



The Role of Cognitive Biases in the Prescribing and Deprescribing of Opioids

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Key Words

Cognitive biases; Chronic pain; Opioids; Policymakers; Guidelines

Abbreviations

JACO: Joint Commission and Accreditation; AMA: American Medical Association; AAFP: American Academy of Family Practitioners; CMS: Center for Medicare/Medicaid Services; PROP: Physicians for Responsible Opioid Prescribing; CDC: Center for Disease Control; CRP: Cancer Related Pain; NCRP: Non-Cancer Related Pain; NPR: Numerical Pain Rating; SAMHSA: Substance Abuse and Mental Health Services Administration; PAS: Protracted Abstinence Syndrome; COT: Chronic Opioid Therapy; SUD: Substance Use Disorder

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Abstract

The policies and guidelines which have shaped the attitude and practice relating to the use of opioids for the treatment of chronic pain have undergone remarkable changes. Recent decades have witnessed a surge, followed by a decline, and near prohibition, in the use of opioids. Cognitive biases appeared to play an important role in how the scientific data upon which policy and guidelines are based is presented, and interpreted. These biases may have had a greater influence on policymakers than the data itself. This paper reviews data from four key areas identified as relating to the use of opioids, and the creation of guidelines including (a) the surge and decline in opioid prescribing, (b) sham distinctions, (c) reliance on the numerical pain rating (NPR) and (d) the consequences associated with the use/discontinuation of opioids. Published studies, commentaries, and guidelines were selected based on their ability to illustrate a particular bias and/or to highlight discrepancies in the scientific literature. Discrepancies and inconsistencies in the presentation and interpretation of data in these areas were identified. Focused illusion, linguistic uncertainty, and heuristic failure were found to be prevalent cognitive biases. Cognitive biases appear to be influential in the making of policy and guidelines related to the use of opioids. Overlooking these biases may result in decisions that negatively impact clinical practice and patient safety.

Introduction

The use of opioid type medications for the treatment of chronic pain has undergone significant changes in recent decades. This coincides with a rather abrupt shift in attitude towards the use of opioids, and the patients taking them. Early concerns over the risk of addiction were replaced by a growing demand for effective treatment of pain. However, within a matter of decades, the use of opioids was labeled as an epidemic causing untold deaths, addiction, and suffering [1,2]. Government agencies, policy-makers, professional societies, and state medical boards were pressed to address this problem. The term epidemic is often associated with sense of urgency [3]. At times the term is used to manipulate public opinion, and justify preconceived policies [4]. Its use is often followed by outbreaks of moral controversy and indignation, potential solutions, and of personal conversion to the many different causes [5]. Furthermore, it tends to engender a global, overarching, and nonspecific response, or hobbesian error [6], versus a more strategic and data-based, response. Thus, the opioid epidemic became not only a 'war on drugs', but a 'war on opioids'. Global and nonspecific reactions can be related to the way the available information is presented and the presence of cognitive bias. Cognitive bias is an umbrella term that refers to the systematic ways in which the context and framing of information influence individuals' judgment and decision-making [7,8]. These biases may include focused illusion, heuristic failure, logical fallacy, and linguistic uncertainty (see Table 1 for definitions). The risk of cognitive bias is present with nearly every important decision-making endeavour [9]. The problem, however, occurs when this bias is not recognized, and decisions are assumed to be more firmly founded on scientific evidence than they, in fact, are.

The intent herein is to provide examples of the above-mentioned cognitive biases (identified by italics in the text), and their potential impact on decision making as it relates to the use of opioids and opioid deprescribing/tapering. The following four areas have been reviewed as a means of illustrating the role of cognitive biases: (a) the surge and decline in opioid prescribing, (b) cancer vs non-cancer related pain, (c) reliance on the Numerical Pain Rating (NPR), and (d) the consequences associated with the use/discontinuation of opioids. These four areas are thought to have contributed to the inconsistencies and controversies surrounding the use of opioids [10]. In each case, evidence will be reviewed which calls into question the assumptions which clinicians, policy-makers, and agencies/organizations may be relying upon.

Table 1: List of cognitive biases.

Focused/focusing illusion	An over emphasis on one aspect of an experience or phenomenon
Heuristic failure	Shortcuts or rules of thumb associated "mental contamination; a mental 'short cut' to decision-making without having all the relevant information; use of rules of thumb vs assimilation of existing data causing decisional errors
Linguistic uncertainty	The uncertainty about a precisely defined quantity that is produced by linguistic information, knowledge, and clarity
Logical fallacy	Distinction between two things that ultimately cannot be explained, or defended, in a meaningful way

The Surge and Decline in of Opioid Prescribing

Efforts to influence the use of opioids in medical practice date back to the Harrison Act of 1914. The stated intent (focused illusion) of the act was to restrict the recreational use of opiates associated with addiction, and only allow them to be prescribed in 'good faith' as part of a legitimate medical practice [11]. This occurred in the relative absence of any revolutionary scientific data (heuristic failure). The addictive properties and overdose potential of opiates had been known for centuries. In fact, the act was motivated by continued hostility toward the Chinese population, and to reduce British opium related economic influence over China, i.e., for political and economic reasons [11]. The term 'good faith' continues



to be a source of some debate. The ambiguity of the term (linguistic uncertainty) appeared to prompt the U.S. treasury department to aggressively investigate and prosecute opiate-prescribing physicians. The medical community shunned the use of the opiates, in part, to avoid prosecution. In addition, 'medical addicts' were portrayed as 'pleasure using addicts' [12] rather than persons with a medical problem. Thus, the overall consequence of the act was a functional prohibition against the medical use of opiates, especially morphine [13,14]. Opioids were quickly viewed as a damaging social menace and not an efficacious medical therapy [11]. This perception became thoroughly entrenched in American society. Even today, the use as beneficial medicines tends to be considered subordinate to their role as dangerous drugs.

The negative attitude towards opioids began to change in the 1970s in response to four related events. First, pain as an undertreated condition gained attention in 1973. Several articles [15-19] describe the failure to effectively treat patients with severe pain and highlighted the negative impact of the underutilization of opioids. In April of 1999 a physician was sanctioned by the Oregon Medical Board for under-prescribing. The importance of pain and its management was further highlighted when the 106th U.S. Congress passed H.R. 3244 Title VI, Sec. 1603, declaring the decade of pain control and research, to begin January 2001. This was only the second congressionally declared medical decade. In addition, pain was declared as the fifth vital, establishing its primacy. Not prescribing opioids for a patient with chronic pain exposed the physician to the risk of being labeled as inhumane; even to the extent of litigation for the under treatment of pain [20]. These events advanced the opioid-use-movement and emphasized the patient's right to effective pain control. However, subsequent research demonstrated that measuring pain as the fifth vital sign did not increase the quality of pain management [21] (heuristic failure). By 2016 several major organizations including the American Medical Association (AMA), and the Center for Medicare/Medicaid Services (CMS) withdrew their support for advocating pain as the 5th vital sign [22,23].

Second, the issue of opioid induced addiction was challenged. In 1980, a one paragraph editorial [24] declared addiction to be rare among users of prescribed opioids. Although this assertion lacked any scientific support (heuristic failure), it was used by the proponents of opioids to assuage concerns over the relationship of prescribed opioids and the development of addiction. In addition, the term 'pseudo addiction' emerged in 1989 [25], suggesting that when addictive behavior was observed that it may represent an iatrogenic syndrome of abnormal behavior secondary to inadequate management of pain. Even though this concept has been challenged [26], it appeared to gain traction despite being based on the observation of a single patient. Third, Portenoy [27,28] reported on the effective management of a group of 38 patients with non-cancer pain using opioids. Importantly, only 2 of the 38 patients developed and addiction type problems. However, the notion that opioids could be used safely, was countered in 2012 when the Physicians for Responsible Opioid Prescribing (PROP), petitioned the FDA to limit the use of opioids in for non-cancer pain to a maximum duration of 90-days [29]. Finally, the CDC (Center for Disease Control) report of 2016 [30] punctuated the opioid epidemic/crises with what has become a call-to-action on the part of the medical community, government, and insurance companies. This report may have had the greatest psychological, and practical, impact on opioid prescribing. Although it was intended to be (a) a guideline, (b) for the primary care clinicians, and (c) one which made provision for the legacy patient, it has been adopted as the law of the land (focused illusion). Perhaps, more than any other publication, it has been used to set goals for opioid prescribing, sanction prescribing physicians, and to justify tapering (de-prescribing) of opioids. Thus, the same psychological environment, fear of sanction and prosecution, which once fueled increased prescribing, now fueled the opposite. Even today, opioids are the most common pharmaceutical class involved in malpractice claims [31].

Attempts by the CDC to clarify its position [32] seems to have had very little impact. Forced tapering [33] is not uncommon. A 2021 study found that only 2 of 27 state guidelines/laws addressing opioid tapering cautioned against abrupt tapering [34]. Furthermore, most laws lacked attributes which experts [35] would deem critical (linguistic uncertainty). Dowell [30] admitted that better evidence was needed in order to evaluate the benefits and harms regarding opioid prescribing (failed heuristics). "Unfortunately, some policies and practices purportedly derived from the guideline have in fact been inconsistent with, and often go beyond, its recommendations including... inflexible application of recommended dosage and duration thresholds and policies that encourage hard limits and abrupt tapering of drug dosages, resulting in sudden opioid discontinuation or dismissal of patients from a physician's practice" (p.1) (focused illusion).

Cancer vs Non-Cancer Related Pain: Logical Fallacy

In his 1824 book, Jeremy Bentham [36] identified several logical fallacies used in political debates. He described one such fallacy as a 'sham distinction' or a 'distinction without a difference'. This logical fallacy appeals to a distinction between two things that ultimately cannot be explained, or defended, in a meaningful way. The distinction between Cancer Related Pain (CRP) and Non-Cancer Related Pain (NCRP) appears to represent one such sham distinction contributing to the attitude(s) regarding opioid prescribing the fear engendered by the diagnosis of cancer, along with recognition of the progressive, and often fatal, nature of cancer, and the suffering endured by the patients, demanded it be granted exceptional status. The relatively high mortality rate associated with CRP, overshadowed any concerns for opioid addiction or abuse. Patients with CRP, and cancer survivors, were excluded in the 2016 and the 2022 CDC guidelines [37]. Indeed, legislation was put forth prohibiting the FDA from labeling certain opioids for use in conditions other than CRP [38]. The term non-cancer, or non-malignant, pain began to occur with regularity around 2000. The terminology appeared to be an attempt to draw a distinction, real or not, between the two types of pain based on the suspected origin. Clearly, the term non-malignant, now abandoned in most taxonomies, conveyed a less serious condition.

The emphasis on the psychosocial aspects of Non-Cancer Related Pain (NCRP) established it as less devastating, more appropriately approached via rehabilitation [39], and psychogenic in nature. Describing NCRP as that which persisted following the normal healing time, and potentially unrelated, or disproportionate, to the tissue damage, positioned NCRP as that which was 'left over' after the real disease resolved [40]. Thus, NCRP came to be viewed as something less than, and not serious enough to warrant the use of opioids. However, NCRP has been described as a progressive neurological disease [41,42] and shown to significantly impact one's quality of life, i.e., high impact pain. The health-related quality of life of patients with chronic pain is comparable to that of patients dying with cancer [43,44]. Sadly, patients with NCRP receiving opioid therapy suffer various forms of discrimination. Indeed, Lagisetty, et al. [45] found that such patients, referred to opioid refugees, were denied a new patient appointment by 40% of primary care clinics contacted. The prescribing of opioids to cancer survivors appears to be accorded more flexibility than for NCRP [46], even though it may be associated with factors unrelated to the severity of the cancer. For example, post-treatment opioid-use rates were lowest for patients who had never used opioids prior to their cancer diagnosis. In addition, the rate of post-treatment diagnoses of opioid abuse or dependence was 2.9%, and opioid-related admissions occurred in 2.1% of patients [47], comparable to some estimates for patients with NCRP. Upto 19% of patients with CRP demonstrate non-medical opioid use behaviors within about 8-weeks of their initial consultation [48]. Furthermore, the evidence suggest that the effect of opioids may not be any greater for CRP than NCRP [49,50].

A recent study by Stein, et al. [51] noted a reduction in the prescribing of opioids by nearly 60% from 2008-2009 to 2018-2019. The reduction by specialty was ER physicians 70.5%, psychiatrists 67.2%, oncologists 59.5%, surgeons 49.3, and pain specialists 15.4%. The reduction imposed by oncologists would seem difficult to reconcile with the notion of CRP as more severe than NCRP. In some cases, even patients taking opioids for CRP have not been able to avoid being stigmatized for doing so [52]. Pain, regardless of its origin, can have devastating effects. One must question the scientific basis for drawing a distinction (sham distinction) between CRP and NCRP. Although there may be a linguistic or conceptual difference between the two, the actual difference seems more apparent than real [46,53]. Indeed, the classification system proposed in 2019 [54] de-emphasizes this distinction by subsuming 'Chronic primary pain' and 'Chronic cancer-related pain' under the heading of 'Chronic pain'.

Numerical Pain Rating (NPR)

Pain intensity has been asserted to be the most salient dimension of pain [55]. It is most often assessed by use of a Numerical Pain Rating (NPR) scale. Changes in the NPR have been used a primary metric for determining the effectiveness of therapies. However, it should be noted that the NPR scale was developed for research purposes. Such scales were not intended to be used as an indicator of how much pain a patient in a clinical setting was experiencing [56] (focused illusion; linguistic uncertainty). The NPR has been shown to be influenced by a variety of psychological variables including perceived consequences of a particular pain rating, mood, gender of the experimenter or clinician, presence of a reinforcing spouse, etc., raising concerns as to what the NPR represents. In addition, there appears to be a functional disconnect between self-



reported pain intensity and other outcome domains including patient satisfaction [40]. A survey of practicing clinicians [57] revealed that the NPR was considered by 68% of the responders at the time of the initial visit, but by only 42% at each follow-up visit. Several clinicians considered function, and how the patient was doing overall, to be more important than the NPR. The authors commented that "... the complexity of the human pain experience reminds us that we neither have a clearly articulated nor widely accepted statement about what the pain intensity ratings represent." (p.1247). Sullivan, et al. [58] go so far as to question the need to consider a reduction in pain intensity in the clinical setting.

The unfettered use of the NPR represents a heuristic failure. Use of the NPR has been linked to the remarkable increase in opioid prescribing [56,58]. The ease with which NPRs can be statistically manipulated, may provide a false sense of security as to our level of knowledge and understanding of the complex and dynamic nature of the experience the number is purported to represent [59]. In some instances, hospital funding has been tied to a demonstrated assessment and reduction in the NPR. However, the use of the NPR did not improve the quality of pain management in the hospital setting [21]. Support for the use the NPR as a proxy for pain, and as the fifth vital sign has been withdrawn [23].

Consequences Associated with the Use/Discontinuation of Opioids

Policies regarding the use of opioids invariably refer to data extracted from one of more of the following areas: (a) prevalence of fatal overdoses, (b) risk of abuse/addiction, (c) effectiveness of opioids, and (d) the misapplication of the CDC 2016 report. It is important to consider these topics in their proper context. Each area is fertile ground for cognitive biases. The following highlights data which is often inconsistent with assumptions that appear to form the basis for prevailing guidelines and policies.

Opioid Related Overdoses (OROD)

The discussion of OROD is marred by focused illusion and linguistic uncertainty. Geographic and racial differences are rarely discussed. OROD rates among properly supervised, and compliant patients appears unknown. The phrase OROD deaths remains ill-defined, and tends to include any opioid, illicit or not, legally obtained or not. The rate of OROD varies. Although prescription opioids were involved in 28% of all OROD deaths in 2019, there was an estimated 7% decrease between 2018 and 2019 [60]. Dunn, et al. [61] reported a rate of 0.51% (51/9940); only one overdose as fatal. Bohnert, et al. [62] noted an OROD rate of 0.49% (750/154,684). However, this study included all patients, regardless of any co-morbid diagnosis or adjunctive medication, e.g., benzodiazepine. Metcalf, et al. [63] found the incidence of serious prescription opioid-induced respiratory depression and overdose to be 0.07% in a group of over 1.4 million patients. The death rate involving prescription opioids is rarely contrasted with those of other drugs (heuristic failure). For example, the case-fatality rates associated with >100 MMED opioid therapy are comparable to the risks of fatal bleeding associated with use of rivaroxaban (Xeralto; 0.2%/year) and warfarin (0.5%/year) when used as prophylaxis therapy following stroke due to atrial fibrillation [64]. Which is compared to the 0.28% reported by Weiner in a group over 230,000 patients [65].

The CDC hypothesized that the opioid crisis to be driven by excessive prescribing. However, when state-by-state data on prescription rates and mortality were examined, there was no correlation between the ten states with highest rate of opioid prescribing and those with the highest rate of OROD. Second, higher prescription rates were associated with lower mortality rates [66,67]. Thus, they found no support for the CDC hypothesis. Furthermore, although the prescribing of opioids declined following its zenith in 2012, the total OROD deaths continued to rise [30]; the greater the decline in prescription rates, the greater the increase in mortality rates. Upon examining over 2,900 fatal overdoses, Walley, et al. [68] found that only 1.3% of decedents had an active prescription for the opioid detected in their system on the day of their death. Although nearly 70% of OROD were attributed to heroine and illicit fentanyl from outside the US, these are often included in the discussion of OROD, creating a false impression as to the role of prescribed opioids (focused illusion). Discussions of the OROD often fail to consider the consequences of uncontrolled chronic pain (focused illusion). Guy, et al. [69] identified a suicide rate of 8.2%; much higher than the OROD. Petrosky, et al. [70] reported that 53.6% of suicides involved firearms, and only 16.2% by opioid overdose. It is of interest that the word 'suicide' appears only three times in the 2016

CDC guidelines [71]. Yet, the term 'abuse' appears 92 times, 'urine drug testing' 38 times, 'overdose' 181 times, and 'substance use disorder' 32 times. Furthermore, there are no recommendations regarding screening for suicide risk associated with chronic pain or, how its presence should influence the use of opioids.

Effectiveness of opioids

The lack of any demonstrated effectiveness of opioids [72-74] has also been present as a rationale for tapering/deprescribing of opioids. However, the data are not consistent. Els, et al. [75] reported that there was insufficient evidence to either support or refute the efficacy of high-dose opioids (>200 MME) in NCRP. Furlan, et al. [76] noted that weak and strong opioids were effective in treating both nociceptive and neuropathic NCRP. Gudim, et al. [77] identified improvements $\geq 25\%$ in a review involving 70 articles and over 19,000 patients. In addition, a cochrane review [78] of opioids delivered oral, transdermal, or intrathecal indicated that all three modes of administration were associated with clinically significant reductions in pain. If there is no evidence that opioids are of any benefit, and, therefore, the risks outweigh any perceived benefit, it begs the question as to why thousands of doctors prescribe them, and patients take them. And only a small minority of patient's misuse/abuse opioids (see below), and only a fraction, about 0.1%, of prescribing physician are ever charged with wrong-doing [79]. This suggests there is a significant number of well-intended, and responsible, physicians prescribing opioids, and compliant patients that report receiving benefits. The apparent disconnect among published data, clinical experience, interpretations, and recommendations may represent another example of heuristic failure, and warrants further investigation and discussion.

Abuse/addiction

The following is a small sampling of research in the areas of abuse/addiction. A 2016 national survey [80] reported that 2% of those taking prescription opioids developed a 'pain reliever use disorder'. Among patients with intractable NCRP receiving long-term high-dose opioids the addiction rate was less than 1%. Edlund, et al. [81] reported abuse and addiction rates within 18-months of initiating treatment ranged from 0.12% to 6.1%. Volkow, et al. [82] concluded that rates of 'carefully diagnosed' addiction to opioid medication averaged less than 8%. When patients with a prior drug abuse and addiction history were excluded, approximately 0.19% developed abuse and addiction to prescribed opioids [83]. A 2019 Cochrane review reported signs of addiction in 0.27% of patient on long-term opioid therapy for NCRP [78]. A 2021 Canadian study [84] identified doctor shopping in only 7.8%. When addiction was present it did not appear to correlated with opioid prescribing patterns. Interpretation of the research and information in this area is hampered linguistic uncertainty [85]. That is, terms used to characterize 'inappropriate prescribing', e.g., 'overprescribing,' 'misprescribing', or 'overutilization', are applied inconsistently, and lack an agreed upon definition. Indeed, the CDC Guideline does not define inappropriate prescribing. In the absence of any consensual validation, the existence of one or more of these behaviors lies in the eye of the beholder.

Consequences of tapering/discontinuation of opioids

The use of opioids has been associated with variety of neuroplastic behavioral changes [86]. These changes make successful tapering of some patients not only difficult, but possibly dangerous. In particular, is the potential unmasking of a Protracted Abstinence Syndrome (PAS), which is related to a refractory dependence of opioids [87]. The PAS includes worsening pain associated with "...anxiety, depression, sleep disturbances, fatigue, dysphoria (i.e., feeling down or emotionally blunted), irritability, decreased ability to focus, and deficits in executive control" (p. 158; [87]). Critically, the PAS can last for months or longer. In addition, there is evidence that discontinuing opioids may provoke suppression of the immune system increasing the risk for opportunistic infections [88]. Therefore, the assumption that reducing or discontinuing opioids will be beneficial to the patient is highly questionable. Several recent studies have examined the consequences of tapering/deprescribing on pain. Goseling, et al. [89] noted that 50% of patients reported their pain to be better or the same, and 47% reported feeling worse pain. McPherson, et al. [90] noted that 54% of patients reported moderate to severe clinically significant pain after tapering. Sturgeon, et al. [91] reported that among patients tapered to less than 90MME, 52.8% reported greater pain, and 23.6% reported reduced pain. A retrospective cohort study by James, et al. [92] of patients in a primary care clinic reported that of the patients that died during a 5-years follow-up period the overdose death was more common in those who



discontinued Chronic Opioid Therapy (COT). Those undergoing provider-initiated discontinuation appeared to be at increased risk. Ongoing prescription opioid use and disruption of primary care continuity were both common after discontinuation of COT. These data call into question the safety of opioid discontinuation as an effort to reduce the risks of COT" (p. 2749; 107).

Agnoli, et al. [93] studied 113,618 patients who underwent opioid tapering. Overdoses events, mental health crisis event, and hospital-based treatment were higher for the tapered vs non-tapered group. The authors concluded that "... Among patients prescribed stable, long-term, higher-dose opioid therapy, tapering events were significantly associated with increased risk of overdose and mental health crisis" (p.411). Furthermore, it is well known, though not always recognized, that opioids can help to stabilize certain psychological/psychiatric states [94]. In such cases, tapering may be contraindicated, especially in the absence of specialized psychiatric support.

Conclusion

Scientific research can provide valuable information but lacks control over how the information is disseminated. Generating policies, formulating, and implementing guidelines which impact patient care, are complicated processes, and subject to cognitive bias. Focused illusion, linguistic uncertainty, heuristic failure, and logical fallacies can impact the interpretation of scientific data and shape the perception of a given issue. The present emphasis on opioid tapering appears to be a consequence of the availability bias and focusing illusion [95]. That is, by focusing on that which garners the greatest and most sensational media coverage, the population in general, and policymakers, do not thoroughly evaluate policies (guidelines), or the data upon which they are based (heuristic failure). Personal opinions, cultural biases, political expedience, seem to take priority over a more evidenced-based approach. Dineen [85] cautioned policy-makers against focusing "...on the most salient information and neglect other important root causes and sources of harm. As this salient but incomplete information is repeated to other experts and policy-makers, it is often taken as valid without checking underlying facts ... the desire to preserve in-group norms and personal and professional reputations leads to widespread adoption of incomplete information, leading to over-reaction and incoherent regulation-often with serious unintended consequences." (p 982).

Kertesz, et al. [96] observed that prior to 2011, a policy monopoly of regulators and pharmaceutical manufacturers encouraged, and made high levels of opioid prescribing acceptable. This group has now been replaced by an 'advocacy coalition' consisting of officials, thought leaders, journalists, and interest groups calling for a more cautious prescribing regimen and all but incentivized involuntary termination of opioids without concern as to the consequences to the individual patient. They assert that the present policies "... emerge from a range of actors and agencies constrained in their ability to assimilate complex data, evaluate the data objectively and to command necessary resources in an iterative, rapid response fashion" (p. 169). The 2022 revised CDC guidelines [37] continue to lack needed clarity. Webster [97] identified several short-comings. For example, the MME threshold had been revised, but was no more founded on scientific evidence than those on the 2016 version. As such, it is readily open to biased and rigid interpretation by policymakers and payors. Indeed, it has been suggested that insurance companies' reimbursement policies may well contribute to the opioid crisis [98]. It remains to be seen if this publication does anything stem the tide of states limiting opioids, insurance companies limiting coverage, guideline consultants harassing providers, and various boards/agencies implying the risk of sanctions or restrictions to clinicians that appear noncompliant or uncooperative.

The use of opioids in the treatment patients with chronic pain is a complex issue. The argument herein is neither for or against tapering/deprescribing but highlights cognitive biases in the decision-making process which can compromise patient care and safety. The scientific data are often inconclusive, and open to interpretation. Every effort should be made to avoid the hobbesian error, in which a global pre-emptive response in favored over a more measured and controlled one, should be avoided [99].

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