The “opium of the masses” that Karl Marx once made reference to has taken on a new meaning when one witnesses what has happened in the past 30 years with opioids, natural opium-extracted semi-synthetic and synthetic substances derived from the poppy (*Papaver somniferum*). While we may look with some degree of gratification at the disappearance of the notorious opium dens, they may have taken on a more insidious, lethal reincarnation with the alarming statistic telling us that U.S. sales of prescription opioids has increased 4-fold from 1999 to 2010 with sharp increases in deaths and emergency room visits associated with the use of fentanyl, hydrocodone, oxycodone, and other opioid medications.¹

What death increases? FIGURE 1 shows that statistics from the National Institutes of Health indicate that in the U.S. there were approximately 20,000 deaths in 2014 alone, or over 165,000 in just the decade preceding from the overuse of prescription opioid pain relievers. For 2014, the opioid death rate was twice that of heroin, or 370% greater than that of heroin over the past decade.²

**FIGURE 1: National deaths due to overdose of opioids or heroin**

As a haiku review on mechanisms of action, let it be said that opioids act through µ opioid receptors which are found in pain-modulating, descending pathways, including the medulla locus coeruleus and periaqueductal gray area. Expression also occurs in the limbic, midbrain, and cortical structures. Activation of these receptors inhibit neurons, the analgesic effect being the inhibition of spinal cord pain transmission,³,⁴ as illustrated in FIGURE 2:

**FIGURE 2: Overall mechanism of action of opioids in pain modulation⁵**
Causes of the opioid epidemic may have begun with the liberalization over the past 20 years by state medical boards of laws governing the prescribing of opioids for treating chronic non-cancer pain. Add to that (i) the introduction of new pain management standards by the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) in 2000, (ii) the increased awareness of the patient’s right to pain relief, (iii) support from a variety of organizations promoting the use of opioids in large doses, and finally (iv) aggressive marketing by the pharmaceutical industry. All these pillars have been exonerated as being based on unsound science, blatant misinformation, and assumptions that opioids are effective and safe—especially when prescribed by physicians. Even more frightening is the fact that opioid analgesics are currently causing more deaths than the number of deaths from suicides and motor vehicle crashes combined. Furthermore, 60% of deaths have been found in patients when they are given prescriptions based on prescribing guidelines by medical boards. As Beauchamp et al have stated so succinctly, “We have moved beyond questions of nonmedical use, abuse, and diversion to highlight the role of prescription opioids in causing addiction even when prescribed and used appropriately (italics mine). In other words, efforts to restrain nonmedical opioid use have failed to address the addiction occurring in medical opioid users as well.

Compounding the problem is that a series of semistructured open-ended telephone interviews with patients discharged from a single urban academic emergency department having experienced pain from fracture, renal colic, or musculoskeletal back injury revealed that emergency physicians typically failed to discuss the risks of opioid dependence, let alone mentioning anything about alternative pain management options. Those patients experiencing negative experiences related to pain management pointed out deficiencies in communication with the provider, leading to the misunderstanding of clinical diagnoses, fragmentation of care among their healthcare providers, and a desire to be involved in the decision-making process concerning their pain management.

What are the costs associated with opioid use and adverse events?

3. At the workplace, average claim costs without the use of opioids was reported to be $13,000, with short-acting opioids like Percocet, that figure inflated to $39,000—and with long-acting opioids like Oxycontin, the cost skyrocketed to $117,000.

What efforts have been made to corral this runaway stallion?

1. One initiative was to introduce what was called an abuse-deterrent formulation of OxyContin. Problem was that not only did the initial reduction of 45% in the first month level off with a persistence of 25-30%, but more importantly, there was a migration to other opioids, particularly heroin. One could almost imagine that the solution was worse than the problem here.
2. Given what is now apparently the strong correlation between therapeutic exposure to opioid analgesics and their abuse, an alternative proposal recommended in Ontario has involved what is mainly methadone maintenance treatment for prescription opioid disorders, but this has been considered to be a last resort for treatment in Canada.
3. The introduction of training programs for anesthesia providers, introduction of specific standards of patient safety, and anesthesia monitoring have been shown to produce significant declines in anesthesia-related mortality. Given that anesthesiologists have wildly prescribed opioids for acute and chronic pain, these steps have been proposed as measures to apply to the use of opioids as well.
4. Anesthesiologists may have taken a step further, in that the American Society of Anesthesiologists Task Force on Acute Pain Management has come out with a recommendation to apply multimodal analgesia, in addition to weighing the benefits and risks of systemic opioids.

Given the fact that orthopedic surgeons have been identified as the third highest prescribers of opioid analgesics among physicians in the United States, a massive opportunity has been created to propose chiropractic as arguably the least invasive, less costly, and clearly nonaddictive alternative for managing musculoskeletal pain. Indeed, a great deal of heft has been given to this suggestion by the very recent report that the per-capita supply of chiropractic and per-capita Medicare spending on chiropractic manipulative therapy were both inversely associated with any use of opioids. Even though these factors were not associated with the mean daily dosage of opioids among those who had already obtained opioid prescriptions, the implications of this study are clear: that
having a chiropractor nearby may reduce the number of opioid prescriptions being issued—and thus one could anticipate decreases in opioid-related hospitalizations, expenses, and even death. Although it would be desirable to confirm these results with further outcome studies and randomized controlled trials, they already emphasize what we believe is the strong potential of increased chiropractic care to alleviate the current rampant overuse and abuse of opioids, leading to increased disability and healthcare costs. In the meantime, it would be foolish to discourage the use of chiropractic manipulative therapy whose effectiveness in alleviating musculoskeletal pain has been supported in an abundance of studies. With this modicum of common sense, we may yet be able to retire or at least diminish the protestations of Karl Marx.

REFERENCES:


