Awareness and use of over the counter analgesic medication: A survey in the Aseer region population, Saudi Arabia

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ABSTRACT

The aim of this study was to explore the self-medication with OTC analgesics practice and awareness among the public in Aseer, Saudi Arabia. A cross-sectional study was conducted between June and October 2017 among the public in the Aseer region, Saudi Arabia. 468 out 600 of the distributed questionnaires were completed. The majority of respondents were female (53.8%, n=254). About 48.7% of the respondents were younger than 25 years old. 72.6% of participants graduated or learned at university. The majority of participants are singles (78%, n=345). were of participants in this study are Saudis (96.9%). The prevalence of self-medication with OTC analgesics was 53.5 %. Paracetamol was the most common analgesic used by the participants in this study (68.2%) followed by Ibuprofen (23%). headache was reported as the most common symptom associated with self-medication used (50.9%) followed by toothache (28.1%), fatigue (10.6 %) and the least reported symptom was back pain (10.3%). majority of participants had poor knowledge of OTC analgesics. The current study shows that the self-medication with OTC analgesics was common in Aseer, Saudi Arabia. A lack of awareness towards analgesics was found in this study. Education programs towards analgesics use, doses, side effects, and other issues are highly recommended.

1. Introduction

Self-medications with over the counter medications is common among the public in developing countries (Ocan et al., 2015; Saeed et al., 2014; Al-Ani et al., 2016). Self-medication defined according to the World Health Organization as "the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms" Self-medications is associated with the use of non-prescription medications (OTC). People can easily buy OTC from pharmacies and medication stores without prescriptions (WHO, 2000). Self-medication practice is considered a numerous

source for medication error likewise the prescription errors (Hughes et al., 2001; Alshahrani et al., 2019a).

Analgesics reported as the most common self-medication agents (Saeed et al., 2014; Hughes et al., 2001). Analgesics such as Paracetamol and non-steroidal anti-inflammatory drugs (NSAIDs) can be obtained from pharmacies and medication stores easily to be self-used for treating their headaches, tooth pain, back pain, period pain, fever and so on. This practice was commonly observed among either public or young adults and university students (Saeed et al., 2014; Alshahrani et al., 2019b; Figueiras et al., 2000; Hasan et al., 2019; French and James, 2008). A systematic review conducted by Shaghaghi et al. (2014) that tried to explore the prevalence of self-medication and its associated factors in developed and developing countries reported that the analgesic was the most common medications used as self-medications.

Paracetamol is used worldwide as an analgesic and people buy paracetamol from pharmacies, markets, and minimarkets easily alone or with other combinations (Saeed et al., 2014; Shaghaghi et al.,

2014). Paracetamol is the potential for severe adverse effects such as hepatotoxicity and death. Many patients do not know that paracetamol also available in other medicinal products and admitted to the hospitals because of unintentional paracetamol overdose (Gyamlani and Parikh, 2002; ISMP, 2007). Food and Drug Administration (FDA), as well as Institute for Safe Medication, reported that paracetamol is combined with many pharmaceutical formulations and majority parts of public do not know this that could lead to unintentional paracetamol overdose (ISMP, 2007; FDA, 2008).

NSAIDs are potential risk factors for bleeding, ulcer and gastrointestinal irritations (McGettigan and Henry, 2013). People practicing self-medication due to many factors such as: easy to buy what they need from pharmacies or others; physician's fees; lack of time; previous experience with the same medications and symptoms; friends and colleague's recommendations and other factors (Saeed et al., 2014; Figueiras et al., 2000; Shaghaghi et al., 2014).

The aim of this study was to explore the self-medication with OTC analgesics practice and awareness among the public in Aseer, Saudi Arabia.

2. Methods and material

2.1. Study design and sample size calculation

A cross-sectional study was conducted between June and October 2017 among the public in the Aseer region, Saudi Arabia.

The sample size (n) was calculated based on this formula to estimate the number of subjects or patients required for this study:

$$n = \frac{Z^2 \, p(1-p)}{d^2}$$

where; n=sample size, Z=Z statistic for a level of confidence (Z=1.96 is selected many pieces of literature to give good power in estimation the sample size), p=expected prevalence or proportion. The formula is based on the prevalence or incidence of related matters. Using the equation, the number of subjects that should be included became as 386. People from different geographical areas attending

three different primary care centers in the Aseer region were invited to participate voluntarily in this study.

2.2. Study instrument and data collection

A self-administered questionnaire was adapted from the literature (Saeed et al., 2014; Al-Gallaf, 2015). The questionnaire was pilot-tested on a convenience sample of ten people from the Aseer region to test the validity of the survey form. The pilot study results were not included in the final results. Then, the validated survey was translated to Arabic by an independent agency before being distributed by the last year's pharmacy students to patients visiting three primary care centers in the Aseer region. The study purpose was explained to the participants and they were asked their consent if they agree to participate in the study

2.3. Data analysis

Data were cleared, entered and analyzed using SPSS version 21 (SPSS Statistics for Windows, version 21.0, IBM Corp., USA). The demographic results were reported as frequency (N) and percentage. The remaining results regarding types of analgesics used, the proper use of analgesics, and the role of the community pharmacists in inpatient counseling were reported as significant or not (<0.05 considered significant) using the Chi-square test to differentiate between responses groups.

3. Results

3.1. Demographic characteristics

The response rate was high in this study as 468 out 500 of the distributed questionnaires were completed (~94%). The majority of respondents were female (53.8%, n=254). About 48.7% of the respondents were younger than 25 years old. 72.6% of participants graduated or learned at university. The majority of participants are singles (78%, n=345). The majority of participants in this study are Saudis (96.9%) as shown in Table 1.

Table 1: Main demographic characteristics of the participants

Variable	Age[a]					Gender		Nationality		Educational Degree[b]			
	<18 yrs	18-25 yrs	26-35 yrs	36-45 yrs	>45 yrs	Male	Female	Saudi	Non-Saudi	Less secondary sch.	secondary sch.	University	Higher studies
Number (N)	25	199	119	78	39	223	245	468	15	9	116	280	51
Percent (%)	5.4	43.3	25.9	17	8.5	47.6	52.4	96.9	3.1	2.0	25.4	61.4	11.2

a: Number of not respond to Age=8, with 1.7% percent of (468); b: Number of not respond to Edu. Degree=12, with 2.6% percent of (468)

3.2. The prevalence of OTC analgesic use among public

Most of the participants were not suffering from any chronic diseases (79.9%). The findings of this study show that 53.5% of participants are willing to

practice self-medication with OTC analgesics. Furthermore, the results show that paracetamol was the most common analgesic used by the participants in this study (68.2%) followed by Ibuprofen (23%) Table 2.

Table 2: Information about analgesic medications

Question	Response	Frequencies (N)	Percent (%)	Chi-Square	P Value
Do you suffer from a chronic disease?	Yes	95	20.3	165.137	0.000[a]
	No	393	79.7		
Do you use any OTC analgesic without a prescription?	Yes	250	53.5	2.332	0.127
	No	217	46.5		
Which medication of the following medicines do you prefer to use it to relieve pain or treat it?	Paracetamol	324	68.2	516.503	0.000[a]
	Ibuprofen	109	23.0		
	Aspirin	20	4.2		
	Diclofenac (Voltaren)	22	4.6		
Do you support the idea of consulting a pharmacist without visiting the doctor?	Yes	237	50.7	0.105	0.746
	No	230	49.3		

P value<0.05 refers to statistical significance difference

3.3. Symptoms associated with the proper use of OTC analgesics

The findings of this study show that the headache was reported as the most common symptom associated with self-medication used (50.9%) followed by toothache (28.1%), fatigue (10.6%) and the least reported symptom was back pain (10.3%) Table 3.

Table 3: The proper use of OTC analgesic medications

Question	Response	Frequencies (N)	Percent (%)	Chi-Square	P value
Do you use the following analgesic medications (Paracetamol, Ibuprofen, Aspirin, Diclofenac (Voltaren)) for the treatment of any of the following diseases?	Headaches	369	50.9	319.58	0.000[a]
	Toothache	204	28.1		
	Back pain	75	10.3		
	Fatigue and drowsiness	77	10.6		

a: P value<0.05 refers to statistical significance difference

3.4. Awareness towards OTC analgesics

The findings of this study show that the majority of participants had poor knowledge of OTC analgesics where they may use the OTC analgesic for improper indications (misuse) in Table 4. The results reveal that the participants appreciate the community pharmacist's counseling during the OTC analgesic prescribing Table 5.

4. Discussion

Self-care practice with OTC analgesics among the public in the Aseer region was 53.3%. Studies conducted by Babakor and Al Ghamdi (2018), reported that 84.4% of the participants were using OTC analgesics among 400 patients attending Primary Health Care Centers in Jeddah, Saudi Arabia. Another study conducted by Saeed et al. (2014) found that the prevalence of OTC analgesics was 63.4% among 354 male students at Qassim University, Saudi Arabia.Sarganas et al. (2015) reported that the prevalence of self-medication with OTC analgesics was ranged between (19) and 21% among 14,000 adults in Germany between 1998 and 2011. Another study conducted by Dale et al. (2015) found that the prevalence of self-medication with OTC analgesics among 50.805 adults in Norway was 47%.

Table 4: The misuse of OTC analgesic medications

Question	Response	Frequencies (N)	Percent (%)
Which of the following diseases do you use Paracetamol in order to be treated?	Coughing	76	22.6
	Diarrhea, nausea	17	5.0
	Sleeping problems	91	27.0
	Sore throat	153	45.4
Which of the following diseases do you use Ibuprofen in order to be treated?	Coughing	32	15.4
	Diarrhea, nausea	38	18.3
	Sleeping problems	51	24.5
	Sore throat	87	41.8
Which of the following diseases do you use Aspirin in order to be treated?	Coughing	34	22.4
	Diarrhea, nausea	40	26.3
	Sleeping problems	45	29.6
	Sore throat	33	21.7
Which of the following diseases do you use Diclofenac (Voltaren) in order to be treated?	Coughing	36	23.8
	Diarrhea, nausea	30	19.9
	Sleeping problems	30	19.9
	Sore throat	55	36.4

Table 5: Role of the community pharmacist inpatient counseling

Source of information	Response	Frequencies	Percent (%)	Chi-Square	P-value
Does the pharmacist tell you instructions and the duration of using medication?	Yes	312	67.4	55.985	0.000[a]
	No	151	32.6		

a: P value<0.05 refers to statistical significance difference

The prevalence of self-medication with analgesics could be different from one study to another. The differences between studies could result from many factors such as study design, age of participants, classifications of OTC versus prescribed OTC difference between countries and other factors. People in Saudi Arabia can buy OTC analgesics as well as prescribed OTC, antibiotics and other medications as a result of that pharmacies not adhere to the pharmacy law in Saudi Arabia (Al-Mohamadi et al., 2013; Alshammari et al., 2017). This could affect the prevalence of analgesics used in our study.

The findings of this study shows that the most common OTC analgesics used by the study participants were paracetamol and Ibuprofen for headache, toothache, fatigue and back pain and this is consistent with what reported in the previous studies (Saeed et al., 2014; French and James, 2008; Al-Gallaf, 2015; Dale et al., 2015). The findings of this study show that the majority of participants had poor knowledge of OTC analgesics. FDA (2008) as well as ISMP (2007) reported that patients had poor knowledge of the analgesics. Self-medications could cause adverse effects as reported by Al-Ani et al. (2016) such as vomiting, nausea and diarrhea and on the other hand, could help health authorities and policymakers if used appropriately and patients get the appropriate education and counseling towards it.

5. Conclusion

The current study shows that the self-medication practice with OTC analgesics was common in Aseer, Saudi Arabia. Lack of awareness towards analgesics was profound in this study. Educational programs towards improving public awareness regarding analgesics uses, doses, side effects, and other issues are highly recommended. Although large sample size was considered as a strength point for this study, it was conducted in one university. Therefore, it would be better in the future to recruit more individuals from a wider age range and from different universities and areas in Aseer Region to provide results that are more representative and generalize the result of this study among the Aseer population.

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Compliance with ethical standards

Ethical considerations

This study was approved by King Khalid University, College of Pharmacy (08/06/2015), Saudi Arabia. Written consent was obtained from the participants. Furthermore, no personal data was obtained from the participants.

Conflict of interest

The authors declare that they have no conflict of interest.

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