
Citation:

Johnson, M and Bonacaro, A and Georgiadis, E and Woodall, J (2022) Reconfiguring the biomedical dominance of pain: time for alternative perspectives from health promotion? Health Promotion International, 37 (4). ISSN 0957-4824 DOI: <https://doi.org/10.1093/heapro/daac128>

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Document Version:

Article (Accepted Version)

This is a pre-copyedited, author-produced version of an article accepted for publication in Health Promotion International following peer review. The version of record Mark I Johnson, Antonio Bonacaro, Emmanouil Georgiadis, James Woodall, Reconfiguring the biomedical dominance of pain: time for alternative perspectives from health promotion?, Health Promotion International, Volume 37, Issue 4, August 2022, daac128, is available online at: <https://doi.org/10.1093/heapro/daac128>

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Title: Reconfiguring the biomedical dominance of pain: time for alternative perspectives from health promotion?

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Lay Summary

Persistent pain is a major health care challenge. Most approaches to tackle pain involve medical treatments to relieve pain once it has become a problem. There has been little research into the role of activities that promote health and wellbeing on pain. We argue that there needs to be more research on how people living with persistent pain can continue to flourish and function with good health. We suggest that there needs to be more attention given to health promotion and community-based approaches to tackle persistent pain and that more research is needed on cultural, environmental, economic, and social factors that influence pain.

For Peer Review

Abstract

Strategies to reduce the burden of persistent pain in society are rooted in a biomedical paradigm. These strategies are located downstream, managing persistent pain once it has become a problem. Upstream activities that create social conditions to promote health and wellbeing are likely to help, yet health promotion discourse and research is lacking in pain literature. In this article we argue that the subjective nature of pain has not sat comfortably with the objective nature of medical practice. We argue that the dominance of the biomedical paradigm, with a simplistic 'bottom-up' model of pain being an inevitable consequence of tissue damage, has been detrimental to the health and well-being of people living with persistent pain. Evidence from neuroscience suggests that bodily pain emerges as perceptual inference based on a wide variety of contextual inputs to the brain. We argue that this supports community, societal and environmental solutions to facilitate whole-person care. We call for more salutogenic orientations to understand how people living with persistent pain can continue to flourish and function with good health. We suggest a need for 'upstream' solutions using community-based approaches to address cultural, environmental, economic, and social determinants of health, guided by principles of equity, civil society, and social justice. As a starting point, we recommend appraising the ways human society appreciates the aetiology, actions, and solutions towards alleviating persistent pain.

Key Words: Pain, Painogenic, Health Promotion, Salutogenesis, Biomedical.

Introduction

Most strategies to reduce the burden of pain in society are downstream, managing the situation once pain has become a problem, with a lack of health promotion discourse in mainstream pain journals (Johnson et al., 2014). It has been argued that upstream activities creating social conditions to promote health and wellbeing are likely to be beneficial for people living with pain (Johnson et al., 2014; Johnson & Dixey, 2012), but this perspective remains overshadowed by biomedical practice and research. This notion has been extended by examining pain through an evolutionary lens comparing modern urban Anthropocene lifestyles with our evolutionary heritage (Paleolithic physiology), concluding that Anthropocene lifestyles are *painogenic*, perpetuating persistent pain states (Johnson, 2019). The purpose of the present article is broadly threefold – first, the article outlines the current issues in relation to the burden of pain in society and biomedical approaches to its alleviation; second, the article suggests alternative perspectives to current pain management, arguing for a more salutogenic approach; and finally, the article seeks other tangible solutions to alleviating the burden of pain through more ‘upstream’ measures, exploring how non-medical perspectives may offer opportunities for improvement.

Setting out the problem: The Burden of Pain

As human society and living conditions evolve, solutions are needed for human challenges that arise. In recent times, modern urban Anthropocene lifestyles have created unique and ever-changing living conditions, personal circumstances, building environment, access to green spaces, occupational conditions, eating options, technology innovation and lifestyle choices. This has resulted in improvements in health, well-being and the quality and duration of life, with age-standardised disability-adjusted life-years rates for global health steadily improving over the past 30 years (Diseases & Injuries, 2020). Paradoxically the proportion of years lived with disability from non-communicable diseases and injuries has increased over the past 30 years, with non-communicable disease and injury constituting over half of all disease burden in 11 countries, and revealing a need for better intervention strategies (Diseases & Injuries, 2020)

The incidence, prevalence, and mortality from noncommunicable diseases such as cardiovascular diseases, chronic respiratory diseases, diabetes, and cancer has risen, especially in dwellers of modern urbanized settings and also in lower-income countries too (Diseases & Injuries, 2020; Woodall & Cross, 2021). Painful conditions rank high across all age groups in the global burden of disease including low back pain, headache disorders and a multitude of conditions associated with pain e.g., road injuries, HIV/AIDS, ischaemic heart disease and stroke. Epidemiological studies suggests that the burden of persistent pain in adults is high (Cohen et al., 2021). Professional bodies and learned societies from the pain community use this information to lobby for more resources and better care for people living with pain. Headlines such as ‘*one in five adults live with persistent pain*’ and ‘*one in 10 adults experience severely disabling persistent pain*’ are used to raise public awareness of the burden of pain on society. The incidence, prevalence, and mortality of persistent pain are likely to increase in the future due to rapidly ageing and urbanised global populations, placing further demands on health services. It is disturbing that this ‘pain epidemic’ takes place against a backdrop of the greatest advances in biomedicine in the history of humankind.

Approaches to relieve pain became firmly grounded in the domain of biomedical sciences in the 17th century when scholars started to explain the human body in mechanistic terms (Rey & Wallace, 1995). Over the centuries there was a steady stream of old and new medical treatments, predominantly surgical and pharmacological, promising quicker, safer, and longer lasting pain relief (Ehrlich et al., 2019). Commentators in health promotion would refer to this as ‘downstream’ in its focus, arguing that earlier intervention may be critical for better population health (Woodall & Cross, 2021). It is unquestionable that surgical and pharmacological approaches have brought ‘relief’ to the masses, although not without iatrogenic outcomes and adverse consequence of harm associated with failed

surgery (e.g., failed back surgery syndrome (Inoue et al., 2017)) and harms associated with long-term use of medication (e.g., the ‘opioid crisis’ (Huynh et al., 2021; Vadivelu et al., 2018)). Moreover, there have been various barriers posed on the use of non-pharmacological pain treatments, including scepticism about effectiveness, resulting in negative impressions about their utility by health care professionals and the general public (Giannitrapani et al., 2018). At the same time, modern medicine’s drive toward palliation has fostered a societal narrative that pain is a negative and individualised experience that should be avoided at all times, and that ‘relief’ should be available immediately and effortlessly (Morton et al., 2019), e.g. ‘Pain relief is a human right’ (Lohman et al., 2010). Thus, advances of biomedical knowledge and technology have created medicalised analgesic approaches that palliate pain in terms of the severity of symptoms, with severe and persistent pain symptoms being treated by intensifying medical interventions such as surgery or doses of pharmacological agents that are more powerful and administered in higher doses, with a potential risk of significant harm and negative consequences for patients (Nakad, 2020).

There is no doubt that many biomedical interventions have excellent benefit-safety profiles when indicated correctly. Appropriate use of drug medication for the management of immediate pain resulting from physical trauma or disease has markedly reduced suffering and improved functional outcomes; as have surgical interventions to remove or repair obstructions or damaged or diseased tissue, reposition structures such as redirecting blood vessels or that implant devices to facilitate repair and/or ‘relief’. However, it has long been known that overmedication, due to prolonged courses of treatment or inappropriate escalation of doses has the potential not only for toxicity due to side effects but also for long-term abuse and addiction (Bernard et al., 2018; Chou et al., 2015). This sits against a backdrop of pain also being influenced by the social determinants of health – manual labour causes an increased likelihood of pain in comparison to those in skilled or professional employment (Marmot, 2020); and education status and socioeconomic status being linked to a greater incidence of lower back pain (Karran et al., 2020). This suggests that tackling pain in a holistic way, by focusing on upstream causes of pain manifestation may be prudent. Indeed, contemporary views about the management of persistent pain have shifted focus toward psychosocial factors influencing the lived experience of pain, including more holistic approaches to care of the person living with pain. Within this backdrop is a society that constantly evolves, creating the necessity for a more careful look at solutions that may be present but as yet ignored because of the dominance of the biomedical lens.

It has been long known that desirable models of care for people living with pain should be ‘patient-centred’ using a bio-psycho-social approach and multimodal treatments delivered by multidisciplinary teams. This opens opportunities for an array of non-medicalised, holistic, and synthesised solutions to help manage pain and wellbeing without exposure to the risk of harm from medical interventions such as side-effects, maladaptive physiological changes, and dependence on drugs. Could the myopic focus on biomedical solutions be contributing to maladaptive emotional responses, known to be a risk factor for the development and maintenance of persistent pain (Koechlin et al., 2018), and / or be stifling opportunities for more humane approaches to manage pain?

Biomedical dominance of the management of pain

The lived experience of pain lies at the intersection of psychophysiology and culture, and the meaning of pain has altered through the ages. In medieval civilizations pain was associated with mystical, spiritual, and religious forces as part of a ‘divine purpose’, such as godly punishment, and to be endured for the sake of salvation (Bourke, 2014; Rey & Wallace, 1995). The emergence of the biomedical narrative shifted the focus from *justifying* the presence of pain from divine intervention to *explaining* the experience of pain as a consequence of pathoanatomical and pathophysiological states (Bourke, 2014). The medical paradigm brought the belief that pain could be measured objectively, and a promise that pain could be ‘relieved’ and ‘fixed’ using biomedical knowledge (Wailoo, 2015). The undoubted success of the biomedical sciences to reduce illness, increase life expectancy and raise the

quality of life has not only legitimised the biomedical paradigm, but this has placed physicians, health care professionals and biomedical scientists as the primary owners of knowledge about pain, excluding to some extent the viewpoints of people experiencing pain themselves. Research on breast cancer pain demonstrates how 'spirituality' can play an important role in coping and aiding in pain management (Flanigan et al., 2019).

The biomedical discourse has neglected pain existing within complex environmental, social, and cultural contexts in which the whole person puts meaning to their lived experience. Sik argues that the '*... technical reduction of the patients' narratives ...*' (Sik, 2021)[p51] alienates pain from its cultural background and perpetuates the biomedical paradigm to a point where it monopolises society's interpretation of pain. This gives the biomedical profession 'exclusive rights' to so-called 'scientific truth' as opposed to alternative meanings and interpretations of pain such as 'superstitious belief' or lay perspectives. Consequently, people whose experiences of pain do not fit within the medical framework are marginalised. While lay perspectives on health have become more common, these continue to be overshadowed by the dominance of biomedicine.

Meta-ethnographies of the lived experience of persistent pain reveal that patients feel that their report of pain is not believed by health care professionals (Toye et al., 2013; Toye et al., 2014) and that practitioners sometimes feel scepticism about the presence of pain in patients. This demonstrates the challenge of navigating the biopsychosocial model and complexity of therapeutic relationships (Toye et al., 2017). Patients experience a constant adversarial struggle with health care services, systems, and personnel, due in part to deep seated cultural notions about illness and expectations of achieving a diagnosis and cure, grounded in a biomedical narrative. Notions of individual and community empowerment to influence change in care and support for people experiencing pain are often dampened by professional viewpoints despite being a cornerstone value of health promotion and person centred care (Woodall & Cross, 2021) –.

Historically, the biomedical narrative has fuelled doubt about the 'authenticity of pain' in the absence of clear signs of pathology, relegating pain to a 'psychological disorder', rendering the person (patient) helpless (Biro, 2010). Moreover, misattribution of pathology as causing pain has resulted in 'pain patients' being exposed to harmful treatments, including inappropriate surgery and long-term medication. Pain patients not responding to medical treatments such as surgery or medicine may be labelled malingers, and even marginalised by the health care system. These paradoxes and blind spots were intentionally and unintentional ignored during the growth of medicalised pain.

The influence of the biomedical paradigm has grown in partnership with legal and medical industries, including multinational pharmaceutical and surgical device companies. Sik argues that this has contributed to people feeling helpless when they fail to respond to strategies and treatments delivered within the biomedical framework, blaming failures of medical knowledge as the reason for persisting experiences of pain, and thus, disempowering the ability to self-govern health and well-being (Sik, 2021).

Over centuries, decisions about how, when and if treatment and expertise is provided has shifted from gatekeepers of knowledge about spiritual entities (such as God) to gatekeepers of medical knowledge. A direct consequence of this reconfiguration of power has been, in some instances, to persist in the delivery of harmful strategies and treatments resulting in a worsening of pain by inappropriate surgical procedures, excessive analgesic use, or addiction to drug medication. An indirect consequence has been ignoring and promoting inequalities contributing to suffering, such as exclusion from treatment and medical exploitation (McParland et al., 2011a; McParland et al., 2011b). The medical paradigm appears incapable of handling more upstream factors that influence the lived experience of pain such as unhealthy living or working conditions, poverty, or marginalisation from society.

"[This medical power emerged] ... as an unintended consequence of inadequate or negligent medical praxes leaving those patients to suffer, who has no choice, but to put their trust in the hegemonic biomedical institutes. " (Sik, 2021) [p54]

Thus, a purely medical paradigm offers no alternatives for people not responding to biomedical treatment leaving them disorientated in a space inhabited by indifferent and uncomprehending others. The malevolence of the medical paradigm is borne out by its power to

- gatekeep the right to receive treatment and thus suppress pain (e.g., medical staff and policy makers);
- sustain painful living conditions (e.g., employers, managers, family members, traditions);
- gain profit from the pain of people (e.g., medical companies, exploitative users);
- differentiate between worthy and unworthy people in pain (e.g., via social policies, social workers, NGOs).

The distortive potential of medicalised pain alienates people and if unchecked results in helplessness, anger, and frustration targeted towards the negligent and malevolent medical paradigm. As such sentiments spread in the wider social world a political culture is strengthened, which builds upon these alienated experiences—potentially distorting institutions outside of the medical sphere as well.

Bourke presents a compelling argument that pain does not emerge naturally from physiological processes which sits at the core of the biomedical paradigm but rather pain emerges in negotiation with social worlds (Bourke, 2014). The concept of pain as a social phenomenon is not new and few patients, practitioners, policy makers or funders would disagree with this premise. The importance of social aspects of pain is emphasised in the biopsychosocial underpinning of pain management, yet this has been slow to gain traction in pain practice and delivery models of care remain transfixed within a biomedical framework.

Contemporary views about pain management

The cartesian 'bottom-up' explanatory model of pain began with the writings of Descartes in the 1600s and have remained the foundation of the public understanding of pain. This simplistic cartesian model is fundamentally mechanistic in nature, reinforcing a belief that pain is an inevitable consequence of activity in nociceptive pathways. The longevity of a simplistic view of pain based on this model is likely to be due in part to vested interests of stakeholders profiting from a biomedical paradigm.

Contemporary views on pain experience describe the phenomenon as being 'embodied', experienced within oneself, and 'embedded', within the external environment (Tabor et al., 2017). Evidence from cognitive neurosciences suggest that pain is an emergent property of the brain generated via perceptual inference informed by snippets of multisensory input (Doleys, 2017). The sensory-emotional-cognitive experience of pain is malleable and strongly influenced by social, psychological, and biological context. The nuanced top-down model of pain explains paradoxical pain experience when, for example, pain emerges in the absence of tissue damage (e.g., Fisher et al., 1995) and when pain is absent in the presence of serious injury (Beecher, 1946). Vanguarders of pain science such as Melzack, Wall, Bonica, Loeser, Fields, Woolf, Mosely, and Tracey, have worked tirelessly over previous decades to raise scientific, clinical, and public awareness of a more nuanced understanding of pain and until recently their calls have been largely ignored. Intense public raising campaigns are starting to change the public's understanding of pain (e.g., Pain Revolution, and Flippin' Pain).

Bourke suggests that we may be better served considering pain as a 'type of event', an occurrence that is experienced and witnessed, and participates in the constitution of our sense of self (Bourke, 2014). Bourke argues that a person becomes a person in pain through the process of naming. To name

an experience 'pain', a person has to identify their experience as a distinctive occurrence to be labelled a pain event. The words that are selected for the sensations that we privately experience are learnt through the process of socialisation early in life, i.e., pain is a way of being in the world and a way of naming an event.

Contemporary models of pain management promote a biopsychosocial approach that places the person at the core of care. The patient-centred approach encourages active engagement in lifestyle management using pain (science) education to help the patient reconceptualise the meaning of pain through the appreciation that pain is multifactorial and modifiable, including why activity-avoidance can be a barrier to well-being and recovery from pain, in the broadest sense (Butler & Moseley, 2013; Watson et al., 2019).

Engel is often credited with inception of the biopsychosocial model of medicine (Engel, 1977) and seminal work from contemporary pain scientists (e.g., Bonica, Melzack and Wall) adapted the model for pain. However, only in recent decades has the biopsychosocial model started to impact in any meaningful way on clinical guidelines and service delivery for pain. This shift from medical interventions (surgery and medication) to psychological therapies and healthy lifestyle strategies, including tapering of medicines of no longer of benefit. For example, guidelines for the management of non-specific persistent low back pain recommend non-pharmacological treatments in the first instance with non-steroidal anti-inflammatory drugs (NSAIDs) or 'weak' opioids or skeletal muscle relaxants for use only in the short-term (e.g. National Institute of Health Care Excellence in the UK (NICE, 2016) or not to prescribe medicine (e.g. National Guidelines, Denmark (Stochkendahl et al., 2018)). Health professionals are encouraged to co-create explanatory models of pain with patients, and to co-design treatment strategies and care plans that empower the patient to build physical and psychological resilience and behavioural responses that are more likely to lessen pain.

Overdiagnosis and overtreatment in medicine is recognised as a public health problem (Welch et al., 2011). In 2018, Lewis and O'Sullivan discussed whether now is the "*... time to reframe how we care for people with non-traumatic musculoskeletal pain ...*" (Lewis & O'Sullivan, 2018). Lewis and O'Sullivan identified two 'disturbing' biomedical trends flourishing over recent decades. Firstly, excessive use of MRI imaging to diagnose pain according to pathoanatomical findings causing "*... exponential increases in elective surgery rates and associated costs ...*". They argue that overuse of diagnostic procedures reinforces biomedical beliefs that pain signals pathology, and that tissue is 'damaged and fragile' and needs to be structurally corrected and protected by avoiding movement and activity. Secondly, misattribution of pain associated with pathology and a proliferation of medical conditions that may not exist (overdiagnosis) coupled with an escalation of the use of pain treatments, some of which may not conform to scientific plausibility or research evidence for benefit.

Historically, new and existing pain treatments are based on biomedical paradigms, such as drugs targeting molecular or neural targets, or interventions that 'destroy', 'correct' or 'damp down' the tissue. Lewis and O'Sullivan argue that such approaches raise expectations that these 'passive' treatments will 'cure' and 'relieve' pain, and these expectations are heightened further through conversations with family, friends, or health care practitioners and through health information disseminated as educational, topical, or as commercial adverts via mainstream and social media services. Evidence of the benefits and safety of many treatments for persistent pain, both old and new, is inconclusive, and patient experiences of using such treatments is often disappointment, when pain persists following treatment, and anger when side effects or a worsening pain condition markedly reduce quality of life.

Lewis and O'Sullivan suggest that reinforcement of medicalisation of non-specific chronic low back pain serves the interests of various stakeholders that depend on the problem remaining unsolved. In

addition, the pain community provided strong biomedical, sociological and political arguments for the inclusion, for the first time, of chronic pain into the ICD-11, acknowledging that persistent pain should be considered a disease entity in its own right (Treede et al., 2019). A potentially negative consequence of such inclusion is a reinforcement of beliefs that persistent pain has permanence for those experiencing it, and that biomedical interventions are the most likely approach to fix the problem.

Entrenched pathoanatomical beliefs and expectations of patients and clinicians of a structural 'fix' for pain is a major barrier to reframe how we care for people experiencing pain and may hinder a shift towards person-centred holistic approaches for care. Vested interests associated with professional identity, time, financial pressures, and lack of adequate training of contemporary pain management strategies for the practitioner impedes change and serves interests of those benefitting from the biomedical model. Viewing analgesics as 'magic bullet' cures is counterproductive, and medications should be viewed as adjuncts to precipitate return to healthy-living, aligned with principles and practices for improving health and well-being. Thus, strategies should be aligned with those used to manage long-term chronic non communicable conditions such as obesity by developing a person's self-efficacy to enable them to take control and responsibility for their own health and well-being, through strong clinical alliance, education, exercise, and lifestyle (sleep hygiene, smoking cessation, stress management, etc). Clinical guidelines for the management of persistent pain are beginning to reflect such an approach.

We suggest that a whole community approach to pain education is optimal, and best delivered through partnerships with influential agents of change. At present, however, models of pain management remain focussed within a patient-centred (individual) rather than a community-centred (societal) paradigm. For example, social prescribing is delivered to individuals (patient-centred) who are directed to community-based activities (e.g., relaxation classes, gym classes etc.). In contrast, community-based approaches would involve communities addressing cultural, economic, and social determinants of health guided by principles of equity, civil society, and social justice. Community-based education and initiatives are beginning to happen such as Pain Revolution (Australia, <https://www.painrevolution.org/>), Flippin' Pain (U.K., <https://www.flippinpain.co.uk/>), and Footsteps Festival (U.K., <https://my.livewellwithpain.co.uk/festival/explore-the-festival/>).

Nevertheless, the social prescribing approach offers opportunities to shift pain management away from a biomedically focussed model of care. Critics, however, argue that a social prescription approach relies on a well-funded voluntary and community sector and is not necessarily an inexpensive means of tackling population health challenges, as some political decision makers may believe; and evidence for cost effectiveness remains scarce (Bickerdike et al., 2017).

Salutogenic focus: Can health and pain co-exist?

There is a growing acceptance to move away from pathogenic understandings of health, disease and pain toward more salutogenic orientations (Woodall et al., 2021). Salutogenesis aims to understand the mechanics that enable people, living in situations with a difficult quality of life i.e. pain, to still continue to flourish and function with good health (Oliveira, 2015). Indeed, Antonovsky, a pioneer in salutogenic thinking, studied what creates health, rather than what causes diseases. His thesis was to reconfigure thinking, and focus less on disease, pain and illness, and focus more on factors that create health and wellness (Antonovsky, 1979). Antonovsky's answer was pivoted on understanding individuals' sense of coherence (SOC) and their generalised resistance resources (GRR). Sense of coherence consists of three dimensions: comprehension, manageability and meaningfulness of the experience (in this case pain, with GRRs supporting a person or community to cope effectively with the situation, disease or disability (Eriksson & Lindstrom, 2008). These GRRs can include material (e.g., money), genetic (e.g., intelligence), knowledge (e.g., coping strategies), and social (e.g., social

network) resources (Hochwlder, 2019). Both the SOC and GRRs interplay to support individuals' health but lead us to a more fundamental position about how individuals can still experience good health while still experiencing pain. While space does not permit a detailed critique of these issues, it seems that the pain community and commentators have largely overlooked a salutogenic lens.

Appraising Broader Perspectives of Pain

We have argued that the subjective nature of pain has not sat comfortably with the objective nature of medical practice, resulting in patients having trouble trying to convince health care professionals of the existence of their pain; and treatment strategies focussing on fix and relieve fuelled by biomedical narratives. A person (patient)-centred approach is advocated but often stifled by a pain (biomedical)-centred approach and the desire for quick fix solutions that feed commercialisation of biomedical treatments. We argue the need to take a much more integrated approach on the way pain has been approached by medical practitioners, pharmaceutical companies, social scientists, and health promoters facilitating decision making for the end user/patient. Community-based awareness raising campaigns that focus on assisting people reconceptualise pain away from a dominant biomedical model is relatively new and still focusses on results at an individual level, with little attention paid to community, societal and environmental solutions. Clearly, there are significant gaps in current scientific literature that do not take account of broader perspectives of people living with pain.

By exploring pain through an evolutionary mismatch lens, we conceptualised a painogenic environment that saw opportunities for upstream strategies to reduce the burden of persistent pain through, for example, the design of evolutionary-concordant urban environments (Johnson 2019). Indeed, there is a growing evidence base about how urban design can foster salutogenesis, rather than pathogenesis (Maass, 2021). We appraised potential mismatch between Palaeolithic physiology and Anthropocene lifestyle and argued that the *milieu* of modern urban living is painogenic in nature (Johnson, 2019). We focussed on the impact of the Anthropocene environment (e.g., diet, mobility, built, ecological and atmospheric) on physiological processes and revealed why patients experience difficulties adhering to clinical recommendations related to lifestyle adjustment. To date, there has been no attempt to describe how the major stakeholders view and act on pain as opposed to what the evidence suggests on human nature, human evolution, and adaptation as well as, what patients request as therapeutic means. We believe that this would be a valuable line of enquiry going forward.

How does current society deal with pain?

We ask: Are patients in a position to take well-informed decisions around pain management? Are they aware of their options? Are they in need to accomplish that? And if they are, which is the best approach to achieve that?

In the current era of integration of disciplines, we argue that pain should be explained in a more holistic way to reveal new paradigms in which to explore pain, and that this should be conveyed to the lay person. For example, we wonder whether the pain community is overly focussed on managing pain at an individual level (patient-centred) at the expense of societal level (community-centred) or environmental level (ecologically-centred) solutions. Expanding the perspectives through which we view pain to include for example evolutionary, phenomenological, societal, political, environmental, and ecological viewpoints is likely to broaden our understanding of factors influencing the lived experience of pain. This will facilitate exploration of new avenues to help individuals and communities live well with pain.

The question of how current society deals with pain and who sees pain as their responsibility have been largely neglected. Kress et al. argue that the views of all stakeholders need to be involved in creating a more successful holistic approach to persistent pain management (Kress et al., 2015). There are various stakeholders who hold power and ultimately influence not only the needs of a

pain patient but also how an individual 'becomes a person in pain'. This information is critical for appropriate pain education to improve pain-related health literacy. Health literacy has been defined as "... the ability of an individual to obtain and translate knowledge and information in order to maintain and improve health in a way that is appropriate to the individual and system contexts" (Liu et al., 2020 page 1). A recent systematic review by Kim et al. found insufficient evidence to judge whether better health literacy enables individuals to make better choices, including resisting offers of biomedical solutions such as medication and surgery (Kim et al., 2021). Moreover, it is not known what people living with persistent pain would like to know more about, and any attempt to find this out may be biased by a dominant biomedical perspective in modern society.

As a starting point, we suggest more focus on how society deals with the lived experience of persistent pain by appraising the ways human society appreciates the aetiology, actions, and solutions towards pain relief. Such investigation may identify what is missing from the agenda on a societal level and provide opportunities for a better way forward. Questions include:

- What is being done to prevent pain at individual and local, regional, national, and international population levels?
- Are pain policies and services meeting the needs of the healthy living agenda?

A reviewing exercise on the ways human society appreciates the aetiology, actions and solutions towards alleviating pain is needed to address this issue. One approach could be to place the end user (i.e., the person living with pain) at the centre of the evaluation and asking a series of questions such as:

- Which stakeholders need to be added in an attempted creation of a stakeholders' map of pain management?
- How do we decide on their proximity to the end user?
- Should we decide this based on decision making, on the ability to influence pain, the magnitude of influence (i.e., based on the active ingredient of painkillers), the proposed means of pain management or other means (e.g., human evolution)?
- How do patients deal with those stakeholders currently?

Another approach could be to evaluate the stance of various stakeholders towards the pain patient such as representatives of the Medical Community, Pharmaceutical Industries and WHO related organisations (e.g., relevant societies on pain management). We suggest ethnography as an approach to evaluate health and well-being using lay perspectives as one way to understand how power and medical dominance impact on experiences. Such an approach, alongside accessing health professionals' views, would enable triangulation of evidence to inform practice and policy.

Conclusion

Giving the opportunity to scholars and practitioners from diverse areas of expertise to offer non-medicalised perspectives to inform pain management solutions can bring a fresh agenda of required changes with the potential to provide previously ignored innovations. At present, we do not know what we do not know about broader perspectives of pain. Consideration of broader perspectives is likely to promote better health care and lifestyle decisions for people living with persistent pain.

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