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Beyond Opioids: A Multidisciplinary Approach to Cancer Pain Management

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Opioid prescribing has declined precipitously in nearly all patients after public attention to opioid-related harms, including overdose deaths.[1-3] In an effort to ensure access to guideline-concordant, evidence-based care, cancer-related pain was intentionally omitted from CDC guidelines. Nonetheless, mounting evidence suggests that subsequent state-level prescribing restrictions have led to significant declines in opioid prescribing, including in oncology settings, even for patients with terminal diseases.[1-4] Admane et al[5] add to this literature by demonstrating sharp declines in daily opioid doses among patients with cancer seen for initial palliative care consultation at the MD Anderson Cancer Center in Texas between 2016 and 2021. They also found that higher pain intensity, substance misuse behaviors, and English language proficiency were associated with higher opioids prescribed at the time of consultation.

The analysis by Amane et al[5] carries some limitations, which raise intriguing questions about how to interpret these data. For example, patient opioid dosing was only assessed at patients' initial palliative care visit. Opioid prescribing can change significantly over time, as clinicians better understand their patient's needs and refine their prescribing pattern and/or as pain management needs evolve, which were not addressed in this study. Additionally, many patients receive their care through outpatient oncology, where prescribers' comfort with opioids and, therefore, prescribing patterns may differ.[6] Concurrently, evidence suggests that opioid management has increasingly shifted from oncology to palliative care.[6,7] Yet, it remains unclear how patients without access to palliative care (eg, those treated by community-based oncology practices) are affected. Additionally, the increasing reliance on palliative care[4] to prescribe opioids is complicated by insufficient palliative care-trained clinicians to meet this growing national demand.[8,9] Most importantly, this study and others frequently focus on opioid prescribing outcomes, which informs our understanding of how many opioids are prescribed and by whom. However, this limited view centered on opioid delivery leaves critical questions unanswered: How is declining opioid use affecting patients' pain control, and what is this the right solution for patients with cancer?

As state laws and national guidelines proliferate, there is mounting evidence that opioid restrictions reduce opioid access and utilization in patients with cancer. However, implications for pain outcomes and quality of life remain unknown, limiting our ability to evaluate whether cancer pain management has truly shifted in a positive direction. In fact, there is sufficient reason to believe that opioid risks and benefits with pain outcomes are not yet precisely balanced. For example, in one Medicare study of patients with terminal cancer, opioid dosing reduced dramatically and emergency care utilization for pain increased, suggesting ongoing and undermanaged pain for patients at the end of life.[2] Without measuring concurrent pain outcomes in parallel with opioid declines, the patient-centered outcome of the highest interest in this context, pain management, is left in the dark. Additional evaluations are desperately needed to examine the specific effect of declining opioid delivery on patient-centered outcomes of interest including pain severity, functional status, and overall quality of life.

To evaluate the impact of opioid declines on cancer pain outcomes accurately, we must take a step back to define how the experience of cancer pain is unique and differs among individuals to inform how effective patient-centered pain care can be achieved. Cancer pain often results from a complex series of syndromes related to disease progression and/or treatment of such disease (eg, surgery, radiation, chemotherapy) that occurs sequentially and, often, simultaneously. As patients are living longer after cancer treatment, investigators are striving to better characterize the many contributors to and consequences of cancer pain. Decades of preclinical,

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translational, and clinical studies however emphasize the unique role of biological (eg, genetics, sex, physiology), psychological (eg, stress, negative thoughts, mood, trauma, sleep), social (eg, loneliness, social support), and spiritual influences on the experience of pain and its impact on function and quality of life (Fig 1A).[10] Although a complete review of the biopsychosocial influences on cancer pain is beyond the scope of this editorial, we can introduce critical evaluations of these influences.

A review of cancer pain physiology highlights that cancer cells instigate inflammatory processes which in turn activate hypersensitivity in the sensory neurons in the spinal cord resulting in *affective* changes in how the brain perceives cancer pain.[10,11] Ample evidence also highlights that psychosocial factors including stress, low mood, pain catastrophizing (negative pain thoughts), sleep disturbance, and social isolation/loneliness, which are often inherent to the cancer experience, contribute to worse pain and quality-of-life outcomes, and even increased opioid use.[12–14] Conversely, factors including greater physical activity and spirituality can function as protective factors associated with improved pain outcomes for patients with cancer.[15,16] In the clinical practice of cancer pain care, most treatments apply the biomedical model first (eg, unimodal opioid treatment, pain interventions), and if the pain is unresponsive to biomedical treatments, psychosocial and spiritual means *may* be introduced.[17,18] This stepped care approach to cancer pain care may pose increasing challenges rather than resolutions to pain.

The *central ethos* of cancer pain management is multifaceted and patient-centered, balancing safety and risks with clinical improvements that include reduced suffering, improved function, and quality of life. Drawing from studies of chronic noncancer pain, effective pain management is generally unachievable by relying solely on the biomedical model to treat cancer pain (eg, unimodal opioid pain management). Rather, a comprehensive, multidisciplinary view of cancer pain and pain treatments is critical—one that *integrates* rather than *replaces* treatment approaches for cancer pain. Unfortunately, the application of multidisciplinary pain management for patients with cancer remains limited by a lack of clarity around what successful multidisciplinary pain management can look like in the context of cancer care.

Multidisciplinary pain management incorporates pain education, self-management support, health behavior change (eg, stress management, relaxation, sleep hygiene, physical activity, diet), spiritual care, and social support to improve function, quality of life, and overall pain outcomes (Fig 1B, cancer pain treatment model adapted from Agency for Healthcare Research and Quality Model for Integrated Pain Management Program[19]). Such approaches motivate patients' engagement in pain self-management, promote safer use of opioids, and likely lead to improved pain outcomes with lower risk of opioid-related complications.[20]

Widening the array of tools that patients have in their pain management toolbox may also serve to validate patients' pain and stress within the cancer experience, de-emphasize the centrality of opioids, and increase the uptake of varied and more sustainable pain management behaviors. This approach aligns with Total Pain coined by Dame Cecile Saunders, founder of the modern hospice movement.

Unfortunately, the fields of oncology and palliative care have yet to translate this approach into robust, scalable, multimodal treatments of cancer pain. Behavioral pain management care that provides pain education, behavioral pain skills, health lifestyle changes (eg, sleep, diet, social support) through in-person or telehealth visits are not always covered by insurance policies and can be limited by dependence on and lack of trained providers. Efforts to improve cancer pain management within the context of insurance barriers and patients' availability have resulted in innovative technology that integrates patient-centered, self-management care. For example, patient-reported outcome (PRO) monitoring in routine cancer care is a strategic approach to identify and treat symptoms earlier and throughout the entire cancer continuum; however, despite notifying care teams about severe symptoms like pain, monitoring infrequently results in advice and management changes.[21] The development of innovative models that deliver targeted symptom support through remote PRO monitoring can be especially useful in conjointly educating and empowering patients about pain management principles, equipping patients with self-management skills, and integrating pain management within their cancer care by facilitating targeted conversations between clinicians and patients. For example, our group has developed an mHealth intervention that uses app-based algorithms to deliver in-the-moment symptom management advice in response to patients pain severity, negative thoughts about pain, mood, and sleep quality paired alongside opioid support and clinician alerts for severe symptoms.[22] The app also provides extensive pain cognitive behavioral therapy education tailored to the cancer experience. Notably, patients who pilot tested the app overwhelmingly emphasized that having behavioral pain management integrated *with* their opioid support de-stigmatized initiating psychological pain care and promoted their engagement with pain self-management techniques. Therefore, if leveraged appropriately, technology can be a markedly helpful tool to increase integrated pain treatments in cancer care.[23]

Moreover, clinicians who treat cancer pain frequently report a lack of confidence and training in pain management decisions, alongside a strong desire for more resources and multidisciplinary teams to offer their patients.[24] This suggests that increased education, support, and collaboration—integrating and balancing opioids *with* nonpharmacological and behavioral interventions—may have a positive effect on treating cancer pain. Finally, future research and program evaluations need to evaluate comprehensive pain outcomes

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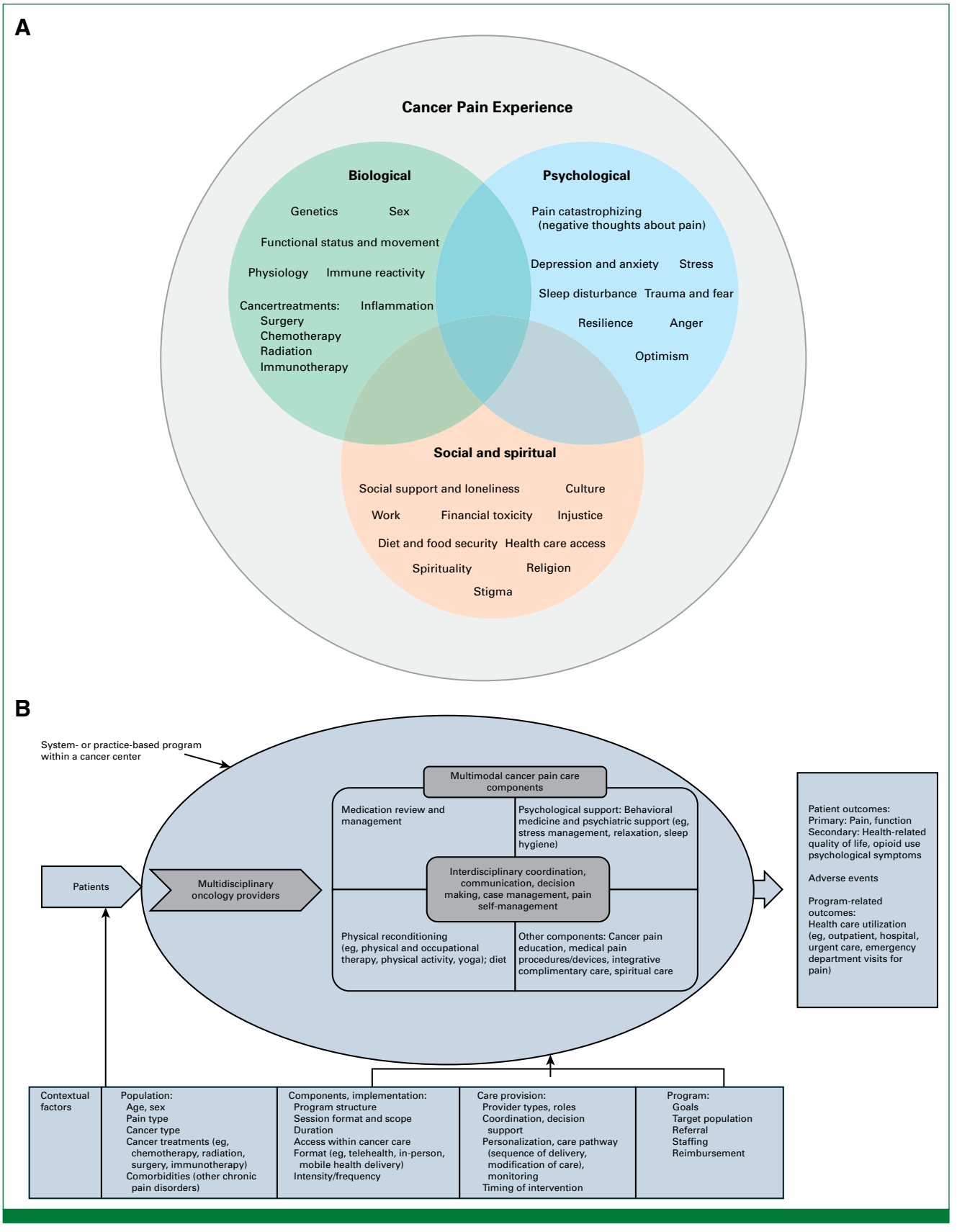

FIG 1. (A)Adapted Biopsychosocial (spiritual) Model of Cancer Pain. (B) Cancer pain treatment model adapted from AHRQ Model for Integrated Pain Management Program. AHRQ, Agency for Healthcare Research and Quality.

(eg, pain severity, pain interference, quality of life) while identifying how to best integrate behavioral pain self-management approaches within oncologic care, targeting interventions to individuals who may benefit most (and identifying why). We propose a broader, patient-centered view of opioid prescribing among patients with cancer, one that applies multidisciplinary pain treatments alongside opioid support, and one that evaluates pain, opioid delivery, and quality-of-life outcomes together to inform effective cancer pain management.

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