**Chronic Pain and Pharmaceutical Grade Opioids:  
the use of painkillers in different demographic groups**

**Goal and Primary Questions**

What effect does chronic pain play on long term(year/lifetime) pharmaceutical drug use prescribed or not? What groups are most likely to misuse pharmaceutical grade painkillers?

Our primary focus will be on the role chronic pain plays in opiate use throughout different demographics.

What relationships exist between chronic pain and pharmaceutical grade opiates (pain killers) and in which demographic groups is this relationship most prevalent. What factors potentially influence opiate misuse with respect to chronic pain? We are also interested in seeing whether misuse of opiates relating to chronic pain may be because of disparities in healthcare access particularly in low-income groups and indigenous peoples.

We will also explore the relationship between opioid misuse and drug overdoses.

**Methods**

We have isolated key demographic variables: age bracket, gender, education, income, indigenous status as well as the following variables relating to chronic pain: PAIN\_CHRONIC, PAIN\_CHRONIC\_DOC, PAIN\_CHRONIC\_RX, and DRSHOP\_NMU. We will look at OP\_USE to explore use of prescription opioids related to the previously listed variables.

For variables relating to drug misuse and drug overdoses, we focused on: DAST\_SUM, DRSHOP\_NMU, and DRSHOP\_SELL.

We will use tableau to visualize the various relations pertaining to the variables above. We will compare different groups to see if there are any potential patterns in the data. We will be making the assumption that questions were answered truthfully and give an accurate representation.

**Discussion**

Pain Chronic vs Age vs Gender:

It is obvious to see almost 98% of people said that they never attempted to get a prescription from a physician for a medication that you did not need and intended to misuse (DRSHOR\_NMU = 1). It makes the sample size of DRSHOR\_NUM = 0 too small, which is not adequate to do detailed analysis.

Depression and Anxiety:

The cases of misusing drugs in people who have anxiety, depression and suffered from chronic pain less or equal to one week might be higher than the other groups. People with higher income produce less cases of misusing/overusing drugs based on the answer of Rxdrugsafe pain. In addition, if we only observe the income higher than $100,000, there is only a few responses on Rxdrugsafe pain. Based on this fact, we cannot make any conclusion of this high-income group based on such tiny number of responses. It is noticeable that a large amount of people with no Chronic Pain, no depression and no anxiety are using drugs to treat pain. After applying the Acute Pain filter to identify whether people have acute pain instead of chronic pain, the number of counts only drop a little bit. That indicates people are taking drugs to relief unreported pain. We are very curious about what kind of pain they are trying to reduce by taking drugs.

Drugs for highs vs Chronic pain:

Above age 55, it seems a lot of elder people use drugs for enjoyment. The ratio between Use drugs for enjoyment and Not for enjoyment is almost showing an increasing trend as the incomes increase. We believe this may be a potential indicator for drug abuse.

Drugs Overdose and Drug Misuse:

Drug Overdosages are more apparent between the ages of 25 to 44 and seem to coincide with inappropriate involvement with drugs (shown in DAST score). The same trends are also evident in pharmaceutical prescriptions where drugs are not used for their intended purpose (either for misuse or to sell).

Conclusion:

From the Age Vs Income Vs Gender chart, we can conclude that Males above 55 have higher incomes than the Female group and the youth. Combining what we just mentioned that there are lots of drugs abusing cases above age 55, these people usually have relatively high income. That indicates prescription opioid abuse exists among rich people, although it has less cases compare to the low-income group.

We believe that the higher rates of prescription drug misuse is more prevalent in higher income groups since these groups are more likely to have better access to healthcare and have an easier time obtaining a prescription.

**For further investigation:**

We have explored how chronic pain relates to prescription opioid usage in various groups. An area that requires further investigation is the role of adequate healthcare access in chronic pain treatment and access to prescription opioids. Questions for further investigation:

Is illicit drug use for medical treatment of chronic pain higher in lower income groups, racialized groups, and other minorities and is the use of illicit drugs linked to lack of adequate healthcare for these communities?

It is important to look at how all these factors relate so that we can ensure that all Canadians are able to safely treat chronic pain.

**References:**

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