

Knowledge, beliefs and attitudes of Italian female undergraduate students towards HIV infection and risky sexual behaviour. Do female medical students make good peer educators?

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Abstract

Background: The main purpose of this study was to identify and describe knowledge, beliefs and attitudes towards HIV infection and risky sexual behaviour in female medical freshmen in order to evaluate the possibility of female medical student-based peer education.

Methods: Researchers surveyed 560 freshmen: 280 medical students and 280 non medical students at two Italian Universities, collecting the data through anonymous, self-administered questionnaires. Data were codified and statistical analysis was computed using Statistica and Openstat 4 software.

Results: Female medical freshmen showed higher levels of knowledge and risk perception about HIV infection, and higher levels of self-awareness in preventing infection when compared with non-medical freshmen. Moreover, medical student's had a lower rate of sexual activity and a higher rate of condom usage.

Conclusions: Our data leads to the hypothesis that the involvement of female medical students in developing and providing safe sex education may be an important and effective way of better enhancing young people's knowledge, attitude and behaviour towards the prevention of HIV and other sexually transmitted infections.

Key words: female medical freshmen, sexual behaviour, peer education

Introduction

Taking precautions to avoid the risk of sexually transmitted infections implies a sexual autonomy which young people rarely achieve [1] because youth sexuality is strongly influenced by peer identity [2]. Thus, young people may perceive the social risk of being mocked by their friends for 'still' being a virgin as being greater than the health risks of having unprotected sex. Furthermore, young girls may find it embarrassing to negotiate the use of a condom because it may lead to them being labelled as 'easy' [1]. Consequently finding effective means to educate and motivate adolescents to avoid risky sexual behaviour is a challenge.

The most common approach used to reach young people is through school-based health education programs [3]. However, using regular teachers has been generally cited as a barrier to successful HIV prevention interventions for youths. There are at least three main reasons for this. Firstly, it has been shown that young people are generally reluctant

to discuss sex with adults [4, 5]. Secondly, many teachers are extremely uncomfortable with the idea of teaching sex education. Thirdly, students usually feel more comfortable consulting with their peers on sexual health issues [6]. Primary prevention, in the form of peer-based programs, shows promise as a means for educating young people about HIV prevention [7]. In particular, intervention studies on AIDS prevention have found that peer education programs have influenced positive changes in adolescents' attitudes and behavioural intentions regarding condom use [8], frequency of intercourse [9], more conservative sexual norms [10], and self-confidence to refuse sex and delay sexually related behaviour [11]. Nwokolo et al. (2002) showed that pupils from 11 to 18 years of age were willing to talk about sexual issues with female doctors [12]. More recently, Bertakis (2009) argued that adult patients of female doctors are more satisfied, probably because female doctors provide more preventive services and psychosocial counselling, while male



doctors spend more time on physical examinations [13]. Therefore, peer educational settings involving female medical students, who are the doctors of the future, could provide opportunities for adolescents to feel more comfortable in receiving information about safe sexual practices. In a general study aimed at exploring knowledge of HIV infection, risk perception, and sexual behaviour of undergraduates we found indicators that the use of female medical students as peer educators was possible [14]. Because we only had the results of our previous study, we considered it necessary to examine and collate new information in order to reevaluate this issue. In addition, our earlier study had a major drawback, as it had been undertaken using a very small sample and therefore lacked sufficient data.

In order to collect further information that might support a new project involving female medical students as peer educators in HIV prevention programmes, the present survey aimed to investigate how much they knew about HIV infection and whether their personal risk perception, attitudes to sexual health and practice differed from other girls of the same age, regardless of their university education.

Methods

Eligibility criteria

The study was reviewed and approved by the ethics panels of the University of Catania and the University of Palermo. The survey was conducted from November to December 2009. Participants were 560 volunteer Italian female students enrolled at the first year of various disciplines of the Universities of Catania and Palermo, registered in the 2009-2010 academic year on September 15, 2009: 280 female students from Medicine ($n=140$ in Catania and $n=140$ in Palermo) and 280 female students from other non-medical disciplines (Economics, Engineering, Education Science, and Law: $n=35$ students each in Catania and $n=35$ students each in Palermo). With respect to the composition of the sample, there were 9798 students enrolled at the University of Catania in the 2009-2010 academic year, while in Palermo there were 12313. The percentage of female students were similar in the two universities and accounted for just over 57.0% (Catania=57.9%, Palermo=57.4%) [15]. The students were recruited by a purposive, theoretical quota sampling method. The quota of students included in the study was selected based on availability for interviewing and on three other criteria: (i) gender (female); (ii) matriculation year (first year of 2009-2010 academic year); (iii) discipline (Medicine, Economics, Engineering,

Education Science, and Law). A self-completed questionnaire was administered to each student (Appendix 1). The survey questionnaire had already been tested on 266 students in a previous pilot study, conducted in Catania in November 2007 [14]. The students enrolled in the pilot study were not enrolled in the present survey. All the selected students agreed to participate and completed the questionnaire after their lectures. For each participant signed informed consent was obtained. Each student was given 10 minutes to complete the questionnaire. They were assured of their anonymity and the confidentiality of their responses. They were also told that no monetary benefits or academic credits would be given.

Survey questionnaire

Information on the age of the surveyed students was recorded on a self-administered questionnaire. The questionnaire also included other thirty questions divided into four sections.

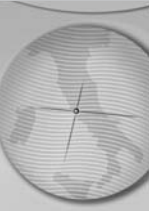
1. *Knowledge of HIV.* Twelve multiple choice questions tested information concerning HIV transmission and prevention. Assessment of knowledge was made according to whether the answer was correct or incorrect. Non-response and 'do not know' were categorized as incorrect.
2. *Risk perception.* Thirteen multiple choice questions measured female students' perception of their personal risk of contracting HIV.
3. *Attitudes.* Two questions, each with two possible answers: 'yes' or 'no', investigated participants' attitudes towards people with AIDS.
4. *Sexually risky behaviour.* To measure risky sexual behaviour three questions were asked about having had sex prior to the survey (one statement with two possible answers: 'yes', 'no'), number of sexual partners (one statement with three possible answers: 'more than one', 'one', 'none'), and frequency of condom use ('never', 'sometimes', 'always').

Statistical analysis

Data were analyzed using *Statistica* and *OpenStat 4* software. Preliminary analyses consisted of examining descriptive analyses (e.g., frequency for qualitative variables and mean and standard deviation for quantitative ones). Chi-square test was used for comparisons of medical and non medical students. A significance threshold of $P<.05$ was chosen.

Results

A total of 560 female freshmen with an average age of 19.06 years ($SD=2.7$ years), 280 (50.0%) from Medicine and 280 (50.0%) from non medical



disciplines made up the sample and completed a copy in full of the self administered questionnaire. The overall knowledge of the female medical students about HIV was higher than that of the other students. In particular, they showed significantly greater knowledge on the items shown in Table 1. In fact, a significantly higher percentage of female medical students showed to have understood the meaning of having a positive serological test (82.1% vs 71.7% $P < .005$), correctly believing that the infection can be transmitted by infected individuals even when symptoms are not present (62.8% vs 44.6% $P < .000$). Moreover, medical students were well acquainted with how to get a HIV test (82.5% vs 72.8% $P < .008$). Finally, a larger proportion of medical students were aware of being as much at risk of HIV as anybody (70.0% vs 59.2% $P < .010$). Also there were some differences between the two groups regarding sexual behaviour. Overall, a lower percentage of female medical students reported previous sexual activity (46.0% vs 75.0% $P < .000$) and a higher percentage of those who were sexually active used condoms (54.6% vs 42.1% $P < .004$).

Discussion

Our data shows that the possibility of female medical students leading a peer group as a way to prevent HIV should be evaluated. In our pilot study conducted at the University of Catania, female medical students were shown to be more aware of risk and of healthier lifestyles than female non medical students [14]. The present study performed in two different Universities (Catania and Palermo) confirms that this difference between female medical and non medical students exists. Participants were enrolled during the first month of the academic year 2009-2010, this means that the female medical students had not already been

exposed to information on HIV infection before data collection. In fact, also the test they had just undergone for being accepted to the university did not require knowledge on this topic. Obviously, the differences in attitudes and behaviours towards the HIV infection showed by our two samples of students (medical and non medical) do not necessarily indicate that medical students have a higher risk perception, but may be indicative of a "different" risk perception. These differences may also be linked to female medical students' more patient-centred attitudes than male students [16], and in demonstrated positive attitudes towards prevention and health promotion when students enter medical school [17].

The applicability of our results to other Italian female university students is limited by our collection of data at only two Universities. However, since both samples are sufficiently large, we believe our results to be indicative of general trends in attitudes and behaviours of female medical students. Another limitation could be that the survey did not collect demographic information and socioeconomic indicators about the students. Although this information would probably have been useful in order to better describe the response pattern, we do not believe that this fact influenced our results as Italian students are quite homogeneous from a socioeconomic point of view. Finally, it could be argued that the fact that only a few female medical students reported previous sexual activity could constitute a limitation in the generalization of the results, because these students did not have the opportunity to test their knowledge and attitudes. In our opinion, this evidence does not necessarily constitute a bias because we rather believe that this could indicate a higher risk perception in female medical students.

Table 1. Main differences on the knowledge, beliefs, and sexual behaviour between medical and non medical female students.

Variable	Medical students	Students of other disciplines	χ^2	P
Meaning of a positive serological test	82.1%	71.7%	7.897	0.005
Transmission of the infection	62.8%	44.6%	17.958	0.000
How to have an HIV test	82.5%	72.8%	6.962	0.008
Awareness of being at risk of HIV	70.0%	59.2%	6.571	0.010
Have already had intercourse	46.0%	75.0%	47.838	0.000
Use of the condom*	54.6%	42.1%	8.266	0.004

* Amongst who have already had intercourse



Giblin [18] suggested that it is easier to recruit and select individuals who already possess the skills and personal characteristics required for the program than it is to train them. Our data shows that female medical students not only have greater and more accurate knowledge about HIV infection than their peers, regardless of their university education, but are also more cautious in their sexual behaviour. Obviously, our findings do not imply that female medical students have better abilities to transmit information about HIV and other sexually transmitted infections. Thus, training for female medical students as peer educators needs to be aimed at developing skills in presenting and communicating information, and at increasing their social status as educators. In terms of maintaining female medical students' interest in healthy lifestyles, the answer seems straightforward. Issues of preventive health need to be stressed regularly throughout the 6-year curriculum in a way that is clinically relevant and interactive. Such topics do not belong to a sterile

“epidemiology” or “health services” course. Rather, issues of preventive medicine need to take centre stage and to be incorporated into the mainstream curriculum and be taught by faculty whom the students see as credible clinicians who are key role models and opinion leaders.

Conclusions

Our data leads to the hypothesis that the involvement of female medical students in developing and providing safe sex education may be an important and effective way of better enhancing young people's knowledge, attitude and behaviour towards the prevention of HIV and other sexually transmitted infections. Our hope is that these results will stimulate an ongoing dialogue among educators, deans, and administrators that will lead to the provision of training, support and supervision for peer educators in medical education, because basic training provides the foundation on which more complex knowledge can be built upon over time.

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Appendix 1. Questionnaire administered for the survey.

- 1. Meaning of the acronym "AIDS"*
- 2. Knowledge of AIDS etiology*
- 3. Knowledge of AIDS etiopathogenesis*
- 4. Meaning of HIV serological positivity*
- 5. Believing that the infection is without symptoms for several years*
- 6. Meaning of "window period"*
- 7. Believing that AIDS is related to risky behaviour*
- 8. Behaviors considered at risk for HIV infection*
- 9. Believing that the infection can be transmitted also when symptoms are not present*
- 10. Believing that the infection can be transmitted also through kissing on the mouth*
- 11. Believing that unsafe sex is particularly dangerous for HIV infection*
- 12. Believing that promiscuous sexual intercourse increases the risk of HIV infection*
- 13. Believing that sexual transmitted diseases increase the risk of HIV infection*
- 14. Believing that persons who do not have sexual intercourse are not at risk of HIV infection*
- 15. Believing that the use of condom is a sufficient protection against HIV infection*
- 16. Believing that the birth control pill is a sufficient protection against HIV infection*
- 17. How it is possible to have an HIV test*
- 18. Awareness of being at risk of HIV as anybody else*
- 19. Awareness of risks due to promiscuous sexual intercourse*
- 20. Awareness of the importance of being a faithful partner*
- 21. Trust in medical practitioners*
- 22. Where it is possible to have an HIV test*
- 23. Awareness of the confidentiality of the HIV test*
- 24. Have already met persons with HIV infection*
- 25. Have continue to go about with persons with HIV infection*
- 26. Had already had sexual intercourse*
- 27. Number of partners*
- 28. Use of condom among who had already had sexual intercourses*
- 29. Have already had an HIV test*
- 30. Sources of information about HIV infection*