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Original Article

Patterns of Analgesic Use and Pain Management Among Adults: A Cross-Sectional Study

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ABSTRACT:

Background: People's quality of life is greatly impacted by pain, a frequent health issue. Analgesics, such as opioids, paracetamol, and nonsteroidal anti-inflammatory medications (NSAIDs), are commonly used to treat pain. Self-medication, ignorance of adverse effects, and inappropriate use, however, continue to be public health issues. The objective of the study: Evaluate the kinds, prevalence, and management of pain in adults, including the use of medicines, knowledge of possible adverse effects, and the role of medical professionals in advising patients on the use of analgesics. **Materials and Methods**: From March 1 to March 31, 2025, 100 adults aged 30 and older participated in a descriptive cross-sectional survey. A standardised questionnaire including demographics, pain experience, analgesic use, side effects, and awareness was used to gather data. Analysis of the replies was done using descriptive statistics. **Result:** 75% of the participants said they had experienced pain in the previous month, with headaches, menstrual pain, and back pain being the most prevalent. Analgesics were used by almost 66% of people, mostly diclofenac and paracetamol (50% each), with ibuprofen (40%). Sixty-three percent of users took painkillers occasionally, and 12 percent used them every day. Fifteen percent of consumers experienced adverse effects. 71% were aware of possible health hazards, such as liver and kidney damage, but 61% sought medical advice. **Conclusion** highlights how common pain is in adults and how often they take analgesics. A sizable percentage of participants were ignorant, despite the fact that the majority showed responsible medicine use and risk knowledge.

Keywords: Analgesics, pain management, self-medication, NSAIDs, and public health awareness

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INTRODUCTION:

Pain is a prevalent ailment that significantly impacts one's quality of life. "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage" is how the International Association for the Study of Pain (IASP) defines it. [1,2]. Over the past few years, there has been a significant increase in the clinical usage of analgesic medication combinations. Combining two or more medications with distinct modes of action is intended to produce a synergistic interaction, which will lessen the severity and frequency of adverse effects by producing a strong enough analgesic effect at lower dosages. Currently, a wide range of medication classes effectively supplement paracetamol, opioids, and nonsteroidal anti-inflammatory medications (NSAIDs) in the treatment of pain [3]. Analgesics, also referred to as painkillers, are drugs that relieve different kinds of pain in the body in a variety of ways. One, the general populace typically uses non-steroidal anti-inflammatory medications (NSAIDs) like aspirin and ibuprofen, paracetamol, and mild opioids like codeine as over-the-counter (OTC) (non-prescription) analgesics [4]. Paracetamol is used as an antipyretic and to treat minor discomfort. Although the exact mechanism of action of paracetamol is unknown, one idea proposes that it functions as a selective inhibitor of the brain and spinal cord's cyclooxygenase enzyme isoform, COX-3. It doesn't have any anti-inflammatory properties like NSAIDs do [5]. NSAIDs have antipyretic, anti-inflammatory, and analgesic properties.COX is inhibited by NSAIDs. The two primary isoforms of COX are COX-1, which is found in the majority of tissues and blood platelets and has a homeostatic function, and COX-2, which is cytokine-induced in inflammatory cells [6]. A popular NSAID, aspirin, is mostly used to treat dental pain. Although it hasn't been proven, children under the age of 16 who take aspirin with a viral infection or fever are more likely to develop Reye's syndrome, which is frequent in kids between the ages of 5 and 14 [7]. Ibuprofen has fewer adverse effects and a marginally weaker anti-inflammatory efficacy than aspirin.1 It is used to treat mild-to-moderate pain, including headaches and joint and muscle aches. 6. Ibuprofen, like other NSAIDs, may have adverse effects on the kidneys and gastrointestinal system [8]. Opioids are medications used to treat moderate to severe pain that have effects similar to those of morphine. One opioid is codeine, which shares structural similarities with morphine and produces comparable pain-relieving effects [9]. The three primary receptor types—m, d, and k—all elicit distinct kinds of responses. The analgesic effects and undesirable side effects are produced by the m and k receptors. There aren't many adverse effects from the D receptor. Since codeine has a low affinity for D and K receptors and a high affinity for m receptors, it is classified as a weak opioid since it produces fewer effects than morphine [9].

The objective of the study:

Evaluate the kinds, prevalence, and management of pain in adults, including the use of medicines, knowledge of possible adverse effects, and the role of medical professionals in advising patients on the use of analgesics.

MATERIALS AND METHODS:

Study design and duration: The study was a descriptive cross-sectional investigation that took place between March 1 and March 3, 2025. The study focused on adult male and female residents of the chosen community or region who were at least 30 years old. Regardless of whether they had lately experienced pain or not, participants were included. The study involved 100 adult volunteers in total. To find volunteers, a convenience sampling technique was employed. During the study period, anyone who satisfied the inclusion criteria and was willing to participate was asked to fill out the survey.

Data collection and analysis:

Data was collected using a structured questionnaire from a previous study. The questionnaire included both closed-ended and multiple-choice questions included: demographic data (age, gender), experience of pain in the past month, types of pain experienced, use of painkillers (analgesics), types and frequency of painkiller use, experience of side effects, source of medical advice, and wariness of the potential risks of frequent painkiller use. Alternatively, in-person or online, participants filled out the questionnaire. Before participation, informed consent was acquired. Anonymity and confidentiality were upheld during the entire investigation. Simple statistical techniques were used to compile and analyse the gathered data. To show trends and patterns in pain perception, analgesic use, and consciousness levels, the results were displayed as frequency tables and percentages.

RESULTS:

A total of 100 adult participants took part in the study during March. The demographic and response data showed that 60% of participants were aged between 30–45 years, and 40% were between 45–60 years. 47% were male and 53% were female. For pain experience, 75% of participants reported experiencing pain in the past month, while 25% did not. Among those who experienced pain, the most commonly reported types were back pain and

menstrual pain (each at 50%), headache (40%), joint pain (20%), and toothache and other types (10% each). Use of Painkillers: 66% of respondents reported using painkillers, while 34% did not.
The most commonly used painkillers were paracetamol and diclofenac (50% each), ibuprofen (40%), tramadol and herbal remedies (10% each), and other medications (5%). For frequency of use: 63% used painkillers occasionally, 25% used them once, and 12% used them daily. Adverse Reactions and Medical Advice: 15% of users reported experiencing adverse reactions to painkillers, while 85% did not. When asked about seeking professional advice before using painkillers, 61% said yes, and 39% said no. Awareness of Risks: 71% of participants reported being aware of the potential dangers of frequent painkiller use, such as liver or kidney damage, whereas 29% were unaware Table 1.

Table 1: Data and analysis for adults:

Characters	N%
Age	
30-45	60
45-60	40
Gender	
Male	47
Female	53
3. Have you experienced pain in the past month?	
Yes	75
No	25
What type of pain did you have?	
Headache	40
Back pain	50
Joint pain	20
Menstrual pain	50
Toothache	10
Other	10
Did you take any painkillers (analgesics)?	
Yes	66
No	34
Which painkillers did you use?	
Paracetamol	50
Ibuprofen	40
Diclofenac	50
Tramadol	10
Herbal	10
Other	5
How frequently did you take them?	
Once	25
Occasionally	63
Daily	12
Did you encounter any adverse reactions?	
No	85
Yes	15
Do you typically get advice from a physician or pharmacist before using painkillers?	
Yes	61
No	39
Do you know the dangers of using painkillers frequently, such as the possibility of liver or kidney damage?	
Yes	71

No	29

DISCUSSION:

The information shows several significant patterns regarding respondents' perceptions of pain, their use of analgesics, and their awareness of possible health hazards. The majority of the study sample's participants were between the ages of 30 and 60, and their gender distribution was about equal (47% male, 53% female). Middle-aged adults, who are more prone to suffer from chronic or recurrent pain as a result of age-related diseases, are represented fairly in this distribution [10]. Pain types and prevalence. Seventy-five percent of those surveyed said they had been in pain within the previous month. This is consistent with research from around the world showing that a significant percentage of adults suffer from chronic pain [11]. The most prevalent forms were headaches (40%) and menstruation pain (50%), and back pain (50%), respectively. This trend is in line with earlier research that found back pain to be one of the main global causes of disability [12]. Used analgesics a total of 66% of those surveyed said they used painkillers, with the most popular ones being diclofenac and paracetamol (50% for each), closely followed by ibuprofen (40%). Herbal therapies and tramadol were utilised less frequently (10% for each), while other unidentified choices were employed 5% of the time. Given that paracetamol is widely accessible and frequently used to treat mild to moderate pain, its high usage is noteworthy. However, there are dangers associated with excessive or unsupervised usage, particularly hepatotoxicity [13]. Side effects and frequency, fewer respondents took analgesics once (25%) or daily (12%), while the majority used them infrequently (63%). The fact that just 15% of respondents said they had experienced negative side effects suggests that most people may be taking these drugs within reasonable bounds. Self-reported data, however, might not accurately reflect the prevalence of side effects, particularly if users are not aware of long-term hazards or subtle symptoms [14]. Expert guidance and knowledge, a modest degree of responsible medication behaviour was indicated by the majority (61%) who sought medical advice before using painkillers. Additionally, 71% of respondents said they were aware of possible risks such kidney or liver damage from frequent analgesic usage. This indicates that the sample population has a comparatively high degree of health literacy. However, targeted education campaigns could be beneficial for the susceptible group of 29% who were not aware of these dangers [15].

CONCLUSION:

75% of participants in this study reported experiencing pain in the previous month, highlighting the significant incidence of pain in adults, especially headaches, menstrual pain, and back pain. The extensive use of analgesics, particularly ibuprofen, diclofenac, and paracetamol, suggests a high dependence on self-medication for pain relief. The regular use of painkillers, even at low levels, raises questions regarding long-term safety, especially among people who are uninformed of the hazards involved, even if the majority of respondents indicated occasional usage and few negative effects. The fact that most individuals sought medical or pharmaceutical guidance and showed awareness of the possible risks associated with regular analgesic use is encouraging. Nonetheless, the significant percentage of people who don't realise this highlights the necessity of ongoing public education regarding the safe use of painkillers. All things considered, these results point to the need for health care providers to be more proactive in educating patients about proper pain management techniques, the dangers of long-term analgesic use, and the value of medical advice, particularly in societies where self-medication is prevalent.

Research ethics committee approval request: Chairperson, Research Ethics Committee, Faculty of Medicine, University of Zawia, Libya, Akram Ali Beshna, Department of Orthopedic Surgery, Faculty of Medicine, University of Zawia, Date: (February, 2025).

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