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Background

Methadone is used world-wide as a first choice treatment for opioid dependency, and higher doses have been shown to be associated with better treatment outcomes. However, methadone also poses overdose risks, especially at higher doses and in combination with other depressant drugs. Some individuals, particularly those using crack/cocaine as well, continue using drugs while on methadone. Intravenous (IV) drug use poses additional risks; more frequent injecting and poor technique increase the risk of overdose and physical health complications. Dual users injecting drugs might therefore be at higher risk of health problems when prescribed higher doses of methadone.

Aim

To explore the physical health and heroin use of IV drug users in methadone treatment by comparing high (≥70 mg daily) vs. low (<70 mg daily) dose and route of administration of crack.

Methods

Design: Retrospective study.

Setting: Two community drug services in London, UK.

Participants: Current or previous intravenous users of heroin in methadone treatment: (electronic records only n=258 for Part 1; n=36 for Part 2).

Data/Measurements: Electronic records (Part 1 and 2); EQ-3D and in-depth interviews covering drug use, injecting and treatment history, living situation, physical health (Part 2).

Predictors: ever injected or used crack, alcohol use, mental health, methadone dose, duration of drug use and treatment, and all interactions between categorical predictors. Part 2: separate predictors for duration of heroin use, crack use and treatment, duration of IV drug use, use of high-risk injection sites (groin, neck), ever street homeless, cardiovascular risk and injecting technique.

Outcome: IV-related physical health (gathered from medical records, participants reports and rated by a clinician)

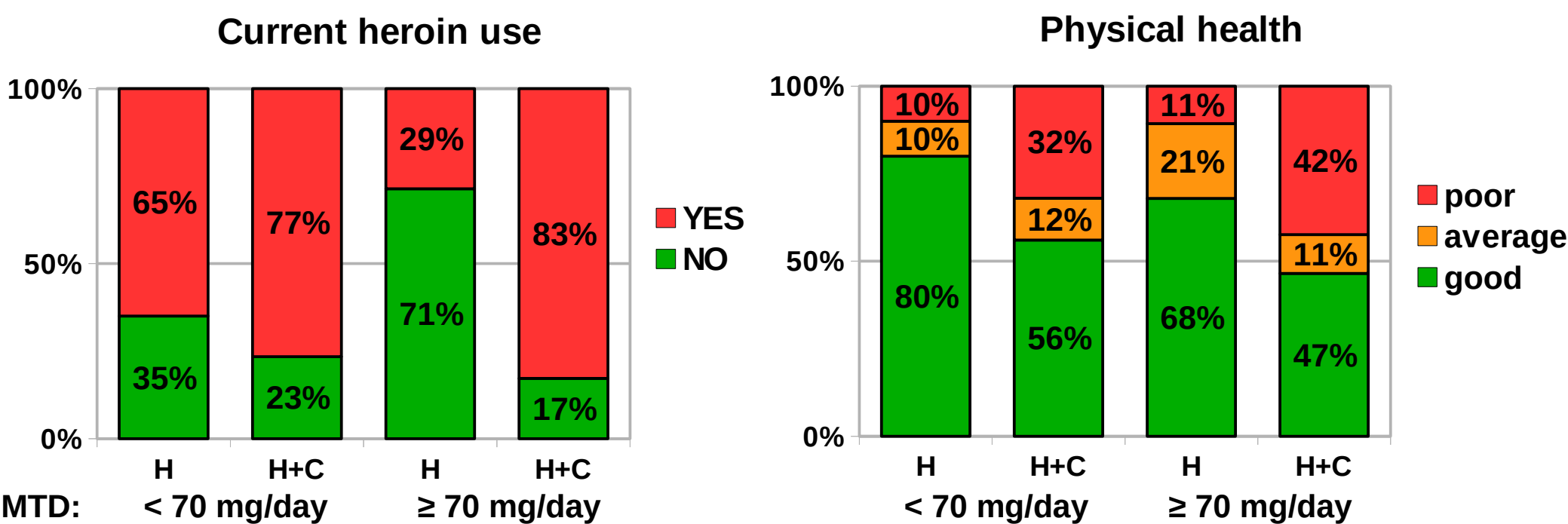
Results – Part 1

A. Differences in sample characteristics:

	Methadone < 70 mg/day		Methadone ≥ 70 mg/day		χ ²
	Heroin	Heroin and Crack	Heroin	Heroin and Crack	
	n = 20	n = 111	n = 28	n = 99	
Hep C positive	31.3	53.4	52	66	P<0.05
Currently using heroin	65	76.6	28.6	82.8	P<0.005
Currently injecting heroin	15	36	10.7	40.4	P<0.01
Good physical health	80	56.7	67.9	46.5	P<0.025

B. Descriptive results

- high doses are better for achieving heroin abstinence for heroin-only users, however, this effect was not observed for users of heroin and crack
- BUT
- Fewer heroin-only users on high dose were in good physical health compared to low dose



C. Logistic regression predicting health:

	OR	95% CI	p value
Duration of drug use and treatment	0.95	0.92-0.96	0.00
Methadone dose	0.58	0.34-0.99	0.05
Ever injected crack	0.31	0.18-0.55	0.00
Alcohol use	0.52	0.28-0.97	0.04
Constant	0.28		0.00

- Higher duration of drug use and treatment, high methadone dose, crack injection (but not generally crack use, and not generally heroin injection) and high alcohol consumption predicted poor physical health.

Discussion

- high methadone dose was associated with heroin abstinence only for people not using crack, and predicted poor physical health regardless of the crack use
- crack and heroin users on high dose rated their general health significantly lower, experienced more overdoses, were more likely to use high-risk injecting-sites, and stopped injecting only after an adverse health event, suggesting that for them the methadone treatment alone was not enough

Although we can not exclude that some dual users of heroin and crack on high dose might have stopped injecting drugs, gradually reduced the medication and been successfully discharged from treatment in good health, our results give a detailed description of people long-term in treatment.

Results – Part 2

Interview study: more accurate data
All participants were crack users

A. Differences in sample characteristics:

		EQ-3D		
		MTD < 70 mg/day	MTD ≥ 70 mg/day	χ ²
		N=21	N=15	
%				
Currently using heroin		81	46.7	P=.002
Poor physical health		38.1	73.3	P<.001
Overdoses (OD)	none	33.3	33.3	P=.020
	few	42.9	20	
	many	23.8	46.7	
High-risk injecting sites		23.8	66.7	P<.001
Ever daily drinking		47.6	73.3	P=.044
Mean ± stdev		t test		
Cardiovascular risk		34.5±10.9	46.7±15.5	P=.008

		EQ-3D		
		MTD < 70 mg/day	MTD ≥ 70 mg/day	χ ²
		N=21	N=15	
%				
Mobility	no probl	70	14.3	P<.001
	some	20	64.3	
	a lot	10	21.4	
Looking after myself	no probl	85	35.7	P<.001
	some	10	57.1	
	a lot	5	7.1	
Doing usual activities	no probl	55	14.3	P<.001
	some	35	78.6	
	a lot	10	7.1	
Pain or discomfort	none	50	7.1	P<.001
	some	30	28.6	
	a lot	20	64.3	
Worried, sad, unhappy	not at all	20	0	P<.001
	a bit	55	71.4	
	very	25	28.6	
Mean ± St dev		t test		
Health today (0-100)		65.0±13.0	46.3±20.6	P=.007

- low dose - inferior only in current heroin use
- high dose – higher % of poor physical health and many OD

B. Bivariate associations with physical health

	OR	95% CI	p value
Duration of drug use and treatment	0.94	0.87-1.01	0.083
Methadone dose	0.18	0.04-0.78	0.022
Duration of heroin use	0.95	0.89-1.02	0.17
Duration of crack use	1.01	0.93-1.09	0.849
Duration of treatment	0.86	0.77-0.96	0.009
Duration of IV use	0.9	0.83-0.99	0.023
Duration of IV use off treatment	0.98	0.90-1.07	0.647
High risk injecting sites	0.1	0.02-0.48	0.004
Cardiovascular risk	0.97	0.92-1.02	0.237
Injecting technique	1	0.93-1.08	0.957
Ever street homeless	2.53	0.57-11.26	0.224

- Duration of treatment, methadone dose, high risk IV sites and duration of IV use were positively associated with poor health

C. Qualitative data:

- High dose: the most frequent reason for stopping IV use was the difficulty to find veins on a high-risk site, or a related severe health complication
- Low dose: many participants on low dose switched to smoking when not able to find veins at lower-risk sites.

Conclusion

For users of heroin and crack on high dose of methadone who cannot stop injecting or even progress to high-risk injecting sites, outcomes could be improved by reconsidering the risk of overdose and addressing their IV use with additional treatment options to prevent further health deterioration.

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