

# Investigate the sexual habits of young people: a cross-sectional study among nursing students of the University of Palermo

Sandro Provenzano<sup>1</sup>, Omar Enzo Santangelo<sup>1</sup>, Antonio Terranova<sup>1</sup>, Giuseppe D'anna<sup>2</sup>, Dimple Grigis<sup>3</sup>, Alberto Firenze<sup>1</sup>

<sup>1</sup>Department of Health Promotion, Mother and Child Care, Internal Medicine and Medical Specialties "G. D'Alessandro", University of Palermo, Palermo, Italy; <sup>2</sup>General Directorate of the University Hospital "P. Giaccone" Hospital, Nursing Office, Palermo, Italy; <sup>3</sup>University of Bergamo, Bergamo, Italy

**Abstract.** *Introduction:* Sexually transmitted diseases are an emerging problem especially among young people, increasing the burden of disease in this population. The aim of the study was to evaluate sexual habits, sexual relations and knowledge of STIs among the students in the nursing science course of the University of Palermo. *Materials and Methods:* In April 2019, a survey was provided to students that investigate on: personal information and habits, knowledge of sexually transmitted diseases, anti-HPV vaccination. Multivariable logistic regression was performed, considering it as a dependent variable "Have you occasionally had unprotected sex (without a condom)? Yes", in order to evaluate the role of the variables of the questionnaire. Results are expressed as adjusted Odds Ratio (aOR). *Results:* 405 students completed the questionnaire. The mean age of the sample is 21.65 years, 69.63% of the interviewees are women. The multivariable logistic regression shows that the risk of having occasional unprotected sex (without condom) is significantly associated with "Do you permanently have unprotected sex (without a condom)? Yes" (aOR 4.46); "Have you ever received information on sex education and/or sexually transmitted diseases? No" (aOR 6.02); "Age Class <22 years old (aOR 2.03); "Number of sexual partners: As the unit increase" (aOR 1.18). *Conclusions:* Too many young people receive confusing and conflicting information about relationships and sex, as they make the transition from childhood to adulthood. Nurses play an important role in promoting public health. The study showed that young students are not still enough sensitized on sexually transmitted infections and preconception care. ([www.actabiomedica.it](http://www.actabiomedica.it))

**Key words:** nursing students, sex, Sicily, unsafe sex, sexually transmitted diseases, sexual behavior, questionnaire

## Introduction

In the last few years, much attention has been focused on understanding casual sex, or hooking up, among college students. The new EURISPES (Institute of Political, Economic and Social Studies in English; Istituto di Studi Politici, Economici e Sociali in Italian) (1) research conducted on Italian people be-

tween 18 and 30 years shows that youth sexuality has changed a lot in recent years. 6 boys out of 10 have casual sex with often different partners. The 39.9% of respondents always use contraception, 23.8% never or rarely use them. Sexual activities among the younger are now quite precocious, and boys in particular thought that they have not get all the information they needed (2). The research showed that men and women who

learned about sexual matters at school experienced first sexual intercourse at a later age than those who got their information from other sources such as friends or the media (2). In an article published in the *Journal of Sex Research*, a group of American researchers investigated the factors and circumstances that drive young university students (18–21 years of age) to casual sex (3). A first interesting fact that emerges from the research is that casual sex is not at all an infrequent experience, but rather concerns over half of the sexually active boys involved in the research. Casual sex, however, all too often takes on a negative connotation: in most studies on the subject it is hypothesized that the increase in sporadic sexual relations is one of the direct causes of the deterioration of psychological health (3–4) in people and may, above all, have as a direct consequence the increasing increase in sexually transmitted diseases (5). This last hypothesis is corroborated by the fact that during occasional relationships, a large proportion of young people do not take precautions or, if they use contraception, they do not use condoms (5,6). The non-use of condoms is justified for economic reasons (condoms cost from 6 to 12 euros per pack) but also “practical”: the condom for young people reduces sensitivity and sexual pleasure, and also the transgression and the adrenaline rush of risk take on an important meaning in sexuality (6). A number of studies have demonstrated that high levels of stress (7,8) and alcohol abuse (9,10) can be an extra risk factor for the implementation of sexual misconduct. The history of sexually transmitted infections (STIs) and their associated control efforts in Europe during the 19th and 20th centuries have been well documented (11). Nurses have been involved in the management of STIs and their role has varied from that of the technician to one in which they are able to provide first line. It appears that nurses have often been called upon in times of crisis and need—their role often evolving only through demand for services and personnel. Barriers to developing the role of the nurse continue to exist as we move into the 21st century. The role of the nurse has evolved over the past 150 years and this suggests how past lessons can help enhance the contribution nurses will make to the future of STI management and control. Progress in the role of the nurse has often corresponded with changing epidemiology of STIs.

## Objectives

The aim of the study was to evaluate sexual habits, sexual relations and knowledge of sexually transmitted infections (STIs) among the students in the nursing science course of University of Palermo.

## Materials and methods

### *Study design*

It's a cross-sectional study. Simple random stratified sampling without replacement was performed. This study was approved by the Ethical Committee of the University Hospital “P. Giaccone” of Palermo, Minutes No. 02/2019 (16. Studio MST3) of February 18, 2019.

### *Participants*

In the first week of April 2019 (1–5 April 2019), a survey was provided to all students who attend daily lessons in the nursing science course of University of Palermo of the three years of course, accompanied by informed consent, daily lessons are mandatory to take the exams. The questionnaire was administered to 100% of the students who attended the lessons during the study period (411 students). 100% of the first-year students who received the questionnaire agreed to complete it. 100% of the second-year students who received the questionnaire agreed to complete it. 93.55% of the third-year students who received the questionnaire agreed to complete it, 6 students refused to complete the questionnaire.

### *Instrument*

The questionnaire was created by the authors based on previous studies (5, 12), asking in addition if the interviewee has had unprotected sex and the reason why. The questions investigate on: personal information, sexual habits, sexual relations, knowledge of sexually transmitted diseases, the perception of the economic and health status, anti-HPV vaccination. The following question was also asked: “If you have

you occasionally had unprotected sex (without a condom), Why?”.

### *Data Analysis*

The variable “age” was subsequently dichotomized in < 22 years and  $\geq$  22 years because of the mean age of the sample was equal to 21.65 years old; the variable “Age at first sexual intercourse” was subsequently dichotomized in < 17 years and  $\geq$  17 years because of the mean age of the sample was equal to 16.75 years old. For all variables absolute and relative frequencies have been calculated. Multivariable logistic regression was performed, considering it as a dependent variable “Have you occasionally had unprotected sex (without a condom)? Yes”, in order to evaluate the role of the variables of the questionnaire. The statistical significance level chosen for all analyzes was 0.05. The results were analyzed using the STATA statistical software version 14 (13). Results are expressed as adjusted Odds Ratio (aOR) with 95% Confidence Intervals (95% CI).

### **Results**

405 students completed the questionnaire. The mean age of the sample is 21.65 years (Standard Deviation  $\pm$  3.24), 69.63% of the interviewees are women, 100% were born in Italy, 53.58% are engaged, 45.68% report to attend the first year of study, 32.84% attend the second year of study and 21.48% the third year. 40.25% were in-site students, 72.59% report a low perceived economic status, 15.06% report a low perceived health status, 94.81% are heterosexual, 75.31% declare to have had complete sex, 48.44% declare to have had occasional unprotected sex (without a condom), 54.81 defines its knowledge in relation to sexually transmitted diseases as poor (Table 1). 150 students answered the question “if you have occasionally had unprotected sex (without a condom), Why?” and for 45.33% of which the answer was “Because I use other contraceptive methods” (Table 2). Table 3 shows a multivariable logistic regression based on 336 observations. Adjusted Odds Ratio are presented. Each independent variable is adjusted for all the other independent variables. The analysis shows that the risk of having occasional

unprotected sex (without condom) is significantly associated with “Do you permanently have unprotected sex (without a condom)? Yes” (aOR 4.46, 95% CI 2.44-8.16); “Have you ever received information on sex education and/or sexually transmitted diseases? No” (aOR 6.02, 95% CI 1.32-27.54); “Age Class <22 years old (aOR 2.03, 95% CI 1.08-3.80); “Number of sexual partners: As the unit increase (aOR 1.18, 95% CI 1.07-1.31).

### **Discussion**

The control and management of sexuality have been a subject of concern in recent years (14). As they grow up, young people face important decisions about relationships, sexuality, and sexual behavior. The decisions they make can impact their health and well-being for the rest of their lives. Too many young people receive confusing and conflicting information about relationships and sex, as they make the transition from childhood to adulthood (15). Comprehensive sexuality education is a process of teaching and learning about the cognitive, emotional, physical and social aspects of sexuality. It aims to equip young people with knowledge, skills, attitudes and values that will empower them to realize their health, well-being and dignity; develop respectful social and sexual relationships; consider how their choices affect their own well-being and that of others; and understand and ensure the protection of their rights throughout their lives. The goals of the current study were to examine sexual habits, sexual relations and knowledge of STIs among the students in nurse at the University of Palermo. The population in study is represented by students of Health Professions, therefore in the field of Medicine, and probably better informed compared to students in other courses of the same age and in comparison with the population who do not attend university (5). In particular, nurses play an important role on promoting public health (16).

The results show that at lower age groups (Age Class <22 years old) correspond to higher risk classes for having had unprotected sex (aOR 2.03, 95% CI 1.08-3.80). As shown by previous authors’ studies it is essential to implement sexual education programs aimed at improving the knowledge in terms of STIs

**Table 1.** Description of the sample

Variables		N	%
Gender	Female	282	69.63
	Male	123	30.37
Contry of birth	Italy	405	100.00
	Other	0	0.00
Perceived economic status	Medium-high	111	27.41
	Low	294	72.59
Perceived health status	Medium-high	344	84.94
	Low	61	15.06
Are you engaged or single?	Engaged	217	53.58
	Single	188	46.42
Year of study	First	185	45.68
	Second	133	32.84
	Third	87	21.48
Are you a student off-site or in-site or commuter students?	In-site	163	40.25
	Commuter student	96	23.70
	Off-site	146	36.05
Sexual orientation	Heterosexual	384	94.81
	Homosexual	12	2.96
	Bisexual	9	2.22
Have you ever had sex?	No	52	12.84
	Yes, incomplete	48	11.85
	Yes, complete	305	75.31
Have you occasionally had unprotected sex (without a condom)?	No	182	51.56
	Yes	171	48.44
Do you permanently have unprotected sex (without a condom)?	No	228	67.46
	Yes	110	32.54
How would you define your knowledge of sexually transmitted diseases?	Good	183	45.19
	Poor	222	54.81
How would you define your knowledge about contraceptive methods?	Good	194	47.90
	Poor	211	52.10
Have you or have you ever had a sexually transmitted disease?	No	355	89.87
	Yes	40	10.13
Have you ever received information on sex education and/or sexually transmitted diseases?	Yes	385	95.06
	No	20	4.94

*(continued)*

**Table 1** (continued). Description of the sample

Do you think you are sufficiently informed to be able to avoid risks of infection from sexually transmitted diseases?	Yes	349	86.17
	No	56	13.83
Do you know the Human Papillomavirus (HPV) vaccination?	Yes, I'm vaccinated	190	46.91
	Yes, but I'm not vaccinated	197	48.64
	No	18	4.44
Do you know that men can also undergo HPV vaccination?	Yes	327	80.74
	No	78	19.26
Do you think that the sexual information provided by the institutions (school, health, ...) is:	Good	94	23.21
	Poor	311	76.79
Age Class	≥22 years old	152	37.53
	<22 years old	253	62.47
Age Class at first sexual intercourse	≥17 years old	186	52.69
	<17 years old	167	47.31
Number of sexual partners	3.33 (SD ± 3.72)*		
Age at first sexual intercourse	16.75 (SD ± 1.77)*		
Age	21.65 (SD ± 3.24)*		

\*mean (Standard Deviation)

**Table 2.** If you have you occasionally had unprotected sex (without a condom), Why?

	N	%
Because I use other contraceptive methods	68	45.33
For the occasional partner's choice	31	20.67
I think that is no use	10	6.67
Because we didn't have any	9	6.00
I was under the influence of drugs	8	5.33
Because I feel more pleasure without it	7	4.67
For personal choice	5	3.33
I'm embarrassed to buy condoms	4	2.67
Because I have a stable partner	3	2.00
I don't know	2	1.33
For economic reasons	2	1.33
For religious reasons	1	0.67

**Table 3.** Multivariable logistic regression. Adjusted Odds Ratio are presented. Each independent variable is adjusted for all the other independent variables. Based on 336 observations

Independent Variables		Have you occasionally had unprotected sex (without a condom)? Yes	
		aOR (95% CI)	<i>p</i> -value
Gender	Female	1	0.848
	Male	1.06 (0.57-1.96)	
Perceived economic status	Medium-high	1	0.847
	Low	1.06 (0.59-1.90)	
Perceived health status	Medium-high	1	0.818
	Low	0.92 (0.45-1.89)	
Are you engaged or single?	Engaged	1	0.539
	Single	1.78 (0.70-1.98)	
Year of study	First	1	0.842
	Second	1.06 (0.60-1.87)	
	Third	1.49 (0.71-3.11)	
Are you a student off-site or in-site or commuter students?	In-site	1	0.754
	Commuter student	0.90 (0.48-1.70)	
	Off-site	1.03 (0.58-1.83)	
Sexual orientation	Heterosexual	1	0.213
	Homosexual	0.40 (0.09-1.69)	
	Bisexual	0.32 (0.06-1.61)	
Do you permanently have unprotected sex (without a condom)?	No	1	<0.001
	Yes	4.46 (2.44-8.16)	
How would you define your knowledge of sexually transmitted diseases?	Good	1	0.927
	Poor	1.03 (0.57-1.85)	
How would you define your knowledge about contraceptive methods?	Good	1	0.942
	Poor	0.98 (0.54-1.77)	
Have you or have you ever had a sexually transmitted disease?	No	1	0.471
	Yes	0.75 (0.34-1.66)	
Have you ever received information on sex education and/or sexually transmitted diseases?	Yes	1	0.021
	No	6.02 (1.32-27.54)	
Do you think you are sufficiently informed to be able to avoid risks of infection from sexually transmitted diseases?	Yes	1	0.617
	No	0.81 (0.36-1.83)	

*(continued)*

**Table 3** (*continued*). Multivariable logistic regression. Adjusted Odds Ratio are presented. Each independent variable is adjusted for all the other independent variables. Based on 336 observations

Do you know the Human Papillomavirus (HPV) vaccination?	Yes, I'm vaccinated	1	
	Yes, but I'm not vaccinated	1.04 (0.60-1.80)	0.900
	No	0.26 (0.06-1.19)	0.082
Do you know that men can also undergo HPV vaccination?	Yes	1	
	No	1.63 (0.83-3.22)	0.157
Do you think that the sexual information provided by the institutions (school, health, ...) is:	Good	1	
	Poor	1.06 (0.59-1.89)	0.854
Age Class	≥22 years old	1	
	<22 years old	2.03 (1.08-3.80)	0.027
Age Class at first sexual intercourse	≥17 years old	1	
	<17 years old	1.39 (0.82-2.34)	0.222
Number of sexual partners	As the unit increase	1.18 (1.07-1.31)	0.001

and increase of sexual and reproductive health (12). To confirm this, we can report that in our study, 45.33% of the sample that occasionally had unprotected sex refers that use other contraceptive methods and 20.67% for the occasional partner's choice. These results highlight how there is still much to do in terms of information and prevention. Ultimately, the results show that the greatest risk classes for having unprotected sex belong to the part of the sample that has never received information about on sex education and/or sexually transmitted diseases (aOR 6.02, 95% CI 1.32-27.54).

## Conclusions

STIs constitute a large group of infectious diseases and are an important public health issue having a strong impact in the society.

This study showed that young students are not still enough sensitized on sexually transmitted infections and preconception care. With certainty, it can be said that the number of properly trained students on the risk of inappropriate sexual behavior must grow. Voluntary initiatives such as the 3 days "Marathon of Prevention" held in Sicily thanks to the help of the

Provincial Health Authority (ASP) n° 6 of Palermo, developed in the context of Hackathon Health Technology Assessment - Never Stop Learning, can be very effective in meeting basic needs young students who will work in the health system (17). In this context, the quality of information and communication, the ability to arouse interest, curiosity and the development of critical skills are crucial, especially among young people that represent a unique population on which the interest of public health researchers and policy is focused to promote sexual and reproductive health and level of knowledge.

## Limits

Results cannot be generalized to all undergraduate students of the Sicilian Region since the survey was carried out at the University of Palermo. Therefore, consider that the findings represented here in should be interpreted with a degree of caution in light of certain limits of the study. In particular, it is a cross-sectional study, several independent variables could not be evaluated for the cause and effect associations. Moreover, consider that this study provides a general

overview of the sexual behaviors of nurse students, which in any case, shall not be deemed as a complete and exhaustive overview and description of the sexual behaviors of all young people.

**Ethical approval:** This study was approved by the Ethical Committee of the University Hospital “P. Giaccone” of Palermo, Minutes No. 02/2019 (16. Studio MST3) of February 18, 2019.

**Conflict of interest:** Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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Correspondence:

Dr. Omar Enzo Santangelo

Department of Health Promotion, Mother and Child Care, Internal Medicine and Medical Specialties “G. D’Alessandro”, University of Palermo, Palermo, Italy

Via del Vespro, 133 - 90127 Palermo (PA), Italy

Tel. +390916553641

Fax +390916553697

E-mail: omarenzosantangelo@hotmail.it