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REGULAR ARTICLE

Sexual debut before the age of 14 leads to poorer psychosocial health and risky behaviour in later life

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ABSTRACT

Aim: This study investigated the relationship between sexual debut before 14 years of age and socio-demographics, sexual experience, health, experience of child abuse and behaviour at 18 years of age.

Methods: A sample of 3432 Swedish high school seniors completed a survey about sexuality, health and abuse at the age of 18.

Results: Early debut was positively correlated with risky behaviours, such as the number of partners, experience of oral and anal sex, health behaviours, such as smoking, drug and alcohol use, and antisocial behaviour, such as being violent, lying, stealing and running away from home. Girls with an early sexual debut had significantly more experience of sexual abuse. Boys with an early sexual debut were more likely to have a weak sense of coherence, low self-esteem and poor mental health, together with experience of sexual abuse, selling sex and physical abuse. A multiple logistic regression model showed that a number of antisocial acts and health behaviours remained significant, but early sexual debut did not increase the risk of psychiatric symptoms, low self-esteem or low sense of coherence at 18 years of age.

Conclusion: Early sexual debut was associated with problematic behaviours during later adolescence, and this vulnerability requires attention from parents and healthcare providers.

INTRODUCTION

Sexual behaviour among adolescents is of concern to parents, scientists and society, especially when it is risky. The most frequently examined indicator of risky sexual behaviour in the literature is having intercourse for the first time at a young age (1). Different perspectives on an early sexual debut, such as background factors, onset of puberty, sexual behaviour and other behaviour and consequences, have been studied. However, they have not usually looked at the impact on psychosocial health later in life. Low parental education and income, as well as a lack of social support, have a positive association with an early sexual debut (2). Religiosity is shown to have a protective association for sexual activity and the number of partners (3). Early onset of puberty might be linked to early sexual debut, unprotected sex, early introduction to alcohol and being drunk. In addition, it could be linked to more aggressive behaviour in boys and to more time off school and being bullied in girls (4). Girls tend to have an earlier onset of puberty, as well as an earlier sexual debut than boys (4,5). Other studies have indicated that an early sexual debut is linked to exposure to pornography and sexual content in movies (6) and Price and Hyde associated it with increased television watching. Studies have also associated early sexual debut with factors such as poor parental relationships, living in a broken home, higher levels of externalising factors – such as symptoms of attention deficit hyperactivity disorder – low academic achievement and parents with low education levels (7). The mother's role in the timing of adolescents' sexual debut

Key notes

- We investigated the relationship between sexual debut before 14 years of age and socio-demographics, sexual experience, health, drug use, child abuse, sexual abuse and present behaviour at 18 years of age.
- Early debut was positively correlated with number of partners, experience of oral and anal sex, smoking, drug and alcohol use, being violent, lying, stealing and running away.
- It was not associated with the risk of psychiatric symptoms, low self-esteem or low sense of coherence.

has also been emphasised, as adolescents whose sexual debut occurred by the age of 15 have reported worse relationships with their mothers than other adolescents (8). A longitudinal study of 136 males, recruited between the ages of 10 and 12, and with follow-up at the ages of 14, 16, 19, 22 and 25, showed a correlation between early sexual debut and risky sexual behaviour, including short-term consequences, such as sexually transmitted diseases and a higher risk of developing substance use disorder early (9). A heightened risk of developing a hazardous lifestyle, involving more use of tobacco, alcohol and drugs, has also been described (4,10). A longitudinal study from Norway showed that girls who experienced sexual abuse in early adolescence reported a high number of partners and an early sexual debut (11). Earlier research showed a relationship between early sexual debut and experience of being sexually assaulted and suggested that sexual abuse can affect a number of other factors. In another Norwegian study of senior high school students, sexual abuse was associated with an earlier sexual debut, with more alcohol consumption linked with their sexual debut, than for students who had not been abused (12). Little has been written about how an early debut could affect different aspects of life at a later date, but some research suggests that it could lead to depression and low self-esteem (13), which in turn could cause other problems such as low academic achievement (14).

The main purpose of this study was to contribute to the existing literature about the long-term consequences of an early sexual debut, which is an understudied area. The study includes reports from students more than four years after their sexual debut, enabling us to study the association between early sexual debut and later psychosocial adjustment and asks does early sexual debut before the age of 14 constitute a risk? The more specific aims of this study were to explore what associations a sexual debut before the age of 14 had with socio-demographic background data, sexual behaviour, health and health behaviour, experience of childhood sexual and, or, physical abuse and present behaviour in the late adolescent period, in this case at the age of 18.

METHODS AND MATERIALS

Procedure and participants

In 2009, the Swedish National Board for Youth Affairs and the Swedish Government commissioned the study *Youth, Sex and the Internet*.

The data collection was carried out by Statistics Sweden. The sampling frame consisted of all students in the second year of a three-year programme in high schools with at least 10 students, registered in the Swedish National School Records in autumn 2007. A cluster sampling was used with three strata according to the size of the school: 10–90 pupils, 191–360 pupils and more than 360 pupils. Each of the schools offered practical, individual and academic programmes. One or two educational programmes were chosen from each of the 150 selected schools (n = 7700 students), but 31 schools did not respond to the request to participate or return the questionnaires and the final sample comprised 5792 (75%) of the students. Statistics Sweden distributed the questionnaires to the participating schools from January to April 2009. We compared the background data on the students from the participating and nonparticipating schools, using data from Sweden Statistics, and this showed that those who did not participate did not skew the results. Factors considered in the dropout analysis included region, size and study programme. The only difference was that 22% of the sample had an immigrant background, compared to 19% of the general population in Sweden (Sweden Statistics).

Information about the study and then questionnaires were mailed to the principal and teachers of each participating school. The students received written information about the study and gave their informed consent by choosing to answer the questionnaire. Under the Swedish Act Concerning the Ethical Review of Research Involving Humans, parental consent was not needed, as the students were older than 15. The anonymous pen-and-paper questionnaire was distributed by school staff and completed in the classroom during school hours, taking 45–60 min, before being sealed by each participant in unmarked envelopes and returned to Statistics Sweden by the schools. Each school was offered 120 Euros to take part in the study, but the participants were not given any personal incentives. In the end, 3503 students (60.5%) of the students answered the questionnaires and five were excluded because the answers were not serious. The 38 participants who did not answer the question about sex and the 28 who did not wish to state whether they were male or female were also excluded. Consequently, the sample used in this study consisted of 3432 students with 46.4% males and 53.6% females with a mean age of 18.3 years $\pm$ 0.6. The inclusion criterion was to have had sexual intercourse. One of the questions in the questionnaire was: 'If you have had experience of voluntary sexual intercourse, how old were you the first time?' This question defined the meaning of sexual intercourse, which could be vaginal or anal, as well as whether the student had had sexual intercourse. Of the total sample, 2469 (71.8%) had had their sexual debut and these constituted the final study group. As the mean debut age was 15.4 years, early debut was defined as below 14 years of age. The study groups were then divided into two groups: those who had had their sexual debut under the age of 14 formed the index group and those who had had their debut over the age of 14 formed the comparison group.

Measures

A questionnaire with 88 questions was specifically developed for this study. It included four well-known questionnaires that measure physical and psychological symptoms (Symptoms Checklist 25), self-esteem (The Rosenberg Self-Esteem Scale), sense of coherence (The Sense of Coherence Scale) and parental bonding (The Parental Bonding Instrument).

The other questions were divided into four categories: socio-demographic data and background, experience of love and consensual sexual, health and health behaviour and experience of sexual abuse, sexual exploitation and physical abuse. Socio-demographic data and background referred to the adolescents living situation and whether they were living with their parents or not, whether they were taking a theoretical, practical or individual study programme and whether they were born in Sweden or were an immigrant. Parental employment was divided into active or inactive. Active was defined as having a job, parental leave or studies and inactive as being unemployed or a pensioner. Love and consensual sexual experiences were measured by sexual identification, including whether people were heterosexual, homosexual, bisexual or not sure. It also measured their experience of sexual intercourse, number of partners up to six or more, experience of anal and oral sex and use of pornography. Participants were asked whether they had ever watched images or movies where one or more people were having sex with themselves or each other. The health and health behaviour category asked questions about the use of cigarettes, alcohol and other drugs and different kinds of antisocial behaviours, such as whether they had ever been away from home without their parents' knowledge, been in a fight or hurt someone, hit or hurt an animal, been violent with a teacher or threatened or bullied someone. Sexual abuse was measured by asking whether the adolescent had ever experienced sexual abuse. This was defined as whether someone had touched their genitals or breasts, tried to undress them to have sex or if the adolescent had to masturbate, have vaginal, oral or anal sex against their will. To measure sexual exploitation, there was a question about whether the adolescent had ever sold sexual services. Physical abuse by an adult was measured by questions about whether they had been pushed or shaken by an adult, if an adult had ever thrown something at them, hit them with their hands or fist, kicked or bitten them or hit them with an object or burnt or scalded them.

The Symptoms Checklist 25, The Rosenberg Self-Esteem Scale and The Sense of Coherence Scale were included in the health and health behaviour category. The Parental Bonding Instrument was included in the background and socio-demographic category.

Symptoms Checklist 25

The Symptoms Checklist 25 was developed from The Symptoms Checklist 90 (15) and measures occurrence of psychiatric symptoms, mainly depression and anxiety, during the previous week. The measure consists of 25 items, with a four-point scale ranging from one, meaning not at all, to four, meaning extremely. A total score ranging from 25 to 100 is calculated, with high values indicating a high symptom score. A cut-off was set at the 80th percentile, with values of 53 or more indicating poor mental health. The Checklist has been shown to have acceptable reliability and validity (16,17). Cronbach's alpha was 0.93 for this study.

The Rosenberg self-esteem scale

The Rosenberg Self-Esteem Scale (18) consists of 10 questions on the current experience of self-esteem, ranging from zero, meaning strongly disagree, to three, meaning strongly agree. The total score ranges from zero to 30, with high values indicating high self-esteem. A cut-off was set at the 20th percentile, with values of 16 or less indicating low self-esteem. Cronbach's alpha was 0.89 for this study.

The sense of coherence scale

The Sense of Coherence scale measures the individual's current sense of coherence, which expresses the extent to which someone has a pervasive and enduring, but dynamic, feeling of confidence. It measures whether: (i) the stimuli derived from an individual's internal and external environments as they live their life are structured, predictable and explicable (comprehensibility); (ii) the resources are available to meet the demands posed by these stimuli (manageability) and (iii) whether these demands are challenges, worthy of investment and engagement (meaningfulness) (19).

The scale has been used in a number of previous studies and has been shown to be valid and reliable (20). High values indicate a strong sense of coherence. Antonovsky suggested that scores can be collapsed into quintiles or tertiles (21). In this study, a weak sense of coherence was defined as values in the lowest quartile with a score of 50 or less. Cronbach's alpha was 0.85 for this study.

Parental bonding

The Parental Bonding Instrument, developed by Parker et al. (22), is a 25-question self-report measure of fundamental parental styles that uses 12 questions to measure how the child perceives care and 13 questions to measure how they perceive overprotection or control. The measure is retrospective, meaning that people over 16 years of age complete the measure based on how they remember their parents' behaviour towards them during their first 16 years. The measure should be completed separately for mothers and fathers. High scores indicate a high level of care. The instrument is established as having good internal consistency and test–retest reliability and satisfactory construct and convergent validity (Parker, 1983). The Swedish version of the instrument has also been found to be reliable (23). Cronbach's alpha for this study was 0.93.

Ethics

The study was approved by the Regional Ethical Review Board in Linköping Sweden (Reg. No. 220-08). Care was taken to ensure that students' answers could not be read by others while they completed the questionnaire. The adolescents were also given information about counselling in case they felt they needed support.

Data analysis

Statistical analyses were performed using SPSS version 22.0 (Armonk, NY, USA). Descriptive analyses were used for

investigating the frequencies, in percentages, of different sexual behaviours among the adolescents. Differences between male and female participants were investigated using a 95% confidence interval (CI). Ordinal data concerning alcohol consumption, self-esteem, sexual and physical abuse, parental relationships, sense of coherence and health were analysed using the Pearson chi-square test.

The data were arranged into four different domains: socio-economics, sexual experience, health factors and abuse. Sexual debut age was categorised into two groups, under 14 years old and 14 years or older at sexual debut, and then stratified by gender (Tables 1–4). Univariate analyses were carried out on those variables. Entering all statistically significant variables into one model was impossible as there were too many variables for the multiple logistic analyses to handle. To overcome this problem, forward stepwise multiple logistic regression analysis was performed separately for each domain. The most important listed variables from each table (Tables 1–4), that is those variables that were statistically significant in the multiple logistic regression for each separate domain, were then analysed in a final multiple logistic regression. When all the variables were entered into the model it became saturated, and an additional forward stepwise multiple regression was performed. Only the final models from the step-wise regressions are displayed in the results. The outcome was the dichotomised variables for age at sexual debut (Table 5). Additional analysis included stepwise multiple

Table 1 Distribution of background and socio-demographic variables by age at sexual debut and gender

	Girls			Boys		
	Debut age <14 (n = 144) %	Debut age ≥14 (n = 1220) %	OR (95% CI)*	Debut age <14 (n = 114) %	Debut age ≥14 (n = 1105) %	OR (95% CI)*
Living situation						
Living with both parents or alternating	66.0	84.1		91.4	81.6	
Other	34.0	15.9	2.73 (1.87–3.98)	8.6	18.4	2.41 (1.43–4.06)
Study programme						
Theoretical	32.6	49.3		27.2	45.3	
Practical	56.9	46.0	1.87 (1.29–2.73)	64.9	45.1	2.40 (1.54–3.72)
Individual	10.4	4.7	3.37 (1.78–6.40)	7.9	9.6	1.37 (0.63–2.98)
Father's employment						
Active (work, parental leave, studies)	86.8	85.8		82.5	88.8	
Inactive (unemployed, pensioner)	13.2	14.2	1.09 (0.65–1.81)	17.5	11.2	0.60 (0.35–1.00)
Mother's employment						
Active (work, parental leave, studies)	88.0	84.7		79.8	88.5	
Inactive (unemployed, pensioner)	12.0	15.3	0.76 (0.47–1.24)	20.2	11.5	0.51 (0.31–0.85)
Father's education						
No university	51.7	53.7		53.7	50.7	
University	26.6	30.1	0.92 (0.61–1.38)	29.6	33.1	0.84 (0.54–1.33)
Don't know	21.7	16.2	1.39 (0.88–2.17)	16.7	16.2	0.97 (0.56–1.70)
Mother's education						
No university	49.3	46.1		43.0	49.1	
University	37.5	43.2	0.81 (0.56–1.18)	44.4	37.5	0.74 (0.48–1.13)
Don't know	13.2	10.8	1.14 (0.67–1.96)	12.8	13.4	0.93 (0.51–1.70)
Adolescent immigrant status						
Swedish	97.9	94.4		74.1	79.7	
Born outside Sweden	2.1	5.6	0.37 (0.11–1.18)	25.9	20.3	1.38 (0.68–2.76)
Parental immigrant status						
Swedish	88.8	83.1		93.5	91.2	
Outside Sweden	11.2	16.9	0.68 (0.36–1.06)	6.5	8.8	1.38 (0.88–2.16)
PBI						
Care mother, cut–off ≥20	76.2	80.6		62.4	78.3	
Low care, mother cut–off <20	23.8	19.4	1.30 (0.86–1.96)	37.6	21.7	2.17 (1.43–3.30)
Overprotection, mother ≤20	80.1	82.5		71.6	81.0	
High overprotection, mother >20	19.9	17.5	1.16 (0.75–1.81)	28.4	19.0	1.69 (1.08–2.64)
Care father, cut–off ≥20	75.2	78.1		59.8	80.0	
Low care, father cut–off <20	24.8	21.9	1.18 (0.78–1.78)	40.2	20.0	2.70 (1.76–4.13)
Overprotection, father ≤20	76.3	79.5		76.8	84.5	
High overprotection, father >20	23.7	20.5	1.20 (0.79–1.83)	23.2	15.5	1.65 (1.00–2.72)

*Unadjusted OR and corresponding CI (outcome = debut age and predictor each socio-demographic variable; each predictor modelled separately).

Table 2 Distribution of sexual behaviour and unadjusted odd ratio for early debut age by age at sexual debut and gender

	Girls			Boys		
	Debut age <14 (n = 144) %	Debut age ≥14 (n = 1220) %	OR (95% CI)*	Debut age <14 (n = 114) %	Debut age ≥14 (n = 1105) %	OR (95% CI)*
Sexual identification[†]						
Heterosexual	84.5	89.1		89.5	95.3	
Homosexual	0.0	0.3	–	3.5	0.4	9.17 (2.26–37.21)
Bisexual	10.6	5.2	2.15 (1.19–3.89)	0.9	1.4	0.66 (0.08–5.03)
Not sure	4.9	5.3	0.97 (0.44–2.17)	6.1	2.9	2.29 (0.98–5.38)
Number of sexual partners						
1	0.7	27.3		2.6	26.7	
2–5	26.4	44.4	23.34 (3.19–170.76)	24.6	49.1	5.07 (1.53–16.84)
≥6	72.9	28.3	101.33 (14.06–730.26)	72.8	24.2	30.57 (9.54–98.03)
Oral sex						
No	2.1	9.8		7.0	14.7	
Yes	97.9	90.2	5.08 (1.59–16.19)	93.0	85.3	2.29 (1.09–4.80)
Anal sex						
No	38.9	68.0		37.7	73.5	
Yes	61.1	32.0	3.33 (2.33–4.76)	62.3	26.5	4.57 (3.05–6.85)
Vaginal sex						
No	2.1	2.4		5.3	2.9	
Yes	97.9	97.6	1.14 (0.34–3.80)	94.7	97.1	0.54 (0.32–1.34)
Watched pornography[‡,§]						
No	10.0	26.1		5.1	10.7	
Yes	90.0	73.9	3.18 (1.80–5.61)	94.9	89.3	2.29 (1.09–4.80)

*Unadjusted OR and corresponding CI (outcome = debut age and predictor each socio-demographic variable; each predictor modelled separately).
[†]Question: How do you see yourself? Alternatives offered: heterosexual, homosexual, bisexual, not sure.
[‡]Question: Have you ever looked at pornography? Alternatives offered: yes, no.
[§]Definition of pornography: images or movies where one or more people are having sex with themselves or with each other.

logistic regression, where the outcome was the dichotomised variables for psychosocial health at the age of 18. Each outcome was modelled separately for The Sense of Coherence Scale, the Symptoms Checklist 25 and the Rosenberg Self-Esteem Scale using the same methodology as for age at sexual debut.

The number of participants varies in different analyses as not all of the participants answered all the questions.

RESULTS

Sexual debut

A total of 258 students (7.5%) had had their sexual debut before the age of 14 (7.8% girls and 7.2% boys), 2211 (64.4%) had had their sexual debut at the age of 14 or older (66.4% girls and 62.2% boys) and 963 (21.1%) had not yet had their sexual debut (25.8% girls and 30.7% boys). The mean age for sexual debut was 15.4 years, with a standard deviation (SD) of 1.5 for the total sample. The girls had an earlier debut, with a mean age of 15.3 years (SD = 1.47), than the boys, with a mean age of 15.5 years (SD = 1.53).

Socio-demographic background

Early sexual debut was negatively correlated with living with both parents and being on a academic educational study programme. This means that the odds ratio for early sexual debut was significantly higher among children who did not live with both parents than those who did. Being in a practical or individual school programme was associated with higher odds of early sexual debut than being in an academic programme (Table 1). On the whole, there was no statistically significant difference between having and not having an early sexual debut. However, maternal unemployment was related to an early sexual debut in boys. There were no statistically significant differences regarding parental educational background or the immigration status of the child or their parents (Table 1).

The Parental Bonding Instrument (PBI) was used to measure parental support in two categories: care and overprotection/control. There were no significant differences between girls in the two age groups regarding care and overprotection/control. However, the odds ratio for an early debut among boys increased for those who reported less caring mothers (OR = 2.17, CI95% = 1.43–3.30) or fathers (OR = 2.70, CI 95% = 1.76–4.13), as well as overprotection/control from mothers (OR = 1.69, CI 95% = 1.08–2.64) when compared to the rest of the boys (Table 1).

Sexual behaviour

The majority (90%) of the subjects were heterosexual, 0.6% were homosexual, 3.6% were bisexual and 5.9% were not sure. Gender-specific distribution of sexual identification is

Table 3 Distribution of health and health behaviour variables by age at sexual debut and gender

	Girls			Boys		
	Debut age <14 (n = 144) %	Debut age ≥14 (n = 1220) %	OR (95% CI)*	Debut age <14 (n = 114) %	Debut age ≥14 (n = 1105) %	OR (95% CI)*
Smoking (current)						
No	41.0	59.2		43.4	62.7	
Yes	59.0	40.8	2.09 (1.47–2.97)	56.6	37.3	2.19 (1.48–3.25)
Alcohol (current)						
Never	2.8	4.3		5.3	7.4	
Up to 4 times/month	84.6	87.3	1.46 (0.52–4.12)	69.0	78.9	1.21 (0.51–2.87
More than 4 times/month	12.6	8.4	2.25 (0.72–7.00)	25.7	13.7	2.58 (1.02–6.50)
Tried hashish/marijuana (ever)						
No	69.4	81.8		40.2	73.0	
Yes	30.6	18.2	1.97 (1.34–2.90)	59.8	27.0	4.03 (2.69–6.03)
Tried heroin, cocaine, ecstasy, amphetamine (ever)						
No	88.2	96.3		66.4	93.9	
Yes	11.8	3.7	3.47 (1.93–6.24)	33.6	6.1	7.79 (4.87–12.46)
Tried anabolic steroids/GHB (ever)						
No	99.3	99.6		83.9	98.4	
Yes	0.7	0.4	1.69 (0.20–14.56)	16.1	1.6	11.55 (5.70–23.40)
Antisocial behaviour (ever)						
Been away from home without parents knowledge						
No	36.4	61.3		22.1	48.8	
Yes	63.6	38.7	2.77 (1.93–3.97)	77.9	51.5	3.32 (2.09–5.26)
Been in fight, bad behaviour, hurt someone						
No	58.8	79.2		21.9	55.1	
Yes	41.2	20.8	3.40 (2.38–4.86)	78.1	44.9	4.36 (2.75–6.92)
Hit or hurt animal						
No	94.4	97.5		74.6	88.3	
Yes	5.6	2.5	2.34 (1.05–5.22)	25.4	11.7	2.59 (1.62–4.12)
Violent with teacher						
No	79.9	94.2		61.4	89.9	
Yes	20.1	5.8	4.11 (2.56–6.60)	38.6	10.1	5.59 (3.64–8.60)
Threatened, bullied someone						
No	63.9	84.6		38.9	66.7	
Yes	36.1	15.4	3.10 (2.13–4.50)	61.1	33.3	3.14 (2.10–4.69)
Kasam cut-off 25						
Normal to strong sense of coherence	62.1	66.6		66.0	79.1	
Low sense of coherence	37.9	33.4	1.22 (0.85–1.74)	34.0	20.9	1.94 (1.26–3.01)
Rosenberg cut-off 20						
Normal to high self–esteem	71.5	73.6		73.0	87.3	
Low self–esteem	28.5	26.4	1.11 (0.76–1.63)	27.0	12.7	2.56 (1.61–4.05)
SCL25 cut-off 80						
Normal to good mental health	65.5	70.8		74.5	88.6	
Poor mental health	34.5	29.2	1.28 (0.88–1.84)	25.5	11.4	2.63 (1.64–4.29)

*Unadjusted OR and corresponding CI (outcome = debut age and predictor each health/health behaviour variable; each predictor modelled separately).

displayed in Table 2 and this shows a significant difference between girls and boys.

Bisexual girls had higher odds of an early sexual debut than heterosexual girls (OR = 2.15, CI95% = 1.19–3.89), and the same pattern was present in homosexual boys. The early debut group had a significantly higher number of sexual partners. Girls were much more likely to have had six or more partners if they had their sexual debut before 14 (72.9%) than after 14 (28.3%), and the figures for the boys were 72.8% and 24.2%, respectively. Thus, having had more than six sexual partners at the age of 18 increased the odds of an early sexual debut (Table 2).

The vast majority of all adolescents (88.7%) had experienced oral sex and having had this by the age of 18 increased the risk for having had an early sexual debut for both girls (OR = 5.08, 95%CI = 1.59–16.19) and boys (OR = 2.29, 95% CI = 1.09–4.80). Girls and boys were more likely to have had an early sexual debut if they had had anal sex by the age of 18 than those who had not (OR = 3.33, CI 95% = 2.33–4.76 and OR = 4.57,

Table 4 Distribution of sexual abuse, sexual exploitation and physical abuse by age at sexual debut and gender

	Girls			Boys		
	Debut age <14%	Debut age ≥14%	OR (95% CI)*	Debut age <14%	Debut age ≥14%	OR (95% CI)*
Sexual abuse (ever)†						
No	71.5	87.5		94.7	95.5	1.17 (0.49–2.80)
Yes	28.5	12.5	2.78 (1.96–4.14)	5.3	4.5	
Sold sex (ever)‡						
No	94.2	98.9		90.9	98.5	
Yes	5.8	1.1	5.55 (2.26–43.64)	9.1	1.5	6.69 (2.82–15.88)
Physical abuse by adult (ever)§						
Pushed, shaken						
No	67.9	78.7		58.1	73.4	
Yes	32.1	21.3	1.75 (1.20–2.56)	41.9	26.6	1.99 (1.31–3.00)
Throw something						
No	87.1	88.4		69.8	84.2	
Yes	12.9	11.6	1.13 (0.67–1.91)	30.2	15.8	2.31 (1.47–3.62)
Hit with hand						
No	74.3	82.0		63.6	81.6	
Yes	25.7	18.0	1.58 (1.05–2.37)	36.4	18.4	2.55 (1.66–3.90)
Kick, hit with fist, bite						
No	90.7	96.5		74.5	92.6	
Yes	9.3	3.5	2.84 (1.48–5.43)	25.5	7.4	4.27 (2.59–7.04)
Hit with object						
No	94.3	96.6		78.5	94.6	
Yes	5.7	3.4	1.71 (0.79–3.73)	21.5	5.4	4.77 (2.78–8.18)
Burn, scald						
No	97.9	98.9		85.8	97.7	
Yes	2.1	1.1	2.01 (0.56–7.13)	14.2	2.3	7.00 (3.51–13.96)

*Unadjusted OR and corresponding CI (outcome = debut age and predictor sexual abuse/exploitation factors; each predictor modelled separately).
†Question: Some people are coerced into, pushed or forced into sexual acts that they cannot defend oneself against. Have you been exposed to any of the following against your will? Alternatives offered. Included in no: Have you been been exposed to any of this against my will and has anyone exposed themselves to you? Included in yes: Has someone touched your genitals or breasts or has tried to undress to have sex with you? Have you masturbated someone, had vaginal intercourse, had oral sex, had anal sex?
‡Question: Have you ever sold sexual services? Alternatives offered: no and yes.
§Question: When you were growing up, how often did an adult do any of the following to you? Alternatives offered: never, seldom, sometimes and often, collapsed into never (no) and yes.

CI95% = 3.05–6.85, respectively) or if they had ever watched pornography (Table 2).

Health and health behaviour

Girls who smoked were more likely to have an early sexual debut (OR = 2.09, CI 95% = 1.47–2.97) and so were boys (OR = 2.19. CI 95% = 1.48–3.25) (Table 3). So were boys who drank more than four times a month (OR = 2.58, CI 95% = 1.02–6.50) (Table 3). A higher percentage of the total early sexual debut group (15.2%) had tried more than a sip alcohol before the age of 11 or younger, compared to 3.9% in the older group, and they were more likely to have got drunk (15.5%) at the age of 12 or younger, compared to 2.7% in the older group.

Adolescents with an early sexual debut were more likely to have tried different kinds of drugs, such as heroin, cocaine, ecstasy or amphetamine (OR = 3.47, CI 95% = 1.93–6.24 girls and OR = 7.79, CI 95% = 4.87–12.46 boys) (Table 3). Having used hashish/marijuana doubled the odds for early sexual debut among girls and increased the odds fourfold for boys. And having used anabolic steroids increased the risk of having had an early sexual debut among boys (OR = 11.55, 95% CI = 5.70–23.40) (Table 3).

The teenagers were also asked about antisocial behaviour, namely having been away for one night without their parents knowing, having been in a fight or hurt someone, having hurt animals, having been violent with a teacher and having threatened or bullied someone. Adolescents with an early sexual debut were significantly more active in these kinds of antisocial behaviour than the adolescents with an older sexual debut and it was much more common for boys to be physically violent towards both people and animals (Table 3).

To assess the adolescents' sense of coherence, The Sense of Coherence Scale developed by Antonovsky was used, with a low sense of coherence defined as scores in the lowest quartile (scores of ≤50). There was a significant difference among the boys in our study, with a low sense of coherence almost doubling the odds of having had an early sexual debut (OR = 1.94, CI 95% = 1.26–3.01) (Table 3).

Table 5 Multiple logistic regression. Distribution of different variables and early sexual debut

	aOR (95% CI)
Gender	
Male	
Female	1.43 (1.03–1.99)
Living situation	
Both or alternating	
Other	1.76 (1.22–2.55)
Number of sexual partners	
1	
2–5	6.39 (2.29–17.79)
6–10	16.34 (5.85–46.65)
>10	32.80 (11.64–92.47)
Anal sex	
No	
Yes	2.01 (1.47–2.74)
Tried heroin, cocaine, ecstasy, amphetamine	
No	
Yes	2.87 (1.28–6.42)
Antisocial behaviour	
Been away from home without parents' knowledge	
No	
Yes	1.46 (1.05–2.03)
Violent with teacher	
No	
Yes	2.27 (1.52–3.38)
Threatened, bullied someone	
No	
Yes	1.62 (1.15–2.27)

The Rosenberg Self-Esteem Scale showed a significant difference among boys. Boys with lower self-esteem were more likely to have an early sexual debut than those who did not (OR = 2.56, CI 95% = 1.61–4.05) (Table 3).

Psychiatric symptoms, mainly depression and anxiety during the previous week, were measured using the Symptoms Checklist 25. Boys who reported more signs of anxiety and depression had an earlier sexual debut than those who reported fewer signs (OR = 2.63, CI 95% = 1.64–4.29) (Table 3).

Experience of sexual and/or physical abuse

The girls in the early debut group had experienced significantly more sexual abuse than the girls with a later debut and the odds of an early sexual debut increased if the girl had been sexually abused (OR = 2.78, CI = 95% = 1.96–4.14) (Table 4). Of all the adolescents, 1.5% stated that they had sold sex – that is they had displayed their genitals, been photographed or filmed, had masturbated for someone, had had oral sex, vaginal or anal intercourse or had been photographed or filmed in sexual situations for payment. This was more common in boys and girls in the early debut group and having sold sex increased the odds of having had an early sexual debut (OR = 6.69, CI 95% = 2.82–15.88, and OR = 5.55, CI 95% = 2.26–43.64, respectively) (Table 4).

Experiences of different kinds of physical abuse among boys were significantly more common in the early debut group. Among boys, experience of having been pushed or shaken, having something thrown at them, being hit with an object or a hand, being kicked, burnt or scalded all significantly increased the odds of an early sexual debut compared to boys who had not experienced these types of physical abuse (Table 4). The results were similar among the girls: experience of having been pushed or shaken, been hit with a hand, been kicked and hit or bitten were all associated with increased odds of having had an early sexual debut.

Multiple analyses

When it came to the socio-demographic data, being female increased the adjusted odds ratio (aOR) of an early sexual debut (aOR = 1.43, 95% CI = 1.03–1.99) and living with both biological parents, or alternating between them, decreased the odds ratio (aOR = 1.76, 95% CI = 1.22–2.55). When we looked at the sexual behaviour variables, the number of sexual partners was positively associated with an early sexual debut, as was anal sex (aOR = 2.01, 95% CI = 1.47–2.74). (Table 5).

In the category health and health behaviour, antisocial behaviour and using drugs were positively associated with an early sexual debut. Adolescents who had tried heroin, cocaine, ecstasy or amphetamine were more likely to be found in the early sexual debut group (aOR = 2.87, 95% CI = 1.28–6.42). Adolescents with an early sexual debut displayed significantly more antisocial behaviour, as they were more often staying away from home overnight without their parents' knowledge, were violent with a teacher more often and were more likely to threaten or bully someone (Table 5).

Finally, to study factors that could explain psychological health (Symptoms Checklist 25), self-esteem (The Rosenberg Self-Esteem Scale) and sense of coherence (The Sense of Coherence Scale) at the age of 18, stepwise logistic regression models were used with these variables as the outcome. In summary, being a girl (aOR = 3.93, 95% CI = 2.95–5.23), being homosexual (aOR = 5.73, 95% CI = 1.11–29.58) or bisexual (aOR = 1.84, 95% CI = 1.10–3.09), watching pornography (aOR = 1.44, 95% CI = 1.06–1.95), smoking (aOR = 1.50, 95% CI = 1.02–1.67), being away from home without their parents' knowledge (aOR = 1.31, 95% CI = 1.18–1.92), low levels of care from both the mother (aOR = 1.82, 95% CI = 1.35–2.46) and father (aOR = 2.03, 95% CI = 1.52–2.72), physical abuse in the form of being pushed/shaken (aOR = 1.54, 95% CI = 1.17–2.03) or burned/scalded (aOR = 3.54, 95% CI = 1.34–9.34) all increased the odds of having a significant deterioration in mental health.

Low self-esteem at the age of 18 was positively associated with being a girl (aOR = 2.78, 95% CI = 2.14–3.62), homosexual (aOR = 5.36, 95% CI = 1.25–23.08) or bisexual (aOR = 2.22, 95% CI = 1.33–3.70), smoking (aOR = 1.39, 95% CI = 1.09–1.77), low levels of care from both the mother (aOR = 2.21, 95% CI = 1.65–2.96) and father

(aOR = 2.45, 95% CI = 1.85–3.24) and being kicked/hit with a fist or bitten (aOR = 2.07, 95% CI = 1.29–3.34).

A low sense of coherence was positively associated with being bisexual (aOR = 2.08, 95% CI = 1.21–3.56), drinking less alcohol (aOR = 0.52, 95% CI = 0.32–0.84), smoking (aOR = 1.64, 95% CI = 1.30–2.07), being away from home without the parents' knowledge (aOR = 1.37, 95% CI = 1.09–1.73), low levels of care from the father (aOR = 2.76, 95% CI = 2.13–3.57), a mother who was highly overprotective (aOR = 1.51, 95% CI = 1.15–1.99), sexual abuse (aOR = 2.00, 95% CI = 1.42–2.82) and being pushed/shaken (aOR = 1.46, 95% CI = 1.13–1.88).

Early sexual debut did not stay significant as a predictor in any of these models.

DISCUSSION

This study compared young people with an early sexual debut, before the age of 14, with young people with a later sexual debut. The assessment, carried out at the age of 18, covered background factors, health behaviour, mental health and experience of sexual and/or physical abuse. The main findings can be summarised as follows.

Firstly, the mean age for sexual debut in this sample was 15.4 years (15.3 for girls and 15.5 for boys) and 7.5% had had their sexual debut before the age of 14 (7.8% girls and 7.2% boys). The slightly lower debut age among girls could be explained by the fact that girls tend to have an earlier onset of puberty than boys and this correlates positively with an early sexual debut (4,5).

Secondly, living with both biological parents, or at least alternating between them, seemed to be a protective factor for having an early sexual debut for both girls and boys in both the univariate analysis and the multiple analysis. This finding is supported by earlier research showing that adolescents from two-parent families were less likely to have sex and had fewer sexual partners (7,24). Similar findings from a Greek study showed that adolescents with an unstable home environment, due to divorce, recent death, or not living with their mother, were more likely to be sexually active (25). Living with both parents seemed to be a protective factor, except for when the mother was very young, poorly educated, or if either of the parents had alcohol use disorder (26). Goldberg (27) described a link between family stress or impaired families and both early sexual debut and risky sexual behaviour. He also provided a description of the connection between early sexual debut and later risky sexual behaviour. Parents who did not care or were overprotective seemed to be a risk factor for early sexual debut, especially for boys. With regard to parental education there was no significant association with early sexual debut, as earlier studies have shown (2,7), or being an immigrant or having been born in Sweden to immigrant parents.

Thirdly, both girls and boys with a sexual debut before 14 years of age had had more sexual partners and as much as two times more experience of anal sex at the age of 18 than girls and boys with a later sex debut. An early debut might explain the experience of having more sexual partners, simply because they have spent more time engaging in sexual activity. It could, however, also indicate a trend of increased risk-taking sexual behaviour (1), as well as other risky behaviour, such as substance use and antisocial behaviour (7,26).

Fourthly, the bivariate analyses showed that different forms of antisocial behaviour were more frequent among both girls and boys in the early debut group and three of five stayed significant in the multiple analyses. Together with the increased use of drugs, this clearly indicated a connection between early sexual debut and risky health behaviour. Earlier Swedish studies showed that when a teenager had their sexual debut at 14 years old or younger there was already a risk of developing a hazardous lifestyle involving more use of tobacco, alcohol, and drugs and being more involved in physical violence (10). Others researchers like Cornelius et al. (9) have shown a correlation between early sexual debut and a higher risk of early development of substance use disorder. In summary, these findings are in line with the results of other studies (7,28), which highlighted the fact that antisocial behaviour and early sexual debut were linked to each other and could be explained by a common trait to test the limits of their behaviours.

Most of the significant health and health behaviour variables did not remain significant in the multiple analyses, and deteriorating health, low self-esteem and low sense of coherence at the age of 18 were better explained by other factors than an early sexual debut.

Finally, experience of sexual abuse, especially among girls, and physical abuse, especially among boys, and sexual exploitation were more prevalent in the group of young people with an early sexual debut. Even if these differences did not remain significant in the multiple regression analysis, it indicated, as other researchers have shown, that there is a connection between early sexual debut and sexual and physical abuse (2,11,12). It is important that professionals and parents are aware of this as it could be a threat to the psychosocial health of adolescents, especially as young people often do not tell anyone they are being, or have been, abused (29).

CONCLUSIONS

In conclusion, early sexual debut seems to be correlated with a series of problematic behaviours that could have an impact on psychosocial health later in life, such as having multiple sexual partners, drug use and antisocial behaviour during later adolescence. Our study revealed a trend that showed that when boys had an early sexual debut it had an impact on their psychosocial health, with low sense of coherence, low self-esteem and a greater incidence of anxiety and depression than boys with a later sexual debut. Parents, teachers and healthcare providers needed to be aware that an early sexual debut is associated with increased vulnerability in some children and that has to be addressed.

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