

# Polydrug use pattern among harm reduction program participants: Implications for prevention and care service

Amy B. Jessop<sup>1</sup>, Livio Azzoni<sup>2</sup>, Madison Scialanca<sup>1</sup>, Rachel Holbert<sup>1</sup>, Karam C. Mounzer<sup>3</sup>, Emily Hiserodt<sup>3</sup>, Luis J Montaner<sup>2</sup>

## BACKGROUND

Patterns of substance use change as preferences and the local drug supply composition vary. Drug purchasers may be unaware of the contents. Polysubstance use exacerbates the risk of overdose, and infections, and limits preventive and therapeutic interventions. This study examines drugs used among participants enrolled in an immunization-related study (examining response by substances used) at Prevention Point Philadelphia (PPP), a multi-service harm reduction organization located in Kensington, a neighborhood disproportionately affected by fatal opioid overdose, in Philadelphia, PA, USA.

## METHODS

- Eligibility included: sought services at PPP between June 2022 and February 2023, received at least 2 doses of Pfizer/Moderna or 1 dose of J&J COVID-19 vaccine (verified by immunization Information System or immunization card), use of opioids or stimulants, and weight >110 pounds.
- Data presented were collected by trained personnel using questionnaires and point-of-care commercial urine dipstick tests.
  - Questionnaire:** requested demographic characteristics, primary drug sought (opioid or stimulant), and substances used within the past month. Substance options included Tobacco products (cigarettes, chewing tobacco, etc.); Alcoholic beverages; Cannabis (marijuana, hash, etc.); Cocaine (coke, crack, etc.); other Amphetamine-type stimulants; Inhalants (nitrous, glue, etc.); Sedatives (Valium®, Serepax®, Rohypnol®, etc.); Hallucinogens (LSD, mushrooms, PCP, Special K, etc.); Opioids (heroin, morphine, methadone, codeine, etc.); Fentanyl.
  - Point-of-care (POC) urine drug test:** analytes included: Amphetamines; Barbiturates; Benzodiazepines; Cocaine, Methamphetamine, MDMA, Methadone, Opiates; Oxycodone; THC; Buprenorphine; Fentanyl. (**Note: tobacco, xylazine and alcohol not assessed**)
- Analysis: For analysis, substances were aggregated in 5 classes: THC and derivatives, stimulants, sedatives, opioids and hallucinogens. Descriptive and non-parametric tests were used for description and subgroup comparisons.

## RESULTS

### Subject Characteristics

Of the 120 volunteers, 59% self-identified as males, 67% were White, 13% Hispanic, and the mean age was 41 years. Opioid seekers was ~3 times more represented than stimulant seekers in this cohort (Table 1).

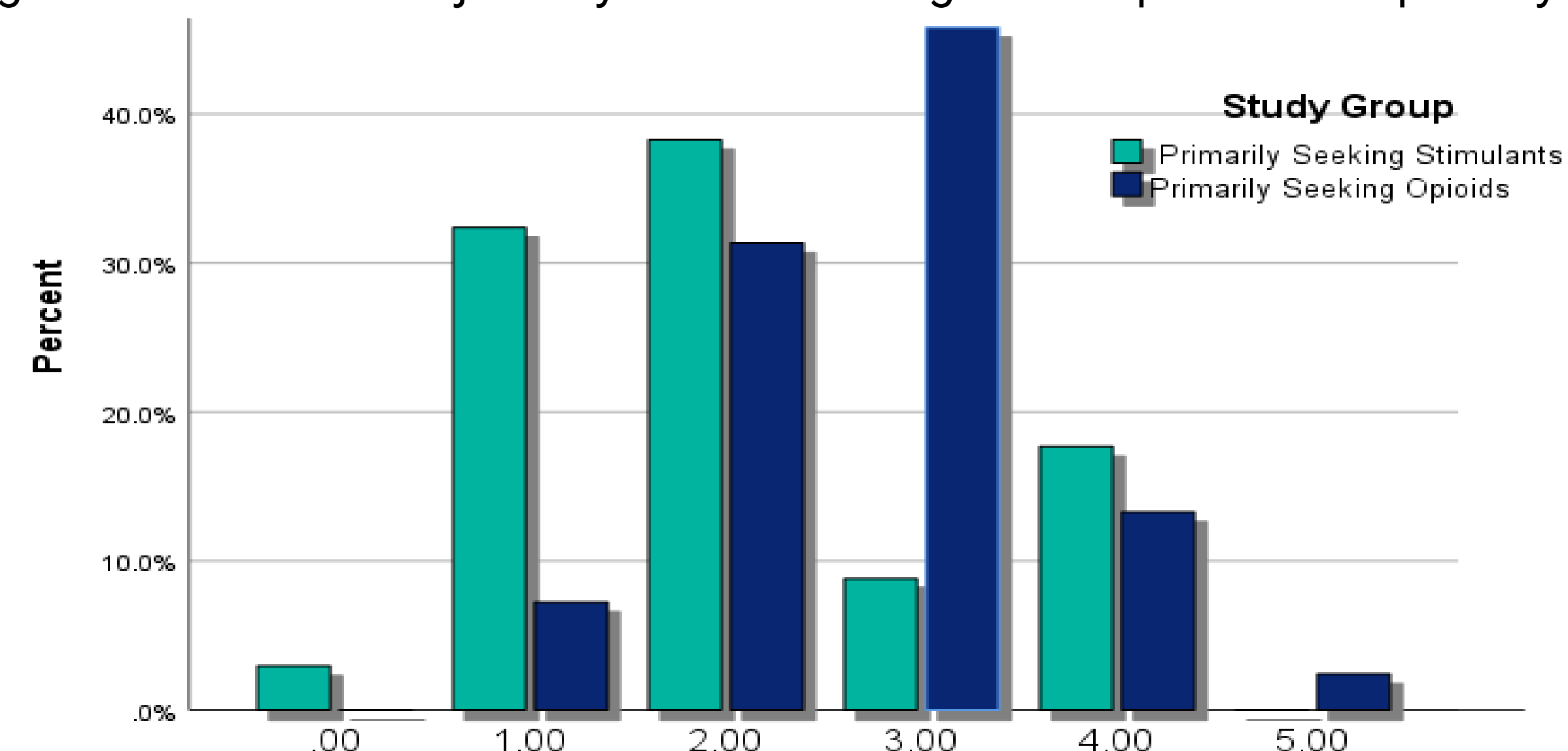
Table 1. Demographics and primary substance sought

Substance preference ▶	OPIOIDS				STIMULANTS				TOTAL
	M	F	Other	All	M	F	Other	All	
▼ Race   Gender ▶									
White	37	27	1	65	7	9	0	16	81
Black/African American	8	7	0	15	12	1	0	13	28
More than one race	4	1	0	5	3	3		7	11
<b>Total</b>	<b>49</b>	<b>35</b>	<b>1</b>	<b>85</b>	<b>22</b>	<b>13</b>	<b>0</b>	<b>33</b>	<b>120</b>
Hispanic ethnicity	6	3		9	5	1		6	15

### Polysubstance use and difference between study groups

85% of subjects had >1 and 67% had >3 classes of drugs detected. More classes were detected in those primarily seeking opioids than stimulants (Mann-Whitney, p>.001). (Figure 1)

Figure 1. Percent of subjects by number of drug classes present and primary drug



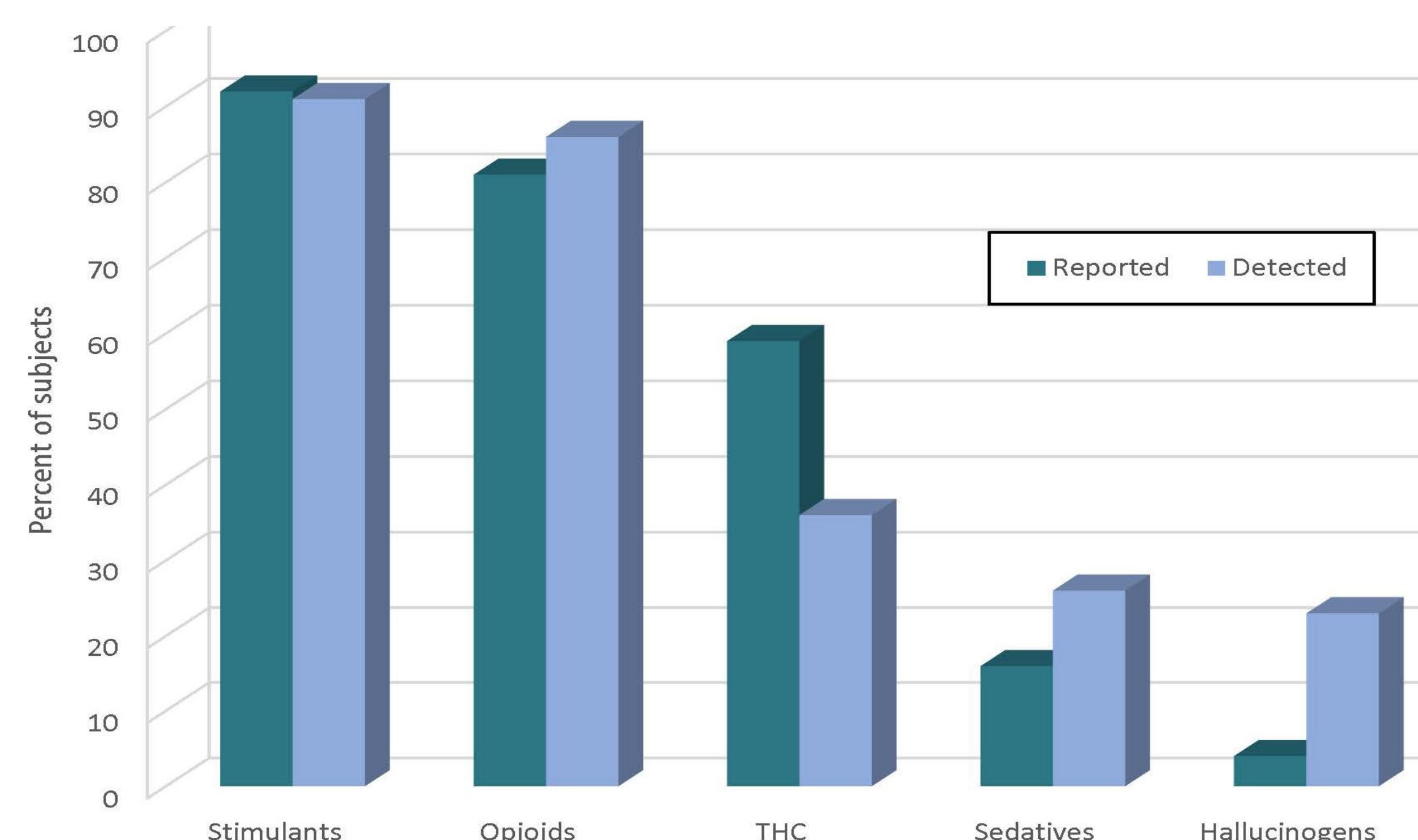
### Reported use and discordance between reported and detected classes of drugs

Reported use : tobacco = 87%; alcohol = 21%; inhalants =4% (not pictured). McNemar test was employed to examine discordance between reported use and detected presence of the 5 main classes of drugs. Reported and detected opioids and stimulants were approximately 80% and 90%, respectively with no significant discord (p=.687, p=.727). Significant discord was noted between reported and detected THC (59% vs. 36%, p<.001), sedatives (13% vs. 26%, p=.005), and hallucinogens (3.2% vs. 22.6%, p<.001).

### Fentanyl and cocaine present in most subjects - xylazine likely present

We detected **Fentanyl** in 81% of subjects tested and in 95% of subjects with any opioid present. Methadone was usually present if fentanyl was absent. Cocaine was present in 79% of subjects and 86% of those with any stimulants. Methamphetamine was present in 47%. According to local authorities, Xylazine (Tranq) was highly present in the neighborhood's drug supply (>80%). POC tests for xylazine was not available at time of study.

Figure 2. Percent of subjects reporting use and detected drugs by class



## CONCLUSIONS

- In our cohort, polysubstance use was >80% and more likely in those primarily seeking opioids than those primarily seeking stimulants.
- Fentanyl was almost universally detected among subjects using opioids.
- Tobacco use was reported at levels similar to that of opioids and stimulants.
- Routine monitoring and timely communication about the local drug supply composition is essential to understand patterns.
- Given its prevalence, polydrug use should be factored into decision making pertaining to harm reduction efforts and clinical care planning.
- Considering polydrug use and current patterns could lead to more acceptable and effective services and care provision.
- A major limitation of this study is the lack of testing for xylazine, a powerful sedative. The absence of xylazine testing may explain the discordance between reported and detected sedative use. Other limitations include our small sample size and limitations associated with detection of commercial POC test kits.