

## **A STUDY OF KNOWLEDGE, ATTITUDE AND PERCEPTION OF PATIENTS TOWARDS ANALGESIC USE**

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## ABSTRACT

**Background:** Analgesics commonly used in pain management include opioids and non steroidal anti inflammatory drugs but their use is associated with various adverse effects. Lack of knowledge regarding the correct usage of analgesic drugs can cause increased risk of developing potential lethality and deleterious outcomes.

**Methodology:** Data was collected from patients attending the outpatient wards of all departments using a self designed questionnaire in the form of survey and direct interview.

**Results:** 209 respondents had participated in the study of which, 71% were females and 29% were males. 31% participants were aware of correct dose of analgesic being used. 36% of respondents reported epigastric pain as major side effect. 70% have reported to take the medication without prescription. 19% of respondents took the analgesic for relief from headache. 53% of respondents got the medication by directly requesting at the pharmacy. 90% of respondents did not report the side effects to their health care provider.

**Conclusion:** Analgesic use is extensively practised. Substantial efforts are needed to raise the level of awareness of the public about basic aspects of analgesic drug use.

**KEYWORDS:** Knowledge, attitude, perception and analgesics.

## INTRODUCTION

Pain is a prime health issue globally and can be divided as acute, chronic, or intermittent, or a combination of these <sup>[1]</sup> Analgesic refers to any drug or medication that is used to provide relief from pain. The WHO (World Health Organization) in 1986 developed a three-step process analgesic ladder for administration of pain medicines in the management of cancer pain depending on the severity of pain. It includes three steps: non opioid analgesic (NSAIDs), weak opioids and strong opioids. NSAIDs are prescribed for mild pain and are considered as the initial step in treatment of pain. <sup>[2]</sup>

Non Steroidal Anti Inflammatory Drugs (NSAIDs) are a class of medications approved by the FDA for their analgesic, antipyretic & anti inflammatory actions. <sup>[3]</sup> Most of NSAID users have upper gastrointestinal symptoms such as heartburn, epigastric discomfort, belching, bloating etc. NSAIDs are considered as potential nephrotoxic agents with deleterious impact on kidneys. The renal effects of NSAIDs lead to symptoms such as hyperkalemia, ARF, decreased GFR, AIN etc. The exacerbation of heart failure leading to hypertension is caused by NSAIDs. Naproxen, which is a nonselective NSAID, is found to have the least risk of cardiovascular events as suggested by the current evidence. Hepatotoxicity is mainly caused by NSAIDs like sulindac, nimesulide and diclofenac and its typical symptoms are malaise, jaundice, fever and itching. Analgesic use, even at the recommended doses is associated with various side effects and is responsible for increased mortality and morbidity rates. NSAIDs are considered to be the most widely prescribed drugs and are usually misused by self medication. It has been noticed in earlier studies that the pattern of NSAID use is often irrational, unnecessary and expensive. The practice of self medication is a widely prevalent among general population. Students in health care professions are not exempt from this frequent behaviour because they are familiar with the available pharmaceuticals and their uses, so they tend to self-medicate based on their knowledge. In India, both non prescribed and prescribed NSAIDs can be easily purchased from the pharmacy without prescription or necessary healthcare instructions. As a result, this easy access to NSAIDs makes common people susceptible to its adverse effects. Hence, the general population, being unaware of serious adverse effects associated with the overuse of analgesics continues using these medications without consulting the physician. Understanding the patient's attitude toward analgesic use can also aid in more effective communication between the patient, his health care provider and pharmacist as well as the development of patient and public education campaigns to create awareness about the safe use of these medications.

Hence this study is being conducted to explore the knowledge, attitude and perception towards risks and safe usage of analgesics in patients, thereby evaluating the pattern of analgesic use.

### **Method and collection of data**

A cross sectional observational study was conducted at Shadan Hospital, Peerancheru, Hyderabad for a period of six months. The ethics approval was obtained from Shadan Hospital's Ethics Committee.

Data collection was done using a self-designed questionnaire in the form of survey and by directly interviewing the patients who could not complete the questionnaire because of language barrier. The questionnaire was segregated into two sections: The first section of questionnaire included socio-demographic data of participants including age, gender, level of education, social habits etc and the other section comprised of knowledge, attitude & perceptions of participants towards analgesic use.

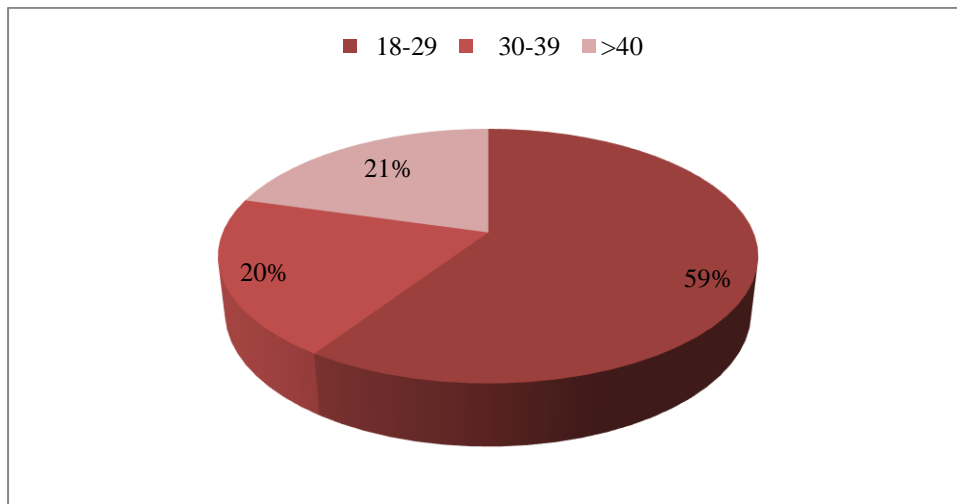
The questionnaire was given to study participants belonging to various departments. The questionnaire was prepared in English language. A brief explanation was given to study participants about the nature and objective of study and necessary instructions. Total of 209 respondents participated in the study. The questionnaire was distributed to the respondents and the results were recorded. Data was analysed using MS Excel.

### **RESULTS**

[Table 1: AGE OF THE STUDY PARTICIPANTS](#)

<b>Variable</b>	<b>Number (n)</b>	<b>Percentage (%)</b>
<b>Age</b>		
<b>18-29</b>	124	59%
<b>30-39</b>	42	20%
<b>&gt;40</b>	43	21%

**Graph 1: AGE OF THE STUDY PARTICIPANTS**

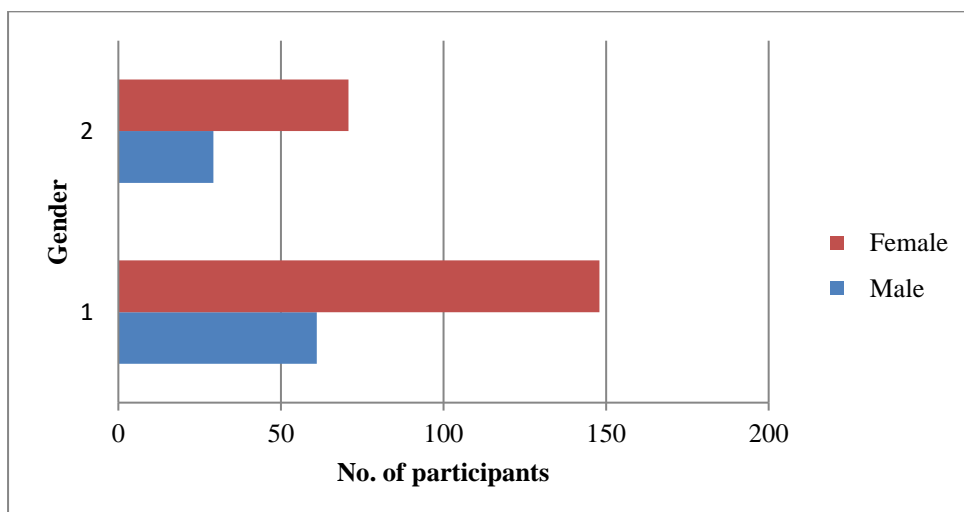


The respondents in our survey were from 18 to over 40 years of age. Approximately 59% of those polled were between the ages of 18 and 29, 20% were between the ages of 30-39, and 21% were >40 years old.

**Table 2: GENDER OF THE STUDY PARTICIPANTS**

Gender	Frequency	Percentage (%)
Male	61	29%
Female	146	71%

**Graph 2: GENDER OF THE STUDY PARTICIPANTS**

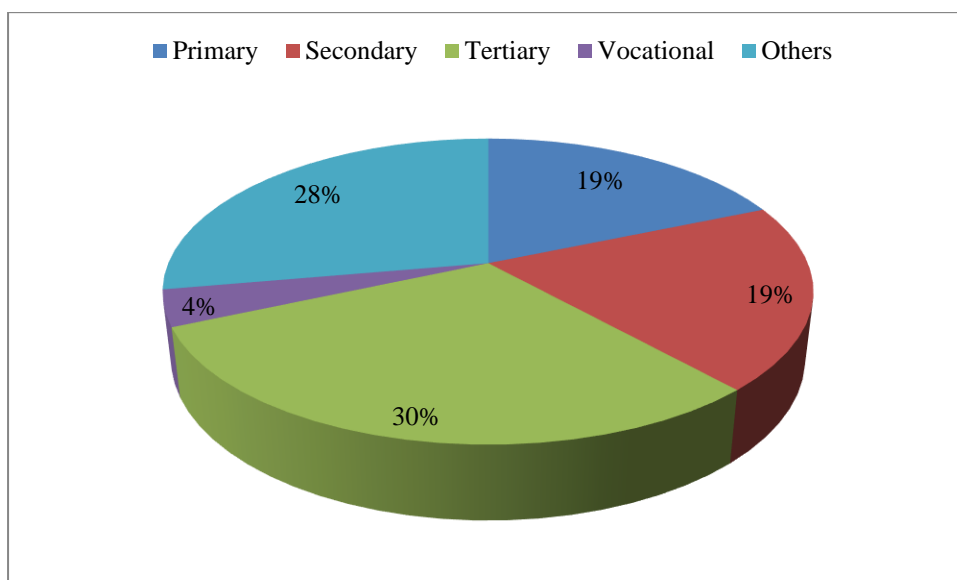


Out of 209 respondents, majority of respondents were females (71%) and (29%) were males.

**Table 3: LEVEL OF EDUCATION OF STUDY PARTICIPANTS**

Level of education	Frequency	Percentage (%)
Primary	39	19%
Secondary	41	19%
Tertiary	93	30%
Vocational /technical	8	4%
Other	58	28%

**Graph 3: LEVEL OF EDUCATION OF STUDY PARTICIPANTS**

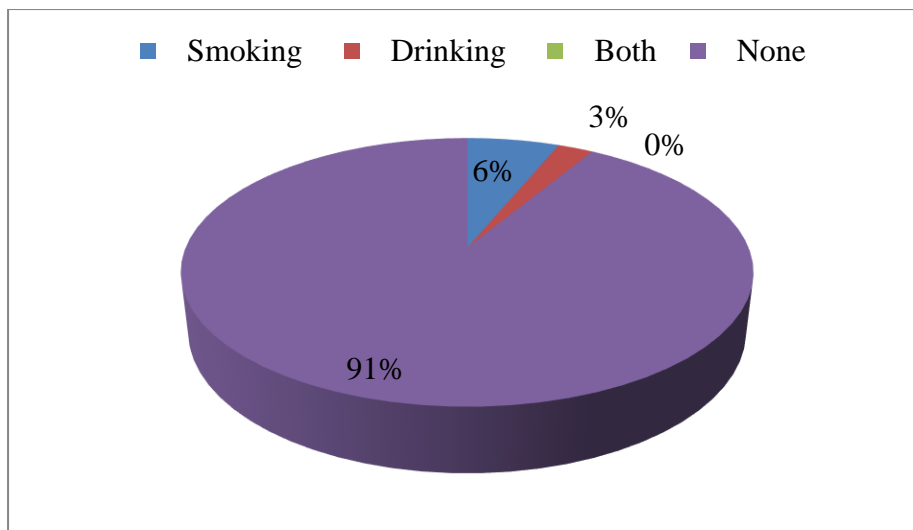


The level of education of study participants reported to be primary (19%), secondary (19%), tertiary (30%), vocational (4%) and other (28%).

**Table 4: SOCIAL HABITS OF STUDY PARTICIPANTS**

Social habits	Frequency	Percentage (%)
Smoking	13	6%
Drinking	5	3%
Both	0	0
None	191	91%

**Graph 4: SOCIAL HABITS OF STUDY PARTICIPANTS**

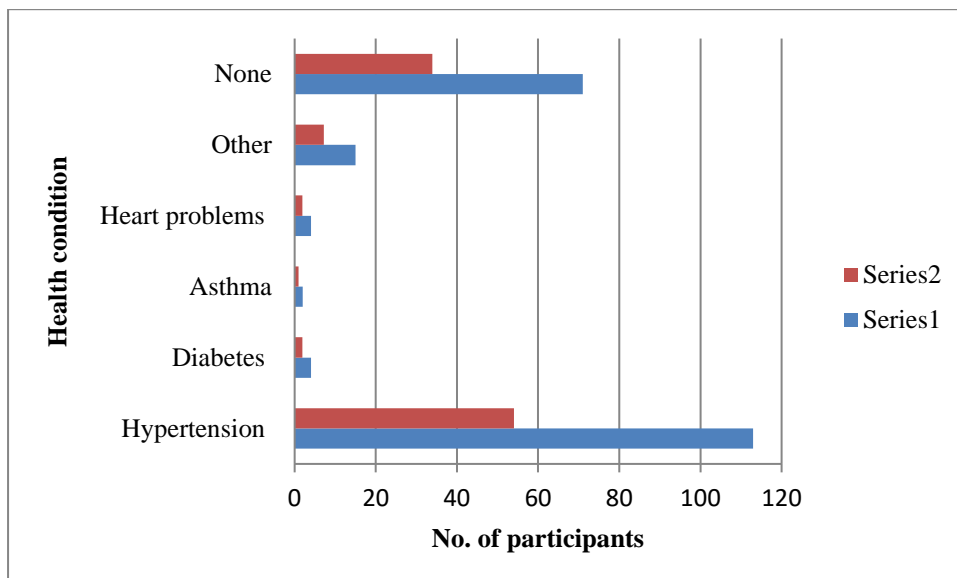


The majority of respondents participating in the study had no social habits (91%) while a very small proportion of respondents had social habits such as smoking (6%) and drinking (3%).

**Table 5: HEALTH CONDITION OF STUDY PARTICIPANTS**

Any health condition	Frequency	Percentage (%)
Hypertension	113	54%
Diabetes	4	2%
Asthma	2	1%
Heart problems	4	2%
Other	15	7%
None	71	34%

**Graph 5: HEALTH CONDITION OF STUDY PARTICIPANTS**



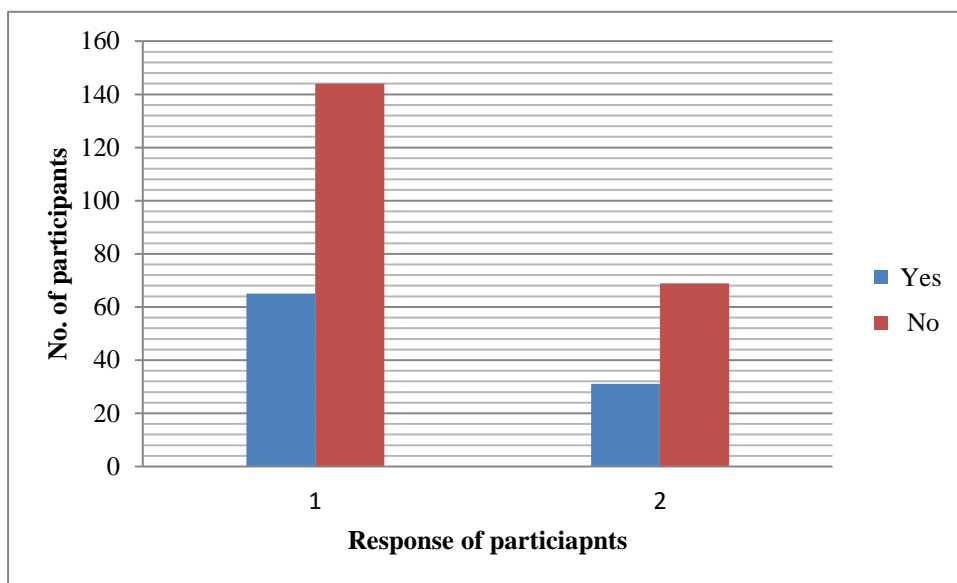
About 54% of respondents had a history of hypertension followed by diabetes (25), asthma (1%), heart problems (2%), other health conditions (7%) while the next major proportion of respondents (34%) didn't have any health condition.



**Table 6: DO YOU KNOW THE CORRECT DOSE OF ANALGESIC**

Do you know the correct dose of analgesic?	Frequency	Percentage (%)
Yes	65	31%
No	144	69%

**Graph 6: DO YOU KNOW THE CORRECT DOSE OF ANALGESIC**

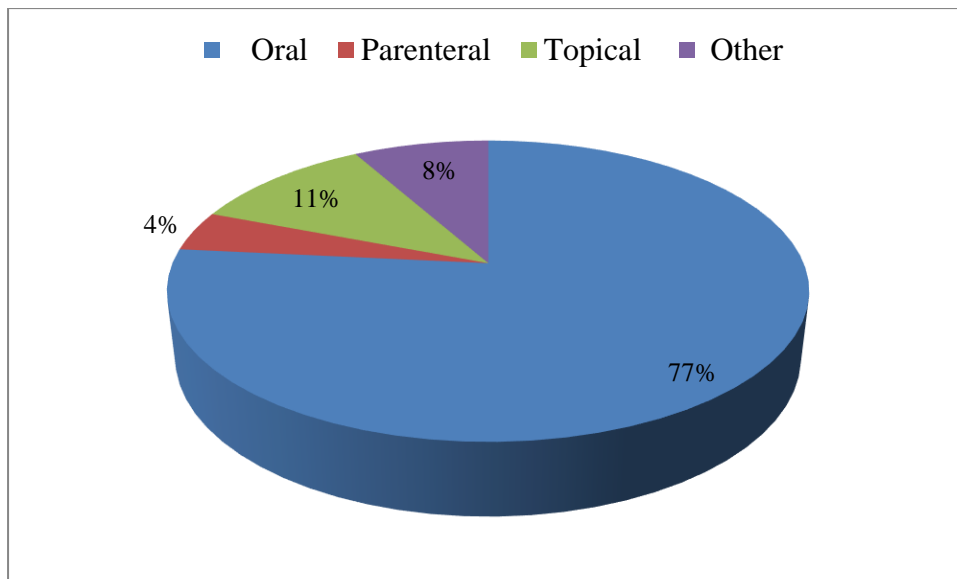


More than half of the respondents (69%) didn't know the correct dose of analgesic used by them while only 31% knew the correct dose of analgesic.

**Table 7: ROUTE OF ADMINISTRATION OF ANALGESIC**

Route of administration	Frequency	Percentage (%)
Oral	160	77%
Parenteral	9	4%
Topical	23	11%
Other	17	8%

**Graph 7: ROUTE OF ADMINISTRATION OF ANALGESIC**

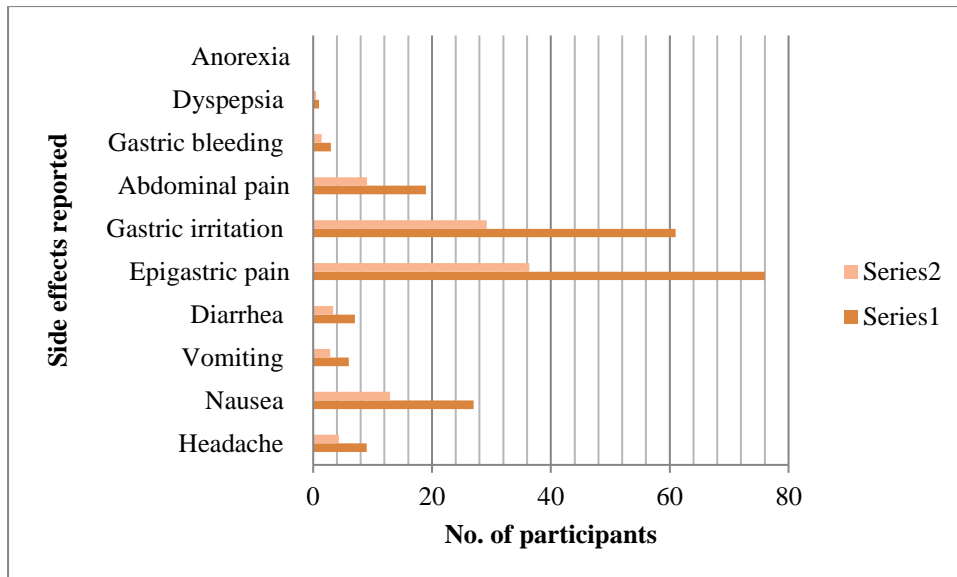


77% of respondents reported oral route of administration followed by topical (11%), parenteral (4%) and other (8%).

**Table 8: ANY UNWANTED/SIDE EFFECTS EXPERIENCED AFTER ANAGESIC USE**

After taking medicine, did you suffer from following unwanted effects of drugs?	Frequency	Percentage (%)
Headache	9	4%
Nausea	27	13%
Vomiting	6	3%
Diarrhea	7	3%
Epigastric pain	76	36%
Gastric irritation	61	29%
Abdominal pain	19	9%
Gastric bleeding	3	1%
Dyspepsia	1	0.4%
Anorexia	0	0

**Graph 8 : ANY UNWANTED/SIDE EFFECTS EXPERIENCED AFTER ANALGESIC USE**

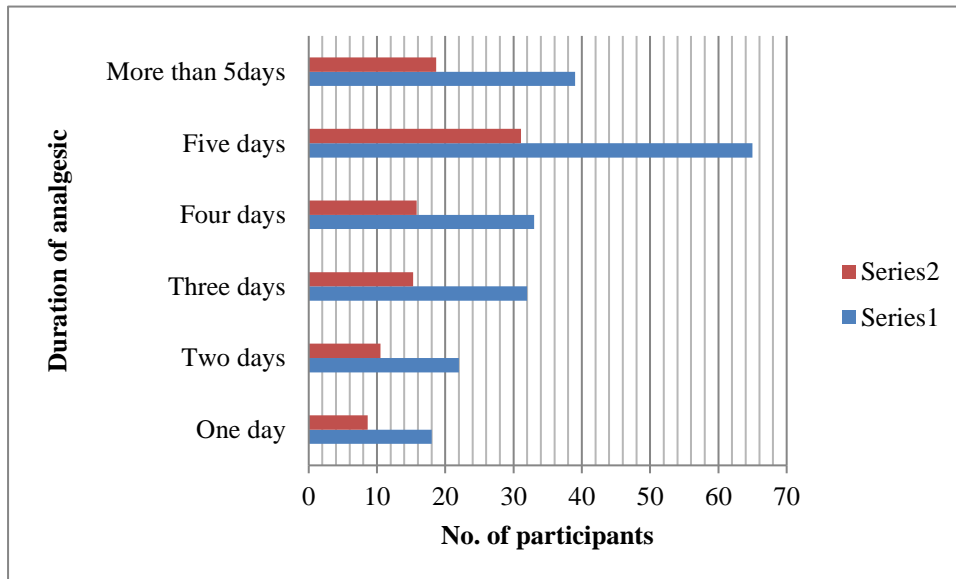


Majority of respondents reported epigastric pain as major side effect (36%) followed by gastric irritation (29%) and nausea (13%). Other deleterious outcomes reported in small proportions including abdominal pain (9%), headache (4%), diarrhea (3%), vomiting (3%), gastric bleeding (1%) and dyspepsia (0.4%).

**Table 9: DURATION OF ANALGESIC USE**

How long you have been taking the analgesic?	Number(n)	Percentage (%)
One day	18	9%
Two days	22	11%
Three days	32	15%
Four days	33	16%
Five days	65	31%
More than 5days	39	19%

**Graph 9: DURATION OF ANALGESIC USE**

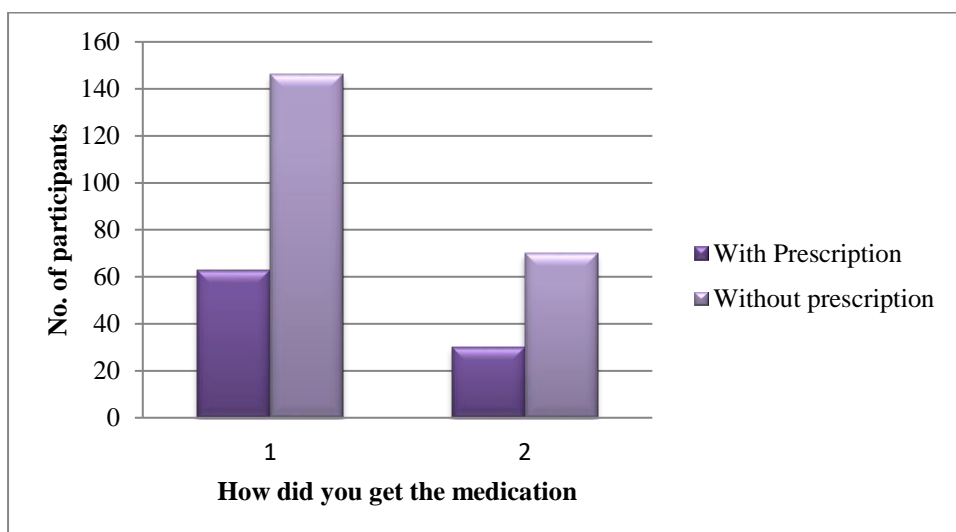


About 31% of respondents took the medicine for 5 days while 19% took the medicine for >5 days followed by 16% for 4 days, 15% for 3 days, 11% for 2 days and 75 for 1day.

**Table 10: HOW DID YOU GET THE MEDICATION**

Question	Number(n)	Percentage (%)
<b>How do take the medication?</b>		
<b>With Prescription</b>	63	30%
<b>Without prescription</b>	146	70%

**Graph 10: HOW DID YOU GET THE MEDICATION**

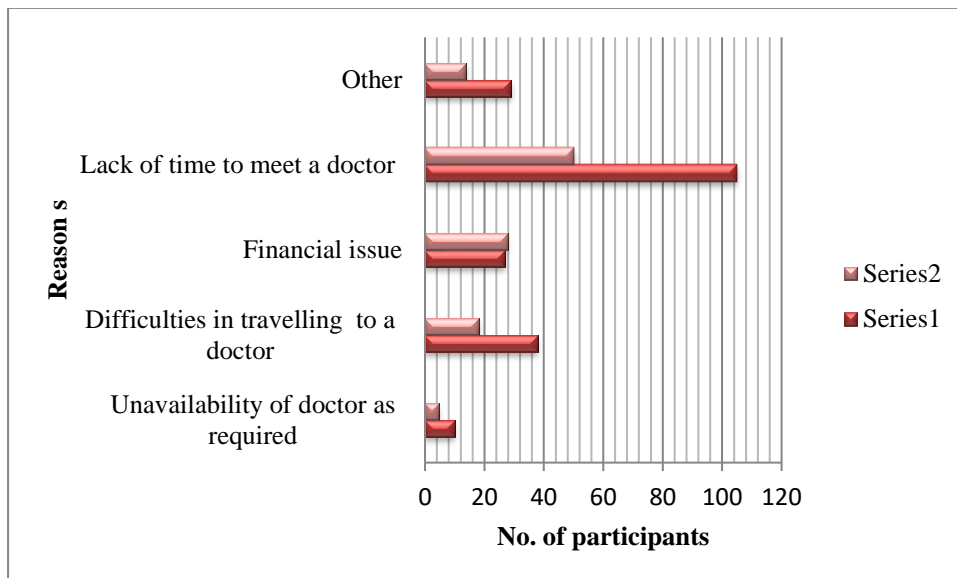


Majority of the study participants (70%) have reported to take the medication without prescription while 30% of them took the medication with prescription.

**Table 11: REASON TO TAKE MEDICINE WITHOUT DOCTOR’S PRESCRIPTION**

What was the reason to take medicines without doctor’s prescription?	Number(n)	Percentage (%)
Unavailability of doctor as required	10	5%
Difficulties in travelling to a doctor	38	18%
Financial issue	27	28%
Lack of time to meet a doctor	105	50%
Other	29	14%

**Graph 11: REASON TO TAKE MEDICINE WITHOUT DOCTOR’S PRESCRIPTION**

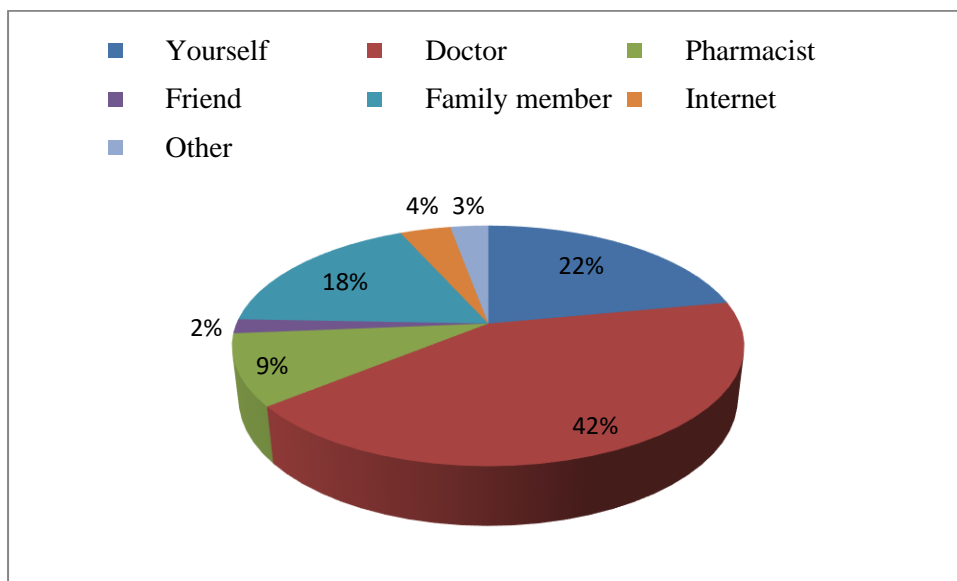


Majority of respondents (50%) have reported ‘Lack of time to meet the doctor’ as a reason to take the medication without prescription, followed by other reasons such as financial issue (28%), difficulties in travelling to a doctor (18%), unavailability of doctor as required (5%) and others (14%).

**Table 12: WHO INFLUENCED YOU TO TAKE THE MEDICINE**

Who influenced you to take the medicine?	Number(n)	Percentage (%)
Yourself	46	22%
Doctor	88	42%
Pharmacist	20	9%
Friend	4	2%
Family member	37	18%
Internet	8	4%
Other	6	3%

**Graph 12: WHO INFLUENCED YOU TO TAKE THE MEDICINE**

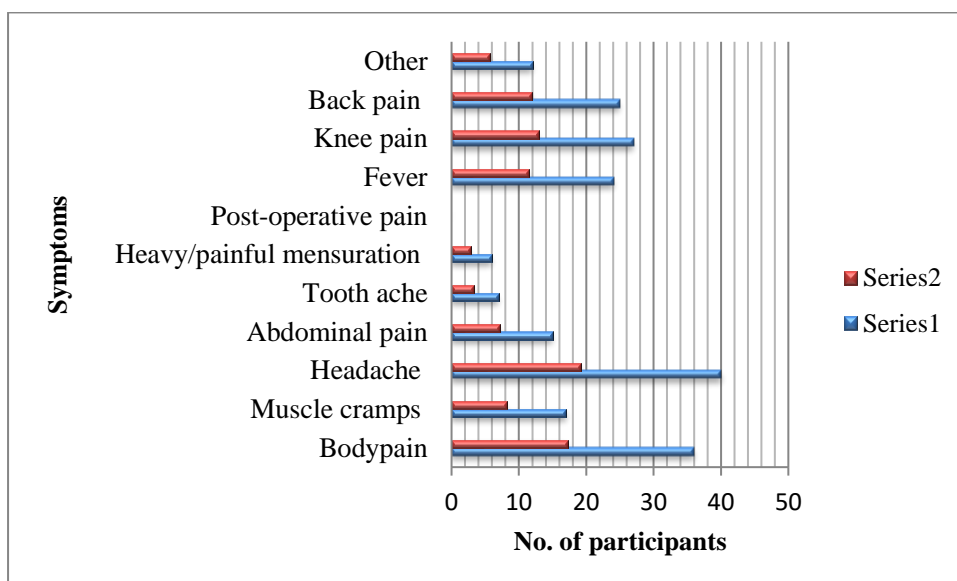


Majority of respondents (42%) have reported to take the medication under doctor’s influence while the next larger proportion of respondents (22%) have reported to take the medication by themselves, followed by other influences such as family member (18%), pharmacist (9%), internet (4%), friends (2%) and other (3%).

**Table 13: REASON/SYMPTOMS FOR TAKING THE MEDICATION**

What was/were your symptoms?	Number(n)	Percentage (%)
Body pain	36	17%
Muscle cramps	17	8%
Headache	40	19%
Abdominal pain	15	7%
Tooth ache	7	3%
Heavy/painful menstruation	6	3%
Post-operative pain	0	0
Fever	24	13%
Knee pain	27	12%
Back pain	25	12%
Other	12	6%

**Graph 13: REASON/SYMPTOMS FOR TAKING THE MEDICATION**

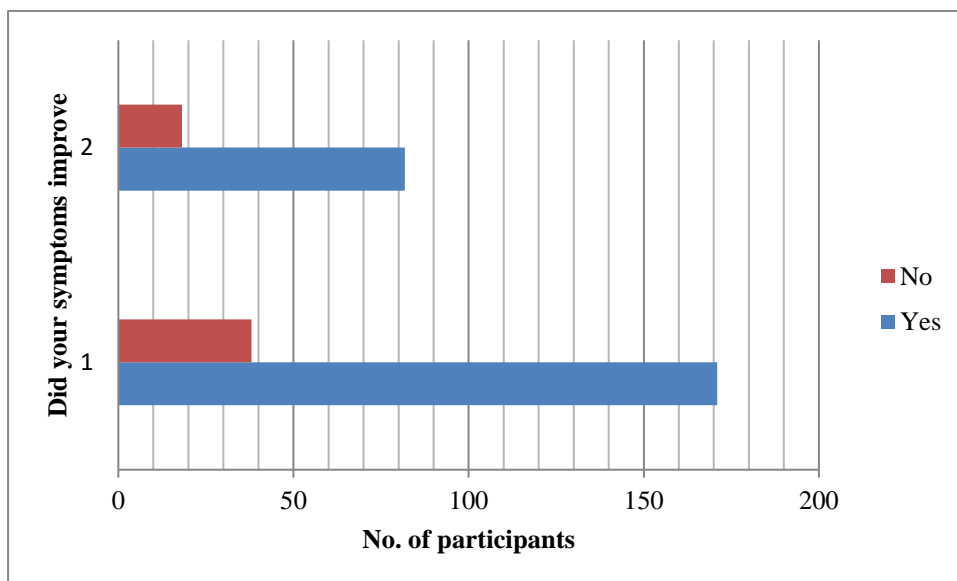


About 19% of respondents took the analgesic for relief from headache, 17% for body pain, 13% for fever, 12% for knee pain and back pain, 8% for muscle cramps, 7% for abdominal pain, 6% for other symptoms and 3% for tooth ache and painful menstruation.

**Table 14: DID THE SYMPTOMS IMPROVE WITH THE MEDICINE**

Was/were the symptoms improved with medicine?	Number(n)	Percentage (%)
Yes	171	82%
No	38	18%

**Graph 14: DID THE SYMPTOMS IMPROVE WITH THE MEDICINE**



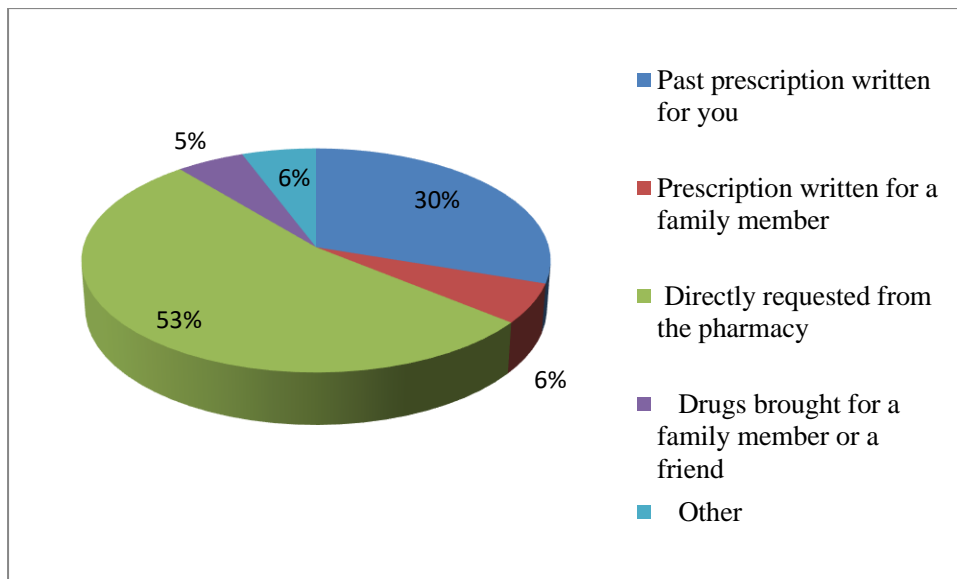
82% of respondents have reported to experience an improvement in their symptoms upon using the medication while 18% did not.

**Table 15: SOURCE OF OBTAINING MEDICINE**

How did you get the medicine?	Number(n)	Percentage (%)
Past prescription written for you	63	30%
Prescription written for a family member	12	6%
Directly requested from the pharmacy	111	53%
Drugs brought for a family member or a friend	11	5%
Other	12	6%



**Graph 15: SOURCE OF OBTAINING MEDICINE**

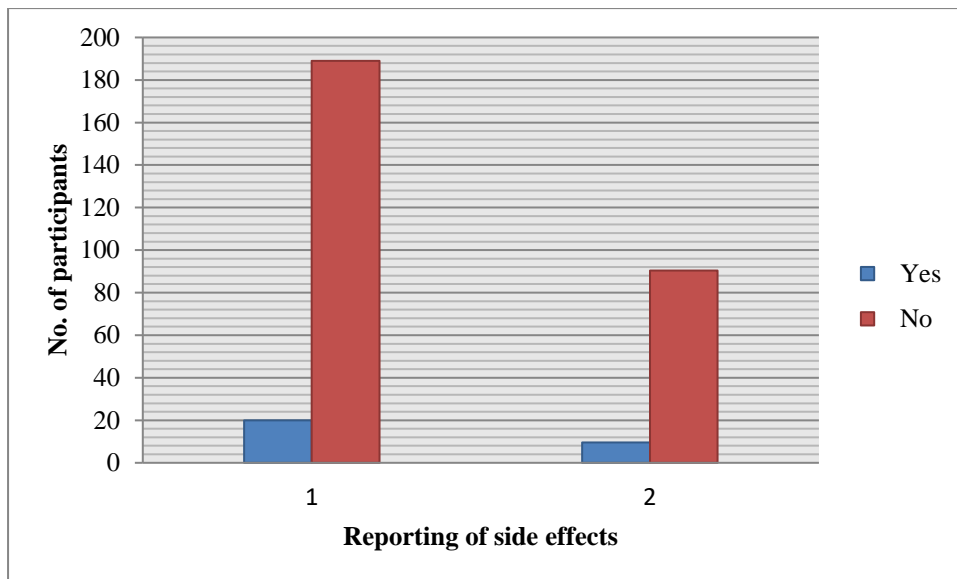


Majority of the respondents (53%) got the medication by directly requesting at the pharmacy, followed by 30% of them taking medications from past prescription written for them, 6% prescription written for a family member, 6% drugs brought for a family member or friend and 5% other reasons.

**Table 16: REPORTING OF SIDE EFFECTS**

If you have experienced any side effects, did you report to any health care professional?	Number(n)	Percentage (%)
Yes	20	10%
No	189	90%

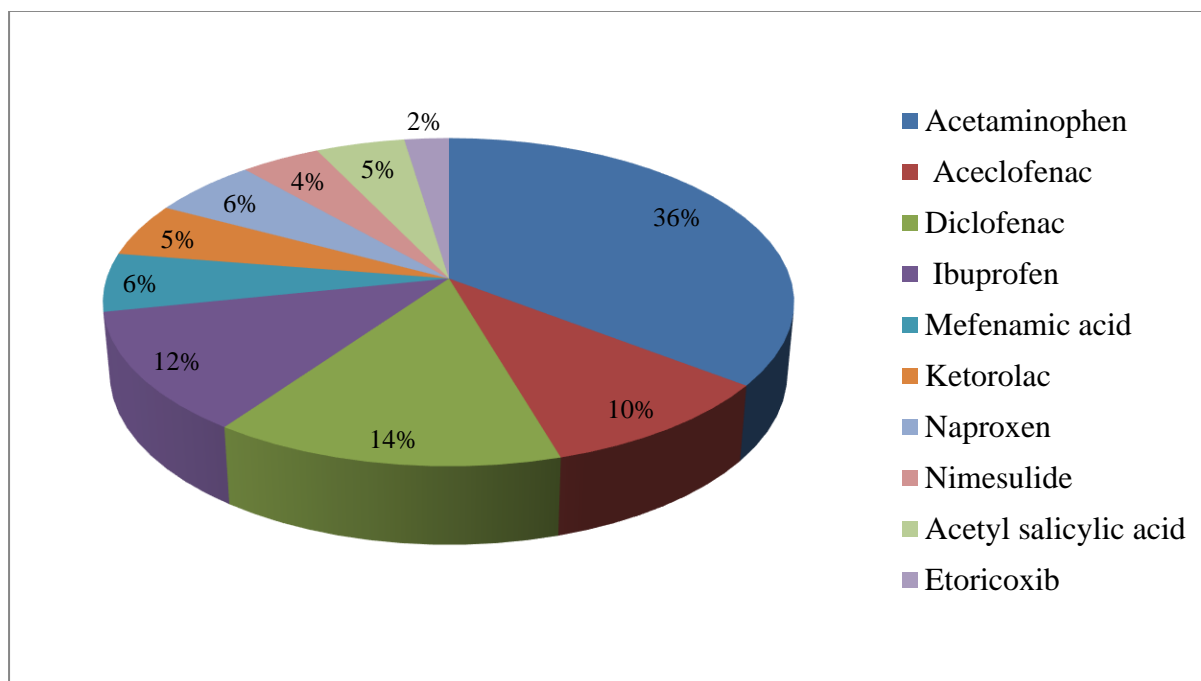
**Graph 16: REPORTING OF SIDE EFFECTS**



The side effects were not reported by 90% of respondents to their health care provider.

**Table 17: MOST COMMONLY USED ANALGESIC**

S.No.	NAME OF ANALGESIC	Number (n)	Percentage (%)
1.	Acetaminophen	74	36%
2.	Aceclofenac	21	10%
3.	Diclofenac	30	14%
4.	Ibuprofen	25	12%
5.	Mefenamic acid	12	6%
6.	Ketorolac	11	5%
7.	Naproxen	12	6%
8.	Nimesulide	9	4%
9.	Acetyl salicylic acid	10	5%
10.	Etoricoxib	5	2%

**Graph 17: MOST COMMONLY USED ANALGESICS**

Acetaminophen was found to be the most commonly used analgesic (36%), followed by Diclofenac (14%), Ibuprofen (12%) and Aceclofenac (10%). Other NSAIDs used in small proportions were Mefenamic acid & Naproxen (6%), Ketorolac & Acetyl salicylic acid (5%) and least used was Etoricoxib (2%).

## DISCUSSION

Total of 209 respondents participated in our research. Our study reveals that females (71%) use more analgesics when compared to males (29%), as seen in a previous study conducted in Norway. In a recent study which was conducted in Saudi (2007) it was found that out of 504 complete questionnaires, majority of respondents were female (69%) and (31%) were male.<sup>[4]</sup>

Majority of the research participants (59%) were young adults which indicates that younger population is more prone to OTC analgesic use when compared to other age groups. A survey in Saudi Arabia (2017) showed that the most OTC drugs users are the young population which agrees with a study conducted in Norway.<sup>[4,6]</sup> About 30% of respondents in our study have completed tertiary level of education.

In our research, the patients who were aware of correct dose of analgesic being used was only 31% and similarly more than a half reportedly took the medication without prescription, indicating that most patients are of opinion that all OTC analgesics can be taken without consulting the doctor and taking these drugs won't cause any adverse effects.

This attitude can be changed by educating patients about the undesirable effects of long term use of analgesics and related complications by health care providers and pharmacists. Acetaminophen was the most frequently used analgesic followed by Aceclofenac, Diclofenac and Ibuprofen. Therefore we conclude that NSAIDs were most commonly used analgesics when compared to opioids. Majority of patients in this study received analgesics via oral route which lead to poor compliance towards self-administration of the analgesics. This also suggests that majority of people prefer oral route as their major route for administration of drugs due to lack of proper knowledge even though topical route can also be effective in providing relief as well as has fewer side effects. Our study reveals that majority of the study participants took the medication for common symptoms such as headache, body ache and fever. Previous study conducted in Saudi Arabia (2017) revealed that maximum patients used analgesics for reasons such as headache, fever & toothache.<sup>[4]</sup> In our research, duration of analgesic use was five or more than five days. A study in Thai population showed that more than half of participants (70%) used NSAIDs consistently.<sup>[5]</sup>

The most reported side effects in our study was epigastric pain (36%) followed by gastric irritation (29%). This suggests that though the respondents have experienced side effects upon using the drug, they continue to use the medication without prescription until their symptoms have resolved. Hence it can be suggested that the lack of knowledge and proper counselling by the pharmacists regarding the safety of analgesic use may lead to inappropriate use of these drugs by the general public. Majority of respondents (50%) have reported 'Lack of time to meet the doctor' as a reason to take the medication without prescription which suggests that heavy patient flow at the hospitals might be a reason for self medication among the patients. In our study, the respondents preferred doctor as the top source of information and internet was ranked as the lower trusted source. These findings were similar to a study conducted in New Zealand.<sup>[7]</sup> Hence the health care professionals can educate the patients about the safe usage of analgesics. A survey in Iran revealed that the most common source of information was friends and family or advice from other people (54.7%) for the respondents. Our study also found that 90% of study participants didn't report the side effects to their health care provider which suggests that there might be a possibility of low communication between the patients and their health care provider.

NSAIDs such as ibuprofen, naproxen, diclofenac as well as celecoxib, etoricoxib are prescribed in hospitals though elderly population believed that there is increased effectiveness of OTC medications if they are combined with prescription medicines.

This attitude can be changed by educating the public about the after effect of certain drug - drug interactions, for example NSAIDs and Warfarin. Our study reveals that public preferred the pharmacies as the source for obtaining the drugs as these OTC medications can be bought easily from the pharmacies without prescription. Therefore pharmacists can play a key role in educating the public regarding the deleterious outcomes related to the drug abuse, non pharmacological and pharmacological alternatives available to symptom relief.

Based on the outcomes obtained from our study, we suggest to promote awareness in public about rational use of analgesics to avoid unwanted side effects and improve the quality of life.

## **CONCLUSION**

Our research reveals that females use more analgesics when compared to males and were not aware of correct dose of analgesics. Maximum proportion of the research participants was young which indicates that younger population is more prone to OTC analgesic use and were unaware of risks associated with NSAIDs use. Majority of patients use analgesics for headache, body pain and fever. Frequently stated reason for self-use of analgesics by the participants was 'Lack of time to meet the doctor' and the major proportion of respondents acquired the medication by directly requesting at the pharmacy. The most ordinarily used analgesic drugs were: Acetaminophen, followed by Aceclofenac, Diclofenac and Ibuprofen. In conclusion, substantial efforts are needed to raise the level of awareness of the public and basic aspects of drug use. Health care experts & pharmacists should advise the patients about the inappropriate use and adverse effects, which may reduce the increased risk associated with NSAIDs use.

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