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Leveling the Playing Field for Mentors and Mentees in Academic Pain Medicine for the Benefit of Patients

Giuliano Lo Bianco[1], Michael E Schatman[2,3], Silvia Natoli[4,5], Christopher L Robinson[6]

[1]Anesthesiology and Pain Department, Foundation G. Giglio Cefalù, Palermo, Italy; [2]Department of Anesthesiology, Perioperative Care, and Pain Medicine, NYU Grossman School of Medicine, New York, NY, USA; [3]Department of Population Health-Division of Medical Ethics, NYU Grossman School of Medicine, New York, NY, USA; [4]Department of Clinical-Surgical, Diagnostic and Pediatric Sciences, University of Pavia, Pavia, Italy; [5]IRCCS Policlinico San Matteo, Pavia, Italy; [6]Department of Anesthesiology, Perioperative, and Pain Medicine, Harvard Medical School, Brigham and Women's Hospital, Boston, MA, USA

Correspondence: Giuliano Lo Bianco, Anesthesiology and Pain Department, Fondazione Istituto G. Giglio Cefalù, Via Pietrapollastra, Cefalù, Palermo, 90015, Italy, Email giulianolobianco@gmail.com

Mentorship plays a crucial role in shaping the future of academic pain medicine, benefiting both mentors and mentees alike. Despite extensive literature on mentorship in academic medicine, its application to pain medicine has been insufficiently explored. This editorial addresses the current state of mentorship in academic pain medicine, highlighting both the benefits and challenges within the Italian system. In Italy, academic education in pain medicine is integrated into anesthesiology and intensive care programs, with limited formal training opportunities for aspiring pain physicians. The lack of mentoring is further aggravated by a prevalent "anti-mentoring" attitude among Italian teachers, regardless of whether they hold an academic position or not.

This analysis emphasizes the need for greater inclusion of experienced pain physicians in academic residency programs to foster formalized mentorship and training in the field. Addressing anti-mentorship behaviors and promoting a supportive environment for mentorship are essential steps toward enhancing training and improving patient care in the field of pain medicine.

True leaders know that leadership is not about asserting power over others, but about inspiring and empowering them. Lao Tzu

The term "mentor" has its origin in ancient Greek mythology. Mentōr was the friend whom Odysseus put in charge of his household when he left for Troy and served as the advisor of Odysseus' young son Telemachus.[1] Although many definitions of "mentor" exist, a recent definition of "a teacher, counselor, and advocate"[2] will suffice for purposes of this analysis. Holmes et al postulated five basic competencies of mentors: knowledge, credibility, communication, altruism, and commitment.[3] More specifically, core skills of mentorship include active listening, building trust, encouraging and inspiring, identifying barriers and goals, educating and teaching new skills, providing constructive criticism, managing risk, and providing opportunities.[4] Specific skills aside, a mentor's wisdom and trustworthiness are imperative. Finally, mentorship is not something that is provided passively. Rather, as Broughton et al have posited, effective mentorship is "intentional",[5] and intentional mentors recognize that their excellence is contingent upon a desire to mentor most effectively. Mentorship is more than "knowledge transfer" and "teaching through example." Strong mentorship involves fostering not only professional growth but also personal growth.[6] Early research on mentorship in academic medicine has demonstrated that the involvement of a mentor is associated with a higher volume of publishing, greater confidence in one's abilities, and higher levels of career satisfaction.[7] Additionally, there is an association with a greater likelihood of promotion to senior ranks and leadership positions[8] and improved grant application outcomes.[9] Importantly, the benefits of mentoring are bidirectional, benefiting not only mentees, but also mentors. Benefits to mentors may include personal fulfillment (associated with "giving back"), assistance on projects, development of leadership and coaching skills, increased recognition, renewed interest in personal career, and the mentor's own career advancement.[10] Interestingly, more mentors having backgrounds in different fields and subfields can increase the mentee's level of educational growth.

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While the topic of mentorship in medicine is widely discussed in the extant literature, its coverage as it relates to pain medicine has been sparse. Although there have been numerous publications on the imperative of mentorship in the development of palliative care physicians,[11,12] there has been a conspicuous absence of such literature as it pertains to the development of pain physicians. An exhaustive PubMed search (search terms "pain" and "mentor") from July 8–10, 2024, yielded 463 articles, with only one article addressing the need for mentorship in academic pain medicine. A 2020 study by the North American Neuromodulation Society (NANS)[13] determined that the organization's mentor/mentee program improved neuromodulation education from a clinical perspective, although it did not address academic development. A 2019 review examining opportunities and challenges for junior physician scientists involved in pain clinical trials[14] noted the potential benefits of mentorship but did not suggest that mentorship was necessarily lacking in American academic pain medicine, specifically. Additionally, a study of survey data on developing and maintaining a pain research force in the United States was published in 2023.[15] Seventy percent of respondents who identified as researchers reported that they had received formal research training or mentoring, with 60% reporting having received such specifically relating to pain. The authors interpreted their survey data to suggest that among established researchers, mentoring was "fairly common." Anecdotally, at recent pain conferences in the United States and abroad, the imperative of providing mentorship has been informally although widely discussed, with a strong consensus suggesting that "lifting up" the next generation of pain scientists is a source of great fulfillment and joy – which is consistent with the aforementioned findings.[10] However, we are disappointed and disturbed by the attitudes and behaviors of too many of our international colleagues, who seem to be providing what we will refer to as "anti-mentoring" to early career pain scientists in their countries. Anti-mentors are described as people of influence "whose life choices personal or professional have led them to circumstances in their lives that you definitely do not wish to experience in your life".[16] An anti-mentor is generally an individual with negative traits, such as greediness, haughtiness, jealousy, and self-centered personality, who has the potential to negatively impact the career and education of those surrounding the anti-mentor. In medicine, anti-mentors harm individuals' career progressions by preventing aspiring chronic pain physicians from pursuing academic careers and limiting opportunities. This could have detrimental effects on professional success and, from a broader perspective, on the quality of healthcare. Where and when should a chronic pain physician learn, if an anti-mentor actively prevents trainees from needed opportunities during training? The perspectives on and practices of mentorship in Italian pain medicine are similar in some regards to those in the United States, although stark differences exist. Despite mentorship in academic medicine being broadly recognized for its substantial benefits, "anti-mentoring" exists among Italian academics. This has caused for years the partition of professorships for faithful pupils, without fair competition and independently of scientific and professional merit. Such anti-mentorship attitudes in the academic system are maintained by the scarce opportunities of academic careers given the scant resources that are put into the university systems in some countries. Thus, the path to becoming a researcher and/or professor at the university level still lays the foundations for the creation of an oligarchic fealty-based system in which career progression is far from any meritocratic logic.

In Italy, post graduate specialization training is held by academic institutions, and pain medicine training is integrated into the broader specialization of Anestesia, Rianimazione, Terapia Intensiva e del Dolore (Anesthesia, Resuscitation, Intensive and Pain Therapy) in a five-year residency program. Unfortunately, the lack of experienced pain physicians within academic teaching staffs contributes to a low level of mentorship practices led by non-pain specialist professors. Because non-pain specialists dominate the academic landscape of anesthesia and resuscitation, there is a low level of interest in developing adequate mentorship in pain medicine, and the development of high standards in the discipline is greatly hindered. Academics are well aware of how prestige tends to be passed down through generations, a phenomenon known as the "Matthew effect of accumulated advantage". This concept refers to the manner in which researchers who are already highly cited or well-established continue to receive disproportionately greater recognition, resources, and opportunities compared to their less-cited peers. Essentially, once scholars gain visibility or renown, they become more likely to receive additional citations, funding, and career advancement, creating a cycle whereby the already successful continue to thrive, while others may struggle to gain similar traction, despite their efforts.[17] The "Matthew effect", named after the Parable of the Talents in the biblical Gospel of Matthew (Matthew 25:14–30), generally carries a negative connotation because it reinforces inequalities within academic systems.[18] However, it can also serve as a springboard for mentees when their mentor is a high-status researcher. Given the small number of pain physicians among the teaching staffs of anesthesia and resuscitation residency programs, as well as the scant resources allocated for academic development in this field in Italy, academic high standard researchers and mentors are usually

dedicated to anesthesia or resuscitation, and those outside these elite circles may find it challenging to achieve similar recognition, even if their work is of comparable quality. Meanwhile, many highly qualified pain physicians work outside academia, where they have limited opportunities to hire and train new anesthesiologists due to systemic constraints. This creates a significant gap in formal mentorship for aspiring pain specialists, who miss out on structured training programs and the guidance of experienced mentors. In a field such as medicine—in which both technical expertise and "soft" skills are essential and require time to develop—this lack of opportunity can severely hinder the growth and potential of young physicians. This state of affairs has forced several Italian trainees to seek post-graduate training abroad. Many trainees who aim to become pain physicians are forced to learn independently, often paying for costly courses in different states and countries during their slated vacation days. Additionally, they may spend their free days shadowing generous colleagues who allow them to observe and follow their work without compensation. As a result, they obtain a piecemeal education, in which several aspects are missing. Worryingly, many Italian physicians, after obtaining specific skills, look for more rewarding career opportunities in other countries. This phenomenon is referred to as "brain drain", and is far more complex than a simple emigration of graduates, amplified by fewer job opportunities and low wages in Italy. The incidence of the Italian brain drain is difficult to definitively ascertain, and a thorough discussion on this is beyond the intents of this manuscript.[19]

Briefly, in Italy, emigration began to affect the national capital of qualified personnel beginning in 1992, and in 2001 there were over 39.071 Italian graduates residing abroad, along with a negative growth of researchers in the period from 1996 to 1999 (- 3.56% versus +3.90. % of rest of the European Union).[20] This brain drain is so relevant that in recent years, the Italian government has promoted an economic support program to encourage the "return of brains".[21] Other corrective measures have been undertaken by the ministry of education, by recognizing formal education and training in pain medicine within anesthesiology residency programs, although implementation could be enhanced. At present, after medical school, aspiring pain physicians must complete a five-year residency in Anesthesia, Resuscitation, Intensive and Pain Therapy, although there is no officially defined amount of time devoted to pain medicine education. Mandatory pain education procedures during the five-year residency program include: the management of ten patients with chronic pain, twenty-five epidural injections for chronic pain treatment, ten peripheral nerve blocks and ten spinal accesses for invasive pain management. The law does not provide further requirements. It follows that although there is some exposure to pain management, there is insufficient training dedicated to pain medicine. Meanwhile, greater awareness among trainees is developing, and they are looking forward towards greater independence and greater training opportunities. Fortunately, Pain Medicine in Italy has been formally recognized as a distinct hospital discipline since 2018.[22] Thus, there will be increasing possibilities to practice pain medicine in the health care system. Moreover, scientific societies, such as the SIAARTI (Italian Society of Anesthesia, Analgesia, Resuscitation and Intensive Care) and local associations (such as Pain Academy, SonoPain, and Mediterranean Pain Forum) which promote initiatives aimed at fostering mentor-mentee relationships, are gradually gaining traction.[23] They are attempting to provide young pain physicians with the support they need to excel clinically and academically.

Nevertheless, this change is not occurring uniformly across Italy and there is a need for mentorship of newer generations who might have a stronger aptitude for mentorship. Before considering a specialization in pain medicine, the field of anesthesia and intensive care in Italy must recognize the need for comprehensive and robust education in pain management and acknowledge the urgent need to include a definite number of pain specialists in the teaching staff of residency programs. Such inclusion is crucial for standardizing and improving the training process for pain physicians in Italy. It would also promote formal mentorship programs, fostering inclusive and dedicated training that ensures the development and spread of the discipline. This approach would provide aspiring pain physicians with the mentorship that they need if they are to grow, while also nurturing young professionals who could significantly shape the future of pain medicine. In the professional development of a pain physician, the sharing of knowledge is not merely an act of generosity, but additionally a necessity. The mentor's role becomes a vital symbol of continuity, growth, and renewal for both the mentee and the mentor. Mentorship has numerous benefits. It provides mentees with the opportunity to learn beyond textbooks, gaining real-world insights and practical experience. Simultaneously, it offers mentors the opportunity for personal and professional fulfillment, fostering both individual and collective growth within the field of pain medicine To quote Robert Boyce, "Knowledge is power. Knowledge shared is power multiplied."[24] Its dissemination enriches the recipient and perpetuates the very essence of knowledge itself. Without the sharing of knowledge, there can be no future.

Yet, sharing knowledge, in and by itself is insufficient in academic pain medicine. Without the empowerment provided by strong mentorship, the development of great pain scientist-practitioners will never reach its full potential.

Disclosure

Dr Giuliano Lo Bianco reports speaker fees from Abbott, and Stryker, outside the submitted work. Dr Michael Schatman is senior medical advisor for Apurano Pharma, outside the submitted work. The authors report no other conflicts of interest in this work.

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