TU229

UQAT
CHAIRE DE RECHERCHE
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DE LA DOULEUR CHRONIQUE

PRESCRIPTION PUZZLES: DECIPHERING SEX DIFFERENCES IN RISK TRAJECTORIES ASSOCIATED TO MEDICATION USE

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INTRODUCTION

- The use of medication is frequent among people living with chronic pain; 7 out of 10 individuals use ≥5 medications *(Zahlan et al., 2023)*
- Several pain medications are often combined and work through diverse mechanisms but may carry adverse effects that impact functioning and even threaten life
- Quantifying the risks associated with pain medication use is, however, challenging, as the risk may change over time and according to patient characteristics
- Sex disparities in pain medication use and adverse effects prevalence have been demonstrated, but actual risk differences have never been investigated

The objective of this study was to explore sex differences in risk trajectories associated to medication use for chronic pain

METHODS

- **Data source**: The TorSaDE Cohort (n=102,148), which links 2007 to 2016 cross-sectional Canadian Community Health Surveys (CCHS) with Quebec administrative health databases
- **Participants:** Individuals self-reporting chronic pain (n = 16,145), aged ≥ 18 years old and covered by the public prescription drug insurance 2 years after survey completion (n = 8,760). Sex at birth was self-reported in the survey
- **Risk quantification**: The monthly risk associated with pain medication use was calculated for each participant for the two years following survey completion. This was achieved using the Medication Quantification Scale 4.0 *(De Clifford-Faugère et al, 2024)* that assigns risk weights to each analgesic/coanalgesic used
- **Trajectories modeling**: Growth Mixture Modeling (GMM) was applied to identify subgroups of individuals with similar patterns of risk over time (risk trajectories) among females and males
- χ^2 tests were used to evaluate disparities among pain medication risk trajectory groups

RESULTS

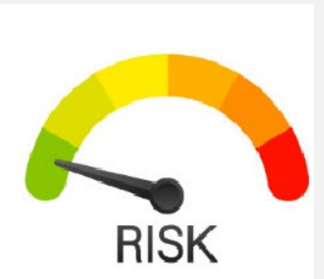
STUDY SAMPLE CARACTERISTICS

	♀ (n=5,684)	♂ (n=3,074)
MQS-4.0 mean score at baseline (± SD)	7.2±8.4	5.6±7.6
Self-reported in the survey:		
Mean age (± SD)	64.6±14.6	61.8±15.0
Having a regular physician	92.1%	85.5%
Measured using administrative data in the 90 days after survey completion:		
Excessive polypharmacy (≥10 medications)	27.3%	19.5%
Use of opioids	4.8%	4.8%
Use of benzodiazepines	25.6%	17.0%

RISK TRAJECTORY GROUPS

In both females and males 4 trajectory groups were identified
Similar patterns of risk associated with pain medication use were found for females and males

#1: Low-stable risk over time
♀ n = 1,798 / 31.6%
♂ n = 1,185 / 38.5%



#2: Moderate-stable risk over time
♀ n = 3,035 / 53.4%
♂ n = 1,444 / 44.9%

#3: Moderate-increasing risk over time
♀ n = 429 / 7.6%
♂ n = 223 / 7.3%

#4 : High-decreasing risk over time
♀ n = 422 / 7.4%
♂ n = 224 / 7.3%

FEMALES' AND MALES' RISK TRAJECTORY GROUPS PROFILES

♀ The **"moderate-increasing risk" group** had the highest proportion with moderate/severe pain; the **"high-risk-decreasing" group** had the most users of ≥10 medications, activity limitations due to pain, fair/poor health, and highest Charlson comorbidity index score

♂ The **"moderate-stable risk"** group had the highest proportion of participants aged ≥65; the **"high-risk-decreasing"** group had the most users of ≥10 medications, moderate to severe pain, activity limitations due to pain, fair/poor health, highest Charlson comorbidity index, and worst continuity of care index

CONCLUSIONS

- We identified four distinct risk trajectories related to pain medication among females and males
- While both sexes showed similar risk trajectories (number, shape), sociodemographic and health profiles within a given trajectory varied
- Whether these differences are due to social factors (gender) remains to be explored
- In sync with IASP's Global Year on Sex and Gender Disparities in Pain, our findings highlight the need to consider sex and gender when addressing disparities in the risk associated with pain medications

Scholarships:

RQRD QPRN Réseau québécois de recherche sur la douleur / Quebec Pain Research Network
CIHR IRSC Canadian Institutes of Health Research / Instituts de recherche en santé du Canada
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