

Factors associated with lack of awareness of HIV infection before diagnosis of AIDS, France 1994-2001



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Background

People infected with HIV can benefit from HAART only if they know they are infected. Description of persons with lack of awareness of their HIV infection before AIDS is crucial to target HIV screening programs.

Objective

To identify characteristics of people likely to be unaware of their HIV infection before diagnosis of AIDS.

Methods

We analysed 23 459 Adults with AIDS diagnosed from january 1994 to december 2001 reported to the French National Institute for Surveillance.

Lack of awareness of infection before diagnosis of AIDS was defined as an interval of less than three months between first positive test result and diagnosis of AIDS.

Logistic regression analyses were performed by using the statistical package BMDP, with the lack of awareness of HIV infection as the outcome variable.

Seven HIV potential risk factors were examined : sex, exposure category, age at diagnosis of AIDS, year of diagnosis, region of residence, nationality and occupation (classification of the National Institute for Statistics and Economic studies).

Table I – Number of people, percentages of people unaware of HIV infection according to variables examined. Odds ratio (OR) and 95 % confidence intervals for variables independently associated with risk of being unaware of HIV infection. Logistic model without interaction.

Variable	No. of people	% unaware of	odds ratio	95% confidence interval	
Nationality					
France	18997	26.2	1		
Sub-Saharan Africa	1899	58.7	2.57	2.3	2.9
North-Africa and Middle East	842	36.4	1.37	1.2	1.6
South-America/Haïti	698	49.1	1.64	1.4	2.0
Asia	139	53.2	2.59	1.8	3.8
Europe/North-America	576	34.8	1.52	1.3	1.9
Age (years)					
15-29	3291	26.4	1		
30-39	10877	24.8	0.91	0.8	1.1
40-49	5523	34.3	1.14	1.1	1.3
>=50	3460	45.4	1.53	1.4	1.7
Sex					
Women	4993	26.4	1		
Men	18158	31.4	1.78	1.6	1.9
Exposure category					
Sex between men	8503	26.9	1		
Injecting drug use	5109	10.9	0.43	0.4	0.5
Blood factor treatment	537	12.6	0.48	0.4	0.6
Sex between men and women	7106	44.1	1.84	1.7	2.0
Undetermined	1896	52.8	2.59	2.3	2.9
Region of residence					
North of France	16294	32.0	1		
South of France	5457	22.3	0.84	0.8	0.9
Overseas French Territories	1400	43.4	1.10	0.9	1.3
Year of diagnosis					
Before june 1996	12933	20.5	1		
After june 1996	10218	42.9	2.5	2.3	2.6
Occupation					
White collar workers	10	456	28.8	1	
Blue-collar workers	3629	39.5	1.25	1.1	1.4
Welfare recipients	609	32.4	1.28	1.1	1.6
Retired	789	49.2	1.29	1.1	1.5
Out of the labor force <60 ys	6237	25.7	0.85	0.8	0.9
Undetermined	1431	27.1	0.84	0.7	0.9

Results

Of the 23 360 adultes who had AIDS diagnosed during 1994 to 2001 and for whom awareness of HIV infection was available, 7091 (30,5 %) had been unaware of their seropositive status.

Lack of awareness of HIV infection controlling for all other factors (Table I) was strongly associated with being from sub-saharan Africa (OR 2.6), being infected heterosexually (OR 1.8), being male (OR 1.8), being aged 50 or more (OR 1.5), being a blue-collar worker (OR 1.3) or welfare recipient (OR 1.3) or retired (OR 1.3), having AIDS diagnosed after june 1996 (OR 2.5).

The best fitting simplest model (Hosmer-Lemeshow's Test $p=0.16$) included two interaction terms, one between the nationality and occupation (Table II) and the other between the year of diagnosis and the exposure category (data not shown).

Being aware of HIV status varied according to occupation and nationality. Among French people, those out of the labor force <60 years (eg. students, home wife) were more likely to be aware of HIV infection (OR 0.7) than others. In contrast, among foreign born residents those out of the labor force <60 years were the least likely (OR 1.3) to be aware of infection (table II).

Table II – Number of people, percentages of people unaware of HIV infection according to Nationality and Occupation, Odds ratio and 95 % confidence intervals. Best fitting simplest logistic model with two interaction terms (Hosmer-Lemeshow $p=0.16$), detail.

Variable	No. of people	% unaware of	odds ratio	95% confidence interval	
Occupation and Nationality					
French					
White-collar workers	9358	26.9	1		
Blue-collar workers	2713	34.1	1.27	1.2	1.4
Welfare recipients	482	29.8	1.43	1.2	1.8
Retired	723	48.3	1.57	1.3	1.9
Out of the labor force <60yrs	4555	17.3	0.74	0.7	0.8
Undetermined	1166	22.8	0.82	0.7	0.9
Non French					
White-collar workers	1098	45.1	1		
Blue-collar workers	916	55.6	1.21	0.9	1.5
Welfare recipients	127	42.5	0.86	0.6	1.3
Retired	66	58.2	1.05	0.6	1.8
Out of the labor force <60 yrs	1682	48.5	1.26	1.1	1.5
Undetermined	265	46.4	1.05	0.8	1.4

Conclusion

AIDS patients were more likely to be unaware of their infection at the time of AIDS if they were male, older than 50, infected heterosexually, and originating from sub-saharan Africa.

The interaction between nationality and occupation indicates that among French, the most socially vulnerable people (blue-collar workers, welfare recipients) were the least likely to be aware of their infection before AIDS while being out of the labor force and less than 60 years old was an advantage. In contrast, among foreign born residents being employed or welfare recipients was more likely to raise the awareness of being HIV infected. This last result shows the role of social integration of foreigners, particularly through work, as it makes their access to care easier.

People with the characteristics listed above were less likely to benefit from effective treatments.

For these people, the primary reasons why their access to care is delayed remain unclear and require further investigations. However, for foreigners and specifically for those from sub-saharan Africa, social, cultural and economic vulnerability are the major barriers to prevention and care.

Identifying those at risk for HIV infection, encouraging them to be tested and those with positive results to seek care remain the most important goals in the fight against HIV infection.