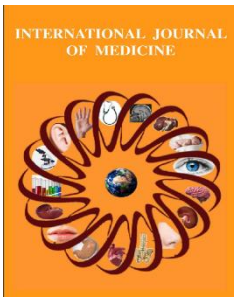
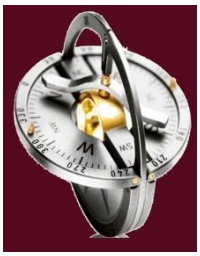
Int Med 2025;7(9): 55-59

International Journal of Medicine 2025; 7(9): 55-59



International Journal of Medicine

https://www.theinternationalmedicine.com



Research Article

Public Knowledge and Safety Awareness of Painkillers (NSAID) use in Himachal Pradesh-a Cross Sectional Study

Dr Monika Pathania[1], Dr Ira Sharma[2] and Dr Meenakshi Thakur[3*]

[1]*Medical Officer, Department of Microbiology, DRKGMC Hamirpur*
[2]*Medical Officer, Department of Pharmacology, DRPGMC Tanda*
[3]*Medical Officer, Department of Obs & Gynae, Zonal Hospital, Dharmshala*

Received -16/08/2025 | Reviewed - 28/08/2025 | Accepted - 04/09/2025 |Published - 21/09/2025

Abstract

Background: Non-steroidal anti-inflammatory drugs (NSAIDs) are commonly used for pain, fever, and inflammation, but irrational or prolonged use can lead to gastrointestinal, renal, and cardiovascular complications. In India, easy over-the-counter (OTC) access and limited awareness contribute to unsafe practices. This study assessed NSAID use, side effects, and public knowledge in Himachal Pradesh. ***Materials and Methods***: A cross-sectional study was conducted among 400 adults using a structured Google Form questionnaire. The tool included socio-demographic data, NSAID use patterns, side effects, and 20 knowledge-based questions. Each correct response scored 1 point, with scores categorized as excellent (16-20), good (12-15), fair (8-11), or poor (0-7). Data were analyzed using SPSS 25. Descriptive statistics and Chi-square tests were applied; $p<0.05$ was considered significant. ***Results***: Of 400 respondents, 51.0% were female, 53.0% urban residents, and 37.5% graduates. NSAID use was reported by 80.5%, with 19.5% consuming them daily. Ibuprofen (39.1%) and diclofenac (27.3%) were most common, while 34.8% procured NSAIDs without prescription. Side effects included gastric irritation (32.9%), nausea/vomiting (16.1%), and kidney-related complaints (6.8%). Knowledge was variable: 78.0% knew NSAIDs relieve pain and inflammation, but only 53.5% recognized kidney risks and 53.0% knew the safe OTC use duration. Overall, 18.0% had excellent knowledge, 31.5% good, 33.5% fair, and 17.0% poor. Knowledge was significantly associated with residence ($p=0.002$), education ($p<0.001$), and occupation ($p=0.009$). ***Conclusion***: NSAID use is widespread in Himachal Pradesh, with high prevalence of unsupervised access and partial safety awareness. Strengthening pharmacist counseling, enforcing OTC regulations, and community-based education are critical to ensure rational NSAID use.

Keywords: NSAIDs; Self-medication; Safety awareness; Over-the-counter drugs; Himachal Pradesh.

Introduction:

Non-steroidal anti-inflammatory drugs (NSAIDs) are among the most widely used medications globally, primarily indicated for pain relief, fever reduction, and control of inflammation. Commonly available NSAIDs such as ibuprofen, diclofenac, aspirin, and naproxen are frequently purchased over-the-counter (OTC) and are perceived as safe due to their wide availability. However, despite their therapeutic benefits, irrational or prolonged use of NSAIDs carries significant risks, including gastrointestinal bleeding, gastric irritation, renal impairment, cardiovascular complications, and drug interactions. The World Health Organization (WHO) has emphasized that while NSAIDs play an important role in effective pain management, their safety depends on rational use, adherence to prescribed doses, and awareness of associated risks.1-3

Globally, inappropriate NSAID consumption has been linked to preventable morbidity and mortality, especially from gastrointestinal and renal complications. In developing countries like India, the burden is compounded by easy access to NSAIDs without prescription, limited public awareness about potential side effects, and weak enforcement of regulatory frameworks. Pharmacies often dispense NSAIDs freely, and self-medication with leftover or shared medicines is common practice. Several Indian studies have reported high prevalence of self-medication with NSAIDs for conditions such as fever, musculoskeletal pain, and headaches, reflecting both their popularity and the lack of awareness regarding long-term hazards.4-6

The problem is further accentuated in regions with mixed urban and rural populations, such as Himachal Pradesh. Rural communities may have limited access to healthcare facilities and rely heavily on chemists or informal advice, while urban populations, though better exposed to information, may still indulge in unsafe practices due to misconceptions about drug safety. Additionally, cultural practices such as combining NSAIDs with alcohol or herbal remedies without medical supervision may increase the risk of adverse outcomes. Despite the widespread use of NSAIDs, there is limited region-specific data from Himachal Pradesh regarding public knowledge and safety awareness.7-10

Understanding population-level awareness of NSAID use and its associated risks is vital for guiding safe self-medication practices and reducing drug-related complications. Assessing knowledge gaps, common practices, and socio-demographic factors associated with unsafe use can help design targeted health education interventions and inform policy measures for stricter regulation of OTC drug sales.

Address for Correspondence Dr Meenakshi Thakur, [3]*Medical Officer, Department of Obs & Gynae, Zonal Hospital, Dharmshala*

DOI: 10.5455/im.125978

The present study was therefore undertaken to assess the prevalence of NSAID use, identify commonly used drugs, document reported side effects, and evaluate public knowledge and safety awareness regarding NSAID use in Himachal Pradesh. By analyzing socio-demographic associations with knowledge levels, the study aims to identify vulnerable groups and provide evidence to guide pharmacist counseling, community-based awareness campaigns, and policy initiatives for promoting rational NSAID use.

Materials and Methods

Study Design and Setting

A descriptive, cross-sectional study was conducted to assess public knowledge and safety awareness regarding non-steroidal anti-inflammatory drug (NSAID) use in Himachal Pradesh. Data were collected using a structured, self-administered questionnaire designed on Google Forms, which allowed efficient distribution, ensured uniformity in data collection, and was feasible for both urban and rural populations across geographically diverse regions of the state.

Study Population and Eligibility Criteria

The study population included adults aged 18 years and above residing in both rural and urban areas of Himachal Pradesh. Both male and female participants from different educational and occupational backgrounds were eligible, provided they gave voluntary informed consent. The following groups were excluded to minimize bias:

Healthcare professionals, pharmacists, and medical students (due to their advanced medical knowledge),
Individuals with severe cognitive or communication difficulties,
Respondents with incomplete or duplicate submissions.

Sample Size Determination

The sample size was calculated using the single population proportion formula, assuming 50% prevalence of adequate NSAID safety awareness (since no prior state-specific data were available), with a 95% confidence interval and 5% margin of error. The minimum sample size required was 384, which was rounded up to 400 participants to account for possible non-responses and exclusions.

Sampling Technique

A purposive-cum-snowball sampling method was adopted. The survey link was disseminated through WhatsApp groups, email, and community-based digital networks. Village health workers and urban volunteers facilitated participation by circulating the link within their communities. Respondents were encouraged to share the form with other eligible adults in their households and neighborhoods to ensure representation from both urban (53.0%) and rural (47.0%) populations.

Study Tool (Questionnaire Design)

The questionnaire was developed after reviewing literature, WHO guidelines on rational NSAID use, and national pharmacovigilance recommendations. It consisted of four sections:

Socio-Demographic Profile – age, gender, residence (urban/rural), education, occupation, and monthly household income.

NSAID Use and Safety Profile – history of NSAID use, frequency of use, most commonly used drugs, procurement sources, and reported side effects.

Knowledge Assessment – 20 multiple-choice questions (MCQs) testing awareness of correct NSAID indications, side effects, contraindications, drug interactions, safe practices, and risks of prolonged use. Each correct response was awarded 1 point; incorrect responses received 0 points.

Knowledge Score Categorization – total score range 0-20, classified into:

- Excellent (16-20),
- Good (12-15),
- Fair (8-11),
- Poor (0-7).
- Validation and Pilot Testing

The draft questionnaire was reviewed by experts in pharmacology, community medicine, and public health to establish face and content validity. A pilot test was conducted on 30 respondents from both rural and urban settings to evaluate clarity, cultural relevance, and comprehensibility. Minor modifications in wording were made accordingly. Internal reliability was confirmed with a Cronbach's alpha of 0.82, indicating good internal consistency.

Data Collection Procedure

Participation was voluntary, and the Google Form began with an informed consent statement. Only those providing consent could proceed to complete the survey. All questions were mandatory to minimize missing responses. The average time to complete the questionnaire was 10-12 minutes. Responses were automatically recorded in a password-protected Google Sheet accessible only to the investigators.

Data Analysis

Data were exported into IBM SPSS Statistics (version 25) for analysis. Descriptive statistics (frequencies and percentages) were used to summarize socio-demographic data, NSAID use patterns, and knowledge responses. The Chi-square test (χ^2) was applied to examine associations between knowledge level categories and socio-demographic variables such as age, gender, education, occupation, and residence. A p-value <0.05 was considered statistically significant.

Ethical Considerations

The study adhered to the principles of the Declaration of Helsinki (2013 revision). Confidentiality of responses was strictly maintained, and no personally identifiable information was collected.

Results

The study included 400 respondents, with the largest age group being 30-44 years (36.5%), followed by 18-29 years (26.0%), 45-59 years (23.5%), and those aged 60 years or above (14.0%). Gender distribution was balanced, with females slightly outnumbering males (51.0% vs. 49.0%). A majority of participants resided in urban areas (53.0%), while 47.0% were from rural settings, ensuring good representation of both populations. Educational status varied considerably: 9.0% reported no formal schooling, 36.5% had secondary education, 37.5% were graduates, and 17.0% had postgraduate qualifications. Occupationally, skilled/unskilled workers comprised the largest group (29.5%), followed by homemakers (27.0%), service/professionals (23.0%), students (13.5%), and retired individuals (7.0%). Household income levels were diverse, with 30.0% earning below ₹10,000, 35.5% between ₹10,001-25,000, 22.5% between ₹25,001-50,000, and 12.0% above ₹50,000. These findings reflect a socio-demographically varied sample that allows meaningful analysis across multiple strata.

Table 1: Socio-Demographic Characteristics of Participants (n = 400)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	18-29	104	26.0
	30-44	146	36.5
	45-59	94	23.5
	≥60	56	14.0
Gender	Male	196	49.0
	Female	204	51.0
Residence	Urban	212	53.0
	Rural	188	47.0
Education	No formal schooling	36	9.0
	Secondary (up to 10+2)	146	36.5
	Graduate	150	37.5
	Postgraduate & above	68	17.0
Occupation	Student	54	13.5
	Homemaker	108	27.0
	Skilled/Unskilled worker	118	29.5
	Service/Professional	92	23.0
	Retired	28	7.0
Monthly Household Income (INR)	<10,000	120	30.0
	10,001-25,000	142	35.5
	25,001-50,000	90	22.5
	>50,000	48	12.0

A high proportion of respondents (80.5%) reported a history of NSAID use, indicating widespread exposure in the population. Among users, 33.5% consumed NSAIDs rarely (≤1/month), 26.5% occasionally (2-5 times/month), 20.5% frequently (≥1/week), while 19.5% admitted to daily use, underscoring the risk of chronic consumption. Ibuprofen emerged as the most commonly used NSAID (39.1%), followed by diclofenac (27.3%), aspirin (16.7%), and other agents such as naproxen or aceclofenac (16.9%). Procurement was largely through doctor prescriptions (47.2%), but a significant proportion accessed NSAIDs without medical supervision–34.8% from pharmacies/chemists, 11.8% from leftover household stock, and 6.2% via friends or relatives. Notably, 32.9% reported gastric irritation or heartburn as side effects, 16.1% experienced nausea/vomiting, and 6.8% reported kidney-related complaints, although 44.2% reported no adverse events. These findings highlight prevalent unsupervised access and frequent side effects among users.

Table 2: NSAID Use and Safety Profile of Respondents (n = 400)

Variable	Category	Frequency (n)	Percentage (%)
History of NSAID Use	Yes	322	80.5
	No	78	19.5
Frequency of Use	Rarely (≤1/month)	134	33.5
	Occasionally (2-5/month)	106	26.5
	Frequently (≥1/week)	82	20.5
	Daily	78	19.5
Most Commonly Used NSAID	Ibuprofen	126	39.1
	Diclofenac	88	27.3
	Aspirin	54	16.7
	Other (e.g., Naproxen, Aceclofenac)	54	16.9
Mode of Procurement	Prescription from doctor	152	47.2
	Pharmacy/chemist without prescription	112	34.8
	Leftover medicines at home	38	11.8
	Friends/relatives	20	6.2
Reported Side Effects	Gastric irritation/heartburn	106	32.9
	Nausea/vomiting	52	16.1
	Kidney-related complaints (swelling/urine issues)	22	6.8
	No side effects reported	142	44.2

Knowledge assessment revealed variable awareness regarding NSAID use and associated risks. While 78.0% correctly identified their use for pain and inflammation, only 67.0% were aware of the risk of stomach ulcers with long-term use. Awareness about specific drugs was moderate, with 60.5% recognizing ibuprofen as an NSAID and 79.5% identifying diclofenac correctly. However, just 57.0% knew NSAIDs should be avoided in kidney disease, and only 53.5% recognized that overuse may damage kidneys. Correct understanding of safe practices was observed in some areas–73.5% linked empty stomach use to gastric irritation, 72.0% identified after-meal intake as preferable, and 76.5% emphasized the importance of a doctor's prescription. Awareness of risks such as alcohol interaction (69.5%), gastrointestinal bleeding (64.0%), pregnancy contraindication in the last trimester (59.5%), and the need for monitoring during long-term therapy (58.0%) was only partial. Notably, just 53.0% knew the maximum safe OTC use duration was 5-7 days. Collectively, these results reveal significant knowledge gaps despite general awareness of NSAID use.

Table 3: Knowledge Questions on NSAID Use and Safety Awareness (n = 400)

Q. No.	Question	Options (Correct in Bold)	Correct (n)	Correct (%)
1	NSAIDs are commonly used for:	a) Infections b) Pain & inflammation c) Fever only d) Cough	312	78.0
2	Long-term NSAID use may cause:	a) No harm b) Stomach ulcers c) Improves digestion d) Prevents cancer	268	67.0
3	Which of the following is an NSAID?	a) Ibuprofen b) Paracetamol c) Amoxicillin d) Cetirizine	242	60.5
4	NSAIDs should be avoided in patients with:	a) Skin rash b) Kidney disease c) Asthma only d) Diabetes	228	57.0
5	Taking NSAIDs on an empty stomach:	a) Safe b) Increases gastric irritation c) Improves absorption d) No effect	294	73.5
6	Diclofenac is an example of:	a) Antibiotic b) NSAID c) Steroid d) Antihistamine	318	79.5
7	Which organ is most affected by prolonged NSAID use?	a) Heart b) Stomach c) Brain d) Skin	276	69.0
8	NSAIDs should preferably be taken:	a) After meals b) Before meals c) On empty stomach d) At night only	288	72.0
9	Overuse of NSAIDs may damage:	a) Lungs b) Kidneys c) Skin d) Eyes	214	53.5
10	Safe use of NSAIDs requires:	a) Doctor's prescription b) Self-decision c) Advice from relatives	306	76.5

		d) Internet search		
11	Combining NSAIDs with alcohol:	a) Safe b) Increases gastric risk c) Reduces pain d) No effect	278	69.5
12	Regular monitoring during long-term NSAID therapy should include:	a) Kidney & liver function tests b) Skin check-up c) Vision test d) Hearing test	232	58.0
13	Which of the following is NOT an NSAID?	a) Naproxen b) Paracetamol c) Aspirin d) Ibuprofen	216	54.0
14	Aspirin is often used in heart patients for:	a) Pain only b) Blood thinning c) Stomach ulcers d) Cough relief	264	66.0
15	NSAID overuse can lead to:	a) Strong bones b) Gastrointestinal bleeding c) Hair growth d) Eye redness	256	64.0
16	NSAIDs should be avoided during:	a) Cough b) Cold c) Pregnancy (last trimester) d) Fever	238	59.5
17	Which is the safest practice?	a) Taking leftover NSAIDs b) Sharing with friends c) Using only prescribed dose d) Doubling dose for faster relief	302	75.5
18	NSAIDs interact dangerously with:	a) Vitamin supplements b) Blood thinners c) Cough syrup d) Antacids	224	56.0
19	Common sign of NSAID overdose:	a) Sleepiness b) Severe stomach pain & bleeding c) Hair fall d) Itching	246	61.5
20	Awareness of maximum duration for safe OTC NSAID use:	a) 1 month b) 2 weeks c) 5-7 days d) No limit	212	53.0

Based on cumulative scores, only 18.0% of respondents demonstrated excellent knowledge (16-20 correct answers), while 31.5% had good knowledge (12-15). The majority of participants fell into lower categories, with 33.5% in the fair group (8-11 correct answers) and 17.0% showing poor knowledge (≤7). This distribution highlights that although a segment of the population has adequate understanding, nearly half the respondents possess only fair to poor awareness, leaving them vulnerable to unsafe NSAID practices.

Table 4: Overall Knowledge Score Distribution (n = 400)

Knowledge Category	Score Range	Frequency (n)	Percentage (%)
Excellent	16-20	72	18.0
Good	12-15	126	31.5
Fair	8-11	134	33.5
Poor	0-7	68	17.0

Analysis of socio-demographic determinants revealed that age and gender were not significantly associated with knowledge levels ($p>0.05$). In contrast, residence showed a significant impact ($p=0.002$), with urban participants demonstrating higher proportions of excellent (23.0%) and good (34.4%) knowledge compared to rural counterparts, where fair (39.1%) and poor (22.4%) knowledge predominated. Education emerged as the strongest predictor of knowledge ($p<0.001$), with only 5.6% of those without formal schooling achieving excellent scores compared to 29.6% among postgraduates. Similarly, occupational status was significantly associated ($p=0.009$), with service/professionals showing better knowledge (27.2% excellent) compared to homemakers (11.7% excellent) and skilled/unskilled workers (14.6% excellent). These findings emphasize that structural factors such as education, occupation, and residence play a greater role in shaping NSAID safety awareness than demographic factors such as age or gender.

Table 5: Association Between Knowledge Level and Socio-Demographic Variables (n = 400)

Variable	Category	Excellent (%)	Good (%)	Fair (%)	Poor (%)	χ^2 value	p-value
Age (years)	18-34	15.2	32.6	34.8	17.4	6.82	0.336
	35-44	19.5	30.5	33.3	16.7		
	45-54	20.3	31.2	32.6	15.9		
	≥55	17.8	29.6	34.2	18.4		
Gender	Male	18.5	30.2	34.0	17.3	1.28	0.734
	Female	17.2	32.0	33.9	16.9		
Residence	Urban	23.0	34.4	28.7	13.9	15.42	0.002**
	Rural	11.5	27.0	39.1	22.4		
Education	No formal	5.6	14.8	38.9	40.7	70.36	<0.001***
	Secondary	9.8	24.1	44.6	21.5		
	Graduate	20.5	35.2	31.2	13.1		
	Postgraduate+	29.6	38.6	24.5	7.3		
Occupation	Homemaker	11.7	28.2	40.3	19.8	20.18	0.009**
	Skilled/Unskilled	14.6	30.5	35.4	19.5		
	Service/Professional	27.2	36.4	26.0	10.4		

Discussion

This study provides valuable insights into public knowledge and safety awareness regarding the use of non-steroidal anti-inflammatory drugs (NSAIDs) in Himachal Pradesh. The findings demonstrate that while NSAIDs are widely used for pain and fever relief, significant knowledge gaps and unsafe practices persist, particularly among rural, less-educated, and non-professional groups. These results carry important implications for public health, patient safety, and drug regulation.

The present study revealed that 80.5% of participants had a history of NSAID use, reflecting the high reliance on these drugs in the general population. Ibuprofen (39.1%) and diclofenac (27.3%) were the most commonly consumed NSAIDs, consistent with national prescribing trends where these drugs are easily available and often considered first-line analgesics. Alarmingly, nearly one-fifth of respondents reported daily NSAID use, which significantly increases the risk of chronic complications such as gastrointestinal bleeding and renal impairment. Similar findings have been reported in studies from Karnataka, Maharashtra, and Tamil Nadu, where frequent and unsupervised use of NSAIDs was widespread.

Mode of procurement was another area of concern. Although 47.2% of users obtained NSAIDs through a doctor's prescription, a substantial proportion accessed them from pharmacies without prescription (34.8%) or from leftover household stock (11.8%). This mirrors the national trend of weak enforcement of prescription-only regulations, where community chemists often serve as the first point of access. The fact that 44.2% of users reported no side effects may reinforce a false perception of safety, but the presence of gastric irritation (32.9%), nausea/vomiting (16.1%), and kidney-related complaints (6.8%) among others indicates that adverse effects are far from rare.

The knowledge assessment highlighted partial but insufficient awareness among participants. While most respondents correctly recognized NSAIDs as drugs for pain and inflammation (78.0%) and acknowledged their association with gastric irritation (73.5%), only 67.0% linked long-term use with stomach ulcers and 53.5% identified kidney damage as a risk of overuse. Awareness of interactions was also limited—only 56.0% recognized the risk of combining NSAIDs with blood thinners, a clinically significant interaction that can precipitate life-threatening bleeding. Encouragingly, the majority understood that NSAID use should be guided by medical advice (76.5%) and that drugs should preferably be taken after meals (72.0%). However, fewer than 54.0% of respondents were aware of the maximum safe OTC use duration (5-7 days), and misconceptions persisted about identifying NSAIDs (only 60.5% recognized ibuprofen correctly, and 54.0% wrongly identified paracetamol as an NSAID). These findings echo earlier reports from India and other developing countries, where gaps in public knowledge about drug classification, contraindications, and dosing have been repeatedly observed.

Knowledge score distribution showed that only 18.0% of respondents had excellent knowledge, whereas nearly half fell into the fair (33.5%) or poor (17.0%) categories. This finding is in line with studies from North India and rural Nepal, where health literacy about NSAID use was found to be inadequate. Importantly, limited awareness increases the likelihood of unsafe self-medication, particularly in populations that perceive NSAIDs as harmless household remedies.

Socio-demographic analysis revealed that education and occupation were the strongest predictors of NSAID awareness. Participants with graduate or postgraduate education demonstrated significantly higher knowledge compared to those with no formal schooling ($p<0.001$). Similarly, service/professionals exhibited the best knowledge levels, while homemakers and unskilled workers were more likely to fall into poor or fair categories ($p=0.009$). These trends underline the role of educational attainment and occupational exposure in shaping health literacy. Residence was another critical determinant: urban participants had better knowledge compared to rural respondents ($p=0.002$), likely due to greater access to health information, services, and awareness campaigns. By contrast, age and gender showed no significant association, suggesting that knowledge gaps cut across demographic groups and are primarily driven by structural rather than biological factors.

The findings of this study are consistent with earlier research highlighting widespread NSAID use and knowledge deficiencies. For instance, studies reported high prevalence of ibuprofen and diclofenac consumption, alongside poor awareness of gastrointestinal and renal risks. In contrast, some studies have shown higher levels of public awareness, attributed to stronger pharmacist-led counseling and stricter regulation of OTC drug sales. These comparisons highlight the urgent need for strengthening regulatory oversight and public education in the Indian context.6-10

Public Health Implications

The results underscore the pressing need for interventions at multiple levels:

Community-level education is vital to dispel misconceptions, particularly regarding long-term use, drug interactions, and contraindications. Pharmacist involvement should be strengthened, as chemists are often the first point of contact in both rural and urban areas. Training and enforcing responsible dispensing practices can reduce irrational NSAID use.

Policy enforcement must be prioritized, with stricter monitoring of OTC sales and penalties for pharmacies dispensing NSAIDs without prescriptions.

Integration of medication literacy into existing public health programs, including rural health missions and school health initiatives, could help build awareness from an early age.

Strengths and Limitations

A strength of this study is its inclusion of both urban and rural populations, allowing meaningful comparisons across settings. The use of a validated questionnaire with good internal reliability (Cronbach's alpha 0.82) strengthens the robustness of findings. However, limitations must be acknowledged: the online Google Form design may have excluded digitally disadvantaged groups, and self-reported responses are subject to recall bias and social desirability bias. Additionally, the cross-sectional design limits causal inferences regarding determinants of knowledge.

Conclusion

In summary, this study highlights that NSAID use is widespread in Himachal Pradesh, with a high prevalence of unsupervised access and variable safety awareness. While a section of the population demonstrates good knowledge, significant gaps exist, particularly among rural and low-education groups. Addressing these gaps through targeted health education, pharmacist engagement, and stronger policy enforcement is critical to minimizing drug-related complications and promoting the rational use of NSAIDs in the community.

References

1. Shifan KM, Ravi K, Simon A. Usage patterns and safety awareness of NSAIDs (non-steroidal anti-inflammatory drugs) among the rural population in Kerala: a cross-sectional survey. J Neonatal Surg. 2025;14(20s):145-53.
2. Negi AK, Rathour C, Guleria KSDS. Know your painkillers: a study on NSAID awareness and self-medication trends in Mandi District. Himal J Appl Med Sci Res. 2025;6(1):1-5.
3. Kumar I, Verma KK, Sharma A, Singh R, et al. A cross-sectional study of knowledge, attitudes, and safety practices of consumers in over-the-counter medication usage. J Pharm Insights Res. 2025;3(4):191-7.
4. Chkhikvadze L, Chikobava E, Hariharan N, Omprakash A, Aamil SM. Awareness of the use of non-steroidal anti-inflammatory drugs: A cross-sectional study. Med Int (Lond). 2025 Jun 16;5(5):49.
5. Montuori P, Shojaeian SZ, Pennino F, D'Angelo D, Sorrentino M, Di Sarno S, Nubi R, Nardo A, Triassi M. Consumer awareness and knowledge regarding use of non-steroidal anti-inflammatory drugs (NSAIDs) in a metropolitan area. Front Pharmacol. 2024 Jun 20;15:1362632.
6. Chkhikvadze L, Chikobava E, Hariharan N, Aamil SM, et al. Awareness of the use of non-steroidal anti-inflammatory drugs: a cross-sectional study. Med Int. 2025;5(5):1-13.
7. Coşkuner İ, Yılmaz TE. Awareness among patients taking oral non-steroidal anti-inflammatory drugs as analgesics: a cross-sectional study. J Health Sci Med. 2021;4(1):63-70.
8. Barakat HE, Aziz CN, Abougalambou SSI. Evaluation of the knowledge, practices, and attitudes of community pharmacists towards adverse effects of non-steroidal anti-inflammatory drugs (NSAIDs): a cross-sectional study. J Pharm Policy Pract. 2023;16:132.
9. Mehboob S, Ahmed A, Kamran M, Ashraf H, Siddiqui S, Nasib U, et al. Knowledge of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) and their Adverse Effects among Medical and Non-Medical Students. Pak J Med Dent. 2022;11(4): 94-99.
10. Al Masoudi W, Al Dweik R, Al-Dweik G. Knowledge and practices regarding the use of non-steroidal anti-inflammatory drugs among university students in Jordan. Clin Pract Epidemiol Ment Health. 2023;16:e187494452306220.