

Pattern use of Non-steroidal Anti-inflammatory Drugs among Saudi Community: Patients' Perspective

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ABSTRACT

Objectives: In this study, we aimed to explore the utilization of public use of non-steroidal anti-inflammatory drugs (NSAIDs) among the participants from the major metropolitan areas in Saudi Arabia. **Methodology:** This is a cross-sectional study conducted over a period of 6 months. The study questionnaire was randomly distributed via digital media using Survey Monkey system to individuals in the Kingdom of Saudi Arabia. The questionnaire comprised 24 questions related to demographic data; age; education; socioeconomic status; weight; history of chronic disease; history of pain; frequency, type and dosage of NSAIDs; and indication for the use of NSAIDs. The survey web link was distributed via social media to a convenient sample of participants. Data were tabulated and analyzed by using SPSS version 13 software. **Results:** The survey questionnaire was distributed to 3000 patients and a total of 500 participants responded, making the response rate as 16.6%. Of them, the highest percentage of responders belonged to the age group of above 40 years (52.63%, $n=263$). Majority of the responders had a university degree (66.20%, $n=329$). Of all the responders, 54% ($n=272$) did not use painkillers daily, whereas 43.33% ($n=216$) took painkillers daily; 2.26% ($n=11$) of the responders did not remember. Around 87% ($n=433$) of the responders took an average of 1–3 NSAIDs daily, 11.44% ($n=57$) took 4–7 NSAIDs daily and 1.49% ($n=7$) responders took 8–12 NSAIDs daily without a prescription. Furthermore, 0.50% ($n=2$) of the responders took more than 12 NSAIDs per day. **Conclusion:** The NSAIDs are highly utilized in the Kingdom of Saudi Arabia. Therefore, the number of awareness programs for the public about the side effects of short- and long-term use of NSAIDs is highly recommended in Saudi Arabia.

Key words: Pattern, Use, Non-steroidal Anti-inflammatory Drugs, Patient, Saudi Arabia.

INTRODUCTION

Non-steroidal anti-inflammatory drugs (NSAIDs) are the most widely used therapeutic agents that are taken alone or in combination with other types of the drugs. They are used to relieve symptoms of many clinical indications including short- and long-term pain. The primary use of NSAIDs is in the treatment of fever and headache.¹ In the elderly population, chronic pain is a significant issue. Approximately 30 million people use NSAIDs daily for the treatment of pain;² of them, almost 50% are above the age of 65 years.^{3,4} NSAIDs are used in both acute and chronic musculoskeletal pain including low back pain.⁴⁻⁶ They might also be used in chronic spinal pain; however, the efficacy of NSAIDs has been evaluated in clinical trials conducted only for a few days.⁷⁻⁹ Furthermore, NSAIDs are widely used to treat various inflammatory conditions such as rheumatoid arthritis and osteoarthritis.¹⁰ Samuelsen *et al.* (2015) reported the use of analgesics in the general Norwegian population, their change over time and high-risk use, which was called “The Tromso Study.” Their study was aimed to estimate the prevalence of use of over the counter (OTC) medications and prescription analgesics. They discussed the change in the use of analgesics over time and the prevalence of use in the presence of potential contraindications and pharmacodynamic drug interactions. Their results also showed that there was a tendency of worsening health, more pain and less education

across the analgesic user group than that of the nonuser group.¹¹ Garofalo *et al.* (2015) studied the use of self-medication among parents in Italy. They performed a cross-sectional survey on the prevalence, the determinants and the reasons of oral medication use without the prescription of a physician among a random sample of 672 parents of students attending randomly in selected public schools in Italy. Their results showed that 69.2% practiced self-medication at least once. The odds of having performed self-medication were higher in females, in the younger population, in those who have had a health problem in the preceding year and were lower in respondents with a middle or lower level of school education. Among those reporting experience of self-medication, 53.4% have practiced at least once in the last year and this was more likely for those who have had a health problem. NSAIDs were more frequently used without a prescription in the previous year. Two-thirds of the participants inappropriately self-medicated during the last year at least once. Of those who did not report self-medication, 13.1% were willing to practice it. Females were more prepared and those who attended secondary school of education were less ready to practice self-medication. The frequency of oral self-medication was quite high and in most cases inappropriate with a potential impact on the health status.¹² Almalak *et al.* (2014) studied the attitude of students in Saudi Arabia toward

the use of OTC medicine during exams. Approximately, 1596 students participated in this survey, of whom, 829 (51.9%) were university students and 767 (48.1%) were high school students. Their results showed that the use of OTC as NSAIDs was higher among high school female students who were in the age group of 16–18 years. Overall, university students were found to have a better knowledge about the safety of OTC medicine.¹³ Therefore, in this study, we aimed to explore the utilization of public use of NSAIDs among participants from major metropolitan areas in Saudi Arabia.

METHOD

This is a cross-sectional study conducted for a period of 6 months. The study questionnaire was developed to evaluate the use of NSAIDs in several major metropolitan areas in the Kingdom of Saudi Arabia. The questionnaire was tested on 32 patients and was re-designed. The re-designed questionnaire was randomly distributed using the Survey Monkey system to individuals via social networking means. The questionnaire comprised 24 questions. The sample size was calculated using Raosoft method assuming a population of 20,000 individuals, with a margin of error as 5%, a response distribution of 50% and 95% confidence interval.¹⁴ The sample size was determined to be 377 individuals. Adult individuals in the age group of 18–65 years were included in this study. Children and geriatric patients above 65 years were excluded from participation. The survey consisted of demographic data; age; education; socioeconomic status; weight; history of chronic disease; history of pain; frequency, type and dosage of NSAIDs; and indication for the use of NSAIDs. The survey web link was distributed via social media to a convenient sample of participants from July to November 2016. Data were tabulated and analyzed by using SPSS version 13 software.

RESULTS

In this study, 3000 patients received the survey questionnaire and a total of 500 patients responded, making the response rate as 16.6%. Of these, the highest percentage of responders were in the age group of above 40 years (52.63% $n=263$), followed by those in the age group of 26–40 years (42.11% $n=210$). Majority of the responders had obtained a university degree (66.20%, $n=329$), followed by high school diploma (21.73%, $n=108$), intermediate degree (1.41%, $n=7$) and finally those without education (0.40%, $n=2$). Around 62% of the responders were employed and the rest were not. Approximately 44% ($n=221$) of the responders had their monthly income as above 15,000 Saudi Riyals (SRs) per month, followed by those with a monthly income ranging from 7000 to 15,000 SRs (33.60%, $n=165$) and those with a salary ranging from 2000 to 7000 SRs and less than 2000 SRs (17%, $n=85$ and 5.87%, $n=29$, respectively) (Table 1).

Among the responders; 63% ($n=315$) did not visit the emergency room (ER) because of the acute pain attack in the previous year, 31.72% ($n=158$) visited the ER for 1–4 times and 3.43% ($n=17$) did visit the ER for 5–8 times. Only 1.82% ($n=9$) visited ER more than 8 times in the last year. The number of responders who underwent surgical operations in the previous 5 years was 62% ($n=312$), whereas 36.14% ($n=180$) did operations from 1 to 4 times during the last 5 years. Furthermore, 0.8% ($n=4$) of the responders underwent at least 5 and 8 operations. In the previous 5 years. Around 58% ($n=289$) of the responders did not suffer from chronic diseases, whereas 42.11% ($n=211$) were suffering from chronic diseases. Approximately 60% ($n=296$) of the responders suffered from headache at least 1–4 times per month, followed by no attacks (18.15%, $n=91$), whereas 14.11% of the responders were suffering headaches at least 5–8 times per month. Around 8.47% ($n=42$) of the responders suffered from headache more than 8 times per month (Table 2).

According to our results, the daily usage of painkillers was not very com-

mon among the responders. Around 54% ($n=272$) did not use painkillers daily, whereas 43.33% ($n=216$) took painkillers daily; 2.26% ($n=11$) did not remember. Approximately 69.2% of the responders practiced self-medication at least once. Furthermore, an average of 1–3 medications were taken daily by around 87% ($n=433$) of the responders, 11.44% ($n=57$) took 4–7 medications daily and only 1.49% ($n=7$) took 8–12 medications daily without a prescription. Furthermore, 0.50% ($n=2$) of the responders took more than 12 medications per day. According to our results, several types of NSAIDs were used by the participants: 39.92% ($n=199$) used Panadol[®] and Voltaren[®] 50 mg and 9.55% ($n=48$) used Panadol, Brufen[®] 600 and Voltaren 50 mg. Furthermore, around 10% ($n=46$) of the responders used Panadol, Brufen 400, and Ponstan[®]. Around 24.63% ($n=123$) of the responders did not use any of the aforementioned drugs (Table 3).

DISCUSSION

Several publications had been published about one type of medications and related patients knowledge or perception or practice.^{15–17} This research is very important to determine patient situation related to the medicines, subsequently setup pharmacy strategic plan to correct and improve the condition.¹⁸ The results of this survey showed that most of the responders had good education and adequate economic incomes. Only one-third of the responders visit the ER due to the pain. Two-third of them suffered from headache several times in a month. As a result, around half of the respondents were taking painkillers daily. This shows that there is a high usage of OTC medicines without doctor's consultation. Moreover, misuse of medications is related to the weak knowledge regarding medications of pain management. By studying the relationship between the multiple headaches suffering individuals and the types of non-NSAIDs used during the headache, it showed that the group who were not experiencing headache, they did not use any of the mentioned

Table 1: Sociodemographic characteristic of the respondents.

Age (years)	n(%)
15-25	27 (5.26%)
26-40	210 (42.11%)
>40	263 (52.63%)
The education level in the Participants	
Education level	n(%)
University	329 (66.20%)
High school education	108 (21.73%)
Intermediate	7(1.41%)
Without	2 (0.40%)
Employment status of participants	
Employment	n(%)
Yes	61.82%
No	38.18%
Monthly income distribution among participants	
Monthly Income (SR)	n (%)
<2000	29 (5.87%)
2000-7000	85 (17%)
7000-15000	165 (33.6%)
>15000	221 (43.52%)

Table 2: Medical history of the respondents.

How Many Times You Visited The Emergency Room For An Acute Pain in the Past year?	Frequency	Percent
None	316	63.20%
From 1 – 4 times	158	31.60%
From 5 – 8 times	17	3.40%
More than 8 times	9	1.80%
Answered questions	500	
Skipped questions	0	
Number of individuals suffering from chronic diseases		
Yes	289	57.80%
No	211	42.20%
Answered questions	500	
Skipped questions	0	
How many operations done to you in the past five years?		
None	312	62.40%
From 1 – 4 operations	180	36.00%
From 5 – 8 operations	4	0.80%
More than 8	4	0.80%
Answered questions	500	
Skipped questions	0	
Number of times you got PAIN/Headache per month		
None	90	18.00%
From 1 – 4 times per month	296	59.20%
From 5 – 8 times per month	72	14.40%
More than 8 times per month	42	8.40%
Answered questions	500	
Skipped questions	0	

Table 3: Pattern use of non-steroidal anti-inflammatory drugs.

Items	Number	Percentages
Are you using pain killer daily		
No	272	54.51%
Yes	216	43.29%
I do not remember	11	2.20%
Answered questions	499	
Skipped questions	1	
Average number of medications taken by individuals daily		
From 1 – 3 medications daily	433	86.77%
From 4 – 7 medications daily	57	11.42%
From 8 – 12 medications daily	7	1.40%
More than 12	2	0.40%
Answered questions	499	
Skipped questions	1	
Types of NSAIDS used by each individual		
Panadol® and voltaren® 50mg	199	39.80%
Panado l® and brufen® 400 and ponstan®	46	11.00%
Panadol® and brufen® 600 and voltaren® 50 mg	48	12.00%
Panadol® and olfen® 100 and celebrix® 100 mg	10	2.00%
Panadol® and brufen 600 and celebrix® 100 mg	15	3.00%
Tylenol 3 and tramadol® 50 mg and celbrex® 100 mg	22	4.40%
I use all those mentioned medications freely	13	3.20%
I am NOT using any of those mentioned medications	123	24.60%
I use Other brands from foreign countries gives the same effect.	0	0.00%
Answered questions	500	
Skipped questions	0	

medication. Responders who suffered headache at least 1–4 times per month were more likely to use Panadol® only during headache. This result is contradictory to those published by Stosic *et al.* (2011); they showed that there was a frequent use of analgesics, such as Voltaren and or Brufen.¹⁹ Respondents who experienced headache at least 5–8 times per month were more likely to use Panadol than that of other NSAIDs. However, respondents who experienced headache more than 8 times per month were more likely to use NSAIDs without prescriptions. Statistical analysis revealed a strong association between the number of headaches per month and the use of nonprescribed NSAIDs (P -value<0.000). This explains the use of NSAIDs without a prescription. Besides, we compared this study with the study of Garafelo *et al.* (2015), our results declared a significant finding about the relation between education and the abuse of NSAIDs used. However, the higher education respondents, the lower use of NSAIDs and pain killers without consultation.

According to the age group, respondents of age group between 15–25 years, were more likely afford pain without taking any treatment. The age group between 26–40 years, were able to tolerate pain without the use of any treatment and less likely to use a previous prescribed medicine for the same pain symptoms. Respondents in the age group over 40 years

were more likely to visit the physician in case of pain and less likely to take medicine from a trusted pharmacist. After testing correlation, it was found to be significant (P -value<0.009). In the case of education level and action taken when feeling sick, we found no statistical difference between the two. The correlation between education level of the respondents and their use a particular type of medication, showed that intermediate and high level education respondents, were stopping their medication without consultation and low number of respondents consult a pharmacist before stopping their medication. The respondents with a university level of education were more likely to consult physicians and less likely to ask a pharmacist or stop the medication without consultation. The respondents with a postgraduate level of education, were more likely to read the leaflet for the possibility of having side effects from the medicine itself, which was found to be significantly correlated (P -value<0.024).

CONCLUSION

There was a high utilization of Non-Steroidal Anti-inflammatory with Saudi population. Targeting of public awareness campaigns about the appropriate usage the medications. Future studies may be conducted to

measure the impact of education program for the usage of Non-Steroidal Anti-inflammatory in the Kingdom of Saudi Arabia.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

ABBREVIATIONS

SPSS: Statistical Packages for Social Sciences; **WHO:** World health Organization.

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