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Filling the knowledge gap: Measuring HIV prevalence and risk factors among populations most vulnerable to HIV/AIDS in Libya

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## INTRODUCTION

Mapping Specialists, Ltd.

Libya had one of the world's largest nosocomial HIV-outbreaks in the 1990s leading to the detention of six foreign medical workers. They were released in 2007 after the Libyan Government and the European Union agreed to humanitarian cooperation that included the development of Libya's first National HIV-Strategy and the research reported here. Given the absence of sound evidence on the status and dynamics of Libya's HIV-epidemic[1], we aimed to assess HIV-prevalence and related risk factors among populations most vulnerable to HIV/AIDS.

METHODS

Using respondent-driven sampling (RDS), we conducted a cross-sectional survey among 328 people who inject drugs (PWID), 227 men having sex with men (MSM), and 69 female sex workers (FSW) in Tripoli. (Unfortunately, FSW target sample size was not reached, the study was interrupted by political turmoil in February 2011). We collected behavioural data and blood samples for HIV, hepatitis C and B testing.

All participants had to belong to the specific risk group, be at least 15 years old, have a valid referral coupon and be able to provide informed consent prior to enrolment.
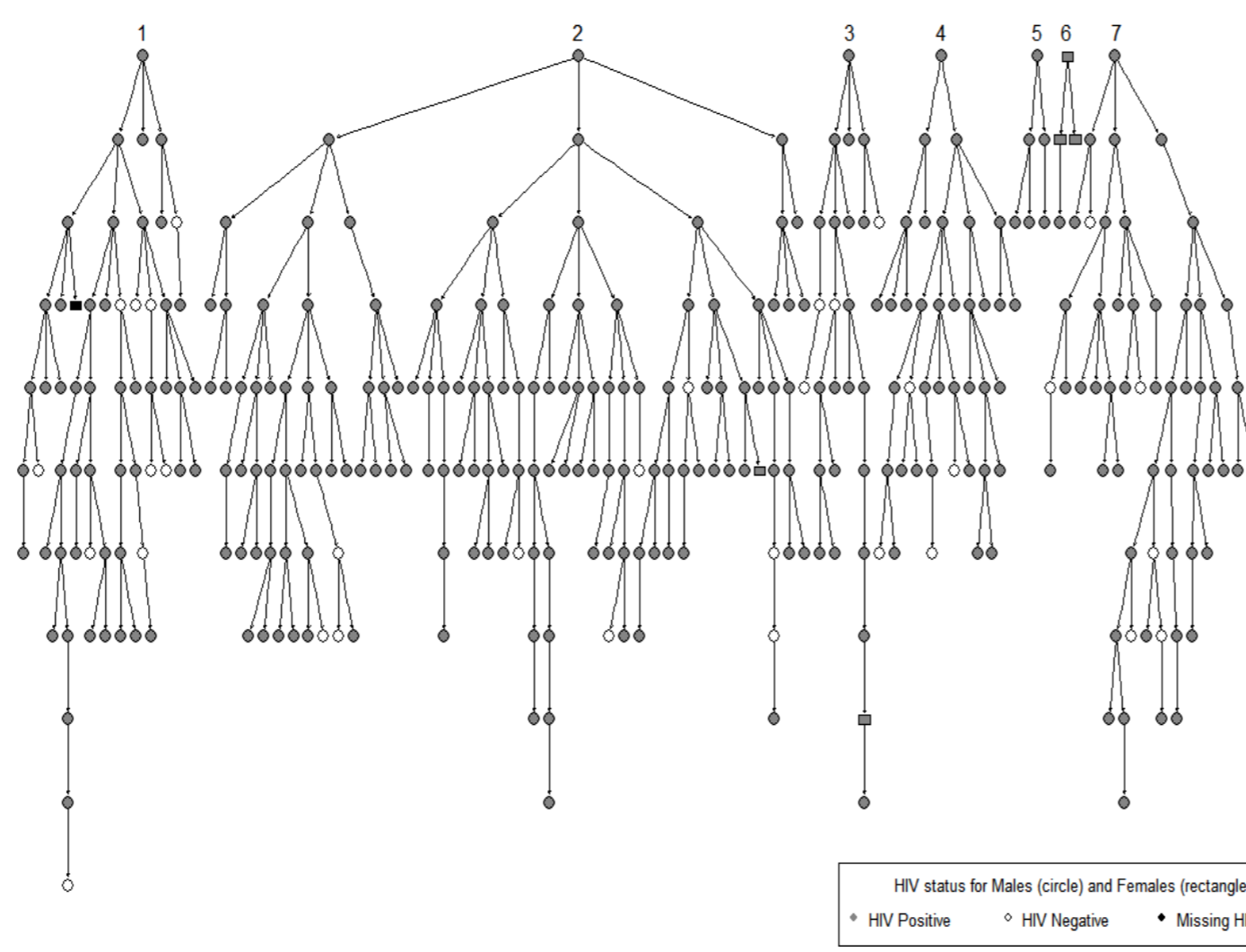
Recruitment tree showing HIV status of PWID study participants in Tripoli

RDS is an established peer-driven chain referral method to sample hard to reach populations[2,3]. Beginning with a set of non-randomly selected individuals (seeds), these seeds directly recruit peers, who go on to recruit further peers. Recruits are linked by coupons with a unique identity number and provided with incentives for attending and for each successful participant they recruit. RDS uses information on participants' personal network sizes and recruitment patterns to compute weighted population proportion estimates and confidence intervals. Population estimates were computed by RDII/DA estimator method[4].
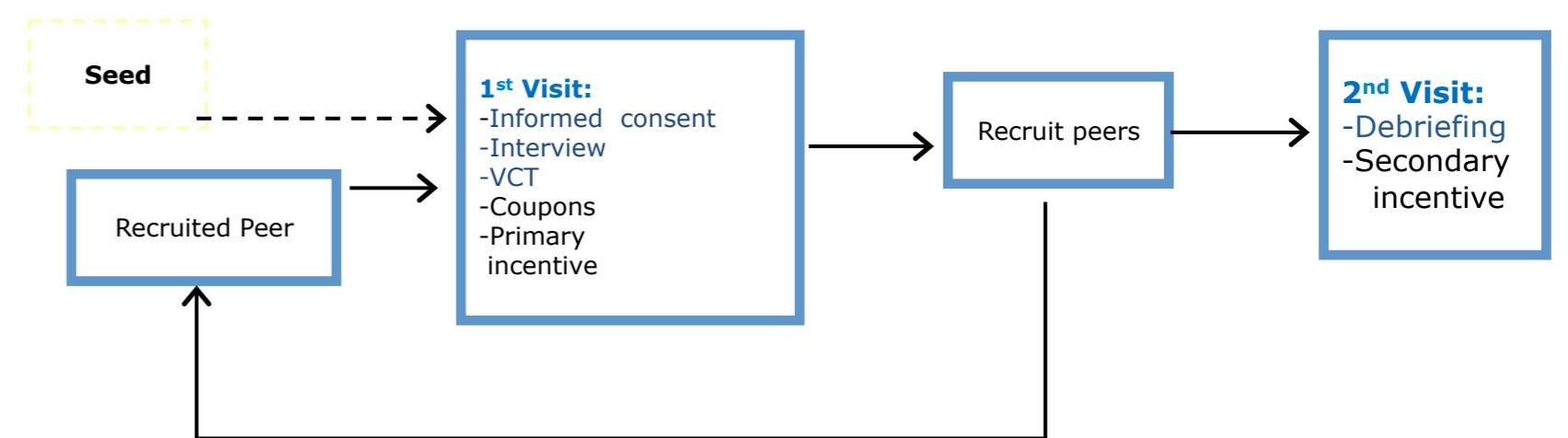

RESULTS

People who inject drugs	
Indicator	%
HIV infection	87.1
Hepatitis B infection	4.5
Hepatitis C infection	94.2
Gender	
Male	98.7
Female	1.3
More than 10 years of injection	81.7
Injects subutex primarily	84.4
Frequency of injection at least once a day	54.2
Ever shared needles/ syringes	85.1
Received maintenance therapy (from abroad, no OST available in Libya)	1.0

Men having sex with men	
Indicator	%
HIV infection	3.1
Hepatitis B infection	2.9
Hepatitis C infection	7.3
Forced sexual debut	13.8
Anal sex with multiple partners in the past 6 months	87.5
Used condom at last sex with regular non-commercial partner	21.8
Anal sex with commercial partner	26.5
Used condom at last anal sexual intercourse with non-regular non-commercial partner in past 6 months	20.5
Sex with females	68.5
Exposure to HIV prevention programs	0.9
Correctly identifies ways to prevent sexual transmission of HIV and who reject major misconceptions about HIV transmission	16.8

Female sex workers	
Indicator	%
HIV infection	15.7
Hepatitis B infection	0.0
Hepatitis C infection	5.2
Forced sexual intercourse in past 12 months	18.2
≥50 sexual partners in last six months	30.5
Consistent condom use with one-time clients	63.4
Reported STI symptoms	27.8
Reported correct action for STI	24.3
Exposure to HIV prevention programs	0.0
Correctly identifies ways to prevent sexual transmission of HIV and who reject major misconceptions about HIV transmission	18.6

We estimated an HIV-prevalence of 87% among PWID, 3% among MSM, and 16% among FSW. We detected high levels of IDU-related, and sexual risk factors, in the context of strong stigma and lack of prevention programmes. Of particular concern, 85% of PWID reported having shared needles, only 21% of MSM used a condom at last sex, and 28% of FSW experienced STI symptoms during the last year. Over a third of MSM have risky sex with men and women and nearly a third of FSW report having had 50 or more sexual partners.
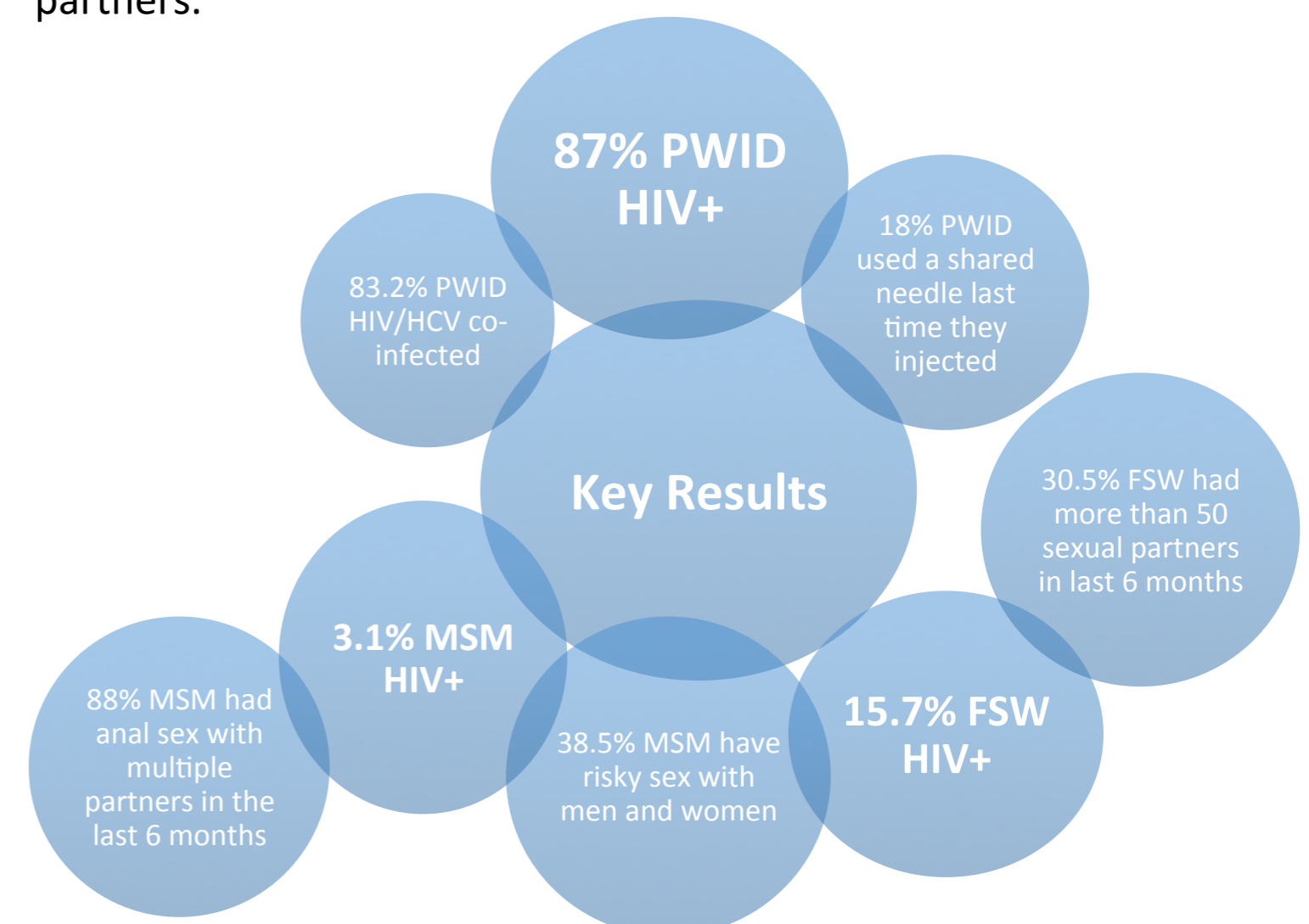
CONCLUSIONS

In this first bio-behavioural survey in Libya we detected among PWID one of the highest (or even the highest) levels of HIV-infection worldwide in the absence of a comprehensive harm-reduction programme. Prevalence of HIV in FSW suggests potential for a concentrated epidemic and there is evidence of bridging between MSM and heterosexual population. There is urgent need to implement an effective National HIV-Strategy informed by the results of this research, taking into account Libya's unique context and high-risk sexual and drug-using networks. The risk of further transmission within different risk groups and to the general population is particularly high given the recent military events that led to increased violence, migration, and the disruption of essential HIV-related services and structures.

ACKNOWLEDGEMENTS

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