Original Research Article

Evaluation of Knowledge, Attitude and Practice (KAP) about Self-medication among population of Eastern province, Saudi Arabia

Abstract

Introduction: Self-medication can be described as the use of medications with therapeutic intent without prescription or supervision of the physician. The World Health Organization has considered Self- medications as one of self-care elements that comprise hygiene, nutrition, lifestyle, living condition, and income level. Self- Care is a practice that people do, to maintain wellness and prevent illness. Hence current study conducted to measure the prevalence of knowledge and attitude about self- medication practice among the communities of Eastern province, Saudi Arabia.

Methods: A cross-sectional descriptive study was conducted among 532 participants via an online survey. Survey questionnaire was distributed over the Social media platform.

Results: The results indicate that among the age group 15 to 25 years (43.42%) there's a high incidence of self-medication practice. Gender comparison indicated that females demonstrated a high prevalence of self-medication than males. Analysis of information from the university graduate students indicated that self-medication was high (46.05%) related with the knowledge of the medications (68.6%). Major medicine that was being used to self-medicate was Analgesic/painkiller (80.26%). It is essential to mention that the use of antibiotic was slightly low (12%). Among the health problems that provoked self-medication, headache was the main health problem (58.83%).

Conclusion: Self-medication was found to be alarmingly high among the population of Eastern Province, Saudi Arabia. So, it is imperative to increase the awareness among the population about the risk of this practice and how to practice self-medication more responsibly to avoid unwanted outcomes.

Key words: Self-medication, prescription, non-prescription, prevalence, Saudi-Arabia, Eastern Providence.

1. INTRODUCTION

Self-medication is a global phenomenon where in people throughout the world act on their own for their health. It is common in every region and age group varying in extent among people of community [1]. Self-medication can be described as the use of medications with therapeutic intent without prescription or supervision of the physician [2, 3]. The World Health Organization has considered Self- medications as one of self-care elements that comprise hygiene, nutrition, lifestyle, living condition, and income level. Self- Care is a practice that people do, to maintain wellness and prevent illness. Somewhere “responsible Self-medication” refers to the individual's practice to treat their illnesses with medications that don’t require prescription and they are considered to be safe and effective when they are used properly and as directed. On the contrary, Self-Medication taken irresponsibly is discouraged as it may not only harm the patient resulting in adverse drug reactions (ADRs) and Drug-Drug interactions but may also increase the direct costs, including the cost of treatment and admission to hospital[1,4]. The patterns of taking Self-medication vary amidst different regions and populations, and are influenced by various characteristics, such as gender, age, educational level, self-care attitude, medical background, non-seriousness of illnesses and socioeconomic factors such as income and expenditure along with Health

insurance [2]. With all the different contributing factors medications are usually obtained from home as a left-over, or from pharmacies and from family members [5].

Among all age groups, the elderly tend to have the highest tendency to seek self-medication because they suffer from various illnesses. Bodily changes associated with aging in addition to the changes in pharmacokinetics process (effect of the body on the drug such as drug metabolism and elimination) and the pharmacodynamics (effect of medicine on the body) may contribute to changes in the way the body reacts to medication. This ultimately resulting in reaction to medicine, congestion and aggravation of medicine effect which in turn can increase the adverse drug reactions (ADRs) and medicine interference [6]. Self-medication has its positives and negatives. Advantages of responsible self-medication includes cost cutting of treatment; evading long waiting times at clinics; treatment of previously diagnosed chronic disease, recurrent and minor diseases without referring to physicians; and encouraging the involvement of community pharmacists in self-care practices, by advising patients about how to use the medications safely and effectively including the over-the-counter (OTC) medications [7]. Besides, self-medication has its disadvantages such as masked diagnosis, using excessive drug dosage, using drug for prolonged duration, drug and food interactions, Drug – Drug interaction, Adverse drug reactions (ADRs), polypharmacy and superinfection can occur in self-medicating individuals [3].

Self-Medication is provoked to treat various minor health conditions like Headache, fever, flue, and cough [2]. Usually these conditions are addressed in over the counter (OTC) medications. Some people may seek self-medication to treat a previously diagnosed chronic condition such as Diabetes or Hypertension. Self- medication is more common nowadays

due to increased exposure to pharmaceutical advertisement and social media like WhatsApp, facebook, twitter and Instagram [2]. This exposure has influenced people to seek medicine related information from social media. This practice leads to self-medication. Self-medication happens when people purchase drugs, based on individual's experience that is shared on social media. A common reason among people to practice self-medication is, searching for their symptoms on Internet, diagnosing themselves and then choosing the desired medication without the guidance of the physician or pharmacist. A study that was carried in Saudi Arabia about "The use of social media among Saudi residents for medicines related information", indicated, 70% of the participants searched for medical related information on social media either on yearly, monthly, weekly and sometimes even on daily basis. Whereas. 29.3% of them. Had never used social media to search for medical related information. While this means that, social media may have a big impact on self-medication practice, it also important to consider that, it can be a major tool to mislead the public [8].

Most of the self-medications used are OTC, so there's a tendency for consumers to think that it is completely safe and has no side effects. Hence, the goal of our study is to evaluate the Knowledge, Attitude and Practice (KAP) about Self-medication among population of Eastern province, Saudi Arabia.

2. METHODS

2. 1 Study plan

A cross-sectional descriptive study was conducted to assess the Knowledge, Attitude and Practice (KAP) about self-medication among population of the Eastern Province, Saudi Arabia. The study was carried out for a period of 2 months from 1st September 2019 to 31st October 2019.

2.2 Study instrument

A self-administered questionnaire to collect data was designed. Items of questionnaire were formed after reviewing the available research literature. The final questionnaire was translated to Arabic language, the national language of all Saudis. The questionnaire included many sections and comprised of close-ended and multiple choices questions. Categories of variables identified were the demographics (Section 1) including age, gender, educational level, occupation, marital status, number of kids, health insurance. Section 2 was concerned with assessment of the knowledge and attitude of people to self-medication. Section 3 was concerned with people's opinions about self-medications, frequency and the main reason for self-medication, self- medication and side effects, health problem that provoked self-medication, and medicine classes used for self-medication.

2.3 Study sample size and collection of data

The Raosoft® online sample calculator was used to calculate the sample size with the margin of error 5%, and confidence level of (CI) 95%. The recommended sample size was 385. Totally 800 convenient questionnaire survey links were distributed amongst the general public of the Eastern province, Saudi Arabia through social media and e-mail, of which 532(66.5%) completely answered the questionnaire.

2.4 Data analysis

Analysis of data was performed using the Statistical Package for Social Science Version 23 (SPSS V.23) (Institute Inc: Cary, NC, USA). Demographic characteristics were applied to calculate the numbers (frequencies) and percentages; mean ±standard deviation).

Associated factors within groups were calculated using the chi-square (χ2) test. A p-value 0.05 was considered statistically significant.

3. RESULTS

3.1 Demographic and socioeconomic characteristics

The total sample amounted to 532 participants. Most of the participants were aged between 15 and 25 (N=231, 43.42%) and around one fourth participants aged between 36 and 50 (N=148, 27.8%). Gender analysis revealed that the majority of participants were females (N=397, 74.6%). Approximately half of the participants were university graduates (N=245, 46.05%). Occupation-wise data revealed that one third was students (N=188, 35.33%) followed by Non-Health care workers (N=154, 28.9%). A little more than half of them were married (N=300, 56.39%) followed by (N=222, 41.72%) single. Half of them did not have children (N= 296, 50.56%) followed by one third who has more than 2 children (N= 165, 31.01%). Over half of them has health insurance (N=298, 56.01%). The demographic and socioeconomic information is tabulated in Table1.

Table 1: Respondent's demographic and socioeconomic characteristics.

Parameter	**Frequency (n=532)**	**Percentage (%)**
Age in Years [Mean ± SD = 31.41± 14.93]		
15-25	231	43.42
26-35	116	21.8
36-50	148	27.8
≥50	37	6.95
Gender		
Male	135	74.6
Female	397	25.37
Marital Status		
Single	222	41.72
Married	300	56.39

Separated	10	1.87
How many kids do you have?		
1	30	5.63
2	68	12.78
>2	165	31.01
I don't have kids	269	50.56
Educational level		
Primary	6	1.12
Secondary	172	32.3
Diploma	83	15.6
University	245	46.05
Postgraduate	18	3.38
PhD	8	1.5
Occupation		
Unemployed	28	5.26
Student	188	35.33
House wife	94	17.66
Non-Healthcare related	154	28.9
Healthcare related	68	12.78
Do you have health insurance?		
Yes	298	56.01
No	234	43.98

3.2 Assessment of people Knowledge and Attitude about self-medication

Over half of participants have practiced self-medication in the last 3 months (N=323, 60.7%) ($p<0.001$). Majority of participants had the knowledge about, whether the medication needs prescription or not (N=365, 68.6%). Most have the knowledge related to the routes of administration, dosage, and side effects of the medication which has been purchased (N=391, 73.49%). Less than two third of them did not use prescription medications along with medications which have been purchased without prescription (N=333, 62.59%) ($p<0.001$). A little over half of them tell the pharmacist about the other medications that are

used at home (N=318, 59.77%) (p<0.001). People's Knowledge and attitude about self-medication are tabulated in Table 2.

Table 2: Assessment of people Knowledge and attitude about self-medication.

Parameter	Frequency (%)	p- Value (χ2 test)
Are you taking medication by yourself in last three months? Yes No	 323 (60.7) 209 (39.28)	 <0.001
Do you know whether the medicine you just purchased needs a prescription or not? Yes No	 365(68.6) 167(31.39)	 <0.001
C) Do you know the route of administration, dosage, and side effects of the medicine you purchased without a prescription? Yes No	 391(73.49) 141(26.5)	 <0.001
Have you ever used prescription medications along with medications you purchased without prescription? Yes No	 199(37.4) 333(62.59)	 <0.001
When you buy a medication without a prescription, do you tell the pharmacist of other medications you use at home? Yes No	 318(59.77) 214(40.22)	 <0.001

3.3 People's opinions about self-medications

Table 3. Shows participants opinions about self-medication from many aspects. Participants' opinions revealed that around one third of people usually read the pamphlet of the purchased medication (N=174, 32.7%) (p<0.001). Not more than half of the participants, always ask the information from the pharmacist regarding the medication (N=225, 42.29%)

(p<0.001). Nearly a third of them think buying a medication without a prescription is sometimes a safe way of using medication (N=174, 32.7%) (p<0.001). And around one Fourth of participants think it is never a safe approach (N=142, 26.69%) (p<0.001). A third of them directly consulted the pharmacist without seeing the physician (N=179, 33.64%) (p<0.001).

Table 3: People's opinions about self-medications.

Parameter	Frequency (%)	p- Value (χ2 test)
When you buy a medication without prescription, do you read the pamphlet?		
Always	125(23.49)	
Usually	174(32.7)	
Frequently	95(17.85)	<0.001
Sometimes	72(13.5)	
Occasionally	15(2.8)	
Rarely	35(6.57)	
Never	16(3)	
When you buy a medication without a prescription, do you ask the pharmacist for information regarding the medication?		
Always	225(42.29)	
Usually	81(15.22)	
Frequently	52(9.77)	
Sometimes	79(14.84)	<0.001
Occasionally	25(4.69)	
Rarely	31(5.82)	
Never	39 (7.33)	
Do you think buying a medication without prescription is a safe way of using medication?		
Always	22(4.13)	
Usually	31(5.81)	<0.001
Frequently	38(7.1)	
Sometimes	174(32.7)	
Occasionally	54(10.15)	
Rarely	71(13.34)	
Never	142(26.69)	
Do you believe that you should consult the pharmacist directly without seeing the physician?		

Always	40(7.51)	
Usually	53(9.96)	<0.001
Frequently	64(12)	
Sometimes	179(33.64)	
Occasionally	50(9.39)	
Rarely	70(13.15)	
Never	76(14.28)	

3.4 Frequency and main reason for self-medication

Over half of participants have gone through self-medication at one time in the last three months (N=320, 60.15%) (p<0.001). Very small number of participants have never practiced self-medication over the last three months (N=44, 8.27%) (p<0.001) details available in table 4.

Table 4: Frequency and Main reason for self-medication.

Parameter	Frequency (%)	p- Value (χ2 test)
How often you gone through self-medication in the last three months?		
Once	320(60.15)	
Twice	90(16.91)	<0.001
Thrice	32(6)	
More than thrice	46(8.64)	
Never	44(8.27)	
What is main reason for self-medication?		
Knowledge or previous experience	272(51.12)	<0.001
Difficulty of obtaining medical services	26(4.88)	
Cost saving	17(3.19)	
Influence from others (friends and relatives)	7(1.3)	
Mild severity of illness	141(26.5)	
Bureaucracy of health/hospital system	11(2)	
I have medicines of family members	16(3)	
Save Time	42(7.89)	

Figure 1 Reveals that “Knowledge or previous experience” was the main cause for self-medication for about half of participants (N=272, 51.12%) followed by the answer “mild severity of illness” which was the main cause for self-medication for around fourth of participants (N=141, 26.5%).

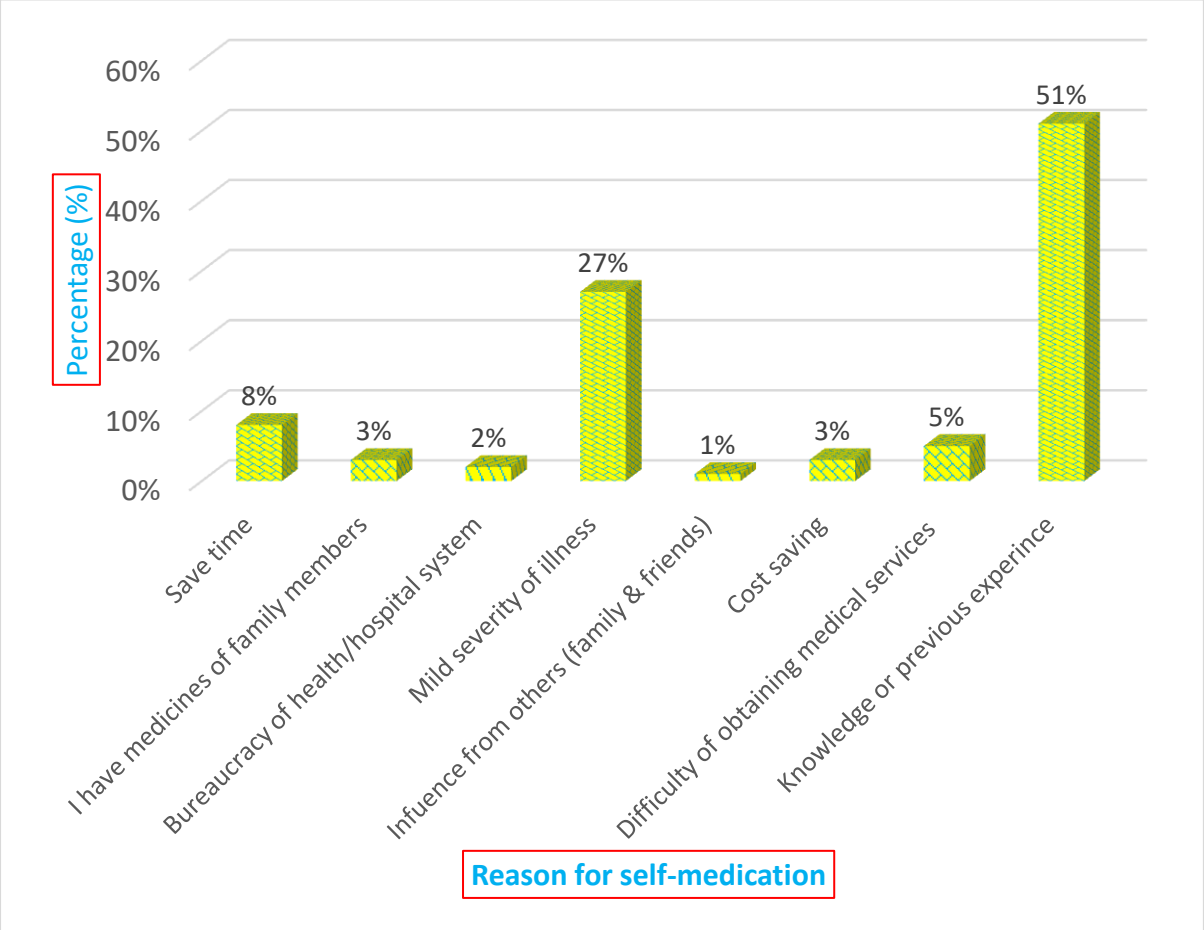

Figure: 1 Reason for self-medication.

3.5 Self- medication and side effects

Table 5. Shows participants knowledge and attitude, with regards to, side effects of the used drugs for self-medication. Figure 2 shows that most of the participants have previous knowledge about side effects of the medications used (N=403, 75.75%) ($p<0.001$). Most of

them had not experienced side effects after self-medication (N=372, 69.92%) (p<0.001). Study participants who experienced side effects after self-medication have stopped taking the medication (N=93, 58.12%) (p<0.001).

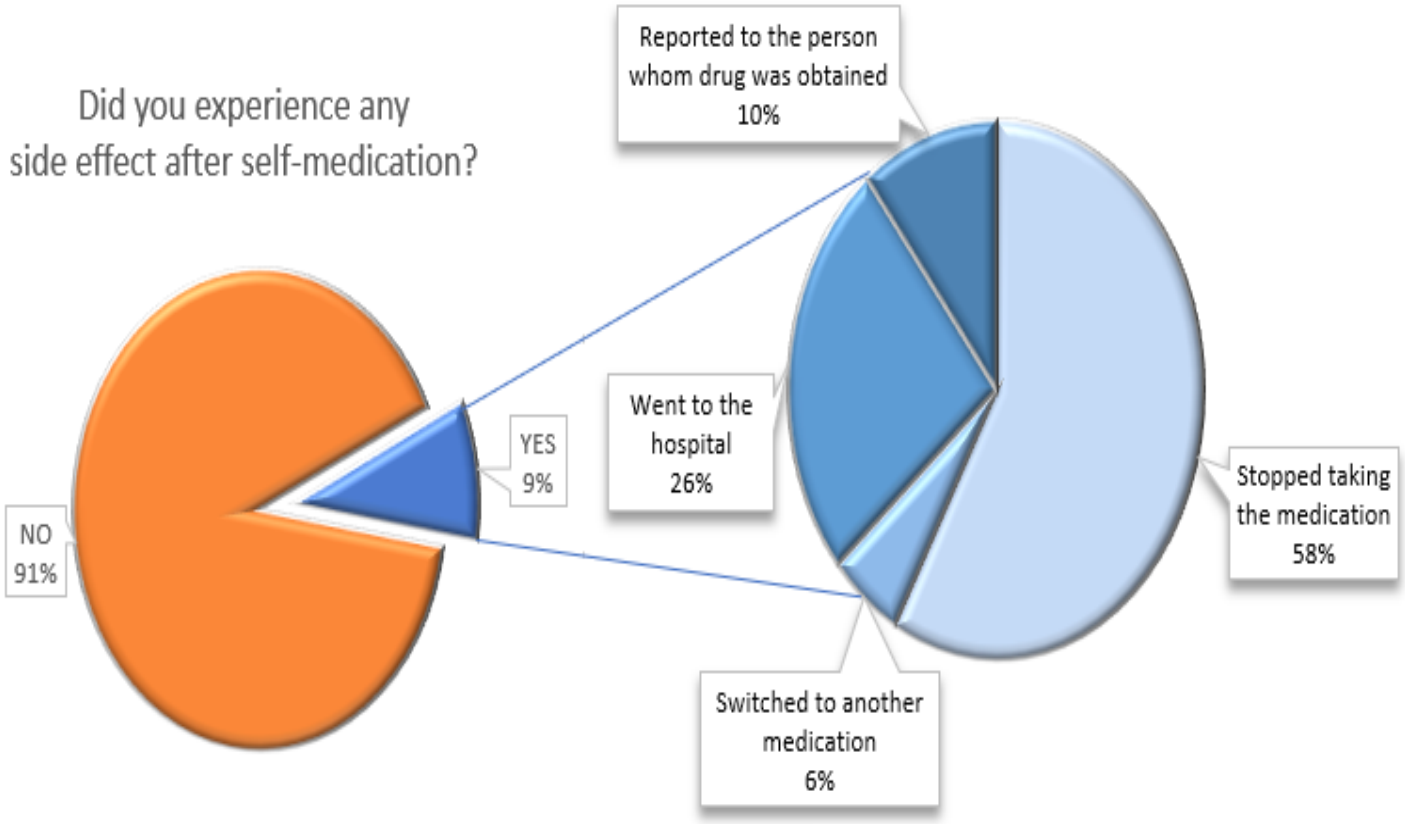

Figure 2: Participant's side effects experience

Table 5: Self- medication and side effects.

Parameter	Frequency (%)	p- Value (χ2 test)
Do you have the Knowledge of the possible side effects of the used medicine?		
Yes	403(75.75)	<0.001
No	129(24.25)	
Did you experience any side effect after self-medication?		
Yes	160(30.07)	<0.001
No	372(69.92)	
If yes, what did you do after experiencing side effect from the self-medication?		
Stopped taking the medication	93(58.125)	
Switched to another medication	9(5.62)	
Went to the hospital	41(25.6)	<0.001
Reported to the person whom drug was obtained	17(10.6)	

3.6 Health problem that provoked Self-medication

Main health problem that provoked self-medication (N=313, 58.83%) followed by Fever (N=143, 26.88%). Third health problem on the list was cough (N=130, 24.4%). Health problems that least provoked self-medication use was Urinary tract problems (N=11, 2.06%) hypertension (N=10, 1.87%) and Diabetes (N=9, 1.69%), details are available in table-6.

Disease	Frequency	(%)
Headache	313	58.83%
Fever	143	26.88%
Cough	130	24.4%
Running nose	122	22.9%
Dental pain	117	21.99%
menstrual problems	102	19.17%
wounds	81	15.22%
Heart burn	79	14.84%
Muscle pain	74	13.9%
Hair fall	59	11.09%
Diarrhea	58	10.9%
skin burns	58	10.9%

Table 6: Shows the different health problems that provoked self-medication.

Migraine	49	9.21%
Pain in joints	49	9.21%
Eye infection	45	8.45%
Nausea and vomiting	41	7.7%
Ear pain	37	6.95%
Difficulty in swallowing	37	6.95%
Birth control	26	4.88%
skin disease	23	4.3%
Other	23	4.32%
Asthma	21	3.94%
Rash	19	3.5%
urinary tracts problems	11	2.06%
Hypertension	10	1.87%
Diabetes	9	1.69%

3.7 Medicine classes used for self-medication

Figure 3. Show that the major medicine that was used for self-medication was Analgesics/painkiller (N=427, 80.26%) followed by antipyretics (N=257, 48.3%) and the third being eye drops (N=132, 24.8%).

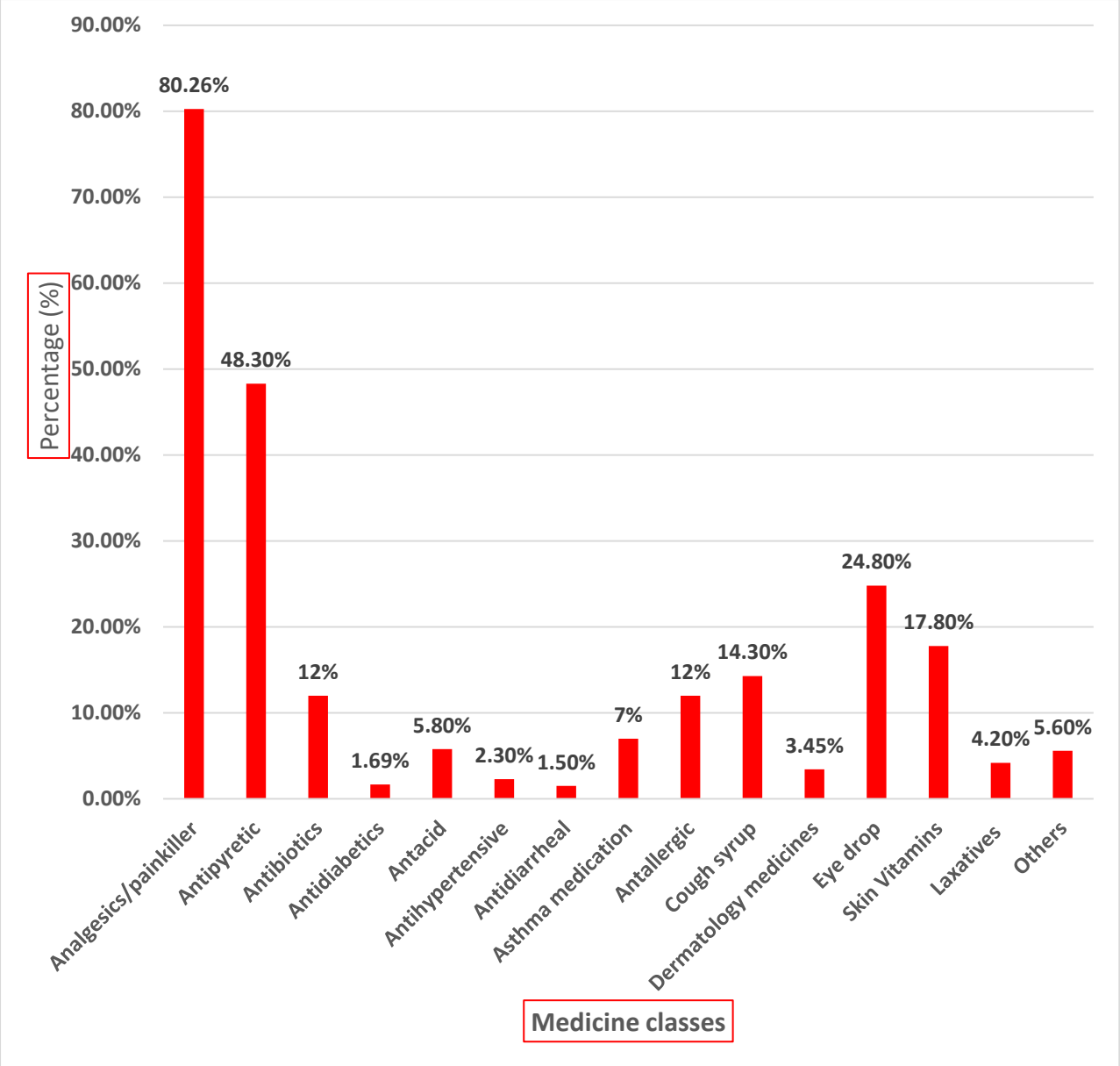

Figure 3: Medicine classes used for self-medication.

4. DISCUSSION

Self-medication is a very common practice all rounds the world which leads to numerous complications that affect people's well-being. Every medication needs to be administered in the right route, right dose, at the right time, and for the right duration to obtain an effective response [9]. Using self-medication may lead to drug misuse and moreover an inappropriate dosage may cause more harm than benefits [10]. To use any medication, it becomes

necessary that, they are used with proper indication from healthcare providers to avoid any harmful side effects. A lot of reasons and factors can lead to self-medication behaviours such as socioeconomic factors, lifestyle, readily available drugs, high medical consultation cost, time consuming clinical process, difficulty of nearby access to healthcare, past experience, and extensive advertisement [2]. Approximately 60.7% of participants in the current study are practicing self-medication during the last three months which are a very high value, based on the quantity of collected data. A comparable study conducted in Dammam, done on Public University Students (pharmacy and medical) indicated that the prevalence of self-medication was 26% [1]. A study in central province of Saudi Arabia showed that 49% of purchased medications are medications that must be dispensed only by prescription and 51% of them were OTC medications [11]. Also, another cross-sectional study in different regions of Saudi Arabia showed that 81.4% of the participants reported of having used a prescription drug without first obtaining a physician's advice [12]. Another similar study among medical first-year students in Bahrain showed that 44.8% of them practiced self-medication [13].

In assessment of people Knowledge and Attitude about self-medication, it shows that 68.6% of participants know whether the purchased medication needs a prescription or not, in comparison to a study conducted in central Saudi Arabia only 31.8 % of participants have the knowledge about whether the purchased medication needs a prescription or not [11]. This indicates a higher level of awareness in the eastern province. Around 74% of participants have knowledge about, the route of administration, dosage, and side effects of the medicine, whereas only 38% of participants have used prescription medications along with purchased medication without prescription. Around 60% of participants have told the pharmacist about the used medication at home which indicates that people are aware of

possible interactions that might occur with drug co-administration, also, this indicates that the pharmacist's involvement in such a situation can help in better outcomes.

Regarding people's opinions about self-medications, one third of (33%) participants "usually" read the pamphlet when medication without prescription is purchased, in comparison to a study conducted in central Saudi Arabia, 43.7% of participants "always" read the pamphlet when medication without prescription is purchased [11]. In a study conducted in Jordan among medicine and pharmacy students, medicines were used according to instructions obtained mainly from the leaflet by 28.8% [7]. In the current study of 42.29% of participants answered with "always" for asking the pharmacist for more information in regards to the purchased medication. In such a practice pharmacist's involvement is greater in self-medication practice meaning a greater responsibility towards their patients and an increased need for accountability [4]. From the safety perspective, one third of participants (33%) think buying medication without prescription is "sometimes" a safe way of using medication, on other hand nearly one fourth (26.69%) of participants think buying medication without prescription is "Never" a safe way of using medication. In comparison to a study conducted in central Saudi Arabia 29.2% of participants think buying medication without prescription is "never" a safe way of using medication [11]. In the present study, around one third of participants (33.64%) believe that "sometimes" they should consult the pharmacist directly without seeing the physician, this means a greater responsibility on the pharmacist and increases the pharmacist enrolment in self-care practice. Pharmacist can treat some symptoms at a pharmacy but for serious illness counseling the pharmacist directly is a discouraged practice. In our study frequencies of practising self-medication vary. Most practiced self-medication once in the last three

months (60.15%), the number of participants who never practiced self-medication (8.27%) is low in comparison to the overall collected data.

The overall motives for self-medication among population in the present study vary. Around 51.12% of the participants answered that they have the knowledge or previous experience of using medications, 26.5% of participants have practiced self-medication due to the mild severity of their illness. In comparison to a cross-sectional study in Saudi Arabia, the two major reasons for taking self-medication were difficult access to hospitals (45.6%), the other reason was, lack of effectiveness of primary healthcare centers (44.8%) [12]. In a study conducted on University students from Mansoura, Egypt, the two main reasons for self-medication were no need to visit the doctor for a minor disease (73.9%) and the knowledge of previous experience (71.4%) [2].

In the present study, participants have a high percentage of knowledge of the possible side effects of the purchased medication which was about 76% , only a minor number of participants have experienced side effect (9.39%) , and majority of those who experienced side effect have stopped taking the medication (58.125%) or went to hospital (25.6%). Lack of information about the medication can lead to unwanted side effects which may in turn harm the patient requiring hospitalization, and this will increase severity of the disease, and waste patients' time and money. As for the Health problems that provoked self-medication, in our study headache was the main health problem (58.83%), followed by fever (26.88%), cough (24.4%), runny nose (22.9%), dental pain (21.99%), and menstrual problems (19.17%). In two studies that were conducted in Bahrain and Jordan, headache was the major problem that provoked practicing self-medication. [8,16]. Another study that was conducted in a rural population in South-Western Saudi Arabia, indicated that pain (38.3%), Influenza

(26.3%), Cough (24%), and Allergy (11.4%) were the main health problems that provoked self-medication [9]. There was a surge in the use of analgesics as our study which reports a prevalence of 80.26%, which is quite high. The most commonly used analgesics are paracetamol and NSAIDs. A study from Saudi Arabia indicated that the top utilized medication class in Saudi Arabia was analgesics, specifically diclofenac. This class represents 67% of the top used drugs in Saudi Arabia [14], followed by antipyretics which are the second most used medicine (48.3%). It is very high percent as compared with percent of people who do not have kids. Usually, antipyretic drugs are used to decrease fever that is associated with factors like vaccinations which is the most common reason for fever itself. So, parents usually use antipyretics without prescription but with instructions. Third high prevalence is eye drops (24.8%). These could be dangerous sometimes because there are many types of drops that not only contains saline. So, the patient should be careful about which kind of eye drops are needed. Cough syrup (20.11%) with the fourth highest prevalence, is used for the temporary relief of cough due to the common cold, hay fever or other upper respiratory allergies. Some of the cough syrup products contain a non-narcotic cough suppressant. It acts centrally on the cough centre thereby suppressing the cough reflex. This product might lead to addiction if it not uses as recommending. In comparison, a cross-sectional study in Saudi Arabia found that the top 4 classes of self-medicated drugs used by the population surveyed are, analgesics (84.1%), antipyretics (70.9%), anti-tussive syrups (46.9%) and antibiotics (37.3%) [12]. This study has nearly similar findings to our study. In the current study, the prevalence of self-medication with antibiotics (12%) was relatively low in comparison to the findings of other studies. A cross-sectional study in Saudi Arabia reported that the percentage of antibiotic use was 37.30% [12]. Another study in central Saudi Arabia reported that the percentage of antibiotic use was 22.3% [11]. Highest

prevalence of using antibiotic in self-medication was in Jordan with percentage of 59.8% [7]. Antibiotic use without proper indication, diagnosis of the disease might lead to increasing morbidity among the population and may lead to multiple resistant strains of the causative organisms which are difficult and costly to treat, especially in immune compromised individuals [10].

Finally, the inappropriate use, indication, diagnosis of drug should not only be blamed on the patients alone as the healthcare providers and physicians in particular have a significant role to play by providing health education on self-prescription. Our study had several limitations such as recall bias, which was minimized by adapting a well formatted, simple, and easy-to-understand questionnaire by translating it to the Arabic language because the study is about prevalence of self-medication practice in the Eastern Province, Saudi Arabia.

5. CONCLUSION

In conclusion, our findings demonstrated that frequency of taking self-medication in the Eastern province, Saudi Arabia is alarmingly high. Most common medications being used without a prescription are analgesics. The common health problems that provoke self-medication are headache, fever, and cough. The reason for using self-medication in being knowledge or previous experience, mild severity of illness and in order to save time. So, it's very important to increase the cognizance among the population about the risks associated with this practice and how to practice self-medication more responsibly to avoid unwanted outcomes.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because

we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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