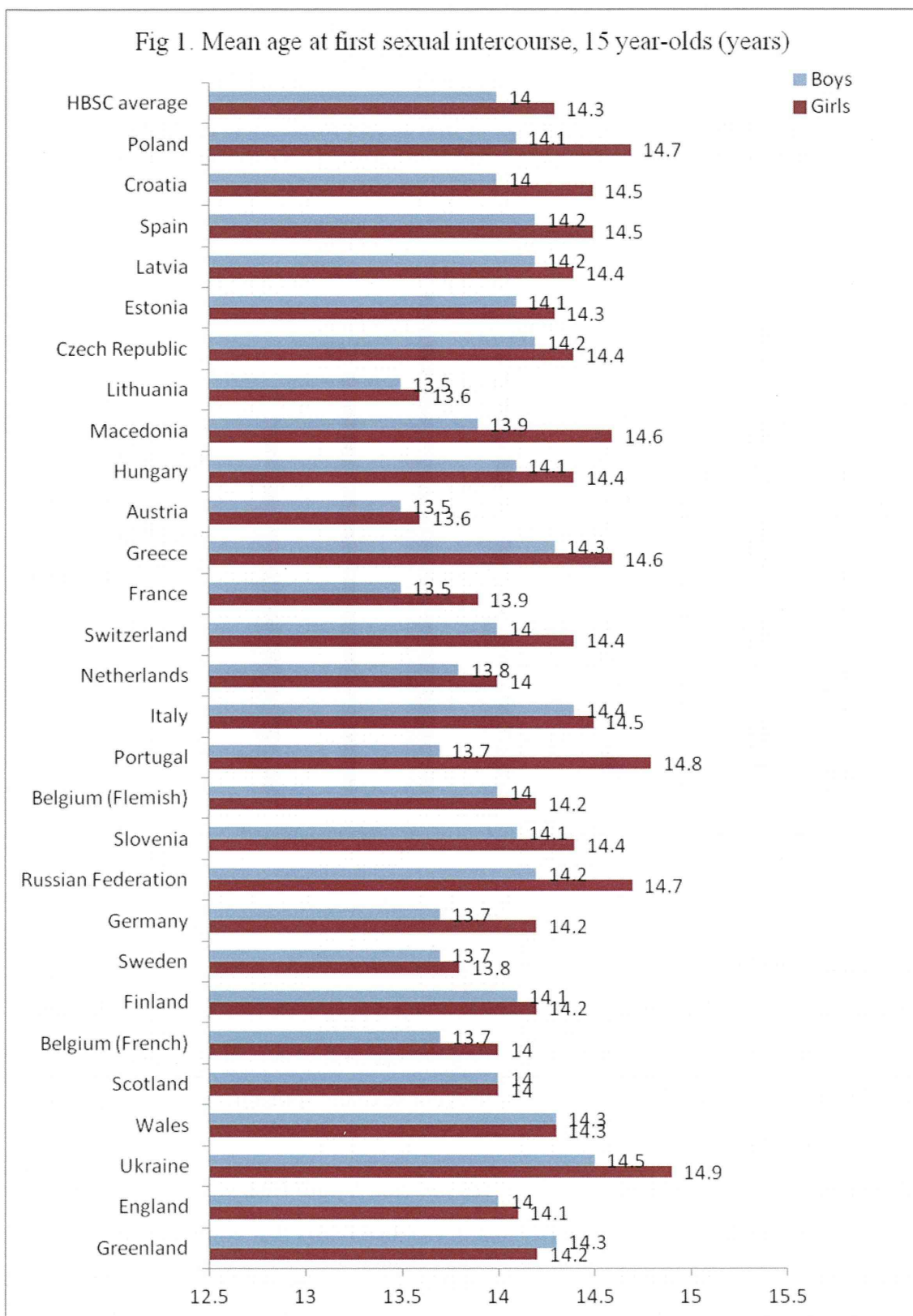
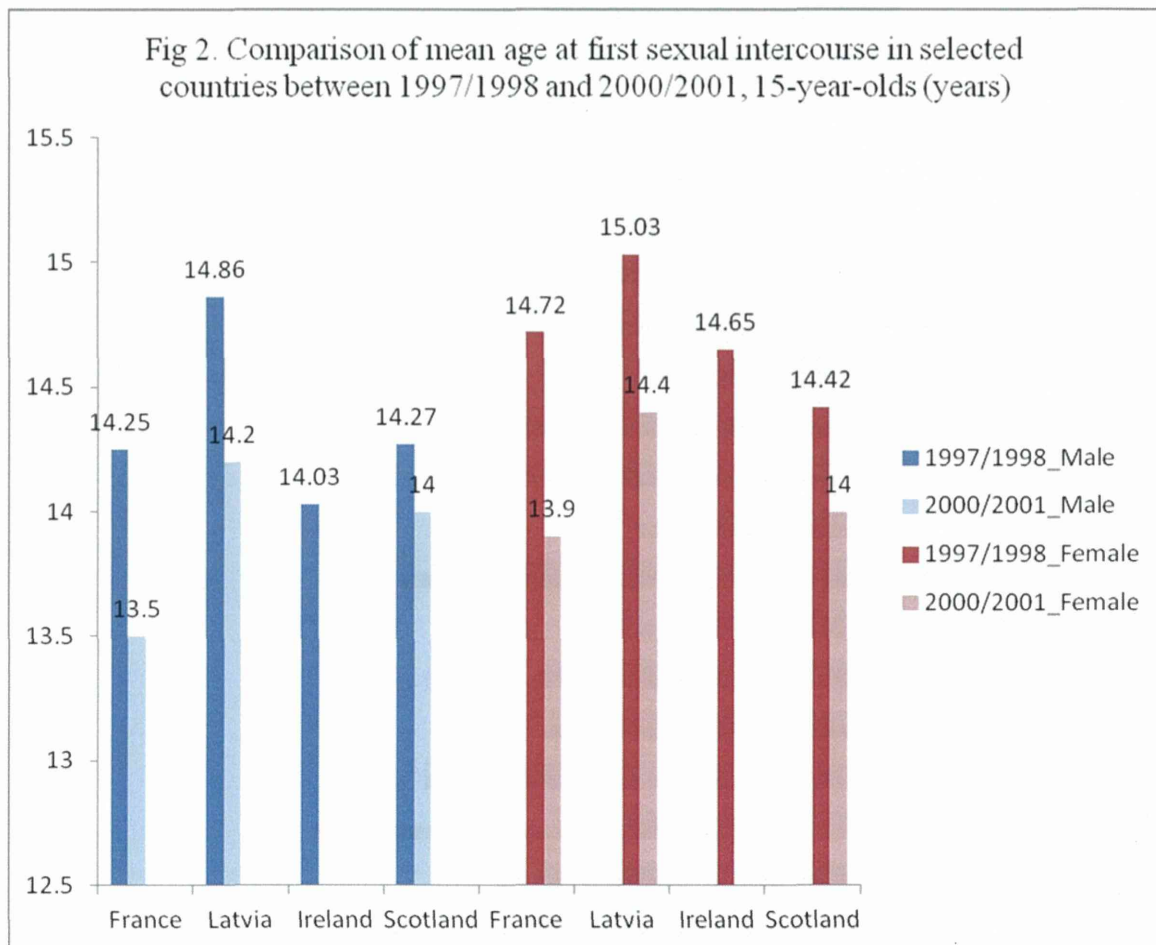


Fig 1. Mean age at first sexual intercourse, 15 year-olds (years)





2.1.2 United States

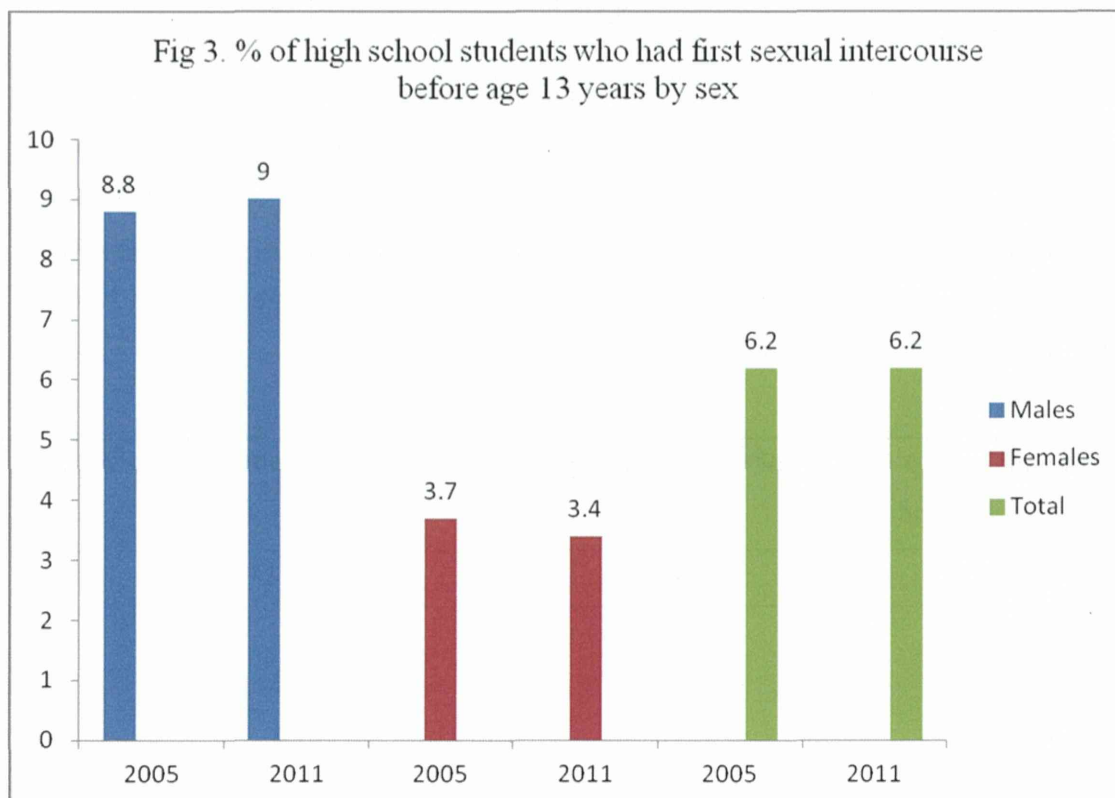
Research from the USA has linked sexual intercourse during early adolescence to future behavioral problems. For this reason, delaying the age at first sexual intercourse has been placed as one of the key strategies to prevent sexually transmitted infections and other related negative health outcomes [14].

Data presented in this subsection are from the national Youth Risk Behavior survey (YRBS), a survey that monitors priority health risk behaviors that contribute to the leading causes of death, disability, and social problems among youth and adults in the United States. The age at first sexual intercourse vary across countries in developed settings [14]. In the United States, the Youth Risk Behavior Surveillance (2011) among adolescents from grade 9-12, reported that nationwide, 6.2% of students had had sexual

intercourse for the first time before age 13 years. Overall, the prevalence of having had sexual intercourse before age 13 years was higher among male (9.0%) than female (3.4%) students. Among students nationwide, the prevalence of having had sexual intercourse for the first time before age 13 years decreased during 1991–2005 (10.2%–6.2%) and then did not change significantly during 2005–2011 (6.2%–6.2%). The prevalence of having had sexual intercourse for the first time before age 13 years also did not change significantly from 2009 (5.9%) to 2011 (6.2%) (Table 1 & Fig. 3)

Table 1. Percentage of high school students who had sexual first intercourse before age 13 years by sex and grade

	1991	2005	2011
Sex			
Males	-	8.8	9.0
Females	-	3.7	3.4
Total	10.2	6.2	6.2
Grade			
9	-	8.7	8.8
10	-	5.9	6.3
11	-	5.2	4.9
12	-	4.1	4.2



2.1.3 Canada

In the 2009/2010 Canadian Community Health Survey (CCHS) [15], 9% of 15- to 24-year olds reported that they first had sexual intercourse when they were younger than 15, and about 25% had had intercourse for the first time at age 15 or 16. These results were not significantly different from 2003 CCHS. However, in 2003, similar percentages of males and females reported having had intercourse before age 15, but in 2009/2010, this was less common among females (8%) than males (10%). (Table 2 & Fig.4)

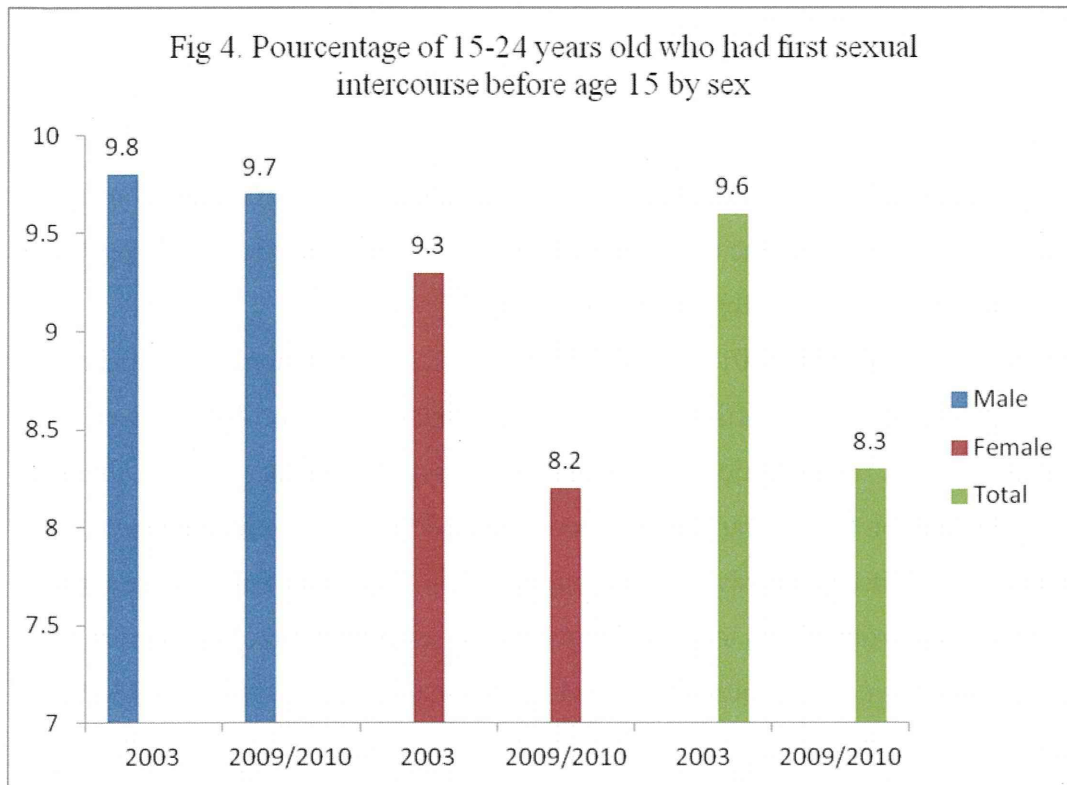


Table 2. Percentage of 15- to 24-year-olds who had first sexual intercourse before age 17 by sex.

Age at first intercourse	2003	2009/2010
Male		
Younger than 15	9.8	9.7
15 or 16	24.8	26.5
Female		
Younger than 15	9.3	8.2
15 or 16	24.8	24.8
Total		
Younger than 15	9.6	8.3
15 or 16	24.8	24.6

2.2 Experience of sexual intercourse

2.2.1 Europe

The European health Behavior in School-aged Children survey (HBSC) have shown substantial differences across the countries and regions in the proportion of 15 years old who reported having had sexually intercourse [5, 6, 13].

The comparison of the 2000/2001 and 2009/2010 HBSC survey indicates that there is an increasing trend in the proportion of 15-year old female who report having ever had sexual intercourse, at the exception of Switzerland, Portugal, Germany, Wales, Ukraine, and England which on the contrary have experienced a downward trend. However, the average trend is balanced towards an increasing trend for female. In females the average trend has increased from 20.2% to 23%. For males, the average trend of proportion of 15-year-olds who have ever experience sexual intercourse has decreased from 28.1% to 15%. However, a closer examination of trend within countries suggests a wide variability with some countries experiencing an increase and other a decrease in the proportion of sexual experience among male. (Fig 5 & Fig 6)

In the 2000/2001 HBSC survey [5], it was found that the percentages of 15-year-olds who had experienced sexual intercourse range from 15% in Poland to 75% in Greenland. In contrast in the 2009/2010 survey [6], it ranged from 16% in Poland to 58.5% in Greenland; highlighting a substantial decrease in this latter. In nine countries and regions, mainly in eastern and central Europe, plus Spain, less than a fifth of young people report ever having had sexual intercourse in the 2000/2001 HBSC survey [5]. At the upper end of the spectrum, in England, Greenland, Scotland, Ukraine and Wales, a third or more have had sexual intercourse. (Fig 5 & Fig 6)

In terms of the gender differences, the examination of 2000/2001 HBSC survey [5] shows that in many countries, were wide. Overall, in many more countries, the genders are almost equal in experienced sexual intercourse, girls were more likely than boys to have experienced sexual intercourse in 6 countries (England, Finland, Germany, Greenland, Scotland and Wales), and boys were twice as likely as girls to have experiences sexual intercourse in nearly one third of the countries. (Fig 5 & Fig 6)

In a much more detailed examination, positive responses among boys ranged from 18% in Spain to around 71% in Greenland. The Czech Republic, Estonia, Poland and Spain cluster at the low end with rates of about 20%. At the opposite end of the spectrum, in nine countries and regions, about a third or more of boys have had sexual intercourse. Among girls, positive responses ranged from 4% in the former Yugoslav Republic of Macedonia to 79% in Greenland. Rates are below 20% in 15 countries and regions but about 33% or more in 6 other countries (England, Finland, Germany, Greenland, Scotland and Wales). Interestingly, in the latter group, more girls than boys declared having had sexual intercourse. The largest differences are found in Germany and Wales. In eight countries, a more traditional pattern prevails with at least twice as many boys as girls having had sexual intercourse. Over 3 times as many boys as girls gave positive answers in Greece and Israel, and over 10 times as many in the former Yugoslav Republic of Macedonia.

Overall, in the 2009/2010 HBSC survey [6], boys were significantly more likely to report having had sexual intercourse in around half of the country. The greatest gender disparity was observed in eastern European countries, Armenia, and Greece. Higher prevalence among girls was reported in seven, mainly Scandinavian countries and the United Kingdom. Detailed insights indicate that the proportion of boys ranged from 15% in Slovakia to 46 % in Greenland, whereby Spain observed an increase from 18% to 71%. The Czech Republic, Estonia, Poland, Spain, Finland, Netherland, and Slovenia cluster at the low end with rates of about 20%. Among girls, positive responses ranged from 3% in Macedonia (MKD, the former Yugoslav Republic of Macedonia) to 71% in Greenland. Rates are below 20% in Romania, Ukraine, Greece, Russian Federation, Armenia, Latvia, Portugal, Ireland, Switzerland, Croatia, MKD, Poland, and Slovenia but about 33% or more in Greenland, Denmark, Wales, Scotland, England, Sweden, Iceland, Norway. In the latter group, apart from Denmark, more girls than boys declared having had sexual intercourse. The largest differences are found in Greenland, Armenia, and MKD. (Fig 5 & Fig 6)

Fig 5. 15-year-olds female who have had sexual intercourse

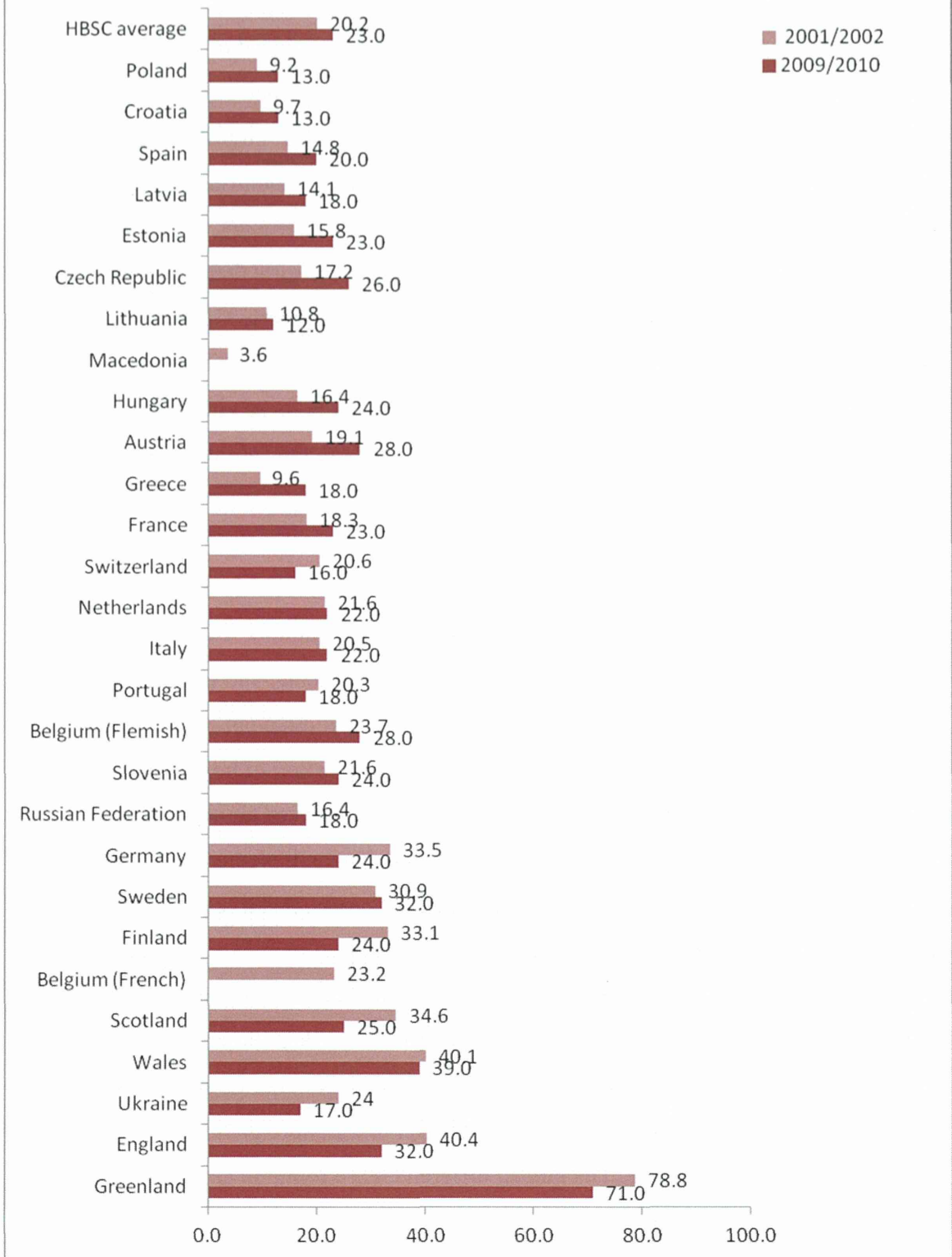
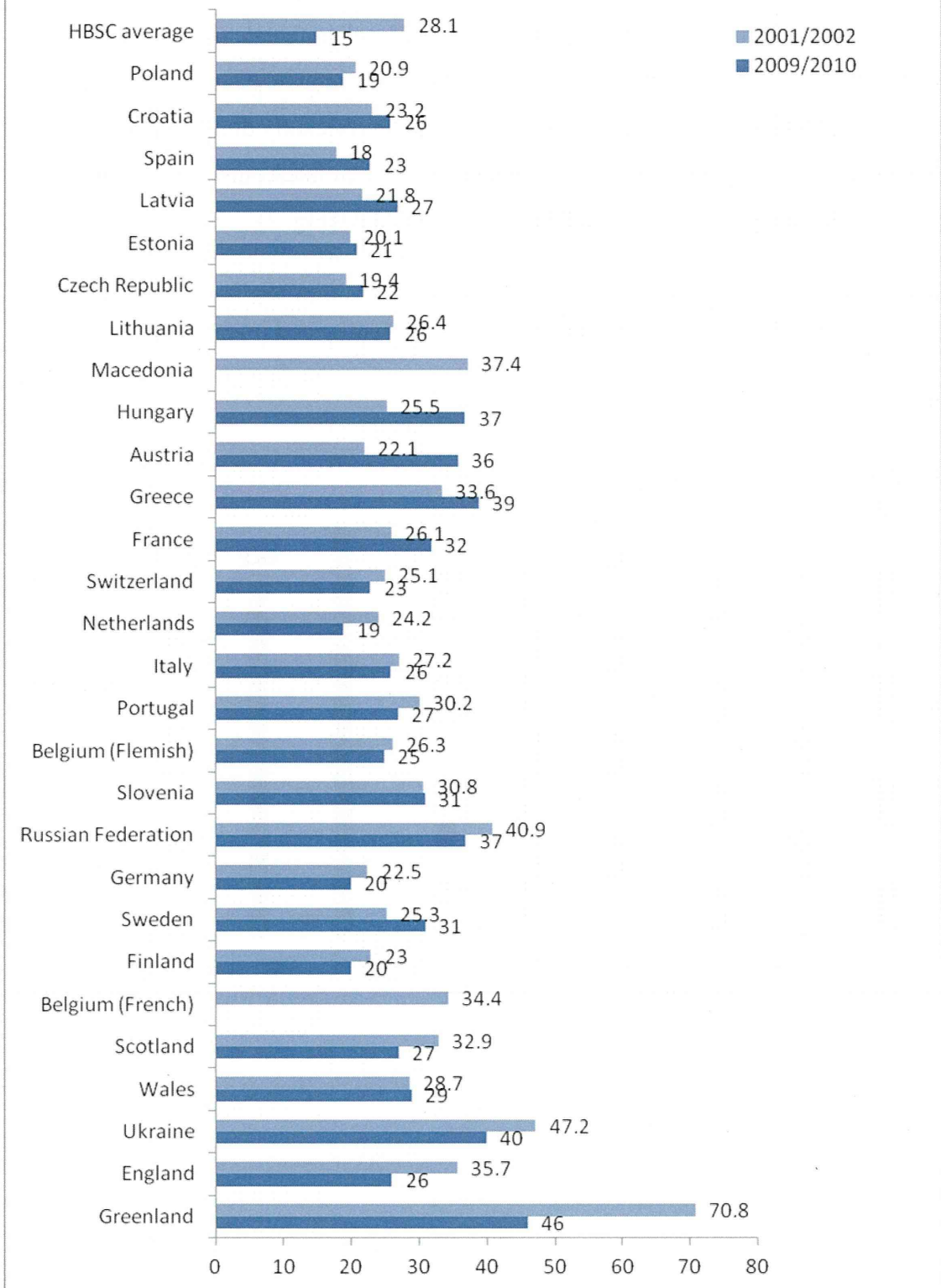


Fig 6. 15-year-olds male who have had sexual intercourse (%)



2.2.2. United States

According to the Youth Risk Behavior Surveillance (2011) [14], 47.4% of students had ever had sexual intercourse in the United States. Overall, the prevalence of having ever had sexual intercourse was higher among male (49.2%) than female (45.6%) students ; nationwide, the prevalence of having ever had sexual intercourse decreased during 1991–2001 (54.1%–45.6%) and then did not change significantly during 2001–2011 (45.6%–47.4%). The prevalence of having ever had sexual intercourse also did not change significantly from 2009 (46.0%) to 2011 (47.4%). (Fig. 7)

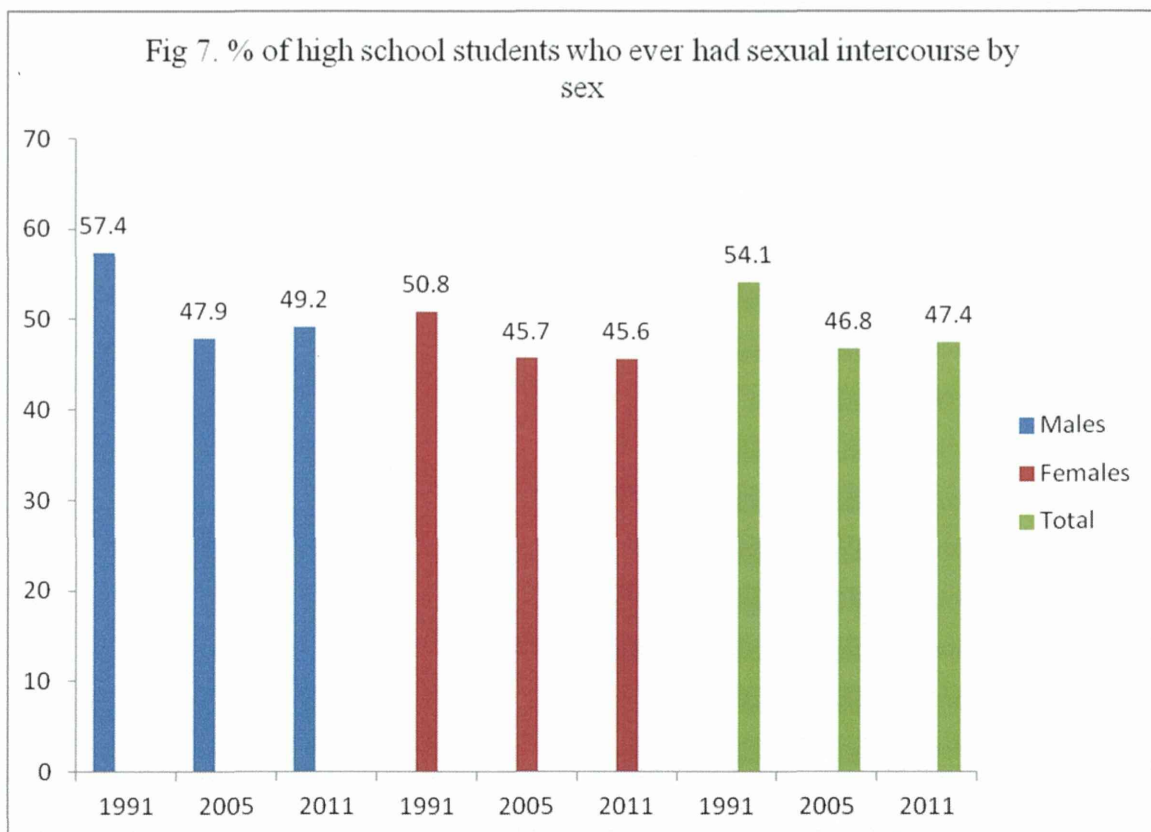


Table 3. Percentage of high school students who ever had sexual intercourse by sex and grade

	1991	2005	2011
Sex			
Males	57.4	47.9	49.2
Females	50.8	45.7	45.6
Total	54.1	46.8	47.4
Grade			
9	39.0	34.3	32.9
10	48.2	42.8	43.8
11	62.4	51.4	53.2
12	66.7	63.1	63.1

Gender differences in the pattern of sexual experience were also reported in the United States. A study examining sexual initiation among minority youth in the United States [16], and indicated that at baseline, 31% of males and 8 % of females reported having already had sexual intercourse, and these figures rose to 66% for male and 52% of female by 10th grade. Similarly for recent sexual intercourse, males at baseline were approximately 4 times more likely to report recent sexual intercourse while by grade 10th, this ratio had narrowed about 1.3 times (54% vs 42%). Another study from the United States examining the growth trajectories of sexual risk behaviors in adolescence and young adulthood have captured the gender differences in risky sexual behavior across time by showing that that boys exhibited more sexual risk behaviors in early years of high school than girls, but girls overtook the boys at the end of high school [17].

2.2.3 Canada

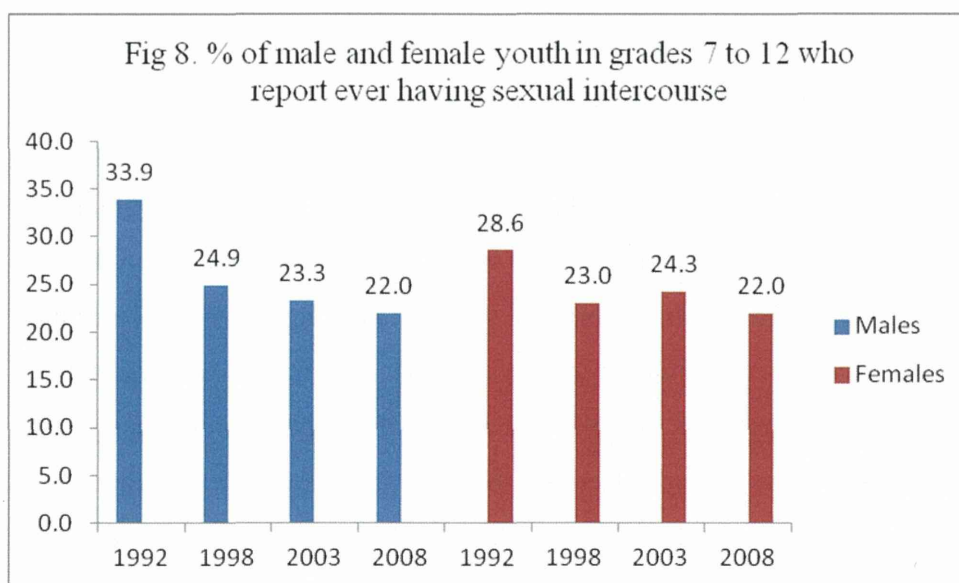
In 2009/2010 CCHS [15], 66% of 15- to 24-year-olds reported having had sexual intercourse at least once, which was not significantly different from 2003. The likelihood of being sexually active rose with age. At ages 15 to 17, 30% reported having had sex, compared with 68% of 18- to 19-year-olds and 86% of 20- to 24-year-olds. The

2003 figures were 30%, 68%, and 85%, respectively.

Table 4. % of Canadian youth aged 15-24 reporting ever having sexual intercourse

	2003	2009/2010
Age group		
15-17	30%	30%
18-19	68%	68%
20-24	85%	86%

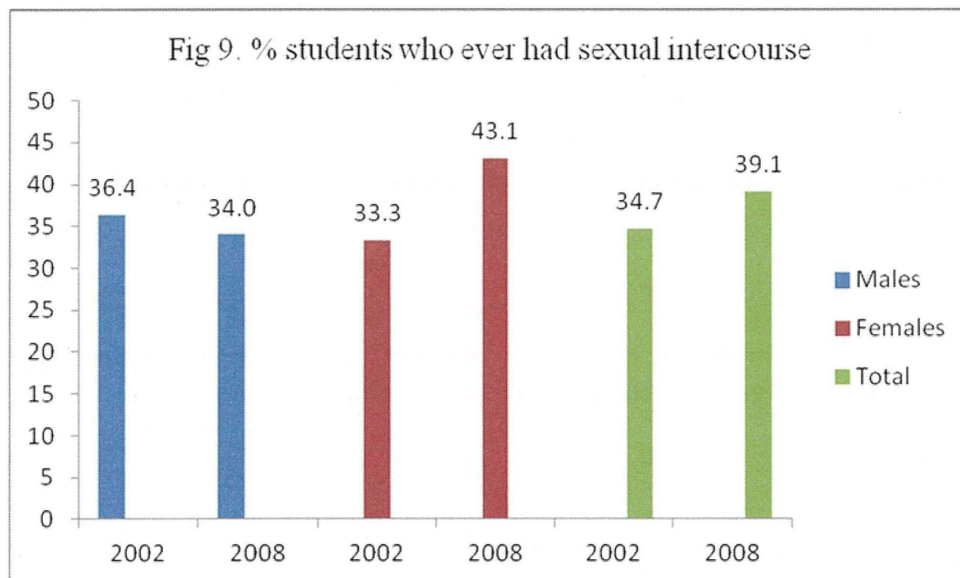
A study examining the trends in sexual health risk behaviors among adolescents in British Columbia [18] indicated that the proportion of adolescents of grade 7 to 12 who reported ever had sexual intercourse decreased over years from 33.9% in 1992 to 22.0% in 2008 among males and from 28.6% in 1992 to 22.0% in 2008 among females. (Fig. 8)



2.2.4 Australia

According to the 2008 National Survey of Australian Secondary Students [19], a greater proportion of young women compared to young men had experienced sexual intercourse although these differences were not statistically significant. Additionally, a

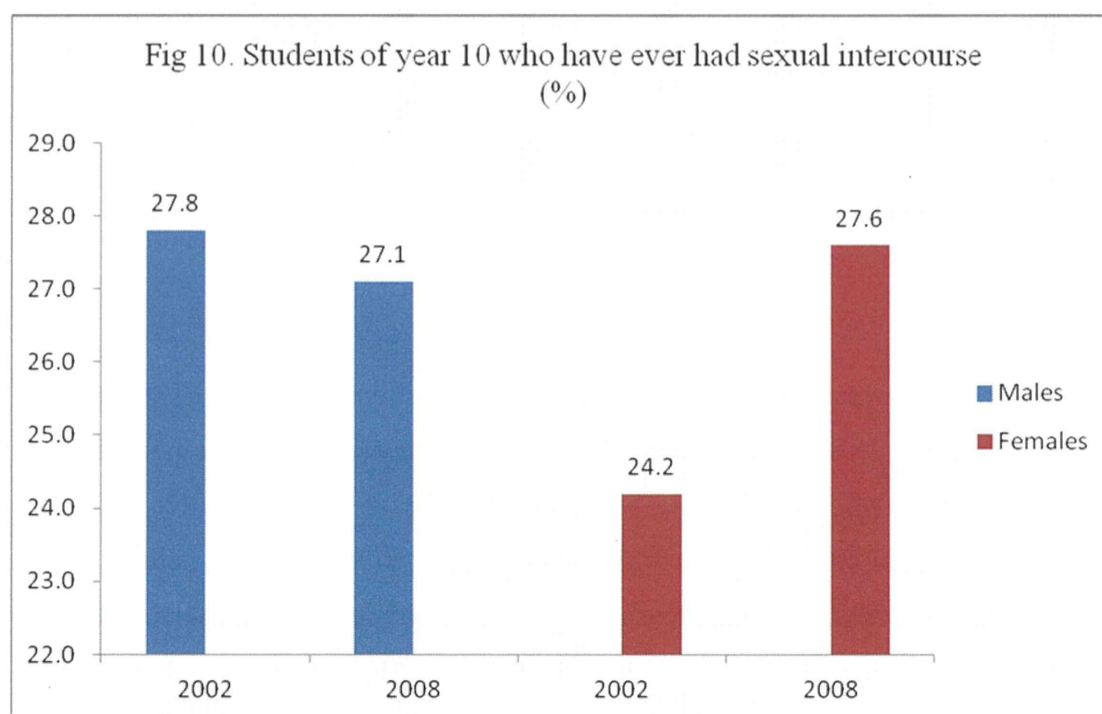
comparison with the 2002 National Survey indicate that a substantial increase in the proportion of females who have experience sexual intercourse from 33.3% to 43.1%. In contrast, the proportion of males who have experienced sexual intercourse did not relatively change. (Fig. 9)

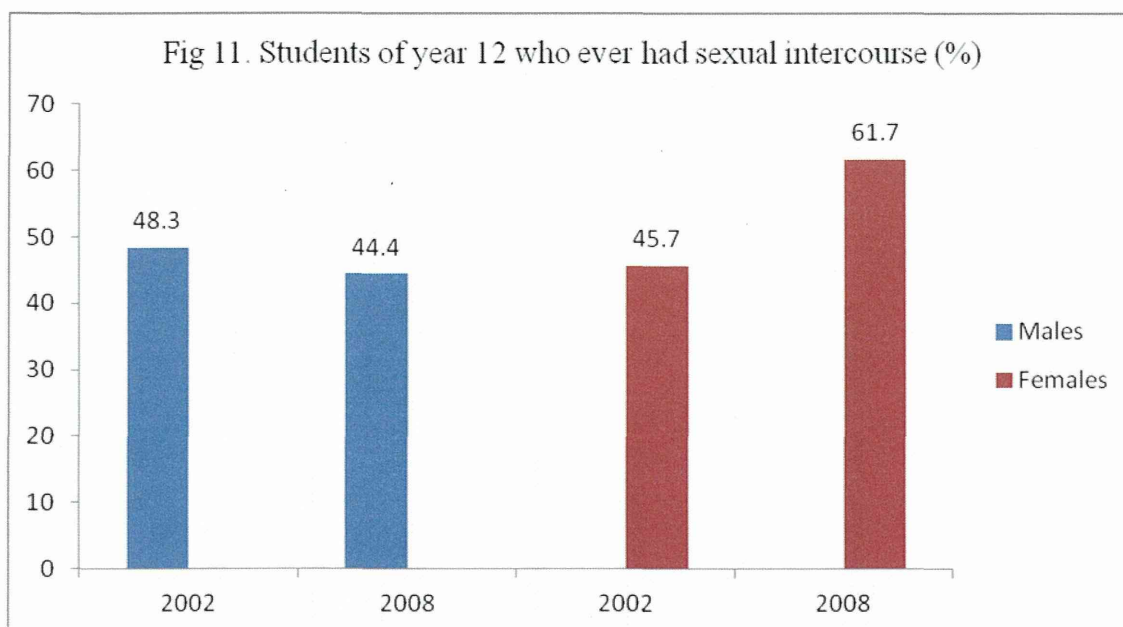


In terms of the grade year, the survey has revealed a downtrend in the age of sexual experience. In 2002, 25.8% of teenagers of year 10 were sexually active compared to 27.4% of year 2008, while 46.8% of teenagers of year 12 were sexually active compared to 56.1% in 2008. In terms of the gender differences, There is a notable increase in the proportion of female teenagers who ever had sexual intercourse. Of female teenagers of year 10, 25% were sexually active in 2002 and increased to 27% in 2008. For those of year 12, the proportion of sexually active increased from 46.8% in 2002 to 56.1% in 2008. In contrast, there is a downward in the proportion of sexually active among male teenagers; from 27.8% in 2002 to 27.1% in 2008 of secondary school students of year 10, and from 48.3 in 2002 to 44.4% in 2008 of those of year 12. (Table 5, Fig 10, & Fig 11)

Table 5. Students who have ever had sexual intercourse (%).

	Year 10		Year 12	
	2002	2008	2002	2008
Sex				
Males	27.8	27.1	48.3	44.4
Females	24.2	27.6	45.7	61.7
Total	25.8	27.4	46.8	56.1





2.3 Multiple sexual partnership/lifetime number of sexual partner

2.3.1 USA

In the United States, the YRBS (2011) [14] indicated that 15.3% of students had had sexual intercourse with four or more persons during their life. Overall, the prevalence of having had sexual intercourse with four or more persons was higher among male (17.8%) than female (12.6%) students. Among students nationwide, the prevalence of having had sexual intercourse with four or more persons during their life decreased during 1991–2001 (18.7%–14.2%) and then did not change significantly during 2001–2011 (14.2%–15.3%). The prevalence of having had sexual intercourse with four or more persons during their life also did not change significantly from 2009 (13.8%) to 2011 (15.3%). (Fig. 12)

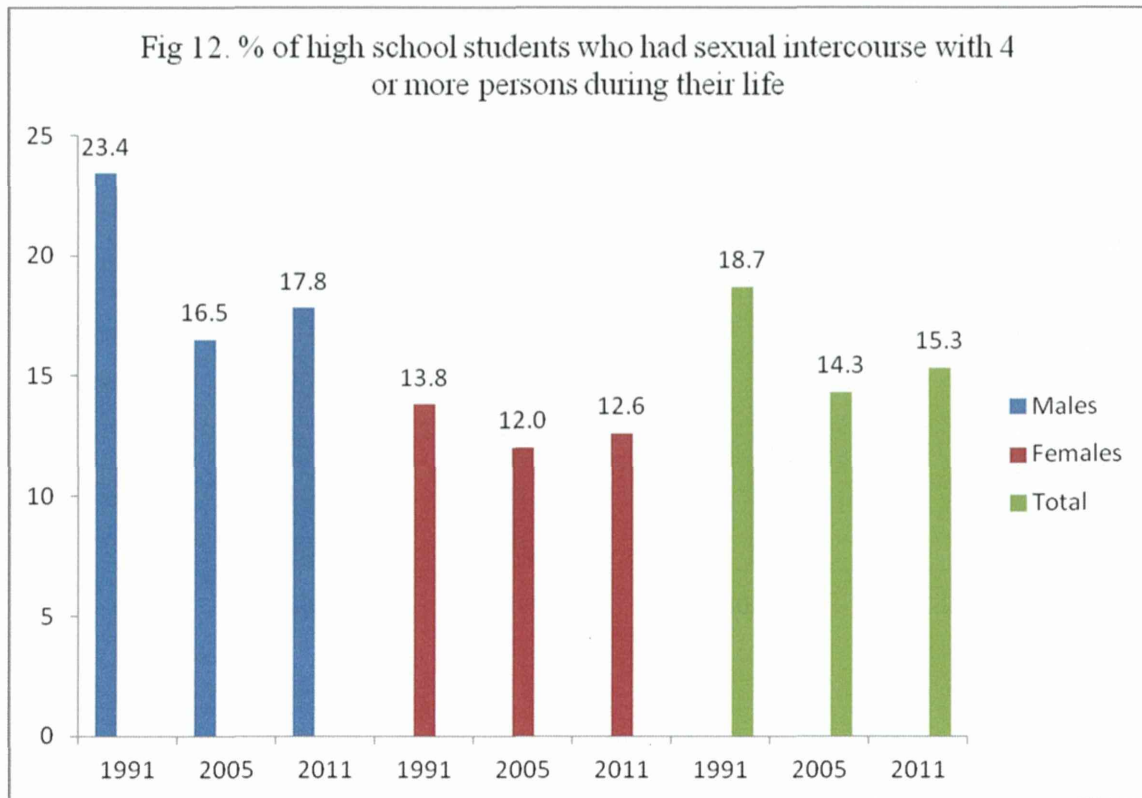


Table 6. Percentage of high school students who had sexual intercourse with four or more persons during their life.

	1991	2005	2011
Sex			
Males	23.4	16.5	17.8
Females	13.8	12.0	12.6
Total	18.7	14.3	15.3
Grade			
9	12.5	1.5	8.7
10	15.1	2.0	12.3
11	22.1	2.4	17.3
12	25.1	2.8	24.1

2.3.2 Finland

The proportion of those with 3 or more sex partners increased between 1996/1997 and 2000/2001 in boys and between 1996/1997 and 2004/2005 in girls, but there was no major changes in boys and girls after the period 2000/2001 and 2004/2005 respectively.

2.3.3 Australia

According to the 2008 National Survey of Australian Secondary Students [19], the vast majority of sexually active students (97%) had experienced sexual intercourse with at least one person in the year prior to being surveyed. Although most (52%) sexually active students reported having one sexual partner in the past year, a significant proportion (45%) of students reported having sex with more than one person. Although relatively more young men (37%) than young women (27%) reported having sex with 3 or more people in the previous year, the difference here was not statistically significant. Compared to the 2002 survey, National survey of Australian Secondary Students, there is a substantial increase in the proportion of males and females who reported 3 or more sexual partners in the previous year.(Table 7 & Fig. 13)

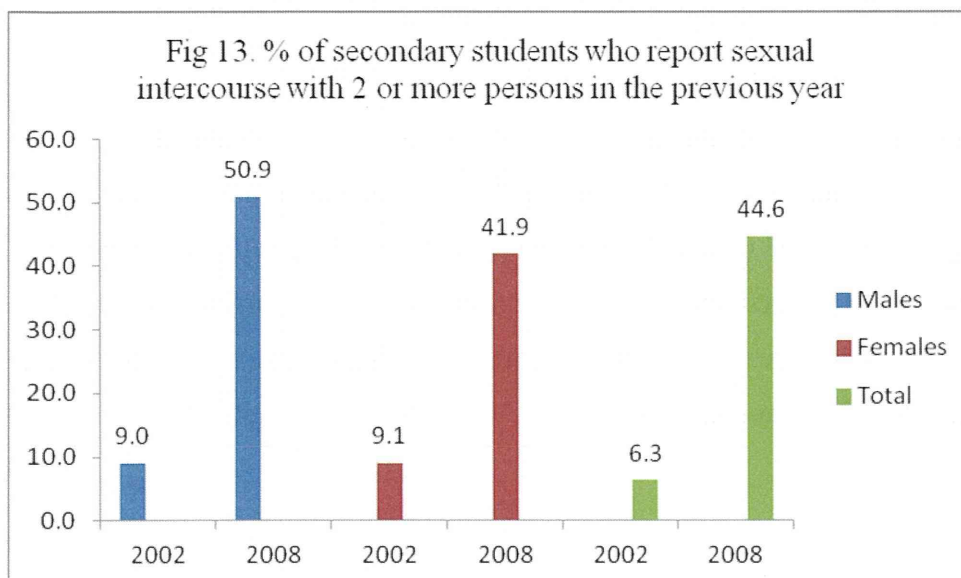


Table 7. Sexually active students reporting multiple sexual partners in the previous 12 months (%)

		Total	
		2002	2008
Males	I have not had sex in the past year	59.7	4.4
	1 person	31.3	44.7
	2 people	9.0	13.7
	3 or more people		37.2
Females	I have not had sex in the past year	46.1	2.9
	1 person	44.8	55.2
	2 people	9.1	15.4
	3 or more people		26.5
Total	I have not had sex in the past year	46.8	3.3
	1 person	46.9	52.0
	2 people	6.3	14.9
	3 or more people		29.7

2.3.4. Canada

In 2009/2010 survey [15], about one-third of sexually active 15- to 24-year-olds reported having had sexual intercourse with more than one partner in the previous 12 months, unchanged from 2003 (Table 2). A larger percentage of sexually active males than females had had intercourse with more than one partner: 39% compared with 25%. The percentage reporting more than one sexual partner was higher among 15- to 17-year olds than among 20- to 24-year-olds (35% versus 30%). (Fig 14 & Table 8)

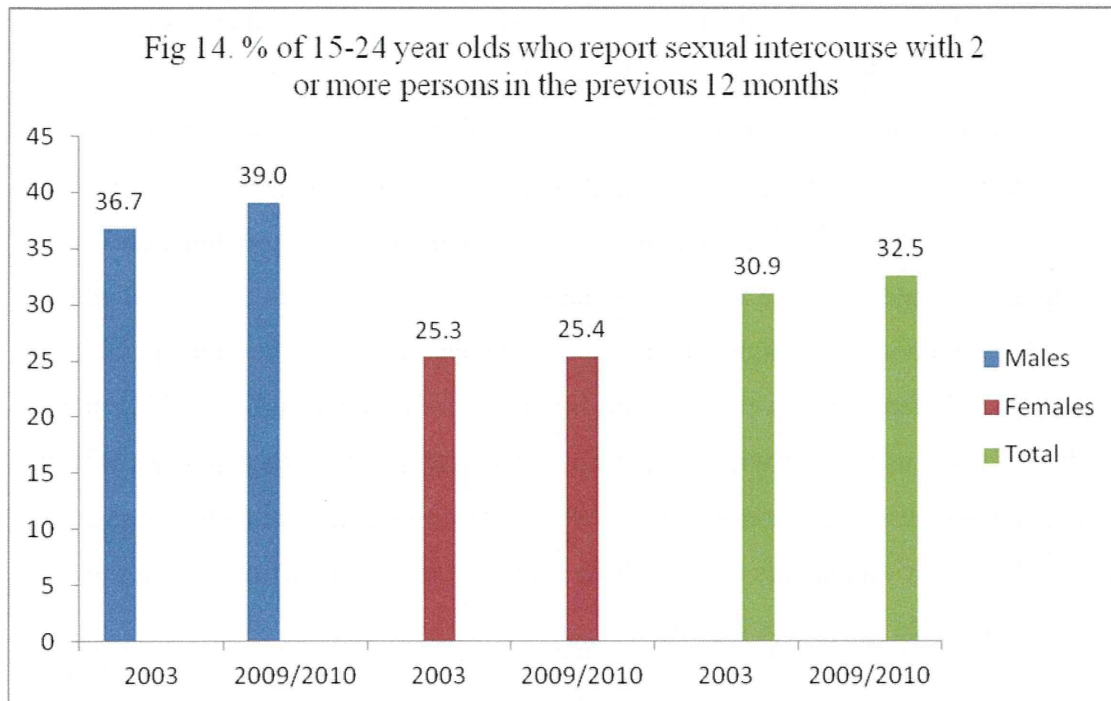


Table 8. Multiple partners of sexually active 15- to 24-year olds, by sex and age group.

	2003	2009/2010
Sex		
Males	36.7	39.0
Females	25.3	25.4
Total	30.9	32.5
Age group		
15-17	35.1	34.7
18-19	34.9	39.4
20-24	29.0	30.0

2.4 Condom use

The correct and consistent use of the condom remains among the most effective devices for preventing sexually transmitted infections among sexually active individuals. Although most sexually transmitted infections including HIV takes place when condoms are not used, and mechanical condom failures are relatively rare, the effectiveness of condoms is jeopardized by commonly experienced problems with use resulting in breakage, slippage and partial use [4]. Several factors are associated with lower with likelihood of condom use among adolescents, including but not limited to substance use, difference between partners, having experienced sexual abuse. On the other hand factors associated with increased condom use in sexual relationships include higher connectedness with parents, history of attendance of sexual education course, higher self-efficacy and beliefs that condoms are effective at preventing pregnancy and sexually transmitted infections [4].

2.4.1 Synopsis on the effectiveness of male condom

The evidence that latex-based and polyurethane-based condoms were effective in preventing transmission of sexually transmitted pathogens started to accumulate in-vitro tests, and the use of condom of have been recommended for HIV prevention since the early 1980s.

A Cochrane review of several longitudinal studies has indicated that the use of condom was 85% effective in preventing the transmission of HIV status. When male condoms are used consistently, their effectiveness can be as high as 95% [60]. However, the population-level effect of condoms remains to be documented, and research is needed in this regard. Moreover, there is evidence that in many populations, the male condoms is not well accepted even as a contraceptive device. Inconsistency in the use of condom is another issue that hinders potential benefits from condoms. For example, although individuals might use condoms successfully with particular partners (eg, clients of sex workers), their use with regular or steady partners might be suboptimum [61,62]. It is worth to underscore that the use of condom as a preventive tool for sexually transmitted infection carries a lot more challenge than when it used for contraception. The risk of pregnancy varies during the course of the menstrual cycle; protection against infection requires consistent use of the male condom, indicating the need for sustained