

Original
article

Sexual behaviour and early coitarche in a national sample of 17 year old Swedish girls

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Objective: To evaluate sexual behaviour in 17 year old girls, using data from a national survey on adolescent sexuality.

Method: The study was based on two samples of 17 year olds, comprising 2% of the population born in 1973 and carried out in 1990. A school sample and a sample of school non-attenders were recruited in a two step procedure. Data were collected by anonymous self administered questionnaires. 2583 questionnaires were distributed. Response rates from students was 92%, for school non-attenders 44%. 1121 female students and 118 female school dropouts responded.

Results: 64% of the student girls had experienced their first intercourse; 16% were “early starters” with coitarche before age 15. STD and pregnancy were reported by 15% of early starters and pregnancy by 14%, $p < 0.001$ and 0.002 respectively when compared with later starters. The number of coital partners, experience of first date intercourse, and of oral and anal sex was higher in the early starters, $p < 0.001$. Early starters reported menarche at age 11 or earlier more often than the later starters (OR 2.30, 95% CI 1.48–3.56), as well as a perceived social age exceeding the chronological by 2 years (OR 1.94, 95% CI 1.34–2.80). Sexual abuse was reported by 20% of the early and 11% of the later starters, $p = 0.002$. Among school non-attenders no significant differences were found with regard to age for coitarche. A majority of 83% of the girls had experienced voluntary intercourse, and 49% were early starters. Five girls were mothers. STD was reported by 19% and induced abortion by 14%. Sexual abuse was alleged by 28%.

Conclusion: Coitarche before age 15 is related to early menarche and high perceived social age. High number of partners and first date intercourse make early starters at increased risk for STD and unintended pregnancy. Sexual abuse is alleged more often by early starters.

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Keywords: adolescent sexuality; sex; coitarche; sexual behaviour; sexual abuse

Introduction

In Sweden, there is a liberal attitude towards sexual relations among adolescents. Education on sexuality and personal relationships has been part of the national school curriculum since 1956. Youth policlinics tailored to the needs of adolescents form a network over the country, in order to support young people in developing responsible sexual behaviour, and to minimise reproductive health problems. Contraceptive counselling is free of charge and available without parental consent. Easily available oral contraceptives have contributed to a decrease in teenage abortions, from 29.8 per 1000 in 1975 to 17.6 per 1000 in 1998.¹ Since the early 1980s, screening, free treatment, and partner notification for genital chlamydial infection have contributed to the decrease from 40 000 estimated cases in 1987 to 15 000 reported cases in 1998.² As fewer than 400 cases of gonorrhoea are reported annually, the total number of bacterial STDs has decreased, as has the rate of pelvic inflammatory disease.³ Consequently, the risk for impaired fertility through tubal damage has decreased. Viral STDs dominate the panorama today. Seroprevalence of HPV type 16 among 3512 pregnant women in Stockholm in 1989 was 21%, and seroprevalence of HSV-2 was 33%.^{4,5} The necessity of condom use became the message to young people during the “chlamydial era,” and was later underlined by

the need for HIV protection. With the combination of oral contraceptives and condoms, sex could be safer. But while knowledge on the need and methods for safer sex practices is widespread, it is not put to practical use.^{6,7}

The aim of this article is to report findings on female sexual behaviour in a national survey of Swedish 17 year old adolescents, students, and school non-attenders, and to focus on coitarche before age 15 as a risk factor for teenage pregnancy and STD. General results from the survey have been published.^{8,9}

Material and methods

SAMPLING PROCEDURES

The study was performed in 1990 and teenagers born in 1973 participated. The number of girls born in 1973 and living in Sweden in 1990 was 54 908. The majority attended upper secondary school, while 10% were school non-attenders, registered at youth centres. The aim was to include 2% of the age group in the survey. Two samples were recruited through a two step procedure. The student sample consisted of 17 year olds from 93 upper secondary schools. School dropouts were recruited from 29 youth centres. The sampling procedure has been presented in detail elsewhere.⁹ Female students on vocational and shorter study lines were overrepresented, as they were assumed to be at higher risk for reproductive health problems.

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THE QUESTIONNAIRE

The questionnaire was self administered and consisted of 170 multiple choice questions, dealing with general health issues, family situation, tobacco, alcohol and drugs, experience of love and sex, STD, and pregnancy. Questions on involuntary sexual experiences were included. The questionnaire was tested during a pilot period on teenage students and school dropouts, and girl victims in therapy after sexual abuse. It was also discussed with and approved by the local contact people, mainly school nurses, who were responsible for the data collection.

DATA COLLECTION

The survey was carried out during school hours, although the classroom situation was avoided. Each respondent put her questionnaire into an envelope and sealed it. Identifiers as to individual, class, or school were not used at any phase of the investigation.

ETHICAL CONSIDERATIONS

The investigation was approved by the ethics committee at the Karolinska Institute in Stockholm. Informed consent was guaranteed through the administering local contact people. Participation was anonymous, and data were handled totally unidentified. The issue of parental consent for participation in the study was discussed with the board of the parent and teacher association, and parental consent for each respondent was not regarded as an ethical prerequisite for carrying out the investigation.

The impact of the survey on respondents' attitudes and feelings was considered. A questionnaire addressing sexual issues may communicate "metamessages" that sexual activity among young people is part of, or is in itself, a "problem behaviour." On the other hand, respondents may take offence if the questionnaire is worded in such a way that specific sexual experiences seem to be expected in an age group where the amount of sexual experience may vary widely. Efforts were also made to avoid judgmental messages on sexual orientation.

A survey on very personal matters may evoke a need for counselling and help. This was taken into consideration by using a local contact per-

son professionally trained to meet adolescent needs, and by distributing a card, "Where to turn," containing the phone numbers of the local youth polyclinic and of pertinent support agencies, together with the questionnaire.

Feedback to respondents and contact people was provided by a short summary of the compiled results during spring 1990.

STATISTICAL EVALUATION

The statistical evaluation was carried out in cooperation with statistical expertise using the SPSS/PC version 9.0. The χ^2 statistic was used to compare differences in distributions between groups. Multivariate analysis was carried out with logistic regression.¹⁰

Results

RESPONSE RATES

In all, 2583 questionnaires were distributed to 17 year old boys and girls; 2108 to students and 475 to school non-attenders. A total of 1943 questionnaires from students were answered, response rate for students 92%; 210 school dropouts responded, response rate 44%. Among the students, 1121 girls responded; 337 on theoretical lines and 784 on vocational lines. Among responding school non-attenders 118 were girls. Owing to differences in response rate, data from the two different study groups are treated separately.

Response rates vary slightly between different questions, but topics of sexual experiences did not suffer from low response rates—for example, 98% of the students answered a question of masturbation and 99% a question on consensual intercourse.

SCHOOL ATTENDERS

Mean age for menarche was 12.8 years, median age 13, range 8–17 years.

To have been in love and to have had a steady partner were experiences most of the girls had in common; 98% had experienced falling in love at least once, and orientation towards the opposite sex was reported by 97%. The girls on vocational study lines reported an ongoing steady relationship more often than the girls on theoretical study lines, 49% (371/774) compared with 41% (136/332), $p=0.012$.

Table 1 Background factors, health hazards, and problematic experiences in 17 year old student girls by experience of vaginal intercourse

	<i>p</i> Values*	Coitarche <15 years (<i>n</i> =178)	Coitarche >15 years (<i>n</i> =534)	Virgins (<i>n</i> =403)
Background:				
Lives with both natural parents	0.333	100/178 (56.2)	323/534 (60.5)	311/403 (77.2)
Immigrant background	0.408	23/173 (13.3)	57/528 (10.8)	45/396 (11.4)
Urban residence	0.409	32/176 (18.2)	82/529 (15.5)	76/397 (19.1)
Theoretical study line	<0.001	25/177 (14.1)	152/530 (28.7)	154/401 (38.4)
Menarche <11 years, or 11 years	<0.001	44/173 (25.5)	64/525 (12.2)	41/389 (10.6)
Perceived social age >2 years older	<0.001	73/178 (41.0)	133/527 (25.5)	58/397 (14.6)
Health hazards:				
Daily smoker	<0.001	77/175 (44.0)	121/528 (22.9)	18/400 (4.5)
Alcohol, drunk often or sometimes	0.235	122/176 (69.3)	339/528 (64.2)	112/400 (28.0)
Tried illicit drugs	0.003	23/178 (12.9)	31/528 (5.9)	7/401 (1.7)
Problems:				
Sexual abuse	0.002	36/178 (20.2)	58/534 (10.9)	31/403 (7.7)
Frequent suicidal thoughts	0.128	21/178 (11.8)	42/531 (7.9)	25/402 (6.2)
Self inflicted injuries	0.002	38/178 (21.3)	62/530 (11.7)	27/399 (6.8)
Eating disorders	0.732	9/173 (5.2)	23/508 (4.5)	16/389 (4.1)

*Comparisons made between girls with coitarche before and after age 15, virgins excluded.

Table 2 Sexual experiences, risk taking, and outcome in 17 year old student girls with coitarche before and after age 15

	Coitarche <15 years (n=178)	%	Coitarche >15 years (n=534)	%	p Values
First intercourse:					
In love	154/174	88.5	456/524	87.0	0.693
Steady partner	127/175	72.6	408/521	78.3	0.122
Partner >3 years older	47/177	26.6	101/525	19.2	0.043
Casual partner	24/175	13.7	64/521	12.3	0.693
Single event	115/172	66.9	368/492	74.8	0.047
No alcohol	143/178	80.3	405/531	76.3	0.301
Wonderful experience	47/178	26.4	163/534	30.5	0.343
Contraception	105/176	59.7	367/520	69.4	0.007
Condom use	79/178	44.4	291/534	54.5	0.024
Lifetime no of partners:					
5–10	49/176	27.8	31/521	5.9	<0.001
>10	18/176	10.2	7/521	1.3	<0.001
First date intercourse:					
>twice	40/177	22.6	42/519	8.0	<0.001
Sex abroad	36/175	20.6	47/517	9.1	<0.001
Contraception at most recent intercourse	139/171	81.3	412/506	81.4	0.968
Oral contraception	83/178	46.6	211/534	39.5	0.114
Condoms	40/178	22.5	156/534	29.2	0.099
Alcohol regularly when sex	16/178	9.0	39/531	7.3	0.517
Oral sex:	167/178	93.8	438/528	83.0	<0.001
receiving/giving	152/178	85.4	370/528	70.1	<0.001
Anal sex	34/178	19.1	43/525	8.2	<0.001
STD	27/178	15.2	29/534	5.4	<0.001
Pregnancy	24/176	13.7	31/518	6.0	<0.001

Masturbation, petting, oral sex, vaginal, and anal intercourse were investigated. The majority of the girls had experience of masturbation, 64% (699/1100), as well as of being petted, reported by 76% (842/1114), and petting, reported by 71% (786/1107) of the girls. Experience of intercourse was reported by 64% (712/1115) of the girls—68% of the those in vocational training and 54% of those in theoretical training (OR 1.79, 95% CI 1.45–2.22). Living with both biological parents was a factor postponing coitarche (OR 0.51, 95% CI 0.65–0.41); whereas neither urban residence nor immigrant background influenced age at onset of intercourse (data not presented). Girls with coitarche before age 15 were defined as “early starters,” and comprised 16% of all female students.

Factors related to coitarche before and after age 15 are presented in table 1, where girls without coital experience are also included. Early biological maturity with menarche before or at age 11 characterises the early starters, as does high perceived social age—that is, a concept used in adolescent medicine, meaning the difference between chronological age and the adolescent’s estimation of what age others perceive her as being.

Table 1 also presents behaviour patterns that constitute a health hazard, such as daily cigarette smoking, use of alcohol (defined as being drunk sometimes or often), having tried illicit drugs, previous sexual abuse, and self inflicted injuries.

Different sexual activities and experiences are presented in table 2, including only girls with coital experience. The early starters have experienced more varied sexual activities, including anal intercourse, they have had more partners, they have had intercourse with a partner met on a trip abroad, and sex on the first date. They have slightly lower use of contraception at first intercourse, and slightly lower use of condoms at most recent inter-

course. STDs of any kind (chlamydia, condylo-mas, herpes, gonorrhoea) were reported by 9% of the student girls with coital experience, and were also more prevalent among early starters. The outcome with regard to STD was 15% (27/178) for the early starters, compared with 5% (29/534) for the later starters, $p<0.001$; and for pregnancy 14% (24/176) compared with 6% (31/518), $p=0.002$.

Relations to first coital partners do not differ between early and later starters, as presented in table 2, nor does use of alcohol at first intercourse. Early starters have experienced more different kinds of genital sex compared with later starters, but no differences were found with regard to the sequence in which sexual experience was gathered. Petting had occurred before coitarche for 80% (139/175) of early starters, compared with 85% (446/524) of later starters, $p=0.080$. Oral sex had been experienced before coitarche by 21% (36/167) of early and 28% (125/449) of later starters, $p=0.082$.

SCHOOL NON-ATTENDERS

As the response rate from the youth centre sample was low, 44%, the results should be interpreted with caution. Mean and median age for menarche was 12 years, range 9–17 years. A perceived social age more than 2 years above the chronological was reported by 41% (47/115). The majority of the girls, 83% (98/118), had experienced intercourse, 49% (47/97) before age 15, and as no significant differences were found with regard to early and later starters, most results are presented for the whole group of coitally experienced girls. STD was reported by 19% (19/98), and 14% (14/98) had experienced an induced abortion. Five of the girls were mothers. The number of coital partners was five or more for 43% (40/93), and first date intercourse had occurred twice or more for 20% (18/98). Contraception was used at first intercourse by 57% (54/95), and at most recent intercourse by 69% (65/94). Daily smoking was common, 77% in early starters and 60% in later starters, $p=0.087$, and experience of illicit drugs was reported by 17% (8/47) and 12% (6/50) respectively, $p=0.569$. Alcohol before first intercourse was more common than for student girls; but 66% (78/118) were sober the first time. A regular combination of sex and alcohol was reported by 17% (20/118). The consumption of alcohol was more frequent than for student girls, 67% (79/118) reported binge drinking sometimes or often.

The social background was less stable than for student girls (data not presented), and whereas sexual abuse was alleged by 28% of the school dropout girls, it was reported by 11% of the female students.

Discussion

Swedish girls aged 17 years have a considerable amount of voluntary sexual experience. Petting and oral sex is common, and may be experienced before intercourse. The term “sexual debut” meaning the first vaginal inter-

course is thus better replaced by expressions for the onset of specific sexual activities.

Early menarche was found to be an independent background factor for early coitarche in Sweden, in accordance with a report from the United States on puberty and sexuality in girls¹¹ and confirming results from a study in a medium sized Swedish town.¹² A recent theory suggests that environmental stress—that is, family stressors such as divorce and interparent conflict, may trigger early menarche.¹³ Early puberty and high perceived social age also belong to the background factors for general risk taking behaviour in adolescent girls.¹⁴

Among background factors postponing coitarche were living together with both natural parents and higher socioeconomic status, reflected in the choice of theoretical study line in upper secondary school. Girls in vocational programmes in school, indicating a lower socioeconomic status, had earlier experiences of sex and also of reproductive health problems. These findings have been presented in more detail in a baseline article of the results of this survey.⁹ The relation between early coitarche and lower SES is in accordance with a recent overview of adolescent sexuality in the United States.¹⁵

In the Nordic countries and in Germany, girls experience intercourse at an earlier age than boys in younger age groups,^{16–19} while in the United Kingdom and the southern parts of Europe, and in the United States, the opposite seems to be the rule and boys tend to start earlier.^{15 20 21} In this survey, the earliest starters comprised girls and boys to the same extent, girls becoming the sexually more experienced sex after age 15.⁹

Early age at first coitus is reported to be a marker for risky sexual behaviour and STD in women, according to a questionnaire study of 4342 American single women, attending a planned parenthood clinic.²² The increased risk associated with early coitarche is also shown to continue after adolescence in a recent study on high risk sexual behaviour in 8450 unmarried young American women, multivariate analysis showed early age at first intercourse to be a predictor of having multiple recent partners.²³ Early coitarche was the “earliest” variable that could be clearly linked to STD and other sexually transmitted conditions, such as cervical dysplasia. The same findings are described in a recent Swedish survey of sexual behaviour in young women.²⁴ But, to complete the picture, an early start to sexual life is also associated with sexual pleasure, and enjoyment of intercourse.²⁵

High risk sexual behaviour can be made safer through consistent use of condoms. High quality condoms are easily available in Sweden, and are promoted by “trendy” advertising. But our respondents had more often used oral contraception at the most recent intercourse than condoms, a finding in accordance with results from Norway.²⁶ Those who had had many partners did not use condoms more than those who had only had one or a few partners. This preference for the pill may make teenagers less inclined to practise STD protective behaviour.

The number of partners, as well as “advanced” sexual behaviour, increases the risk for STDs. Experience of oral sex was reported more often by early starters, and encounters involving oral sex may contribute to increased risk of genital HSV type 1 infections.^{27 28} Also intercourse with a partner met on a trip abroad belongs to the risks taken more often by early than later starters, and may increase the risk for gonorrhoea and HIV.

The results presented here concerning school dropouts should be interpreted with caution because of the the small sample size and the low prevalence, and because of the lack of information on non-responders. But what can be assumed is that non-responders do not constitute a silent, happy group. Girls in in-patient psychiatric care may belong here, as well as girls in care because of substance abuse. Female school non-attenders in Sweden constitute 10% of girls in their upper teens, and have a high number of self reported STDs and pregnancies, and are often early starters. Health hazards—that is, smoking, binge drinking, and experimenting with illicit drugs, are more frequent in this group. More school dropout girls, 28%, reported sexual abuse than student girls, 11%.²⁹ Further investigations and interventions targeting this group should be prioritised.

The early starters in this survey have a risk taking pattern with increased risk for negative consequences in the form of STDs and unintended pregnancy. Risk taking behaviour is part and parcel of adolescence, and experimentation is part of the adolescent way of exploring reality. But a young person in early and mid adolescence has not reached full cognitive development, and has been described as having a feeling of invulnerability.³⁰ Risk taking behaviours starting at an early age also tend to cover several domains, and may, together with health hazards such as smoking and drug experimentation, join into “clusters” of risky behaviours.¹⁴ The term “problem behaviour” then becomes more adequate than “risk taking.” Low socioeconomic status, unstable family situation, and experiences of neglect and abuse belong to childhood precedents. Deprivation at an early age is described to predispose adolescent girls to seek emotional closeness through sexual activity and even parenthood.³¹ Risky sexual behaviour and substance abuse are reported to be linked to previous sexual abuse, as presented here, and as discussed by several authors.³²

Swedish girls with early coitarche have their early start as one of several risk taking behaviours. Comparisons can be made also with results from comprehensive Swedish surveys of normative developmental adolescent behaviour.³³ The analysis of clusters of problem behaviours, with related background factors, has been described as an instrument for identifying and helping troubled young people.¹⁴ Early coitarche and reproductive health problems in young girls can preferably be analysed in the same manner. Consistent, comprehensive, and long lasting public health activities have been shown to reduce problem behaviour

and improve health and health habits during adolescence.³⁴

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