Issue 8 | November 2016

SCIENCE FACT OR SCIENCE FICTION:
OPIOID EDUCATION: SEX AND GENDER MATTER

Opioid prescriptions more than doubled over the last two decades.[1] This pattern has troubling implications: opioids are associated with high levels of misuse, addiction and death.[2-6] Sex and gender factors influence opioid use and misuse; factors that are often ignored when it comes to treatment. Could integrating sex and gender into patient education help address the opioid crisis in Canada?

CHRONIC PAIN AND OPIOIDS

Chronic pain is a serious health care challenge for Canadians. One in five people suffer from some form of chronic pain (defined as continuous or intermittent pain experienced for at least six months, not related to cancer or cancer treatment).[7] One in six Canadians reports opioid use, and Canada is number one in global opioid pain-reliever consumption.[8,9]

SEX

Biological attributes of humans and animals, including physical features, chromosomes, gene expression, hormones and anatomy.

GENDER

Socially-constructed roles, behaviours, expressions and identities of girls, women, boys, men and gender diverse people.

WOMEN, SEX, GENDER AND OPIOIDS

Sex influences opioid use because females are more likely to suffer from chronic pain.[5,6,11,12] Normal estrogen variation during the menstrual cycle as well as exogenous hormone replacement therapy after menopause can affect sensitivity to pain and response to opioid pain relievers.[13,14]

Gender also plays a role. Women are more likely to visit health care providers[15] and more likely to receive prescriptions for all types of drugs, including opioids.[11,16] "Due to stereotypes, many prescribers have preconceived notions of women being less problematic drug users than men," says Dr. Zainab Samaan, a CIHR-funded researcher who studies opioid use and treatment at McMaster University. Findings from 500 people with opioid use disorder at 13 rehab clinics across Ontario indicate this is far from the truth. Fifty-two percent of women, compared to only 38% of men, report first exposure to opioids through a medical prescription.[11] More women report physical and psychological health problems, a family history of anxiety and depression and caregiving responsibilities.[11,17]

Only 35% of opioid users in Samaan's studies reported ongoing pain.[11] Opioid-induced euphoria, which reduces the intensity of stress and anxiety, may explain persistent consumption. Representation in the popular media increasingly shows women getting hooked on opioids because of gender-related pressures to succeed in their jobs, be "supermoms" or juggle caregiving responsibilities for their aging parents. The movie *Bad Moms* portrays a desperate mom who admits to popping Vicodin® every 20 minutes just to get through the day, even though she has no pain. Institutionalized gender inequities such as the gender pay gap and financial stress experienced by women in lower socioeconomic strata are other risk factors.[18,19]

MASCULINITY, TESTOSTERONE AND OPIOIDS

Opioids suppress testosterone levels to half their normal levels in men.[20] One would think this sex-related factor would impede opioid use in men. Yet, a myth has emerged among some users that only methadone, a synthetic opioid dispensed during withdrawal therapy, lowers testosterone levels. In fact, all opioids have been found to lower men's testosterone and decrease libido.[20] This misconception can lead to men being reluctant to seek treatment.

Gender factors become apparent in the male veteran population, where rates of opioid use are highest.[21,22] Veterans are more likely to suffer from post-traumatic stress and anxiety, as well as additional pressure from traditionally hyper-masculine environments. Stigma can prevent men from seeking help and lead to self-medication.

Men are twice as likely to escalate their doses.[6] "This may create a deadly combination with traditionally male behaviours like risk taking," says Samaan. Men are also twice as likely to die from opioids.[6]

HOW SHOULD PATIENT EDUCATION TAKE SEX AND GENDER INTO ACCOUNT?

Sex and gender differences in the root causes and consequences of chronic opioid use in Canada underscore that patient education and treatment need to incorporate sex and gender. Women should be advised to disclose whether they are on the birth control pill or hormonal replacement, as well as links between pain and their menstrual cycle. Gendered pressures perceived by women in their lives need to be exposed and addressed in order to find healthier ways of dealing with stress and anxiety.

Men have a right to know that all opioids lower testosterone levels and diminish sexual function. Direct-to-consumer messaging must address gendered elements such as male toughness and the stigma of mental health symptoms. The informed consent process should include a warning that opioids can become addictive very quickly for both men and women, even within the first two weeks.

"Treatment approaches that take sex and gender differences into account will be much more effective," Samaan says. Integrative therapy that addresses the gendered needs of women and men must include access and converage for childcare services, vocational counselling, lifecoaching, legal services and support for co-existing addictions. A more personalized sex and gender approach to opioid use could help reduce risks and increase health for men and women.

BERT'S STORY

When 53-year-old Bert Mitchell almost died in a car accident in 2003, he woke in "excruciating" pain. His doctors put him on powerful opioid drugs.

When did you realize you were addicted?
Four years later, I was watching a news story about "poor man's heroin." I realized that's what I was on, and decided not to take any more that day. The drugs started to wear off, and I could feel the pain coming back in waves until it was full blown. It was so compelling. I had to relent.

What did your doctor say?
He was very angry. I hadn't researched it, but I was experiencing withdrawal. We developed a program to gradually get off of it. It was horrible. I couldn't function. So he put me on fentanyl patches. I was so frightened to go off those that it took me six or seven years.

Why did you decide to go off opioids?
I felt the drugs affected me worse than the pain. I was drowsy. I almost had several accidents in the car. I was twitching in bed, getting up and walking around at night.

What do you think clinicians could do better?
I wish I had known how addictive it can be. A few years later my appendix burst and I told the doctor I didn't want opioids because I was susceptible to addiction. He prescribed me Percocet. When I went to the pharmacist he told me that it was oxycodone. Did my doctor not realize? Are surgeons aware that post- surgery pain relief can get you hooked? Perhaps they don't know. I'm afraid this is a big part of the problem with opioids. Doctors don't know enough about the euphoria you can feel and how quickly you can get addicted.

How are you now?
Much better. I have my life back. I don't take anything. I'm sore, but I'd rather be that than be addicted to this crap. I use physiotherapy, massage therapy and other treatments.

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