Coercion into addiction treatment and subsequent substance use among people who use illicit drugs in Vancouver, Canada

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Conflict of Interest:

Dr. M-J Milloy's institution has received an unstructured arms' length gift to support him from NG Biomed, Ltd., a private firm applying for a government license to produce cannabis.

The Canopy Growth professorship in cannabis science was established through unstructured arms' length gifts to the University of British Columbia from Canopy Growth, a licensed producer of cannabis, and the Ministry of Mental Health and Addictions of the Government of British Columbia.

Background

- **Over 5,000 overdose deaths from 2015 – June 2019**

  - January – June, 2019 → 538 fatalities

  - Approximately 80% involve fentanyl or analogues

- **Compulsory/coerced treatment prevalent approach**

  - *1/3 of USA treatment admissions through coercion*

  - *Vancouver Dug Treatment Court*

  - *Proposed legislation in British Columbia, Canada*

Objectives

1. To identify factors associated with time to coerced addiction treatment; and,

2. To assess the before and after substance use patterns among people who were coerced into treatment versus two control groups

Methods

- *3 prospective cohort studies:*

  - *At Risk Youth Study (ARYS)*

  - *Vancouver Injection Drug User Study (VIDUS)*

  - *AIDS Care Cohort to Evaluate Exposure to Survival Services (ACCESS)*

- *Street outreach and self-referral in the Greater Vancouver region between* <u>*Sept 2005 and June 2015*</u>

- *At baseline and semi-annually, participants complete an interviewer-administered questionnaire*

Methods

- ***Primary outcome:***

  Being coerced into addiction treatment

- ***"Why did you enter treatment?"***

  o *Coerced/forced by doctor or courts/police/etc.*

  o *Own choice/convinced by friends/health reasons*
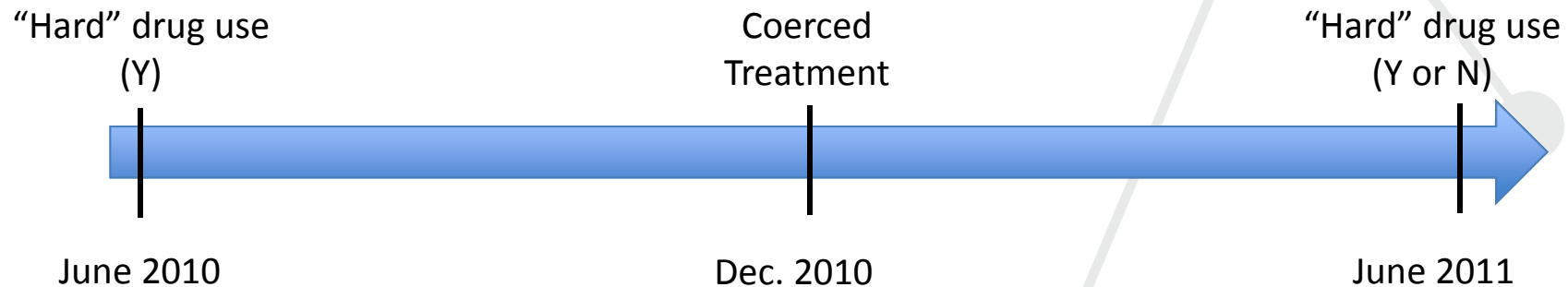
  o *Did not enter treatment*

Methods

- *Extended **Cox model** with time-dependent variables, where all substance use variables lagged to the previous observation*

- *Model controlled for the following covariates:*
  - ✓ *Age, gender, ethnicity*
  - ✓ *Binge drug use*
  - ✓ *Any non/-injection illicit drug use*
  - ✓ *Any or daily cannabis use*
  - ✓ *Non-fatal overdose*
  - ✓ *Incarceration*
  - ✓ *Police contact*
  - ✓ *Homelessness*
  - ✓ *Employment*
  - ✓ *Sex work*
  - ✓ *Drug dealing*

All variables except age/gender/ethnicity refer to the last 6 months

Methods

- *Established **"case"** and **"control"** trios for:*

  1) coerced;

  2) voluntary;

  3) treatment naïve.

"Hard" drug use (Y)	Coerced Treatment	"Hard" drug use (Y or N)
June 2010	Dec. 2010	June 2011

- *Bootstrapping method: participant selection repeated 50 times*
- *McNemar's test used to compare **within-group** differences*
- *Non-linear growth curve analyses for **between-group** differences*

Methods

- *2 sensitivity analyses:*

1. *Restricted to coercion by "police, courts, etc."*
   - *Does source of coercion matter?*

AND

2. *Included detoxification as a "treatment"*

Results: Sample characteristics

- *Between <u>September 2005 and June 2015</u>:*

  o **3,196 participants** *eligible for the analysis*

  o *Total of* **23,694 observations**

  o *Median number of follow-ups:* **5 (IQR 2-12)**

Results

- **399 (12.5%)** reported at least one coercion event

- **662 events/observations** of coerced treatment
  - 354 (53.5%) events of coercion **by a physician**
  - 300 (45.3%) events of coercion **by the courts/police/etc.**
  - 8 (1.2%) events of coercion **by both**
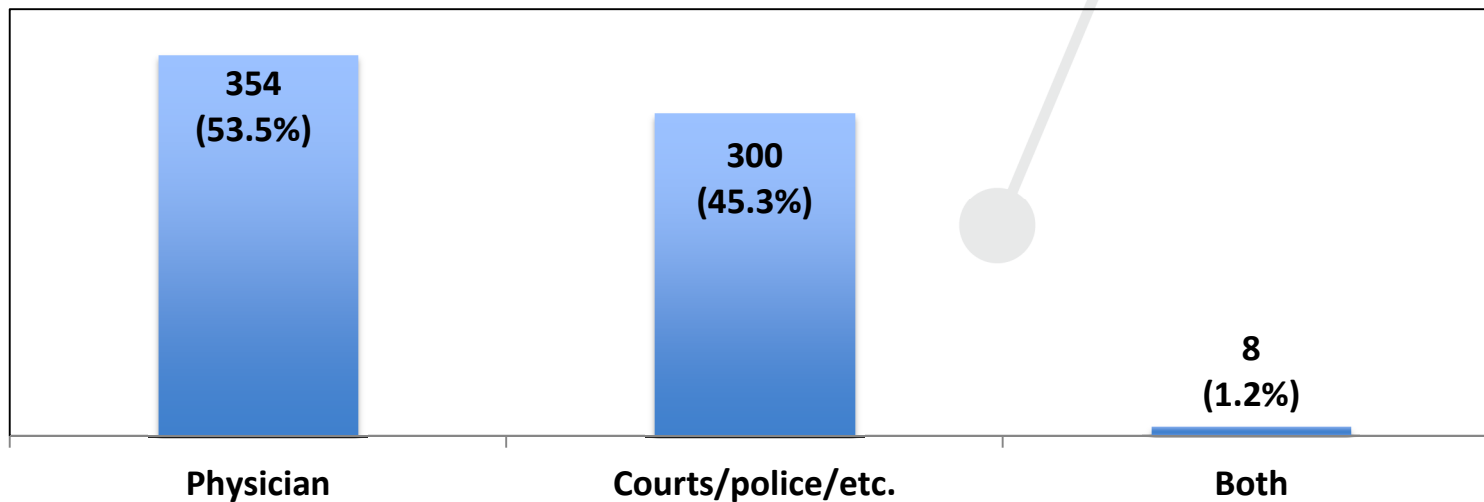
Extended Cox regression*
time to coerced addiction treatment

Characteristic	Adjusted Hazard Ratio (95% CI)
Any cocaine use yes vs. no	**1.33** (1.06 – 1.66)
Any PO use yes vs. no	**1.12** (0.87 – 1.44)
Police contact yes vs. no	**1.13** (0.88 – 1.44)
Non-fatal overdose yes vs. no	**1.66** (1.20 – 2.28)
Incarceration yes vs. no	**1.77** (1.37 – 2.28)
Daily cannabis use yes vs. no	**0.74** (0.58 – 0.95)
Employment yes vs. no	**0.73** (0.57 – 0.93)

All substance use variables lagged

Results: Before and after analysis

- *No significant **within-group** or **between-group** reductions*
  - *But, reductions in voluntary group were closer to significance*

Heroin use

	Before n (%)	After n (%)	P-value
Coerced	35 (42.9)	33 (40.4)	0.803
Voluntary	87 (53.1)	73 (44.8)	0.121

- ***Sub-analyses** found **<u>no significant differences</u>** when:*
  - Restricting to coercion by police/courts/etc.
  - Including detoxification as a treatment

Discussion

- Analysis suggests coerced treatment may be less effective than presumed

- Given known treatment gaps, the prevalence of coerced addiction treatment is concerning

- Physicians and policy-makers should be aware of the risks of coerced treatment

- Harm reduction and a public health response should be prioritized

Limitations

- Unable to discern the type of treatment participants were coerced into

- Observational study:

  - Unmeasured confounding may exist

  - Participants were not recruited at random

  - Relied on self-reported data

  - Not generalizable to other populations

Conclusions

- Study findings raise caution around the use of coercion in addiction treatment

- Investments in on-demand, comprehensive, evidence-based addiction treatment interventions are needed

Acknowledgements

- ✓ *All study participants who generously gave their time*
- ✓ *BCCSU staff, Graduate students, and the study team*
- ✓ *Community groups, funders, and others*

References

1. B.C. Coroners Service: Illicit Drug Overdose Deaths in B.C.: January 1, 2008 - July 31, 2018. *British Columbia Provincial Government,* 2018.

2. B.C. Coroners Service: Illicit Drug Overdose Deaths in B.C.: January 1, 2009 – March 31, 2019. *British Columbia Provincial Government,* 2019.

3. United Nations Office on Drugs and Crime: World Drug Report 2018. *United Nations publication,* 2018.

4. Broadstock, M., Brinson, D., & Weston, A. (2008). *The effectiveness of compulsory, residential treatment of chronic alcohol or drug addiction in non-offenders: a systematic review of the literature*. Health Services Assessment Collaboration (HSAC), University of Canterbury.

5. Werb, D., Kamarulzaman, A., Meacham, M. C., Rafful, C., Fischer, B., Strathdee, S. A., & Wood, E. (2016). The effectiveness of compulsory drug treatment: a systematic review. *International Journal of Drug Policy*, *28*, 1-9.

TABLE 3. Substance use patterns reported in the period before and after addiction treatment among individuals who were coerced into treatment (n=86 cases) and controls that voluntarily accessed treatment (mean n over 50 runs = 162 controls).

Substance use patterns[3]	Coerced Addiction Treatment Period[2]			p value[6]
	Before n (%)	After n (%)		
Any heroin use[1]				
Coerced	35 (42.9)	33 (40.4)	-2.5 %	0.803
Controls	87 (53.1)	73 (44.8)	-8.3 %	0.121
Any cocaine use[1]				
Coerced	37 (45.3)	38 (46.6)	+1.3 %	1.000
Controls	62 (38.1)	52 (31.7)	-6.4 %	0.260
Any crack use[1]				
Coerced	51 (62.0)	45 (54.7)	-7.3 %	0.327
Controls	107 (65.3)	93 (56.7)	-8.6 %	0.151
Any CM use[1, 4]				
Coerced	15 (18.4)	18 (22.1)	+3.7 %	0.579
Controls	44 (26.7)	42 (25.8)	-0.9 %	0.610
Any PO use[1, 5]				
Coerced	20 (24.5)	17 (20.8)	-3.7 %	0.662
Controls	45 (27.3)	29 (17.5)	-9.8 %	0.056
Any cannabis use[1]				
Coerced	50 (60.8)	48 (58.8)	-2 %	0.888
Controls	90 (55.3)	85 (52.4)	-2.9 %	0.486
Daily cannabis use[1]				
Coerced	22 (27.0)	23 (28.2)	+1.2 %	1.000
Controls	43 (26.3)	38 (23.2)	-3.1 %	0.548
Overdose[1]				
Coerced	7 (8.6)	1 (1.2)	-7.4 %	0.077
Controls	14 (8.6)	9 (5.6)	-3 %	0.417

Discussion

- *Potential policy implications include:*

  – *Investing in low-threshold, low-barrier treatment models*

  – *Ensuring treatment services are culturally-safe, trauma-informed, and place-based*

  – *Integrating treatment services within primary care*

  – *Expanding access to opioid substitution treatment*