

# Knowledge about Sexually Transmitted Infections and HIV awareness in an Italian adolescent and young adults group

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## Introduction

The study aimed to evaluate the level of Sexually Transmitted Infections (STIs) knowledge and HIV awareness in a sample of adolescents and young adults living in the Umbria region (Italy), where sexual education school programs are not guaranteed.

## Study Design

An observational and descriptive study was performed in a group of adolescents and young adults during December 2022 and 2023, on the occasion of the World AIDS Day.

## Methods

The analysis was carried out using an electronic self-administered questionnaire on sexual health and awareness of STIs, distributed through the social network of the involved associations. A univariate statistical analysis was conducted using the Mann Whitney test or Fisher exact test, as appropriate, and a multivariable logistic regression with a correct model according to the Hosmer-Lemeshow Test.

## Results

A total of 293 adolescents and young adults were included. Of these, 205 (70%) were women and 201 (68.6%) had a previous sexual experience. Most of them usually discussed sexual problems with friends (73.5%) instead of family members (29.7%) or medical staff (25.6%). Overall, they learned about HIV on the internet and social media (88.2%) (Table 1).

Characteristics	n=293
<b>Sex at birth, n (%)</b>	
Female	205 (70.0)
Male	88 (30.0)
<b>Gender, n (%)</b>	
Female	195 (66.6)
Male	89 (30.4)
Non binary	9 (3.1)
<b>Sexual orientation, n (%)</b>	
Heterosexual	189 (64.5)
Homosexual	33 (11.3)
Bisexual	53 (17.3)
Others	15 (5.1)
<b>Age, years</b>	
<19, n (%)	140 (47.8)
<b>Current working status, n (%)</b>	
Student	252 (86.0)
- Middle School	1/252 (0.4)
- High School/College	87/252 (34.5)
- Technical School	55/252 (21.8)
- University	109/252 (43.3)
Worker	31 (10.6)
Others	10 (3.4)
<b>Residential status, n (%)</b>	
City	250 (85.3)
Province	43 (14.7)
<b>Sexual problems discussed, n (%)</b>	
Friends	215 (73.4)
Family members	87 (29.7)
Internet/mass media	79 (27.0)
Medical staff	75 (25.6)
Nobody	60 (20.5)
<b>Concerns about sex, n (%)</b>	
Being judged negatively	210 (71.6)
Pregnancy	151/210 (71.9)
STIs	101/210 (48.1)
<b>Previous sexual experiences, n (%)</b>	
Oral	174/201 (86.6)
Vaginal	160/201 (79.6)
Anal	82/201 (40.8)
<b>Current contraceptive methods, n (%)</b>	
Condom	168/201 (83.6)
Intravaginal ring	143/201 (71.1)
Coitus interruptus	6/201 (3.0)
Birth control pill	26/201 (12.9)
	42/201 (20.9)

Table 1: Demographic characteristics of the study population. STIs: Sexually Transmitted Infections.

Furthermore, the main concern was not about STIs (47.6%) or unwanted pregnancy (48.1%) but about the negative judgment of others (71.9%) That translates into poor consciousness of STIs; indeed, only 132 (47.5%) participants correctly individuated the proposed STIs. Most of the participants did not recognize hepatitis B or C (51.4%) or HPV infection (45.9%) as STIs. In contrast, our cohort demonstrated good knowledge about HIV diagnosis strategies (89.4%) and the use of condom as a prevention tool (90.1%), although only 71.1% of those who had sexual intercourse used it. Overall, knowledge about preexposure prophylaxis (PrEP) was very poor (41.3%) (Table 2).

Characteristics	n=293
<b>Be aware of STIs, n (%)</b>	278 (94.9)
<b>Right knowledge about STIs, n (%)</b>	132/278 (47.5)
<b>No recognized as STIs, n (%)</b>	
HIV	22/146 (15.1)
HPV/condyloma	67/146 (45.9)
Hepatitis B or C	75/146 (51.4)
Syphilis	27/146 (18.5)
Chlamydia	26/146 (17.8)
<b>Be aware about HIV, n (%)</b>	289 (98.6)
<b>Knowledge about HIV are learned at, n (%)</b>	
School/Institutions	197/289 (68.2)
Family	96/289 (33.2)
Friends	114/289 (39.4)
Internet/social media	255/289 (88.2)
<b>Right knowledge about, n (%)</b>	
Difference between HIV and AIDS	198 (67.6)
HIV transmission	218 (74.4)
Diagnosis strategies	262 (89.4)
Treatment strategies	218 (74.4)
<b>Prevention options:</b>	
- Condoms, n (%)	264 (90.1)
- PrEP, n (%)	121 (41.3)

Table 2: Knowledge about HIV infection and others Sexual Transmission Infections. STIs: Sexually Transmitted Infections; PrEP: preexposure prophylaxis.

For the univariate analysis, the variables that could have influenced the correct recognition of STIs were analyzed. In particular, age <19 years (adolescent), sex at birth, sexual orientation, working status, concerns about sex, previous sexual experiences, current contraceptive methods, and having obtained information about HIV at school. Among these, age <19 years correlated significantly with STIs knowledge (p=0.02). Subsequently, these variables, together with others clinically relevant, such as sex at birth, concerns about sex and HIV information at school, were analyzed by multivariate logistic regression, which confirmed a significant correlation only with age <19 years (OR 0.52, IC 0.32-0.85) (Image 1).

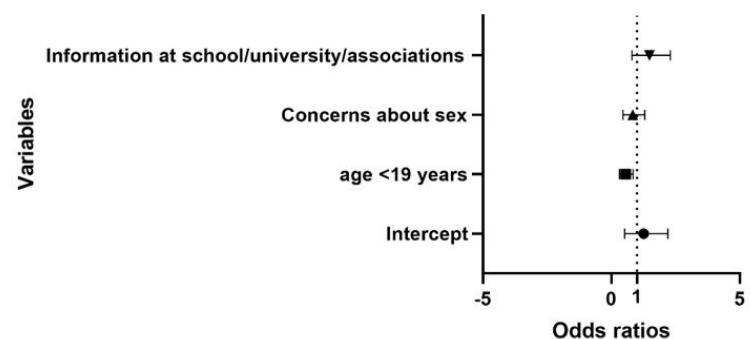


Image 1: Multiple logistic regression. Variables that influence the correct recognition of Sexually Transmitted Infections.

## Conclusion

Gaps in knowledge related to STIs were detected, especially in the adolescents group, highlighting the key role that school could play in the STIs prevention. Based on the results of this study, we promote community-based educational interventions, including peer education strategies. However, there is still insufficient: structural prevention programs in Umbrian schools are needed.

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