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Original article

Self-Medication Patterns with Non-Steroidal Anti-inflammatory Drugs Among Healthcare Workers in Alkoms City: Analysis of Causes, Effects, and Preventive Strategies

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Abstract
Self-medication with non-steroidal anti-inflammatory drugs (NSAIDs) without medical supervision represents a significant global public health concern, as it may lead to preventable adverse drug reactions and increased healthcare costs. This study looks at how common it is for healthcare workers and residents in Alkoms City, Libya, to take NSAIDs without a prescription. It also looks at the social and behavioral factors that lead to this, how they affect people, and how they can be stopped using evidence-based methods. A structured, validated questionnaire was used to conduct a descriptive, community-based, cross-sectional study with 100 randomly chosen adult subjects (most of whom were healthcare workers). The questionnaire asked about the subjects' racial and ethnic background, how often they used drugs, how much they knew about their uses and risks, and how they felt about seeing a doctor. We used SPSS version 26 to look at the data and descriptive statistics, and Chi-square tests to find links. A significant proportion of participants (20%) reported purchasing NSAIDs without prior medical consultation, indicating the presence of self-medication practices within the study population, which is also known as self-medication. A notable difference between male and female participants was observed, with males demonstrating a higher tendency toward self-medication practices: men (65%) were more likely to self-medicate than women (35%), which may be because of cultural norms about how people should act when they are looking for health care. Notably, 90% of those who answered said they had never had formal training in how to keep medications safe. This is a worrying result considering that 75% of the sample were healthcare workers. A statistically significant positive link was found between having more education and using medications correctly ($p<0.05$), which supports the idea that education is a major social factor that affects health. These results show that organized public health programs to help people learn more about medications are needed right away, and that rules about drugs need to be strictly enforced. NSAID self-medication and the health problems that come with it are becoming a bigger problem that needs more than one solution.
Keywords. Self-medication with NSAIDs, Medication Safety, Pharmacovigilance, Healthcare Workers, Libya.

Introduction

Analgesics, especially Non-Steroidal Anti-inflammatory Drugs (NSAIDs), are being used illegally and by people who are not sick. This is a big public health concern around the world. The World Health Organization (WHO) says that about 60% of people around the world do not take their pain medications as recommended [1]. Because they are easy to get over-the-counter (OTC) and most people think they are safe, NSAIDs are one of the most frequently abused classes. These medicines are necessary to control pain, inflammation, and fever, but using them for a long time or without supervision is clearly linked to dangerous side effects that depend on the dose, such as stomach bleeding, peptic ulcers, kidney damage, and a higher risk of heart problems [2]. This problem is made worse in Low- and Middle-Income Countries (LMICs) by a number of things, including lax government oversight, low public health knowledge, a lot of people self-medicating, and unequal access to affordable healthcare services [3]. Libya is facing a growing problem with people taking NSAIDs for personal reasons without following the rules. Early evidence and anecdotal reports suggest that the easy availability of community shops and the cultural acceptance of self-managing pain have made it common for people to use painkillers without supervision [4]. However, there is a major gap because there is not a lot of empirical data available that measures the exact prevalence, explains the main causes, and looks at the full social effects of this problem in Libya. Most of the research that has been done on drug abuse in North Africa has focused on opioids and limited prescription drugs. This means that there is still a lot we do not know about the specific patterns, reasons, and effects of people self-medicating with NSAIDs [5].

This study is especially important because a lot of the people who were in the group were healthcare workers (75%). It is very important to know how often people in this professional group take medications for themselves because they are thought to know a lot about drug safety. The fact that healthcare workers still self-medicate shows that understanding and practice do not always match up, which is a big research gap that needs to be filled. Therefore, the main goal of this study is to immediately fill in this research gap by

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thoroughly exploring the prevalence, main causes, and health effects of NSAID self-medication in Alkoms City, with a focus on healthcare workers.
According to Petersen and Al-Taeb [6], the study's results will help shape national drug and pharmaceutical policies, help with focused public health campaigns, and add to the growing global conversation about the safety of analgesics, which is especially important now that more people are self-medicating. The present study aims to evaluate the prevalence of NSAID self-medication among adults in Alkoms City, with particular attention to healthcare workers. In addition, the study seeks to identify the key demographic and behavioral factors associated with self-medication practices, including education level, occupational background, and access to healthcare services. The research also assesses participants' knowledge regarding the potential risks and adverse effects of NSAIDs, and finally proposes evidence-based strategies that may help reduce unsafe medication practices and promote responsible drug use within the community.

Methods

Study Design and Population

It was a cross-sectional, community-based, descriptive study that took place from March to July 2025. Adults in Alkoms City who were at least 18 years old made up the study group. Stratified random sampling was used to make sure that the samples were fairly split up by age, gender, and job background, among other important demographic factors.

Data Collection Instrument

A structured questionnaire was developed and divided into four sections. The first section collected sociodemographic information, including age, gender, level of education, and occupation. The second section assessed patterns of NSAID use, including frequency, source, and reasons for use. The third section evaluated participants' knowledge regarding appropriate drug use, contraindications, and potential adverse drug reactions. The final section explored participants' attitudes toward self-medication, perceived barriers to seeking medical advice, and trust in healthcare professionals.
The questionnaire was tested with 15 people in a testing phase to make sure it was clear, useful, and right for the situation. With a Cronbach's alpha score of 0.78, it was shown that the knowledge and attitude scales were accurate and consistent with each other.

Statistical Analysis

Statistical Package for the Social Sciences (SPSS) version 26.0 was used to enter data and do statistical analysis. To describe the study group and sum up the answers, descriptive statistics were used, such as frequencies, percentages, means, and standard deviations. To find links between categorical variables (like work and purchasing behavior), inferential analyses, mostly Chi-square tests, were used. All tests were thought to be statistically significant if the p-value was less than 0.05. Before anyone could join, they all gave their written consent after being fully told. All the data were made anonymous when they were collected, and strict rules about privacy were followed the whole time the study was going on.

Results

Socio-Demographic Characteristics of the Participants

The study included a total of 100 participants. The gender distribution showed that 65% of the participants were male and 35% were female. Regarding educational level, 45% had completed higher education, 20% had secondary education, and 35% had primary education or less. In terms of occupational background, 75% of the participants were healthcare workers, while 25% were non-healthcare workers. This distribution indicates that the sample was predominantly composed of individuals working in healthcare-related fields, which is relevant to the objectives of the present study, as it allows for the assessment of self-medication practices within a medically informed population.

Table 1. Distribution of Participants by Demographic Characteristics (N=100)

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Male	65	65%
	Female	35	35%
Educational Level	Primary or less	35	35%
	Secondary	20	20%
	Higher Education	45	45%
Occupation	Healthcare Workers	75	75%
	Non-Healthcare Workers	25	25%

The educational distribution of the participants showed that 45% had completed higher education, while 20% had secondary education and 35% had primary education or less. This indicates that a substantial proportion of the sample possessed a relatively high educational background. One interesting thing about

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the participants is that 75% of them work in healthcare-related areas, such as doctors, nurses, pharmacists, and allied health workers. This group of jobs is very important because it lets us compare how health professionals (the remaining 25%) and the rest of the public (the other 75% of people) use NSAIDs in a meaningful way.

Medication Use Patterns, Knowledge, and Attitudes

Analysis of medication procurement patterns revealed that 20% of the participants obtained NSAIDs without medical consultation, whereas 80% reported obtaining these medications with a physician's prescription. Regarding awareness indicators, only 10% of the participants had previously participated in medication safety programs, indicating limited exposure to formal education on safe medication use. Furthermore, 28% of the respondents were able to identify three or more potential adverse effects associated with NSAID use, reflecting relatively limited knowledge of medication-related risks.

When asked where they got their NSAIDs, 20% of participants said they bought them at the pharmacy without first talking to a doctor, while 80% said they got them with a prescription. This percentage (20%) shows that a lot of people in the group are self-medicating. As for awareness indicators, the data showed that not many people had gone to official education programs on medication safety. Only 10% of the people who participated said they had been to such programs before. Also, people did not seem to know enough about the risks of NSAIDs because only 28% could correctly name three or more possible side effects of these drugs. Interesting things came out of the information and attitude tests. 70% of the people who participated in the study agreed that talking to a doctor before taking medicine was important, but this attitude was very different from how the participants actually bought the medicine. What is even scarier is that 62% of those who answered thought that NSAIDs were safe for long-term use, which is a very bad idea of how safe medicines are.

Healthcare workers had significantly higher knowledge scores than non-healthcare subjects ($p=0.03$) when occupational groups were compared. This shows that professional medical training helps protect people by making them more aware of how to use medications correctly [7]. However, 20% of the group (mostly healthcare workers) self-medicated, which shows that there is a worrying gap between what people know and what they do safely [8]. A statistically significant positive relationship ($p<0.05$) was found between having more schooling and the right way to get medications. This study did not use multivariate logistic regression analysis.

Table 2. Self-Medication Patterns, Knowledge, and Attitudes Among Participants (N=100)

Variable	Indicator	Result (n)	Percentage (%)	Interpretation
Medication Procurement	Purchased NSAIDs without consultation (Self-medication)	20	20%	Indicates substantial self-medication practices.
	Obtained medication with a prescription	80	80%	
Awareness Indicators	Participated in medication safety programs	10	10%	Demonstrates limited engagement with formal medication safety education.
	Could identify ≥3 NSAID side effects	28	28%	
Knowledge and Attitudes	Acknowledged the importance of professional consultation	70	70%	Contrasts with actual procurement behavior observed.
Risk Perception	Believed NSAIDs were safe for long-term use	62	62%	Reflects a dangerous misconception about medication safety.

Discussion

This study gives us useful information that could change how public health and medical care are provided in Libya and similar places. One notable finding of this study is the discrepancy between knowledge and practice among healthcare workers. Despite their professional background, a proportion of participants reported self-medication with NSAIDs, indicating that knowledge alone may not necessarily translate into safe medication practices. Furthermore, the belief held by a considerable proportion of participants that NSAIDs are safe for long-term use highlights a critical gap in risk perception. This paradox suggests that working in a medical setting is not enough to make sure that what people learn is put into safe everyday practices [9]. There are several reasons for this difference, including persistent gaps between what people know and what they do, the normalization of self-medication for minor illnesses during times of work stress, or a possible over-familiarity with these medications that gives a false sense of security, as seen in other professional healthcare settings [9].

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In addition, the study stresses how important information is in determining safe medication behavior. Health knowledge is very important, as shown by the strong and statistically significant link ($p<0.05$) between more formal education and the right way to buy medications. This finding fits with research from around the world that shows education is a big social factor that affects how people behave when it comes to their health [10]. This shows how important it is for public health to improve health literacy programs for groups with less education and to promote education.

Along with the educational factors, the fact that 20% of people get NSAIDs without a prescription suggests that rules about drugs may not be followed as strictly as they should be. This problem is not unique; it has been seen in other developing countries that over-the-counter drugs are easy to get without proper professional control, which makes policies that only allow prescriptions less effective [11, 12]. This shows that tightening regulatory control and making sure compliance at the point of sale are important parts of any plan to stop people from self-medicating.

Finally, the study shows that medication habits are affected by social factors. Males were more likely than girls to self-medicate. In North African countries, there are culturally built ideas about how men and women should seek medical help and deal with pain [4]. In these situations, men may be less likely to go to the doctor for what they see as minor problems, seeing self-medication as a faster or easier choice. To make effective, situation-specific public health measures that deal with the causes of self-medication, it is necessary to understand these complicated cultural factors.

Study Limitations

Several problems must be taken into account when figuring out what the study's results mean. Firstly, the study's statistical power and ability to find small effects are limited by the small sample size (N=100). Furthermore, since 75% of the sample members were healthcare workers, it is not appropriate to apply the results to the whole community of Alkoms City. The results should be seen as a measure of how people in this professional group usually treat themselves. Lastly, descriptive statistics and Chi-square tests were used for the statistical analysis. This meant that independent risk factors could not be found, and influencing variables could not be controlled. Utilizing multivariate logistic regression would have given more detailed information.

Conclusion and Recommendations

This study shows that there is a major public health issue. with how people in Alkoms City know about and use NSAIDs, especially healthcare workers. The paradox between academic knowledge and self-medication behavior shows how important it is for interventions to go beyond just giving people information. To solve these problems successfully, we need to take a multifaceted approach. First, healthcare workers should have their own drug safety awareness programs that are designed to close the gap between what they know and what they do in the real world. At the same time, health and drug regulatory officials need to keep a closer eye on pharmacies to make sure they follow the rules that limit the distribution of drugs that can only be obtained with a prescription. Also, public health education programs should be started to teach people about the risks of using NSAIDs for a long time. These campaigns should pay extra attention to groups with less education and men, who may be more at risk. Finally, to build on these results, it is suggested that more study be done. Larger sample sizes and more complicated statistical analysis methods, like logistic regression, should be used in these kinds of studies to get a better idea of the separate risk factors that lead people in the community to self-medicate.

Conflict of interest. Nil

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