

Trends in Portuguese Adolescents' Sexual Behavior from 2002 to 2014: HBSC Portuguese Study

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Keywords

Adolescents · Sexual experience · Age of sexual initiation · Condom use · Pill use · Sexual intercourse under the influence of alcohol or drugs

Abstract

This study examined trends in adolescent sexual behaviors from 2002 to 2014 in Portugal. Data were collected using self-reported questionnaires from 8th and 10th graders in classrooms during 2002, 2006, 2010, and 2014. Overall, the prevalence of sexual intercourse, age of sexual initiation, pill use, and sexual intercourse under the influence of alcohol or drugs decreased in Portugal between 2002 and 2014, while condom use increased. Boys and 10th graders more frequently reported having ever had sexual intercourse, boys and 8th graders more frequently reported having had sexual intercourse under the influence of alcohol or drugs, girls and 10th graders more frequently reported having had their first sexual intercourse at 14 years or older (except in 2014, where boys and girls reported more frequently having initiated at 12–13 years), and girls and 10th graders reported more frequently having used condoms and the pill (except in 2014) at the last sexual intercourse. Eighth graders more

frequently reported having had their first sexual experience at 12–13 years (except in 2006).

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Comportamento sexual dos adolescentes portugueses entre 2002 e 2014: estudo de HBSC em português

Palavras chave

Adolescentes · Experiência sexual · Idade de iniciação sexual · Uso de preservativo · Uso da pílula · Relações sexuais sob a influência de álcool ou drogas

Resumo

Este estudo examinou as tendências dos comportamentos sexuais de adolescentes de 2002 a 2014 em Portugal. Os dados foram recolhidos usando questionários de autorrelato nos alunos de 8º e 10º anos de escolaridade, nas salas de aula durante 2002, 2006, 2010 e 2014. Em geral, a prevalência de relações sexuais, a idade de iniciação

sexual, o uso da pílula e as relações sexuais sob a influência de álcool ou drogas diminuiu em Portugal entre 2002 e 2014, enquanto o uso de preservativos aumentou. Os rapazes e os alunos do 10º ano referiram mais frequentemente terem tido relações sexuais, os rapazes e os alunos do 8º ano mencionara ter tido, mais frequentemente relações sexuais sob a influência de álcool ou drogas, as raparigas e os alunos do 10º ano relataram mais frequentemente terem tido sua primeira relação sexual aos 14 ou mais (exceto em 2014, onde rapazes e raparigas referiram mais frequentemente ter iniciado às 12–13), e as raparigas e os alunos do 10º ano relataram mais frequentemente ter usado preservativo e pílula (exceto em 2014) na última relação sexual. Os alunos do 8º ano referiram mais frequentemente terem tido sua primeira experiência sexual aos 12–13 (exceto em 2006).

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Introduction

Adolescents, unlike adults, may be more prone to engage in risky sexual behavior due to perceptions of personal invulnerability and their tendency to focus on the immediate, rather than long-term, consequences of their behavior [1–3]. The majority of older adolescents (aged 15 years or older) in Portugal are sexually active, yet many do not take appropriate precautions to prevent pregnancy or the spread of sexually transmitted infections (STIs) [3].

Adolescents routinely engage in behaviors that put their health at risk. Risky sexual behaviors are of particular concern to parents, teachers, and health professionals in that they can lead to serious consequences both for the adolescents involved and for any number of unseen partners. Parents, teachers, and health professionals are faced with 3 challenges: (1) how to understand this behavior, (2) how to identify risky sexual behavior in the adolescent, and (3) what to do about it.

Age of sexual initiation has been decreasing in several industrialized countries [1, 3, 4]. According to recent Health Behaviour in School-Aged Children (HBSC) surveys, most sexually active 15-year-olds reported having had their first sexual intercourse from 14 years of age upwards [5, 6]. Addressing sexual behavior among very young people is therefore of significant relevance to public health [7–9].

Sexual activity is commonly initiated during adolescence [1–3], but while generally accepted as a normative

part of the transition to adulthood, it can have negative consequences such as infection with HIV and other STIs, unwanted pregnancy, and abortion. Young people are at higher risk of related negative outcomes than adults, primarily due to their relative physical, emotional, and cognitive immaturity [10, 11], and tend to engage more frequently in risky behaviors such as sexual intercourse without a condom [2, 12, 13]. Recent data suggest that among adolescents in Western, Central, and Eastern Europe [1] who have had intercourse, up to 40% had not used condoms during their last sexual intercourse; thus, many sexually active adolescents remain at risk of infection by HIV and other STIs. Although there has been a recent decline in HIV infection among adolescents in industrialized countries, rates of other STIs have increased [1, 4, 14].

This paper aims to (1) describe trends in sexual experience, sexual initiation, condom and pill use at the last sexual intercourse, and sexual intercourse under the influence of alcohol or drugs among adolescents of the 8th and 10th grades from 2002 to 2014 in Portugal; and (2) describe variations in these trends over time in boys and girls and school grades (8th and 10th).

Methods

Data were collected through a self-administered questionnaire from the Portuguese sample of the HBSC study of 2002, 2006, 2010, and 2014 [15–16]. The study provided national representative data of 14,456 Portuguese adolescents, randomly chosen from those attending the 8th and 10th grades of high school and the opportunity to examine trends in sexual behavior. The sample included 52.8% girls and 47.2% boys, whose mean age was 14.96 years (SD = 1.30). The majority was of Portuguese nationality (94.1%); 54.5% attended the 8th grade and 45.5% the 10th grade (Table 1).

The sampling unit used in this survey was the class. The schools in the sample were randomly selected from the official national list of public schools. In each school, classes were randomly selected in order to meet the required number of students for each grade, according to the international research protocol.

This study was approved by a scientific committee, an ethical national committee, and the national commission for data protection and strictly followed all the guidelines for human rights protection.

In the questionnaire, which covered a wide range of questions about behaviors and lifestyles in adolescence, issues were selected that relate to sociodemographic characteristics and sexual behavior [17].

Measures

Sexual Behaviors

Experience of sexual intercourse was assessed by the question “Have you ever had sexual intercourse?” (Yes/No); age of first sexual intercourse by “How old were you when you had sexual inter-

Table 1. Sociodemographic characteristics of the total sample

	2002 (n = 3,762)	2006 (n = 3,331)	2010 (n = 3,494)	2014 (n = 3,869)	Total ¹ (n = 14,456)
Gender, n (%)					
Male	1,806 (48.0)	1,579 (47.4)	1,622 (46.4)	1,812 (46.8)	6,819 (47.2)
Female	1,956 (52.0)	1,752 (52.6)	1,872 (53.6)	2,057 (53.2)	7,637 (52.8)
Grade, n (%)					
8th	2,181 (58.0)	1,740 (52.2)	1,594 (45.6)	2,358 (60.9)	7,873 (54.5)
10th	1,581 (42.0)	1,591 (47.8)	1,900 (54.4)	1,511 (39.1)	6,583 (45.5)
Nationality, n (%)					
Portuguese	3,382 (93.3)	3,101 (94.1)	3,145 (94.2)	3,663 (94.8)	13,291 (94.1)
African or Brazilian	116 (3.2)	111 (3.4)	94 (2.8)	112 (2.9)	433 (3.1)
Other	127 (3.5)	82 (2.5)	101 (3.0)	88 (2.3)	398 (2.8)
Age (mean ± SD), years	15.12±1.35	15.07±1.34	14.94±1.30	14.74±1.18	14.96±1.30

¹ The total numbers differ considering that some participants did not reply to some variables.

course for the first time?" (11 or younger/12/13/14/15/16/17 or older; in the 2014 survey the option "17 or older" was withdrawn and the last option was "16 or older"). Responses were dichotomized into "11 or younger," "12–13 years," and "14 or older." Condom use, pill use, and having had sexual intercourse under the influence of alcohol or drugs were assessed by the following questions: "The last time you had sexual intercourse, did you or your partner use a condom?," "The last time you had sexual intercourse, did you or your partner use a pill?," and "Have you ever had sexual intercourse under the influence of alcohol or drugs?" (Yes/No). In the last survey (2014), the question about condom and pill use had 3 answer options – Yes/No/I do not know. Those who answered "I do not know" to either of the 2 items were coded as not having used a condom or the pill at the last intercourse, respectively.

Time

Time was included as a ratio variable reflecting the year of study with 2002 as baseline.

Statistical Analyses

Analyses and statistical procedures were carried out in the Statistical Package for Social Sciences program (version 22 for Windows). Overall, 14,456 participants completed structured self-reported questionnaires. The total numbers differed considering that some participants did not reply to some questions. Descriptive statistics were performed to characterize the sample and to examine sexual behaviors according to gender and grade. χ^2 analyses were used to examine sexual behaviors. Upward or downward trends were determined through the comparison of the module that corresponded to an adjusted residual $\geq |1.9|$. The level for statistical significance was set at $p < 0.001$.

Results

Differences between 2002, 2006, 2010, and 2014 for Questions about Sexual Behaviors

Table 2 shows the trends in sexual behaviors between 2002 and 2014. There was a statistically significant difference in the percentage of participants reporting ever having had sexual intercourse ($\chi^2(3) = 75.578$, $p \leq 0.001$). There was a significant decrease from 2002 to 2014.

Among those who were sexually active, regarding the age of first sexual intercourse of 14 years or older, an overall decrease was observed ($\chi^2(3) = 218.693$, $p \leq 0.001$), with rates ranging from 38.9% (2014) to 71.1% (2006). Moreover, according to the results of the last study, participants most frequently reported having had sexual intercourse for the first time at the age of 12–13 years.

Among those who were sexually active, overall, 88.3% reported that they or their partner had used a condom the last time they had engaged in sexual intercourse, which means that about 12% are currently at high risk. Considering the 4 cycles of the study, an increase was observed ($\chi^2(3) = 234.363$, $p \leq 0.001$), which was especially strong between 2002, 2006, and 2010, and a decrease was observed from 2010 to 2014.

Regarding those who were sexually active, overall, only 41.3% reported that they or their partner had used the pill the last time they had engaged in sexual intercourse. Considering the 4 cycles of the study, an increase was observed ($\chi^2(3) = 50.357$, $p \leq 0.001$), which was especially strong between 2006 and 2010, and a decrease was observed from 2010 to 2014.

Table 2. Differences between 2002, 2006, 2010, and 2014 for questions about sexual behaviors

	2002		2006		2010		2014		Total ¹		χ^2	<i>p</i>
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%		
SI											75.578	0.000
Yes	862	23.7	723	22.7	748	21.8	589	16.1	2,922	21.0		
No	2,772	76.3	2,464	77.3	2,688	78.2	3,067	83.9	10,991	83.9		
Participants who have had SI												
Age of first SI											218.693	0.000
≤11 years	143	17.2	68	9.7	54	7.4	44	9.3	309	11.3		
12–13 years	217	26.1	134	19.2	173	23.7	244	51.8	768	28.1		
≥14 years	473	56.8	497	71.1	504	68.9	183	38.9	1,657	60.6		
Condom use at last SI²												
Yes	553	92.6	577	94.1	554	95.2	402	70.4	2,086	88.3	234.363	0.000
No	44	7.4	36	5.9	28	4.8	169	7.2	277	11.7		
Pill use at last SI²												
Yes	118	40.0	156	47.1	183	53.5	174	31.0	631	41.3	50.357	0.000
No	177	60.0	146	52.9	159	46.5	387	69.0	898	58.7		
Having had SI under the influence of alcohol or drugs												
Yes	101	12.1	96	14.1	88	12.7	88	15.9	373	13.5	4.828	0.185
No	737	87.9	587	85.9	605	87.3	465	84.1	2,394	86.5		

Values in bold correspond to an adjusted residual ≥ 1.91 . SI, sexual intercourse. ¹ The total numbers differ considering that some participants did not reply to some variables. ² In the last survey in 2014, the question about condom and pill use had 3 answer options: Yes/No/I do not know. Those who answered “I do not know” to either of the 2 items were coded as not having used a condom or the pill at the last intercourse.

There was no statistically significant difference for having had sexual intercourse under the influence of alcohol or drugs ($\chi^2(3) = 4.828, p = 0.185$).

Differences between 2002, 2006, 2010, and 2014 and Gender for Questions about Sexual Behaviors

Table 3 shows the trends in sexual behaviors between 2002 and 2014 by gender. There was a statistically significant difference by gender between participants reporting having ever had sexual intercourse in the 4 cycles of the study, with boys reporting more frequently having had sexual intercourse than girls ($\chi^2(1) = 167.284, p \leq 0.001$; $\chi^2(1) = 35.333, p \leq 0.001$; $\chi^2(1) = 57.309, p \leq 0.001$; $\chi^2(1) = 89.416, p \leq 0.001$). In addition, results suggested that there was a significant decrease in the rate of boys who reported having had sexual intercourse from 2002 to 2014.

Among those who were sexually active, an overall increase was observed regarding age of first sexual intercourse between boys and girls, especially in 2002, 2006, and 2010 ($\chi^2(1) = 97.988, p \leq 0.001$; $\chi^2(1) = 45.690, p \leq 0.001$; $\chi^2(1) = 19.628, p \leq 0.001$), peaking in 2006, with

girls mentioning more frequently than boys to have had sexual intercourse at the age of 14 years or older. There was no statistically significant difference between gender and the age of first sexual intercourse in 2014. Nevertheless, results showed that both boys and girls more frequently reported having had their first sexual intercourse at the age of 12–13 years, particularly boys.

There was no statistically significant difference between boys and girls as for the use of a condom the last time they had engaged in sexual intercourse for the 4 cycles of the study and for the use of the pill in 3 cycles of the study (2002, 2010, and 2014). In 2006, girls reported more frequently having used the pill the last time they had engaged in sexual intercourse. Although not representing statistically significant differences, overall results showed that girls more often than boys reported having used a condom and the pill at the last sexual intercourse.

Regarding those who were sexually active, statistically significant differences were observed between boys and girls, which showed an increasing trend with boys reporting more often having had sexual intercourse under the influence of alcohol or drugs in the 4 cycles of the study

Table 3. Differences between 2002, 2006, 2010, and 2014 and gender for questions about sexual behaviors

	2002		2006		2010		2014		χ^2	P
	n	%	n	%	n	%	n	%		
SI	girls		boys		girls		boys		89.416	0.000
	n	%	n	%	n	%	n	%		
Yes	576	33.3	404	27.4	437	27.5	383	22.2	206	10.7
No	1,154	66.7	1,068	72.6	1,151	72.5	1,343	77.8	1,724	89.3
Participants who have had SI										
<i>Age of first SI</i>										
≤11 years	138	24.5	56	14.4	43	10.1	30	10.6	14	7.4
12–13 years	166	29.5	96	24.6	114	26.8	150	53.2	94	49.7
≥14 years	259	46.0	238	61.0	268	63.1	102	36.2	81	42.9
<i>Condom use at last SI¹</i>										
Yes	365	92.2	321	93.6	302	94.1	257	69.1	145	72.9
No	31	7.8	22	6.4	19	5.9	115	30.9	54	9.5
<i>Pill use at last SI²</i>										
Yes	61	37.9	53	36.8	80	48.2	114	31.1	60	30.8
No	100	62.1	91	63.2	86	51.8	252	68.9	135	69.2
<i>Having had SI under the influence of alcohol or drugs</i>										
Yes	85	15.3	64	17.1	66	16.4	68	19.0	20	10.3
No	472	84.7	310	82.9	337	83.6	290	81.0	175	89.7

Values in bold correspond to an adjusted residual $\geq |1.9|$. SI, sexual intercourse. ¹The total numbers differ considering that some participants did not reply to some variables. ²In the last survey in 2014, the question about condom and pill use had 3 answer options: Yes/No/I do not know. Those who answered "I do not know" to either of the 2 items were coded as not having used a condom or the pill at the last intercourse.

Table 4. Differences between 2002, 2006, 2010, and 2014 and grade for questions about sexual behaviors

	2002			2006			2010			2014			χ^2	P
	n	%	10th	n	%	10th	n	%	10th	n	%	10th		
SI														
Yes	422	20.3	440	28.2	440	28.2	206	13.2	542	29.0	267	12.2	322	22.0
No	1,654	79.7	1,118	71.8	1,406	84.6	1,360	86.8	1,328	71.0	1,928	87.8	1,139	78.0
Participants who have had SI														
Age of first SI														
≤11 years	100	24.9	43	10.0	47	19.7	24	12.4	30	5.6	27	14.6	17	5.9
12–13 years	153	38.2	64	14.8	77	32.2	105	54.1	68	12.7	133	71.9	111	38.8
≥14 years	148	36.9	325	75.2	115	48.1	65	33.5	439	81.8	25	13.5	158	55.2
Condom use at last SI²														
Yes	259	90.2	294	94.8	194	91.1	142	94.0	412	95.6	171	66.3	231	73.8
No	28	9.8	16	5.2	19	8.9	9	6.0	19	4.4	87	33.7	82	26.2
Pill use at last SI²														
Yes	40	30.1	78	48.1	45	38.1	30	39.0	153	57.7	72	28.6	102	33.0
No	93	69.9	84	51.9	73	61.9	47	61.0	112	42.3	180	71.4	207	67.0
Having had SI under the influence of alcohol or drugs														
Yes	57	14.1	44	10.1	51	21.3	32	16.5	56	11.2	44	18.1	44	14.2
No	347	85.9	390	89.9	188	78.7	162	83.5	443	88.8	199	81.9	266	85.8

Values in bold correspond to an adjusted residual $\geq |1.9|$. SI, sexual intercourse. ¹The total numbers differ considering that some participants have not replied to some variables. ²In the last survey in 2014, the question about condom and pill use had 3 answer options: Yes/No/I do not know. Those who answered "I do not know" to either of the 2 items were coded as not having used a condom or the pill at the last intercourse.

($\chi^2(1) = 16.125, p \leq 0.001$; $\chi^2(1) = 6.394, p \leq 0.050$; $\chi^2(1) = 11.756, p \leq 0.001$; $\chi^2(1) = 7.203, p \leq 0.010$).

Differences between 2002, 2006, 2010, and 2014 and Grade for Questions about Sexual Behaviors

Table 4 shows the trends in sexual behaviors between 2002 and 2014 by grade. There was a statistically significant difference between 8th and 10th graders who reported having ever had sexual intercourse in the 4 cycles of the study, with the students of the 10th grade reporting more frequently having had sexual intercourse. In addition, the number of 8th graders who reported having ever had sexual intercourse decreased from 2002 to 2014 ($\chi^2(1) = 30.807, p \leq 0.001$; $\chi^2(1) = 105.032, p \leq 0.001$; $\chi^2(1) = 125.397, p \leq 0.001$; $\chi^2(1) = 63.299, p \leq 0.001$); therefore, a decreasing trend is noticeable.

Among those who were sexually active, an overall increase was observed in age of first sexual intercourse among 10th graders who reported having had sexual intercourse at the age of 14 years or older, from 2002 to 2010, peaking in 2006; whereas in 2014, a decrease was noticeable ($\chi^2(1) = 124.476, p \leq 0.001$; $\chi^2(1) = 96.098, p \leq 0.001$; $\chi^2(1) = 160.508, p \leq 0.001$; $\chi^2(1) = 83.080, p \leq 0.001$). There were statistically significant differences for 3 cycles of the study (2002, 2006, and 2014) between 8th and 10th graders reporting the use of a condom the last time they had engaged in sexual intercourse, with the students of the 10th grade reporting using a condom more frequently than the students of the 8th grade ($\chi^2(1) = 4.609, p \leq 0.050$; $\chi^2(1) = 5.484, p \leq 0.050$; $\chi^2(1) = 3.841, p \leq 0.050$). There was no statistically significant difference between grade and the use of a condom the last time participants had engaged in sexual intercourse in 2010.

Among those who were sexually active, statistically significant differences between grades were observed regarding the use of the pill at the last sexual intercourse for 3 cycles of the study (2002, 2006, and 2010), with the students of the 10th grade reporting an overall increase in comparison to the students of the 8th grade ($\chi^2(1) = 9.940, p \leq 0.010$; $\chi^2(1) = 5.953, p \leq 0.050$; $\chi^2(1) = 8.454, p \leq 0.010$). There was no statistically significant difference between grades and the use of the pill at the last sexual intercourse in 2014. In 2014, both 8th and 10th graders' pill use at the last sexual intercourse decreased.

Regarding those who were sexually active and reported having had sexual intercourse under the influence of alcohol or drugs, statistically significant differences were observed between grades only in 2006, with the students of the 8th grade reporting to have had sexual intercourse under the influence of alcohol or drugs more frequently

than the students of the 10th grade ($\chi^2(1) = 16.144, p \leq 0.001$). There were no statistically significant differences for having had sexual intercourse under the influence of alcohol or drugs between grades in 2002, 2010, and 2014. It was also noticeable that both 8th and 10th graders reported more frequently having had sexual intercourse under the influence of alcohol or drugs in 2014.

Discussion

The goal of this study was to document recent trends in preventive sexual behaviors in Portuguese adolescents and assessing whether they have changed and how they have changed from 2002 to 2014.

Comparing the data from the 2002, 2006, 2010, and 2014 surveys, results showed an increasing trend regarding the percentage of participants reporting their first sexual intercourse at 14 years or older (except in 2014) and condom use at the last sexual intercourse (except in 2014) as well as a stabilized trend concerning having had sexual intercourse, pill use at the last intercourse (except in 2014), and having had intercourse under the influence of alcohol or drugs.

Overall, in terms of differences between gender and grade, results showed that boys and older adolescents (10th graders) more often stated having had sexual intercourse. Girls and 8th graders more often reported having had their first sexual intercourse at 14 years or older, and 10th graders more often reported having used a condom and/or the pill during their last sexual intercourse. Condom use among sexually active adolescents has been increasing over the same period, especially so among girls.

In terms of the latest survey, specifically, on the one hand, there was an improvement in sexual reproductive health because some preventive behaviors have either increased (having ever had sexual intercourse) or stabilized (having had sexual intercourse under the influence of alcohol or drugs). On the other hand, some results suggested that some sexual risk behaviors may be increasing since the age of first sexual intercourse may be decreasing to 12–13 years, and condom and pill use at the last sexual intercourse may be decreasing.

Although these results may seem significant, they must be interpreted with caution. They may suggest an inversion of the trends from 2002 to 2010, but it is not possible to attest to it yet. It would be of great interest to compare these results with those of other HBSC countries. They may be the result of the reduction of investment that has been put into sexual education since the

2010 survey, when the Ministry of Education stopped putting schools under pressure concerning sexual education; they may be due to the latest scientific developments concerning AIDS; or they may reflect innumerable reasons not accounted for in this paper.

Regardless of potentially worrisome results, the authors must recall that the 2014 survey results are overall positive in terms of sexual health, suggesting that the majority of those who attend the 8th and 10th grades do have protective behaviors.

Nevertheless, in addition to overall protective results (including 2014), a significant minority of adolescents is involved in risk behaviors such as not having used a condom at the last sexual intercourse and having had sex at 13 years or younger, behaviors that can bring major negative outcomes individually and in terms of public health [3, 8, 9, 18].

Past analyses (from 2002 to 2010) suggested that formal sexual education in the school context promoted protective sexual behaviors [19]; therefore, it must be determined whether sexual education has been modified or interrupted. In other words, sexual education in the school context should be evaluated.

In 2013, an evaluation about the implementation of the law No. 60/2009 (6th August) [20] on sexual education in schools was carried out. The results showed that the law was being fulfilled and, in general, the schools or-

ganized an office that provided information and support for students and managed its functioning. In addition, school principals and teachers emphasized that schools were making a huge effort to implement the law. However, some of them questioned their ability to continue this process due to the economic restrictions at the time. Principals and teachers reported the need to “revitalize” this area, underlining the need to maintain the law and one annual “Call” from which the Ministry of Education and Science received proposals for funding schools for projects in the area of health promotion as well as teacher training [21].

It is crucial to understand if and why prevention strategies have not been as successful overall as they seemed to have been in the past.

In conclusion, it is important to highlight adolescents’ reported adoption of preventive behaviors, but also how these have been changing from 2002 to 2014, which demands for careful monitoring.

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