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Social and behavioural characteristics of a sample of AIDS Help-Line users never tested for HIV in Italy

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Background: We conducted an anonymous cross-sectional telephone survey among persons who had never undergone HIV testing to determine their socio-demographic characteristics, behaviour, risk perception and reasons for not being tested. **Methods:** A questionnaire was administered to adult callers to the Italian National AIDS Help-Line who reported that they had never been tested for HIV. **Results:** The study sample consisted of 539 individuals. The individual who does not undergo testing is young (median age 30 years), male (85.5%), unmarried (79.0%), employed (70.1%) and with a high educational level (81.6%). More than two-thirds of the respondents had little or no perception of risk. Among persons who had more than one sexual partner, 47.0% do not use a condom. When dividing the respondents into two groups (i.e. high risk and lower risk), the results showed that the proportion of respondents with a high risk was higher among women (73.1%), among persons >35 years (76.3%) and among persons with a low educational level (77.8%). Individuals who had hadbeen seen in health-care facilities also reported high-risk behaviour. **Conclusions:** The results indicate the socio-demographic characteristics, behaviours, risk perception and reasons for not being tested among a sample of callers to Italy's National AIDS Help-Line, and they confirm the necessity of gearing prevention activities towards heterosexuals and young adults with a low perception of risk.

Keywords: at-risk behaviour, HIV test, risk perception, telephone survey

Introduction

Because antiretroviral therapy has greatly increased the incubation time for HIV infection, HIV surveillance has become an increasingly important priority.[1,2] However, estimates of the incidence of HIV infection based on surveillance data are at best approximate, in that surveillance systems identify new diagnoses and not incident cases and the date of actual infection is unknown.[1] Although surveillance data can be used to estimate the prevalence of infection, these estimates are influenced by the fact that many people do not get tested for infection.

In Italy, since the beginning of the HIV/AIDS epidemic, the circulation of HIV has expanded to include population groups that do not perceive themselves to be 'at risk' and which thus do not even consider undergoing HIV testing.[2] This is consistent with reports that there has been a progressive increase in the proportion of persons who become aware of being seropositive in an advanced stage of the disease.[3,4]

Thus, the prevalence data and data on new diagnoses of HIV infection should be interpreted with caution because they depend on individuals' perceived risk of infection and on their willingness to undergo testing. According to Italy's National AIDS Registry, persons who acquired infection sexually are more likely than other exposure categories to be unaware of their serostatus.[2] Studies conducted in other European countries have demonstrated that failure to undergo testing is still strongly associated with a history of sexually transmitted infections (STIs) and with a low perception of risk.[5–10] For this reason, some experts believe that testing should be offered routinely, in particular, to persons at-risk of sexual transmission and persons visiting STI clinics, as well as to pregnant women or women planning a pregnancy.[5,11–15] In light of these considerations, we conducted a survey of persons who have never undergone HIV testing, with the aim of describing their socio-demographic and behavioural characteristics, their perceived risk of infection and their reasons for not having been tested.

Methods

Study sample

We conducted an anonymous cross-sectional telephone survey among a sample of callers to Italy's National AIDS Help Line—Operational Unit (*Telefono Verde AIDS*; TVA), which is managed by the *Istituto Superiore di Sanità* (ISS; Italy's National Institute of Public Health). The sample was selected using non-probabilistic sampling among callers in the period from February 2005 to April 2006, during the TVA's normal hours of operation (Monday to Friday, 1:00 p.m. to 6:00 p.m.). To be included in the study, the caller had to be a legal adult (≥18 years of age) who had never been tested for HIV.

Data collection

The survey was conducted using a specifically designed questionnaire, which had been tested with a pilot study

performed among 20 callers (10 males and 10 females) between the ages of 18 and 49 years. The pilot study was performed to evaluate the acceptability of the questionnaire in terms of the number of items and the suitability of questions on personal issues and behaviours.

The questionnaire was administered at the end of the telephone counselling session by the operator, who described the characteristics and purpose of the study and asked the caller whether or not he/she wanted to participate, explaining that anonymity would be guaranteed. The questionnaire consisted of 38 questions for obtaining: socio-demographic information (province of origin of the call, age, gender, marital status, level of education, occupation); information on at-risk behaviour; whether or not the caller belonged to predefined typologies (pregnant women, persons who had been hospitalized, blood donors, persons with a history of an STI); level of knowledge of issues regarding HIV/AIDS; risk perception; and the reasons for never having undergone HIV testing. The questions were closed-ended, and the answers were immediately recorded in a database developed for this purpose. The interview lasted an average of 10 min (range 8–15 min).

The characteristics of the persons included in the study were compared with the characteristics of all callers to the TVA in the same period, using Chi-square test; differences were considered as significant if the *P*-value was <0.05.

We performed an analysis dividing the sample into two groups based on the reported sexual behaviour: (i) persons with high-risk behaviour (sex workers, clients of sex workers, persons with a seropositive partner, multipartner homosexuals, multipartner heterosexuals and partners of multipartner persons); and (ii) persons with lower-risk behaviour (persons who only reported non-multipartner homosexual or heterosexual contact, as well as persons who reported some at-risk behaviour). The two groups were compared using Chi-square test (differences were considered as significant if the *P*-value was <0.05).

Results

Study sample

A total of 556 callers who met the inclusion criteria were asked to participate in the survey. Of the 556 callers, 17 refused; thus the survey included 539 individuals. The 17 individuals who refused to participate did not significantly differ from participants in terms of age, gender, nationality, geographic area of the call or at-risk behaviour, which are routinely recorded by the TVA during telephone counselling.

The characteristics of the participants are shown in table 1. Compared with the entire population of adult callers to the TVA in the same period ($n = 23\,423$, not including the study sample), the study participants were younger ($P < 0.001$) and included a greater proportion of heterosexuals ($P < 0.001$).

Behaviour and risk perception

The information on behaviour and risk perception is reported in table 2. Approximately half (49.4%) of the participants reported that they had had fewer than five sexual partners in their lifetime. The median age at first sexual contact was 18 years.

A history of an STI was reported by 7.2% of the participants (the STIs listed on the questionnaire were: syphilis, gonorrhoea, condyloma and genital herpes). Of the women interviewed, 17.8% (13/73) reported that they had been pregnant in their lifetime.

Of the participants, 63.1% reported that they had been hospitalized in their lifetime. Blood donation was reported by 31.2% of the participants (6.7% were repeat blood donors and 24.5% were occasional donors). Of the reasons reported for not having been tested, the most common were that the participant did not consider him/herself to be at risk (74.6% of participants) and that he/she felt physically well and had no reason to suspect having acquired HIV (53.6%).

With regard to risk perception, 48.4% of the participants felt that they were 'at little risk', 28.8% 'at no risk at all' and 8.2% 'at high risk'; 14.6% were unable to evaluate their level of risk.

Of the 402 participants who reported that they had not been tested because they believed that they were not at risk of infection, around half (45.6%) perceived themselves to be at little risk, whereas one-third (33.4%) perceived themselves to have no risk at all. Of the 289 participants who had not been tested because they felt physically well and had no reason to suspect infection, 45.3% perceived themselves to be at little risk and 33.0% to be at no risk at all.

Of 180 participants who had not undergone testing because it had not been recommended by their physician, 9.6% reported that they perceived themselves to be at high risk of infection. Of those who had not undergone testing because

Table 1 Socio-demographic characteristics of the 539 callers interviewed and of all callers to Italy's National AIDS Help-Line in the period from February 2005 to April 2006

	n (%)	Total number of calls	Percentage of calls
Number of questionnaires	539 (2.3)	23 423	
Gender			
Male	461 (85.5)	20 256	86.5
Female	78 (14.5)	3167	13.5
Age (in years)			
18–24	142 (26.3)	3905	16.7
25–29	181 (33.6)	6030	25.8
30–34	102 (18.9)	5775	24.6
35–39	58 (10.8)	3906	16.7
40–44	30 (5.6)	2119	9.0
≥45	26 (4.8)	1688	7.2
Median age (IQR)	28 (24–32)	30	(26–36)
Marital status[a]			
Unmarried	425 (79.0)	-	-
Married/Cohabitating	113 (21.0)		
Level of education[a]			
Elementary/middle school	99 (18.4)	-	-
High school	329 (61.2)		
University	110 (20.4)		
Employment status[a]			
Unemployed	37 (6.9)	-	-
Employed	377 (70.1)		
Student	124 (23.0)		
Nationality			
Italian	538 (99.8)	23 323	99.6
Non-Italian	1 (0.2)	100	0.4
Area of origin of call			
Northern Italy	223 (41.3)	10 822	46.2
Central Italy	182 (33.8)	7142	30.5
Southern Italy	134 (24.9)	5452	23.3
Unknown		7	0.0
Type of at-risk behaviour			
Intravenous drug use	5 (0.9)	63	0.3
Homosexual/bisexual contact	19 (3.5)	1731	7.4
Heterosexual contact	478 (88.8)	16 281	69.6
Sexual contact with a seropositive person	0 (0.0)	669	2.8
Other/unknown	0 (0.0)	362	1.5
None	37 (6.8)	4317	18.4

a:Data about marital status, level of education, and employment status are not routinely recorded by the help-line, this information is not available for all callers (23 423).

Table 2 At-risk behaviour and risk perception of the 539 callers interviewed

	n (%)[a]
Median age (in years) at first sexual contact (IQR)	18 (16–19.75)
Number of lifetime sexual partners	
<5	257 (49.4)
5–20	206 (39.6)
>20	57 (11.0)
No answer	19
Sexually transmitted infections in lifetime	
Yes	39 (7.2)
No	500 (92.8)
No answer	0
Pregnancy in lifetime	
Yes	13 (17.8)
No	60 (82.2)
No answer	5
Hospitalization in lifetime	
Yes	332 (63.1)
No	194 (36.9)
No answer	13
Blood donor	
Repeat	35 (6.7)
Occasional	129 (24.5)
Does not remember	362 (68.8)
No answer	13
Reason for not having been tested for HIV[b]	
'I am not at risk.'	402 (30.1)
'I do not know where to undergo testing.'	126 (9.4)
'I do not want to know if I am HIV-positive.'	88 (6.6)
'I am afraid to have a blood sample taken.'	52 (3.9)
'I feel fine and have no reason to suspect that I am HIV-positive.'	289 (21.6)
'I was not advised to undergo testing by a physician.'	180 (13.5)
'I am afraid that I will be 'black-listed.'	66 (4.9)
'I am afraid that my family will find out.'	121 (9.0)
Other	13 (1.0)
Self-perceived risk	
None	151 (28.8)
Little	254 (48.4)
High	43 (8.2)
Do not know	77 (14.6)
No answer	14
'Is it probable that you had sexual contact with…?'[c]	
Homosexual	55 (6.4)
Bisexual	119 (14.0)
Multipartner heterosexual	232 (27.2)
Intravenous drug user	31 (3.6)
Someone who does not use a condom	204 (24.0)
Sex worker	211 (24.8)

a: Percentage calculated on the total number of persons who responded to each question (i.e. excluding those with missing data)

b: Percentage calculated on the total number of responses ($n = 1337$)

c: This question had three possible answers (not at all probable, a little probable, and very probable); for the analysis, the respondents were divided into two groups ('yes', which included those who responded that the behaviour was a little or very probable, and 'no', which included those who responded that the behaviour was not at all probable); the data in the table only refer to the 'yes' answers given to each group. The percentage was calculated on the total number of answers (852)

they were afraid of being 'black-listed' ($n = 66$), 4.8% perceived themselves to be at high risk; and of those who reported that they feared their family would find out ($n = 121$), 5.0% perceived themselves to be at high risk.

Of the 539 participants, 232 (43.0%) reported that they probably had had sexual contact with more than one sexual partner; of these individuals, 47.0% do not use a condom (table 2). Probable sexual contact with a sex worker was reported by 211 participants (39.1%); of these, 41.7% do not use a condom.

Type of sexual behaviour

The characteristics of the study sample, by level of risk of infection, are reported in table 3. The percentage of persons with a history of an STI was significantly higher among persons with high-risk behaviour (9.0%, compared with 2.0% among persons with lower risk behaviour; $P < 0.05$).

The proportion of participants' categorized as having engaged in high-risk behaviour was 71.1% among males and 73.1% among females ($P \geq 0.05$). The percentage of persons with high-risk behaviour was higher, though not significantly, for 18- to 24-year-olds and for persons >35 years, compared with the other age groups. Of the persons with an elementary/middle school education, 77.8% reported high-risk behaviour, which is higher, though not significantly, than the proportion of persons with a high school education or a university education. Among women with a history of pregnancy, 46.2% (6/13) reported high-risk behaviour, which is significantly lower than the percentage of women who had never had a pregnancy.

Among participants who had been hospitalized at least once in their lifetime, 75.3% reported high-risk behaviour, which is significantly higher than the percentage of those who had never been hospitalized. Among blood donors, 57.1% of the repeat donors and 64.3% of the occasional donors reported high-risk behaviour, and these percentages were significantly higher than the percentage of non-donors.

With regard to risk perception, of the persons who perceived themselves to be at no risk, 65.6% reported high-risk behaviour; a similar percentage of persons (67.5%) reported high-risk behaviour among the participants who were not able to evaluate their perceived risk. Of the participants who, instead, perceived themselves to be at risk, 23.9% had not engaged in any at-risk behaviour.

Of the 226 participants who reported that they perceived themselves to be at risk and who had engaged in at-risk behaviour, 181 (80.1%) had sought information on testing, whereas 45 (19.9%), despite having engaged in at-risk behaviour and having an accurate self-perceived risk, had never sought information on testing (data not shown).

Discussion

Based on the results of this survey, we can propose a profile of the individual who fails to undergo HIV testing. This individual is young, male, unmarried, employed and with a high level of education. Our results also showed that a high proportion of participants (88.8%) reported heterosexual contact, which is higher than the 69.6% found for the entire population of adult callers to the TVA in the same period. About half of the study participants had had fewer than five sexual partners in their lifetime, and the median age at first sexual contact was 18 years, which is consistent with other studies conducted among the same age general population in Italy.[16]

With regard to the individuals who had had access to health-care facilities (i.e. those who had been hospitalized or who had contracted an STI and women who had been pregnant), the fact that they had not been tested, despite having been seen in a health-care setting, may suggest that health-care workers are not adequately communicating the risk of infection to their patients. Regarding blood donors, in Italy, donated blood units must be tested by law[17] and the results are sent to the donors. However, in our study, a proportion of donors did not remember ever having been tested. This finding suggests that even in a population that is

Table 3 Characteristics of the 539 callers interviewed by level of risk of infection (lower risk[a] and high risk[b])

	Lower risk *n* (%, row)	High risk *n* (%, row)	Total	*P*-value[c]
Gender				0.728
Male	133 (28.9)	328 (71.1)	461	
Female	21 (26.9)	57 (73.1)	78	
Age (years)				0.333
18–24	34 (23.9)	108 (76.1)	142	
25–29	61 (33.7)	120 (66.3)	181	
30–34	32 (31.4)	70 (68.6)	102	
35–39	13 (22.4)	45 (77.6)	58	
40–44	8 (26.7)	22 (73.3)	30	
≥45	6 (23.1)	20 (76.9)	26	
Nationality				0.527
Italian	154 (28.6)	384 (71.4)	538	
Non-Italian	0 (0.0)	1 (100.0)	1	
Level of education				0.303
Elementary/middle school	22 (22.2)	77 (77.8)	99	
High school	97 (29.5)	232 (70.5)	329	
University	34 (30.9)	76 (69.1)	110	
Pregnancy in lifetime				0.002
Yes	7 (53.8)	6 (46.2)	13	
No	9 (15.0)	51 (85.0)	60	
Hospitalization in lifetime				0.016
Yes	82 (24.7)	250 (75.3)	332	
No	67 (34.5)	127 (65.5)	194	
Blood donor				0.007
Repeat	15 (42.9)	20 (57.1)	35	
Occasional	46 (35.7)	83 (64.3)	129	
Does not remember	88 (24.3)	274 (75.7)	362	
Self-perceived risk				0.043
None	52 (34.4)	99 (65.6)	151	
Yes	71 (23.9)	226 (76.1)	297	
Does not know	25 (32.5)	52 (67.5)	77	

a: The group at lower risk includes persons who only had homosexual or heterosexual sexual contact with non-multipartner partners, as well as persons who no reported risk behaviour.
b: The group at high risk includes: sex workers, clients of sex workers, partners of seropositive persons, multipartner homosexuals and heterosexuals, and partners of persons with multipartners.
c: *P*-value, Chi-square test.

sensitive to the safeguarding and promotion of health, as are blood donors, the test is not accompanied by effective counselling for making individuals aware of their behaviour, nor are these individuals being informed of the clinical tests performed upon donation. Moreover, half of the donors reported at-risk behaviour, which could indicate that a proportion of individuals are not excluded by the rigid controls that are applied in the pre-selection process of donors because they did not report their at-risk behaviour.

More than two-thirds of the participants perceived themselves to be at low risk or no risk at all. When we divided our sample into two groups based on the type of behaviour reported (high risk and lower risk), we found that the proportion of persons with a high risk was greater among women ($P > 0.05$), among persons >35 years and among persons with a medium–low educational level.

In interpreting the results of this study, some limitations should be considered. In particular, given that the data consisted of self-reported information, their accuracy cannot be guaranteed. Moreover, our study sample was a convenience sample and callers to AIDS help-lines cannot be considered as representative of all persons who do not undergo testing. In fact, these persons prefer the telephone to direct and personal contact with a health-care worker in a screening facility. However, to the best of our knowledge, no studies have been conducted in Italy or other countries on the characteristics of persons who do not undergo testing and who use AIDS help-lines.

Despite these limitations, these results confirm the necessity of gearing prevention activities not only towards the general population or specific target groups that are considered to be more vulnerable (e.g. injecting drug users, migrants and women) but also towards heterosexuals and young adults with a low perceived risk, who can be difficult to identify, reach and motivate to undergo HIV testing.[18–20] Moreover, in light of the finding that contact with a health-care facility does not necessarily translate into greater adhesion to testing, it may be necessary to further educate health-care workers on the importance of testing persons in their care.

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Key points

- More than two-thirds of the survey participants perceived themselves to be at low risk or no risk at all, despite the fact that some of them had engaged in unprotected sex and/or had had a high number of sexual partners.
- Half of the blood donors reported at-risk behaviour.
- Some individuals had not been tested for HIV, despite having been seen in a health-care setting.
- It may be necessary to further educate health-care workers on the importance of testing persons in their care.

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