

# The European Men-Who-Have-Sex-With-Men Internet Survey (EMIS 2017)

## Israeli Report

Zohar Mor<sup>1</sup>, Saar Maoz<sup>2</sup>, Rivka Sheffer<sup>1</sup>

### Executive summary

#### Introduction:

Due to the constant increase in HIV and STIs (sexually transmitted diseases) among men who have sex with men (MSM) in Europe and in Israel, the European MSM Internet Survey (EMIS-2017) aimed to collect and compare data about MSM in Europe, Lebanon and Israel. This was done by describing the level and distribution of HIV transmission risk and precautionary behaviour related HIV prevention needs, and by assessing self-reported STI testing behaviour, testing performance, and various STI diagnoses, including viral hepatitis.

#### Methods:

Anonymous web-based questionnaires were distributed in geospatial applications used by MSM who seek dating (such as Grindr and Atraf Dating) and also social networks, such as Facebook, in 33 languages simultaneously, including Hebrew. Online recruitment was conducted between 18 October 2017 and 31 January 2018. Men were eligible to participate if they had sex with men and, in Israel, over the age of 16 years. The questionnaires included demographic details, mental morbidities, sexual behaviours, health related needs and possible interventions in the MSM communities.

#### Results:

**Demographics:** In total, 127,792 MSM living in 46 European countries, Lebanon, and Israel completed the survey, and 1,274 men were recruited from Israel, in median age of 31 years (mean of 32.6, with a standard deviation of 11.4), younger than men who participated from the entire sample or from the EU countries (median of 36 and 37 years, respectively). The majority of Israeli participants lived in Tel Aviv (N=726, 66.5%), were Israeli born (N=963, 88.3%), employed (N=775, 71.4%), and self-identified as gay men (N=847, 77.6%), similar to 77.0% and 78.0% in the entire sample of participant from the EU member countries, respectively. The majority (N=756, 69.8%) disclosed their sexual identity to their close family and friends, higher than 59% of the entire sample. It might reflect a relatively liberal climate in Israel, which allows gay outness in spite of the younger age of the participants. Most study participants (N=705, 64.6%) were singles, and 304 (27.8%) were in steady relationships vs. 54% and 38%, in the entire sample, respectively, which may be associated with the relatively younger age range of the Israeli sample.

**Sexual behaviour:** Of those with steady partner, 217 (39.6%) had concomitant sex with a non-steady partner in the last 12 months. Sex with a casual partner was reported among 887 (81.3%) of all study participants (compared with 77% in the total sample). The median number of non-steady partners in the last year was five (in the total sample and the EU member states it was four). Condomless anal sex with partner whose HIV status was unknown in the last year

<sup>1</sup> Tel Aviv Department of Health, Ministry of Health, Tel Aviv, Israel

<sup>2</sup> AIDS Task Force, Tel Aviv, Israel

was reported among 428 (27.3%) of sexual intercourse with non-steady partners (higher than 23.7% in the total sample and the EU member states). Nearly a quarter (N=273, 22.5%) reported that the sexual contact practices were not as safe as they wanted them to be.

Being paid for sex within the last 12 months was reported by 61 (5.6%) participants, slightly higher than the total sample and the EU member states (4.9%). Paying for another man for sex was reported by 69 (6.3%), lower than the entire sample and the EU member states (9.5%), which may also be related to the younger age range of the Israeli sample.

**Mental health morbidity:** Patient Health Questionnaire- 4 (PHQ-4), which was used to measure mental health found moderate to severe depression or anxiety during the last two weeks was reported in 211 (18.6%) of the participants, comparable with 18% in the entire sample. Overall, 197 (19.1%) had also thoughts of harming themselves within the past two weeks, compared with 21% in the entire sample. Sexual unhappiness on the scale of four or less was reported by 20.4% (22% in the total sample).

Alcohol dependency scale was found lower among Israeli participants compared with the entire sample (10.4% vs. 18.0%).

**HIV tests and individuals infected with HIV:** Most men (N=860, 78.8%) have ever been tested for HIV tests, while 230 (21.1%) had never have (vs. 79% and 21% in the entire sample, respectively). An HIV test was performed in the last year for 625 (60.9%), while in the entire sample 55.6% have done so and the EU member states 55.0%. Of all the Israeli participants who were tested, 67 (5.8%) were infected with HIV, substantially lower than 10% HIV positive men in the entire sample. HIV diagnosis in the previous year was reported in 0.4%, compared with 1.1% in the entire sample – suggesting a lower limited level of HIV incidence among MSM in Israel.

Most (N=64, 95.5%) of all HIV-diagnosed men were monitored during the last six month (vs. 95.6% in the entire cohort), using antiretroviral treatment (ART) was reported by all 64 men (100%), which was higher than the total sample (89.9%) or and the EU member states (91.4%). Of those who were on ART, 60 (95.2%) reported being undetectable, which was slightly higher than in the total sample or the EU member states (92.0%). ART was started within one month following the diagnosis in 24.3% and after a year in 60.0%, whereas it was 23% and 57% respectively in the total sample.

**STIs:** Of all Israeli sample, 568 (54.2%) were tested for STI in the last year (vs. 46% in the entire sample). The most common STI diagnoses in the last year was N. gonorrhoea (N=79, 6.5%), followed by C. Trachomatis (N=60, 5.5%), genital warts (N=43, 3.5%) and syphilis (N=35, 2.9%), compared with 4.5%, 3.9%, 13.6% and 13.6% infections in non-HIV diagnosed MSM in the entire sample, respectively. All STIs were more prevalent among HIV-diagnosed MSM. In spite of the STI diagnosis, 19 (27.1%) of all those who were infected with N. gonorrhoea, and 10 (31.3%) of those who were infected with syphilis did not notify their sexual partners, vs. 26.9% and 21.0% in the entire sample, respectively.

**Hepatitis:** 426 (39.4%) reported prior vaccination against hepatitis A, and 74 (6.8%) reported a previous infection. For hepatitis B, 430 (44.8%) were vaccinated, and 51 (4.7%) had been previously infected (one case of chronic infection). Hepatitis C was prevalent in eight (0.7%) of the responders. Previous diagnoses of viral hepatitis in the Israeli sample were slightly lower than in the entire sample (7.4%, 6.2% and 1.9% for hepatitis A, B and C, respectively).

**PEP:** 793 (73.5%) had already heard about PEP vs. 55.2% in the entire sample, and 98 (9.0%) had already used PEP, compared with 4.5% in the total sample.

**PrEP:** 895 (82.0%) had heard about PrEP (vs. 63.0% in the entire sample), and 74 (8.3%) had already used PrEP (higher than 3.0% in the total sample and 3.3% in the EU member states).

**Drugs:** Alcohol was the most commonly used drug in all time intervals. Smoking in the last

24 hours was reported in 34.8%. Cannabis was the most common illicit drug used. Injected steroids was reported by 37 (3.2%) of all participants. Combining sex and drugs in the last year was reported by 595 (58.5%) of participants, while 109 (10.8%) were under the influence of alcohol or drug in most or in every sexual encounter in the last year (vs. 56.6% and 6.6% in the total sample, respectively).

**Needs:** The mean value of homonegativity was 1.5, similar to the entire cohort and 1.4 in the EU member states. Ten percent reported that lack of social support (vs. 11.7% in the entire sample).

**Violence:** 15 (1.4%) had been physically assaulted in the last 12 months, 182 (17.1%) were verbally assaulted and 308 (29.3%) had been intimidated because someone had known or presumed they were attracted to men (the figures in the entire sample were 3%, 21% and 27%, respectively).

**Knowledge:** Basic knowledge about HIV/STI transmission was generally high. However, there is still a lack of knowledge on the HIV risk of insertive intercourse, the existence of asymptomatic infections and the differences in transmissibility of other STI compared with HIV. The knowledge of the Israeli participants was generally lower than that of the entire sample.

**Behaviour:** Median age for first sex was 18 and age for first anal debut was 20, similar to the entire sample. Anal sex was practiced in two thirds of all sexual intercourses. Threesome sex was performed by 161 (19.1%) of men in the last year. Most Israeli participants were satisfied from their sex life.

**Last sexual encounter with a non-steady partner:** The most common place for the men to meet their most recent non-steady sex partner(s) for the first time was via a mobile phone app (41.0%), followed by the Internet (38.0%). HIV was raised in only 36.0% of the encounters.

Anal intercourse was performed in 71.3% (vs. 73.5% in the entire sample). Receptive anal sex was performed in 30.5%, insertive anal sex in 30.6% mutual penetrations in 7.6% and no anal sex during the last non-steady encounter was reported in 31.4% vs. 34.0%, 27.8%, 11.7% and 26.5% in the total sample, respectively). Among anally receptive participants, 42.3% did not use a condom, and in 42.3% of the condomless sex, the encounter ejaculated inside the anus. Participants who were insertive in anal sex did not use condoms in 46.3%, and they ejaculated inside the anus of their encounters in 43.7% of the condomless sex.

Mutual masturbation among Israeli participants was reported in 60%, oral sex in 80%, rimming in 31%, fisting in 6%, sex toys 4%. During the last sexual encounter, alcohol was used in 19.2%, poppers in 15.7%, Viagra or similar erection pills in 9.7%, cannabis in 18.3%, MDMA in 1.3%, GHB in 1.2% and ketamine in 0.7%. The level of satisfaction from the sexual contact was 6.5 (vs. 6.7 in the entire sample). The rate of mutual disclosure of both partners' HIV status was 25.4% (vs. 26.1% in the entire sample). Of all study participants, 10.9% used PrEP or U=U for prevention of HIV transmission in the last encounter vs. 14.8% in the entire sample.

### **Major differences between the Israeli sample and the entire sample:**

Most of the responses were generally in the range of the total EMIS sample. The age range of the Israeli sample was younger and it might have impacted the findings of the Israeli participants. Condomless anal sex with a casual partner whose HIV status was unknown in the last year was reported among 428 (27.3%) of sexual intercourse (higher than 23.7% in the total sample and the EU member states, which may also be related to the relatively higher rate of PrEP use in the Israeli sample).

HIV rates among the Israeli sample was lower than the entire EMIS sample. Among the HIV-diagnosed Israeli participants, the second and third of UNAIDS' three 90-90-90 goals were

reached in 2017 – 95.5% were monitored and treated with ART and 95.2% had undetectable viral load (90% and 82% in the entire sample, respectively). Israeli men reported higher proportions of PrEP-use, which might be related to the approval of PrEP in Israel a few months before the study was distributed.

The Israeli sample had lower rates of HAV, HBV and HCV. In terms of STI- higher rates of *Neisseria gonorrhoea* and lower rates of syphilis- although testing rates were similar.

The use of alcohol was lower than that of the entire sample, but similar rates of drugs during sex. Israeli men had more casual partners and performed more condomless sex with a partner whose HIV status was unknown than participants in the entire sample. Israeli men reported lower level of control over their sexual behaviour and more condomless sex with casual sex partners. Finally, the level of knowledge among the Israeli sample was slightly lower than that of the entire sample.

### **Recommendations:**

1. Support further promotion of HIV chemoprophylaxis (PrEP).
2. Increase HIV and STI testing rates.
3. Increase access to hepatitis A and B vaccination.
4. Target younger MSM for mental health interventions.
5. Decrease the proportion of MSM using stimulant drugs during sex.
6. Target single MSM to reduce sexual risks.
7. Encourage HIV infected MSM to get ART and to achieve and maintain undetectable viral load.
8. Support partner notification among those infected with STIs.

## Introduction

HIV and other sexually transmitted infections (STI) are increasing among men who have sex with men (MSM) in developing countries and in Israel. EMIS-2017 (the European MSM Internet Survey) was one component of ESTICOM (European Surveys and Training to Improve MSM Community Health)<sup>1</sup>. The overall aim of EMIS was to generate data useful for the planning of HIV and STI prevention and care programmes and the monitoring of national progress in this area. This was done by describing the level and distribution of HIV transmission risk and precautionary behaviour related HIV prevention needs, and by assessing self-reported STI testing behaviour, testing performance, and various STI diagnoses, including viral hepatitis.

## Methods

The EMIS-2017 questionnaire was based on a previous version of the survey (EMIS-2010). This second European MSM Internet Survey (EMIS-2017) was designed to consolidate progress made in multi-country research projects. It is a multi-language, pan-European, collaborative HIV prevention needs assessment, including measures of morbidity, behaviours, unmet prevention needs and intervention performance<sup>2</sup>. In short, following on from EMIS-2010 Development was informed by a scoping exercise of available MSM questionnaires published since 2010 followed by three public consultation rounds among our partners, a time trial and a formal pilot of the online version in English only. Ultimately the survey was available online in 33 languages simultaneously, including Hebrew. Online recruitment was conducted between 18 October 2017 and 31 January 2018 in gay related internet sites, both using smartphones, such as geospatial applications used by MSM who seek dating (such as Grindr and Atraf Dating) and also social networks, such as Facebook. Men were eligible to participate if they had sex with men and over the age of 16 years. Respondents were requested to complete anonymously a set of questions regarding their demographic details, mental morbidities, sexual behaviours, health related needs and possible interventions in the MSM communities.

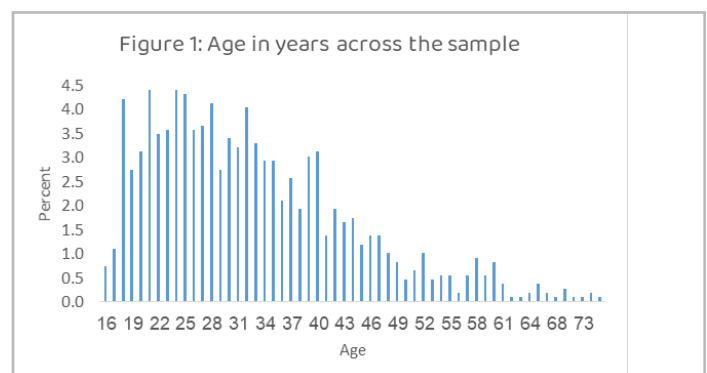
## Results

In total, 127,792 MSM living in 48 countries completed the survey, including all 28 EU countries, three EFTA countries, four non-EU European microstates, seven countries of the EU enlargement area, three countries from the Eastern Partnership (EaP), two countries from the Southern Neighbourhood and Russia.

In Israel, there were 1,280 men who completed the questionnaire. Most of the study participants (57.5%) were recruited through Grindr, 8.4% Atraf, while another 16.2% were recruited through social networks, such as Facebook or Twitter, including in Russian language. The most commonly used device for completing the survey was a smart phone (61.5% Android and 25.9% iPhone, while 11.6% used desktop computers, more commonly among the older age group).

Of all 1,280 participants, two were not men, three did not have sex with men and one was under the age of consent. The relative response rate in Israel was 4.7 cases per 10,000 out of the total male population aged 15-65, compared with 4.6 and 6.4 per 10,000 among the total participants in the survey and the participants in the EU countries, respectively.

After excluding participants who did not comply with the inclusion criteria, the analysis included 1,274 who were identified as Israeli men or transmen, sexually attracted to men and/or having had sex with men and aged 16 years or older. Their median age was 31 years (mean of 32.6, with a standard deviation of 11.4), younger than men who participated from the entire sample or from the EU countries (median of 36 and 37 years, respectively), see figure 1.

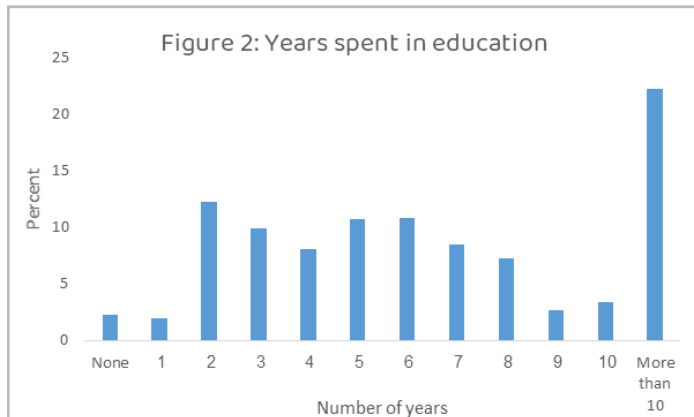


<sup>1</sup> The EMIS Network. EMIS-2017 – The European Men-Who-Have-Sex-With-Men Internet Survey. Key findings from 50 countries. Stockholm: European Centre for Disease Prevention and Control; 2019. [www.emis2017.eu](http://www.emis2017.eu)

<sup>2</sup> Weatherburn P, Hickson F, Reid DS et al. European Men-Who-Have-Sex-With-Men Internet Survey (EMIS-2017): Design and Methods. *Sex Res Soc Policy* 2020;17:543–57.



The majority of Israeli participants lived in Tel Aviv (N=726, 66.5%), followed by Haifa and the north (N=171, 15.7%), Beer Sheva and the south (N=78, 7.1%), and Jerusalem and the west bank (N=74, 6.8%). The median number of years spent in education was seven, while it was six in the total EMIS-2017 sample (figure 2).



The majority (N=963, 88.3%) were Israeli-born, while the other 127 (11.7%) were born elsewhere. Most (88.9%) of the Israeli participants were born in Israel and 13.7% of them perceived themselves to be ethnic minority (compared with 86.6% of local born and 12.7% perceived themselves to be ethnic minority in the entire EMIS-2017 sample). Of all participants, 71.4% (N=775) were employed 3.4% (N=37) were unemployed and 15.8% (N=172) were students, while in the entire EMIS-2017 sample, 72% were employed and 14% were students. When participants were asked to respond to the level of satisfactory with their income, 480 (44.5%) were comfortable with their income, while 307 (27.8%) were straggling or hardly straggling financially, which was different than the total sample (49% and 17%, respectively). The lower level of satisfaction from the financial income among Israelis may be related to the younger age of the Israeli participants compared with the entire sample.

Of all study participants, 184 (16.9%) were attracted to men but also to women, 847 (77.6%) identified themselves as gay men, 159 (14.6%) as bisexuals and eight (0.7%) as heterosexuals, which is compared with 12.2%, 77.0%, 16.0% and <1.0% with the entire sample, respectively, while in the EU 78.0% were identified as gay men. The majority (N=756, 69.8%) disclosed their sexual identity to their close family and friends, higher than 59% of the entire sample. It might reflect a relatively liberal climate in Israel, which allows gay outness in spite of the younger age of the participants. Men who

had sex only with men were more likely to "out of the closet" than participants who had sex with both men and women (76.8% and 27.0%, respectively).

Most study participants (N=705, 64.6%) were singles (including those who had one night stand or regular sex buddies) at the time they completed the survey, and 304 (27.8%) were in steady relationships (different than the total sample, as it was 54% and 38%, respectively), which may be associated with the relatively younger age range of the Israeli sample. Twenty-six (8.6% of all men in relationships) had more than one steady partner and 33 (3.0%) had a concomitant female partner during the last year. Of all men in steady relationships, 22 (2.0%) had a steady HIV-diagnosed partner, and only seven (0.6%) did not know the HIV status of their steady partner. Overall, 72.9% of all those with steady partner had condomless anal sex (compared with 71% in the total sample). Of those with steady partner, 217 (39.6%) had concomitant sex with a non-steady partner in the last 12 months. HIV-diagnosed men in steady relationships were more likely to have condomless anal sex with their non-steady partners (55% have seldom or ever used condom), mostly (80.0%) with other HIV-positive men.

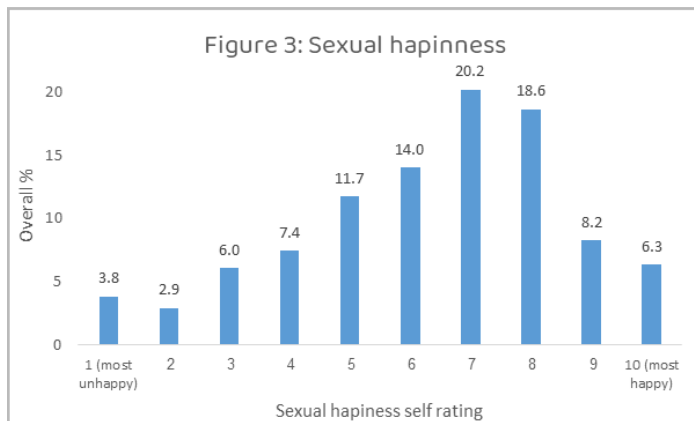
Sex with a casual partner was reported among 887 (81.3%) of all study participants (compared with 77% in the total sample). The median number of non-steady partners in the last year was five (in the total sample and the EU member states it was four). Condomless anal sex with partner whose HIV status was unknown in the last year was reported among 428 (27.3%) of sexual intercourse with non-steady partners (higher than 23.7% in the total sample and the EU member states). Of 275 men who have condomless sex with a non-steady partner, 96 (34.9%) knew that their partner was taking PrEP.

Being paid for sex within the last 12 months was reported by 61 (5.6%) participants, slightly higher than the total sample and the EU member states (4.9%). Mostly (62.3%) it has been done 1-2 times. Paying for another man for sex was reported by 69 (6.3%), lower than the entire sample and the EU member states (9.5%)-both may also be related to the younger age range of the Israeli sample.

Nearly a quarter (N=273, 22.5%) of all participants reported that the sexual contact practices were not as safe as they wanted them to be, and 246 (19.2%) found it hard to refuse to sex.

## Mental health morbidity

Patient Health Questionnaire- 4 (PHQ-4), which is a short clinical screening tool, was used to measure mental health problems. Moderate to severe depression or anxiety during the last two weeks was reported by 211 (18.6%) of the participants, comparable with 18% in the entire sample. Overall, 197 (19.1%) had also thoughts of harming themselves within the past two weeks, compared with 21% in the entire sample. The frequency of suicidal ideation was strongly associated with reported levels of anxiety and depression,  $r < 0.1$  in Pearson correlation test. Sexual unhappiness on the scale of four or less was reported by 20.4% (vs. 22% in the total sample), see figure 3. A lower sexual happiness score was given by men with higher levels of anxiety and depression,  $r < 0.1$  in Pearson correlation test.



The CAGE4 screening tool was used to assess alcohol dependency. While the tool is not intended to be diagnostic and may over-estimate the prevalence of problems, 123 (10.4%) of Israeli study participants met the criteria for alcohol dependency, significantly lower than 18% in the entire sample. Potential alcohol dependency was more common in men with a greater level of anxiety and depression,  $r < 0.1$  in Pearson correlation test.

## HIV test

Most men (N=860, 78.8%) performed HIV tests, while 230 (21.2%) have never had (vs. 79% and 21% in the entire sample, respectively). HIV test was performed in the last year among 625 (60.9%), while in the entire sample 55.6% have done so and the EU member states 55.0%. The last HIV test was performed by the general practitioner (52.5% among Israeli participants vs. 23.7% in the entire sample), followed by community health service (28.8% vs. 21.6% in the entire sample), outpatient clinic (7.8%), blood bank or mobile testing unit (1.8% in each). Of those who performed HIV tests, 28.8% did not get

any support or information (the information was missing in 43.2% of the meetings with at the general practitioner setting) and 2.3% were dissatisfied with the information level provided. The highest level of satisfaction (91.7%) was reported from Israeli participants who were tested at specialized HIV/STI community clinics. Those who were detected with HIV were more likely to be satisfied (61.6%) from the post-test counselling.

Of all the Israeli participants who were tested, 67 (5.8%) were diagnosed with HIV, significantly lower than 10% HIV-diagnosed in the entire sample. Last year diagnosis was reported in 0.4%, compared with 1.1% in the entire sample- which may reflect a relatively limited level of HIV dynamic in Israel. Most HIV-diagnosed men (N=11, 32.8%) were diagnosed at their general practitioner, 16 (23.9%) at the hospital or out-patient clinic and 14 (20.9%) at a specialized community testing service. No statistically difference was found in depression and anxiety score between HIV-diagnosed and uninfected MSM ( $p=0.3$  in the Chi square test), yet severe anxiety was reported by 12.3% (N=8) of the HIV-diagnosed vs. 7.7% (N=77) among HIV uninfected men ( $p=0.02$ ). Most (N=64, 95.5%) of all HIV-diagnosed men were monitored during the last six months (vs. 95.6% in the entire cohort), and all reported they were on ART, which was higher than the total sample (89.9%) or and the EU member states (91.4%). The two other men were diagnosed recently and had not started the treatment yet. Of those who were on ART, 60 (95.2%) reported they were undetectable, which was higher than the total sample or the EU member states (92.0%). Most (55.0%) of the HIV-diagnosed MSM were on ART at the first three months after following their detection, significantly earlier than the entire sample, where only 57% were on treatment after a year from their diagnosis. Israeli HIV-diagnosed MSM were significantly more likely than men without HIV to have been diagnosed with syphilis (36.1% vs. 4.9%), gonorrhoea (47.2% vs. 17.1%) or chlamydia (31.9% vs. 13.4%) in the last 12 months,  $p < 0.001$ .

Among the HIV-diagnosed Israeli EMIS-2017 participants, the second and third of UNAIDS' three 90-90-90 goals were reached in 2017 – 95.5% were monitored and treated with ART and 95.2% had undetectable viral load (90% and 82% in the entire sample, respectively).

Men were asked if a person with HIV who is

on effective treatment (undetectable viral load) cannot pass their virus to someone else during sex. In the Israeli sample, 702 (64.5%) knew that, while in the entire sample 57.4% knew that and 58.4% in the EU member states.

## **STI**

Of all study participants, 719 (68.8%) had STI other than HIV (vs. 63% in the entire sample), while 568 (54.2%) were tested for STI in the last year (vs. 46% in the entire sample). Although bacterial STI can more easily be transmitted and are less stigmatized than HIV, among non-HIV-diagnosed respondents, STI-testing was much less common than HIV- testing. Only 104 (18.8%) men were symptomatic upon testing (vs. 20% in the entire sample) and 403 (71.1%) disclosed the physician that they were having sex with men (vs. 68.4% in the entire sample). The test used was urine in 460 (82.3%), urine swab in 44 (7.9% vs. 27.3% in the entire sample), physical examination in 95 (8.7%) and anal swab in 45 (8.0%, vs. 37.1% in the entire sample).

A full STI screen was defined as reporting the following tests in the last 12 months: an HIV test, a blood test for other STIs, an anal swab, and a urethral, swab/providing a urine sample. In the Israeli sample 3.4% have done so, significantly lower than the 13% in the entire sample.

Of all Israeli sample, 568 (54.2%) were tested for STI in the last year (vs. 46% in the entire sample). The most common STI ever diagnosed among Israeli participants was gonorrhoea (N=232, 19.1%), followed by anal or genital warts (N=191, 15.7%) chlamydia (N=179, 14.6%), and syphilis (N=82, 6.7%), compared with 19.9%, 15.9% and 14.2% of gonorrhoea.

The most common STI diagnoses in the last year was N. gonorrhoea (N=79, 6.5%), followed by C. Trachomatis (N=60, 5.5%), genital warts (N=43, 3.5%) and syphilis (N=35, 2.9%), compared with 4.5%, 3.9%, 13.6% and 13.6% infections in non-HIV diagnosed MSM in the entire sample, respectively. In spite of the STI diagnosis, 19 (27.1%) of all those who were infected with gonorrhoea, and 10 (31.3%) of those who were infected with syphilis did not notify their sexual partners, vs. 26.9% and 21.0% in the entire sample, respectively.

## **Hepatitis**

Of all study participants, 781 (72.0%) knew that it is a disease which related to hepatic infection (vs. 76.5% in the entire sample), 523 (48.2%) knew that

they should get vaccinated against the infections and 42.3% were already recommended to get vaccinated by their provider. Some participants did not know where they can get vaccinated for hepatitis (34.5%), similar to the entire sample-meaning there is a room for better education regarding hepatitis vaccines. Of all participants, 426 (39.4%) have been already immunized against hepatitis A, 74 (6.8%) have been previously infected and 258 (23.6%) were not sure whether they were vaccinated against this pathogen. For hepatitis B, 430 (44.8%) were vaccinated, and 51 (4.7%) have been previously infected (one case of chronic infection). Hepatitis C was prevalent in eight (0.7%) of the responders and six of those (75.0%) were cleared from their infection. Of all HIV-diagnosed, 2% were co-infected with hepatitis C, significantly lower than 10% co-infection prevalence in the entire sample. Hepatitis infection rate in the Israeli sample were lower than found in the entire sample (6.8%, 4.7% and 0.7% for hepatitis A, B and C in the Israeli sample vs. 7%, 6% and 1.9% in the entire sample, respectively).

## **PEP**

Most (N=793, 73.5%) have already heard about PEP- higher than the 55.2% in the entire sample, and 119 (10.9%) have tried to get PEP. Additionally, 93.1% knew it protect someone who was exposed to HIV, 75.9% knew that the treatment should be taken for a month long (vs. 35.4% in the entire sample), and 69.9% knew it should be taken as soon as possible following the exposure (vs. 50.2% in the entire sample). The level of knowledge among Israeli MSM was higher than the entire sample.

Overall, 119 men (10.9%) have ever tried to getting PEP (compared with 7% in the total sample), 98 (9.0%) had taken PEP (vs. 4.5% in the entire sample and the EU member states) and 17 (1.6%) took more than a single PEP course (vs. 1.1% in the total sample). Yet, 14 (11.8%) reported they had not been able to obtain it (compared with 28% in the total sample). Of those who were infected with HIV, seven (10.5%) had already tried to obtain PEP, but four (57.0%) reported that they had not been able to get it.

## **PrEP**

Of all study participants, 895 (82.0%) have already heard about the PrEP (vs. 63.0% in the entire sample), and 74 (8.3%) have tried the treatment (higher than 3.0% in the total sample and 3.3% in the EU member states). Concerning knowledge, 80.0%



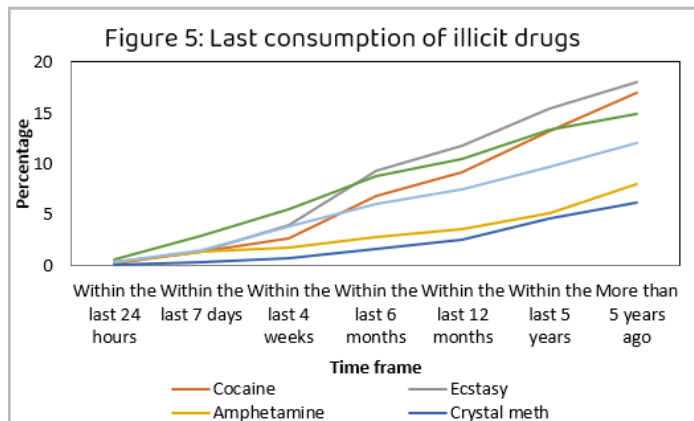
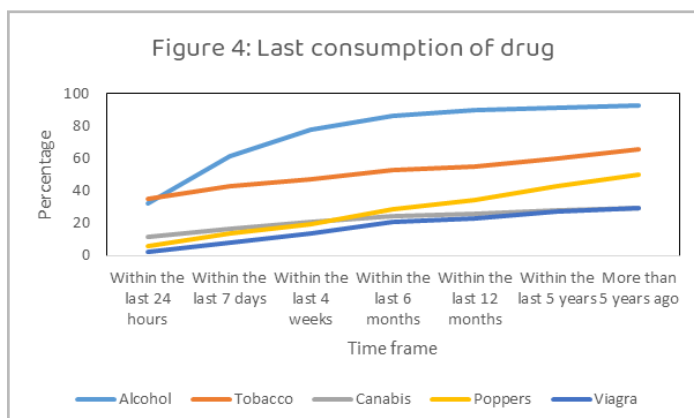
knew it protects one from HIV infection, 56.7% knew about the daily PrEP regimen, 14.4% knew about the short "per-demand" regimen (vs. 41.2% and 19.8% for daily and "per-demand" treatment in the entire sample, respectively). At the time of the study, 4.3% were using PrEP (vs. 3.0% in the entire sample). Of the PrEP users, 55 (74.3%) were prescribed the treatment, while 12 (16.2%) bought it online (vs. 11.7% in the entire sample), two (2.7%) used PEP as PrEP and one (1.3%) got the treatment from a friend who has been already diagnosed with HIV. If PrEP had been more available and affordable, 476 (47.2%) of the Israeli sample would have used it (vs. 28% in the entire sample).

Some (N=97, 10.6%) were offered PrEP by their practitioner, mostly (N=64, 66.0%) by their family doctor.

### Drugs

Alcohol was the most commonly used drug in all time intervals of the study. Current smoking was reported by 34.8%. Cannabis was the most common illicit drug used. Injected steroids was reported by 37 (3.2%) of all participants.

Sex under intoxication during the last year was reported by 595 (58.5%) of participants, while 109 (10.8%) were under the influence of alcohol or drug in most or in every sexual encounter in the last year (vs. 56.6% and 6.6% in the total sample, respectively), see figures 4 and 5. Stimulants drugs to make sex last for longer or more intensified in the last four weeks was used in 3.3% of the Israeli participants (compared with 5.2% and 5.5% in the entire sample or the EU member states, respectively). Private homes are the most common setting for multiple partners chemsex, which was reported by 55 (75.1%) of all chemsex users.



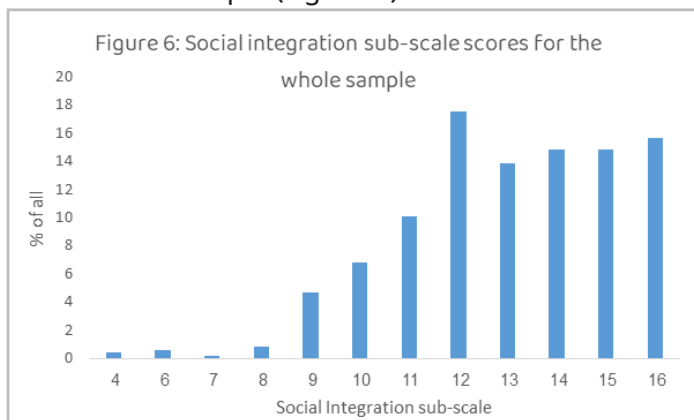
Men who indicated that they had taken any illicit drug in the last 12 months were asked whether they worry about their recreational drug use. Of all Israeli MSM who used drugs during sex, 2.0% were concerned with their drug using habits (vs. 4% in the entire sample).

Sixty participants (5.6%) have consulted a professional for their concern about their drug or alcohol use (vs. 4.2% in the entire sample).

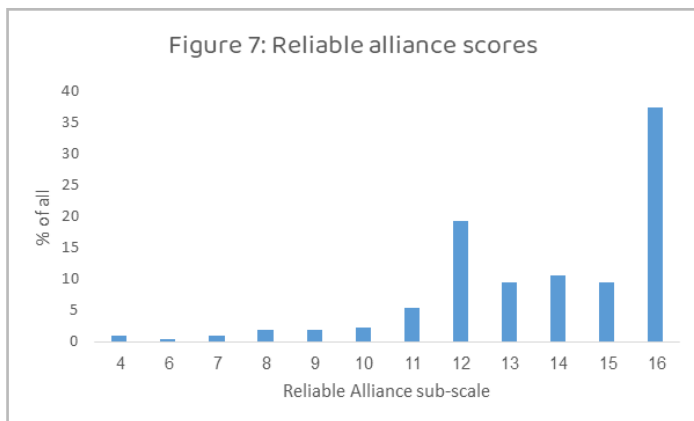
High percentage of men used drugs or alcohol during sex.

### Needs

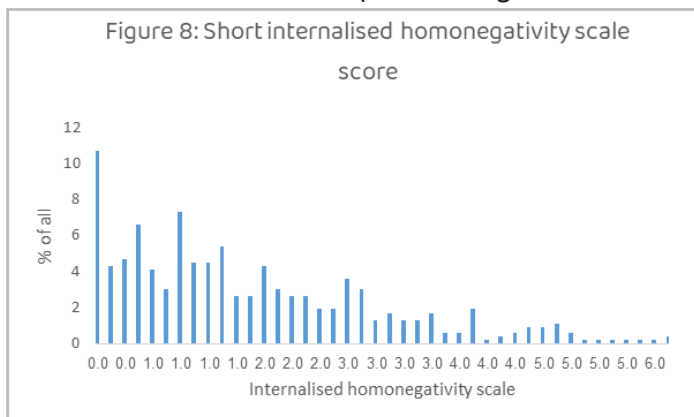
Sexual health needs include capabilities, opportunities and motivations to engage in sexual health related behaviours, both precautions and risks. Half of the respondents were asked at random two sets of questions related to social integration and to reliable alliance. Social integration is the extent to which people feel they belong in a group. The higher the value, the stronger the integration. The mean and median were 13, similar to the results of the total sample (figure 6).



Reliable alliance is the extent to which people can call on others when they are in need. The higher the value, the stronger the alliance. The average score in the Israeli sample was 13.7 and the median 14.0 (vs. 13.6 and 14 in the entire sample, respectively), see figure 7.



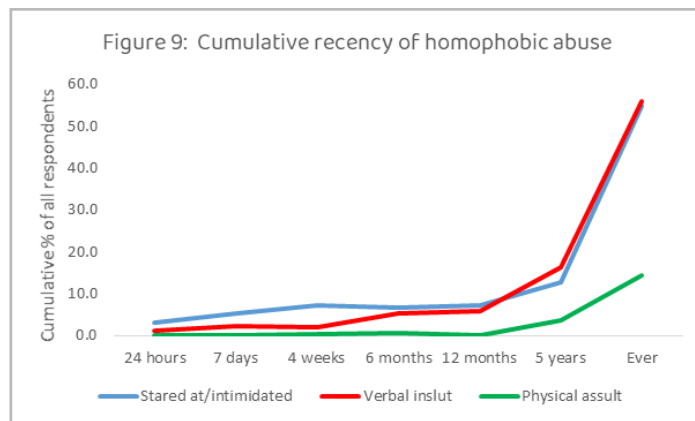
A short internalized homonegativity scale (SIHS) was used to estimate the extent of homonegativity in the sample. The score assesses negative feelings towards one's own homosexuality have been shown to be related to increased sexual risk-taking and less HIV testing, as well as being predictors of anxiety and depression among MSM. Ideally, men should be scored lower on the scale. The mean value in the Israeli sample was 1.5, similar to the entire cohort and was 1.4 in the EU member states. Ten percent reported that the lack social support (vs. 11.7% in the entire sample), see figure 8.



Men were asked questions related to their self-efficacy. Overall, 271 (25.0%) reported that they did have their sex to be as safe as they wanted (vs. 22% in the total sample) and 246 (22.5%) found it difficult to refuse sex (vs. 17% in the total sample).

### Violence

In the last 12 months, 15 (1.4%) were physically assaulted, 182 (17.1%) were verbally assaulted and 308 (29.3%) had been intimidated because someone had known or presumed they were attracted to men (the figures in the entire sample for the same questions were 3%, 21% and 27%, respectively), see figure 9. In the EU member states, 174% were verbally assaulted. It seems that the Israeli sample was less exposed to violence as participants from the entire sample.



### Knowledge

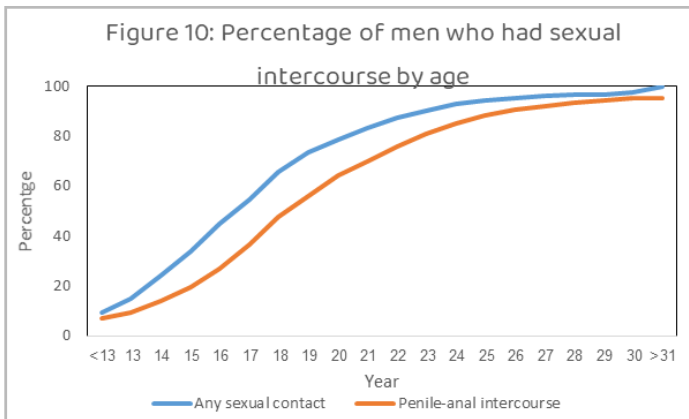
The vast majority of men (98.3%) knew that HIV causes AIDS, were aware of the HIV-test (98.1%), knew about the "window period" (88.3%), that there is no cure for HIV infection (91.5%), but that there is a treatment to control the infection (95.1%), and that HIV-diagnosed man who takes the treatment effectively can not transmit the infection (64.5%).

Most (91.8%) knew that HIV is not transmitted through kissing (vs. 88.6% in the total sample), 83.5% knew that that insretive men are also at risk (vs. 86.5% in the total sample), 94.5% knew that HIV is transmitted through the rectum (vs. 95.7% in the total sample), 65.8% knew that that most STI are more easily transmissible than HIV (vs. 71.8% in the total sample), and 75.7% knew that there is an asymptomatic asymptomatic phase of STI (vs. 82.9% in the total sample). Basic knowledge about HIV/STI transmission was generally high. However, there is still a lack of knowledge on the HIV risk of insertive intercourse, the existence of asymptomatic infections and the differences in transmissibility of other STI compared with HIV. The knowledge of the Israeli participants was generally lower than that of the entire sample.

The majority of men (87.6% in the Israeli sample, similar to the 88% in the entire sample) had seen MSM-specific information about HIV or STIs in the last year and more than half (60.2% vs. 57% in the entire sample) reported that they were exposed to material in the last four weeks.

### Behaviour

The term sex in this study was defined as a physical contact or orgasm for one or both partners. Median age for first sex was 18 and age for first anal debut was 20, similar to that of the entire sample (figure 10). Anal sex was practiced by two thirds of all sexual intercourses.



Most anal intercourses with a casual partner (N=600, 76.8%) were protected. Of those who had condomless anal intercourse, 306 (65.6%) did not know the HIV status of their partner and 99 (21.2%) had condomless anal intercourse with a men who was infected with HIV. Most (N=80, 80.8%) of those who had condomless anal intercourse with HIV diagnosed partner reported that disclosed his HIV status and was undetectable.

### Condoms

The most common source of condoms was buying them from a physical shop (66.4% vs. 53.3% in the entire sample), 11.7% from gay bars or clubs, 10.4% from saunas, 9.4% from community organizations, and 7.6% from clinics.

Last sexual encounter with a non-steady partner

The most common place for the men to meet their most recent non-steady sex partner(s) for the first time was via a mobile phone app (41.0%), followed by elsewhere on the Internet (38.0%). In 18.2% it was a threesome or more partners (it was 21.8% in the entire sample). HIV was raised in only 36.0% of the encounters. Meeting the non-steady partner(s) in gay or cruising location venue was reported by 10.9% (vs. 16.7% in the entire sample).

Anal intercourse was performed in 71.3% (vs. 73.5% in the entire sample) of the sexual encounters. Receptive anal sex was performed in 30.5%, insertive anal sex in 30.6% mutual penetrations in 7.6% and no anal sex during the last non-steady encounter was reported in 31.4% (vs. 34.0%, 27.8%, 11.7% and 26.5% in the total sample, respectively). Among the receptive participants in our study, 42.3% reported that their top partner did not use a condom, and in 42.5% of those who had condomless anal intercourses, the top partner ejaculated inside their anus. The insertive participants in our study used condoms in 46.3% and ejaculated in the anal canal of their non steady partners in 43.7%.

Mutual masturbation among Israeli participants was reported in 60.5% with their non-steady partner, oral sex in 80%, rimming in 31%, fisting in 6%, sex toys 4%. Alcohol in the last encounter was used in 19.2%, poppers in 15.7%, Viagra in 9.7%, cannabis in 18.3%, MDMA in 1.3%, GHB in 1.2% and ketamine in 0.7%. Level of satisfaction from the sexual contact was reported as 6.5 (vs. 6.7 in the entire sample). The rate of mutual reporting of both partners' HIV status was 25.4% (vs. 26.1% in the entire sample). Sero sorting (either with PrEP or U=U) was performed in 10.9% (vs. 14.8% in the entire sample).

Table 1: Age and correlations with sexual behaviour

| Age range in years  | <25<br>N=357 | 25-39<br>N=611 | 40-60<br>N=290 | 65+<br>N=16 | All  |
|---|--------------|----------------|----------------|-------------|------|
| % taking ART, among men with diagnosed HIV (HIV care cascade stage 5; DDM 6.84)                           | 50.0         | 97.1           | 100            | 0           | 96.0 |
| % who took PEP ever, excluding HIV-diagnosed  | 4.7          | 12.6           | 8.6            | 0           | 8.4  |
| % currently taking PrEP, excluding HIV diagnosed  | 0.9          | 5.7            | 5.5            | 6.3         | 4.3  |
| % having condomless intercourse with non steady partners of unknown HIV status, last 12 months (DDM 3.27) | 25.3         | 28.5           | 27.3           | 31.3        | 27.3 |
| % who used stimulant drugs to make sex more intense or last longer, last four weeks (DDM 2.50)            | 0.6          | 5.0            | 3.1            | 0           | 3.3  |

Younger men were less likely to use ART if they were infected with HIV, less likely use PEP or PrEP (Table 1). Condomless sex was more likely to be reported among 40-60 years old group and stimulants among 25-39 years old.

Table 2: Age and correlations with mental health characteristics

| Age range in years   | <25<br>N=297 | 25-39<br>N=522 | 40-60<br>N=251 | 65+<br>N=15 | All  |
|--|--------------|----------------|----------------|-------------|------|
| % with severe anxiety or depression in the last two weeks (PHQ-4)  | 10.5         | 8.2            | 3.1            | 6.7         | 10.3 |
| % with self harm thoughts in the last two weeks  | 24.8         | 17.6           | 11.0           | 12.3        | 18.0 |
| % with potential alcohol dependency (CAGE 4)   | 13.3         | 12.3           | 6.3            | 0           | 11.0 |
| % experiencing verbal insults, because someone knew/presumed attraction to men, last 12 months           | 26.0         | 16.1           | 8.0            | 0           | 16.6 |
| % with free condoms from civil society organisations, clinics, bars or saunas, last 12 months (DDM 3.1a) | 23.5         | 26.2           | 23.9           | 13.3        | 24.8 |
| % spoken to about PrEP at a health service -among non-HIV-diagnosed                                      | 5.6          | 11.7           | 7.2            | 6.7         | 8.9  |
| % saw or heard information about HIV or STIs for MSM, last 12 months (DDM 3.5a)                          | 65.3         | 80.5           | 76.5           | 86.7        | 75.4 |

|   |      |       |       |      |      |
|---|------|-------|-------|------|------|
| % tested for HIV, last 12 months, excluding men diagnosed prior to that (DDM 4.53)  | 46.8 | 68.7  | 64.8  | 46.7 | 61.1 |
| % using community HIV-testing at last HIV test (DDM 4.13a)  | 16.3 | 26.0  | 26.9  | 26.7 | 23.4 |
| % using HIV self-sampling at last HIV test (DDM 4.13b)  | 0.3  | 0     | 0     | 0    | 0.1  |
| % using HIV self-testing at last HIV test (DDM 4.13c)   | 1.0  | 0     | 0     | 0    | 0.3  |
| % having had HIV monitoring ever among HIV-diagnosed (HIV care cascade stage 3; DDM 6.278)  | 75.0 | 100.0 | 100.0 | 0    | 98.5 |
| % having had HIV monitoring, last six months, among HIV-diagnosed (HIV care cascade stage 4; DDM 6.282)   | 75.0 | 96.8  | 96.9  | 0    | 95.5 |
| % with undetectable viral load, among HIV diagnosed (HIV care cascade stage 6; DDM 6.91)  | 25.0 | 87.1  | 96.9  | 0    | 88.1 |
| % offered any hepatitis vaccination by health service, ever   | 31.3 | 44.0  | 58.4  | 40.0 | 42.6 |
| % with full course of hepatitis A vaccination, excluding men with a history of hepatitis A (DDM 3.10a)  | 26.5 | 44.4  | 58.2  | 42.9 | 42.3 |
| % with full course of hepatitis B vaccination, excluding men with a history of hepatitis B (DDM 3.10b)  | 73.7 | 55.2  | 43.1  | 78.6 | 58.1 |
| % with full STI screen (HIV, STI blood test, rectal swab, urethral swab or urine) last 12 months, excluding men with diagnosed HIV more than 12 months ago (DDM 3.3a) | 98.7 | 97.2  | 96.3  | 93.3 | 97.4 |

Younger men were more likely to report mental health morbidities (Table 2). They were more likely to be assaulted, less knowledgeable about chemoprophylaxis for HIV and least linked to care. The rate of condomless intercourse with non-steady partners of unknown HIV status during the last 12 months increased with age. Stimulants drugs were more likely to be used in the 25-35 years age group.

Table 3: Outness and correlations with sexual behaviour

|   | Few or none<br>N=293 | Some<br>N=315 | Almost or all<br>N=657 |
|---|----------------------|---------------|------------------------|
| % taking ART, among men with diagnosed HIV (HIV care cascade stage 5; DDM 6.84)                           | 83.8                 | 92.9          | 98.2                   |
| % who took PEP ever, excluding HIV-diagnosed  | 1.3                  | 5.3           | 13.3                   |
| % currently taking PrEP, excluding HIV diagnosed  | 1.0                  | 2.3           | 6.8                    |
| % having condomless intercourse with non steady partners of unknown HIV status, last 12 months (DDM 3.27) | 26.0                 | 23.3          | 30.1                   |
| % who used stimulant drugs to make sex more intense or last longer, last four weeks (DDM 2.50)            | 1.4                  | 2.6           | 4.5                    |

Sexual risk was more common among men who

were out, but precautions, like PrEP or PEP were lower in use in this group (Table 3).

Table 4: Outness and correlations other health characteristics

|   | Few or none<br>N=293 | Some<br>N=315 | Almost or all<br>N=657 |
|---|----------------------|---------------|------------------------|
| % experiencing verbal insults, because someone knew/presumed attraction to men, last 12 months  | 11.4                 | 17.9          | 18.7                   |
| % with free condoms from civil society organisations, clinics, bars or saunas, last 12 months (DDM 3.1a)  | 20.7                 | 24.5          | 26.8                   |
| % spoken to about PrEP at a health service - among non-HIV-diagnosed  | 4.5                  | 6.2           | 12.2                   |
| % saw or heard information about HIV or STIs for MSM, last 12 months (DDM 3.5a)   | 64.9                 | 79.6          | 78.4                   |
| % tested for HIV, last 12 months, excluding men diagnosed prior to that (DDM 4.53)  | 44.9                 | 62.2          | 68.8                   |
| % using community HIV-testing at last HIV test (DDM 4.13a)  | 10.3                 | 25.1          | 29.0                   |
| % using HIV self-sampling at last HIV test (DDM 4.13b)  | 0.4                  | 0             | 0                      |
| % using HIV self-testing at last HIV test (DDM 4.13c)   | 0.4                  | 0.4           | 0.2                    |
| % having had HIV monitoring ever among HIV-diagnosed (HIV care cascade stage 3; DDM 6.278)  | 100.0                | 100.0         | 98.0                   |
| % having had HIV monitoring, last six months, among HIV-diagnosed (HIV care cascade stage 4; DDM 6.282)   | 100.0                | 100.0         | 94.1                   |
| % with undetectable viral load, among HIV diagnosed (HIV care cascade stage 6; DDM 6.91)  | 80.0                 | 81.8          | 90.2                   |
| % offered any hepatitis vaccination by health service, ever   | 27.9                 | 40.6          | 50.2                   |
| % with full course of hepatitis A vaccination, excluding men with a history of hepatitis A (DDM 3.10a)  | 30.3                 | 37.7          | 49.5                   |
| % with full course of hepatitis B vaccination, excluding men with a history of hepatitis B (DDM 3.10b)  | 28.6                 | 37.6          | 49.4                   |
| % with full STI screen (HIV, STI blood test, rectal swab, urethral swab or urine) last 12 months, excluding men with diagnosed HIV more than 12 months ago (DDM 3.3a) | 1.6                  | 1.6           | 3.6                    |

Those who were closeted were less likely to have an access to condoms or chemical barriers against HIV, such as PrEP and PEP, and less likely to be exposed to other health preventions, such as vaccinations (Table 4). Men who were out were more likely to perform high risk sexual behaviours.

Table 5: Partnership and correlations with other characteristics

|   | Single<br>N=838 | Steady<br>N=330 |
|---|-----------------|-----------------|
| % taking ART, among men with diagnosed HIV (HIV care cascade stage 5; DDM 6.84) | 95.3            | 96.4            |
| % who took PEP ever, excluding HIV-diagnosed                                    | 7.6             | 10.9            |
| % currently taking PrEP, excluding HIV diagnosed                                | 3.6             | 5.9             |



|   |      |      |
|---|------|------|
| % currently taking PrEP, excluding HIV diagnosed  | 3.6  | 5.9  |
| % having condomless intercourse with non steady partners of unknown HIV status, last 12 months (DDM 3.27) | 28.3 | 25.8 |
| % who used stimulant drugs to make sex more intense or last longer, last four weeks (DDM 2.50)            | 2.7  | 5.2  |

Single men were more likely to take PrEP, but also more commonly had condomless anal intercourse with a partner whose HIV status was unknown. Men in steady relationships were more likely to use stimulant drugs (Table 5).

Table 6: Partnership and correlations with mental health

|   | Single<br>N=703 | Steady<br>partner<br>N=302 |
|---|-----------------|----------------------------|
| % with severe anxiety or depression in the last two weeks (PHQ-4)   | 46.0            | 40.5                       |
| % with self harm thoughts in the last two weeks   | 20.4            | 12.6                       |
| % with potential alcohol dependency (CAGE 4)  | 11.4            | 9.5                        |
| % experiencing verbal insults, because someone knew / presumed attraction to men, last 12 months  | 16.6            | 15.6                       |
| % with free condoms from civil society organisations, clinics, bars or saunas, last 12 months (DDM 3.1a)  | 25.0            | 24.8                       |
| % spoken to about PrEP at a health service -among non-HIV-diagnosed   | 8.5             | 9.9                        |
| % saw or heard information about HIV or STIs for MSM, last 12 months (DDM 3.5a)   | 74.2            | 78.3                       |
| % tested for HIV, last 12 months, excluding men diagnosed prior to that (DDM 4.53)  | 62.1            | 58.9                       |
| % using community HIV-testing at last HIV test (DDM 4.13a)  | 19.3            | 31.8                       |
| % using HIV self-sampling at last HIV test (DDM 4.13b)  | 0.1             | 0                          |
| % using HIV self-testing at last HIV test (DDM 4.13c)   | 0.4             | 0                          |
| % having had HIV monitoring ever among HIV-diagnosed (HIV care cascade stage 3; DDM 6.278)  | 97.4            | 100.0                      |
| % having had HIV monitoring, last six months, among HIV-diagnosed (HIV care cascade stage 4; DDM 6.282)   | 94.9            | 95.8                       |
| % with undetectable viral load, among HIV diagnosed (HIV care cascade stage 6; DDM 6.91)  | 82.1            | 95.8                       |
| % offered any hepatitis vaccination by health service, ever   | 40.7            | 49.7                       |
| % with full course of hepatitis A vaccination, excluding men with a history of hepatitis A (DDM 3.10a)  | 38.2            | 53.0                       |
| % with full course of hepatitis B vaccination, excluding men with a history of hepatitis B (DDM 3.10b)  | 38.2            | 52.3                       |
| % with full STI screen (HIV, STI blood test, rectal swab, urethral swab or urine) last 12 months, excluding men with diagnosed HIV more than 12 months ago (DDM 3.3a) | 2.2             | 3.9                        |

Men in steady relationships were less likely to report sexual risk behaviour than singles (Table 6). Singles were less connected to care and had more psychological morbidities.

### Major differences between the Israeli sample and the entire sample

Most of the responses of the Israeli participants were generally in the range of the all participants in the EMIS-2017 sample. The age range of the Israeli

sample was younger and it might have impacted the local findings, such as relatively higher proportion of single men, more financial challenges and lower HIV rates. Nevertheless, education level of the Israeli participants was higher than the entire sample, although the relatively younger age. The rate of Israeli MSM who self-identified as gay men was 77.6%, similar to the entire sample, yet the proportion of MSM who were "out of the closet" was higher in Israel (69.8% vs. 59.0% in the entire sample).

Condomless anal sex with a casual partner whose HIV status was unknown in the last year was reported among 428 (27.3%) of sexual intercourse (higher than 23.7% in the total sample and the EU member states).

The lower HIV rates among the Israeli sample is worth noticing, as the rate of testing was not different than that of the entire sample. The rate of HIV-diagnosed men who were at care and their undetectability rates were higher than that of the entire sample, and the time from diagnosis to treatment was shorter. Israeli men reported higher rate of PrEP-use, although the study started only several months following the approval of PrEP in Israel. Similar pattern was demonstrated in PEP.

Moderate to severe depression or anxiety were similar to the entire sample. While thoughts of self-harm were lower.

The Israeli sample had lower rates of HAV, HBV and HCV. It terms of STI- higher rates of Neisseria gonorrhoea and lower rates of syphilis- although testing rates were similar.

The use of alcohol was lower than that of the entire sample, but similar rates of drugs during sex and chemsex. Israeli men had more casual partners and performed more condomless sex with a partner whose HIV status was unknown than participants in the entire sample. Israeli men reported lower level of control over their sexual behaviour and more condomless sex with casual sex partners. Finally, the level of knowledge among the Israeli sample was slightly lower than that of the entire sample.

### Recommendations

1. Support further promotion of HIV chemoprophylaxis, such as PrEP and PEP, especially among the younger age group. This should include the knowledge about the finding that undetectable HIV limits viral transition.

2. Increase testing rate to achieving annual HIV and STI tests.
3. Increase the opportunities to receive hepatitis A and B vaccines for those who are unvaccinated.
4. Target younger MSM for mental health interventions.
5. Decrease the rate of MSM who are intoxicated during sex.
6. Target single MSM to reduce sexual risks.
7. Encourage MSM to disclose HIV status before sexual intercourse and discuss the preferred way of protection.
8. Support partner notification among those infected with STI.

### **Limitations**

Reporting bias: a self reported questionnaire and the length of the questionnaire may end up with uncompleted questionnaires.

Selection bias: recruitment was performed in gay related internet sites, sparing men who were not connected at the time of the study. The study is cross-sectional convenience study and therefore limits the reader to differentiate between the cause and the outcome.

### **Strengths**

The anonymous nature of the survey allowed reliable responses, free of possible desirability bias, and allowed comparability with 43 European countries with a national sample of more than 1200 respondents.

### **Acknowledgment**

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