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Prevalence, Self-Medication Practices, and Knowledge Levels on Analgesic Among Residents of Nalut, Libya: A Cross – Sectional Study

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ABSTRACT

Self-medication (SM) has become an increasingly important symptom management option for common conditions today. Irrational SM practice leads to incorrect diagnosis and a risk factor for disease exacerbation and serious health consequences. Hence responsible SM is vital for better health outcomes. In the present community- based study, we explored the prevalence the SM practice among residents, frequency, outcome, distribution of different level of knowledge about Paracetamol, aspirin, and ibuprofen analgesics. Cross-sectional study was conducted among randomly selected 1218 participants depending on multi-stage random sampling technique. The sample was taken among the consumers of community facilities in Nalut- Libya. Data were analyzed using SPSS; Chi-square test was performed to indicate significance, frequency, percentage. A total of 1218 residents completed the survey, prevalence of SM practiced was 12.95%, The mean age of participants was 25±30, ranged from 18 to 41 and above years. Most of residents 834 (68.5%) were in undergraduate level, 725 (59.5%) were employing and 559 (45.9%) were in low income level and 170 (14%) had chronic diseases. There is no statistically significant deference between the level of knowledge to paracetamol, Aspirin and ibuprofen analgesics among participants and their age ($X^2 = 0.954, P = 0.812$). Most the participants had poor knowledge toward paracetamol, Aspirin and ibuprofen analgesics.

INTRODUCTION

In the midst of escalating health care costs globally, SM is becoming an increasingly important option for common conditions. Despite the benefits of practicing SM depends on responsible implementation. According to the (WHO,2000). SM is also defined as “the use of drugs to treat self-diagnosed disorders or symptoms”. They are often called SM (over-the counter medicines) (OTC) and can be purchased at pharmacies without a doctor’s prescription (Azhar *et al.*,2013). Medicines that do not require a prescription play a major role in self-care, which provides individuals with the option to make independent decisions about their health. Drug education and culture have an important role in educating consumers and providing them with the correct rules for using medicine to avoid the risks that can result from the indiscriminate use of medicines (Stosic *et al.*,2011). The misuse of analgesic’s or taking them indiscriminately and without medical advice has many risks for all age groups, as some medicines cannot be given to the patient together. Or they may need to adjust their doses, So the specialist doctor is the only one who is able to prescribe the appropriate medicine, as he takes into account all the precautions are necessary (Mohammed,2016). Most types of analgesics share the same side effects, which stomach pain, nausea, vomiting, dizziness allergic reactions and skin rashes. These effects can be considered short- term, as they can appear on some without the other. As for the side effects that result from the continuous and excessive use of sedatives, they are often related to the kidneys, liver and are severe (Ali *et al.*,2018). A study to

evaluate the indication for the use of non-steroidal anti-inflammatory drugs, to what extent the public is aware of their side effects, the sample size is 9062 participants from the American public, and the results showed that ibuprofen –based drugs are the most used and 26% of respondents used more than the recommended dose, 15% reported daily use of analgesics and 49% did not know about possible side effects (Wilcox *et al.*,2005). There are many medicines that contain paracetamol, so you must read the ingredients of the medicine and not take more than one medicine that contains paracetamol, and taking it may cause an increase in the effectiveness of warfarin (an anticoagulant drug) and the risk of bleeding increases, and paracetamol should not be taken with epilepsy and tuberculosis medicines (NHS,2019). In the study (Kontogiorgis *et al.*,2016) entitled “Assessment of consumer’s knowledge and Attitudes towards Over-the-Counter Analgesic Drugs”, the researchers used a sample of participants individuals was frequented community pharmacies, and a questionnaire was used as a data collection tool. The aim of the study is to bridge the knowledge gap regarding people’s beliefs and attitudes related to the use of paracetamol. The results showed that 11.1% of the participants believed that the maximum permissible dose. More than a third of participants thought that paracetamol had no side effects. A large proportion of the participants ranged between 9.9% and 33.7% the difference between paracetamol and non-steroidal anti-inflammatory drugs was not known. The results also showed a relationship between the rate of paracetamol use and the gender and age of

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the participants. The use of aspirin may sometimes be accompanied by the emergence of some unwanted side effects, and these effects may require a visit to the doctor. The most important side effects of the use of aspirin are the worsening of the condition of people with asthma, and it also affects blood clotting, as it is one of the blood-thinning drugs. Which may cause some problems related to bleeding in some people. Aspirin use also cause serious allergic reactions in some people who are allergic to aspirin, such as a rash (Kanaan & Gholami, 2021). Taking ibuprofen, for long periods or in high doses may lead to serious side effects. One of the noticeable side effects of taking it is swelling of the leg or body (edema). This swelling is caused by excess fluids trapped in the body tissues. It can also cause digestive problems. If a person takes ibuprofen regularly, the stomach loses its protective barrier, and over time this may lead to gastritis, stomach ulcers or perforation (Krasniqi *et al.*, 2019). We conducted this study to determine the prevalence of SM practice , and assess the knowledge level on analgesic (Paracetamol, Aspirin, Ibuprofen) among residents of Nalut city , Libya.

MATERIALS AND METHODS

Sample size and sampling method

The present community-based cross-sectional study was carried out to explore the prevalence of self-medication, participant's level of knowledge regarding paracetamol, aspirin and ibuprofen analgesic. The sample was taken among the consumers of community facilities in Nalut - Libya. Cross-sectional study was conducted among 1218 participants randomly selected depending on multi-stage random sampling technique. The study was conducted between February and July 2022 among residents aged 18 to 41 and above years in Nalut, Libya. The institutional review board of the Nalute University (NU) approved the study during 2022. Participation was voluntary. They had the participation of option to choose either yes or

no. Those who selected disagree option were directed to decline the participation section and finish participation. A questionnaire-based cross, sectional study were used. The questionnaire consisted of personal information (gender, age, level of education, family income, occupation) and other question related to the knowledge level of participation on paracetamol, aspirin and ibuprofen analgesic. The sample was taken randomly from 5 preparatory schools, 2 secondary schools and 3 colleges affiliated with Nalut university and other facilities .Data were analyzed using statistical package of social science (SPSS version) Descriptive statistics(frequencies, percentages, mean, and standard deviation) were used to describe the categorical study and outcome variables chi-square test was used to describe the different level of knowledge about paracetamol, aspirin, and ibuprofen analgesic, and P value ≤ 0.05 were considered statistically significant.

RESULTS

The Prevalence of SM is increasing globally, and its rational practice warrants the benefits. Overall, 12.95% have practiced SM among residents during this study. A total of 1218 participants was included in the study , 321 (26.4%) were male and 897 (73.6%) were female, Moreover, the mean age of participants was (25±30) ranged from 18 to 41 years and above. Most of participations 834 (68.5%) were in undergraduate level, 725(59.5%) were employing and 559 (45.9%) were in low-income level and 170 (14%) had chronic diseases (Table 1).

The participant's answers about the use of SM were collected among residents, and it was found that they use SM and analgesics without a prescription 819 (67.2%), but the most use was observed in cases of necessity 1196 (98.2%), also when asked about reading the pharmaceutical leaflet, it was found that 836 (68.6%) does so before use. These percentages indicate to the

Table 1: Socio-Demographic characteristics of the study participants

	Demographic variables	Freq.	(%)
Gender	Male	321	26.4%
	Female	897	73%
Age	18-20	267	22.1%
	21-30	464	38.1%
	31-40	242	19.8%
	41years above	243	20%
Level of Education	High school	315	25.8%
	Undergraduate	834	68.5%
	Post graduate	69	5.7%
Occupation	Student	397	32.6%
	Employee	725	59.5%
	Retired	13	1.1%
	unemployed	83	6.8%
Family income by L.D	Less than 450	84	6.9%
	450 – 1000	475	39%
	1000 – 3000	621	51%
	More than 3000	38	3.1%
Chronic diseases	Yes	170	14%
	No	1048	86%

Table 2: Self-medication pattern among residents of Nalut city, Libya.

Self-medication practice information	Freq.	(%)
Do you use any analgesic without a prescription?		
Yes	819	67.2%
No	399	32.8%
When do you use analgesics?		
As necessary	1196	98.2%
Always	22	1.8%
What do you do if the pain has not stopped?		
Consult a doctor or pharmacist	672	55.2%
Increase the dose of the analgesic	309	25.3%
Use another pain reliever	237	19.5%
Who advises you to use analgesics when you buy it without a prescription?		
The doctor or pharmacist	782	64.2%
TV or social media	100	8.2%
Family and friends	149	12.2%
No one	187	15.4%
Why do you usually use analgesics?		
Head ache	468	38.4%
Tooth ache	319	26.2%
Cough, fever, or cold	187	15.4%
Back pain or muscle pain	82	6.7%
Painful menstruation	84	6.9%
Any other pain	78	6.4%
Do you read the medication leaflet before using it?		
Yes	836	68.6%
No	382	31.4%

awareness of the participants about the use of analgesics and SM. Also, when asked about who guides them to use analgesics without a prescription, it turns out that they get analgesics from the pharmacist and the doctor at a high rate of up to 782 (64.2%). The study showed a great diversity in the pain used analgesics, from head pain 468 (38.4%), followed by tooth ache 319 (26.2%) than by coughing and high fever 187 (15.4%), back and muscle pain 82 (6.7%) and menstrual 84 (6.9%) (Table 2).

Most of participant based on the knowledge total score 1218 participants had poor knowledge toward the paracetamol, aspirin and ibuprofen analgesics. 981 (80.5%) of the participants do not know the cases in

which use of paracetamol analgesic is not allowed, also 980 (80.5%) of the participants do not know the drug interactions of the paracetamol analgesic, while 324 (26.6%) of the participants know what are the conditions in which the use of paracetamol is contraindicated, and also 654 (53.7%) of the participants do not know the recommended dose of paracetamol. We notice a slight difference in the knowledge about aspirin between the participants compared to their knowledge about paracetamol analgesic. We find that 925 (75.9%) are not aware of the side effects of aspirin analgesic, and we also find that 950 (78%) of the participants is not aware of the drug interaction of aspirin analgesic, while

Table 3: Distribution of different level of knowledge on paracetamol, aspirin and ibuprofen analgesics.

Different level of Knowledge on Paracetamol, Aspirin, and Ibuprofen			
Do you Know the recommended dose of			
	Paracetamol	Aspirin	Ibuprofen
Yes	564(46.3%)	407(33.4%)	263(21.6%)
No	654(53.7%)	811(66.6%)	955(78.4%)
Do you know what are the side effects of			
	Paracetamol	Aspirin	Ibuprofen
Yes	237(19.5%)	293(24.1%)	226(18.6%)
No	981(80.5%)	925(75.9%)	992(81.4%)
Do you know what are the cases in which it is forbidden to use			
	Paracetamol	Aspirin	Ibuprofen
Yes	324(26.6%)	353(29%)	230(18.9%)
No	894(73.4%)	865(71%)	988(81.1%)
Do you know what drug interactions			
	Paracetamol	Aspirin	Ibuprofen
Yes	238(19.5%)	268(22%)	236(19.4%)
No	980(80.5%)	950(78%)	982(80.6%)

353 (29%) of the participants is aware of the cases in which the use of aspirin analgesic is prohibited. In general, we note that the participant's knowledge about ibuprofen does not constitute a significant difference between the participant's knowledge about paracetamol and aspirin, and it is noted that 992 (81.4%) do not know the side effects of ibuprofen analgesic, while only 236 (19.4%) participants are aware of the drug interactions of ibuprofen, and the results find 263 (21.6%) of the participants on the know the recommended dose of

ibuprofen (Table 3).

Overall, participants (76.1%) of the participants know drug interactions of paracetamol and (65.3%) know drug interactions aspirin in other hand had negative knowledge toward the ibuprofen analgesic side effects (0.8%). There is no statistically significant difference between the level of knowledge of the use of analgesic among participants and their age ($X^2=0.954$, $P=0.812$). Most the participants had poor knowledge toward paracetamol, aspirin, and ibuprofen (Table 4).

Table 4: Distribution of different level of knowledge about Paracetamol, Aspirin, and Ibuprofen

Variables	High Knowledge	Low knowledge	X ²	P-value
Age				
18 - 20	56(20.9%)	213(22.4%)	0.954	0.812
21 - 30	105(39.2%)	359(37.8%)		
31 - 40	57(21.3%)	185(19.5%)		
41years& above	50(18.7%)	193(20.3%)		
Gender				
Female	181(76.1%)	716(73.1%)	0.882	0.348
Male	57(23.9%)	264(26.9%)		
Level of education				
High school	70(26.1%)	245(25.8%)	7.439	0.114
Undergraduate	175(65.3%)	659(69.4%)		
Postgraduate	23(8.6%)	46(4.8%)		
Family income				
Less than 450	18(8.0%)	66(6.7%)	1.136	0.768
450 - 1000	82(36.3%)	393(39.6%)		
1000 – 3000	119(52.7%)	502(50.6%)		
More than 3000	7(3.1%)	31(3.16%)		

It is noticeable from the Figure 1 there is a great lack (poor) knowledge about the most common analgesics among the residents of the area. Where we find that the cumulative rate of knowledge about paracetamol is 27.9% and the cumulative average of knowledge about aspirin 27.1 and

we see a significant decline knowledge about ibuprofen with a cumulative rate of 19.6% (Figure 1).

Participant's level of knowledge regarding Paracetamol, Aspirin, and Ibuprofen

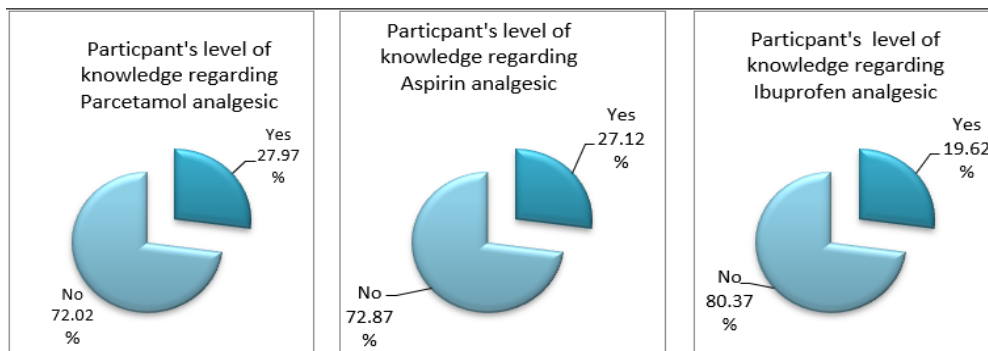


Figure 1: Shows the knowledge toward the Paracetamol, Aspirin, and Ibuprofen analgesic's

DISCUSSION

This study was conducted to evaluate the prevalence practice of SM and knowledge toward paracetamol, aspirin, and ibuprofen analgesic among residents in Nalut city, Libya. This study included 1218 participants, whose ages ranged from 18 to 41 years and above. The prevalence of SM in our study were found to be 1218 (10.69%) of them practices SM. There no statistically significant difference between the level of knowledge to use of analgesic among participants and their age

($X^2= 0.954$, $P=0.812$). Most the participants had poor knowledge towards paracetamol, aspirin, and ibuprofen analgesics. It is clear from the study that sample members use of analgesic when necessary 98.2%, and others always use them 1.8%, as these results agree with (Siddig *et al* .,2020). Also, that religion, it consults the pharmacist when they use sedatives 64.2%, and others does not consult the pharmacist 15.4%, either religion, it consults friends and family it was about 12.2%, and others, they use television and social media as a source of information

8.2% (Karami *et al.*,2018). It is noted that religious participants read the medication leaflet of the analgesic before use 68.6%, and those participants do not read the medication leaflet of the analgesic before using it 31.4%. The results of the study show that the participants know the amount of the recommended dose of paracetamol analgesic 64.3%, 53.7% they do not know the amount of the recommended dose, this comes into agreement with the study (Zamir & Nadeem ,2016). Also, the participants know about the side effects of paracetamol 19.5% and religion did not have knowledge about the side effects of paracetamol analgesic 80.5%. About the participant's knowledge on drugs interactions of paracetamol 19.5% and religion do not have knowledge about it 80.5%. The participant's knowledge about the recommended dose of aspirin 33.1% and religion do not know the recommended dose, 66%. Results of the participant's knowledge of the side effects of aspirin analgesic 24.1% and those who had no knowledge were 75.9% these results were in agreement with the studies (Rabee *et al.* ,2021) knowledge of participants about the ibuprofen recommended dose analgesic 21.6% and who do not know the recommended dose of ibuprofen 78.4% (Sarganas *et al.* ,2015). The results also expected us that the participants knowledge of analgesic ibuprofen side effects 18.6% and those who did not have knowledge 81.4% (Muhammad *et al.* , 2021).

CONCLUSION

Through this study , the results shown that most of the participant's practice self-medication and , also there is poor knowledge about the use of most common analgesics among the residents of the area. So ,from the results we recommend need to educate the public about the use of over-the-counter medications to increase knowledge and awareness.

The study had the limitation that was important for the lack of responsiveness and people's consent in answering the questionnaire, So it was possible the sample size could have been greater, and many samples were excluded due to the neglect of participants. Also suggest conducting more research with regard to the practice of home therapy with the use of traditional medicine that is remarkably widespread in our country, Libya, and conducting future research with large samples in different cities in Libya. Inclusion of the concept of pharmaceutical culture in educational curricula to develop consumers' awareness. For promoting rational self-medication practice, patient health awareness programs, community pharmacist assistance, continuing medical education programs for health care providers, and planned interventions in the media, such as newspapers, magazines, and television are required.

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