SÉMINAIRE INTERNE SESTIM

Sciences Économiques et Sociales de la Santé & Traitement de l'Information Médicale

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Diversité des 'trajectoires chemsex' et comparaison des chemsexeurs aux usagers de drogues en contexte non sexuel : résultats de deux analyses de la cohorte ANRS-PREVENIR

septembre 2023

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A group-based trajectory model to study engagement in chemsex among MSM in the French prospective cohort ANRS PREVENIR.

E. Sietiņš[1], L. Sagaon-Teyssier[1], A. Sow[1], L. Assoumou[2], D. Rojas-Castro[1, 3], D. Michels[3, 4], J. Ghosn[5], D. Costagliola[2], B. Spire[1], P. Roux[1], J.M. Molina[6], C. Protiere[1]

Differences between MSM who use drugs and those who practice chemsex in the French ANRS-PREVENIR cohort: the need for adapting harm reduction services.

Roux P[1], Donadille C[1], Sow A[1], Sagaon-Teyssier L[1], Assoumou L[2], Ghosn J[3], Costagliola D[2], Molina JM[4], Spire B[1], Protiere C[1]

Context

MSM who practice chemsex and its complications have been extensively described

1. Lack of longitudinal studies & to consider the variability of practices/trajectories
2. Less attention has been paid to MSM who use drugs without practicing chemsex

We do not know whether these groups differ

Do we have to adapt harm reduction services to their specific needs?

Objectives

1st analysis: to define (Group-based trajectory modelling)
- the pattern of behavioral trajectories of engagement in chemsex
  - Time-constant covariates for trajectory group membership
  - Time-varying covariates associated with trajectories evolution across time

2nd analysis: to compare (*Generalized Estimating Equation model accounting for repeated measures*)
- practice of chemsex (CX)
- Drug use without practising chemsex (DU)
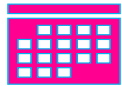- no drug use (nDU - reference)

Socio-economic characteristics

Psychosocial characteristics

PrEP related characteristics

Sexual life

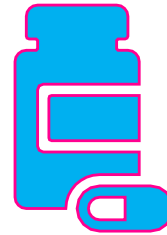# ANRS-PREVENIR STUDY

an ongoing prospective cohort study

May 2017 -

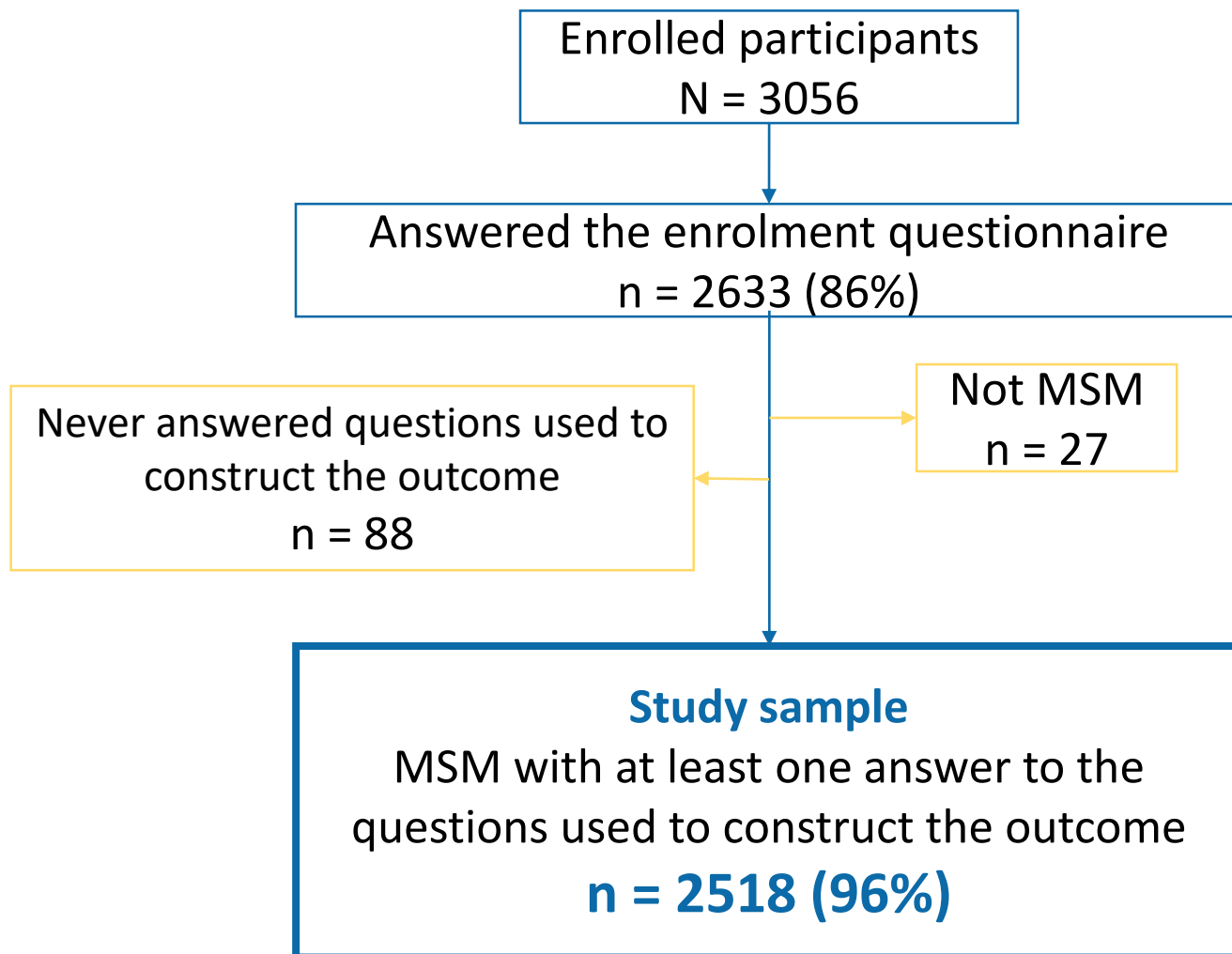Île-de-France region (26 centres)

to reduce HIV infection incidence

On-demand and daily PrEP use

People at high risk of HIV infection

QUARTERLY FOLLOW-UP

online socio-behavioural self-report questionnaires & e-crf
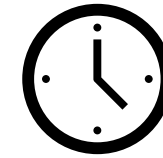
Study flowchart (May 2017 - Sept 2022)

Enrolled participants
N = 3056

Answered the enrolment questionnaire
n = 2633 (86%)

Never answered questions used to
construct the outcome
n = 88

Not MSM
n = 27

Study sample
MSM with at least one answer to the
questions used to construct the outcome
n = 2518 (96%)

- **Time points:** 11 (D0 – M30)

- Time points: 13 (D0 – M36)

- Number of observations/visits: 19.171

- Median follow-up: 21 months [9-33]

Description of the study sample at enrolment (n=2518)

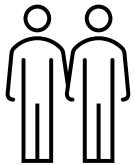51% ≥ Masters degree
71% Good financial situation
86% employed

Median age: 36 years [IQR: 29-43]

46% followed for mental health disorders
41% CES-D score ≥ 16
36% feeling lonely

62% AUDIT-C score ≥ 4

10 median casual sex partners
18% always used condom (LSE)
60% perceived having risky sexual practices

57% on PrEP before enrolment
- Optimal PrEP: 46%
- Suboptimal PrEP: 27%
- No PrEP: 27%

1st analysis: Construction of the outcome

"During your last sexual encounter (LSE), have you been under the effect of one of the following products?"* (Y/N)

- Ecstasy
- Crack/free-base
- Cocaine
- GHB/GBL

- Ketamine
- Amphetamine or metamphetamine (crystal/speed)
- Cathinones (mephedrone/ PDPV/ 3MMC/ NRJ3/ 4MEC)

- **34% engaged in chemsex** at least once throughout the study period
- Stable percent engaged in chemsex at each follow up : **15% at baseline → 16% at M30**

COVARIATES: Fixed variables assessed at baseline (aOR) + time-varying variables (coeff)

GROUP BASED TRAJECTORY ANALYSIS

ODDS OF ENGAGING IN CHEMSEX *:

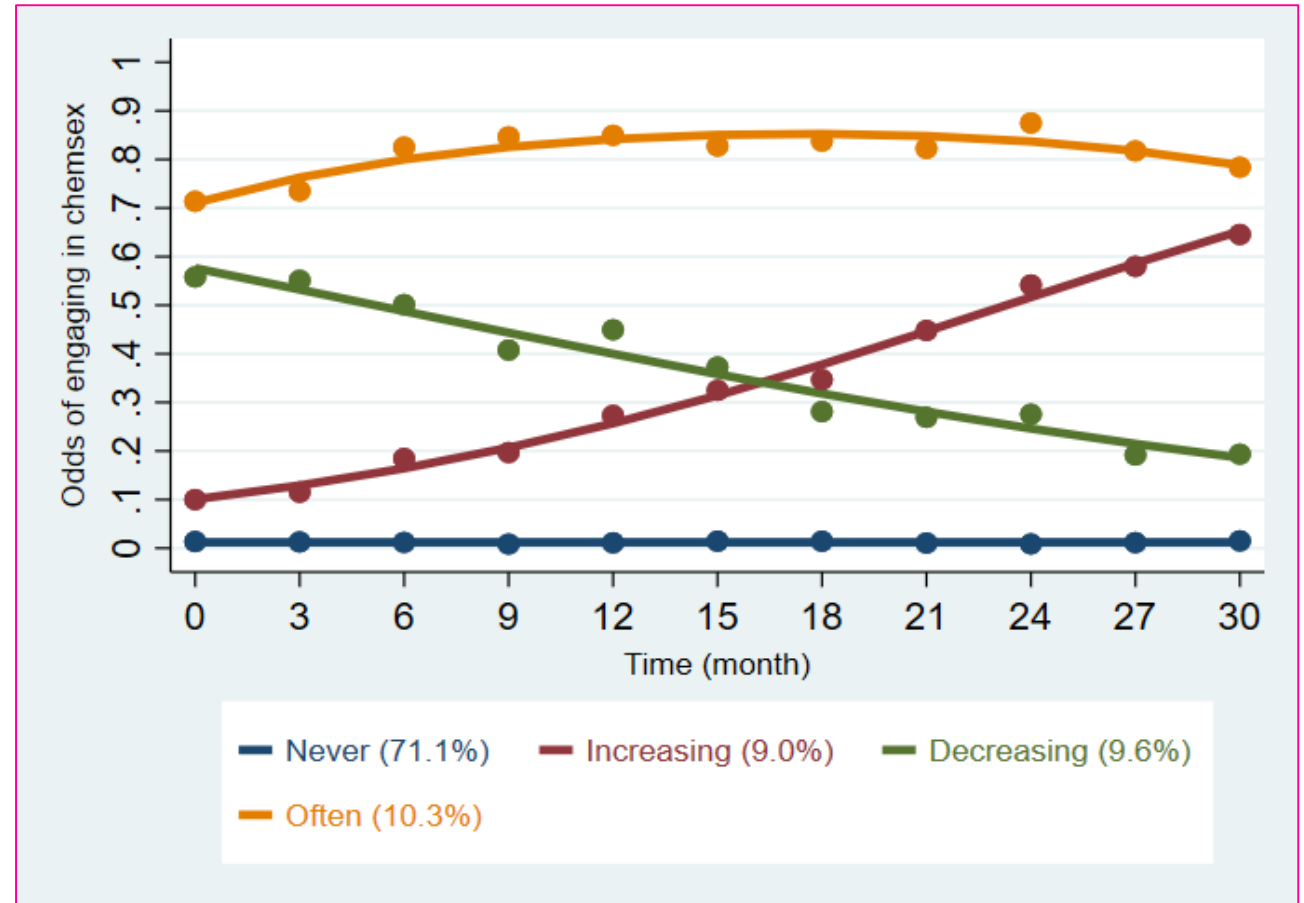➤ **OFFEN** (n=284): From 70% to 80%

➤ **DECREASING** (n=195): From 60% to 20%

➤ **INCREASING** (n=158): From 10% to 70%

➤ **NEVER** (n=1881) : Constantly around 0%

*Mutually exclusive groups = a person can NOT switch to a different trajectory across time

Figure 1: Estimated trajectories of behavioral engagement in chemsex during follow-up from baseline to month 30 - ANRS-PREVENIR cohort, 2017 – 2022, Île-de-France (N=2518)

GBTM Time-constant part: Membership to trajectory groups

VARIABLES	OFTEN	DECREASING	INCREASING	NEVER
⧗	Older*	Younger***	Younger***	
♂	More likely to use trt for erectile disfunction (past 3m)***	-	More likely to use trt for erectile disfunction (past 3m)***	
🏳	More likely to think they engaged in risky sex***	-	-	Ref.
🧠	-	More depressed*	Less depressed*	
🛏	-	-	Thought that PrEP will change their sexual practices*	
💊	-	-	More likely to be on PrEP before enrollment**	

*p < 0.05, **p <0.01, ***p <0.001

GBTM Time-varying part:
Increase in chemsex engagement over time within trajectories

OFTEN trajectory:

- Daily PrEP *

- Higher number of casual sex partners **

DECREASING trajectory:
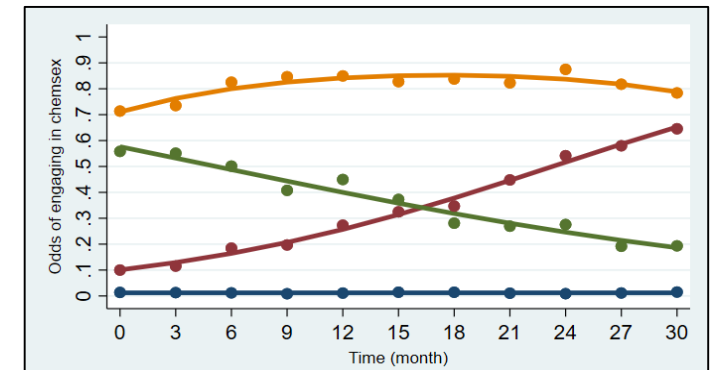
- On-demand PrEP *
- Effective PrEP coverage ***
- Increased level of arousal *

- Higher number of casual sex partners **
- Engagement in condomless anal sex ***

INCREASING trajectory:

- Increased level of arousal ***

NEVER trajectory:

- Consumption of cannabis ***
- Higher number of casual sex partners *
- Engagement in condomless anal sex *

*p < 0.05, **p <0.01, ***p <0.001

Some points of discussion (1st analysis)

- Four groups of MSM based on their engagement in chemsex across time.
  - Good adaptation to PrEP regimen for the **often** trajectory
  - Specific attention should be pay to
    - younger MSM with novel engagement in chemsex (Younger age associated with fluctuating (**increasing** & **decreasing)** trajectories
    - potential sexual health risk underestimation among MSM who **rarely** or **decrease** their engagement in chemsex (Never & decreasing trajectories were associated with more casual sex partners and condomless anal sex during LSE).
- Future studies:
  - Mixed methods study assessing motivations for engagement in chemsex by trajectory
  - Time varying psychological variables (**increasing:** less depressed, **decreasing:** more depressed)

2ⁿᵈ analysis :
Construction of the time varying outcome (GEE)

- **CX (Chemsex practice)**
  "During your last sexual encounter (LSE), have you been under the effect of one of the following products?"* (Y/N)

  *Cathinone, Ecstasy, Cocaine, Crack/free base, GHB/GBL, Ketamine, (met)amphetamine
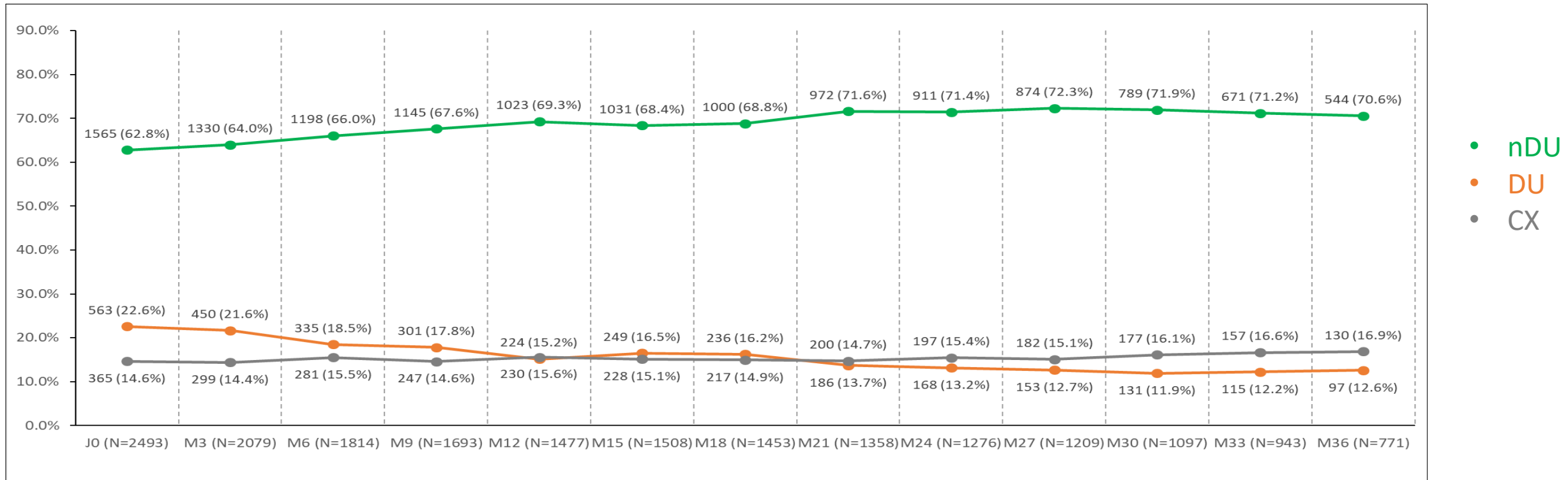
- **DU (Drug use)**
  "In the previous 3 months, have you used drugs or medication without prescription?"* (yes/no) **& Not CX**

  *Heroin, Cocaine, MDMA, GHB, LSD, Ketamine, Morphine, Amphetamines, etc.
  poppers, cannabis, erectile treatment not considered

- **nDU (no drug use)**
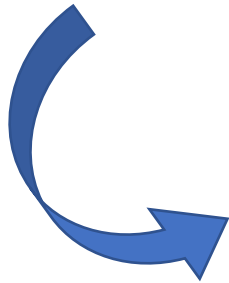 All the others

Evolution of the outcome across time(n=2518)

Results of the multivariable GEE (n=2478)

	DU	CX	nUD
On PrEP before enrolment		Yes***	
Poppers use (ref never)		Yes***	
Cannabis use (ref never)		Yes***	
Nber of casual sex partners		**Higher***	
Self perception of risky sexual practices (ref no)	**Yes, rather**	**Rather & definitively***	
Hard sexual practices (Fisting and/or BDSM)	**Less***	**More***	
PrEP protection (ref no PrEP)	**Not efficient***	**efficient***	
Systematically using condoms during LSE		**No***	
Have been followed for mental health disorders	**yes**		
Level of depression (CES-D score)		**Higher**	
Age	Younger***		
Education level	Higher**		
Self-perceived financial situation		Difficult**	
Alcohol Use Disorders Identification Test-Consumption	Higher***		
Quite satisfied with sexual life	Yes**		
Having a main partner		No***	

Limitations

- Characteristics of the study sample
  - PrEP cohort ⇨ Only **HIV-** MSM
  - High socio-professional category

Future studies:

- More heterogeneous sample
- Comparison of the two groups to better explore harm reduction behaviours related to drug use
- Go further and analyse transitions between groups

Discussion

A third of MSM in the PREVENIR cohort study use drugs

- Chemsexers ⇨ *preventive behaviours*

  - risky sexual practices, no use of condoms **but** efficient PrEP protection

  - higher score of depression

- DU ⇨ *access to care*

  - [Have been/were] followed by professional for mental health disorders

    - Dependency to drug and/or alcohol

  - risky sexual practices **but** not efficient PrEP protection

Take home messages

➢ Improving access to care for CX, in particular psychological support

➢ Focusing on prevention for DU, by providing educational and/or peer support, in particular regarding sexual practices and PrEP protection

Thank you for your attention

We would like to thank:

- all the participants for dedicating their time to this research,

- the site investigators,

- the trial's scientific committee,

- the community advisory board and the ANRS staff,

- the funders