

Title: SIALON: HIV prevalence, undiagnosed HIV cases and Risk behaviour among MSM in Verona (Italy) and Barcelona (Spain)

Keywords: MSM, risk behaviour, UNGASS indicators, HIV prevalence, undiagnosed HIV cases

Abstract: Background

The use of effective and valid research methods for gathering epidemiological information is of crucial importance for the implementation of evidence-based preventive actions. HIV and STI prevalence reported among Men having Sex with Men (MSM) has risen in recent years in Western European countries concomitantly to an increase in unsafe sexual practices. The same information is not available for all countries of Eastern and Southern Europe.

Objective

The overall objective is to obtain reliable and valid information on HIV and syphilis prevalence, to study sexual behaviour risk patterns and the determinants of VCT access among MSM in gay venues, using a non-invasive outreach testing method based on oral fluid samples in selected countries of Southern and Eastern Europe.

Methods

Study design: multi centre biological and behavioural cross-sectional study. The survey is designed to obtain a "one time" estimation of the prevalence of HIV and Syphilis in the study population (MSM attending gay venues).

Subjects:

The subjects recruited are male individuals who have had any kind of sex (oral and anal, penetrative or not) at least once with another man during the last 12 months before the enrolment in the study. At the end of the project 2,800 subjects will be enrolled in the study (400 per participating country: Czech Republic, Slovakia, Slovenia, Spain, Greece, Italy, Romania)

Sampling:

A Venue-Day-Time (VDT) sampling method is being used. This sampling technique is a probability-based method for enrolling members of target population at times and places where they congregate or live. Time-location (or time-space) sampling is a procedure in which venue/day/time units are the primary sampling units (PSU). This method has been used in several studies because it allows to construct a sample with known properties and to make statistical inference to the larger population of venue visitors. A sample size estimation for prevalence study has been calculated on the basis of previous studies when available.

Statistical Analysis

The HIV prevalence is estimated by dividing the number of oral fluid HIV positive MSMs with the total number of MSMs participating in the study. In addition a 95% Confidence Interval is calculated for each estimate. The STATA 10 SVY suite, a specialized set of command for survey data, is used for data analysis.

Tools:

For collecting behavioural data, a self administered questionnaire has been developed

using questionnaires used by partners in previous studies, information from the literature and the UNGASS indicators for the most at risk population (UNAIDS). An oral fluid collector device is used to collect biological sample. On each sample, EIA testing (GENSCREEN HIV 1 / 2 version 2, BIO-RAD) is performed to detect anti HIV antibodies and TRFIA (Time Resolved Fluorescence Immuno Assay) to detect anti-treponema IgG.

Questionnaire data and biological test results have been successively linked together for each subject using a barcode.

#### Preliminary results

At this stage data are available only for two countries: Italy (Verona) and Spain (Barcelona). In Verona the number of MSMs enrolled in the project were 405 while in Barcelona were 400. Oral Fluid samples valid for testing were 797. Findings presented here are limited to the analysis of data from these two sites. Data on syphilis testing are not available yet.

As for the age of respondents, the average in Verona was 35.8 year (SD 10.3) while in Barcelona it was 38.2 (SD 10.2). The percentage of young people aged < 25 year was 15.10% and 9.98 % respectively.

#### (UNGASS indicator N.8) HIV testing practice

The percentage of respondents who had an HIV test in the last 12 months and that also got the results of the test was 52.97 [IC 48.08;57.86] in Verona and 56.11 in Barcelona [IC 51.23;60.99]. The same indicator for MSM aged < 25 showed an estimation of 34.43 CI [22.45 ; 46.40] in Verona and 60.00 CI [44.75; 75.25] in Barcelona.

#### (UNGASS indicator N. 9) Percentage of MSM reached by an HIV prevention programme

The percentage of MSM reached by an HIV prevention programme was significantly higher in Barcelona (83.29% [IC 79.62;86.96]) than in Verona (71.29% [IC 66.86;75.72]). The same indicator for MSM aged < 25 showed an estimation of 57.38 CI [44.91 ; 69.84] in Verona and 80.00 CI [67.55 ; 92.45] in Barcelona.

#### (UNGASS indicator N.14) Percentage of respondents who both correctly identify ways of preventing sexual transmission of HIV and who reject major misconceptions about HIV.

As for the knowledge and misconception of HIV transmission routes as measured by this indicator, the percentage of respondents who correctly indentified all routes and misconceptions was 76.34% [IC 72.11;80.56] in Verona and 63.61% [IC 58.84;68.39] in Barcelona.

#### (UNGASS indicator N. 19) Use of a condom last time they had anal sex

The percentage of respondents reporting the use of a condom the last time they had anal sex with a male partner was significantly lower in Verona (45.58% : IC [40.35;50.82]) compared to Barcelona (57.18 % : IC [52.01;62.35]). The same indicator among young people (< 25 y. o.) showed a percentage of 25.86 IC [14.54;37.19] in Verona and 53.85 IC [38.12;69.57] in Barcelona. For people over 25 y. o. the percentage is 49.49 IC [43.73;55.24] in Verona and 57.59 IC [52.12;63.07] in Barcelona.

On the other side, the percentage of respondents reporting not using a condom the last time they had anal sex with a steady partner was 62.96% in Verona sample and 63.09% in Barcelona sample. As far as anal sex with a casual partner is concerned, the

percentage was 23.45% for Verona and 21.39% for Barcelona.

In Table 1 the percentages of respondents reporting anal sex with an inconsistent condom use during the last 6 months are presented. The differences between cities are not statistically significant.

Table 1: Unprotected anal sex with inconsistent condom use over the last six months

	steady partner	casual partner
Italy	62.10 [55.62 ; 68.57]	38.11 [32.23 ; 44.00]
Spain	62.63 [55.69 ; 69.57]	35.99 [30.42 ; 41.55]

(UNGASS indicator N.23) HIV prevalence

The UNGASS indicator n° 23 requires information on biological ascertained prevalence so this information goes beyond behavioural surveillance. The HIV prevalence was lower in Italy (46 subjects: 11.56%) than in Spain (66 subjects: 16.54%) . Among young people (< 25 y o) the prevalence was 4.92% [IC 0.00;10.37] in Verona and 12.50% [IC 2.21;22.79] in Barcelona. As far as subjects aged >= 25 are concerned the prevalence was 12.76% [IC 9.18;16.34] and 16.99% [IC 12.88;20.20] respectively. In Table 2, the prevalence according to the type of venue is reported. From the table it is clear that there are significant differences between cities and venues.

Table 2: Prevalence of HIV positive samples according to venue type

	Disco	Naked/Sexshop	Sauna	Bar	Cruising	Total
Italy	Freq 5	6	30	5	0	46
	% 6.33	23.08	19.23	3.91	0.00	11.56
	CI [0.93 ; 11.72]	[6.81 ; 39.34]	[13.02 ; 25.44]	[0.53 ; 7.28]		[8.40 ; 14.71]
Spain	Freq 22	9	16	10	9	66
	% 21.15	18.00	15.38	9.52	25.71	16.58
	CI [13.27 ; 29.04]	[7.30 ; 28.69]	[8.42 ; 22.35]	[3.88 ; 15.165]	[11.17 ; 40.26]	[12.91 ; 20.25]

Undiagnosed HIV cases

An important indicator, not specifically considered by the UNGASS paper, is the number of people carrying the infection but not aware of their serological status. In the study, the UNGASS indicator n° 8 on testing behaviour was used to identify, among the subjects tested HIV positive on oral fluid samples, those MSMs reporting the last negative HIV test within the previous 12 months before the enrolment in the study. Using this categorization of all HIV positive subjects the percentage of subject not aware of their real serological status was 45.45% in Verona and 39.13% in Barcelona.

Conclusions

The HIV prevalence among MSM attending the gay scene and gay venues in Barcelona is in line with previous studies even if it seems to be slightly lower than expected. Maybe this result may be related to the use of a different sampling method (Time-Location-Sampling versus convenience sampling).

In Verona data on HIV prevalence among MSM were not available and the estimated prevalence seems to be quite high.

One of the most relevant findings of these preliminary results is that among oral fluid HIV positive subjects, nearly half reported a negative HIV test in the last year and so they were not aware of their real serological status. This data seems to indicate that quite a number of infections were recently acquired over the last 12 months. If these data are confirmed it is very likely that a new epidemic wave is currently developing.

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Comments: