

THE NON-PHARMACOLOGICAL TREATMENT OF DRUG ADDICTION

A bio-psycho-social approach

The path from drug use to severe Substance Use Disorder (SUD)

First use typically in teen years. Free choice.

Prevention

**Prevention; Harm reduction;
Penalties**

Impacts all age groups.
Compulsive use
Treatment

Drug experience

Mild SUD
(occasional use)

Moderate SUD

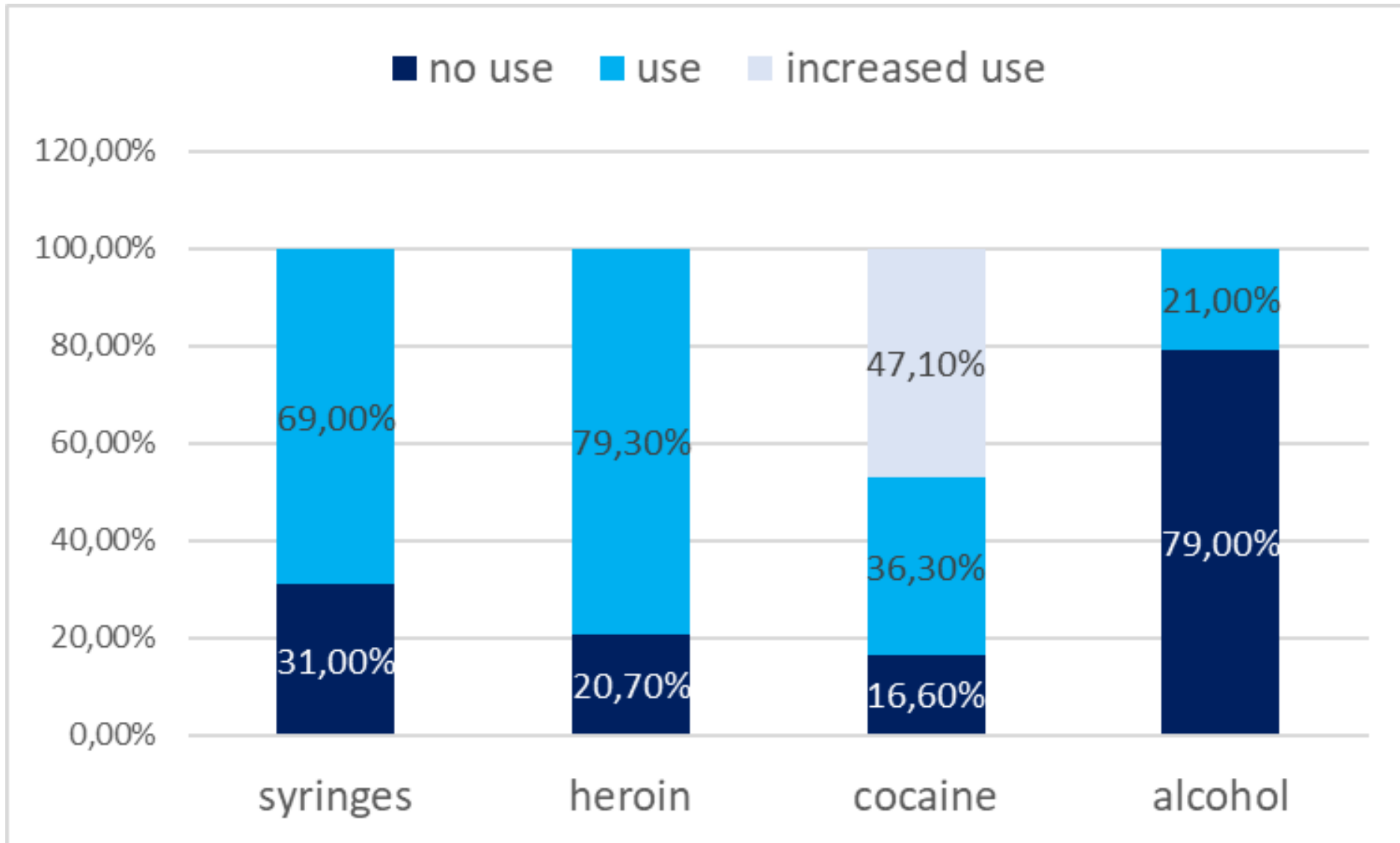
Severe SUD
(addiction)

**BRAIN
DISEASE**

Biomedical treatments

- Despite neurobiological research and understanding, there are no pharmacological treatments that reliably target brain dysfunction that lead to addiction.
- Agonistic drugs (those targeting drug-specific brain receptors) are inevitably addictive in itself, and their efficacy is substantial in the harm reduction perspective.
- Agonistic drugs are available only for opioid addiction, but we lack reliable agonistic drugs for alcohol, cocaine, methamphetamine, and cannabis addiction.
- Antagonist drugs: low usage.
- Transcranial Magnetic Stimulation (TMS) is a non pharmacological, biomedical, treatment, with proven efficacy in reducing craving in AUD and CUD.

Limited efficacy of OAT maintenance on syringes, heroin, cocaine use, and alcohol abuse (194 PWID admitted from 2015 to 2021)



NB: This population is not representative of people with OUD in treatment with agonistic drugs.

NB: the variable «use» includes the possibility of decreased use

The bio-psycho-social model: A more comprehensive understanding of drug addiction

DRUGS

Specific drug effects

Specific addictive potential.

INDIVIDUAL VULNERABILITIES

Biological: genetics; age at first use, psychiatric disorders, etc.

Psychological: childhood traumas, etc.

Socio-economic: family, peers, limited education, unemployment, lack of alternative rewards: culture, sport, green environment; etc.

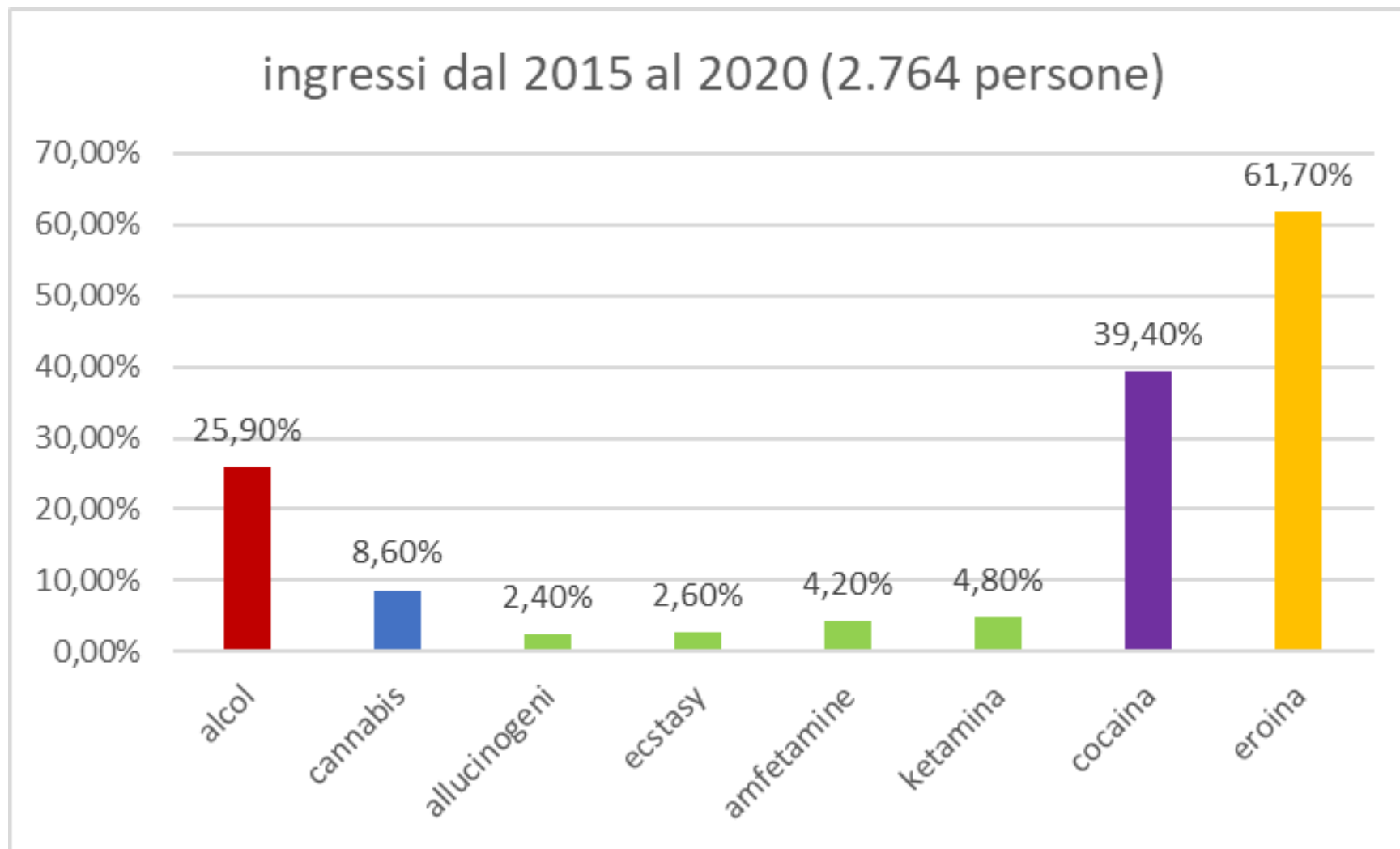
BRAIN MECHANISMS:

Impulsive-compulsive shift,
Impaired response inhibition, etc.

Changes in dopamine circuitry
Delay discounting

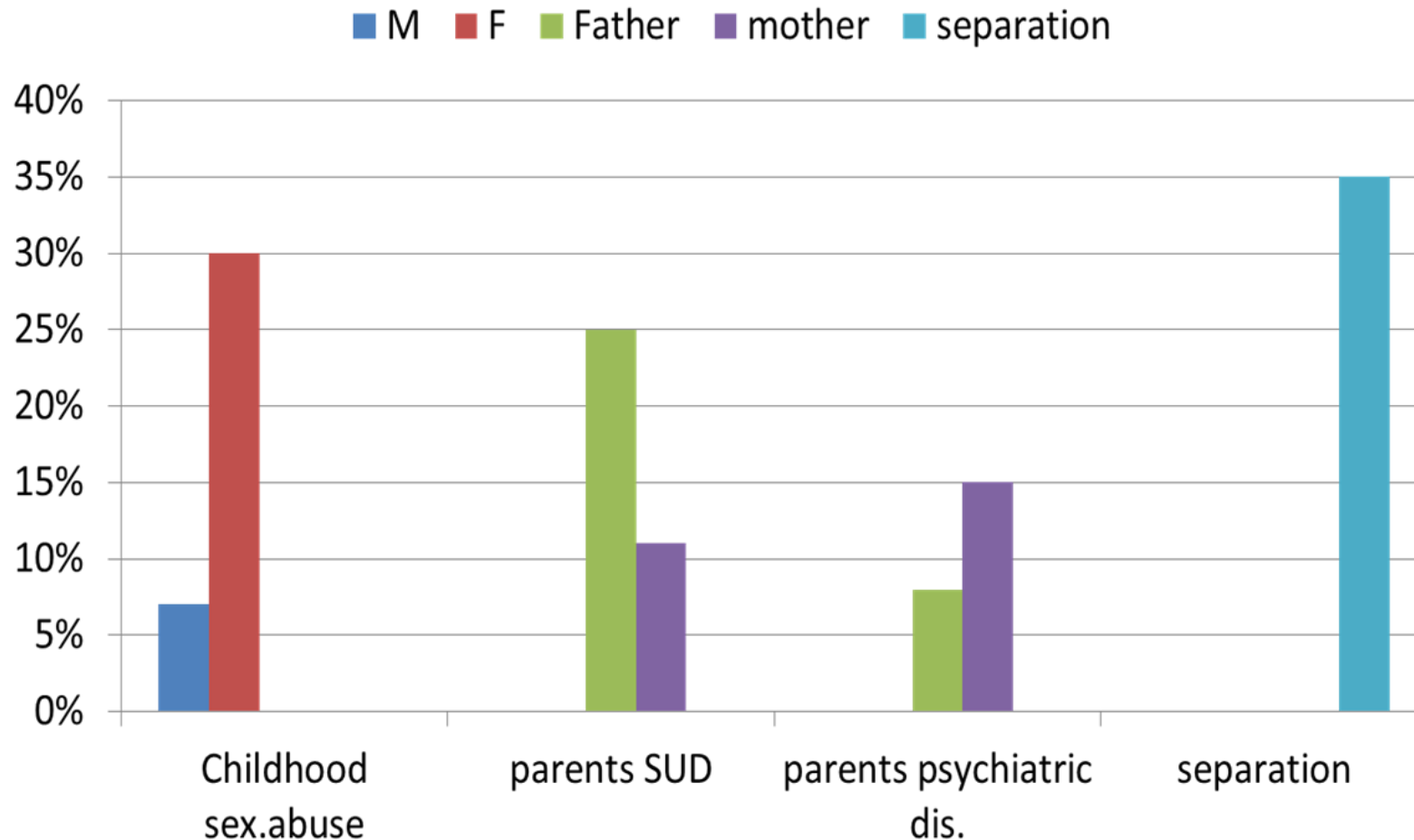
ADDICTION

Risk of severe SUD by substance used: ratio between use and addiction for different types of substances



Adverse childhood experiences and severe SUD

data from 2,311 individuals in treatment from 2016 to 2020



Abuse:

- sexual
- physical
- psychological

Neglect

Household challenges:

- Drug use/addiction
- Violence
- Psychiatric disease
- Traumatic separation of parents
- Crime, jail detention, etc.

Theoretical basis for non-pharmacological treatment: the need to address individual bio-psycho-social vulnerability and its origins

Biological

- Craving: lack of drugs and drug-related cues.
- Diagnosis and treatment of psychiatric comorbidities
- Time (as needed) to reverse brain dysfunctions.
- Learning process: cognitive, emotional, restoring of safe rewards.

Psychological

- Self biography retrieval
- Addicted identity change
- Childhood trauma recognition and treatment (EMDR, etc.)

Social

- Social skills learning.
- Environment with social and ethical rules
- Availability of multiple, safe, rewarding opportunities
- Family bonds rebuilding
- Vocational training, school education

outcome study

Population studied: 287 HCV infected PWID admitted from 2018 to 2022, followed after TC exit

Male	210	73.2%
Heroin use	284	98.9%
Heroin addict.	154	53.6%
Cocaine use	271	94.4%
Cocaine addict.	97	33.8%
OAT (tapering)	142	49.5%
OAT maintainence	111	38.7%
HIV pos.	14	4.8%
Age at first drug injection (mean)	20.6	
Age at CT entry (mean)	31.2	

Drug addiction post-treatment outcomes at San Patrignano in a cohort of 287 HCV infected PWID admitted from 2018 to 2022

