ORIGINAL ARTICLE

Situation Analysis of Pain Management Practices in Bangladesh: Identifying Gaps and Challenges

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Abstract

Background: Chronic pain is a global burden affecting over 30% of patients worldwide. The issue is particularly challenging in low- and middle-income countries, where there are limited dedicated pain services. In Bangladesh, national evidence on pain management practice and barriers to care is unexplored. Therefore, this study aimed to conduct a situational analysis of pain management practices among physicians in Bangladesh to identify gaps in training, resources, and multidisciplinary care, and to plan strategies to improve patient outcomes.

Methods: A cross-sectional study was conducted using an online survey. Physicians practicing pain management across Bangladesh were invited to participate. Data were collected regarding professional background, training in pain medicine, institutional capacity, use of pain assessment tools, treatment modalities, and barriers to pain management. Descriptive statistics were used for data analysis.

Results: Sixty-seven participants participated, predominantly anaesthesiologists (96.4%) practicing in an urban area (70.9%). 47.2% had no formal training in pain medicine, and 62.3% did not have training on Essential Pain Management (EPM). There are no dedicated pain management units in 60.4% of institutions. Application of standardized pain assessment tools remained variable. Pain management is largely medication-based (67.4%), with limited availability of multidisciplinary services (48.8%). Only 30.2% reported implementation of clinical practice guidelines. Key challenges included limited multidisciplinary support (66.7%), lack of training (56.4%), high treatment costs (38.5%), and poor patient adherence (41.0%).

Conclusion: This study identifies substantial gaps in current pain management practices in Bangladesh, including inadequate training, limited multidisciplinary care, and limited implementation of clinical practice guidelines. Addressing these challenges requires a coordinated national strategy focused on strengthening education and training, implementing clinical practice guidelines, and expanding multidisciplinary pain services.

Keywords: Chronic pain, Pain Management, Pain Practice, Gaps and Challenges, LMIC, Bangladesh

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Introduction

Pain is the commonest presentation for seeking medical assistance and a global burden causing various disabilities[1]. Chronic pain is regarded as a complex biopsychosocial condition persisting beyond the normal healing process of tissues as well as significantly impairing quality

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of life. Global Burden of Disease (GBD) reports suggest that at any given time, more than 30% of adults suffer from chronic pain[2,3]. Chronic pain results in increased healthcare costs, substantial socioeconomic load through reduced productivity and also dependency on family. This burden is disproportionately high in low- and middle-income countries (LMICs), where there is a shortage of resources, scarcity of pain services, and suboptimal access to essential analgesic medications[4].

In high-income countries, a multidisciplinary and multimodal approach is utilized for pain management, including both non-pharmacological & pharmacological options, interventions, psychosocial support, and rehabilitation. On the contrary, in LMICs, a pharmacological approach is the basis of managing pain, often without using standard pain assessment tools and treatment algorithms[5]. This crucial gap in pain management leads to inappropriate treatment and an inability to achieve expected patient outcomes.

Globally, pain refers to a disease requiring a standardised management protocol rather than only symptomatic management. World Health Organization (WHO) analgesic ladder has provided a foundational framework for cancer pain management, which is now also used for non-cancer pain management[6]. The International Association for the Study of Pain (IASP) conducts standard training modules and pain education programs worldwide. Prior studies in LMICs demonstrate inadequate pain assessment, restricted access to opioids, lack of trained pain physicians, and limited application of guidelines[7]. In resource-poor settings, multidisciplinary pain clinics, which are considered the gold standard in chronic pain management, are insufficient. In Bangladesh, pain management protocols are not well established in most healthcare institutions. Few institutional audits and hospital-based studies have highlighted these challenges; however, national-level data on pain practices and barriers to managing pain remain limited[8]. Furthermore, basic pain medicine education is not included in the undergraduate curriculum[9]. In the postgraduate curriculum, there is insufficient content on Pain Medicine[10].

Despite the rising burden of chronic pain in Bangladesh, there is still no national-level situation analysis of how pain is currently managed across healthcare institutions. Therefore, this study aimed to gather data regarding physician training, institutional capacity for standard pain management, and use of pain assessment tools, treatment strategies, and barriers to managing pain.

Methods

Study Design and Setting

A nationwide descriptive cross-sectional study was conducted among physicians involved in pain management in Bangladesh from September 2025 to February 2026.

Study Population and Eligibility Criteria

The study population comprised registered physicians practicing in Bangladesh who were involved in the assessment or management of acute or chronic pain. Physicians were eligible to participate if they were registered medical practitioners, actively involved in pain management, and were willing to provide electronic informed consent.

Medical students, interns, physicians not involved in pain management, and respondents who submitted incomplete questionnaires were excluded.

Sample Size and Sampling

A total of sixty-seven physicians participated in the study. Participants were selected using a convenience sampling technique because a comprehensive national registry of physicians involved in pain management was unavailable. Potential participants were recruited through professional networks and electronic communication channels.

Study tool

A survey questionnaire was prepared following the study objectives. The questionnaire comprises closed-ended and multiple-choice type questions (MCQs) to ensure consistency in responses and facilitate quantitative analysis.

Pretesting and Data Collection

The survey questionnaire was pretested before the main survey to assess its clarity, relevance, understandability, and completion time. Following

pretesting, a survey link was generated and distributed electronically to potentially eligible physicians through professional networks using WhatsApp and Email communication.

Outcome Variables

The outcome variables included training in pain medicine, availability of pain-management services, application of clinical guidelines, use of standardized pain-assessment tools, treatment modalities used in clinical practice, and perceived barriers to effective pain management.

Data Management and Statistical Analysis

Survey data were exported from SurveyMonkey to Excel and analyzed using Jamovi version 2.6.44, which is based on the R statistical software. The dataset was reviewed and cleaned before analysis. Categorical variables were presented using numbers and percentages. Results are presented using tables. Inferential analyses were not performed because the study was designed primarily to describe current pain-management practices, institutional capacity, and perceived barriers rather than to test specific hypotheses.

Ethical Considerations

The study was conducted in accordance with the ethical principles for research involving human participants. Participation was voluntary, and electronic informed consent was obtained from all respondents before data collection. Participants were informed about the purpose of the study, the confidentiality of their responses, and their right to withdraw from the survey at any stage without penalty. Responses were anonymous. The collected data were used exclusively for academic and research purposes and were accessible only to the research team. Ethical approval was obtained from the Institutional Review Board (IRB) of Bangladesh Medical University.

Results

Participant Characteristics

A total of 67 physicians participated in the study. Among them, 38 (56.7%) were men and 29 (43.3%) were women. Most respondents were anaesthesiologists (n = 65, 97.0%), while 2 (3.0%) belonged to other specialties. Regarding workplace location, 47 (70.1%) respondents practiced in urban areas and 20 (29.9%) practiced in rural areas (Table I).

Table I: Sociodemographic and professional characteristics of respondents (n = 67)

Characteristics	n (%)
Sex	
Men	38 (56.7)
Women	29 (43.3)
Specialty	
Anaesthesiology	65 (97.0)
Other specialties	2 (3.0)
Workplace location	
Urban	47 (70.1)
Rural	20 (29.9)

Data are presented as number and percent.

Training and Education in Pain Medicine

Formal training in pain medicine was reported by 35 (52.2%) respondents, whereas 32 (47.8%) had received no formal training. Twenty-five (37.3%) respondents had attended Essential Pain Management training, while 42 (62.7%) had not. Institutional training programmes in pain management were available in the workplaces of 22 (32.8%) respondents and unavailable in those of 45 (67.2%) respondents (Table II).

Table II: Training and education in pain medicine (n = 67)

Variable	n (%)
Formal training in pain medicine	
Yes	35 (52.2)
No	32 (47.8)
Attendance at Essential Pain Management training	
Yes	25 (37.3)
No	42 (62.7)
Institutional pain-management training programme	
Available	22 (32.8)
Not available	45 (67.2)

Data are presented as number and percent.

Institutional Capacity for Pain Management

A dedicated pain-management unit was available in the institutions of 26 (38.8%) respondents, while 41 (61.2%) reported that no such unit was available. Clinical guidelines for pain management were available in the institutions of 20 (29.9%) respondents and unavailable in those of 47 (70.1%) respondents (Table III).

Table III: Institutional capacity for pain management (n = 67)

Variable	n (%)
Dedicated pain-management unit	
Present	26 (38.8)
Absent	41 (61.2)
Clinical guidelines for pain management	
Available	20 (29.9)
Not available	47 (70.1)

Data are presented as number and percent.

Pain-Management Practices

Standardized pain-assessment tools were used by 42 (62.7%) respondents, whereas 25 (37.3%) reported not using such tools. Pharmacological treatment was the primary pain-management approach among 45 (67.2%) respondents, while 22 (32.8%) reported using a multidisciplinary approach (Table 4).

Table IV: Pain-management practices among respondents (n = 67)

Variable	n (%)
Use of standardized pain-assessment tools	
Yes	42 (62.7)
No	25 (37.3)
Primary pain-management approach	
Pharmacological	45 (67.2)
Multidisciplinary	22 (32.8)

Data are presented as number and percent.

Difficulty in Managing Chronic Pain

Most respondents reported experiencing difficulty in managing chronic pain cases (n = 62, 92.5%), while 5 (7.5%) reported no difficulty (Table V).

Table V: Reported difficulty in managing chronic pain (n = 67)

Response	n (%)
Yes	62 (92.5)
No	5 (7.5)

Data are presented as number and percent.

Perceived Barriers to Pain Management

The most frequently reported barrier to effective pain management was lack of multidisciplinary support, identified by 45 (67.2%) respondents. Insufficient training opportunities were reported by 38 (56.7%), poor patient adherence to treatment by 27 (40.3%), and high treatment costs by 26 (38.8%) respondents (Table VI).

Table VI: Perceived barriers to effective pain management (n = 67)

Barrier	n (%)
Lack of multidisciplinary support	45 (67.2)
Insufficient training opportunities	38 (56.7)
Poor patient adherence to treatment	27 (40.3)
High treatment costs	26 (38.8)

Data are presented as number and percent. Multiple responses were permitted.

Discussion

This study revealed substantial gaps in pain physicians' training, institutional capacity, application of pain management guidelines, and multidisciplinary strategy in managing pain in Bangladesh. There is limited formal training in the pain medicine specialty, and not all practicing pain physicians have attended the Essential Pain Management (EPM) training programme. Most respondents also worked in institutions without dedicated pain-management units. Although most of the participants use validated pain-assessment tools, pain management remained predominantly pharmacological, and more than 90% of the respondents face difficulty in managing chronic pain.

These findings suggest that pain medicine has not yet been adequately incorporated into continuing professional development or institutional training systems in Bangladesh. Inadequate pain education

is recognized as an important barrier to effective pain management, particularly in low- and middle-income countries (LMICs). The International Association for the Study of Pain emphasized the importance of incorporating pain-related competencies into undergraduate, postgraduate, and continuing medical education. Studies from South Asia and sub-Saharan Africa have similarly reported that limited access to formal training may lead clinicians to depend on personal experience rather than standardized and evidence-based approaches to pain management[11,12].

The training gaps identified in the present study may contribute to variations in clinical decision-making, limited use of validated assessment methods, and inadequate implementation of comprehensive pain-management strategies. Expanding structured training opportunities, including EPM programmes, may therefore provide a practical approach to strengthening the knowledge and confidence of practicing physicians.

Limited institutional capacity to provide organized and specialized pain services. Dedicated pain units can facilitate structured assessment, continuity of care, appropriate referral, and collaboration among healthcare professionals. Multidisciplinary care is widely regarded as an important component of chronic pain management because chronic pain is influenced by biological, psychological, and social factors. Such models may involve pain physicians, psychologists, physiotherapists, rehabilitation specialists, nurses, and other healthcare professionals. Evidence indicates that coordinated multidisciplinary care can improve functional outcomes and reduce pain-related disability[13].

In the present study, however, less than one-third of respondents identified a multidisciplinary approach as their primary pain-management strategy. The limited adoption of such care may reflect shortages of trained personnel, inadequate referral pathways, financial constraints, and the absence of dedicated pain services. Similar challenges have been described in other resource-constrained settings, where pain services are frequently delivered within anaesthesiology or general clinical departments without formally established multidisciplinary teams[5].

The predominance of anaesthesiologists among the respondents also reflects the central role of this specialty in pain care in Bangladesh. Nevertheless, the findings should not be interpreted as indicating that pain management is exclusively provided by anaesthesiologists, as the sampling strategy and recruitment networks may have influenced the specialty distribution.

Standard pain assessment tools such as the Numerical Rating Scale (NRS) and Visual Analogue Scale (VAS) are important for documenting pain intensity, evaluating treatment response, and supporting communication between healthcare professionals and patients. Pain assessment tools have not been universally integrated into clinical practice. Several factors are probably responsible for this, such as limited training in pain medicine, Patient load, time constraints, and inadequate documentation systems. Institutional adoption of standard pain assessment tools may help improve consistency in clinical evaluation, treatment and follow-up.

Approximately two-thirds of respondents reported that pain is managed mainly by pharmacological approach. Chronic pain often requires a biopsychosocial approach. Limited availability of psychological support, physiotherapy and rehabilitation services, cost and resource scarcity for interventional procedures may contribute to dependence on medication-based management. Strengthening access to non-pharmacological and multidisciplinary services is therefore necessary to support optimal pain care.

Pain management guidelines are essential for improving the delivery of optimum patient care, reducing disparities and preserving patient dignity[13,14]. The limited adoption of pain management guidelines suggests a gap between international recommendations and institutional implementation. Application of clinical practice guidelines may remain limited due to lack of professional training, administrative support, monitoring, and enforcement mechanisms[15]. Bangladesh may therefore benefit from the development of national pain-management guidelines.

The high level of reported difficulty in managing chronic pain is likely due to the combined effects of limited professional training, poor clinical practice guideline implementation, insufficient rehabilitation services, and ineffective referral systems. Lack of a multidisciplinary support system was the most frequently reported barrier for effective pain management, followed by insufficient training opportunities; poor patient adherence and high treatment costs were also emphasized. These findings demonstrate that barriers are present at multiple levels, such as healthcare-provider, institutional, financial, and patient levels. Increasing the number of trained pain professionals, establishing referral networks, expanding rehabilitation services, and promoting continuous professional development programmes may improve pain management services. Financial barriers also need to be considered, as high out-of-pocket expenditure may restrict access to essential medications, necessary investigations, required interventions, physiotherapy, and long-term follow-up.

Poor compliance of patients with treatment may be influenced by treatment costs, limited understanding of chronic pain, concerns regarding medication dependence, cultural beliefs, or unrealistic expectations of rapid recovery. Involving patients in pain management by pain education and shared decision-making can play a crucial role in treatment compliance and outcome.

The study findings have several implications for the development of optimal pain management practice in Bangladesh. Pain medicine education content needs to be incorporated into undergraduate and postgraduate medical curricula. Continuing professional education, including expansion of Essential Pain Management (EPM) training programme, will help address knowledge and skill gaps among practicing pain physicians.

Strengths and Limitations

This study addressed an important under-researched area and collected information regarding pain physicians' training status, institutional capacity, current pain practices, and barriers related to pain management in Bangladesh. The findings will help plan better management services as well as pain educational initiatives.

There are several limitations in the current study. Use of convenience sampling limits the generalizability of the findings to all physicians in Bangladesh. Most respondents were anaesthesiologists, a result of recruitment through professional networks that may not reflect the experiences of physicians from other specialties. The greater representation of urban practitioners may have underrepresented challenges in rural healthcare settings. The findings were based on self-reported information and may therefore be affected by recall bias.

Conclusion

In Bangladesh, current pain practice needs to be strengthened by addressing the gaps and challenges. Expanding the Essential Pain Management (EPM) programme and continuing professional training, implementing clinical pain practice guidelines, establishing dedicated and multidisciplinary pain services, establishing a referral system and rehabilitation pathways, and addressing patient-related barriers need to be considered. All these measures will contribute to standardized and patient-centered pain management in Bangladesh.

Declaration:

Ethics approval: The study was approved by the Institutional Review Board (IRB) of Bangladesh Medical University, Dhaka, Bangladesh [Registration: BMU/2025/11437]

Author contributions

Conception and development of the idea: AKMA, KMA, MMK, RB
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Data analysis: AKMA, KMA, MMK, RB, CSC, SAT
Data collection: AKMA, KMA, MMK, RB, CSC, SAT
Review and Editing: AKMA, KMA, MMK, RB, CSC, SAT

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AI disclosure

Artificial intelligence–based tools were used solely for language editing, formatting, and structural refinement of the manuscript. All intellectual content, data interpretation, and scientific conclusions were developed and verified by the authors. The AI tool did not generate or modify any study data or results.

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