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Original Research Article

Knowledge, attitude and related practices about chronic pain conditions and pain clinic among undergraduate students in a medical college

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ABSTRACT

Background: Objectives were to evaluate the knowledge, attitude, and related practices about chronic pain conditions and pain clinics among undergraduate medical students in a medical college.
Methods: This cross-sectional, questionnaire-based study was conducted among 226 final-year undergraduate students and interns at Heritage Institute of Medical Sciences, Varanasi. Data were collected through a Google Form questionnaire designed to assess basic knowledge, attitudes, and practices related to chronic pain and pain clinic awareness. Descriptive statistics were applied to analyze the responses.
Results: Most participants correctly defined chronic pain (88.9%) and a pain clinic (87.6%), though only 37.6% identified a validated pain assessment scale. Arthritis was the most commonly identified chronic pain condition. Despite 127 students or family members reporting chronic pain, only 11 had ever consulted a pain clinic. The mean Likert score for perception of pain physicians' competence was 3.82, while agreement on including chronic pain education in the medical curriculum scored 4.09, indicating a strongly positive attitude.
Conclusions: Although conceptual awareness of chronic pain and pain clinics was high among participants, significant gaps were found in applied knowledge and exposure to multidisciplinary pain care. The findings underscore the need for integrating structured pain management education and clinical exposure into undergraduate medical training in India.

Keywords: Chronic pain, Pain clinic, Knowledge, Attitude and practice, Undergraduate medical students

INTRODUCTION

Pain is a common health concern and, in many cases, preventable. Chronic pain, defined as persisting for more than three months, is highly subjective but has been formally recognized as a separate condition in the international classification of diseases (ICD).[1] Despite this recognition, it is still poorly understood by the general population. Chronic pain continues to be underreported, underdiagnosed, and insufficiently addressed in both healthcare practice and public perception.[2,3]

Even with considerable research in this field, the overall management of chronic pain remains inadequate, leading many patients to consult several healthcare professionals and pursue multiple forms of treatment.[4,5] Individuals living with chronic pain are also frequently subjected to stigma and limited empathy from both society and medical professionals.[6] Addressing this issue requires raising awareness and strengthening education among healthcare workers, patients, policymakers, and the community at large.[3,7]

The approach to pain care largely depends on the knowledge, attitude, and awareness of general practitioners. However, unlike Western settings, there is limited published evidence from India regarding this subject.[8] Based on this gap, the present study was

undertaken to evaluate the basic knowledge, attitudes, and practices concerning chronic pain and pain clinics among final-year undergraduate students and interns at a medical college in Varanasi, Uttar Pradesh.

METHODS

This was a cross-sectional descriptive questionnaire-based observational study. The study was approved by the institutional ethics committee (HIMS/IEC/218). Informed consent was obtained from all the participants. Study population was Undergraduate students of Heritage Institute of Medical Sciences, Varanasi (final year medical students and those undergoing internship). Sample size calculation was done using these formulae

$$n=\frac{Z^2PQ}{d^2}$$

Where, n=sample size, Z=Z static for a level of confidence (1.96 for 95% confidence level), P=expected prevalence and d=precision.

By putting value of prevalence 50% and precision 5% we got sample size of 384.

Sample size adjustment was performed using the Yamane formula as there are only 300 registered students in the population.

Where N is the study population, e is the constant equal to 0.05 (95% confidence), and n is the sample size. Considering 10 percent dropout rate we aimed to recruit minimum 217 students (95% confidence).

Inclusion criteria

Students of MBBS final year and those undergoing internship were included.

Exclusion criteria

Those who did not give consent for participating in the study were excluded.

Total 226 students participated voluntarily in the study. Data were collected through e-questionnaire (google form). A questionnaire with 10 questions was prepared to highlight the basic knowledge, attitude, and related practices of the medical students about chronic pain and pain clinics. Final year students and internship doctors were approached during classes and clinical posting and were requested to answer the questionnaire. The questionnaire comprised questions that were divided into three broad categories based on their types, i.e., knowledge, attitude, and related practices. The questions related to knowledge included definition of chronic pain and pain clinic, name of any one chronic pain conditions and any pain scale they are aware of. Participants attitude about pain physician in managing chronic pain conditions and education on chronic pain management in medical curriculum was measured using 5-point Likert scaling. Questions which indicated related practices about chronic pain and pain clinics were like if they or any of their family member have ever suffered from any chronic pain condition or not, if yes then have they taken any treatment for that or not, finally they have consulted which specialist doctor for their chronic pain was asked. The data was analysed using SPSS ver. 25 (IBM corp.)

RESULTS

The study comprised of total 226 medical students, table 1 shows their distribution according to their age, gender, and education. Table 2 shows distribution of participants according to knowledge of chronic pain.

Only 147 undergraduates who participated in the study were able to enumerate any one chronic pain condition correctly. Arthritis was the most common answer given by them. Figure 1 shows the distribution of different chronic pain conditions enumerated by the participants. Furthermore, only 84 participants were able to correctly answer any one pain scale used for assessment of pain. Numerical rating scale (NRS) was the most common reply followed by visual analog scale (VAS). Figure 2 shows the distribution of the same.

Out of 226 students, 127 students or their family member had suffered from chronic pain, but only 119 took the treatment for the same.

Most of them took the treatment from orthopedic doctors and only 11 people took the treatment from a pain clinic. Figure 3 shows the distribution of chronic pain patients and the specialty from which they took the consultations.

Attitude of the participants towards chronic pain physician was done using 5 points Likert scaling. Figure 4 shows the distribution of the responses. The mean score was around 3.82 which shows that most of the respondents perceive pain physician as well trained in chronic pain, 17.7% neutral group shows some respondents are unsure.

On asking if chronic pain management is important aspect of medical education (Figure 5), the mean Likert score was around 4.09, indicating strong positive perception, means they believed chronic management is essential component of medical education.

Table 1: Demographic data.

Gender	N	Age (in years)		Education	N	%
Male	108	<20	220	MBBS final year	132	58.4
Female	118	20-30	6	Internship	94	41.6

Table 2: Distribution of participants according to knowledge of chronic pain.

Questions	Response	N (%)
What is chronic pain?	Correct	88.9
	Incorrect	11.1
Enumerate any one chronic pain condition you are of	Correct	65
	Incorrect	18.1
	Not responded	16.8
Enumerate any one scale of pain assessment	Correct	37.6
	Incorrect	9.2
	Not responded	91.2
What is a pain clinic?	Correct	87.6
	Incorrect	12.4
Which of the following treatment may be offered in pain clinic?	Both medications and interventions	91.2
	Only medications	5.3
	Do not know	3.5

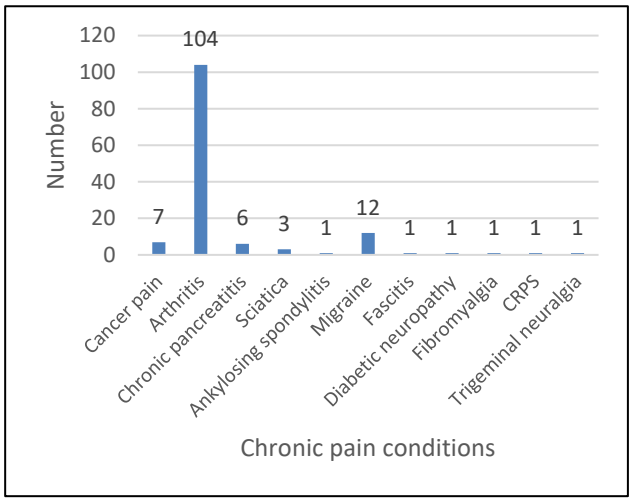

Figure 1: Distribution of responses of awareness about chronic pain conditions.

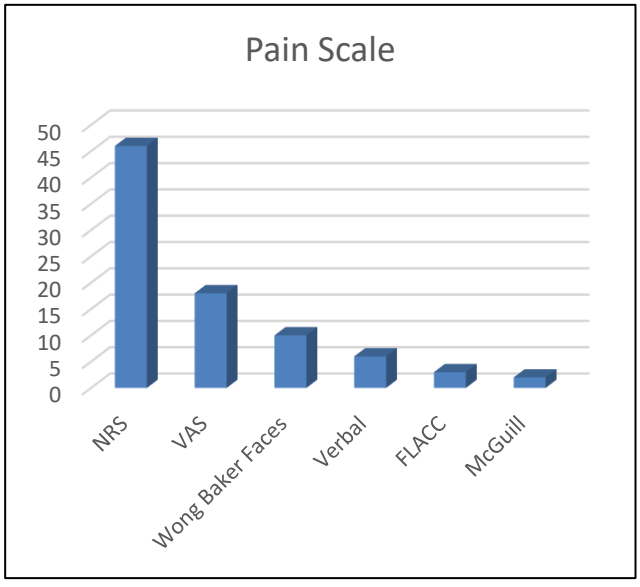

Figure 2: Awareness about pain scale.

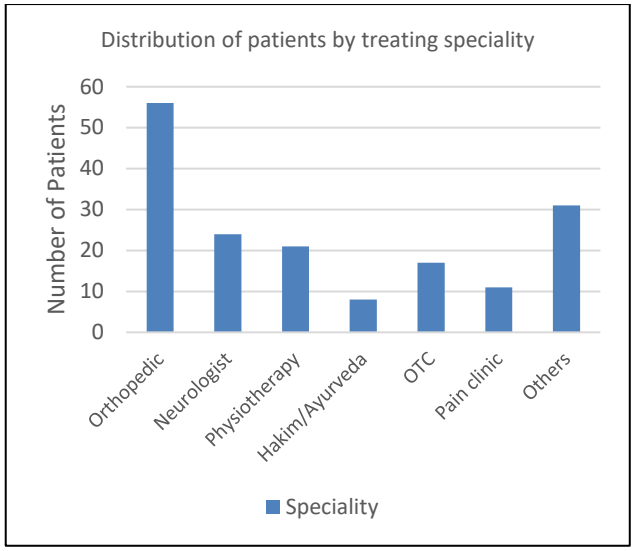

Figure 3: Distribution of patients according to speciality considered for seeking treatment of chronic pain.

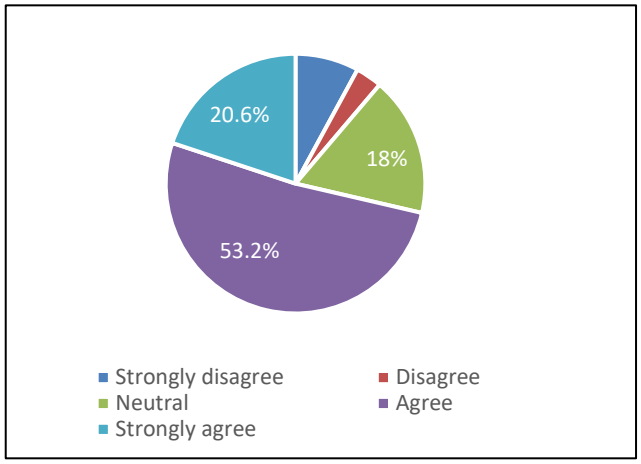

Figure 4: Attitude of the participants towards chronic pain physician.

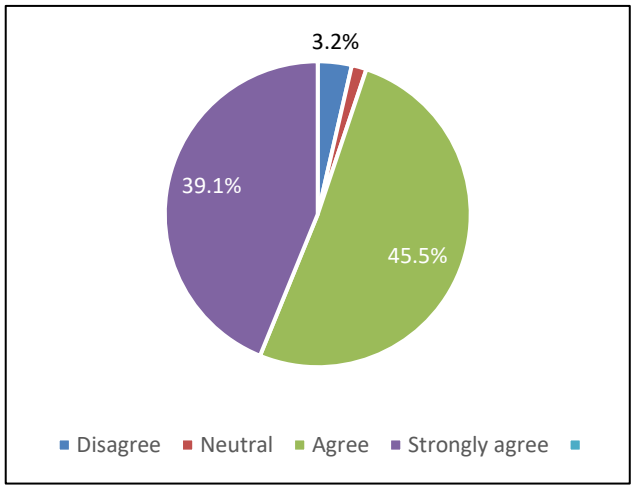

Figure 5: Attitude of participants regarding inclusion of chronic pain management in medical education.

DISCUSSION

The present study assessed knowledge, attitudes, and related practices regarding chronic pain and pain clinics among 226 senior medical undergraduates in a private Indian medical college. While conceptual awareness was high-88.9% of participants correctly defined chronic pain and 87.6% knew what a pain clinic is, but important gaps existed in applied knowledge and exposure. Only 65% could name a chronic pain condition, 37.6% could identify a validated pain assessment scale, and very few (n=11) had ever sought care from a pain clinic despite 127 reporting that they or a family member had experienced chronic pain.

The limited familiarity with validated pain assessment scales such as the NRS and VAS is concerning. These tools are validated, reliable, and widely recommended for adult pain measurement.[9-11] Since pain intensity measurement underpins clinical decisions, including analgesic titration and monitoring response, inadequate knowledge of such tools may hinder graduates' ability to provide safe and effective care.

Our results also reflect the broader clinical landscape in India. Musculoskeletal and chronic back or joint pain are highly prevalent and represent leading causes of healthcare visits.[12] Among medical students themselves, musculoskeletal pain has been linked with study posture, gadget use, and stress, further emphasizing its relevance to their future practice.[13] The students or their families sought care mainly from orthopedic services rather than pain clinics aligns with data indicating limited awareness and availability of dedicated pain services.[14] This represents a missed opportunity for exposure to multidisciplinary pain care, which is increasingly emphasized in modern practice.

Surveys of Indian anesthesiologists and postgraduate trainees have similarly demonstrated knowledge gaps and the need for structured teaching in pain management.[14,15] Ajay's preprint of a cross-sectional survey in May 2025 of Indian residents further confirms deficits in preparedness, particularly in multimodal management and referral pathways, suggesting that the issue is systemic rather than confined to our institution. These observations mirror international evidence: a systematic review by Shipton et al reported that pain medicine is often taught in fragmented fashion, not compulsory, and rarely assessed in clinical examinations.[16] Similarly, Watt-Watson et al highlighted inadequate and variable curricular hours devoted to pain across Canadian health science faculties.[17] Together, these data reinforce that the observed "conceptual awareness but limited applied skills" phenomenon is not unique to our setting but reflects a broader curricular challenge.

Importantly, attitudes toward pain physicians and the importance of pain education were positive (mean Likert scores 3.82 and 4.09, respectively). This receptivity suggests that students are open to better training. Incorporating structured modules on validated pain scales, hands-on exposure to pain clinics, and longitudinal case-based teaching could bridge the gap between theoretical awareness and clinical competence.

This study was limited by its single-center design in a private medical college, which may restrict generalizability to other institutions. Self-reported responses could be subject to recall and social desirability bias. Additionally, the cross-sectional design captures knowledge and attitudes at one point in time without assessing changes over the course of training or after targeted interventions.

CONCLUSION

This study highlights that while senior medical undergraduates possess high conceptual awareness of chronic pain and pain clinics, significant gaps remain in applied knowledge, assessment tool familiarity, and exposure to multidisciplinary pain care. Positive attitudes toward pain physicians and education suggest strong receptivity to improved training. Integrating structured pain curricula, practical training in validated pain assessment tools, and clinical exposure to pain clinics into undergraduate programs is essential to prepare future physicians for effective chronic pain management.

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Ethical approval: The study was approved by the Institutional Ethics Committee (HIMS/IEC/218)

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