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Short report about HPV: How unknown is it among teens?

Abstract

This work analyzed knowledge related to the infection by the human papillomavirus (HPV) in Portuguese adolescents, and identified the influence of demographic variables. Results showed that the majority had low level of knowledge. Boys and adolescents who reported not having had sex education at schools showed significantly less knowledge than girls and adolescents who reported having had sex education at school. Having had sex education at school increased knowledge about HPV. In terms of prevention, this study emphasises the need to teach about this issue, encourages HPV vaccination and regular screening for cervical cancer and other sexually transmitted infections (STIs) that are crucial for the promotion of healthy sexual behaviours.

Keywords: HPV, sexually transmitted infection, knowledge, adolescents, sexuality, prevention

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Introduction

Globally, cervical cancer is the fourth leading cause of death for women and is usually associated with infection by the human papillomavirus (HPV), which is the most sexually transmitted viral agent. The estimated risk of HPV infection is about 50-80% in both sexes. In 2012 528,000 new cases were diagnosed worldwide.[1] In addition, there is a high prevalence of infection by this agent in young people with sexual activity, constituting the group with the highest number of infected, reaching rates of 46% in women aged 20-30 years old.[1] Early initiation of genital sexual life, especially initiation within the first year since menarche occurred, increases the risk and persistence of infections and the risk of more severe damages because of the immaturity of the genital organs, and that finding justified the recent prescription of the vaccine to younger ages.[2] Portugal is the country of Western Europe with the highest incidence rate of cervical cancer. The presence of a malignant tumor associated with a virus in almost 100% of cases has led to the development of preventative vaccines against some subtypes of HPV.[1,3,4]

The goals of this article were

a. To analyze knowledge related to HPV in Portuguese adolescents, and

b. To identify the influence of gender, school year, having had sexual education in school and having had sexual intercourse on the knowledge of HPV transmission/prevention.

Methods

This study was based on data from the Health Behaviour in School-Aged Children (HBSC) Portuguese survey.[5] Collected data is used at a national and international level, using an internationally standardized methodological protocol.[6,7]

This study wave provided national representative data of 5050 Portuguese adolescents, randomly chosen. This study used a subset of 8th (middle school) (n=1594) and 10th graders (high school) (n=1900) to represent middle school and high school educational stages. The majority was female (middle school, 51.0%; high school, 55.7%) and their mean ages were respectively 13.8 and 15.9years old (standard deviation 0.8 for both). All ethical procedures were followed, and school and parental informed consent was obtained. Pupils' participation was voluntary and anonymous.

Measures

This study included issues related to socio-demographic characteristics (gender and school grade), identifying if the participant had ever had sexual education at school (Yes/No) and if the participant had ever had sexual intercourse (Yes/No), and issues that assessed knowledge regarding HPV transmission/prevention (constituted by 4 items). Young people were asked to respond to four statements about HPV transmission/prevention: 1. "condom protects against HPV"; 2. "HPV can cause cervical cancer"; 3."there is a HPV vaccine"; 4. "the HPV vaccine protects against cervical cancer"; items were rated on a three response options (Yes, No and I do not know). Only responses that showed correct information scored and so final scores ranged from 0 to 4, with high scores suggesting more positive knowledge/ more information.

Data analysis

Analyses and statistical procedures were carried out in the Statistical Package for Social Sciences program (SPSS, version 22.0 for Windows). Descriptive statistics were performed to characterize the sample. HPV knowledge was then compared between genders, school grade, students who reported having had and not having had sex education at school, and between those reporting having had and not having had sexual intercourse, using Chi-square (χ^2) and ANOVA tests. The level for statistical significance was set at $p<.05$. Only significant results were discussed.

Results

Knowledge regarding HPV transmission/prevention: the distribution of each item is shown in Table 1. The majority showed a low level of knowledge, responding incorrectly or saying they did

not know the answer. The mean total score in relation to knowledge about HPV was 1.94 (*SD*=1.50), with boys showing significantly less knowledge Table 1. The majority said that they had sex education at school in the last years (66%) and 21.8% reported having had sexual intercourse. The results showed that the students who have had sexual education showed significantly more knowledge than those who reported not having had sexual education Table 2.

Considering those that mentioned having had sexual education, results showed that girls who reported having had sex education presented more knowledge regarding HPV transmission/prevention than girls who did not have sex education. A significant variation was found between having/not having had sex education for the following items of knowledge - HPV can cause cervical cancer, there is a HPV vaccine and the HPV vaccine protects against cervical cancer Table 3.

It was carried out by stepwise multiple regression method in order to assess predictive factors of knowledge about HPV to the total sample. They were introduced as potential predictors, gender, grade, having had sexual education and having had sexual intercourse. The results obtained showed the existence of two independent predictive variables at the level of knowledge about HPV, which in its full explained 31% of the variance of the model. Gender was the first independent variable and it explained 14% of the model, having had sex education was the second independent variable explaining 17% of the model Table 4.

Table 3 Differences between having had sex education by gender and knowledge regarding HPV transmission/prevention of the Portuguese adolescents in 2010 (n = 3156)

	Having had sex education											
	Boy[1] (n=1434)				χ^2	*p*	**Girl[1] (n=1722)**				χ^2	*p*
	Yes (n=888)		**No (n=546)**				**Yes (n=1193)**		**No (n=529)**			
	n	**%**	**n**	**%**			**n**	**%**	**n**	**%**		
The condom protects against HPV infection					.300	n.s					4.260	n.s
Yes	423	49.0	265	50.3			608	52.2	245	48.2		
No	50	5.8	28	5.3			69	5.9	42	8.3		
Do not know	391	45.3	234	44.4			487	41.8	221	43.5		
HPV can cause cervical cancer					1.541	n.s					27.893	.000
Yes	330	38.4	185	35.2			**542**	**46.8**	194	38.0		
No	59	6.9	40	7.6			50	4.3	**53**	**10.4**		
Do not know	470	54.7	301	57.2			566	48.9	264	51.7		
Knowing about the existence of HPV vaccine					1.763	n.s					16.735	.000
Yes	311	36.2	172	32.8			**628**	**54.1**	225	44.1		
No	159	18.5	101	19.2			179	15.4	81	15.9		
Do not know	388	45.2	252	48.0			353	30.4	**204**	**40.0**		
The HPV vaccine protects against cervical cancer					1.325	n.s					6.824	.033
Yes	269	31.4	158	30.0			**515**	**44.5**	197	38.8		
No	42	4.9	33	6.3			31	2.7	22	4.3		
Do not know	545	63.7	335	63.7			611	52.8	289	56.9		

[1]The total numbers differ considering that some young people have not replied to some parameters.

n.s.= not significant/In bold – values that correspond to an adjusted residual≥ | 1.9 |

Table 4 Predictors of factors about knowledge regarding HPV

DV	**Steps**	**IV**	**R^2**	**R^2 ajusted**	**β**	**t**
Knowledge regarding HPV	1	Gender	-.114	.014	-.114	-6.118***
	2	Having had sex education at school	-.056	.017	-.056	-3.019**
% Variance explained				31.0%		

DV – dependent variable; IV – independent variable

Removed variables –school year and having had sexual intercourse

*p<.05;** p<.01***p<.001.

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Discussion

Results showed the majority of adolescents had a low level of knowledge, responding incorrectly or saying they did not know the answers. Boys and adolescents who reported not having had sex education at school showed significantly less knowledge than girls and adolescents who reported having had sex education at school.

When assessing the level of knowledge amongst all the participants, it was found that 58.2% of the respondents did not know that the HPV vaccine protects against virus that causes cervical cancer, 52.1% did not know that HPV can cause cervical cancer and 39.3% did not know that there is a vaccine to prevent HPV.

Boys in particular demonstrated a poor overall knowledge of the issues concerning HPV, 54.9% of boys did not know that HPV can cause cervical cancer and 46.1% did not know that there is a vaccine to prevent HPV. Specifically with regard to knowledge about HPV, results surfaced positive effects of sex education in schools especially on girls. Significant factors that affected the level of knowledge amongst all participants were gender and having had sexual education at school. Their overall lack of knowledge can discourage the use of barrier contraceptives, leading to an increase in the incidence of various STIs. Given the high prevalence of HPV[2] and the recent opportunity to intervene with a vaccine, these topics are of growing importance to the health of all teens, boys and girls.[8]

Despite a few limitations regarding the cross-sectional nature of the study design, this study provided novel data about knowledge toward HPV with nationally representative data of Portuguese adolescents.

Conclusion

In conclusion, results suggested that knowledge amongst the public, particularly in subgroups such as boys and those who haven't had sex education at school is poor. Furthermore, there are many misconceptions about the causes of cervical cancer which reinforces the need for post vaccination cervical screening and contraception. These results have significant implications for information provision and the targeting of future education programs.

Studies conducted recently by Matos[9] have suggested the need "to give a voice to young people", by including young people as active participants in all phases of the interventions: problem identification; planning, implementation, and evaluation. This is especially true regarding sexuality and sexual health in adolescence- perhaps adolescents know better what is really missing when they fail to take preventive measures and engage into sexual health compromising behaviours.

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Conflict of interest

The author declares no conflict of interest.

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