Painogenicity: An ecological approach to reduce the burden of chronic pain.

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Short biography
Mark I. Johnson is Professor of Pain and Analgesia and Director of the Centre for Pain Research, School of Health, Leeds Beckett University, U.K. Mark has investigated the science of pain and its management for over 35 years with expertise in transcutaneous electrical nerve stimulation (TENS) and electrophysical agents. Current interests are non-biomedical approaches to explore, prevent and manage pain.

Tweet

Viewing chronic pain through a socio-ecological evolutionary-mismatch lens reveals environmental ‘painogenicity’ making pain sticky. Painogenicity raises awareness of health promoting (salutogenic) solutions, in a similar manner to obesogenicity for obesity.

Abstract

When viewed through a socio-ecological evolutionary-mismatch lens the burden of chronic pain has many parallels with obesity. The introduction of ‘obesogenicity’ in the mid-1990s triggered awareness in policy-makers and the public of the burden of obesity on society, refocussing efforts 'upstream'. I propose that ‘painogenicity’ could do the same for chronic pain. Painogenicity is the sum of influences that the surroundings, opportunities, or conditions of life have on promoting the persistence (stickiness) of pain in individuals or populations. Painogenicity draws attention to upstream forces that ‘threaten’ a person’s sense of well-being to make pain sticky. A painogenic lens reconfigures pain as an embodied personal *experience* embedded in a socio-ecological environment and opens-up health promoting (salutogenic) solutions to address the burden of chronic pain.

Main Text

A British Medical Journal newsroom announcement accompanying a large systematic review on analgesic drugs reminds us of the challenge of managing pain; "*Despite nearly 60 years of research, there is still a lack of high certainty evidence on the effectiveness and safety of commonly used painkillers (analgesics) for short bouts of low back pain …*"[1]. Shortcomings in the quality of clinical research in pain and anaesthesia, described by Moore et al. as 'Flawed, futile or fabricated…'[2] p.287, is one reason for the evidence-impasse. Meanwhile, chronic pain ranks globally as one of the greatest burdens of disease despite ever-increasing varieties of analgesic interventions being used in clinical practice[3] – a treatment-prevalence paradox.

A call for better quality research is motivated, in part, by a conviction that high-certainty evidence will confirm (or refute) the premise that certain analgesics are efficacious for certain types of pain. How long should this search continue? What if trial findings are inherently unstable, even in the presence of high-quality research? Some contemporary philosophers argue that despite being a real phenomenon, pain may not be amenable to scientific generalisations and therefore not an appropriate target for medical intervention[4]. Could this be an alternative reason for the evidence-impasse?

Primary care practitioners report limited expertise and resource to deliver biopsychosocial person-centred approaches for chronic pain. Patients report unsatisfactory clinical encounters that create a sense of helplessness and hopelessness about the future, rather than optimism about recovery[5]. Perhaps, it is time to reconfigure the way we view chronic pain?

In 1997 Egger and Swinburn argued for an ecological approach to the obesity pandemic and introduced the notion of obesogenicity – the tendency of the sum of influences that the surroundings, opportunities, or conditions of life have on promoting obesity in individuals or populations[6]. This refocussed attention 'upstream' and caught the imagination of health promotion researchers, practitioners, and policy-makers, catalysing whole-system approaches to tackle the obesity problem, with some notable success. Is it not time to do something similar for chronic pain?

Obesogenicity emerged through a lens of evolutionary-mismatch. Physiological traits adapted for hunter-foraging outdoor lifestyles with low calorie diets high in fibre and low in sugar, are maladapted for modern sedentary indoor lifestyles with plentiful food resources. Remarkably, evolutionary-mismatch has received little attention in the field of pain. Evolutionary-mismatch directs attention 'upstream', beyond traditional social determinants of health, to socio-ecological factors that shape a person's living experience, and may be making pain 'sticky' (q.v. Borsook et al.[7]). Painogenicity moves the pain agenda 'upstream'.

Painogenicity is the sum of influences that the surroundings, opportunities, or conditions of life have on promoting the persistence (stickiness) of pain in individuals or populations[8, 9]. Painogenicity encompasses macro-level forces such as built or natural habitats, natural resources, climate, geopolitics, and economic sectors (raw materials/agriculture, industrial, service, corporate, technical, and public)[9]. Practitioners consider macro-level determinants of health to be out of their realm, requiring political solutions and system-change. System-change grounded in social prescribing is a priority of the NHS long-term plan and is beginning to happen for pain services, e.g., Rethinking Pain, a community-based pain support service led by the voluntary and community sector (https://rethinkingpain.org)

Societal narrative binds macro-, meso-, and micro-level factors into a cohesive and socially acceptable norm. The dominant world view of pain is grounded in a neuro-mechanistic tissue-centric model of actual or potential tissue damage. This model conflates the first person living (subjective)

experience of pain and pain being a pathological 'thing of stuff' (objective), resulting in misnomer and fallacy[10]. This painogenic narrative spawns a lexicon of damage and warmongering likely to amplify fear, anxiety, maladapted appraisals, and 'psychophysiological dis-ease', e.g., stabbing pain, degeneration, wear and tear, fighting pain, pain killers etc. The 'war' against pain by health care practitioners ('soldiers') disempowers patients, rendering them helpless through unmet promises that medical weaponry will 'fix' or 'relieve' chronic pain[10]. Constructive, empowering, non-threatening pain language aligned with contemporary pain science education and a health promoting (salutogenic) philosophy is a powerful alternative, e.g., sore but safe, pain softeners, journeys alongside pain.

A painogenic lens reconfigures pain as an embodied personal *experience* embedded in a socio-ecological environment and draws attention to forces that 'threaten' a person's sense of well-being. Painogenicity encourages a health promoting (salutogenic) philosophy and opens-up alternative solutions to address the burden of chronic pain, such as the creation of healthy narratives and healthy settings (environment and social). Painogenicity acknowledges the importance of the socio-ecological context in which health and social care is delivered, and by doing so has the potential to drive system-change.

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