IJPSR (2014), Vol. 5, Issue 2 **(Research Article)**

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 27 September, 2013; received in revised form, 27 October, 2013; accepted, 15 January, 2014; published 01 February, 2014

ASSESSMENT OF C.S.J.M. UNIVERSITY CAMPUS STUDENTS AWARENESS AND ATTITUDE TOWARDS ANALGESICS (NSAIDs)

Ajay Kumar Gupta*, Arvind Kumar Jaiswal and Satyendra Kumar

University Institute of Pharmacy, C.S.J.M. University, Kanpur- 208 024, Uttar Pradesh, India

Keywords:

Analgesics, NSAIDs, Qualitative research, Kanpur, north India, ADRs

Correspondence to Author:

Dr. Ajay Kumar Gupta

University Institute of Pharmacy, C.S.J.M. University, Kanpur-208024, Uttar Pradesh, India

E-mail: ajaympgupta@yahoo.com

ABSTRACT: The present study was performed with an objective to assess knowledge, awareness, frequency indication and pattern of uses and attitude towards Non-Steroidal anti-inflammatory drugs (NSAIDs) among the scholars. In this survey based qualitative research, 591 respondents from the C.S.J.M. University campus, Kanpur, were screened out during the changing weather of north India (January–February 2013) with the help of Questionnaire. All the respondents were having the experience of pain- 61.08% headache, 31.64% backache, 21.31% joint pain, 16.36% menstrual pain, 13.19% sport or exercise related pain; and as analgesic the aspirin and paracetamol with or without ibuprofen were found to be most commonly used drugs among 63.75% NSAIDs user as pain reliving remedy. 51.6% had taken drug multiple times in a day while 28.93% of them took multiple doses at a time. 53.3% of scholars were unaware about such irrational pattern and adverse effects of these NSAIDs, although they were pursuing higher studies. While 46.7% scholars, who were aware about some of the ADRs of NSAIDs were belonging to pharmacy (78.61%) and paramedical department. Educational intervention changed dramatically the attitude of participants towards the drug use, as reflected by their acceptance (87.64%) of clinical pharmacist's services.

INTRODUCTION: "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage"- *International Association for the Study of Pain*. Sometimes pain also arises in the absence of any detectable stimulus, damage or disease [1]. Pain may be sharp or dull. It may come and go, or it may be constant.

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.5(2).612-18

Article can be accessed online on: www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.5(2).612-18

Pain can be helpful in diagnosing a problem. Without pain, human might seriously hurt themselves without knowing it, or they may not realize that they have a medical problem that needs treatment. Analgesics are medicines that reduce or relieve headaches, sore muscles, arthritis or any number of other aches and pains. Non-steroidal anti-inflammatory drugs (NSAIDs) are one of the most commonly used classes of medications worldwide. NSAIDs are available in both prescription and over-the-counter (OTC) forms [2]. Because of their widespread availability, patients or people may take both forms at the same time, either because of inadequate pain relief or because they are unaware that they are taking two drugs in the same therapeutic class.

Further, in economically deprived countries most episodes of illness are treated by self-medication. In a number of developing countries many drugs are dispensed over the counter without medical supervision. In this case, self-medication provides a lower cost-alternative for people who cannot afford the cost of clinical services [3].

It is well recognized that taking multiple NSAIDs can lead to mild to severe problems. Adverse drug reactions experienced may vary with person to person and these problems could be minimized by raising people's awareness of the indications, contraindications and side-effects of these drugs. Gastrointestinal toxicities in conjunction with cardiovascular, hepatic, renal complications etc are reported to increase continuously from NSAIDs, by both OTC and prescription [4].

Despite the widespread use of OTC NSAIDs, there is little information on the characteristics of the population that use OTC and their attitudes toward an understanding of these drugs and their potential toxicity.

Therefore, in the present qualitative study it was decided to assess campus students of C.S.J.M. University of Kanpur city regarding their attitude and awareness towards these pain relievers i.e. NSAIDs.

Study Area: Kanpur district is situated in central region of Uttar Pradesh. It is situated between 25° 26'N and 26° 58' N longitude and 79° 31' and 80° 34' E latitude. Kanpur is also one of the favorable destinations of education and research in India as it is home to several globally recognized institutions and universities. Ganga, Esan, Pandu, Sengur, Noon, Atak are main rivers of Kanpur. The district lies on a plain, varied only by a few gentle undulation and slopes, sometimes abrupt, which lead down to the river valleys. The recorded elevation is between 130-150 Mt. above sea level[5, 6].

METHODOLOGY: A random cross-sectional study was conducted in the various departments/ institutes located in the campus of C.S.J.M. University, Kanpur and the questionnaire based survey in the university campus formed the basis of this qualitative study for getting a better understanding through firsthand experience, truthful reporting, and quotations of actual conversations. The questionnaire consisted of open- and closed-ended questions in the English language.

The present study was performed during the changing weather of north India i.e. from January 2013 to February 2013. A total of 591 adult participants (both male and female) were screened from the department of Bioscience & Bio-technology, Business Management, Engineering & Technology, Fine Arts & Painting, Library Information & Science, Paramedical Science and Pharmacy [7].

The purpose of this survey based study was to determine the perceptions of NSAID users towards the effectiveness and safety, and knowledge regarding side effects and medical complications of NSAIDs via direct interaction and filling questionnaire. NSAID users are defined as having used prescription or OTC analgesics (to relieve any kind of pain such as pain, swelling, and/or inflammation in the joints/muscles, back pain, cramps, headaches, sport or exercises induced pain, menstrual pain and the like wise).

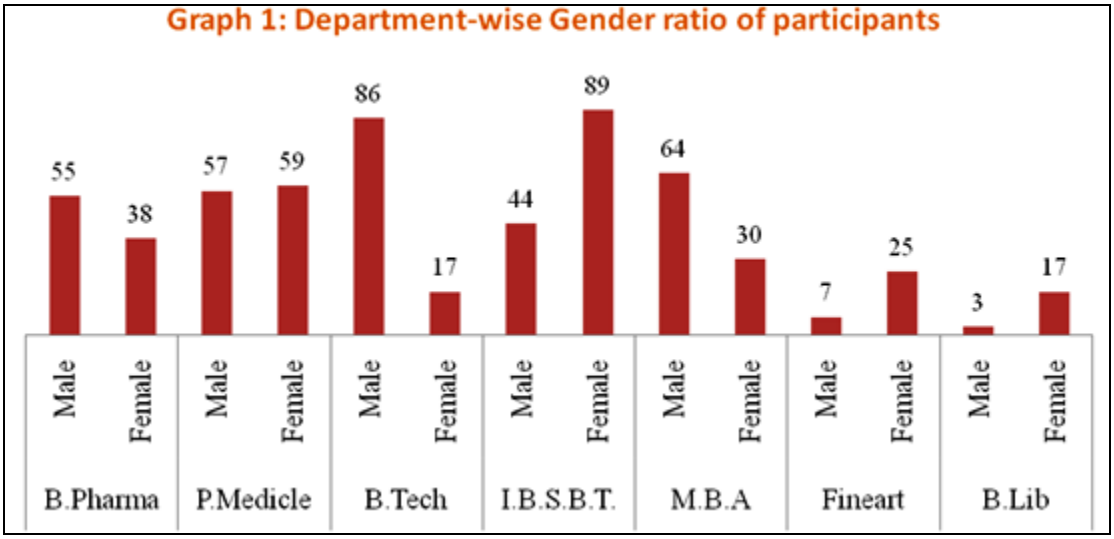
The respondents completed a self-administered questionnaire and one of the researchers was present during completion in case the respondents required assistance. On completion, the data were reviewed, organized, tabulated and critically analyzed. Descriptive analysis was conducted by calculating means and proportions for continuous and discrete data. Some of the questions had multiple options to choose from, while some of description could not be the summarized as count therefore total of percentage is not always 100% [2, 8].

RESULTS AND DISCUSSION: Participants gender ratio, 53.4% male (n=316) : 46.5% female (n=275), of the present study may be a reflection of country and state's present situation, because as per census 2011, sex ratio in Uttar Pradesh is 912 i.e. for each 1000 male, which is below national average of 940. Even then there is appreciable contribution of university campus females, which is always reflected in the university results and merit. Literacy rate in Uttar Pradesh has seen upward trend and is 67.68% as per 2011 population census.

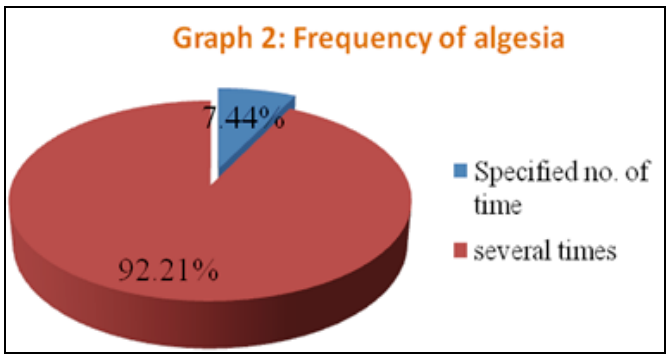
Of that, male literacy stands at 77.28% while female literacy is at 51.36%[9]. The higher ratio of female participants in certain department may due to courses offered; **Table 1 and graph 1**.

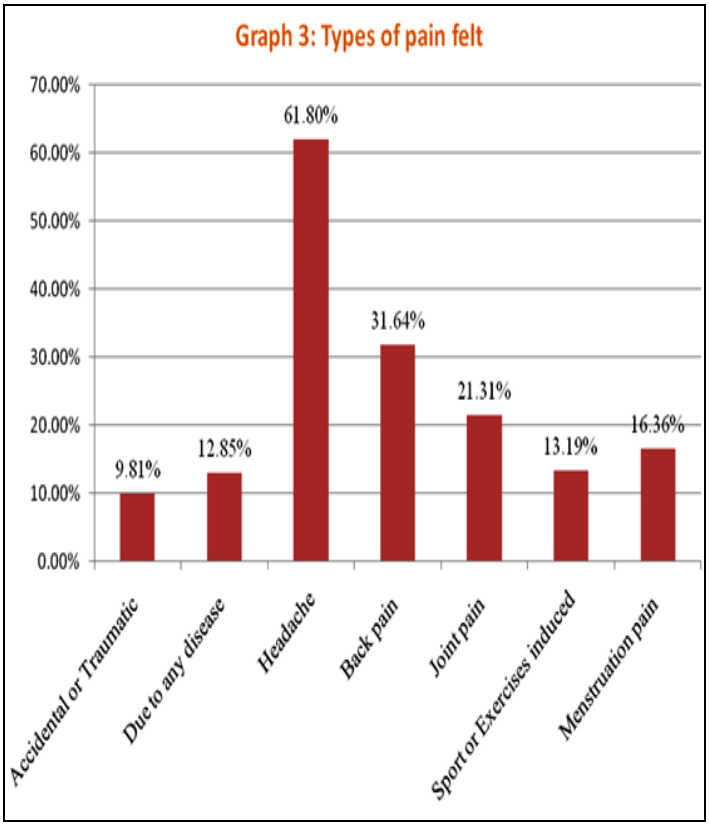
TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS

Department/ Institute	No. of participants	Gender		Age group (in years)	Department-wise % participation
		Male	Female		
B. Pharma	93	55	38	18 - 25	15.73 %
Paramedical	116	57	59	18 - 28	19.62 %
I.B.S.B.T. (Bio-Tech)	133	44	89	18 - 27	22.50 %
B. Tech	103	86	17	18 - 25	17.42 %
MBA	94	64	30	18 - 25	15.09 %
Fine Art	32	07	25	18 - 25	05.41 %
B. Lib	20	03	17	22 - 32	03.38 %



The majority of participants (92.21%) were sufferer of pain at multiple times (**graph 2**), which would be due to hectic/stressful and changing lifestyle, because among the various types of pain felt by respondent - 61.8% headache, 31.64% backache and 16.36% menstrual pain may be the reflection of such lifestyle (**graph 3**). 7.44% of the respondents were found to be able to specify that how many time and for which probable reasons they suffered with pain while the descriptions of remaining 0.35% could not be summarized as count (graph 2).

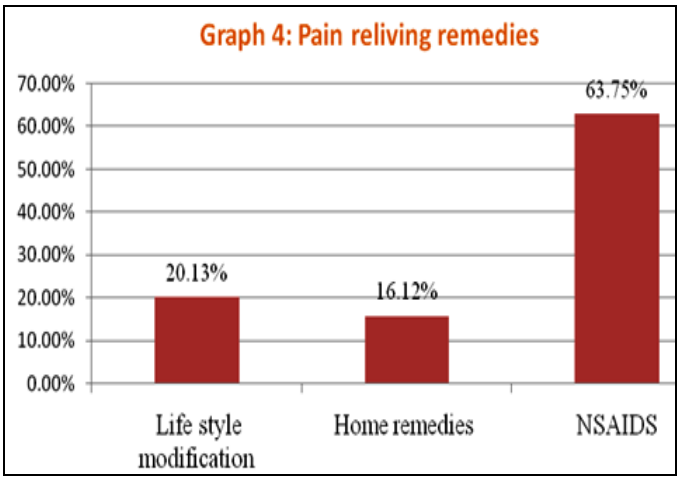


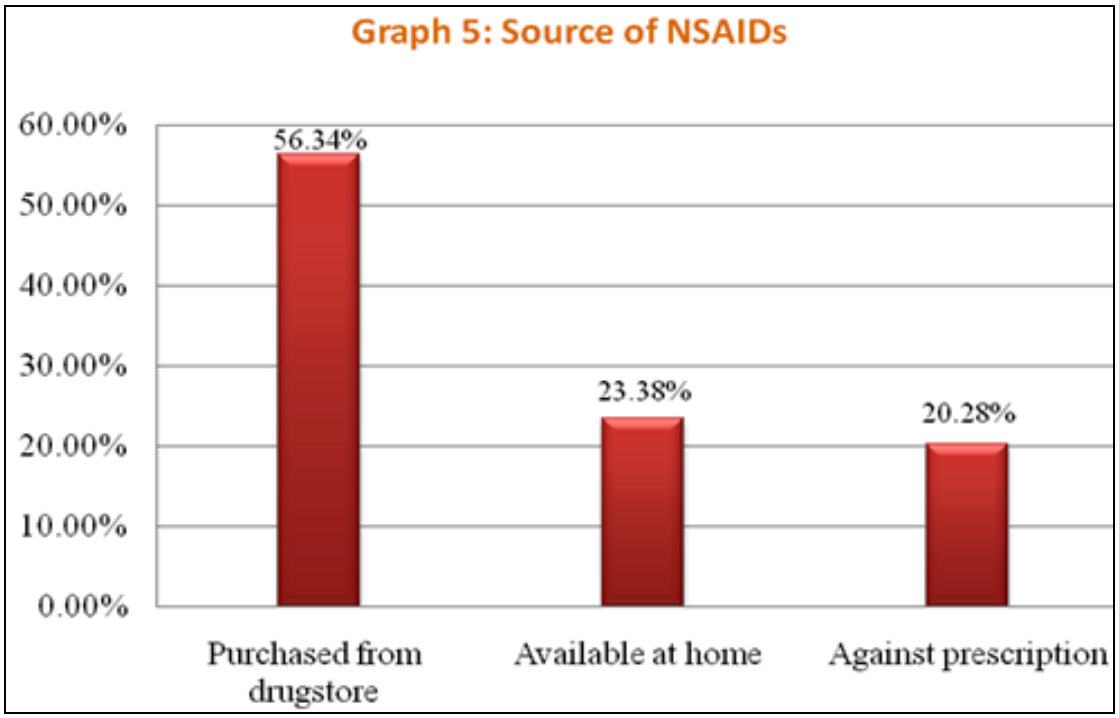


India is well known for its traditional system of medicine and this would be a reason for 16.12% of modern as well as young participants who were found to be using home remedies as pain reliever (**graph 4**). As we live in a time of evidence-based medicine thus traditional and conventional dictums are being challenged on a routine basis and being replaced by scientific practices, therefore, there is a huge contribution i.e. 63.75% of NSAIDs which appeared as major pain reliving remedy.

Lifestyle modification and 'yoga' has great correlation which originated in ancient India [10] and as the present survey has been done among Indian scholars so it could be a reason for remaining 20.13% participants who adopt life style modification as pain reliving remedy for minor/acute pain (graph 4).

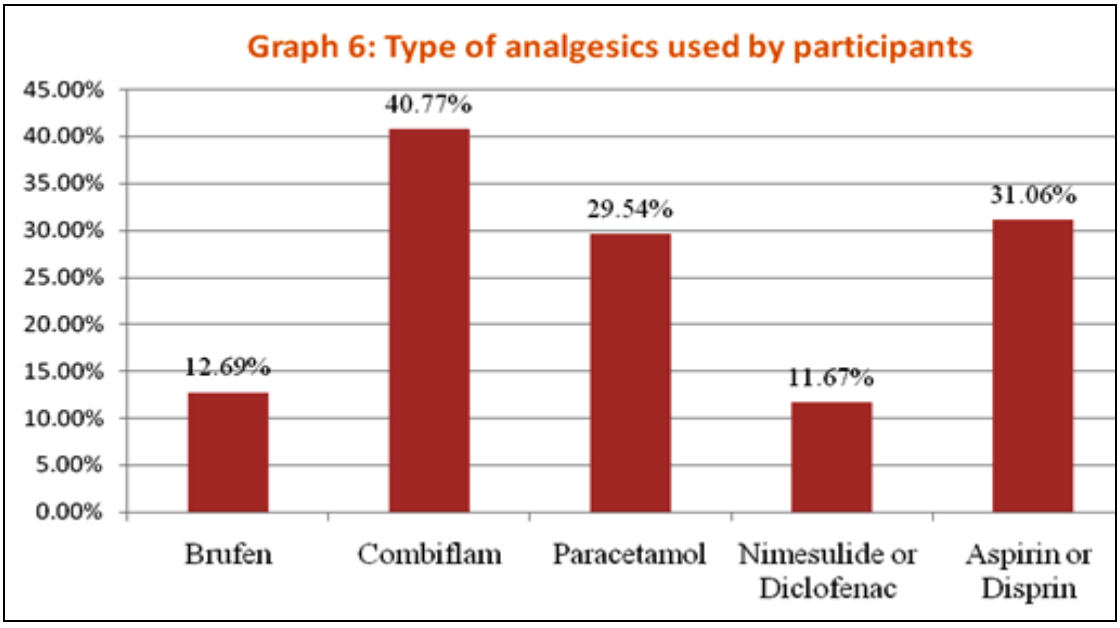
NSAIDs are available as both prescriptive and OTC drugs, so can be purchased from any drugstore and same was found in the results of present study i.e. 56.34% respondents purchased analgesics from drugstores, 23.38% participants accepted their home as source of NSAIDs either as residual drugs or as a result of purposeful storage; and only 20.28% participants said that they had procured the drugs only against the prescription (**graph 5**). These results indicate that majority of participants are practicing self-medication because these drugs are neither recommended nor controlled by a licensed healthcare specialist [3].



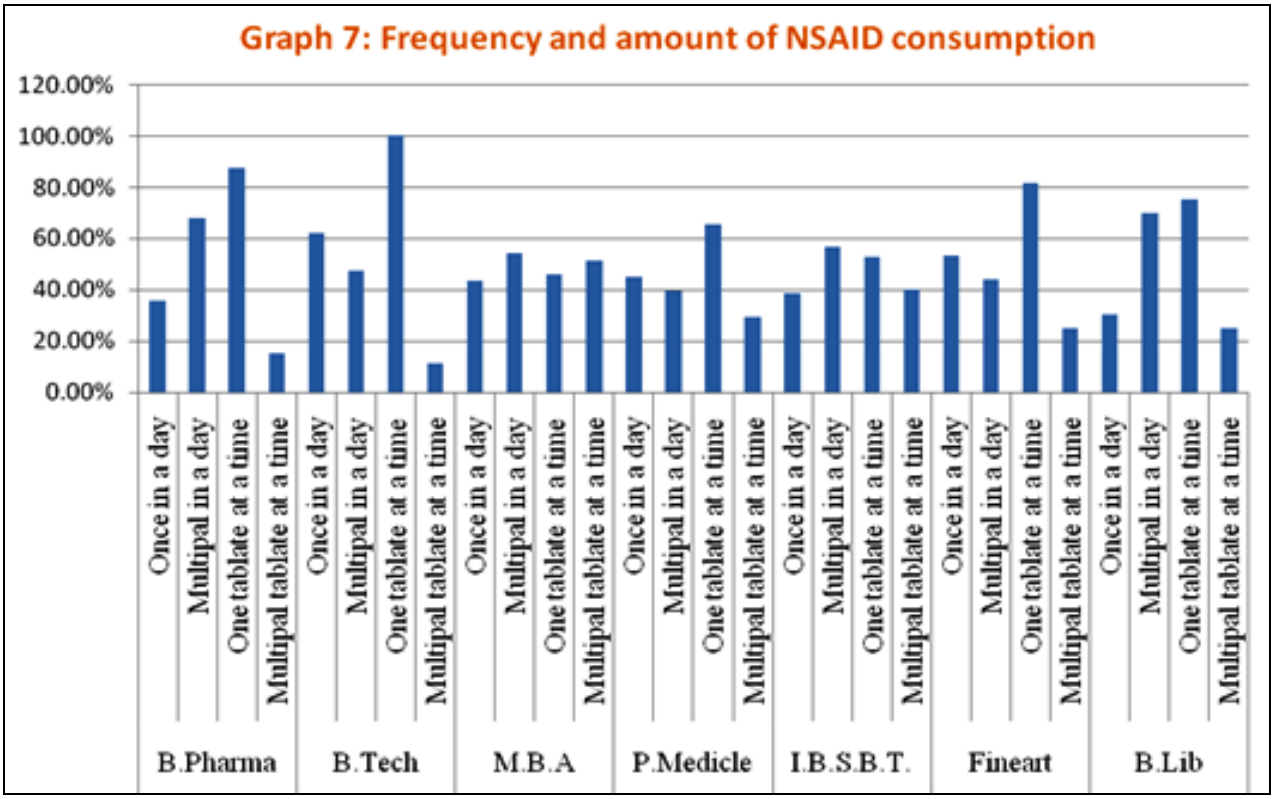


In the present study, OTC drug Combiflam was found to be most common brand (40.77%) used by the scholars, probably not only for its synergistic effect but also for its ability to cure various routine ailments, therefore such brands are prescribed or advised frequently; followed by aspirin/dispirin (31.06%) dispersible tablets formulated for quick analgesic action, but side by side it do have various other effects like cardiovascular effects [11].

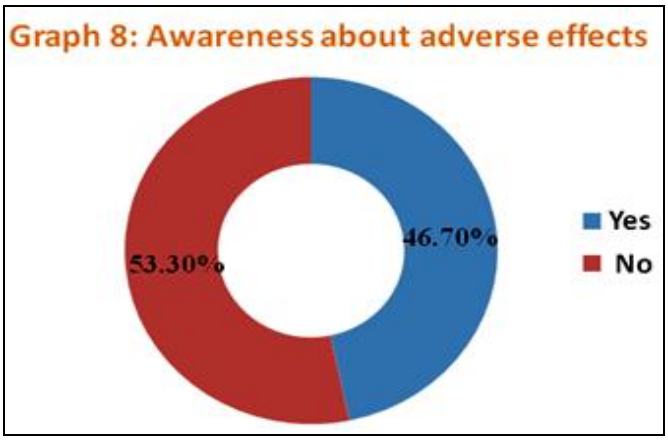
Paracetamol alone contributed for 29.54% (**graph 6**). Here, the role of advertisement to promote the sale of OTC drugs or promotional activities of pharmaceutical industries can also not be ruled out.

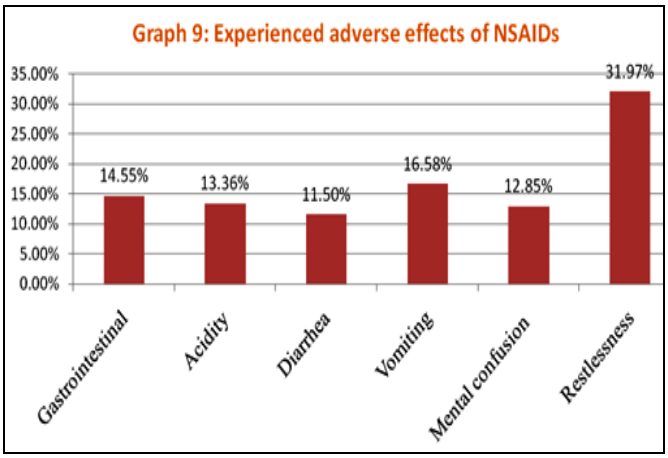


It is the dose which discriminates a drug from poison therefore correct dose and frequency of drug administration is very important. In the present study, there were great variations in the dose and frequency of analgesics, used by the participants to relive the acute pain. Different doses of a drug may also produce difference in the effect, for example low doses of aspirin (75-81 mg/day) produces antithrombotic effect, intermediate doses (650 mg-4g/day) produces analgesic-antipyretic effect while high doses of aspirin between 4 and 8 g/day produces anti-inflammatory effect in rheumatic disorders along with the toxic effects like tinnitus, hearing loss, and gastric intolerance [12]. On average, 51.60% participants admitted use of multiple tablets in a day, which may also include those 20.28% who might be taking medication against prescription; but, 28.93% participants who were found to consuming multiple tablets at a time could never be rational (**graph 7**).



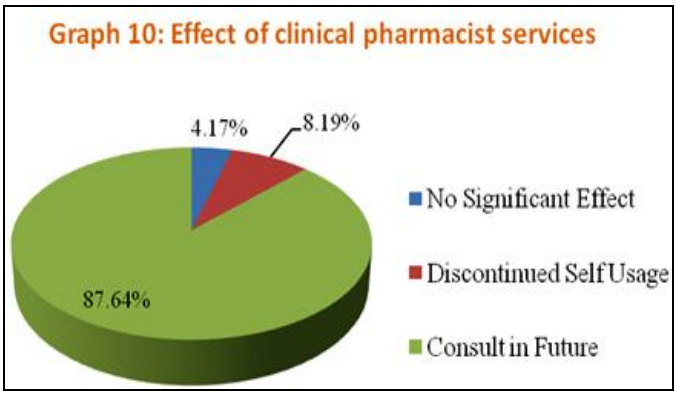
Except anti-inflammatory and analgesic effects, 53.30% scholars were unaware about the adverse effects of NSAIDs (**graph 8**) while in remaining 46.70%, majority of scholars were belonging to pharmacy and paramedical departments. The major experienced adverse effect among the respondents was found to be restlessness (31.97%) followed by non-specified gastrointestinal complications (14.55%) and specified vomiting (16.58%), acidity (13.36%) and diarrhea (11.50%) as shown in **graph 9**. The restlessness, drowsiness, mental confusion etc. are the side effects of NSAIDs due to overdosing [13], which may be either the result of multiple NSAIDs in a day or multiple tablets at a time, as discussed earlier.





The fact came out from the present study is that, the scholars who were not aware about other effects or adverse effects of analgesics, when counseled about potential danger of such medicines, 87.64% participants committed that in future they will consult with the physician or concerned person like clinical pharmacist before taking such medicines; and 8.19% of participants became prepared for discontinuing such irrational self-medication practices.

But, 4.17% participants were found to be real matter of worry because they would like to continue the use of drugs in similar fashion as they were using earlier (**graph 10**); therefore more such educational interventions may require making them aware as well to change their attitude towards such drug uses.



These results indicating a great need of clinical pharmacist in the society, particularly in the developing countries like India, because clinical pharmacist may fill the gap between patients and doctor as well as can optimize the drug use.

CONCLUSION: An OTC drug allows patients to treat their symptoms without having to visit a health care provider. The polypharmacy, overuse, misuse or drug abuse and incorrect use of drugs have the potential to cause serious adverse drug reactions and or drug interactions, though the NSAIDs are safe when used as per the medicals direction.

Findings of the present study are also in support of Wilcox CM *et al* & Gorki T *et al* [4, 14], concluding that there is a high prevalence of NSAIDs consumption, taken frequently inappropriately or irrationally, limited awareness of the effects and side effects, a high rate of non-prescribed use and their use is neither recommended nor controlled by a licensed healthcare specialist. Participant's feedback and their counseling by final year B. Pharm., students as clinical pharmacist concluded that clinicians should question patients about their use of nonprescription analgesics to reduce incidents of drug interactions or adverse events, there is also need to provide education about the appropriate use of such medications and must also be warn of the adverse effects that drugs may provoke.

Here, clinical pharmacist may be good option for improving drug use or to provide better health care services in developing countries, because such counseling are lacking from physicians or at primary health care centre physicians are not assessable or the healthcare specialist are overcrowded with patients.

As per the World Health Organization, the rational use of drugs requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time, at the lowest cost to them and their community. Irrational or non-rational use is the use of medicines in a way that is not compliant with rational use as defined above. The irrational use of drugs - a global phenomenon is also found in the present study, may lead to serious economical and health related consequences. Good nutrition, adequate sleep, conservation of environment and strengthening immune are other things we can do in support and or in addition of rational uses of drugs.

Further, lesser literacy rate especially in females, disturb gender ratio, poor economy, time consuming clinical visits, lesser health care facilities, poor coordination and cooperation among health professionals as team etcetera give more sufferings and less satisfaction to the patients and public.

The clinical pharmacist may be a solution at various stages of above mentioned problems and such facility to patients may also reduce fear of clinics, they can introduce a knowledge getting process during their waiting in health centers as incomplete knowledge about any drug including NSAIDs may result into nightmare as it happened with thalidomide [15]. There is also need to make better policies to sale and buying of drugs along with proper implementation of existing rules and regulations.

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How to cite this article:
Gupta AK, Jaiswal AK and Kumar S: Assessment of C.S.J.M. University campus students awareness and attitude towards Analgesics (NSAIDs). *Int J Pharm Sci Res* 2014; 5(2): 612-18.doi: 10.13040/IJPSR.0975-8232.5(2).612-18