

Survey of Usage and Awareness of Ibuprofen Among the Syrian Population



Hanan Mahfouz, Aya Assaf, Ayat Abbood

Abstract: *Ibuprofen is a non-selective NSAID. This drug inhibits both COX-1 and COX-2. It is commonly used to manage some conditions in Syria, especially pain. This research aimed to assess the awareness and use of ibuprofen among the Syrian population. A survey was conducted on social networking sites during January, February, and March 2024 to achieve this purpose. 217 responses were collected. Most participants were female (65%) and between 20 and 30 years old (83.9). Most participants had taken ibuprofen 80.9%. 45% use ibuprofen as a pain reliever. 74.4% responded that they can get ibuprofen from the pharmacy without a prescription. Half of the participants believe that the recommended dose of ibuprofen to relieve pain is 400 mg every 8 hours for an adult. Only 23.5% of participants had experienced side effects when taking ibuprofen, mainly stomach pain (55%). The first alternative drug to ibuprofen among participants was paracetamol 32%. The treatment plan of 69.8% of participants includes the combination of ibuprofen with paracetamol. The results of this survey demonstrated high consumption of Ibuprofen in Syria. Indeed, the surveyed Syrians had a good understanding of this medication.*

Keywords: *Ibuprofen, Syrians, Knowledge, Practice, Survey.*

I. INTRODUCTION

Ibuprofen is a non-selective non-steroidal anti-inflammatory drug derived from propionic acid [1][54][55]. Stuart Adams and John Nicholson developed Ibuprofen for the first time in 1960. It was patented in 1961 [2]. Nowadays, it is one of the most commonly used medications without a prescription.

The usual adult dose is 1200–2400 mg/day. Ibuprofen is available in 200, 400, and 600 mg tablets, and in a 100 mg/5 ml oral suspension form in Syria. Ibuprofen is also available in an intravenous formulation.

Ibuprofen is indicated for use in the treatment of inflammatory diseases and rheumatoid disorders [3]-[14]. Ibuprofen is also used to treat mild to moderate pain such as muscle sprains or strains, joint aches, migraine, and sore throats [15]-[26].

To obtain specific therapeutic goals, ibuprofen requires

taking under adherence to the suitable dose, and the therapeutic interval between doses [27]-[29][56]. There is necessary to pay attention to the interactions of ibuprofen with some nutriment, or other medicines. However, some patients suffer from some side effects after administering ibuprofen. Several surveys evaluated people’s knowledge about non-steroidal, non-selective anti-inflammatory drugs [30]-[53]. This study aimed to survey the use and awareness of ibuprofen in the Syrian population.

II. METHODS

A questionnaire was published on social networking sites during January, February, and March 2024 to assess awareness regarding the usage of ibuprofen among Syrians. The questionnaire consists of two parts. The first part of the questionnaire included questions to collect participants’ demographic characteristics. The second part evaluates the participants’ usage and awareness of ibuprofen.

III. RESULTS

A. Demographic Data of Participants

217 responses were collected in this research. The participants’ demographic characteristics are presented in Table II. Most participants were between 18 and 30 years old, representing 83.9% (183 out of 217). The number of participants based on gender was: 35% (76) males and 65% (141) females. The educational background of most participants was a bachelor’s degree 54.7% (119). The study or the profession of 61.8% (134) related to the medical/pharmaceutical field. Only 5.6% have chronic diseases. 92.6% (201) knew ibuprofen before participating in this survey. Most participants have taken ibuprofen 80.9% (176), but 19.1% (41) did not.

Table- II: Demographic Characteristics of Participating Students

	Total Number of Participants (217)	Demographic Characteristics	
3.90%	8	< 18 years	1. Age
83.90%	183	18-30 years	
8.80%	19	31-45 years	
2.20%	5	46-65 years	
1.20%	2	>65 years old	2. Sex
35%	76	Male	
65%	141	Female	
13.60%	29	baccalaureate degree	3. Educational level
54.70%	119	Bachelor's degree	

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25.20%	55	High education	4. Does your study or work relate to healthcare?
6.50%	14	Other	
61.80%	134	Medicine/Pharmacy	
16.10%	35	Engineering	
1.40%	3	Science	
20.70%	45	Other	
92.60%	201	Yes	5. Have you heard of ibuprofen before participating in this survey?
7.40%	16	No	
5.60%	12	Yes	6. Do you have any chronic diseases?
94.40%	205	No	
80.90%	176	Yes	7. Have you ever taken ibuprofen before?
19.10%	41	No	

B. Level of Participants' Consumption Awareness, and Practices:

Half of the participants (51.2% -111) declared that they knew ibuprofen well (Figure 1).

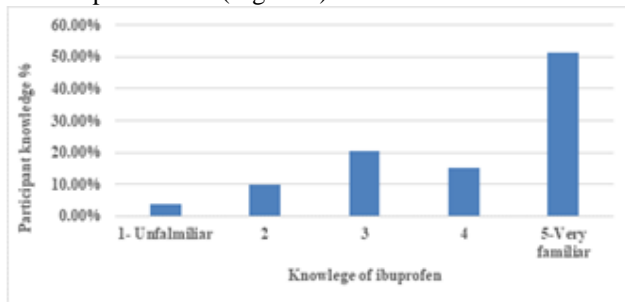


Figure 1: Percentage of Participants' Responses to the Question Regarding their Knowledge About Ibuprofen

Figure 2 demonstrates the reasons for ibuprofen consumption among participants. The responses were as follows: 45% (64) use ibuprofen as a pain reliever, 16.6% (24) to relieve toothache, 13.8% (20) as an antipyretic, and 7.6% (11) to relieve menstrual pain.

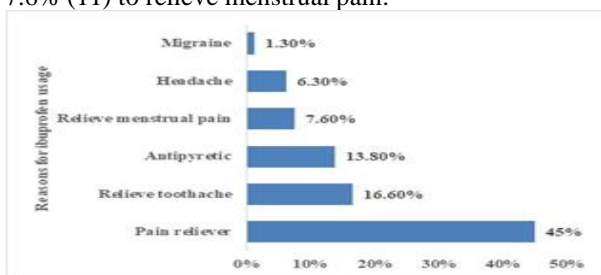


Figure 2: Percentage of Participants' Responses to the Question Regarding the Reasons for Ibuprofen Use

Table III summarizes the participant responses about consumption and awareness of ibuprofen. 85% (64) reported that pain management is the primary use of ibuprofen. 74.4% (161) declared that they could get ibuprofen from the pharmacy without a prescription. Half of the participants believe that the recommended dose of ibuprofen for an adult to relieve pain is 400 mg every 8 hours. The majority of participants (91.2%) think that ibuprofen should be taken after meals. Ibuprofen gave significant improvement in disease management in a high percentage of participants. 61.8% feel better for a long time after taking ibuprofen. Only

23.5% of participants (55) had experienced side effects when taking ibuprofen. The side effect that participants experienced after taking ibuprofen was mainly stomach pain (55% of 55 participants).

Regarding the behavior of taking alternative drugs of ibuprofen, 67.6% were aware (Table IV). The first alternative drug to ibuprofen among participants was paracetamol 32%, then diclofenac 24%, etoricoxib 7.6%, and ketofen and naproxen 2.4% (Figure 3).

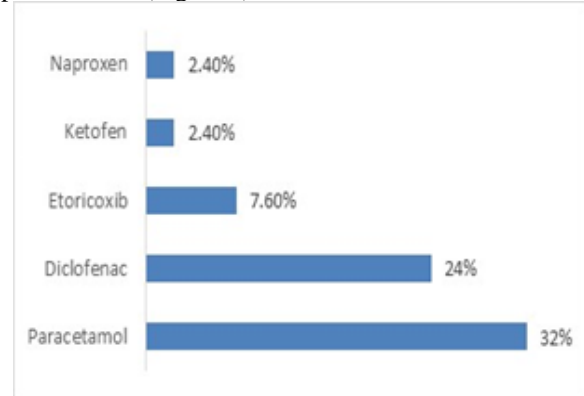


Figure 3: Percentage of Participants' Responses Regarding Drugs Used as Alternatives to Ibuprofen

Table III: Assessing the Level of Ibuprofen Consumption and Awareness Among Participants (Participants Can Select more than Responses for Some Questions)

Percentage	Total Number of Participants (217)	Options	Questions
85.30%	185	Analgesic	8. What is the primary use of ibuprofen?
35.90%	78	Antipyretic	
41%	89	Anti-inflammatory	
2.30%	5	Other	
25.60%	56	By prescription	9. How can you get ibuprofen from a pharmacy?
74.40%	161	Without prescription	
22.50%	48	200mg	10. What is the recommended dose for an adult taking ibuprofen to relieve pain?
50.20%	107	400mg	
37.1%	79	600mg	
4.70%	10	800mg	
2.30%	5	Every 4 hours	11. How many times can a patient take ibuprofen in 24 hours?
27.20%	59	Every 6 hours	
54.90%	117	Every 8 hours	
18.80%	40	Every 12 hours	
5.20%	11	Every 24 hours	
1.40%	3	Other	12. What time should you take ibuprofen?
91.20%	198	Before meals	
3.80%	8	After meals	
5%	11	I don't know	13. How do you evaluate your improvement after taking ibuprofen?
2.80%	6	1	

0.50%	1	2	(1 slight improvement - 10 excellent improvement)
3.20%	7	3	
3.70%	8	4	
11.50%	25	5	
5.10%	11	6	
18.40%	40	7	
25.80%	56	8	
12.90%	28	9	
16.10%	35	10	
61.80%	134	Yes	14. Do you feel better for a long time?
38.20%	82	No	
23.50%	51	Yes	15. Did you experience side effects when taking ibuprofen?
77.50%	166	No	

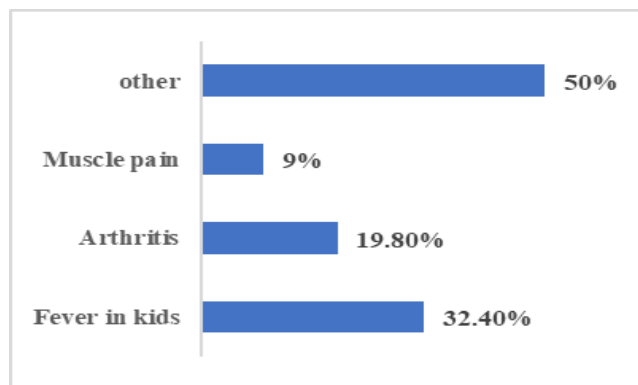


Figure 4: Percentage of Participants' Responses Regarding the Reasons for Combining Paracetamol with Ibuprofen

Concerning giving ibuprofen to kids, 79.1% of participants believed that ibuprofen should not be given without a prescription. Most participants (75.8%) do not know the appropriate body temperature for giving ibuprofen. 62.3% of participants reported the possibility of replacement of ibuprofen with paracetamol. The treatment plan of 69.8% of participants includes the combination of ibuprofen with paracetamol. Different reasons for combining ibuprofen with paracetamol were reported, mainly to treat fever in kids (23.4%) (Figure 4).

Table IV: Assessing the Level of Ibuprofen Consumption Practices Among Participants (Participants Can Select More Than Responses for Some Questions)

percentage	Total number of participants (217)	Choices	Questions
67.60%	147	Yes	Are you aware of any alternatives to ibuprofen?
32.40%	70	No	
77%	168	Yes	Does your treatment plan include taking ibuprofen in combination with other medications?
23%	49	No	
9.30%	20	Yes	Do you think it is good to give ibuprofen to children without a prescription?
79.10%	171	No	
11.60%	25	I don't know	Do you know the appropriate body temperature for giving ibuprofen?
24.20%	53	Yes	
75.80%	164	No	Can ibuprofen be replaced with paracetamol?
62.30%	135	Yes	
20.50%	44	No	Did your treatment plan include the combination of ibuprofen + paracetamol?
17.20%	37	I don't know	
30.20%	65	Yes	
69.80%	151	No	

IV. DISCUSSION

Ibuprofen is classified as a non-selective NSAID, inhibiting both COX-1 and COX-2. Ibuprofen is one of the most widely used medications in the world, especially in Syria. Due to its widespread use in Syria, a questionnaire was designed to shed light on the practices of Syrians regarding the consumption of ibuprofen, in addition to assessing information and knowledge about this drug. This drug is commonly used due to its antipyretic, anti-inflammatory, and pain-relieving effectiveness. In addition, ibuprofen is available over the counter in various pharmaceutical forms. It was noted a high level of consumption of ibuprofen among surveyed Syrians. Awareness of ibuprofen plays an important role in achieving the desired medical action and decreasing side effects. Most participants reported that they took this drug after food and every 8 hours.

V. CONCLUSION

The results of this questionnaire monitored a high consumption of Ibuprofen among the Syrian population, especially for the treatment of pain. They have a good understanding of this medication. However, they need to obtain more information about these OTC drugs concerning their dose, side effects, and efficacy.

DECLARATION STATEMENT

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Ethical Approval and Consent to Participate	No, the article does not require ethical approval and consent to participate with evidence.
Availability of Data and Material	Not relevant.
Authors Contributions	All authors have equal participation in this article.

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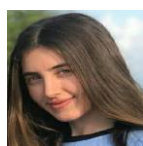
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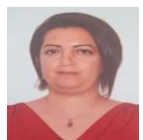
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Survey of Usage and Awareness of Ibuprofen Among the Syrian Population

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