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Map of Pain Education in Latin America: current state and perspectives

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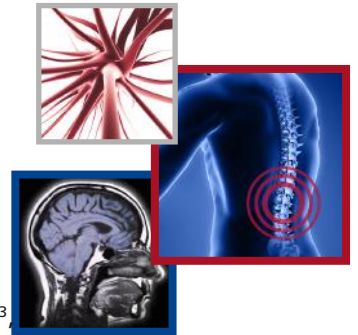
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Practice points

- A generally observed barrier for adequate pain management in Latin American countries is the lack of sufficient pain centers and properly trained pain professionals.
- Pain education programs are needed to face the challenges of pain management in Latin American countries.
- Undergraduate and postgraduate pain education programs demonstrated previously to be useful in order to advance knowledge about pain science and the clinical management of pain.
- There are chronic, structural and cultural barriers to adequate pain management that can be addressed and discussed in pain education programs.
- In Latin America, the impact of chronic pain is associated with low education, unemployment and limited access to healthcare services.
- The survey conducted by Federación Latinoamericana de Asociaciones para el Estudio del Dolor showed that 90.5% of respondents stated that there was a shortage of pain specialists and 95.35% answered that the number of pain centers was insufficient.
- There is a shortage of undergraduate, graduate, primary care programs for pain education and training programs for graduate specialties in pain.
- Programs to improve knowledge about the science of pain and pain management must be harmonized for all Latin American countries and must be accessible to all types of health professionals, not just physicians.
- At the University, minimum requirements for pain management should be included within the undergraduate curriculum of the different healthcare professions.

The Latin American Map of Pain Education initiative has developed steadily in recent years. A recent survey yields important new data on the current state and allows outlining of the next steps to improve pain education in Latin American countries. A survey conducted by Federación Latinoamericana de Asociaciones para el Estudio del Dolor (FEDELAT) with data from 19 Latin American countries showed that a generally observed barrier is the lack of adequately trained pain professionals and the insufficient number of pain centers. There is a need for formal programs of pain education and palliative care in undergraduate and graduate programs. These programs should be accessible not only to physicians but to all types of healthcare professionals involved in the management of pain patients. The article includes some recommendations that will certainly be helpful in improving pain education over the next decade in Latin America.

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In recent years, the prevalence of chronic pain in Latin America was reported to range from 29.7 to 52.8% [1]. Reports of prevalence have high variability, especially related to the threshold level adopted for pain chronicity. Although, the statistical results of individual studies are not necessarily representative of the country or region as a whole, the evidence from different studies supports the generalizability of the data [1–3].

Pain education can be defined as the process of receiving systematic instruction about pain science and pain management. This word may refer to the education and training of physicians and other healthcare professionals but also to the education of patients about management of suffering and pain. In this article, when we use the term ‘pain education’ we refer normally to the teaching and learning structured activities for healthcare professionals [4–7].

Undergraduate and postgraduate pain education programs showed to be useful to improve the knowledge about pain science and the clinical management of pain in different countries and settings [4–7]. Despite some mixed results reported about the efficacy of pain education programs [7], educational experience proved that short interventions are sufficient to modify knowledge and perceptions, while longer and repetitive interventions, involving interactivity with experienced colleagues, improve professional skills. In general, recommendations include the introduction of pain related educational standards across all healthcare professions, greater integration of pain content in undergraduate programs and interdisciplinary approaches to the topic [5–8].

Therefore, we consider that pain education programs are needed to face the challenges of pain management in developing countries, including Latin America nations [4–9]. The development of educational programs seems to be crucial to overcome obstacles like the lack of physicians training in chronic pain diagnosis and management. Therefore, the appropriate pain management should be targeted by educational programs [1,4–9].

Rico *et al.* stated that the main obstacles to achieve a high standard in the treatment of pain are insufficient training of physicians and the lack of education programs for pharmacists, nurses and other healthcare professionals [9]. Pain education programs may be helpful to clarify misconceptions about the correct use of pain medicines among physicians. Insufficient education of dentistry, midwifery, nursing, occupational therapy, pharmacy, physiotherapy and allied healthcare professionals is also common in Latin American countries. For that reason, it would be advisable to include them in pain education programs and campaigns [4–10].

Impact of pain

In general, the prevalence and impact of pain are greater in females and older patients; other demographics characteristics associated to chronic pain are low education, unemployment and limited access to healthcare services [10–19].

Some Latin American studies and systematic reviews conducted in Brazil, Colombia and Chile also reported a predominance of chronic pain in women and the elderly [10–15].

Chronic pain affects quality of life, the ability to work, activities of daily living and the maintenance of both social and family relationships [1,7,9]. A study on chronic pain in Colombia, conducted by Guerrero Liñeiro *et al.* in 1583 adults, male or female, found that 36% of participants reported an impact on work ability. In this study carried out by the Asociación Colombiana para el Estudio del Dolor, 34.1% of patients reported a negative impact on their emotional mood, 33.3% on sleep and 27.3% on social activities [18].

In a study conducted by Pereira *et al.* in 934 Brazilian elderly patients, 17% of patients reported that chronic pain greatly interferes with their work and daily activities [16].

Obstacles to pain management

Economic, social and cultural obstacles are well-known structural and chronic barriers for developing countries and they are obstacles to proper pain management. Lack of public health politics or poor education for patients and physicians are common issues for all Latin American countries. Related to pain management, for example, a general observed barrier is the lack of sufficient pain centers and adequately trained pain professionals in Latin America [1–3,17–22].

In Latin American countries, pain guidelines are not always followed by healthcare professionals and pain treatment seems to be driven mostly by tradition and personal experience [18–22]. According to García *et al.*, the lack of awareness about the importance of clear policies and guidelines has led to a constant under treatment of pain in the region [10,22].

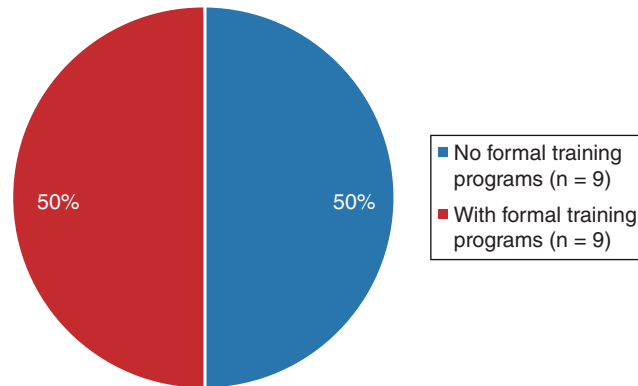


Figure 1. Formal pain training programs (alone or combined with palliative care) in Latin America (n = 18 countries).

Insufficiency of Education programs

Training is an important part of pain management and palliative care programs [1–3,17–21]. A systematic review of training programs for healthcare professionals conducted by Vindrola-Padros found that the main barriers during implementation of pain and palliative care education programs were a lack of recognition (acknowledgement) of the importance of professional education, a shortage of funding and the unavailability of trained teaching staff [19].

A study conducted by Garcia *et al.* reported that among 17 Brazilian universities that participated in academic leagues for pain education, only three (18%) offered a discipline dedicated specifically to the study of pain, while in five (29%) pain education was not part of the curriculum [22].

A recent analysis carried out by Pastrana *et al.* on data from 19 Latin American countries showed that despite constant efforts to improve the quality of palliative care, most Latin American nations did not consider palliative medicine as a medical specialty. Undergraduate and graduate training programs are still insufficient relative to regional needs, and education programs vary widely between countries in structure, content and duration [23].

Therefore, Federación Latinoamericana de Asociaciones para el Estudio del Dolor (FEDELAT) conducted a multinational survey from January to June 2020 in order to assess the status of pain education and retrieve key data that could be useful in improving pain management in Latin American countries.

Current Map of Pain Education in Latin America

Since 2018, the FEDELAT Epidemiology Committee has been developing a diagnosis of the situation of pain education in Latin America, a project that has been named “*Latin American Pain Education Map*” [10].

The objectives of this initiative are to understand the current state of professional education in pain in Latin America, to generate an available and reliable consultation tool for all Latin American healthcare workers who require training in pain and palliative care and to establish FEDELAT guidelines to improve access and quality of pain education for health personnel in Latin America.

The methodology to achieve our objectives consisted of an online questionnaire, meant to be answered by the Presidents of the Pain Associations of the countries that participate in FEDELAT or their delegates. They were also asked to distribute the survey to pain associations in their respective countries.

Data from this initiative have been presented in three academic events, the first in Lisbon 2018, the second in the Mexican Congress in 2019, and the third, with the results of the last survey, in the December 2020 virtual meeting of Pain in Brazil (IX CINDOR, *IX Congreso Interdisciplinar de Dor da USP*, São Paulo, Brazil).

The current survey identified elements in pain and palliative care training in the participating countries, and a quantitative analysis of the information was carried out through percentages and averages.

The results of this new survey showed that only one out of the 19 countries invited to participate (El Salvador) did not respond to the questionnaire. Participating countries, number of pain and palliative care specialists and country population can be seen in [Table 1](#).

According to the responses to the questionnaire, nine Latin American countries (50%) did not have formal training programs in pain management, such as programs endorsed by the Ministry of Education ([Figure 1](#)).

In general, the duration of pain training programs varies from 1 to 3 years. Haiti and Brazil reported training programs of 1 year, Panama and Bolivia 2 years and Peru 3 years. Venezuela reported 1 or 2 years according to specialty. Mexico has a 1 year program for a certified pain specialist (algologist) and palliative care specialist. Costa

Table 1. Data from 18 Latin American countries that participated in the FEDELAT survey.		
Country	n of specialists in pain and/or PC	Population
Argentina	Data not provided	44,938,712
Bolivia	12	11,513,100
Brazil	400	211,049,527
Chile	150	18,952,038
Colombia	400	50,339,443
Costa Rica	60	5,047,561
Dominican Republic	10	10,738,958
Ecuador	Pain and PC: 1 Pain: 20 PC: 3	17,373,662
Guatemala	15	16,604,026
Haiti	Pain: 7 Pain and PC: 58	11,263,077
Honduras	None	9,746,117
México	Certified pain specialist: 343 Certified PC specialist: 194	127,575,529
Nicaragua	7	6,545,502
Panamá	14	4,246,439
Paraguay	15	7,044,636
Perú	20	32,510,453
Uruguay	50	3,461,734
Venezuela	70	28,515,829

PC: Palliative care.

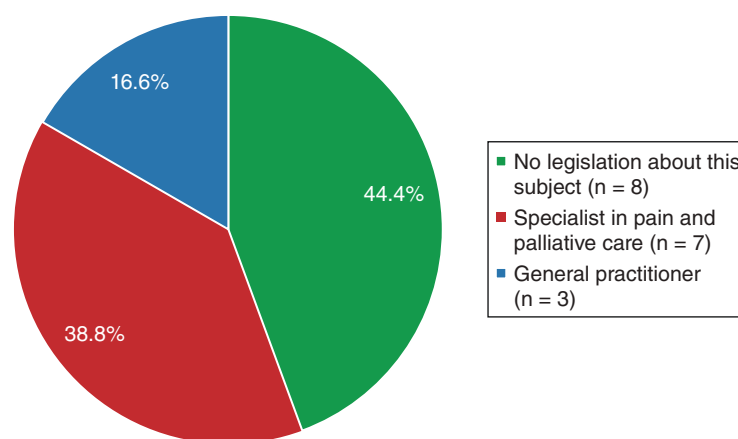


Figure 2. Level of professional qualification required for the management of patients with chronic pain (n = 18 countries).

Rica has a 4 year graduate degree in palliative care medicine, and a year and a half for a Master degree. Colombia reported a 1 year training program for anesthesiologists and a 3 year training program for general practitioners.

The level of professional qualification required for in clinical centers was assessed in each country in accordance with their laws or regulatory requirements. More than half of the countries (55.6%) have some kind of regulation about pain management, and the involvement of a general practitioner or a specialist in pain and palliative care is required for the management of patients with chronic pain (16.6 and 38.8%, respectively). However, 44.4% of the countries did not report any legislation on this subject (Figure 2).

Non-formal education was provided by pain associations through annual national congresses, occasional training and education meetings and periodic (weekly or monthly) training meetings on particular topics. Professional pain associations allowed the participation of different healthcare professionals, such as physicians, nurses, therapists, etc. in 95.2% of cases, although in a small percentage of cases the associations were exclusively for physicians.

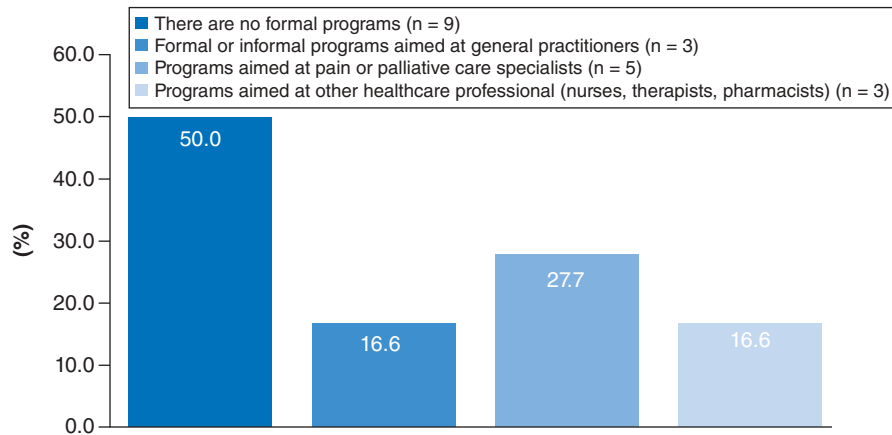


Figure 3. Common problems about pain education in Latin American countries (n = 18 countries)*.

*Some countries have more than one program.

When asked if there were a sufficient number of pain doctors and pain therapy centers in their country, 90.5% stated that there was a shortage of pain specialists and 95.35% answered that the number of pain centers was insufficient.

Regarding the current state of pain education in their country, a majority highlighted the lack of programs for the specialty. Many stated that some adjustments were needed to improve programs at different levels (undergraduate, graduate, primary healthcare, specialty) (Figure 3).

Current issues detected by the Pain Education Map

In general, there is a lack of universities involved in different regions in each country. There is a shortage of undergraduate, graduate and primary care programs for pain education. There is also a lack of training programs for graduate specialties in pain.

There is no professional profile defined by the Ministry of Education to assist in pain centers or clinics. Training in pain management at different educational levels should be formalized.

Some countries have programs endorsed by the Ministry of Education. However, these training programs are linked to medical residency programs and they are on average only for one or two residents per year.

There are some Pain programs of excellence, including fellowship and specialty programs. However, standardized Pain programs are lacking, and the quality of information available for pain training programs is low in most countries.

Some organizations are in charge of training healthcare professionals, but they work on their own, somehow disconnected from pain associations, public health policies and the specific needs of each region. Another issue is that pain training is not available in undergraduate medicine and nursing programs.

Future perspective & next steps

Based on this situational diagnosis, the authors outline some perspectives and next steps to improve pain education in Latin America. It is important to carry out standardized pain education programs in the FEDELAT countries enabling all healthcare professionals to have access to a minimum curriculum and reach a similar academic profile. Therefore, it is vital to standardize the curriculum in all FEDELAT member countries, and to enhance the activity of the FEDELAT Pain Education and Training Commission in Latin America.

At the University, it is key to establish a compulsory or mandatory academic pain program in every undergraduate medicine program and regulate graduate training in pain. Minimum requirements for pain management should be included within the undergraduate curriculum of the different healthcare professions. Pain education should begin in undergraduate programs, using an organized plan for care in pain units, including classes on interventional care and palliative care. The training of Primary HealthCare professionals is also a fundamental step.

The development of a Continuing Medical Education program with standardized topics and skills for all Latin American countries is advisable. Certification is recommendable for interventional practices every 5 years with

continuous training. These programs may have special chapters for different types of healthcare professionals (physicians, nurses, psychologists, pharmacists, therapists) and diverse types of patients (children, elderly).

Conclusion

Our perspective is that these steps mentioned above will be helpful in improving pain education over the next decade in Latin America. A main first step is to increase formal programs of pain education and palliative care in undergraduate and graduate programs and as a specialty. These programs should be harmonized for all Latin American countries and must be accessible to all types of healthcare professionals.

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References

Papers of special note have been highlighted as: ● of interest; ●● of considerable interest

- García CA, Santos Garcia JB, Rosario Berenguel Cook MD *et al.* Undertreatment of pain and low use of opioids in Latin America. *Pain Manag.* 8(3), 181–196 (2018).
- Pastrana T, De Lima L. Palliative care in Latin America: are we making any progress? Assessing development over time using macro indicators. *J. Pain Symptom Manage.* 63(1), 33–41 (2021).
- Sá KN, Moreira L, Baptista AF *et al.* Prevalence of chronic pain in developing countries: systematic review and meta-analysis. *Pain Rep.* 4(6), e779 (2019).
- Carr EC, Briggs EV, Briggs M, Allcock N, Black P, Jones D. Understanding factors that facilitate the inclusion of pain education in undergraduate curricula: perspectives from a UK survey. *Br. J. Pain* 10(2), 100–107 (2016).
- **Identifies a broad range of approaches, for pain education, that could be deemed as successful across a range of health disciplines in undergraduate students.**
- Briggs EV, Carr EC, Whittaker MS. Survey of undergraduate pain curricula for healthcare professionals in the United Kingdom. *Eur. J. Pain* 15(8), 789–795 (2011).
- **Recommends the introduction of pain related educational standards across all health professions, with greater integration of pain content in undergraduate programs and interdisciplinary approaches to the subject.**
- Miró J, Castarlenas E, Solé E, Martí L, Salvat I, Reinoso-Barbero F. Pain curricula across healthcare professions undergraduate degrees: a cross-sectional study in Catalonia, Spain. *BMC Med. Educ.* 19(1), 307 (2019).
- Mankelov J, Ryan CG, Taylor PC *et al.* International, multi-disciplinary, cross-section study of pain knowledge and attitudes in nursing, midwifery and allied health professions students. *BMC Med Educ.* 22(1), 547 (2022).
- **Discusses in detail pain related knowledge and attitudes and the impact of pain education training in undergraduates students.**
- Ashton S, Kilby M, Wu J, Lo K. Teaching pain management to health professional students: a systematic review and meta-analysis. *Br. J. Pain* 16(4), 379–403 (2022).
- **Shows that short theoretical interventions are sufficient to change students knowledge and perceptions, while the associated meta-analysis demonstrates a clear effect in favor of the knowledge intervention.**
- Rico MA, Krachete DC, Iskandar AJ *et al.* Use of opioids in Latin America: the need of an evidence-based change. *Pain Med.* 17(4), 704–716 (2016).
- **An article that gives a good overview of pain management challenges and barriers in Latin America.**
- García JBS, Lopez MPG, Barros GAM *et al.* Latin American Pain Federation position paper on appropriate opioid use in pain management. *Pain Rep.* 4(3), e730 (2019).
- Diaz R, Marulanda F. Chronic nociceptive and neuropathic pain in adult population in Manizales (Colombia). *Acta Med. Colomb.* 36, 1 (2011).
- Miranda JP, Morales A, Cavada G *et al.* Chilean validation survey of chronic non cancer pain. *Rev. Dolor.* 22(60), 10–18 (2013).
- García JB. Change Pain Latin America Advisory Panel. Change pain Latin America – new initiative established to enhance management of patients with chronic pain in Latin America. *Braz. J. Anesthesiol.* 64(2), 140–142 (2014).
- **This perspective article shows that inadequate management of patients with chronic pain in Latin America is associated to gaps in clinician understanding and misconceptions associated with pain management.**
- de Moraes Vieira EB, Garcia JB, da Silva AA, Muallem Araújo RL, Jansen RC. Prevalence, characteristics, and factors associated with chronic pain with and without neuropathic characteristics in Sao Luis, Brazil. *J. Pain Symptom Manag.* 44(2), 239–251 (2012).

15. Sá KN, Baptista AF, Matos MA, Lessa Í. Chronic pain and gender in Salvador population, Brazil. *Pain* 139(3), 498–506 (2008).
16. Pereira LV, de Vasconcelos PP, Souza LA, Pereira Gde A, Nakatani AY, Bachion MM. Prevalence and intensity of chronic pain and self-perceived health among elderly people: a population-based study. *Rev. Lat. Am. Enfermagem*. 22(4), 662–669 (2014).
17. Dellaroza MS, Pimenta CA, Lebrão ML, Duarte YA, Braga PE. Association between chronic pain and self-reported falls in the SABE study population. *Cad. Saude Publica*. 30(3), 522–532 (2014).
18. Guerrero Lineiro AM, Gomez Lopez MP. Prevalence of chronic pain in Colombia. *ACED*. (2014). <http://fedelat.com/wp-content/uploads/2018/03/139-1.pdf>
19. Vindrola-Padros C, Mertnoff R, Lasmarias C, Gómez-Batiste X. Palliative care education in Latin America: a systematic review of training programs for healthcare professionals. *Palliat. Support. Care* 16(1), 107–117 (2018).
- **Discusses the main barriers during the implementation of educational programs, including lack of recognition of the importance of palliative care and pain education, lack of funding and the difficult to access to trained teaching staff.**
20. Pastrana T, De Lima L, Wenk L *et al*. In: *Atlas de cuidados Paliativos de Latinoamérica ACLP – 1a edicion*. IAHPC Press, TX, USA (2012).
21. Garcia JBS, Bonilla P, Kraychete DC, Flores FC, Valtolina EDP, Guerrero C. Optimizing post-operative pain management in Latin America. *Rev. Bras. Anestesiol*. 67(4), 395–403 (2017).
22. Garcia JBS, Neto JOB, Rodrigues TA. The role of academic leagues as a strategy for pain education in Brazil. *J. Pain Res*. 12, 1891–1898 (2019).
- **An interesting paper shows the Brazilian experience with academic leagues that addressed curricular deficiencies in pain education through strategies little known in other countries.**
23. Pastrana T, De Lima L, Stoltenberg M, Peters H. Palliative medicine specialization in Latin America: a comparative analysis. *J. Pain Symptom Manage*. 62(5), 960–967 (2021).