Setting Clinical Pain Research Priorities in Low- and Middle-Income Settings

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Pain is a leading cause of disability worldwide, with its burden rising disproportionately in low- and middle-income countries (LMICs) [1-3] and among people living in low- and middle-income settings within high-income countries [4]. Socioeconomic, cultural, and health system challenges in these settings exacerbate untreated pain, reducing quality of life and economic productivity [5]. Despite this, pain often receives minimal attention and is poorly managed, leading to further incapacity, morbidity, and poor quality of life [6]. In low-resource settings, evidence-based and knowledge-driven effective pain management strategies are largely absent due to minimal investment in pain research [7, 8]. Furthermore, there are significant gaps in the scope and focus of existing pain research conducted to inform contextually relevant care strategies. This Fact Sheet focuses on key challenges and priority areas to guide clinical pain research priorities in low- and middle-income settings, supporting IASP's 2025 Global Year About Pain Management, Research and Education in Low- and Middle-Income Settings.

Challenges of Conducting Clinical Pain Research in Low- and Middle-Income Settings

Clinical pain research in low- and middle-income settings faces significant challenges, including limited funding, insufficient human capital, inadequate infrastructure, limited knowledge of research methodology, unsupportive work environments for conducting research, and lack of tools and data [9-11]. Cultural stigma around pain, communication barriers, low literacy, participant retention issues, and cross-cultural and language differences further hinder research efforts [12, 13]. Additionally, competing health priorities, such as infectious diseases and maternal and neonatal health, often divert attention from pain research [14]. The absence of robust policy support and socioeconomic inequalities further impede the inclusion of diverse populations and the development of sustainable pain research initiatives.

Priority Areas and Key Considerations for Clinical Pain Research in Low- and Middle-Income Settings

There is a knowledge gap in our understanding of pain and its link to disability in low- and middle-income countries due to the lack of robust research on the topic [15]. Bridging this gap requires a comprehensive understanding of the burden and barriers to pain management and the development of cost-effective, culturally appropriate interventions. In addition, incorporating equity, diversity, inclusion, and other considerations, including patient and caregiver involvement in pain research, would help reduce these disparities. Closing these knowledge gaps is critical to advancing equitable pain care and improving health outcomes in under-resourced settings.

The following outlines priority areas, considerations, and opportunities to advance clinical pain research and improve pain management in low- and middle-income settings:

Understand the Burden of Pain

- Develop standardized research methodologies (e.g., protocols), tools (e.g., survey questionnaires), and outcome measures in local languages suitable to cultural needs.

- Conduct epidemiological studies to determine the prevalence and impact of chronic pain conditions, thus forming the base from which further pain research and management agendas can be developed.

- Prioritize research that considers the unique economic costs (e.g., medical costs, productivity losses), epidemiological transitions, and projected trends of painful conditions.

Develop and Evaluate Pain Management Strategies

- Focus on translational pain research and embedded research to impact clinical practice.

- Develop and evaluate context-specific (e.g., local priority populations, groups such as older adults) pain management intervention strategies to local cultural, social, and economic contexts. The involvement of people living with pain in the development and evaluation process is crucial to improve the uptake and sustainability of newly developed interventions.

- Develop and evaluate the effectiveness of various interdisciplinary rehabilitation programs (e.g., cognitive behavioral therapy interventions, physical therapy, occupational therapy), self-management strategies and toolkits, and supportive/palliative care, including spiritual and cultural practices, to improve the quality of life of people living with painful conditions.

Address Barriers to Pain Care

- Identify and develop processes to mitigate hindrances to effective pain care, such as inadequate infrastructure, access to medication and therapeutics, cultural and systemic factors, and healthcare personnel challenges.

Address the Training Needs of Pain Researchers to Conduct High-Quality Research

- Improve the capacity of pain researchers by developing locally relevant research training programs. The training programs should include skills such as (1) problem identification, (2) formulation of high-quality and priority research questions, (3) critical appraisal of published articles, (4) planning and conducting of impactful research, (5) implementation and dissemination of research findings, and (6) advocacy for pain research and education in the local context.

- Encourage local, regional, and international collaboration and networks to share resources, expertise, and best practices. Existing examples include the In-ChildPain research network on chronic pain in childhood (www.neuron-eranet.eu/projects/INCHILDPAIN).

- Foster research partnerships with people living with pain, community members, healthcare providers, and policymakers.

Leverage Technology and Innovation

- Develop new and tailor existing digital treatments and mobile health platforms to improve pain assessment and care delivery in remote and underserved areas. Create pain registries specific to the local context to collect and share data among researchers and other users.

Policy and Advocacy

There are several opportunities for policy advocacy to advance and sustain clinical pain research in low- and middle-income settings. Specific areas include:

- Advocate for allocation of resources by governmental and non-governmental agencies to conduct pain research.

- Encourage citizen science initiatives, including citizen panels or councils, in setting clinical pain research priorities and processes (e.g., identify and prioritize research questions). This not only increases public awareness of pain research but also provides alternatives to difficulties in securing pain research funding in LMICs [16].

- Promote the inclusion of diverse interest holder groups, including people living with pain, in research priority settings.
- Promote adaptation of existing methodological approaches to suit local pain research needs.
- Push for greater global representation of pain researchers from low- and middle-income countries. There are several challenges faced by researchers from LMICs to publish their research. However, research from these settings will benefit global health [11].
- Promote innovative and culturally relevant approaches for disseminating and translating knowledge locally.
- Support policies that foster interdisciplinary collaboration in pain research.

Conclusion and Call to Action

Closing gaps in clinical pain research in low- and middle-income settings demands actionable strategies, including robust policy support, increased funding, mentorship, and training. Collaboration, capacity building, and fostering research with social impact are essential. Leveraging technological advances, such as telehealth and digital health platforms, can drive sustainable and scalable pain management solutions. Furthermore, embedding research findings into healthcare policies and practices will improve outcomes, guide resource allocation, and inspire innovation.

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