Risk Factors Driving Alcohol and Substance Use Rates During the COVID-19 Pandemic and Recovery

Rowan University SCHOOL OF OSTEOPATHIC MEDICINE

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Background

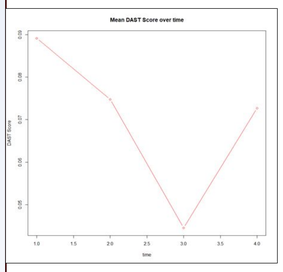
- Alcohol misuse is one of the leading preventable causes of death worldwide[1]
- Substance use disorders continue to ravage the country
  - Opioids noted in > 70% of substance overdose deaths in 2018[2]
  - 15% of general population over age 12 report illicit use of marijuana regularly[3]
- Stress is a known risk factor in the mitigation of both alcohol and substance use disorders
  - Fed by dysregulation of hypothalamic pituitary adrenocortical & sympathetic adrenomedullary axes
    - Resulting in dysregulation of cortisol response & profound deficits in emotional regulation[4]
    - Creates dangerous feedback loop of dependence
- Increased cravings for alcohol or illicit drugs couples with impulsivity
  - Increase habit-forming behaviors in all substance use disorders[5]
- Previous studies described long-term effects of social isolation on stress levels in non-human animals[6]
- Currently no known studies examining impact of long-term social isolation on humans
- **Our study aimed to demonstrate heightened risk of increased use of alcohol & substance use in adults during times of pandemic, lock-down and isolation**
  - Also assess more extreme use of alcohol & substance use in those diagnosed with a substance use disorder during this more stressful period

Methods

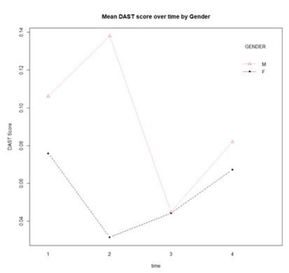
- Project approved by RowanSOM IRB.
- Report was requested from the institution's IT department which included all adult patients of Rowan Family Medicine during four distinct time frames:
  - **Prior to the COVID-19 pandemic (12/2019-3/2020)**
  - **During the NJ stay-at-home order (3/2020-5/2020)**
  - **After the NJ stay-at-home order was lifted (6/2020-8/2020)**
  - **NJ return to partial stay-at-home order (9/2020-11/2021)**
- Information that was requested included alcohol and substance use screen scores (AUDIT-C and DAST-10), patient gender, patient age, and zip code of residence
- Individual patients not compared across time periods to maintain anonymity of patient information

Results: DAST Scores

DAST Scores: General



DAST Scores: Influence of Gender



Key:

Period 1: Pre pandemic
Period 2: Lockdown/Shelter at home
Period 3: Post-Shelter at home
Period 4: Lockdown #2

- There was a decrease between period 1 and 2 suggesting drug use decreased with lock down orders taking place
- There is a significant decrease between period 2 and 3 suggesting drug use decreased when stay at home orders lifted and re-engagement outside home resumed
- During period 4, there was an increase in DAST score to near period 2 levels
  - Contributing factors: reinstatement of shelter-at-home orders, second surge
  - Overall, male DAST scores are higher than females
    - Females experienced a significant decrease in DAST score from period 1 to period 2 and then increased during period 3 and 4
    - Male DAST scores increased significantly between period 1 and period 2 followed by significantly decreasing in period 3 and rebounding in period 4

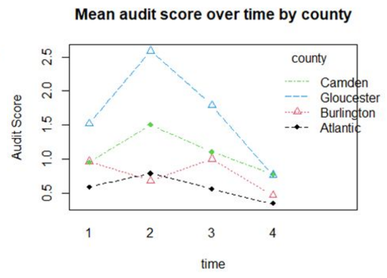
Results: AUDIT Scores

AUDIT Scores: General

	Change Rate
Period 1 to Period 2	**43%**
Period 2 to Period 3	**-26%**
Period 3 to Period 4	**-44%**

In general, AUDIT scores for men are, at a baseline, "acceptable" at a higher level, which allows us to assume male alcohol use is higher than female alcohol use (**p-value = 0.0007018**)

AUDIT Scores: Influence of Gender, SES Status



	Change Rate	Change Rate
Gender	**Female**	**Male**
Period 1 to Period 2	**35%**	**56%**
Period 2 to Period 3	**-23%**	**-27%**
Period 3 to Period 4	**-20%**	**-50%**

Key:

Period 1: Pre pandemic
Period 2: Lockdown/Shelter at home
Period 3: Post-Shelter at home
Period 4: Lockdown #2

- Male AUDIT scores ***increased*** significantly faster than females from period 1 to period 2 of the pandemic and also ***decreased*** faster than females after the pandemic
  - Alcohol use increased faster in males during the stay at home orders and decreased faster after stay at home was lifted, however, ***alcohol use in females remained elevated post stay at home orders***
    - Contributing factors: Women have been disproportionately affected by the COVID-19 pandemic, leaving the workforce in larger numbers with an increasing demand as caregivers
      - Men returned to work faster, less balancing of work/family demands
    - This phenomenon was seen across socioeconomic groups

Conclusions

- **Periods of social isolation during lockdown in the COVID-19 pandemic showed a distinct and sharp rise in both alcohol use and substance use amongst all patients**
  - The rate of rise and persistence of excessive use of these substances was affected by multiple variables:
    - Gender, socioeconomic status, and age
    - Slower resolution of risky alcohol consumption noted in women in both affluent and impoverished communities
  - Drug misuse followed a bell-shaped curve in men during and after lockdown
  - Drug use in women decreased in lockdown & rebounded with social isolation measures lifted
- **There are several conclusions to be drawn from these findings**
  - Regarding **drug misuse**, supply and demand phenomenon influencing rates observed:
    - Less social interactions leading to procurement of substances results in overall decrease in use rates during lockdown with a return to pre-lockdown rates upon re-engagement
    - The same logic does not apply to **alcohol use** rates
      - Sharp uptick in alcohol use amongst all groups during lockdown regardless of socioeconomic status
  - **Gender** noted to be a subtle but important factor influencing rates of both alcohol and substance use during the time periods studied
    - Alcohol use was higher in males during lockdown
    - Alcohol use in females also rose and was slower to return to baseline after lockdown, if it did at all
    - Similar phenomenon observed in rates of drug misuse in women: less drug use noted during lockdown, however, drug use increased during re-engagement
    - Both factors are a cause for alarm
  - **This pandemic disproportionately affected women**
    - Large exodus leaving workforce to juggle caregiving at home for children & elderly parents[7]
    - Crisis has no clear solution or quick end in sight
      - Estimate 2-3 years for labor market to correct for women
        - Women at increased risk for persistent stressors influencing hazardous behaviors and maladaptive coping mechanisms.
- **Authors urge physicians to continue screening patients, particularly women, for substance & alcohol use disorders**
  - **Receive training in motivational interviewing tools for engaging patients at risk**

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