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A Cross-Sectional Study to Assess Knowledge, Attitude, and Practice Regarding Over-the-Counter (OTC) Analgesic Use Among Undergraduate Medical Students of Osmania Medical College, Hyderabad.

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Abstract

Background: Over-the-counter (OTC) analgesics are widely consumed worldwide due to their accessibility and perceived safety. However, inappropriate use can result in hepatotoxicity, gastrointestinal bleeding, cardiovascular complications, or dependence [5]. Medical students, with their pharmacological knowledge and easy access to drugs, are particularly prone to self-medication practices [6]. ***Aims and Objectives:*** This study aimed to assess knowledge, attitude, and practice (KAP) regarding OTC analgesic use among undergraduate medical students of Osmania Medical College, Hyderabad, and to identify gaps that may inform educational interventions. ***Materials and Methods:*** A cross-sectional descriptive study was conducted among 300 MBBS students over two months using a structured questionnaire. Data were collected online and analysed using descriptive statistics. ***Results:*** While 65% had heard of OTC medications, misconceptions persisted: 75% believed all OTC drugs are safe, and 97% thought painkillers are safe in pregnancy. Attitudes were generally positive, with 90% avoiding analgesics when pain was tolerable and 85% seeking medical advice for unfamiliar drugs. However, practices revealed unsafe behaviours — 75% shared prescriptions, and only 10% read instructions before use. ***Conclusion:*** Although awareness of OTC analgesics exists, significant gaps remain in safe usage practices. Educational interventions integrated into the medical curriculum are necessary to promote rational drug use and prevent adverse outcomes [6–10].

Keywords: OTC analgesics, medical students, knowledge, attitude, practice, self-medication, rational drug use.

INTRODUCTION

The overall prevalence of daily analgesic use was 8.5%, and the prevalence of analgesic use a few times a week 13.6%. The adjusted prevalence of using exclusively prescribed analgesics daily or a few times a week was 8.7%, and that of utilizing purely OTC analgesics 8.8%. [2]

Analgesics are among the most frequently consumed drugs globally, both prescribed and OTC [2]. In developed countries, NSAIDs and paracetamol are widely used for musculoskeletal pain, headaches, and fever. In India, self-medication is common due to easy drug availability, cultural acceptance, and limited enforcement of prescription regulations [6]. Studies in Indonesia [11], Malaysia [12], and Saudi Arabia [13] have highlighted similar trends, with high prevalence of OTC analgesic use among students.

Analgesics are classified into non-opioid (NSAIDs, paracetamol), opioid, and adjuvant categories [1]. Opioids act primarily by activating μ-opioid receptor. Opioids are among the most effective analgesics available and are the first choice in the treatment of acute severe pain. However, partial efficacy, a tendency to produce tolerance, and a host of ill-tolerated side effects make clinically available opioids less effective in the management of chronic pain syndromes [4] NSAIDs remain one of the most consumed drugs either by prescription or over the counter. Inhibition of Prostaglandins synthesis as a mechanism of action of aspirin like drugs (NSAIDs) [3]. NSAIDs increase gastrointestinal and cardiovascular risks, and opioids carry dependence potential [5].

Need for Research:
Medical students, due to their pharmacological knowledge, often self-medicate with OTC analgesics. However, inappropriate dosing, misconceptions about safety in pregnancy, and neglect of side effects can lead to harmful outcomes [6–8]. Previous studies have shown gaps in knowledge and unsafe practices among students [6,7]. Therefore, assessing KAP among Indian medical students is crucial to design targeted educational interventions.

MATERIALS AND METHODS

Study Design: Cross-sectional descriptive study, through structured questionnaire

Study Setting: Osmania Medical College, Hyderabad

Study Period: Two months

Sample Size: 300 MBBS students

Sampling Method: Convenient sampling

Inclusion Criteria: MBBS students willing to participate

Exclusion Criteria: MBBS students unwilling to participate

Methodology: Structured questionnaire (17 items) covering demographics, knowledge, attitude, and practice. Questions included awareness of OTC drugs, perception of safety, reading instructions, and sharing prescriptions. Data were collected via online forms

Statistical Analysis: Responses were tabulated; percentages calculated. Associations between knowledge, attitude, and practice were compared with findings from similar studies

Ethical Approval: Institutional Ethics Committee approval obtained prior to commencement.

RESULTS

Table 1. Knowledge of OTC Analgesics among Medical Students

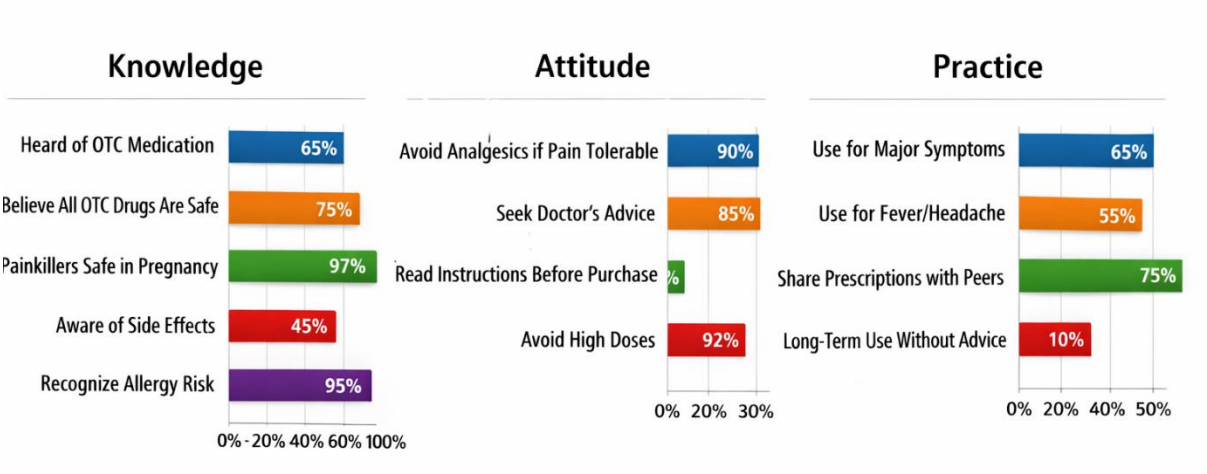
Question	Yes (%)	No (%)
Heard the term OTC Medication	65	35
Are all OTC drugs safe and effective	75	25
Painkillers can be taken every hourly when in pain	10	90
All painkillers have side effects	45	55
Painkillers relieve all types of pain and inflammation	65	35
All painkillers are safe during pregnancy	97	3
Patients can have allergy towards painkillers	95	5

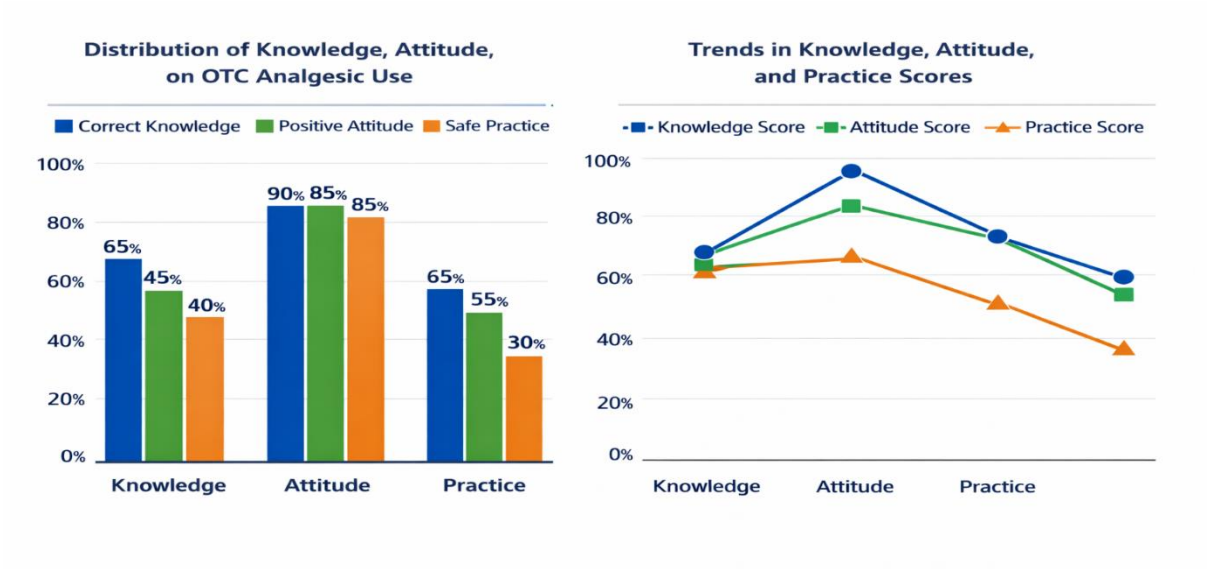
Table 2. Attitudes toward OTC Analgesic Use

Question	Yes (%)	No (%)
Taking multiple analgesics at the same time relieves pain faster	5	95
Taking high doses of analgesics resolves pain immediately	8	92
Do you Refuse analgesics when pain was tolerable	90	10
Is it appropriate to Seek doctor's advice before using unfamiliar OTC medicine	85	15
Reading instructions before/after purchasing analgesics	10	90

Table 3. Practices of OTC Analgesic Use

Question	Response Options	%
When do you use analgesics	a) Major symptoms	65
	b) Minor symptoms	25
	c) Can't visit doctor	10
Illnesses for which OTC drugs are consumed	a) Fever/Headache	55
	b) Dysmenorrhea	30
	c) Cough/Cold	10
	d) Other	5
Do you share prescription with someone having similar symptoms	Yes	75
	No	25
Taking OTC drugs for longer time without medical advice	Yes	10
	No	90
Preferring OTC medication for all types of illness	Yes	15
	No	85





DISCUSSION

This study highlights widespread use of OTC analgesics among medical students, reflecting convenience and perceived safety. However, misconceptions persist — notably regarding safety in pregnancy and side effects. Positive attitudes toward responsible use were evident, but poor practices such as sharing prescriptions and neglecting instructions remain concerning.

Comparable studies in Indonesia [11] and Malaysia [12] reported moderate knowledge but unsafe practices, while Indian studies [6,7] confirmed similar gaps. The finding that 97% of students believed analgesics are safe in pregnancy is particularly alarming, as NSAIDs are contraindicated in late pregnancy due to risk of premature closure of the ductus arteriosus [5].

The tendency to share prescriptions (75%) reflects a cultural norm of peer reliance but poses risks of inappropriate dosing and adverse reactions. Only 10% reading instructions indicates poor engagement with drug safety information, consistent with findings from Saudi Arabia [13].

Educational interventions, including integration of rational drug use modules into the medical curriculum, are essential. Awareness campaigns, workshops, and case-based learning may improve safe practices.

CONCLUSION

Medical students demonstrate awareness of OTC analgesics but significant gaps in safe usage remain. Misconceptions about safety in pregnancy, neglect of side effects, and unsafe practices such as sharing prescriptions highlight the urgent need for structured educational programs. Incorporating rational drug use into medical training will promote safe self-medication and reduce adverse outcomes [10].

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Ethical Approval: Institutional Ethical Approval obtained prior to commencement of study.

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