THE GLOBAL BURDEN

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Chronic pain affects at least 10 percent of the world's population – approximately 60 million people – with estimates of chronic pain prevalence closer to 20-25 percent in some countries and regions. An additional one in 10 people develop chronic pain every year worldwide. However, akin to the general global burden of disease, risk factors for persistent pain and management options are distributed unequally between high-income and low- and middle-income countries (LMICs), with those most disadvantaged bearing higher burdens of persistent pain and lesser likelihood of effective treatment.[1] In 2004, the International Pain Society and Global Health Community concluded that *"failure to treat pain is viewed worldwide as poor medicine, unethical practice, and an abrogation of a fundamental human right."*[2] Since that time, pain management is described in international law as a basic human right, with countries ethically mandated to provide pain treatment as part of their core obligations under the right to health.[3]

Pain is a subjective experience with sensory, affective and cognitive components, making it exceedingly difficult to define, characterize and quantify, especially in different cultural settings. Furthermore, epidemiologic evidence strongly suggests that patterns of all global non-communicable diseases are determined by the social conditions in which people live. This is especially true with chronic pain, as global population surveys demonstrate chronic pain prevalence is affected by gender, age, occupational stress, socioeconomic status, population density and education. Moreover, anxiety, depression, post-traumatic stress, violence and abuse are significantly associated with both the development and perpetuation of persistent pain disorders in all regions of the world.[4]

The global literature often describes pain as a symptom of modifiable disease, injury or trauma, and its presence presumed to reflect a failure of global health initiatives to address an underlying "cause." For this reason, the global focus to this point has been on treatment of cancer, HIV, infection, trauma and other etiologies of pain. However, *the 2010 Global Burden of Disease (GBD) Study reports low back pain – the vast majority without clear cause – is now the number-one cause of years lost to disability worldwide.*[5] In fact, eight of the top 12 disabling conditions globally – low-back and neck pain, migraine, arthritis, other musculoskeletal condition, depression,

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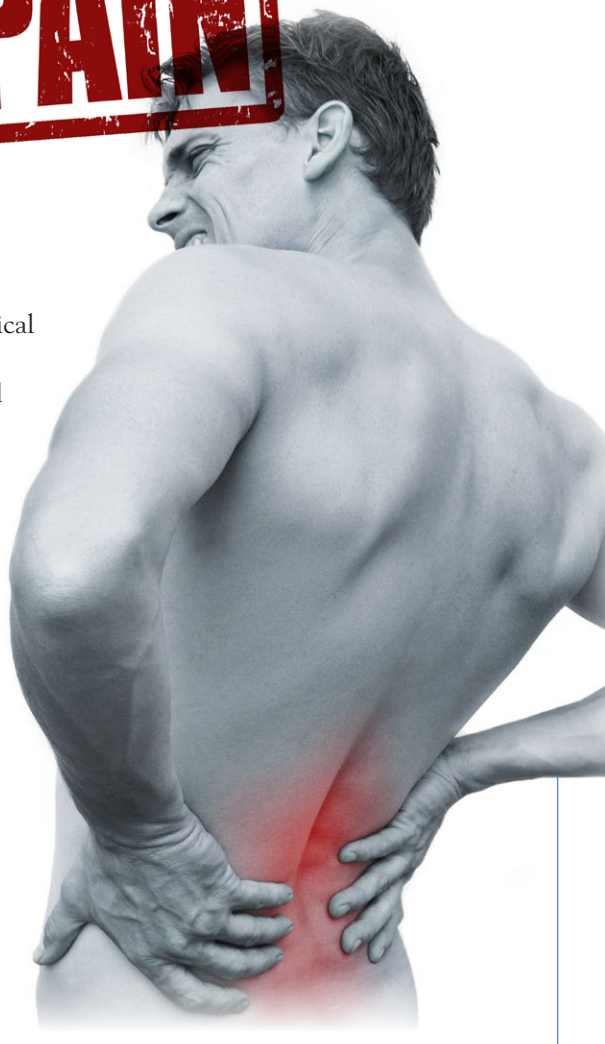
OF

CHRONIC PAIN



anxiety and drug use disorder – are all either chronic pain conditions or psychological conditions strongly associated with persistent pain.

Further characterization of these disabling pain and mood disorders should consider the presence of an underlying common pathological state of central nervous system sensitization that is exacerbated by social and emotional hardship, as at least 1-4 percent of the global population suffers from a "chronic pain syndrome" (i.e., fibromyalgia, somatoform disorder, neurasthenia and/or chronic widespread pain) comprising multiple somatic pain complaints and psychological distress.[4]

Countries struggling to ensure other basic human rights often do not allocate resources to address basic health care adequately, much less provide for acute or chronic pain management, yet these are the very areas where rates of injury, trauma, interpersonal violence, war and conflict are higher[7,8] and GBD data show that, over three decades, chronic pain and psychological distress are consistently and increasingly reducing the economic productivity of its population. LMICs literally cannot afford to ignore pain management any longer.

Appropriate global access to essential pain medicines, including opioids, for acute and cancer pain is a necessary goal, especially in LMICs, as access to life-saving surgical intervention and effective disease-modifying initiatives continue to increase. Opioid access continues to be hindered by regulatory quagmires, misinformation, and limited available health care practitioners to administer and

Continued on page 26

	Global	High-Income Asia Pacific	Western Europe	Australasia	High-Income North America	Central Europe	Southern Latin America	Eastern Europe	East Asia	Tropical Latin America	Central Latin America	Southeast Asia	Central Asia	Andean Latin America	North Africa and Middle East	Caribbean	South Asia	Oceania	Southern Sub-Saharan Africa	Eastern Sub-Saharan Africa	Central Sub-Saharan Africa	Western Sub-Saharan Africa
Low Back Pain	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	3	2	2	3	3	3	2
Major Depressive Disorder	2	4	2	2	2	2	2	2	2	2	1	1	1	1	1	1	3	1	2	2	2	3
Iron-Deficiency Anemia	3	26	48	21	85	13	11	10	15	6	6	3	3	3	3	2	1	3	4	1	1	1
Neck Pain	4	3	4	3	4	5	3	4	3	4	3	5	4	5	6	7	7	7	6	6	7	5
COPD	5	20	9	10	6	10	8	11	8	12	18	4	9	11	8	16	4	8	5	5	4	6
Other Musculoskeletal	6	2	5	4	3	4	4	3	4	7	4	8	7	6	7	11	8	10	8	9	10	10
Anxiety Disorders	7	8	6	6	5	6	5	12	12	3	5	7	5	4	4	5	6	9	7	4	6	8
Migraine	8	10	8	8	13	8	13	8	17	8	8	6	6	9	11	12	5	11	10	24	12	7
Diabetes	9	7	7	11	8	7	12	5	5	13	7	12	8	16	5	4	10	4	17	26	29	22
Falls	10	5	3	5	11	3	7	9	7	15	21	11	11	14	12	9	12	15	19	25	23	25
Osteoarthritis	11	6	13	15	9	9	15	7	6	11	11	16	12	12	10	14	19	13	16	17	25	19
Drug Use Disorders	12	11	11	9	7	15	6	16	18	9	10	9	14	10	9	13	9	16	12	16	21	20

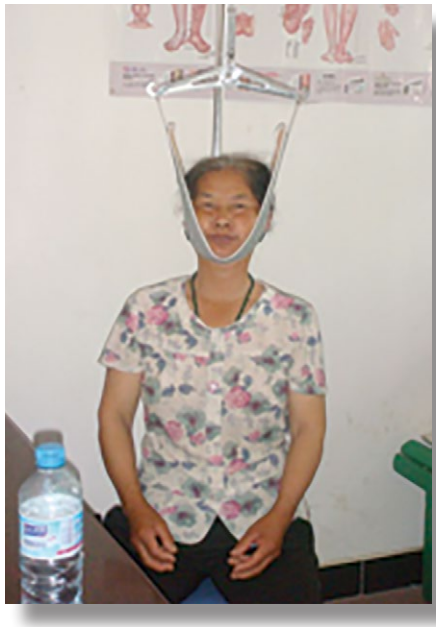
1-10 11-20 21-30 31-50 51-90 91+

Figure 3: Buchbinder et al. 2013[6]
Reprinted from "Placing the global burden of low back pain in context," Rachelle Buchbinder, Fiona M. Blyth, Lyn M. March, Peter Brooks, Anthony D. Woolf, Damian G. Hoy - Best Practice & Research *Clinical Rheumatology*. Volume 27, Issue 5, 575-589, with permission from Elsevier.

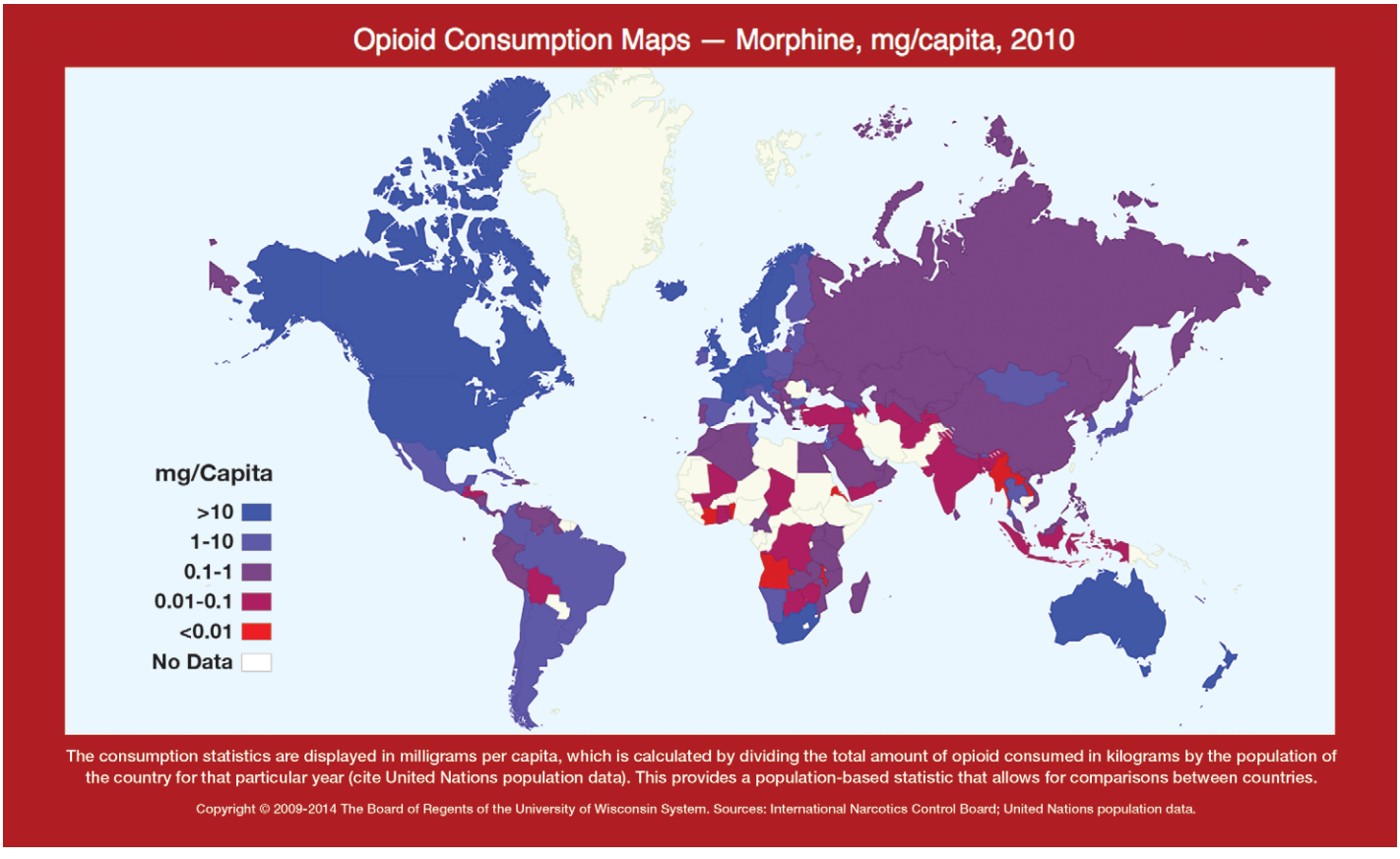
Continued from page 25

distribute medication in LMICs. As a result, staggering inequity exists in the global availability of needed opioids for acute pain and palliative care.

Yet it is critical to note that chronic pain, in particular, is not the result of an opioid deficit. As LMICs respond to the mandate for pain management, lessons must be learned from the U.S. In 2012, direct costs from low-back pain were $300 billion per year, with an additional $335 billion related to disability and lost productivity.[9] Additionally, widespread prescription of opioids and benzodiazepines to treat pain and anxiety/insomnia has risen in parallel to unprecedented increases in mortality from accidental overdose.[10] Such costs are not attainable for most countries, but the reality is that, even in high-resource countries, opioids and expensive interventions are not the answer to the biopsychosocial underpinnings of much of the disabling chronic pain worldwide.



Pain patient in China. *From personal files of K.A. Kelly McQueen, M.D.*



http://ppsg-production.heroku.com (Drug Control and Access to Medicines Consortium [DCAM] Map)

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Particularly in LMICs, more detailed assessments will be needed to clarify common, modifiable risk factors – many of which may not be strictly "medical" – when tackling chronic pain and its associated disability on a global scale. Mental health interventions (mindfulness, cognitive behavioral therapy, social support for survivors of abuse/trauma), complementary/alternative medicine (yoga, acupuncture, nutrition) and programs for functional rehabilitation (occupational, social, physical and psychological) all are relatively cost-effective options that may result in reductions in pain, disability and health care utilization in chronic pain patients, and should be considered alongside any pharmacologic or interventional/surgical initiatives.

Any country or organization making any attempt at rational global resource allocation should mandate assessment and resource-appropriate, cost-effective treatment of both pain and disability using an individualized sociocultural context.

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