secondary	
62	248	University	
100	400	Total	

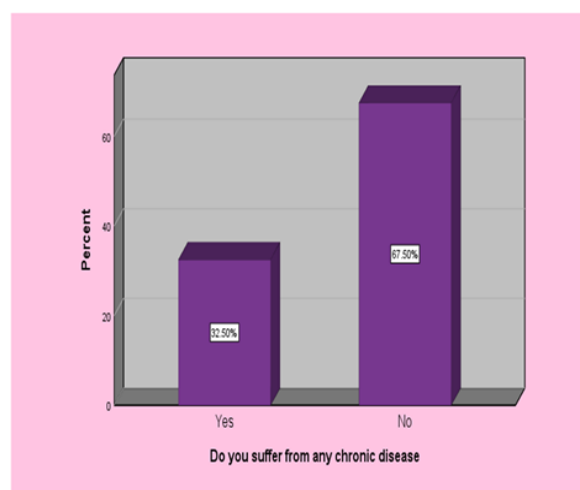


Figure(3).Educational level Percentage.

Table and Figure (4): About 68% of the study group did not have any chronic disorders, whereas 32.5% did not according.

Table(4). Do you suffer from any chronic disease Frequency and Percentage.

Do you suffer from any chronic disease			
Percent	Frequency		
32.5	130	Yes	Valid
67.5	270	No	
100	400	Total	

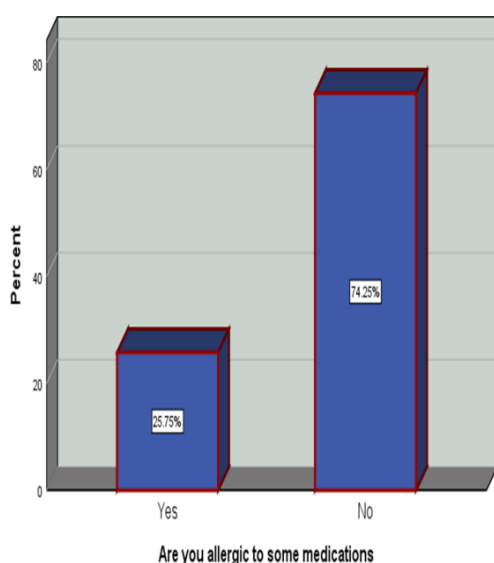


Figure(4). Do you suffer from any chronic disease Percentage.

Table and Figure (5): Approximately 74% of persons do not have allergies to certain medications, while 25.25%.

Table(5). Are you allergic to some medications Frequency and Percentage.

Are you allergic to some medications			
Percent	Frequency		
25.75	103	Yes	Valid
74.25	297	No	
100	400	Total	

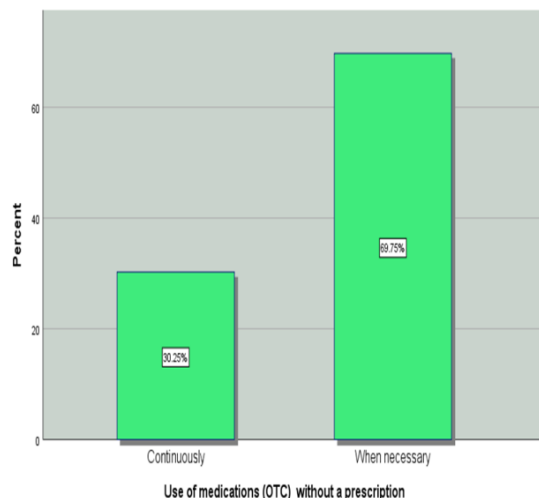


Figure(5). Are you allergic to some medications Percentage.

Table and Figure (6): on the rate of non-prescription medicine use, 30% of the study participants take their drugs on a regular basis, and 70% only take them when absolutely required.

Table(6). Use of medication (OTC) without a prescription Frequency and Percentage.

Use of medications (OTC) without a prescription			
Percent	Frequency		
30.25	121	Continuously	Valid
69.75	279	When necessary	
100	400	Total	



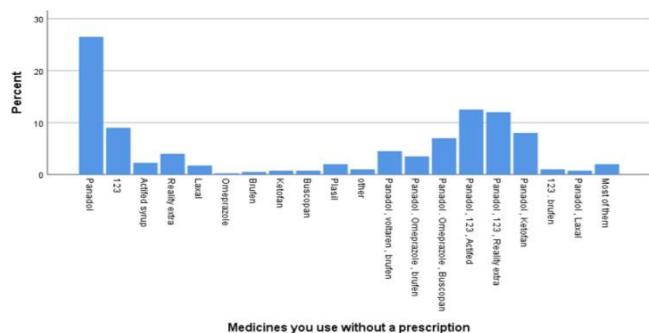
Figure(6). Use of medication (OTC) without a prescription Percentage.

Table and Figure (7): At 26.5%, "Panadol" was the most commonly used or taken drug, followed by "123" 9%.

Table(7). Medicines you use without a prescription Frequency and Percentage.

Medicines you use without a prescription			
Percent	Frequency		
26.5	106	Panadol	Valid
9.0	36	123	
2.3	9	Actifed syrup	
4.0	16	Reality extra	
1.8	7	Laxal	
0.3	1	Omeprazole	
0.5	2	Brufen	
0.8	3	Ketofan	
0.8	3	Buscopan	
2.0	8	Plasil	
1.0	4	Other	
4.5	18	Panadol , voltaren , brufen	
3.5	14	Panadol . Omeprazole , brufen	
7.0	28	Panadol . Omeprazole , Buscopan	
12.5	50	Panadol , 123 , Actifed	
12.0	48	Panadol , 123 , Reality extra	

8.0	32	Panadol , Ketofan
1.0	4	123 . brufen
0.8	3	Panadol , Laxal
2.0	8	Most of them
100.0	400	Total

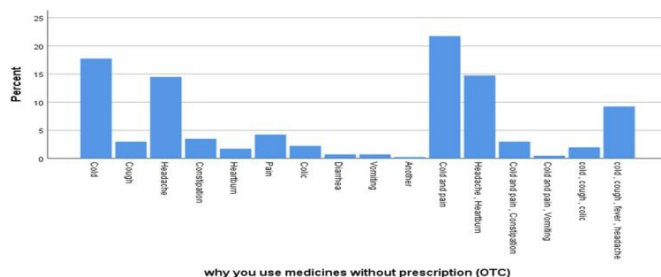


Figure(7). Medicines you use without a prescription Percentage.

Table and Figure (8): show the number and percentages of the most important reasons for taking medication. It was found that the most commonly used medications were those used to treat colds, at 17.8%, followed by headache and heartburn medications, at 14.8%.

Table(8). Why you use medicines without prescription (OTC) Frequency and Percentage.

Why you use medicines without prescription (OTC)			
Percent	Frequency		
17.8	71	Cold	Valid
3.0	12	Cough	
14.5	58	Headache	
3.5	14	Constipation	
1.8	7	Heartburn	
4.3	17	Pain	
2.3	9	Colic	
0.8	3	Diarrhea	
0.8	3	Vomiting	
0.3	1	Another	
21.8	87	Cold and pain	
14.8	59	Headache , Heartburn	
3.0	12	Cold and pain , Constipation	
0.5	2	Cold and pain , Vomiting	
2.0	8	cold , cough , colic	
9.3	37	cold , cough , fever , headache	
100.0	400	Total	

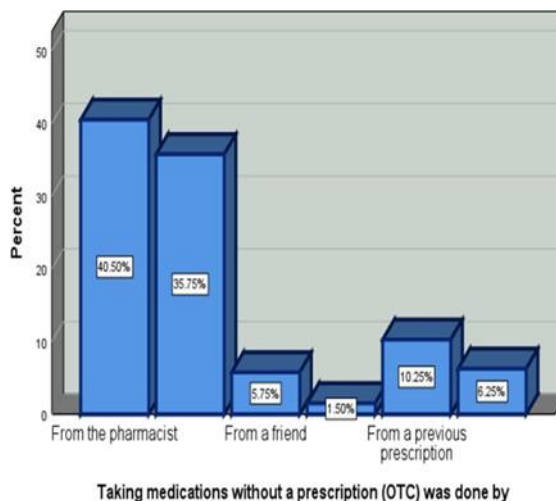


Figure(8). Medicines you use without a prescription Percentage.

Table and Figure (9): show that 40% of people were given medication by a pharmacist, while 36% were given it by a friend.

Table(9). Taking medications without a prescription (OTC) was done by Frequency and Percentage.

Taking medications without a prescription (OTC) was done by			
Percent	Frequency		Valid
40.5	162	From the pharmacist	
35.8	143	From yourself	
5.8	23	From a friend	
1.5	6	From Internet	
10.3	41	From a previous prescription	
6.3	25	Other	
100.0	400	Total	

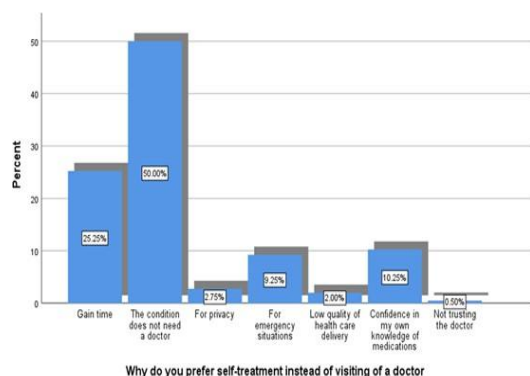


Figure(9). Taking medications without a prescription (OTC) was done by Percentage.

Table and Figure (10): illustrate the reason for self-treatment instead of visiting a doctor, as the medical condition that does not require a visit to the doctor was the most frequent, accounting for 50% of the data.

Table(10). Why do you prefer self-treatment instead of visiting of a doctor Frequency and Percentage.

Why do you prefer self-treatment instead of visiting of a doctor			
Percent		Frequency	
25.3	101	Gain time	Valid
50.0	200	The condition does not need a doctor	
2.8	11	For privacy	
9.3	37	For emergency situations	
2.0	8	Low quality of health care delivery	
10.3	41	Confidence in my own knowledge of medications	
0.5	2	Not trusting the doctor	
100.0	400	Total	

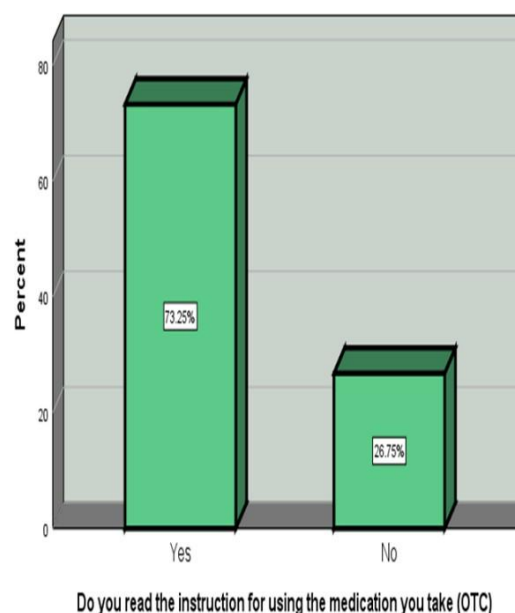


Figure(10). Why do you prefer self-treatment instead of visiting of a doctor Percentage.

Table and Figure (11): show that 73% of the study subjects read the instructions included with the medication.

Table(11). Do you read the instruction for using the medication you take (OTC) Frequency and Percentage.

Do you read the instruction for using the medication you take (OTC)			
Percent		Frequency	
73.3	293	Yes	Valid
26.8	107	No	
100.0	400	Total	

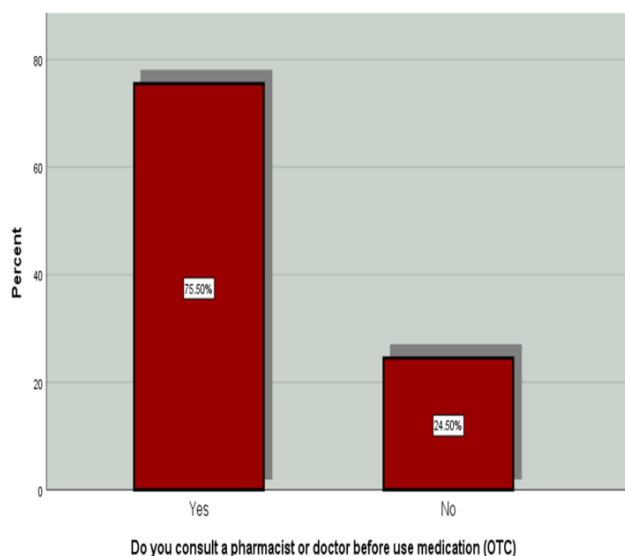


Figure(11). Do you read the instruction for using the medication you take (OTC) Percentage.

Table and Figure (12): show that approximately 25% of people do not consult a pharmacist before dispensing medication.

Table(12). Do you consult a pharmacist or doctor before use medication (OTC) Frequency and Percentage.

Do you consult a pharmacist or doctor before use medication (OTC)			
Percent		Frequency	
75.5	302	Yes	Valid
24.5	98	No	
100.0	400	Total	

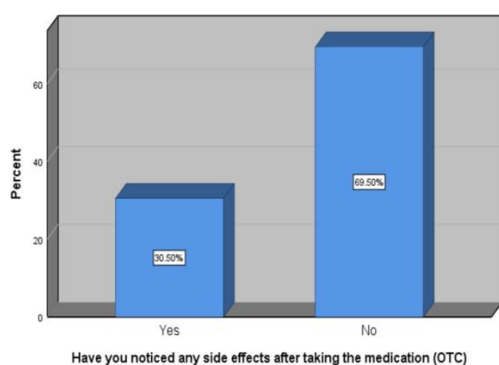


Figure(12). Do you consult a pharmacist or doctor before use medication (OTC) Percentage.

Table and Figure (13): show that approximately 70% of the study subjects did not notice any side effects.

Table(13). Have you noticed any side effects after taking the medication (OTC) Frequency and Percentage.

Have you noticed any side effects after taking the medication (OTC)			
Percent	Frequency		
30.5	122	Yes	Valid
69.5	278	No	
100.0	400	Total	

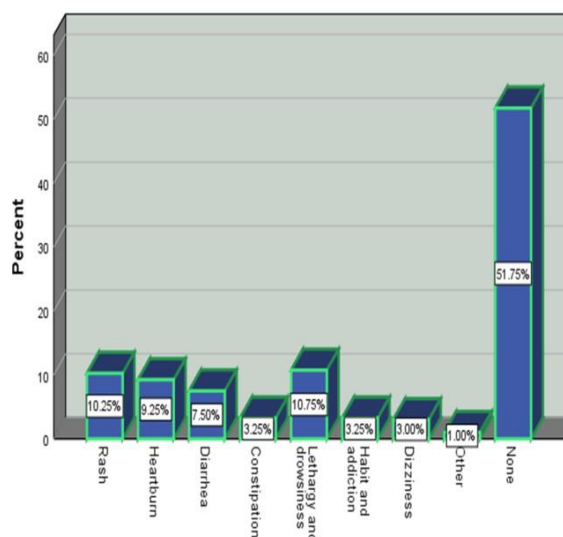


Figure(13). Have you noticed any side effects after taking the medication (OTC) Percentage.

Table and Figure (14): show that Lethargy and drowsiness were the most common side effects after taking the drug (10.8%), Heartburn (9.3%), and diarrhea (7.5%).

Table(14). Side effects that noticed Frequency and Percentage.

Side effects that noticed			
Percent		Frequency	
10.3	41	Rash	Valid
9.3	37	Heartburn	
7.5	30	Diarrhea	
3.3	13	Constipation	
10.8	43	Lethargy and drowsiness	
3.3	13	Habit and addiction	
3.0	12	Dizziness	
1.0	4	Other	
51.8	207	None	
100.0	400	Total	

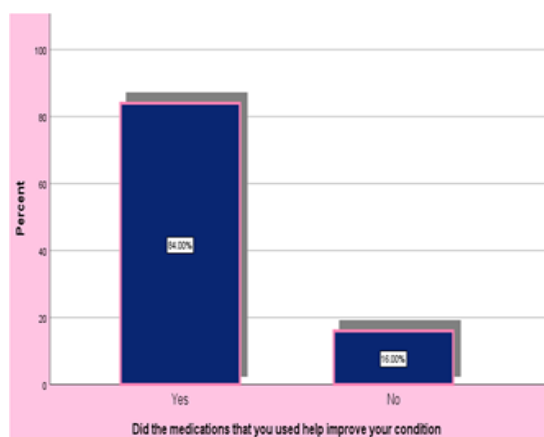


Figure(14). Side effects that noticed Percentage.

Table and Figure (15): show that 84% of the people in the study had their condition improved by medication.

Table(15). Did the medications that you used help improve your condition Frequency and Percentage.

Did the medications that you used help improve your condition			
Percent	Frequency		
84.0	336	Yes	Valid
16.0	64	No	
100.0	400	Total	

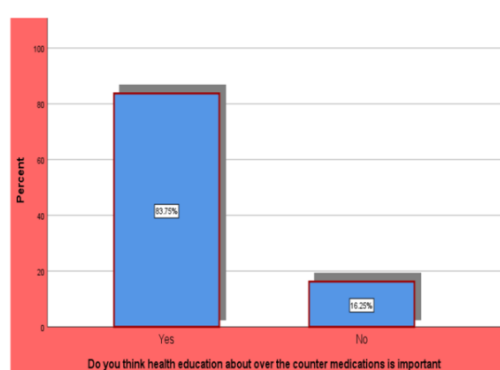


Figure(15). Did the medications that you used help improve your condition Percentage.

Table and Figure (16): show that 86% of the people under study trust the medical information provided by the pharmacist.

Table(16). Do you trust the health information provided by the pharmacist Frequency and Percentage.

Do you trust the health information provided by the pharmacist			
Percent		Frequency	Valid
86.0	344	Yes	
14.0	56	No	
100.0	400	Total	

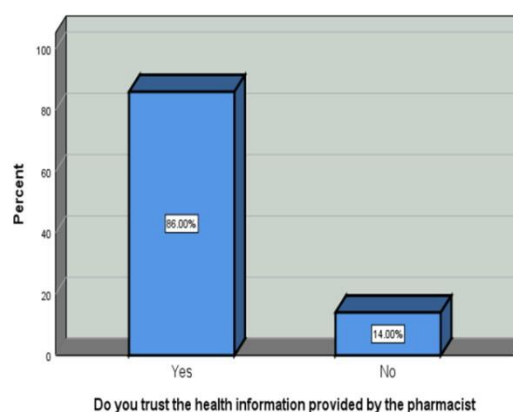


Figure(16). Do you trust the health information provided by the pharmacist Percentage.

Table and Figure (17): show that approximately 84% of the people under study believe that health education is important.

Table(17). Do you think health education about over the counter medications is important Frequency and Percentage.

Do you think health education about over the counter medications is important			
Percent	Frequency		
83.8	335	Yes	Valid
16.3	65	No	
100.0	400	Total	

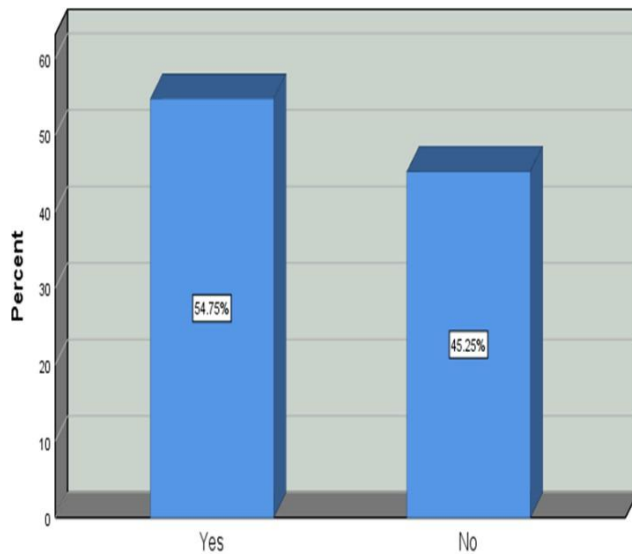


Figure(17). Do you think health education about over the counter medications is important Percentage.

Table and Figure (18): show that 54.8% of people advise their families, relatives and friends to use non-prescription medications.

Table(18). Would you recommend using medications (OTC) to your relatives and friends Frequency and Percentage.

Would you recommend using medications (OTC) to your relatives and friends			
Percent	Frequency		
54.8	219	Yes	Valid
45.3	181	No	
100.0	400	Total	



Figure(18). Would you recommend using medications (OTC) to your relatives and friends Percentage.

4.2 Important relationships

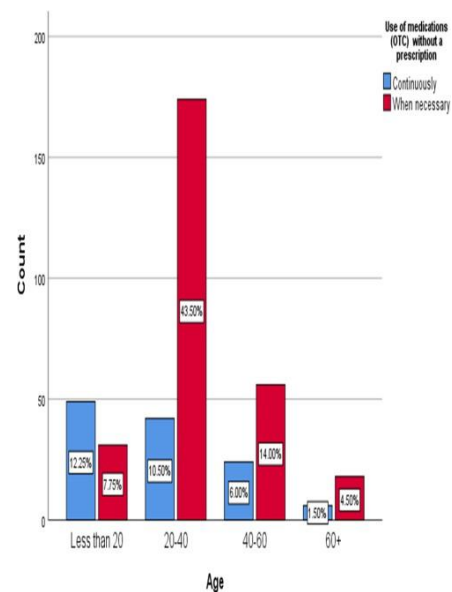
Table (19-20) and Figure (19): As seen below describe The **Pearson Chi-Square** value is **48.706**, indicating a statistically significant relationship between the age and frequency use of drug without prescription. The p-value associated with this Chi-Square value is likely less than 0.05.

Table (19):The Correlation showing Age and Use of non-prescription medications.

Age * Use of medications (OTC) without a prescription Cross tabulation				
Total	Use of medications (OTC) without a prescription			
	When necessary	Continuously		
80	31	49	Less than 20	Age
216	174	42	20-40	
80	56	24	40-60	
24	18	6	60+	
400	279	121	Total	Total

Table (20): The relation between Age and Use of non-prescription medication by Chi-square test.

Chi-Square Tests			
Asymptotic Significance (2-sided)	Df	Value	
0.000	3	48.706 ^a	Pearson Chi-Square
		400	N of Valid Cases



Figure(19). The Correlation showing Age and Use of non-prescription medications Percentage and Count.

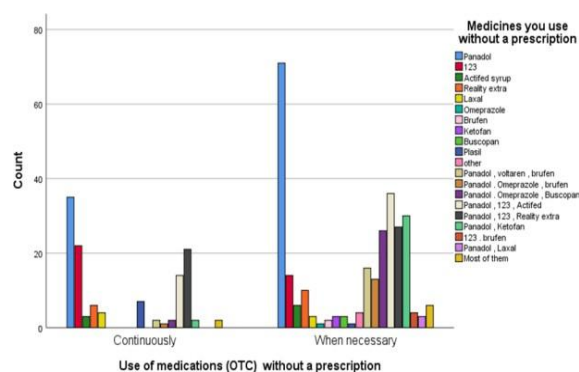
Table (21-22) and Figure (20): shows the correlation value between the two variables, which is 67.43, which is less than the value of " $\alpha = 0.05$ ", which indicates the strength of the relationship between the Medicines you use without a prescription and frequency use of drug without prescription.

Table (21).The Correlation showing Use of medications (OTC) without a prescription and Medicines you use without a prescription.

Use of medications (OTC) without a prescription * Medicines you use without a prescription Cross tabulation				
Count				
Total	Use of medications (OTC) without a prescription			Medicines you use without a prescription
	When necessary		Continuously	
106	71	35	Panadol	
36	14	22	123	
9	6	3	Actifed syrup	
16	10	6	Reality extra	
7	3	4	Laxal	
1	1	0	Omeprazole	
2	2	0	Brufen	
3	3	0	Ketofan	
3	3	0	Buscopan	
8	1	7	Plasil	
4	4	0	Other	
18	16	2	Panadol , voltaren , brufen	
14	13	1	Panadol . Omeprazole , brufen	
28	26	2	Panadol . Omeprazole , Buscopan	
50	36	14	Panadol , 123 , Actifed	
48	27	21	Panadol , 123 , Reality extra	
32	30	2	Panadol , Ketofan	
4	4	0	123 . brufen	
3	3	0	Panadol , Laxal	
8	6	2	Most of them	
400	279		121	Total

Table (22). The relation Use of medications (OTC) without a prescription and Medicines you use without a prescription by Chi-square test.

Chi-Square Tests			
Asymptotic Significance (2-sided)	Df	Value	
0.000	19	67.435 ^a	Pearson Chi-Square
		400	N of Valid Cases



Figure(20). The Correlation showing Use of medications (OTC) without a prescription and Medicines you use without a prescription Count, Continuously and when necessary.

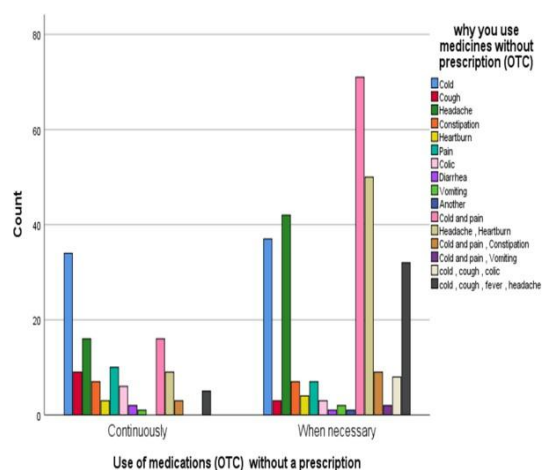
Table (23-24) and Figure (21): demonstrates that the two variables have a correlation value of 61.22, which is smaller than the value of " $\alpha = 0.05$ " and shows how strongly the usage of non-prescription pharmaceuticals and the reason for using them are related.

Table (23).The Correlation showing Use of medications (OTC) without a prescription and why you use medicines without prescription (OTC).

Use of medications (OTC) without a prescription * why you use medicines without prescription (OTC) Cross tabulation				
Count				
Total		Use of medications (OTC) without a prescription		
		When necessary	Continuously	
71	37	34	Cold	why you use medicines without prescription (OTC)
12	3	9	Cough	
58	42	16	Headache	
14	7	7	Constipation	
7	4	3	Heartburn	
17	7	10	Pain	
9	3	6	Colic	
3	1	2	Diarrhea	
3	2	1	Vomiting	
1	1	0	Another	
87	71	16	Cold and pain	
59	50	9	Headache , Heartburn	
12	9	3	Cold and pain , Constipation	
2	2	0	Cold and pain , Vomiting	
8	8	0	cold , cough , colic	
37	32	5	cold , cough , fever , headache	
400	279	121		Total

Table (24). The relation between Use of medications (OTC) without a prescription and why you use medicines without prescription (OTC) by Chi-square test

Chi-Square Tests			
Asymptotic Significance (2-sided)	Df	Value	
0.000	15	61.228 ^a	Pearson Chi-Square
		400	N of Valid Cases



Figure(21). The Correlation showing Use of medications (OTC) without a prescription and why you use medicines without prescription (OTC) Count, Continuously and when necessary.

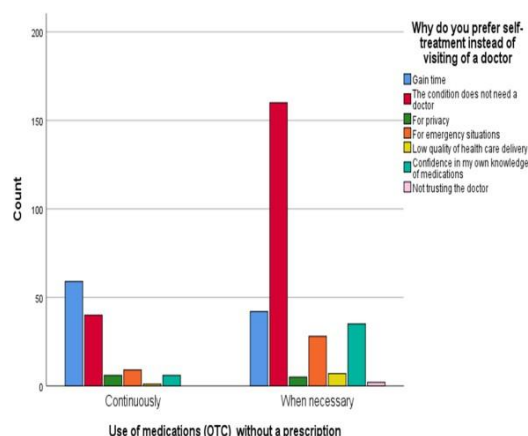
Table (25-26) and Figure (22): shows that the two variables have a correlation value of 58.42, which is less than the value of " $\alpha = 0.05$ " and illustrates how strongly people choose self-treatment over going to the doctor and using over-the-counter medications.

Table (25):The Correlation showing Use of medications (OTC) without a prescription and Why do you prefer self-treatment instead of visiting of a doctor.

Use of medications (OTC) without a prescription * Why do you prefer self-treatment instead of visiting of a doctor Cross tabulation				
Count				
Total		Use of medications (OTC) without a prescription		
		When necessary	Continuously	
101	42	59		Gain time
200	160	40		The condition does not need a doctor
11	5	6		For privacy
37	28	9		For emergency situations
8	7	1		Low quality of health care delivery
41	35	6		Confidence in my own knowledge of medications
2	2	0		Not trusting the doctor
400	279	121		Total

Table (26). The relation between Use of medications (OTC) without a prescription and Why do you prefer self-treatment instead of visiting of a doctor by Chi-square test.

Use of medications (OTC) without a prescription * Have you noticed any side effects after taking the medication (OTC) Cross tabulation				
Total	Have you noticed any side effects after taking the medication (OTC)			
	No	Yes		
121	40	81	Continuously	Use of medications (OTC) without a prescription
279	238	41	When necessary	
400	278		122	



Figure(22). The Correlation showing Use of medications (OTC) without a prescription and Why do you prefer self-treatment instead of visiting of a doctor Count, Continuously and when necessary.

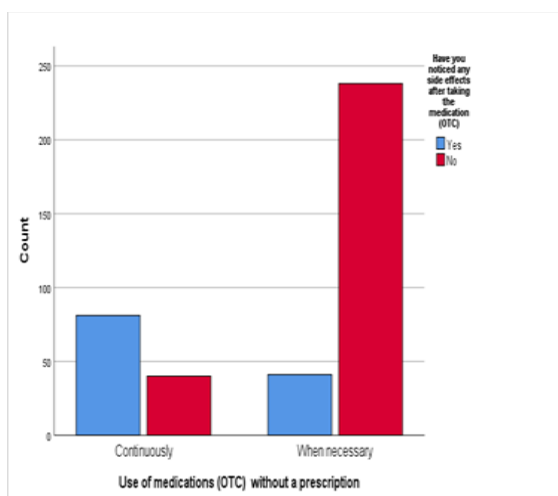
Table (27-28) and Figure (23): indicates that the two variables have a correlation value of 108.68, which is below the " $\alpha = 0.05$ " value. It also suggests that any side effects following the use of over-the-counter drugs and medication should be noted.

Table (27):The Correlation showing Note any side effects after taking the medicine and use of non-prescription medications.

Use of medications (OTC) without a prescription * Have you noticed any side effects after taking the medication (OTC) Cross tabulation				
Total	Have you noticed any side effects after taking the medication (OTC)			
	No	Yes		
121	40	81	Continuously	Use of medications (OTC) without a prescription
279	238	41	When necessary	
400	278	122	Total	

Table (28). The relation between Note any side effects after taking the medicine and use of non-prescription medications by Chi-square test.

Chi-Square Tests			
Asymptotic Significance (2-sided)	df	Value	
0.000	1	108.684 ^a	Pearson Chi-Square
		400	N of Valid Cases



Figure(23). The Correlation showing Note any side effects after taking the medicine and use of non-prescription medication Count, Continuously and when necessary.

Table (29-30) and Figure (24): indicates that the two variables have a correlation value of 60.06, which is below the " $\alpha = 0.05$ " value. It also suggests that any side effects following the use of over-the-counter drugs and medication should be noted.

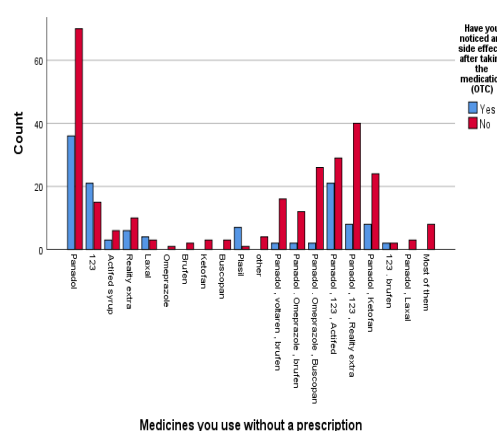
Table (29):The Correlation showing Medicines you use without a prescription and Have you noticed any side effects after taking the medication (OTC).

Medicines you use without a prescription * Have you noticed any side effects after taking the medication (OTC) Cross tabulation				
Count				
Total	Have you noticed any side effects after taking the medication (OTC)			
	No	Yes		
106	70	36	Panadol	Medicines you use without a prescription
36	15	21	123	
9	6	3	Actifed syrup	
16	10	6	Reality extra	
7	3	4	Laxal	
1	1	0	Omeprazole	
2	2	0	Brufen	

3	3	0	Ketofan
3	3	0	Buscopan
8	1	7	Plasil
4	4	0	Other
18	16	2	Panadol , voltaren , brufen
14	12	2	Panadol . Omeprazole , brufen
28	26	2	Panadol .Omeprazole ,Buscopan
50	29	21	Panadol , 123 , Actifed
48	40	8	Panadol , 123 , Reality extra
32	24	8	Panadol , Ketofan
4	2	2	123 . brufen
3	3	0	Panadol , Laxal
8	8	0	Most of them
400	278	122	Total

Table (30). The relation between Medicines you use without a prescription and Have you noticed any side effects after taking the medication (OTC) by Chi-square test.

Chi-Square Tests			
Asymptotic Significance (2-sided)	Df	Value	
0.000	19	60.060 ^a	Pearson Chi-Square
		400	N of Valid Cases



Figure(24). The Correlation showing Medicines you use without a prescription and Have you noticed any side effects after taking the medication (OTC) count.

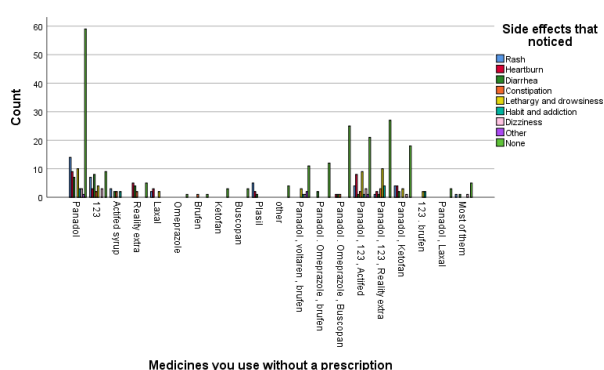
Table (31-32) and Figure (25): shows that the correlation between the two variables is 287.82, which is less than the " $\alpha = 0.05$ " value. Additionally, it recommends that adverse effects observed after using non prescription medications and over-the-counter medications be documented.

Table (31):The Correlation showing Medicines you use without a prescription and Side effects that noticed.

Medicines you use without a prescription * Side effects that noticed Cross tabulation											
Count											
Total	Side effects that noticed										
	None	Other	Dizziness	Habit and addiction	Lethargy and drowsiness	Constipation	Diarrhea	Heartburn	Rash		
106	59	1	3	3	10	0	7	9	14	Panadol	Medicines you use without a prescription
36	9	0	3	0	4	2	8	3	7	123	
9	0	0	0	2	0	2	2	0	3	Actifed syrup	
16	5	0	0	0	0	2	4	5	0	Reality extra	
7	0	0	0	0	2	0	0	3	2	Laxal	
1	1	0	0	0	0	0	0	0	0	Omeprazole	
2	1	0	0	0	0	1	0	0	0	Brufen	
3	3	0	0	0	0	0	0	0	0	Ketofan	
3	3	0	0	0	0	0	0	0	0	Buscopan	
8	0	0	0	0	0	0	1	2	5	Plasil	
4	4	0	0	0	0	0	0	0	0	Other	
18	11	2	1	1	3	0	0	0	0	Panadol ,voltaren , brufen	
14	12	0	0	0	0	0	2	0	0	Panadol ,Omeprazole , brufen	
28	25	0	0	0	0	1	1	1	0	Panadol . Omeprazole, Buscopan	
50	21	1	3	1	9	2	1	8	4	Panadol , 123 , Actifed	
48	27	0	0	4	10	3	1	2	1	Panadol , 123 , Reality extra	
32	18	0	1	0	3	0	2	4	4	Panadol, Ketofan	
4	0	0	0	2	2	0	0	0	0	123 . brufen	
3	3	0	0	0	0	0	0	0	0	Panadol , Laxal	
8	5	0	1	0	0	0	1	0	1	Most of them	
400	207	4	12	13	43	13	30	37	41	Total	

Table (32). The relation between Medicines you use without a prescription and Side effects that noticed by Chi-square test.

Chi-Square Tests			
Asymptotic Significance (2-sided)	df	Value	
0.000	152	287.820 ^a	Pearson Chi-Square
		400	N of Valid Cases



Figure(25). The Correlation showing Medicines you use without a prescription and Side effects that noticed count.

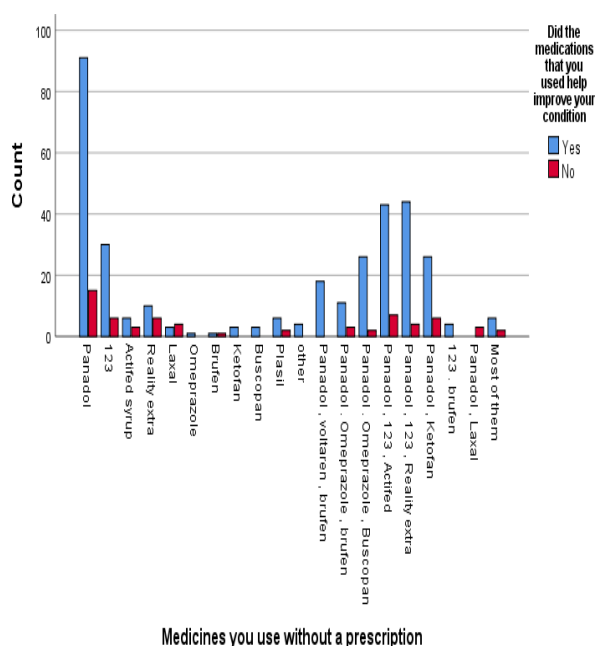
Table (33-34) and Figure (26): demonstrates that the two variables have a correlation of 45.70, which is below the " $\alpha = 0.05$ " criterion. Furthermore, the improvement in health following the use of prescription drugs and over-the-counter treatments should be recorded.

Table (33):The Correlation showing Medicines you use without a prescription and Did the medications that you used help improve your condition.

Medicines you use without a prescription * Did the medications that you used help improve your condition Cross tabulation				
Count				
Total	Did the medications that you used help improve your condition			
	No	Yes		
106	15	91	Panadol	Medicines you use without a prescription
36	6	30	123	
9	3	6	Actifed syrup	
16	6	10	Reality extra	
7	4	3	Laxal	
1	0	1	Omeprazole	
2	1	1	Brufen	
3	0	3	Ketofan	
3	0	3	Buscopan	
8	2	6	Plasil	
4	0	4	Other	
18	0	18	Panadol , voltaren , brufen	
14	3	11	Panadol . Omeprazole , brufen	
28	2	26	Panadol . Omeprazole , Buscopan	
50	7	43	Panadol , 123 , Actifed	
48	4	44	Panadol , 123 , Reality extra	
32	6	26	Panadol , Ketofan	
4	0	4	123 . brufen	
3	3	0	Panadol , Laxal	
8	2	6	Most of them	
400	64	336	Total	

Table (34). The relation between Medicines you use without a prescription and Did the medications that you used help improve your condition by Chi-square test.

Chi-Square Tests			
Asymptotic Significance (2-sided)	Df	Value	
0.001	19	45.702 ^a	Pearson Chi-Square
		400	N of Valid Cases



Figure(26). The Correlation showing Medicines you use without a prescription and Did the medications that you used help improve your condition count.

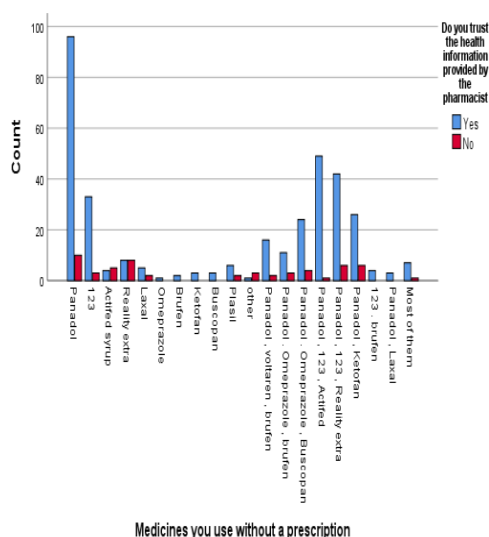
Table (35-36) and Figure (27): shows that the correlation between the two variables is 57.38, below the " $\alpha = 0.05$ " threshold. It should be noted how much people trust the pharmacist's medical advice and over-the-counter medications.

Table (35):The Correlation showing Medicines you use without a prescription and Do you trust the health information provided by the pharmacist.

Medicines you use without a prescription * Do you trust the health information provided by the pharmacist Cross tabulation				
Count				
Total	Do you trust the health information provided by the pharmacist			
	No	Yes		
106	10	96	Panadol	Medicines you use without a prescription
36	3	33	123	
9	5	4	Actifed syrup	
16	8	8	Reality extra	
7	2	5	Laxal	
1	0	1	Omeprazole	
2	0	2	Brufen	
3	0	3	Ketofan	
3	0	3	Buscopan	
8	2	6	Plasil	
4	3	1	Other	
18	2	16	Panadol , voltaren , brufen	
14	3	11	Panadol . Omeprazole , brufen	
28	4	24	Panadol . Omeprazole, Buscopan	
50	1	49	Panadol , 123 , Actifed	
48	6	42	Panadol , 123 , Reality extra	
32	6	26	Panadol , Ketofan	
4	0	4	123 . brufen	
3	0	3	Panadol , Laxal	
8	1	7	Most of them	
400	56	344	Total	

Table (36). The relation between Medicines you use without a prescription and Do you trust the health information provided by the pharmacist. by Chi-square test.

Chi-Square Tests			
Asymptotic Significance (2-sided)	Df	Value	
0.000	19	57.385 ^a	Pearson Chi-Square
		400	N of Valid Cases



Figure(27). The Correlation showing Medicines you use without a prescription and Do you trust the health information provided by the pharmacist count.

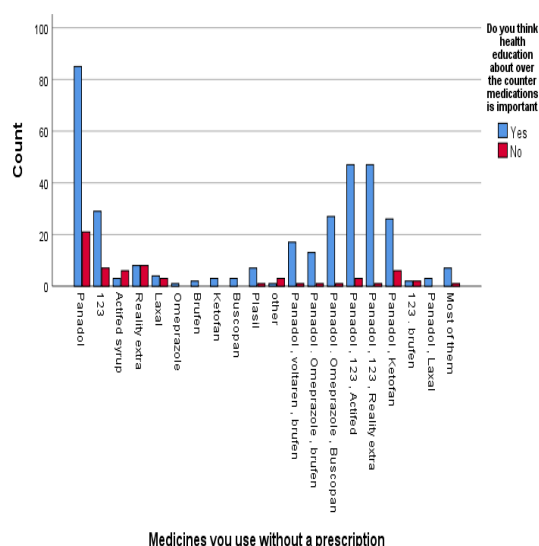
Table (37-38) and Figure (28): indicates that the two variables have a correlation of 67.84, which is less than the " $\alpha = 0.05$ " cutoff. Health education on the indiscriminate use of medications and over-the-counter remedies is crucial.

Table (37):The Correlation showing Medicines you use without a prescription and Do you think health education about over the counter medications is important.

Medicines you use without a prescription * Do you think health education about over the counter medications is important Cross tabulation				
			Count	
Total	Do you think health education about over the counter medications is important			
	No	Yes		
106	21	85	Panadol	Medicines you use without a prescription
36	7	29	123	
9	6	3	Actifed syrup	
16	8	8	Reality extra	
7	3	4	Laxal	
1	0	1	Omeprazole	
2	0	2	Brufen	
3	0	3	Ketofan	
3	0	3	Buscopan	
8	1	7	Plasil	
4	3	1	Other	
18	1	17	Panadol , voltaren , brufen	
14	1	13	Panadol . Omeprazole , brufen	
28	1	27	Panadol . Omeprazole , Buscopan	
50	3	47	Panadol , 123 , Actifed	
48	1	47	Panadol , 123 , Reality extra	
32	6	26	Panadol , Ketofan	
4	2	2	123 . brufen	
3	0	3	Panadol , Laxal	
8	1	7	Most of them	
400	65	335	Total	

Table (38). The relation between Medicines you use without a prescription and Do you think health education about over the counter medications is important by Chi-square test.

Chi-Square Tests			
Asymptotic Significance (2-sided)	Df	Value	
0.000	19	67.845 ^a	Pearson Chi-Square
		400	N of Valid Cases



Figure(28). The Correlation showing Medicines you use without a prescription and Do you think health education about over the counter medications is important count.

5. DISCUSSION

In the current research, we looked at OTC drug use trends and evaluated patients' opinions regarding OTC drug use. The study's key conclusion was that, half of the survey participants had taken over-the-counter (OTC) drugs, and almost half of them had done so for self-treatment that reported with (Kim,et al) was that ~92% of the survey respondents had taken prescription medications and about 64% of them had used OTC medications for the purpose of self-treatment(Kim,et al.,2018).Antipyretics, analgesics, and pharmaceuticals like

Panadol and 123 were the most commonly used over-the-counter medications. The most frequent reasons for taking over-the-counter medications were to treat colds, headaches, and heartburn. Consistent with (KAMAL, et al). observed coughing and the common cold (33.33%). The OTC medications used in this survey were ibuprofen (2.04%), and paracetamol (13.35%).

We observe that, with 54% of the sample as a whole, people in the 20–40 age range are the most commonly cited, while people over 60 make up the least frequent (6%) category. Participants in a different study by (Mourya *et al*). ranged in age from 14 to 90. The largest percentage of participants (51.33%) were in the 14–24 age group, while the lowest percentages were in the >64 age category. Additionally, Sharma et al. found that almost one-third (33.6%) of the respondents were in the 20–29 age range. In terms of educational attainment, we discovered that 248 of the sample (62%), whereas 42.7% of the sample in another study by (KAMAL *et al*). had a bachelor's degree or above.

According to the study, women utilized over-the-counter pharmaceuticals at a significantly higher rate than men. This finding was consistent with findings from earlier studies carried out in various nations (Barrenberg and Garbe, *et al*. 2015; Gazibara, *et al.*, 2013; Wazaify, *et al.*, 2005). Women made up 52.2% of the 224 respondents and 63.4% of the 202 OTC medication users in Serbia (Gazibara *et al.*, 2013). Women's higher prevalence of OTC medication use may be partially explained by differences in how they perceive pain (such as menstrual pain), increased health awareness, increased use of medical services, and improved medication knowledge (Barrenberg and Garbe, *et al.*, 2015; Isaacson and Bingeors, 2002).

In contrast to a prior study, ours revealed a comparatively high degree of reading OTC medication packaging leaflets. Depending on their level of familiarity with over-the-counter medications, 73% of the 400 survey participants said they read package leaflets; however, they did not pay equal attention to all of the information presented in the leaflets. Information about dosage, indications, and contraindications was the most read; information about interactions and duration was less read, while information about side effects was the least read (Barrenberg and Garbe, 2015).

Furthermore, a study by (Calamusa *et al.* 2012) found that 70.7% of survey participants said they primarily obtained information about over-the-counter medications from the package leaflets; however, only 38.1% of them said they fully comprehended the information contained in the leaflets (Calamusa *et al.*, 2012). Another study that was published in 2000 revealed a similar outcome (Bernardini, *et al.*, 2000). 23

By using clear language and providing glossaries and further explanations, it is crucial to assist patients in using the information in package leaflets more often and to enhance their comprehension of functional health literacy.

Pharmacists can contribute in part to the accomplishment of these goals. Prior research revealed that patients' choices of over-the-counter pharmaceuticals are frequently influenced by the advice of pharmacists (Wazaify *et al.*, 2005; Hayashi *et al.*, 2015; Aoyama *et al.*, 2012). According to a statewide survey carried out in Germany, 86% of the participants in the study trust their pharmacist, making pharmacies the most popular location for patients to seek information regarding over-the-counter medications (Eichenberg *et al.*, 2015). According to a systematic analysis by Raynor *et al.*, patients preferred information about over-the-counter medications supplied by pharmacists based on their unique health conditions and illnesses over information prepared by manufacturers under stringent regulations (Raynor *et al.*, 2007).

6. Conclusion

Pharmacies have easy access to over-the-counter medications for self-treatment. The majority of our patients had previously taken over-the-counter medications, either on the advice of a friend or after using them online. The majority of patients were happy with their choice to use the most widely used over-the-counter medication, and it had no adverse effects. The most commonly used over-the-counter drug among the survey participants was paracetamol. The patient's age and gender were significantly correlated with the duration, frequency, suggestion, and abuse of over-the-counter medications. Similar surveys must be carried out in other areas before the overall findings can be examined and utilized as foundational information to create comprehensive patient care programs. Additionally, it is recommended that a community-wide awareness campaign about over-the-counter medications be launched.

7. Recommendations

1. Enhancing Health Education

- Develop health education programs to raise public awareness about the safe use of OTC medications and their potential adverse effects.

- Provide clear and understandable information on how to use OTC medications safely.

2. Role of Pharmacists

- Enhance the role of pharmacists in providing counseling and advice to patients on the use of OTC medications.
- Encourage pharmacists to provide information on the potential adverse effects of OTC medications.

3. Awareness Campaigns

- Organize public awareness campaigns to educate the public about the potential risks associated with OTC medication use
- Utilize various media channels to disseminate information on the safe use of OTC medications.

4. Health Policy Development

- Develop health policies to regulate OTC medication use and minimize associated risks.

- Encourage health authorities to monitor and evaluate OTC medication use and provide necessary recommendations.

5. Scientific Research

- Encourage scientific research on OTC medication use and adverse effects.
- Support studies that aim to improve understanding of OTC medication use and develop strategies for safe use.

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