



## **PATTERN OF USE OF OVER THE COUNTER NSAIDS IN RURAL HEALTH CARE SETTINGS: A PILOT STUDY**

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### **ABSTRACT**

Pain is common problem in elders. Elder age group who are above 60 years, 85% of them experiencing moderate to severe pain and 28% of them experiencing continues pain. Non steroidal anti inflammatory drugs (NSAIDs) are most commonly prescribed drugs in management of pain and inflammation in management of musculoskeletal disorders especially in elders. We conducted cross sectional study in rural health care setting and collected data from the patients who are purchasing OTC NSAIDs, and then we collected demographics of patient, medical and medication history and social history and assessed pain severity using visual analogue scale. We found both males and females are equally using OTC NSAIDs, patients with age of 65-75 and with risk factors like hypertension; smoking and alcohol are mainly using OTC NSAIDs. Most of them are using oral NSAIDs more than one year for moderate to severe knee pain. Proper screening, treatment and monitoring approaches are needed in rural health care setting where chances of misuse of Over the Counter drugs are more.

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### **INTRODUCTION**

Elder population rises from 4% of total population in 1900 to 13% in 2010, expected to reach 20-21% of total population by 2030. <sup>[1]</sup> Pain is common problem in elders. Elder age group who are above 60 years, 85% of them experiencing moderate to severe pain and 28% of them experiencing continues pain. <sup>[2]</sup> NSAIDs are most commonly prescribed drugs in management of pain and inflammation in management of musculoskeletal disorders especially in elders. <sup>[3]</sup> Over 20% of elders above 65 years use prescription NSAIDS, more than that use over the counter NSAIDS. NSAIDS with short half life i.e less than 6 hours include Ibuprofen, Ketoprofen, Diclofenac and Indomethacin, where as Naproxen, Meloxicam and Celecoxib having longer half life more than 6 hours. Common side effects of NSAIDS include, Gastrointestinal disturbances like, dyspepsia, abdominal pain, ulcers, bleeding, perforation etc, Cardiovascular side effects like increased blood pressure, myocardial infarction, congestive heart failure and cardiovascular accidents, hematological side effects like increased bleeding and anemia, renal side effects like water and sodium retention, decreased renal blood flow and electrolyte imbalance and hepatic side effects like increased transaminases and hepatitis.

Selective COX 2 inhibitors having low GI side effects than non selective NSAIDS but these are having risk of cardio vascular side effects than non selective NSAIDS. NSAIDS should be cautiously used when used along with aspirin, anticoagulants, ACE inhibitors and diuretics. Other pain management options other than NSAIDS are use of paracetamol if no contraindications are there, opioids (but it causes addiction), tramadol (if moderate to severe pain is not controlled with NSAIDS), Serotonin nor epinephrine reuptake inhibitors and anticonvulsants in case of neuropathic pain, and topical analgesics. Non pharmacological methods include, exercise, patient education, cognitive behavioral therapy, thermal therapy, use of assistive devices, and Transcutaneous electrical nerve stimulation. Treating pain in elders is challenging question for clinicians due to pharmacodynamic changes, co morbid conditions, use of multiple medications etc. It's better to use paracetamol to treat pain in elders, if patient's pain is not relieved then go for low dose oral NSAIDS with short duration of action for less than 18 months. <sup>[2]</sup> NICE guidelines suggests that if paracetamol and topical NSAIDS are not effective for pain relief, then use oral NSAIDS with proton pump inhibitor or COX2 inhibitor based on individual conditions. <sup>[3]</sup> Physician barriers while prescribing NSAIDS include, limited awareness of current guidelines and failure to adhere to guidelines, lack of education of primary care provider about geriatric drug prescribing, lack of interaction with patients, absence of educational programmes for monitoring and preventing of adverse drug reactions in elders,

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lack of knowledge and availability of usage of tools for individualized prescribing and, limited awareness of evidence based practices for non pharmacological options in management of pain.<sup>[4]</sup> Use of medicines and drug related problems increases with age. So there is a need of monitoring of efficacy and safety of drugs in especially in elders. Some solutions are there to prevent adverse drug reactions in elders like, individual treatment approach based on patient needs, maintain accurate record of medicines used by elders' minimizing unnecessary use of medicines, based on efficacy and safety, adjust the dose wherever possible, appropriate medicine should be selected based on condition, proper counseling about drugs and related adverse effects should be given and collaborating with other health care disciplines is required for better patient safety.<sup>[5]</sup> In our pilot study, we want to explore use of over the counter NSAIDs in rural health care settings.

**METHODOLOGY**

We conducted small pilot cross sectional study in rural health care setting, Visakhapatnam, Andhrapradesh, for period of 10 days. We collected data from the patients who are buying OTC NSAIDs, and we collected demographics of patient, medical and medication history and social history. And also we asked pain score of patients using visual analogue scale. After that we analyzed data using excel.

**RESULTS**

In our study, almost both females (n=18) and males (n=17) are equally using OTC NSAIDs.

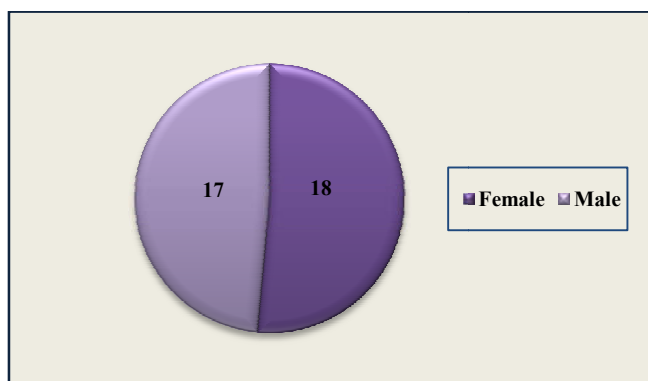


Figure 1 Gender wise distribution of patients

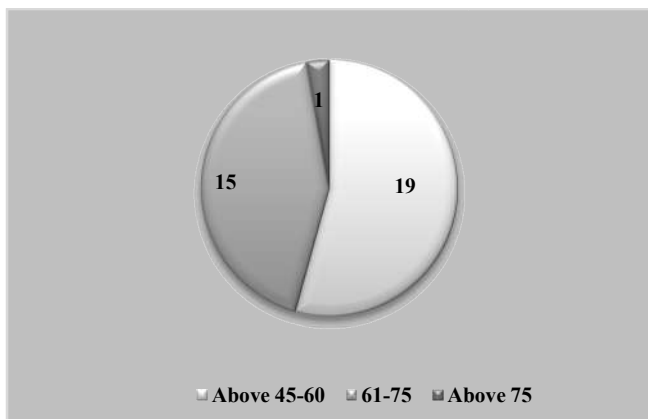


Figure 2 Age wise distribution of patients

In our study, patients who are using OTC NSAIDs with age group of 61-75 years are more (n=19) than compared to remaining age groups i.e. patients of age group 45-60 years (n=15) and, patients of age group above 75 years (n=1).

In our study, most of the patients who are consuming OTC NSAIDs are farmers (n=15), than others i.e. house wife who is doing farming also and then only house wife who is doing regular household work (n=7).

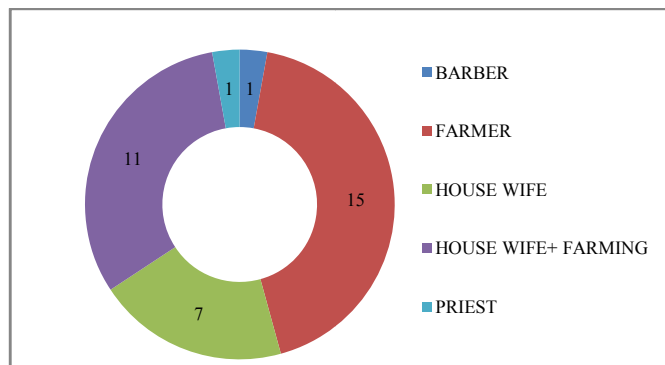


Figure 3 Occupation wise distribution of patients

In our study, patients who are using OTC NSAIDs, are having co morbidity like Hypertension (n=15) and remaining patients (n=20) are not having Hypertension

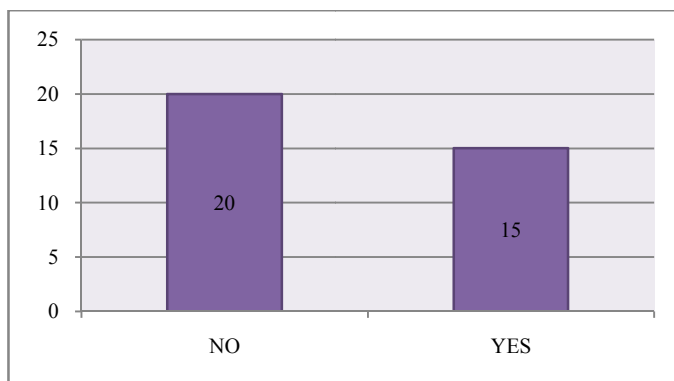


Figure 4 Number of patients with Hypertension

In our study, patients who are using OTC NSAIDs, are having co morbidity like Type 2 Diabetes (n=1) and remaining patients (n=34) are not having Type 2 Diabetes

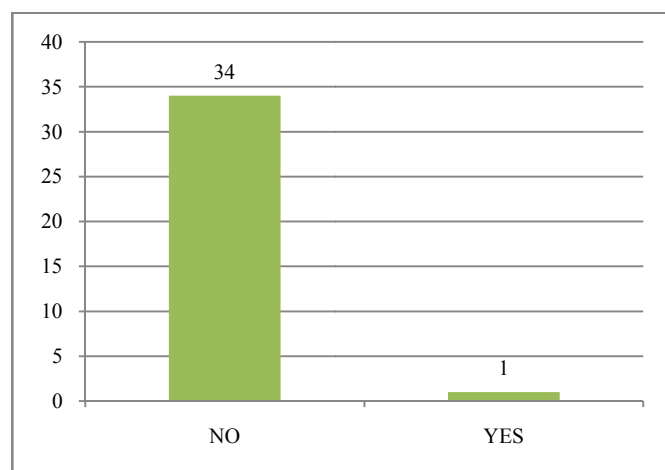


Figure 5 Number of patients with Type 2 Diabetes

In our study, Patients who are using OTC NSAIDs with alcohol habit (n=5) are less when compared to remaining patients without alcohol habit (n=30)

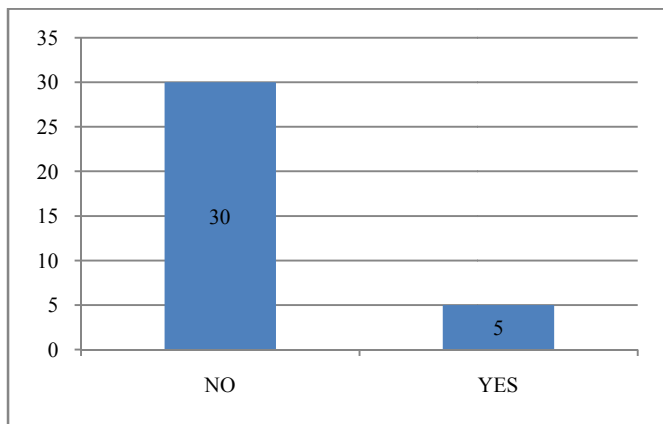


Figure 6 Number of patients with Alcohol habit

In our study, Patients who are using OTC NSAIDs with smoking habit (n=16) are less when compared to remaining patients without smoking habit (n=19)

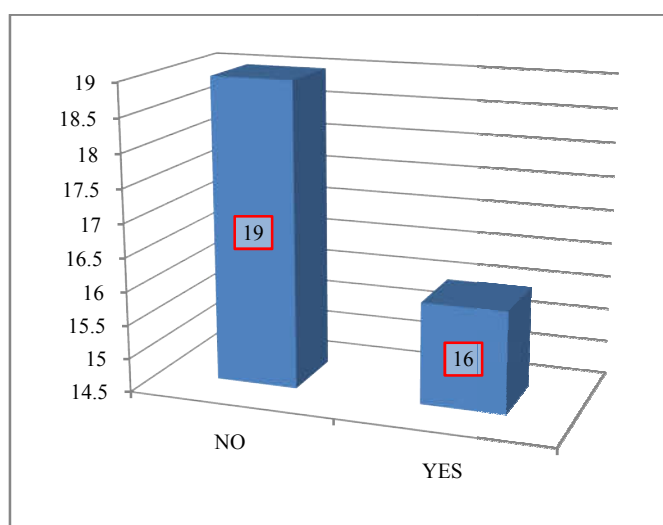


Figure 7 Number of patients with Smoking habit

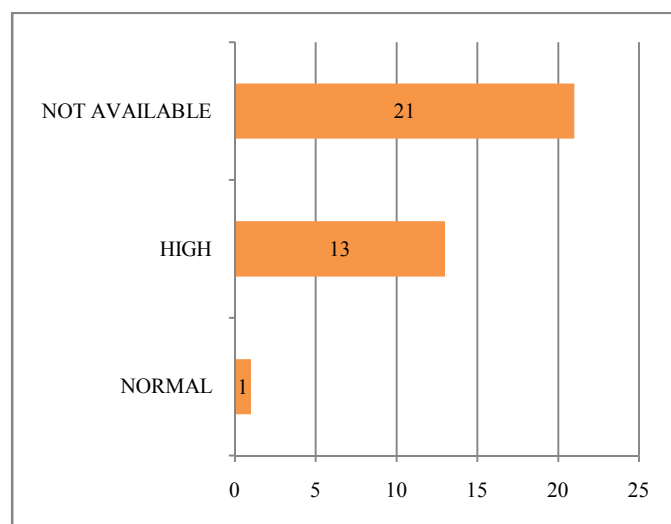


Figure 8: Number of patients with current Blood Pressure reading

In our study, 13 patients are having high blood pressure readings, and one patient is with normal blood pressure reading and for remaining patients data is not available

In our study, most of the patients are using Aceclofenac+ Paracetamol combination (n=11), Tramadol+ Paracetamol combination (n=4), Aceclofenac+ Paracetamol with Ranitidine

(n=3), Aceclofenac+ Paracetamol with Prednisolone (n=3) and Aceclofenac+ Ranitidine (n=2).

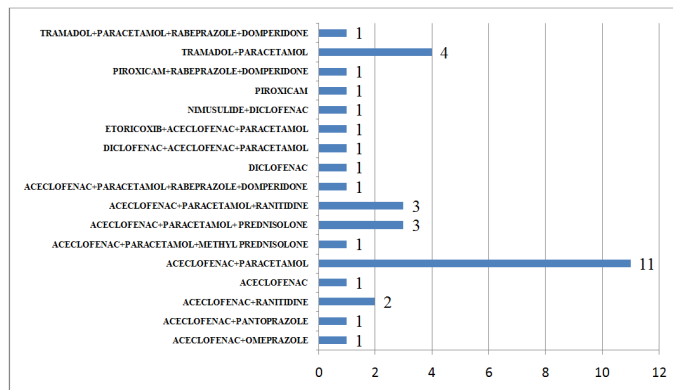


Figure 9 Number of patients using different types of OTC NSAIDs

Bases on visual assessment pain scale, most of the patients (n=20) are suffering with moderate pain, 14 patients are suffering with severe pain and 1 patients is having worst pain score

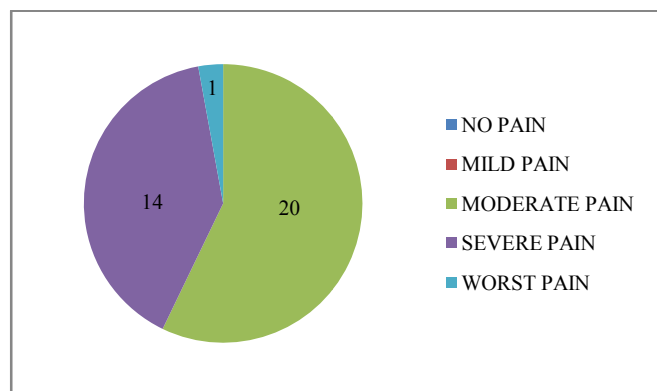


Figure 10 Number of patients with different pain severity

## DISCUSSION

We conducted, community based cross sectional study in rural primary health care setting about ten days. In our study, in total of 35 patients, both males and females are equally consuming OTC NSAIDs, which implies that irrespective of gender, patients may use OTC drugs based on their pain severity, which is in consistent with study conducted by Upadhyay *J et al*, where they mentioned that both females and males are equally using anti rheumatic drugs as self medication.<sup>[6]</sup> In our study, patients who are using OTC NSAIDs are in age group of 61-75 years are more than compared to remaining age groups, which is in consistent with study conducted by sherin sushan paul *et al*, where they mentioned that elders of age above 60 years are more prevalently using OTC NSAIDs.<sup>[7]</sup> In our study, patients are who are consuming OTC NSAIDs are farmers, because elder farmers prone to have increased risk of musculoskeletal disorders.<sup>[8]</sup>

Here most of the patients who are using OTC NSAIDs are having risk factor like hypertension and are on anti hypertensive treatment. But according to guidelines, NSAIDs are cautiously used in elders with hypertension because NSAIDs exacerbate hypertension.<sup>[9]</sup> In our study only one patient is with Type2 Diabetes, who is taking OTC NSAIDs. Here most of the patients are having the habit of smoking and alcohol. Smoking and alcohol increases the risk of NSAID

associated side effects. <sup>[10]</sup> In our study sample, most of the patients are using oral formulations containing Aceclofenac and Paracetamol, Tramadol and Paracetamol and Aceclofenac and Paracetamol with Ranitidine. Generally Paracetamol and NSAIDs are first line treatment options for osteoarthritis. <sup>[11]</sup> Here most of the patients are suffering with moderate to severe pain for which they are using OTC NSAIDs which is consistent with findings of one population based study, they found that intensity of chronic pain increases with age. <sup>[12]</sup> Because of that most of the patients are using NSAIDs as OTC drugs. In our study all 35 patients are using OTC NSAIDs more than one year for knee pain. None of them are diagnosed or treated by specialists or any physician. All of them are using NSAIDs for self reported pain. Pain increases with the age. In rural areas, most of the people are doing farming which requires more physical stress. As younger population going to towns for getting employment, burden on elder population increases which lead to so many health problems results in overuse of medications (NSAIDs) and medication related adverse effects. So, proper care should be taken among those populations and over use of pain medicines should be avoided in these people with high risk of complications. Diagnosing possible health conditions in elders and make them to get proper treatment by qualified physician and monitoring of treatment risks will improve patient safety.

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