

# Sex workers clients in Italy: results of a phone survey on hiv risk behaviour and perception

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## Abstract

**Introduction.** Sex workers (SW) clients represent a bridge population for HIV transmission from high risk to low risk general population.

**Materials and Methods.** A cross-sectional anonymous telephone survey was carried out at the AIDS and Sexually Transmitted Infections Helpline of National Institute of Health in Italy. The questionnaire was proposed on a voluntary basis to a sample of 119 subjects from helpline users.

**Results.** The 119 participants were all males, aged between 19 and 59 years and mostly accessed female prostitutes. Vaginal intercourses with SW were more frequently reported, followed by passive oral, active oral sex and active anal intercourses. Cumulatively, 86.6% and 84.6% of vaginal and anal intercourses were respectively reported as regularly protected by condom.

**Discussion.** The telephone interview allowed an eased access, a high response rate and a standardised evaluation of questions

**Conclusions.** It is necessary a constant monitoring of the characteristics, behaviour, risk perception and testing of SW clients in Italian and other populations.

## Key words

- HIV
- clients of sex workers
- commercial sex
- survey HIV
- risk perception

## INTRODUCTION

Since the early years of epidemic, HIV infection has progressively expanded towards population groups, as heterosexual men and women, who do not perceive themselves as "at risk" and do not consider the possibility of HIV testing [1].

This scenario is particularly alarming since, within the last years, the proportion of people who discovered to have HIV infection in an advanced stage has gradually increased up to more than half of all diagnosed AIDS cases. Data of the National Institute of Health in Italy (Istituto Superiore di Sanità, ISS) AIDS Operational Centre (COA) have shown that, among new infections, the distribution of HIV ways of transmission has undergone remarkable changes in the last 28 years: injecting drug users (IDUs) have decreased from 76.2% in 1985 to 5.3% in 2012, while heterosexuals and men who have sex with men (MSM) increased from 1.7% to 42.7% and from 6.3% to 37.9%, respectively [2].

The persons who were unaware of their HIV-positive status have prevalently got infected through sexual intercourses. Since sexual behaviour is a key factor in the transmission of HIV and sexually transmitted diseases (STDs), sex workers (SW) including prostitutes and trans-

sexuals are often referred as high-risk group. It has been documented that SW have a higher prevalence of sexually transmitted diseases and have a key role in the incidence of HIV and STDs in the general population, constituting a cause of concern for both public health and economic resources exploited for specific preventive interventions [3].

Thus, SW are a group of population highly vulnerable to both HIV infection and STDs and, through clients, can transmit infection to general population. Indeed, a comprehensive study conducted in China shows that SW clients represent a real bridge-population for the transmission of HIV from a high risk group to low risk general population [4]. SW clients have therefore become a key target for prevention programs, including the promotion of HIV testing [4-6].

HIV testing of general population is however, a hard-to-get goal due to the unawareness of the infection risk. The latest data from the COA showed that among persons who underwent HIV testing in 2012, 22.4% did it due to the presence of HIV-related symptoms, 16.5% following potential risky behaviours, 15.0% within investigations for other pathologies or surgery-associated procedures, 4.7% within routine check-up, 2.9% following the diagnosis of a STD, 2.9% within gynaecological

check-up during pregnancy/childbirth/abortion, 2.7% following unprotected sex with a HIV-positive partner, 2.3% within routine checks in therapeutic communities or in care services for injection drug users (IDU), 2.1% within blood donation screening procedures, and 2.7% for other reasons. Cumulatively, it was computed that only a small percentage (16.5%) of tested people had a clear perception of HIV infection risk.

Data on both HIV infection prevalence and incidence may be underestimated due to people inadequate perception of risk, availability to testing and access to diagnostic services. There is in fact clear evidence that HIV testing in European countries is still strongly associated with a history of STDs in people who had a poor self-perception of risk [6].

For this reason, specialists within STDs strongly encourage the broadening of HIV testing to people who have risk due to unprotected sexual behaviours [7].

In some studies, based on prevailing theories on health behaviours such as the Health Action Process Approach (HAPA) and the Health Belief Model, the perception of HIV infection risk has been measured by the assessment of self-perceived likelihood of contracting the infection [8-12]. This experimental approach can be effectively applied in order to understand the behaviour related to HIV or other sexually transmitted diseases and to support both specifically targeted interventions.

The perception of HIV risk is one of the most studied research topics [13-22]. HIV risk perception should – at least theoretically – induce individuals to take precautionary measures and/or to refrain from risky behaviours. Therefore, attempts to increase both the individual awareness and risk perception are common approaches to interventions for HIV prevention. In particular, the relationship between the perception of risk and risk behaviour has not been fully investigated, probably due to conceptual problems. It would be therefore necessary to pay special attention to clients of SW which are neither a homogeneous and well-outlined population nor easily identifiable and accessible within specific preventive interventions [23].

## MATERIALS AND METHODS

### Study sample

An anonymous cross-sectional telephone survey has been carried out for 3 months (December 5th, 2012 - March 5th, 2013 in the usual weekly schedule Monday to Friday from 13:00 to 18:00) within the AIDS and Sexually Transmitted Infections Helpline (Telefono Verde AIDS/IST, TVA-IST) of National Institute of Health in Italy (Istituto Superiore di Sanità, ISS), co-financed by the Italian Ministry of Health and managed by the Psycho-Socio-Behavioural-Research-Communication and Education Operative Unit (UO RCF) of Department of Infectious, Parasitic and Immune-Mediated Diseases of ISS. Population included into the study consisted in persons, aged between 19 and 59 years, reporting to have been clients of prostitutes and/or transsexuals. A total number of 155 persons responding to inclusion criteria and selected through a non-probability sampling type, were asked to enter the study and 119 persons, who gave their consent, were specifically recruited.

### Interview and questionnaire

Phone counselling intervention was performed as for all calls at TVA-IST Helpline, according to a standardized procedure. At the completion of the phone counselling intervention, an anonymous questionnaire was proposed, on voluntary basis, to persons/users upon adequate information on both the characteristics and purpose of the study. The questionnaire included 13 questions related to: a) socio-demographic information (province of origin, gender, age, marital status, education level, employment); b) sexual behaviour in the last six months (type of intercourse, degree of protection); c) degree of perception of risk of HIV or other STDs; d) HIV testing (reasons to have or not HIV testing; type and availability of diagnostic services structures); e) history of STDs.

### Collection and analysis of data

Data from the interview and questionnaires were adequately stored within a specifically designed data-entry software ensuring the protection of sensitive data. The demographic characteristics, referred “potentially at risk” behaviours, sexual risk perception and HIV testing of the participants were analyzed by descriptive statistics. Continuous numerical variables were displayed as median, upper quartile and lower, while categorical variables were displayed as observed frequencies and proportions. The Chi-squared test was used to assess statistical significance in relation between condom use and educational level or presence of a stable relationship. It is assumed that statistical significance occurs where p-value is lower than 0.05.

All analyses were performed using STATA Software (version 13.0).

## RESULTS

### Characteristics of study sample

Thirty-six out of 155 subjects selected during the session period did not agree to answer to the questionnaire due to reported lack of time, lack of will or anxiety condition.

The socio-demographic characteristics of enrolled 119 persons are shown in *Table 1*.

The survey participants are all males aged between 19 and 59 years old with a median age of 34 years (range 28-40).

All of them declared to have Italian nationality and a significant proportion (82.4%) reported a high level of education (> 8 years).

The 59.7% of persons did not report to be in a stable relationship, while the remaining 40.3% of study sample reported to have a wife or stable partner.

In the 84.9% of study sample a job was reported, while the 5.9% resulted as unemployed and the 9.2% as a student.

Within study sample 112 persons (94.1%) reported having had sex with prostitutes, and only 7 (5.9%) with transsexuals.

### Sexual behaviour

As shown in *Table 2*, the mostly reported sexual intercourse in the last six months is the vaginal intercourse (68.9%), followed by passive oral sex (36.1%), active oral sex (28.6%), anal sex (21.8%), and massage/masturbation (21.0%). The data also show that among the 119 ex-

**Table 1**  
Socio-anagraphic characteristics of sex workers clients enrolled

|   |                            | N   | %    |
|---|----------------------------|-----|------|
| <b>Gender</b>                           | <b>Male</b>                | 119 | 100  |
| <b>Age range</b>                        | 19-28                      | 39  | 32.8 |
|   | 29-38                      | 41  | 34.4 |
|   | 39-48                      | 32  | 26.9 |
|   | ≥ 49                       | 7   | 5.9  |
| <b>Median age (interquartile range)</b> | 34 (28-40)                 |     |      |
| <b>Average age ± SDE</b>                | 33.8 ± 8.8                 |     |      |
| <b>Place of origin</b>                  | Northern Italy             | 52  | 43.7 |
|   | Central Italy              | 29  | 24.4 |
|   | Southern Italy and Islands | 38  | 31.9 |
| <b>Education</b>                        | ≤ 8 years                  | 21  | 17.6 |
|   | > 8 years                  | 98  | 82.4 |
| <b>In a stable relationship</b>         | Yes                        | 48  | 40.3 |
|   | No                         | 71  | 59.7 |
| <b>Employment</b>                       | Employed                   | 101 | 84.9 |
|   | Unemployed                 | 7   | 5.9  |
|   | Student                    | 11  | 9.2  |

amined subjects, 35 (29.4%) had more than one type of sexual intercourses.

Respondents had also been asked how frequently they used condom (always, sometimes, never) in vaginal, anal, and active oral intercourses which are at potential risk for HIV transmission.

Among reported vaginal intercourses, condom use was not consistent (never or sometimes) in the 13.4% of cases due to usage difficulty, choice of "coitus interruptus", unexpected penetration, carelessness.

Active oral sex was unprotected in the 55.9% of cases reported, mainly due to either the consideration that it is not a risky intercourse or lack of information on female condoms.

Among those reporting anal intercourses, consistent condom use was declared in the 84.6% of cases.

The number of persons who reported at least one HIV risky sexual intercourse, including unprotected or partly protected vaginal, anal, and active oral intercourses, resulted to be 27 (22.7%).

Of note, the number of unprotected intercourses resulted to inversely correlate, although without statistical significance, with the level of education and was reported in a higher extent, although not statistically significantly, by persons without a stable partnership than those with a stable partnership (26.8% vs 16.7% respectively).

### **Risk perception**

Among persons reporting vaginal, anal or active sexual intercourses, the perception of HIV risk (as high or moderate) was 77.7%. Of those, the risk perception was

slightly higher for persons reporting consistent condom protection than those reporting no or occasional condom protection (79.1% vs 74.1%, respectively) (see Table 3).

The perception of HIV infection risk changed according to the type of sexual intercourse.

Specifically, among persons reporting vaginal, anal and oral intercourses the risk was perceived (as high or moderate) in the 78.0%, 84.6% and 73.5% of cases, respectively. Of note, risk perception resulted different between persons reporting regular or non-regular/non-use of condom (81.8% vs 77.6%, 75.0% vs 86.4%, 79.0% vs 66.7% for vaginal, anal and active oral intercourses, respectively).

### **HIV testing**

Within study sample 34.0% of persons said that they had never undergone HIV testing. Among these, 83.3% of cases had the awareness they have not risked HIV infection.

Among the 66.0% of persons who reported HIV testing, in 36.0% of cases it was performed once.

No particular preference between public or private health structures was reported for HIV testing and in about 50.0% of the sample public health structures were indicated.

### **DISCUSSION**

HIV infection spreading in general population occurs prevalently through sexual activity. Although infection prevalence in general population is quite low, SW bears a higher infection risk and can spread HIV to low-risk general population.

The true extent of SW potential and occurred HIV

**Table 2**  
Sexual behaviours reported by sex workers clients

|  |                          | N* | %    |
|--|--------------------------|----|------|
| <b>Sexual intercourse</b>                    | Vaginal intercourse      | 82 | 68.9 |
|  | Active oral intercourse  | 34 | 28.6 |
|  | Anal intercourse         | 26 | 21.8 |
|  | Passive oral intercourse | 43 | 36.1 |
|  | Massage and masturbation | 25 | 21.0 |
| <b>At least one risky sexual intercourse</b> | Yes                      | 27 | 22.7 |
|  | No                       | 92 | 77.3 |
| <b>Condom use**</b>                          |                          |    |      |
| <b>Vaginal intercourse</b><br>(N = 82)       | Consistent               | 71 | 86.6 |
|  | Not consistent           | 11 | 13.4 |
| <b>Active oral intercourse</b><br>(N = 34)   | Consistent               | 15 | 44.1 |
|  | Not consistent           | 19 | 55.9 |
| <b>Anal intercourse</b><br>(N = 26)          | Consistent               | 22 | 84.6 |
|  | Not consistent           | 4  | 15.4 |

\* The number of intercourses are herein reported, resulting higher than the number of subjects enrolled.

\*\* Consistent = always; Not consistent = sometimes or never.

transmission to their clients and general population has to be however fully characterised since SW clients have not the full perception of infection risk and do not easily undergo HIV testing. To this aim, specific interventions targeted to increase in SW clients the awareness of HIV infection risk require to adequately define their profile and characteristics, including sexual behaviour and risk perception.

This study was designed as a continuation of a previous investigation carried out by the TVA-IST Helpline on SW clients, which has allowed characterising the main features of this target population [24]. To this aim, a specific survey was designed and performed by researchers of TVA-IST Helpline to gain deeper and detailed information on SW client's sexual behaviour and HIV risk perception.

Looking through the gathered data, the survey shows that, among TVA-IST Helpline users, those who report sex with SW and have been recruited in the study are mainly Italian young adults in an age range of 19-48 years (median 34 years). These data are similar to those found in previously published studies, in which the age of targeted subjects ranges between 25 and 39 years [25-27].

Among Helpline users selected for the survey, 23.0% refused to participate to the study; this amount, already observed in other telephone surveys carried out by TVA-IST Helpline is generally associated with the fact that the phone tool – although meeting the needs of the persons/users – may not fit conditions as the available time, the emotional state or even the personal context, thus hampering the full and adequate participation at the survey [24].

As already confirmed by literature studies [28], a high level of education has been observed among the users with only a few cases reporting a low level of education (< 8 years).

The data also show that in 40.0% of the survey sample a wife or stable partner was reported, indicating that the demand of sex workers is not necessarily associated to inadequate affection or sexual fulfillment. The presence of stable partnership could therefore suggest that the persons targeted in the study may represent a bridge between high-risk groups (sex workers) and low-risk groups (companions, wives, girlfriends, recurring female partners), thus playing an important role in the transmission of HIV [29].

As foreseen by a previous study and literature [28-30], the survey found out that the most requested type of intercourse was the vaginal – 69.0% of cases – followed by active or passive oral sex (64.6%), and by anal intercourse (22.0%).

As expected, a high percentage of SW clients (over 80.0%) reported the consistent use of condom protection in both vaginal and anal intercourses, while less than half of them regularly protected active oral sex, mainly due to the underestimation of the infection risk and/or missed use of female condoms due to inadequate knowledge or availability.

The perception of HIV infection risk was not necessarily correlated to the usage of condom protection since it resulted to be high in both persons reporting protected or unprotected intercourses, also if slightly higher values

**Table 3**  
Perception of risk by sexual behaviour (%)

| Degree of perception                       |               | None | Moderate | High | Don't know |
|--|---------------|------|----------|------|------------|
| <b>Vaginal intercourse</b><br>(N = 82)     | Total         | 6.1  | 41.4     | 36.6 | 15.9       |
|  | *Protected    | 7.0  | 43.7     | 33.8 | 15.5       |
|  | **Unprotected | 0.0  | 27.3     | 54.6 | 18.2       |
| <b>Active oral intercourse</b><br>(N = 34) | Total         | 11.8 | 38.2     | 35.3 | 14.7       |
|  | Protected     | 13.3 | 40.0     | 26.7 | 20.0       |
|  | Unprotected   | 10.5 | 36.8     | 54.6 | 18.2       |
| <b>Anal intercourse</b><br>(N = 26)        | Total         | 7.7  | 42.3     | 42.3 | 7.7        |
|  | Protected     | 9.1  | 45.5     | 40.9 | 4.6        |
|  | Unprotected   | 0.0  | 25.0     | 50.0 | 25.0       |
| <b>Overall risk perception</b>             | Total         | 6.4  | 41.5     | 36.2 | 15.9       |
|  | Protected     | 6.0  | 43.3     | 35.8 | 14.9       |
|  | Unprotected   | 7.4  | 37.0     | 37.0 | 18.5       |

\*Persons reporting consistent condom use; \*\*Persons reporting no or non-consistent condom use.

were observed within vaginal and active oral sex. The risk perception is probably also due to stigma and irrational fear related to HIV infection, particularly within SW, or to the feeling of guilt which generally follows the access to sex workers. Nonetheless, condom use persists as inadequate in a relevant component of study sample, maybe due to carelessness, desire of condom-free sex or high condom costs. As regards risk perception with oral sex, a lack of knowledge was generally found within study participants, with an evident trend to underestimate risk in the active oral sex. The inadequate knowledge or use of female condom probably contributes to the biased perception of HIV risk related to active oral sex.

HIV testing was performed by at least 66.0% of the study sample, also if not necessarily following the access to SW. Of note, it was performed once in the 36.0% of cases, evidencing that the high-risk perception does not lead to adequate testing, may due to not easily accessible diagnostic services in the territory or irrational fear or shame associated to HIV testing.

It was however not possible to find an evident association between the perception of risk related to SW access and the implementation of HIV testing because of the short time period: the report of sexual behaviour refers to the six months preceding the survey while the questions on HIV testing refer to a wider and earlier time period (Have you ever made an HIV antibody detection test?)

We underscore that the study presents the typical limitations of any telephone survey that use self-reports by the respondent/user and it was necessary to adopt a convenience – non probabilistic – sampling due to the TVA-IST Helpline organization and mission. However, the exploit of structured telephone interview allowed an eased access, a high response rate and a standardised evaluation of questions related to HIV associated behavioural risks within a non-easily accessible population group.

## CONCLUSIONS

Despite these potential experimental limitations and although the investigation sample can not be considered fully representative of the whole Italian population of SW customers, study data allow to define the characteristics, sexual behaviour and HIV risk perception of the targeted group. In particular, the evidence of inadequate risk perception, condom use and HIV testing in a relevant part of SW clients was found, suggesting the need of implementing the interventions aimed to increase the general awareness of sexually associated infection risk.

As already underlined, SW customers are a relevant target bridge from high-risk groups to low-risk groups and it is highly important to specifically reach this population group in order to encourage the adoption of safe behaviours and HIV testing.

It is also necessary, through further specifically targeted studies and surveys, a constant monitoring of the characteristics, behaviour, risk perception and testing of SW clients in Italian and other populations.

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## Conflicts of interest statement

None declared.

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