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MEDICAL EDUCATION

Undergraduate Medical Education on Pain Management across the Globe

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Introduction and an Appeal

Pain is common, easily recognized, and largely treatable, and, despite this, pain is often inadequately assessed and managed in clinical practice [1-5]. Inadequately managed pain is a worldwide problem that leads to significant suffering, dysfunction and disability, loss in job productivity, and an increasing health care burden [1-3]. Adequate pain management is now recognized as a patient/human right [6].

An essential cause of suboptimal pain recognition, assessment, and treatment is inadequate education of health care practitioners. This is of particular concern because patients with pain are most likely to visit their primary care or general physicians first. In other words, we are failing to teach a large percentage of doctors who are the first line of patient care. The failure to do so during residency training has particularly notable consequences.

This failure should not be attributed to the lack of guidelines or clinical and research studies. In fact, there are numerous guidelines and a robust body of literature on how pain management should be taught and implemented. For example, a detailed "core professional curriculum" for teaching about all aspects of pain, developed by the International Association for the Study of Pain (IASP), has been available for the past 25 years [7], with the latest (third) version published in 2005 [8]. Guidelines to ensure that hospital staff are adequately trained to manage acute pain were issued by the Joint Commission on Accreditation on Healthcare Organizations (now the Joint Commission) more than a decade ago [9]. Thus, inadequate pain management is rooted not in a lack of guidance but in the deficiencies in our current methods of pain education [10].

We addressed this issue in a recent publication on acute pain education and management [11]. In that piece, we argued that improved medical education is the key to solving the problem of inadequate acute pain management. Residency is the seminal period during which attitudes toward pain are conceived and nurtured. Instilling an early understanding of and empathy for pain during residency will greatly enhance the chances that future practitioners will be more willing and able to treat pain. This understanding, coupled with the knowledge and skills required for assessment and management of acute pain, will round out all three domains of medical education: cognitive, psychomotor, and affective.

In this article we seek to expand upon the early discussions of acute and chronic pain and focus on the broader area of pain education. We make the appeal that such education should start early into the career of the undergraduate medical student, whose mind is more receptive and impressionable [11]. We also believe that such education should be integrated in the general medical curriculum from the first through the final years to ensure the broadest reach possible at both the national and the international levels.

We contrast our approach with those aimed at developing pain medicine as a dedicated specialty. While there is no doubt that such emphasis and approaches are required (and, indeed, being followed in some countries), our point is that a more broad-based and early introduction to pain education is likely to yield richer dividends. Utilizing this approach, common pain conditions can be effectively managed in primary or secondary health care settings, thus freeing up valuable time, limited manpower, and even more limited resources to manage the complex pain conditions at the tertiary care level.

Pain Education: A Bird's-Eye View of the Global Situation

Recently we examined pain education from a global perspective by reviewing the varying degrees of information available from several developed and developing countries: the U.S., Canada, the United Kingdom, Finland, Australia, New Zealand, and India [11]. Our results showed that, despite marked variations across countries, the overall picture was one of inadequacy and dissatisfaction on the part of practitioners. For example, until recently only 3 percent of medical schools in the United States had any part of their curricula specifically dedicated to pain education [12]. In a 2009-2010 survey of 117 medical schools in the U.S. and Canada, the situation appeared much better: 80 percent of U.S. medical schools and 92 percent of Canadian medical schools required at least one pain session in their curricula. The actual content, style, and format of the education, however, were found to be "limited, variable, and often fragmentary" [13]. On closer scrutiny it was discerned that many topics of the IASP core curriculum were not even addressed [13]. Findings with similar results have been reported from Finland, Australia, and New Zealand, and the United Kingdom [14-17].

The recently published results of a comprehensive survey conducted by the Special Interest Group on Pain Education of the British Pain Society are eye-opening [18]. In this survey of 19 higher education institutions affiliated with 11 universities offering 108 undergraduate programs in a wide range of medical and related disciplines across the U.K., it was found that pain education comprised less than 1 percent of the university-based teaching for health care professionals. The average pain-related content comprised only 12 hours. Of note, more coverage of pain-related topics was provided in physiotherapy and veterinary science programs than in medical science. Only 11 programs (less than 15 percent) offered a specific pain teaching module. The original report finally concluded that "the amount of pain education in the curricula of healthcare professionals is woefully inadequate given the burden of pain in the general population in the UK" [17].

The emphasis on integrating pain education into the medical school curriculum has been studied significantly less in developing countries than in the developed world. In a recent preliminary, impression-based survey of medical centers, one each from 7 developing countries (India, China, Indonesia, Philippines, Thailand, Nigeria, and Guatemala), it was felt by all respondents but those in Thailand that there was "no" or "some" availability of education in acute pain management in medical, nursing, or pharmacy schools [19]. Pain was felt to be adequately managed in only 30 to 50 percent of patients. Indeed, all respondents agreed that "pain control is not given priority." Of note, "concerns about addiction (even for Acute Pain)" was mentioned as a barrier to opioid use in severe acute pain management [19]. Additionally, the IASP conducted a survey in its chapters in the developing countries in 2005 [20]. More than 90 percent of the respondents agreed that pain recognition and management was a significant issue in their populations. Furthermore, results from the survey revealed that, although up to 50 percent of respondents had, as undergraduates, attended formal courses relating to pain, more than 90 percent stated that the level of education they received was not sufficient to cover their needs at the time they entered clinical practice.

Ways Forward: Learning Lessons from Existing and Innovative Programs

The most desirable way to advance pain education is to encourage its integration in the regular medical school curriculum. Some institutions have begun to do this, although in most situations there is a lack of coordination between the preclinical and clinical curricula [21, 22]. Pain as a topic is often relegated to brief lectures or seminars at most institutions. There are several reasons for this, including attitudes of the program administrators but also the real constraint on time in an ever-expanding medical curriculum that forces prioritization of themes and topics to be covered during medical school.

Despite these limitations, it is encouraging that even brief study can still produce positive effects. Even a 6-hour course for first-year medical students that combined written materials on behavioral, social, and biological aspects of pain with clinical observations of an acute and chronic pain treatment team produced a greater recognition of pain as a real and complex entity and a stronger belief that working with pain patients is rewarding [23].

When even less time is available, the role of bedside instruction assumes particular significance. For example, fourth-year medical students randomly assigned to a 1-hour lecture on regional anesthesia plus a 1-hour bedside teaching session scored significantly better on an objective structured clinical examination than those assigned to a 2-hour classroom-based structured course alone [24]. A recent report from the Johns Hopkins University School of Medicine demonstrated the utility and feasibility of a short (18 hours over 4 consecutive days) pain education program for first-year medical students. This program combined core curriculum knowledge on pain with affective and attitudinal development in an innovative way [25]. The program consisted of 4 didactic lectures, 3 learning "labs," 3 team-based learning

exercises, and 3 small-group teaching sessions. Overall, the students gave positive feedback on their training and expressed enhanced interest in pain medicine.

In Canada, the University of Toronto Centre for the Study of Pain has offered an interfaculty, interprofessional pain curriculum (IPC) since 2002 [26, 27]. In this 5-day offering, a 20-hour integrated pain course was provided by six health science departments—dentistry, medicine, nursing, pharmacy, physical therapy, and occupational therapy—to some of their second- or third-year students. Evaluation of the program revealed that it not only produced significant improvements in pain knowledge and beliefs, but also generated a high degree of student satisfaction with both the process and content of teaching [26]. Recently, the same group published on an interactive multimedia pain education program focusing on cognitive (knowledge-based) as well as reflective (affective, experiential, and attitudinal) aspects of pain evaluation and management [28].

The Developing Countries Working Group of the IASP has been supporting several educational initiatives specifically for developing countries for a decade now by giving grants for educational programs (74 grants to members from 34 countries) and establishing clinical training centers [29].

Conclusion

A recent editorial by John D. Loeser, MD, former president and founding member of the IASP, identified "inadequate education of primary care providers about pain and how to treat it" as one of five major crises in pain management today [30]. To effectively address this problem, basic pain education should be made a mandatory and integral part of medical school curricula in developed and developing countries alike. A small but growing number of such educational efforts are taking place, mostly in developed countries, as briefly reviewed above. Now is the time to rigorously evaluate these programs to probe their effectiveness [31] and expand upon their evidence base so it can be effectively used in political and advocacy campaigns to further expand pain education offerings worldwide. As a recent editorial put it [32], "education…education…education" in the area of pain should be our motto now.

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