Evaluation of treatment of opioid addicted prisoners during imprisonment

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Statistics Bavaria

Area:
70,541 sq km

Population:
12.5 million (2008)
13.1 million (2021)

Number of Prisoners:
13.103 (2005)
8.714 (2022)

Germany and opioid dependency

- Around 81.200 opioid dependent persons in Germany received substitution treatment (2022)
  - 161.000 persons are estimated to consume opioids in Germany (0.31% of total population aged 18 – 64 years) (Kraus et al., 2018)
  - 8% of German inmates use primarily opioids (Länderarbeitsgruppe, 2021)
- Guidelines of the German Medical Association (Bundesärztekammer, 2023)
  - Substitution treatment as method of choice for most opioid dependent patients
  - Receiving patients are registered in a federal database since 2002 (‘Substitutionsregister’)
  - Costs covered by the public health insurances

Treatment of opioid dependency in prison

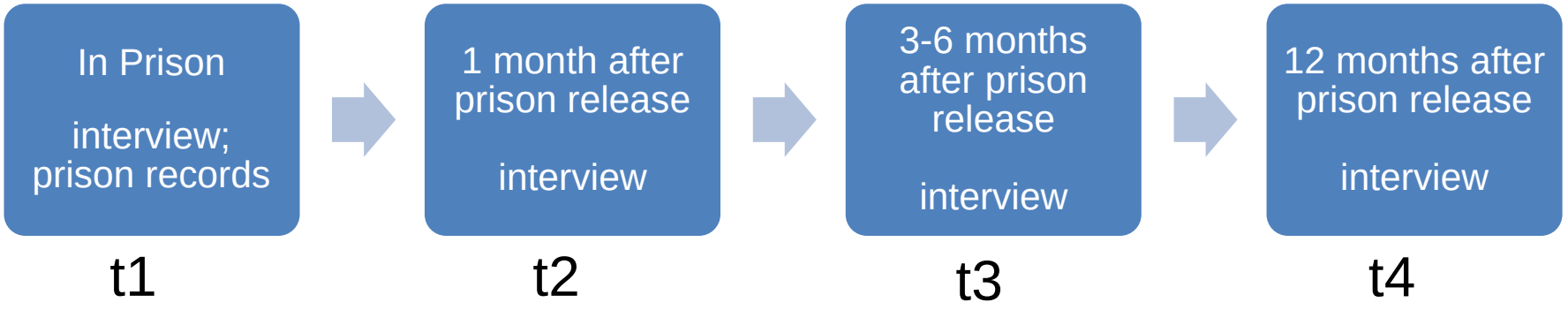
- Principle of health care treatment for inmates: equivalence of care
- ECHR (2016): Categorical denial of a substitution treatment is an ‘inhumane treatment’ according to Art. 3 of the European Convention on Human Rights
    - Rising substitution rates in the Bavarian justice system

Current research regarding substitution treatment in the prison environment

- Partially positive results found in different Metaanalyses (Moore et al., 2019, Boksán et al., 2023)
- But: Data less clear than in freedom (McMurran 2007; Moore et al. 2019; Sugarman et al. 2020), overall insufficient number of studies, subpar study quality (e.g., sample size, lack of follow-up time points)
- Studies mainly from the USA or Australia, only isolated findings for Europe and Germany (Koehler et al., 2013)

Research topic and design

- Investigation of the effects of substitution treatment (TG) in prison compared to primarily abstinence-oriented treatment (CG = non-substituted)
  - Regarding the prison situation (everyday-life, drug use in prison)
  - Regarding the situation after release (substitution retention, drug relapse, criminal behavior)
- Longitudinal, observational design (no randomization)



- Interview: European Addiction Severity Index (EuropASI, Gsellhofer et al., 1997; adapted for prison)

Sample recruitment

- **Inclusion criteria:**
  - Adult inmates (m/f/d) in Bavarian prisons
  - Duration of incarceration at least three months
  - Prison release imminent
  - Medically diagnosed opioid dependency
- **Voluntary** participation and **compensation** via gift cards
- **Recruitment period**: March 2020 – May 2022
- Final sample:
  - *N* = 247 participants (from 20 participating Bavarian prisons)
  - 56% substituted in prison (= treatment group)
  - 88% male
  - Mean age: 37.5 years (*SD = 8.5)*
  - Hepatitis (lifetime): 68%
  - Violent crimes (self-report, lifetime): 65%

Sample – rate of drop-out

Initial sample size	*N = 247*
1-month follow-up	56% retention rate
3-6-month follow-up	64% retention rate
12-month follow-up	64% retention rate
overall (at least 1 FU)	76% retention rate

- Comparable drop-out rates in similar longitudinal studies with samples of drug using inmates (retention rates around 43 – 69%, e.g., Clark et al., 2020; Crisanti et al., 2014; Stewart et al., 2021)
- No selective drop-out in group variable
- Few differences with potentially better outcomes for drop-outs (e.g., injection drug use, first-age opiod use)

➢ Results valid despite drop-out

Baseline-interview (prison)

Situation in prison

Baseline-interview *N* = 247	Substituted in prison (*n* = 139)	Not substituted in prison (*n* = 108)	*p*	*OR*
Drug use, total	47 %	50 %	.746	1.09
Opioids	21 %	37 %	**.007**	**2.18**
Other drugs	44 %	44 %	.989	1.00
Illegal substitution meds	21 %	57 %	**<.001**	**4.77**
Craving	22 %	35 %	**.026**	**1.91**
Withdrawal symptoms	40 %	33 %	.292	0.75
Disciplinary actions	56 %	51 %	.471	0.82
Drug-related disciplinary actions	27 %	17 %	**.047**	**0.53**
Work in prison	60 %	61 %	.960	1.01

First follow-up (1-month after release)

Results – 1st Follow-Up

Data – 1-month after release *N* = 133	Substituted in prison (*n* = 74)	Not substituted in prison (*n* = 59)	*p*	*OR*
Substitution treatment	85 %	15 %	**<.001**	**33.64**
Drug use, total	74 %	83 %	.253	1.69
Opioids	52 %	63 %	.260	1.54
Other drugs	69 %	69 %	.944	0.97
Illegal substitution meds	5 %	18 %	**.022**	**4.46**
Overdose	2 %	8 %	.090	5.62
Craving	23 %	50 %	**.002**	**3.40**
Withdrawal symptoms	54 %	50 %	.689	0.86

Results – 1st Follow-Up

Data – 1-month after release *N* = 133	Substituted in prison (*n* = 74)	Not substituted in prison (*n* = 59)	*p*	*OR*
Criminal offenses, total	40 %	33 %	.394	0.72
Drug-related crimes	33%	29%	.602	0.81
Acquisitive crimes	12 %	10 %	.687	0.79
Violent crimes	3 %	4 %	.808	1.28
Other crimes	10 %	6 %	.362	0.53
Employed	10 %	13 %	.599	0.74
Hospitalizations	9 %	14 %	.47	1.53

Second Follow-up (3-6 months after release)

Results – 2nd Follow-Up

Data – 3-6-months after release *N* = 150	Substituted in prison (*n* = 88)	Not substituted in prison (*n* = 62)	*p*	*OR*
Substitution treatment	89 %	21 %	**<.001**	**29.74**
Drug use, total	65 %	79 %	.079	2.07
Opioids	31 %	59 %	**.002**	**3.12**
Other drugs	64 %	68 %	.606	1.22
Illegal substitution drugs	1 %	11 %	**.015**	**9.32**
Overdose	3 %	13 %	**.022**	**5.51**
Craving	19 %	42 %	**.004**	**3.14**
Withdrawal symptoms	41 %	46 %	.574	1.23

Results – 2nd Follow-Up

Data – 3-6-months after release *N* = 150	Substituted in prison (*n* = 88)	Not substituted in prison (*n* = 62)	*p*	*OR*
Criminal offenses, total	**37 %**	57 %	**.025**	**2.27**
Drug-related crimes	**26%**	43%	**.036**	**2.22**
Acquisitive crimes	14 %	14 %	.993	1.00
Violent crimes	5 %	4 %	.686	0.70
Other crimes	11 %	17 %	.293	1.73
Employed	12 %	22 %	.117	0.47
Hospitalizations	9 %	7 %	.732	0.80

Final follow-up (12 months after release)

Results – 3rd Follow-Up

Data – 12-months after release *N* = 143	Substituted in prison (*n* = 85)	Not substituted in prison (*n* = 58)	*p*	*OR*
Substitution treatment	79 %	31 %	**<.001**	**8.30**
Drug use, total	73 %	79 %	.477	1.40
Opioids	44 %	54 %	.360	1.44
Other drugs	71 %	67 %	.661	0.83
Illegal substitution drugs	5 %	7 %	.614	1.53
Overdose	6 %	9 %	.549	1.55
Craving	22 %	26 %	.615	1.24
Withdrawal symptoms	49 %	47 %	.802	0.91

Results – 3rd Follow-Up

Data – 12-months after release *N* = 143	Substituted in prison (*n* = 85)	Not substituted in prison (*n* = 58)	*p*	*OR*
Criminal offenses, total	46 %	50%	.643	1.19
Drug-related crimes	30%	30%	.988	1.01
Acquisitive crimes	18 %	22 %	.573	1.31
Violent crimes	3 %	9 %	.174	3.17
Other crimes	14 %	13 %	.928	0.95
Employed	20 %	34 %	.177	0.58
Hospitalizations	25 %	22 %	.626	0.81

Summary

Substituted participants reported…	Prison	1st FU*	2nd FU*	3rd FU*
… more drug-related disciplinary actions	✓			
… higher rates of treatment retention after release		✓	✓	✓
… less total drug use	x	x	(✓)	x
… less opioid use	✓	x	✓	x
… less use of illegal substitution drugs	✓	✓	✓	x
… less overdoses		(✓)	✓	x
… less craving	✓	✓	✓	x
… criminal offenses		x	✓	x
… drug-related crimes		x	✓	x

No differences regarding …

- Other drug use
- Withdrawal symptoms
- Acquisitve crimes
- Other crimes
- Employment status
- Hospitalizations
- Violent crimes

1st FU = 1 month after release; **2nd FU** = 3-6 months after release; **3rd FU**= 12 months after release

Discussion

Limitations:

- No randomization of groups → Weighting
- Around 45% drop-out rate → no signs for problematic selective attrition
- Covid-19

Practical Implications:

- Substitution in prison a viable treatment for opioid-dependent persons:
  - Frequent continuation of treatment after release → protective factor
  - No evidence for adverse effects in prison
- But: Substitution not a panacea
  - Little to no effects on use of other drugs
  - There are those, who receive substitution treatment, and use opioids nevertheless
  - Problems with integration of daily substitution into everyday life (e.g., descriptively lower occupation of those, who are substituted)

Thank you for your attention!

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