

## The Prevalence of HIV, HBV, HCV, and HIV-Related Risk-Taking Behaviors among Palestinian Injecting Drug Users in the East Jerusalem Governorate

Aleksandar Štulhofer, Agnes Chetty, Randa Abu Rabie, Isam Jwehan, and Asad Ramlawi

### INTRODUCTION

Similarly to other Middle Eastern and North African countries, HIV prevalence in the Occupied Palestinian Territory (OPT) is reportedly low.<sup>1</sup> According to the Palestinian Ministry of Health, the first HIV/AIDS cases in the OPT were diagnosed in 1988. By the end of 2009, 66 cumulative cases have been reported, of which 71.2% were AIDS cases.<sup>2</sup> Currently, there are 36 people living with HIV in the OPT, of whom 11 are on ART. The official Palestinian statistics, however, do not include HIV and AIDS cases reported in East Jerusalem, estimated at 18 cumulative cases, which are notified to and followed up by the hospitals in Israel. According to a study, 25 AIDS cases and 51 HIV+ cases among adult Israeli Arab citizens were documented in Israeli hospitals between 1985 and 2002.<sup>3</sup> The current absence of HIV surveillance studies in the most vulnerable groups such as injecting drug users (IDUs), female sex workers, men who have sex with men, and migrant workers remains a substantial obstacle for efficient and cost-effective prevention efforts in the OPT.

There is evidence that IDUs are particularly exposed to HIV risks in a number of countries in the region.<sup>4-6</sup> A situation analysis carried out in 2006 suggested that 20,000–45,000 individuals may be abusing drugs in the OPT.<sup>7</sup> At least a third was presumed to be residing in the East Jerusalem Governorate (EJG).<sup>\*</sup> Although the report estimated that most of illicit drug use was non-injectable, it noted that IDU may be on the rise. Currently, there is no information on HIV or sexually transmitted infection (STI) prevalence, or about levels of risk taking, among IDUs in the OPT. In a recent national study, the prevalence of HBV, HCV, and HIV prevalence among Israeli IDUs was found to be 3.5%, 35.7%, and 0.9%, respectively.<sup>8</sup> The aims of this study were to estimate the prevalence of HIV, HBV, and HCV and to assess HIV-related risky behaviors among Palestinian IDUs in the East Jerusalem Governorate.

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\*East Jerusalem Governorate (EJG) includes all localities and areas specified in 1996 for the purpose of national Palestinian elections. The EJG consists of two parts: (a) East Jerusalem within the wall (the part that Israel annexed in 1967) and (b) the parts of the city left outside the wall, as well as the rest of the governorate.

Štulhofer is with the Faculty of Humanities and Social Sciences, University of Zagreb, Zagreb, Croatia; Chetty is with the WHO Regional Office for Eastern Mediterranean, Cairo, Egypt; Rabie is with the WHO Country Office, Jerusalem, Israel; Jwehan is with the Al-Maqdese Organization, Jerusalem, Israel; Ramlawi is with the Ministry of Health of the Palestinian National Authority, Ramallah, Occupied Palestinian Territory.

Correspondence: Aleksandar Štulhofer, Faculty of Humanities and Social Sciences, University of Zagreb, Zagreb, Croatia. (E-mail: astulhof@ffzg.hr)

## METHODS

### Formative Research and Sampling Strategy

To assess the feasibility of respondent-driven sampling<sup>9</sup> among IDUs in the EJG, a pre-surveillance assessment study was carried out in March 2010 in three areas with a high concentration of IDUs. In total, 82 IDUs (mean age=40.7, SD=7.98) were interviewed. The findings confirmed the existence of reasonably large peer networks (mean network size=29) and a substantial overlap between geographically distinct networks.

### Participants and Procedures

Eligible individuals—who were 18–56 years old, were living or working in the EJG, and have injected drugs at least once in the past month—were informed about the nature and requirements of the study and asked for informed consent. Following verbal consent, participants were interviewed and then briefed about biological testing. After giving a blood sample, participants received primary (monetary) incentive and three coupons for peer recruitment.\* They were instructed to revisit the site in 7–10 days to collect recruitment-related secondary incentive and test results. During the second visit, participants received posttest counseling and were given test results. Only 90 participants (45.2%) revisited the site. All study procedures were approved by the Palestinian National AIDS Committee.

### Questionnaire

In addition to sociodemographic data, the questionnaire collected information on drug use, sexual behaviors, utilization of services catering to IDUs, prison experiences, STI symptoms, HIV knowledge, and HIV testing. United Nations General Assembly Special Session (UNGASS) indicators were used to assess sharing injecting equipment, condom use, and HIV knowledge (five items).<sup>10</sup>

### Laboratory Testing

Venous blood (5 ml) was drawn. Refrigerated serum samples were transported from the site to the central laboratory in Ramallah every second day. HIV was tested using DRG Diagnostic Kit for Antibody to HIV 1&2 (sandwich), EIA-3897. For HBV and HCV testing, DRG Diagnostic Kit for Hepatitis B Surface Antigen (EIA-3892) and DRG Diagnostic Kit for Antibody to Hepatitis C Virus (EIA-3896) were used. Fifteen percent of the samples were retested for HIV.

### Statistical Analysis

RDSAT 6.0.1 statistical software was used to obtain weighted population proportions with 95% confidence intervals for the variables of interest, as well as to check if equilibrium point was reached for each indicator. SPSS 16 statistical software package was used for multivariate logistic regression analysis. To adjust for specific features of network-based sampling, personalized weights for the dependent variable were imported from RDSAT.

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\*Twelve waves of peer recruitment were reached suggesting a deep reach into the population. In regard to the quality of recruitment, only four participants reported receiving a coupon from a stranger.

## RESULTS

### Sociodemographic Characteristics of the Sample

The sampled IDUs came from 21 different localities/neighborhoods in the EJG. Only 3 of 199 participants were women. Age range in the sample was 19–56 ( $M=41.3$ ,  $SD=8.09$ ). A majority of participants (80.9%) had only attended primary school. Most participants were married (66.5%). Less than a third of IDUs were employed or working part time (26.6%).

### HIV, HBV, and HCV Prevalence

No HIV cases were found in the study. Five participants (0.6%) tested positive for HBV, while 84 participants (40.3%) were HCV+ (Table 1).

### Injecting Drug Use

On average, the surveyed IDUs were 29 years of age when they first injected drugs ( $SD=8.25$ ). During the preceding month, 51.0% of participants injected drugs two to three times a day. Heroin was the most popular drug in the sample (86.9%). Last time they injected, most IDUs (90.4%) reported using sterile injecting equipment. However, 18.8% of them claimed that someone used the same needle or syringe after them. A majority of participants (72.9%) did not share injecting equipment in the past week. Obtaining sterile injection equipment from an NGO in the past year was reported by 22.8% of participants.

In a multivariate analysis (Table 2), using sterile injecting equipment in the past week was significantly associated with age, education, peer networks, and the frequency of injecting drugs. While older age [odds ratio (OR)=2.52,  $p<.05$ ] and higher than primary education (OR=6.67,  $p<.01$ ) were found to significantly increase the odds, personal network size (OR=.18,  $p<.001$ ) and more frequent drug use (OR=.20,  $p<.001$ ) decreased the odds of using sterile equipment.

In the past 12 months, 48.6% of IDUs were arrested for drug abuse; 93.4% reported ever being arrested and imprisoned. A substantial proportion of participants reported injecting while in prison (29.2%).

### Sexual Risk Taking

A majority of IDUs (63.3%) were sexually active at the time of the survey, with 29.2% of them reporting multiple sexual partners in the past year. A minority of participants had sexual intercourse with a casual drug-injecting partner in the past month (18.1%). About a third of IDUs (34.2%) used a condom at most recent sexual intercourse, while 30.2% reported consistent condom use in the past month. Selling or buying sex (or exchanging it for drugs) in the last 12 months was reported by 24.8% IDUs. Anal intercourse was acknowledged by 24.6% of participants.

### HIV Knowledge and HIV Testing

Less than a fifth of IDUs (17.4%) answered correctly all five UNGASS indicators of HIV knowledge. However, when asked specifically about HIV risks related to injecting drug use, 95.5% of participants correctly stated that HIV can be transmitted by syringe sharing, while 84.9% knew that sharing a needle or syringe washed in water may result in getting infected with HIV. Two thirds of participants (66.3%) have ever tested for HIV.

**TABLE 1** Sample and population prevalence of the main biological and behavioral indicators

	<i>n/N</i>	Sample prevalence (%)	Estimated population prevalence (%)	Population prevalence 95% CI	Equilibrium reached at wave #
HBV	5/192	2.5	0.6	0.1–1.4	2
HCV	84/192	45.2	40.3	29.2–52.2	2
Did not share injecting equipment in the last week	77/192	41.2	72.9	61.3–79.5	5
Used sterile injecting equipment when last injected	132/192	68.8	90.4	85.2–94.2	1
More than one sexual partner in the past year	73/192	38.0	29.2	20.8–40.2	2
Used a condom at most recent sexual intercourse	50/187	26.4	34.2	20.4–45.5	2
Consistent use of condoms in the past month	21/94	20.8	30.2	13.0–54.2	2
Sold or bought/exchanged sex in the last 12 months	56/192	27.5	24.8	14.6–33.2	2
Experience of anal intercourse (ever)	51/187	26.4	24.6	14.9–34.0	2
Correctly identifies ways of preventing HIV transmission and rejects major misconceptions about HIV transmission <sup>a</sup>	37/192	19.3	17.4	10.2–25.3	2
Ever tested for HIV	112/189	61.1	66.3	55.6–76.5	4

Seeds ( $n=7$ ) were excluded from analyses

<sup>a</sup>Answered correctly all five UNGASS HIV knowledge indicators

## DISCUSSION

Although no HIV+ cases were found in this study,\* the findings point to a substantial exposure to the risk of infection among IDUs in the EJG. Over a quarter of participants in this sample of mostly unemployed men in their 40s shared injecting equipment in the week preceding the survey. The data on sexual risk taking corroborated the above conclusion. The reported prevalence of condom use at most recent sexual intercourse dropped to less than 10% when analyzing condom use at most recent intercourse with an injecting casual partner.

\*Similarly, no HIV+ and 51% of HCV+ cases were found in a recent Lebanese study carried among IDUs in Beirut.<sup>11</sup> A comparable study reported the RDS-weighted HIV prevalence of 0.6% among IDUs in Cairo.<sup>12</sup>

**TABLE 2 Sociodemographic and behavioral correlates of using sterile injecting equipment in the past week ( $n=191$ )**

	OR	95% CI
Age (1=41 and older)	2.52*	1.02–6.23
Education (1=secondary or higher)	6.67**	1.96–22.75
Married	.77	.39–2.02
Employed (full or part time)	.78	.36–2.16
Personal network size (0≤10 alters; 1≥11 alters)	.18***	.07–.46
Frequency of injecting drugs in the past month (0=up to once a day; 1=two or more times per day)	.20***	.08–.49
Used NGO services in the past year	1.22	.50–2.97
Ever tested for HIV	1.34	.59–3.03
HIV knowledge (1=higher than median score)	1.61	.74–3.48

\* $p<.05$ ; \*\* $p<.01$ ; \*\*\* $p<.001$

The analyses pointed to the important role of education and IDUs' social networks in drug-related HIV risks and revealed problems with incarceration. In comparison to the RDS study carried out among Lebanese IDUs, in which only 3% of participants reported injecting drugs while in prison,<sup>11</sup> the finding that 29% of the surveyed IDUs continued to inject while in prison strongly suggests that the present policy be reconsidered.

Before contextualizing the findings, several study limitations need to be mentioned. Firstly, a relatively small sample size reduced statistical power of some of the presented analyses. Secondly, the issue of representativeness needs to be considered against a relative sociodemographic homogeneity of the sample. Clearly, our sample cannot represent female IDUs or male IDUs younger than 30. Finally, as this study relied on self-reported behaviors, the validity of findings needs to be assessed against the specific sociocultural context characterized by a strong stigmatization of IDU.

Taking into account the specific situation in the OPT, a potential for HIV epidemic cannot be properly assessed by focusing solely on the direct, individualized risks of HIV transmission, such as through sharing injecting equipment or having unprotected sex. HIV vulnerability of IDUs is also structural—or socially produced—as it is related to a number of characteristics of the social environment.<sup>13–15</sup> The situation in the EJJ is characterized by the persisting economic hardship, widespread unemployment (>25% in the West Bank in 2008<sup>16</sup>), and poverty. About 40–46% of the population in the West Bank was estimated to live below poverty line in 2007.<sup>17</sup> Military occupation and the related violence, political instability, and economic hardship have serious epidemiological implications for the comparably young Palestinian population. Comparably to other regions affected by complex emergencies,<sup>18–20</sup> these macro factors will likely continue to generate conditions conducive to drug abuse in the OPT.

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