

## PRESCRIPTION TRENDS OF ANALGESIC FOR OUTPATIENTS AT THREE SOUTH-WEST CITIES IN BANGLADESH

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### *Abstract*

Analgesics prescribing by physicians have gained due importance across the globe. The present study is aimed to evaluate the physicians prescribing pattern of analgesics, their usages by outpatients in three cities of Bangladesh. This cross sectional health survey was carried out with a self- designed standard questionnaire by manual data collection over a one month period (09-12-2015 to 10-01-2016) at three adjacent cities Jessore Sadar, Jhikargacha and Chowgacha upazila respectively. A total of 300 prescriptions were collected and 46 local pharmacies were selected for data collection about daily sales of analgesics. The highest prescribed analgesic groups were diclofenac (27%), aceclofenac (24%), ketorolac (16%), paracetamol (17%), naproxen (4%), ibuprofen (3%), etoricoxib (4%), indomethacin (1%) and others (4%). However, among the total prescriptions observed, 60% female patients and 30-45 years aged people were relying completely on prescription to use analgesic medications.

### *Keywords:*

*Analgesics, physician, patient, pharmacies.*

## INTRODUCTION

An analgesic is any member of the group of drugs used to achieve analgesia and relief from pain, but not inflammation, without causing the loss of consciousness. Analgesic drugs act in various ways on the peripheral and central nervous systems [1-3]. The various analgesics are available as over the counter medications and are frequently utilized for the treatment of mild to moderate pain, fever, migraine and tension, headache, osteoarthritis and rheumatoid arthritis, including juvenile rheumatoid arthritis, pain caused by cancer, particularly bone cancer, post-operative pain, trauma, colds, flu, toothaches, and menstrual cramp. Currently, available oral analgesics include acetaminophen, non-steroidal anti-inflammatory drugs (NSAIDs) (ibuprofen and naproxen), and salicylates (aspirin, magnesium salicylate, and sodium salicylate). Topical analgesics include menthol, camphor, capsaicin, and trolamine salicylate. Analgesics are available in both brand and generic formulations in tablets, capsules, gel caps, powders, creams, ointments, suppositories, sprays, and patches [3-6]. However, their chronic use is associated with a well-recognized spectrum of side effects, in particular those involving the gastrointestinal system [8,9,20,23,25] and, as highlighted by the relatively recent withdrawal of certain cyclooxygenase (COX)-2-selective agents (rofecoxib and valdecoxib), the cardiovascular system [7-9]. An estimated 20% to 30% of patients over the age of 65 years take analgesics daily. It is particularly important that this older patient population be educated about the safe use of analgesics because they are more likely to take prescription medications, which could result in drug interactions or contraindications [10-15]. Many doctors in Bangladesh are prescribing analgesics irrationally without taking consideration the clinical test in most cases. Subsequently the patients are not completing the complete dosage regimen of analgesics. Physicians give analgesics to the patients for various reasons pleasing the patients. A high

proportion of patients in some developing countries are treated by untrained practitioners simultaneously with oral and injectable analgesics. So, the study of prescribing pattern of analgesics infers to monitor, evaluate, and suggest modifications in the practitioner's prescription habits so as to make patient care reasonable and effective. It is extremely important that institutions and hospitals should have an analgesics policy and ensure that the best choices are made by individual prescribers. The knowledge about analgesics utilization patterns is necessary for a constructive approach to problems that arise from multiple analgesics usages. Data from the 2005 National Survey on Drug Use and Health demonstrated that 6.4 million (2.6%) people aged 12 or older had used prescription drugs, among them 4.7 million used pain relievers. This was primarily because of an increase in the use of pain relievers, which was 4.1% in 2002 and 4.7% in 2003, 2004, and 2005. In a developing country like Bangladesh, the consumption rate of analgesics is increasing day by day. Bangladesh has made substantial progress in drug manufacturing since the promulgation of 'Drug Control Ordinance-1982' but irrational use, inappropriate prescribing and unjustified self-medication of analgesics often increase the cost of therapy and side effects [16-19]. The aim of this survey based research is to analyze and justify whether analgesics are being prescribed rationally or irrationally for outpatients as well as to indicate the prevalence of most prescribed analgesics, the mostly sold analgesics by using a survey based study in three adjacent geographically vital cities in Bangladesh.

## **MATERIALS & METHODS**

### **Study design, setting and study population**

The present research is a cross-sectional prospective study carried out in three adjacent cities named Jessore Sadar, Jhikargacha and Chowgacha upazila in the district of Jessore under Khulna Division of Bangladesh. The data were collected during 9 December, 2015 to 10 December; 2016. From every patient single prescription was collected & took a snapshot of this prescription & information was collected by conducting meeting with physicians, market promotional officers, workers of pharmacy shops, observing their daily sales of analgesics. In this health survey any patient aged '0' years to over 70 years whom prescribed one or more analgesics at any stage during this study period is defined as an 'analgesic patient'.

### **Data collection**

Data were collected from various prescriptions and local pharmacy shops to carry out the survey. Total 300 prescriptions were collected directly from the patient of physician chamber and 46 local pharmacy shops were selected from different locations for data collection about daily selling of analgesics. The data collectors were waiting in front of the pharmacy shop and convince them to produce their prescription data to the interviewers as well as participated in the interview session. The patients who were unconscious/mentally retarded, who were suffering with psychiatric diseases and who were admitted into hospitals were excluded from the study. Few questionnaires were excluded during the data analysis because of inadequate information.

### **Statistical analysis**

Descriptive statistics were applied to the collected data using Microsoft Excel software. Simple statistical method (Bar diagram) was used to calculate the data and finally expressed in percentages.

### **Ethical considerations**

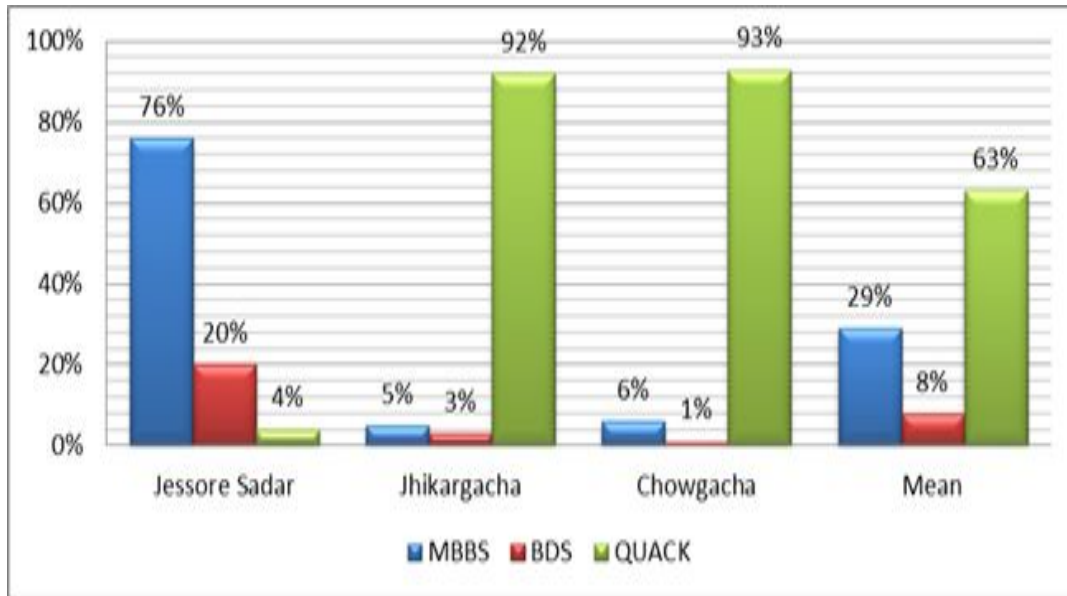
This survey based field work is also logistically supported by the Department of Pharmacy, Jessore University of Science & Technology, Jessore. The human subjects involved in this study did not use any hazardous agents and samples were not collected from them.

## **RESULTS & DISCUSSION**

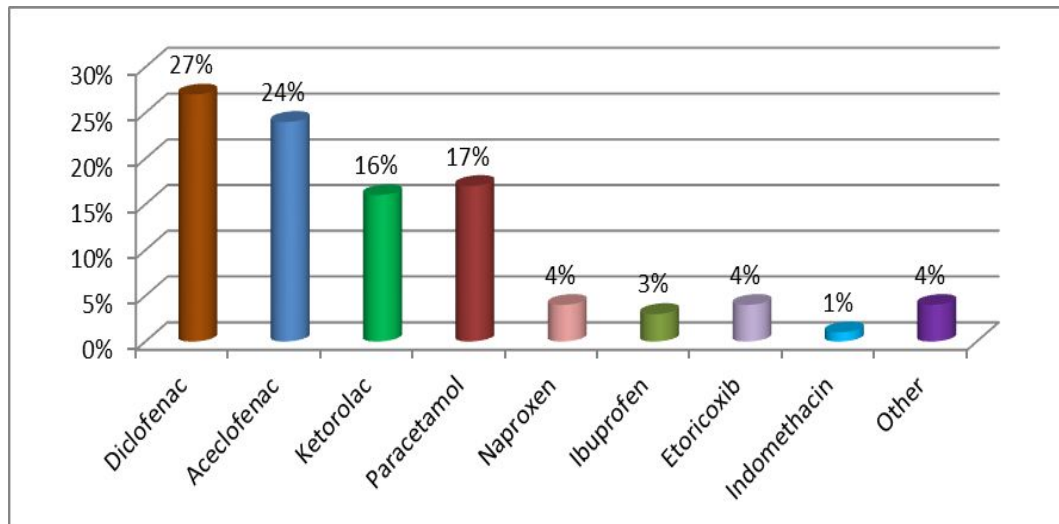
This cross sectional survey was carried out in the Jessore Sadar, Jhikargacha and Chowgacha upazila indicating the prescription trends of analgesics and it was found that in these "three cities" averagely 29% patients visited Bachelor of Medicine, Bachelor of Surgery (MBBS) doctors, 63% visited Quack doctors whereas only 8% visited Bachelor of Dental service (BDS) doctors shown in Figure- 1. In these three cities, highest percentage of Diclofenac (27%) and lowest percentage of Indomethacin (1%) were prescribed (Figure- 2). Patients had come twice due to the same diseases that did not complete full course of analgesics and or to stop taking medicines when symptoms disappear.

Among the total patients, 60% female and 40% male patients prescription were observed in this study and interestingly females were prescribed 20% more analgesics than males to cure the disease as shown in Figure- 3. In case of age variation it was shown that maximum analgesics are prescribed between 30-50 years aged patient. (Figure- 4)

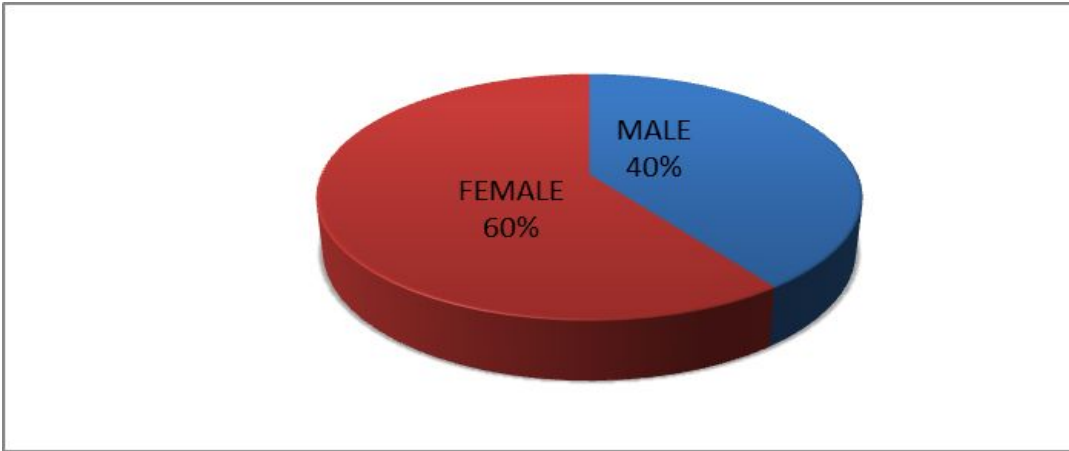
**Figure- 1: Prescription obtained from different health care professionals.**



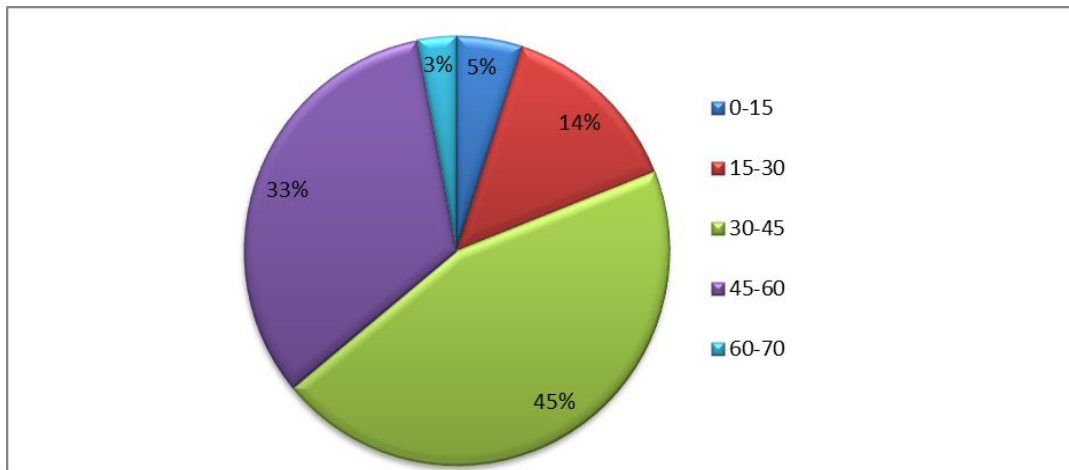
**Figure- 2: Selected responses from prescriptions (percentage of various analgesics which are collected from patient's prescription).**



**Figure- 3: Gender variability based on prescription.**



**Figure- 4: Age related variation of collected prescription.**



## CONCLUSION

This study confirms the irrational prescribing of analgesics and consumes in Bangladesh. Patterns of analgesic prescribing, availability and dispersing in Jessore district are very crucial at present. The existing systems should be reformed in order to ensure proper use of analgesics including other therapeutic agents in the country. This study urges the physician to be more professional and careful when analgesic is prescribed for the outpatients. Proper monitoring system should be implemented, retail pharmacy services should be run properly by retail pharmacist, physician should take extra precautions regarding practices of analgesics, and patient's awareness should be increased at national level. Finally effective strategies should be taken by the Government of Bangladesh to reduce the use of analgesics which could include the development of policies to support the judicious use of analgesics, strengthen the control of analgesics selling and implement educational campaigns for prescribers.

**COMPETING INTERESTS**

The authors declare that they have no competing interests.

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