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## **Intercourse Debut Age: Poor Resources, Problem Behavior, or Romantic Appeal? A Population-Based Longitudinal Study**

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*The most important predictors of early intercourse debut are reported to be poor social resources and early developing problem behaviors. In this study we have a new, additional emphasis on variables related to self-concept and social acceptance. In a population-based longitudinal study, 1,399 Norwegians were followed over a 7-year span. We analyzed data using multivariate Cox regression techniques. Early intercourse debut was part of a broader spectrum of problem behaviors, including early alcohol intoxication and early-developing conduct problems. A new finding was that a positive self-concept in the domain of "romantic appeal" was also a strong predictor, but only for boys. We suggest that the findings may have important implications for prevention and more research should be conducted along this line.*

### **THE NORDIC CONTEXT**

Norway is one of the so-called "Nordic welfare states," with low rates of poverty and a high level of gender equality. These countries are rather secularized with little religious involvement, and they are regarded as sexually liberal. Abortion rates are in the mid to high range among Western European countries (about 20/1,000 in the age range of 15-19), and there are few teenage births (Norwegian Central Bureau of Statistics, 2003). Females have, since the mid-1960s, reported earlier intercourse debut than males: a pattern typical for the Nordic countries, in contrast to findings from many other areas (Kraft, 1991). Recent findings indicate that this development has accelerated during the last decade, with a considerable decrease in median intercourse debut age among females, a pattern less clear in males (Pedersen & Samuelsen, 2003). Previously, intercourse among Norwegian youth has been documented to be preceded by a typical sequence of noncoital interactions ("French kissing," "light petting," "heavy petting"; Jakobsen, 1997). Oral sex was recently documented to be introduced at approximately the same time as intercourse, indicating a change in the typical sexual script in ordinary adolescents (Pedersen & Samuelsen, 2003). Thus, intercourse debut is interwoven in a web of various sexual experiences, with a typical sequence, and it is of course not appropriate to define first intercourse as *sexual debut*, in the strict sense of the concept.

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### **THE RESEARCH TRADITION: UNSOLVED PROBLEMS**

Despite the above statement, the first intercourse represents an important event in adolescents' development. Previous research suggests this event is influenced by a mixture of social, psychological, and biological factors. Generally speaking, there have been two main approaches in this research area: The first considers how social control over teenage sex differs as a function of historical period, gender, social class, and religion. The second approach is more interested in how individual experiences and characteristics play a role in this picture (Joyner & Laumann, 2001). Based on more general lines of reasoning in recent social research, one would suggest the second group of factors to play an increasingly important role (Beck & Beck-Gernsheim, 2002; Giddens, 1992). In other words, we hypothesized teenage sexual behavior would be less influenced by membership in broad social groupings and more related to individual characteristics and biography.

Indeed, there are quite a few contributions in recent research using such a perspective. Thus, individual biography and characteristics are recognized as important in several recent studies. But a problem is still that intercourse debut often is one-sidedly conceptualized within a framework of poor resources and psychosocial problems, usually as a "problem behavior." In our opinion, there are other problems as well in contemporary research. Let us briefly review the most important.

1. Many studies still use nonrepresentative samples (Mott, Fondell, Hu, Kowaleski-Jones, & Menaghan, 1996; Miller-Johnson et al., 1999), samples of girls only (Leitenberg & Saltzmann, 2000; Whitbeck, Conger, & Kao, 1993) or boys only (Feldmann, Rosenthal, Brown,

- & Canning, 1995), or samples with a low response rate (Costa, Jessor, Donovan, & Fortenberry, 1995). These restrictions make it difficult to generalize findings to a broader population, and such limits are often not given proper attention. Furthermore, too few studies have focussed on possible gender differences.
2. Many studies concentrate on only one or two domains of influence—such as demographic factors (Heaton & Jacobson, 1994) or biological factors (Rowe, Rodgers, & Meseck-Bushey, 1989)—and do not control for other domains of variables. Thus, possible confounding factors are often not taken into account, and the mechanisms behind certain types of development are often not properly modelled.
  3. Sexual intercourse, in the course of a few teenage years, changes from a low-frequency deviant behavior to a normative behavior. Thus, the factors associated with intercourse debut most likely will change, and variables serving as causal agents in early adolescence may no longer have effect in mid or late adolescence. Generally, previous research has lacked such a developmental focus.
  4. Closely linked to the problem above, choice of statistical methodology has often been inappropriate. Most researchers have used undifferentiated categories based on the relative timing of first sexual intercourse—early versus late intercourse debut—as the dependent variable. However, this approach artificially reduces the variance explained and often makes it difficult to include sexually inexperienced adolescents in the analysis.
  5. Finally, and most important, most studies conceptualize early intercourse debut within a framework of poor resources and psychosocial problems. However, we suggest that characteristics such as a positive self-concept and high self-esteem may also play a role in this picture. Indeed, this may be the situation in a secularized and liberal country as Norway, but one may hypothesize that such influences may also play a role in countries such as the U.S., even if little attention has been given to such lines of reasoning.

The aim of the present investigation was to overcome some of the weaknesses of previous research. More precisely, we wanted to investigate possible predictors of intercourse debut related to “positive” characteristics such as social integration, social competence, and positive self-evaluations in the dating context. However, we situated such variables within more comprehensive models in which we simultaneously considered other factors documented to be relevant. We had at our disposal a high-quality, population-based longitudinal data set. But before we address our most important set of variables in more detail, let us give a brief review of main findings in previous research in the other domains important for our study.

#### SOCIO-DEMOGRAPHIC AND FAMILY FACTORS

Several studies indicate that socially disadvantaged groups

begin their sexual careers earlier than do adolescents in other groups (Gagnon, 1989; West, Wight, & Macintyre, 1993). An earlier Norwegian population study reported the highest median intercourse debut age among people in the highest social class and among people with the highest educational level (Sundet, Magnus, Kvale, Samuelsen, & Bakketeig, 1992). Similarly, Lammers, Ireland, Resnick, and Blum (2000) found lower levels of early sexual activity among adolescents with high socioeconomic backgrounds. However, Paul, Fitzjohn, Herbison, and Dickson (2000) reported no association between mean age of intercourse debut and social class for boys. Moreover, they found that females in the middle socioeconomic status (SES) range had higher levels of early sexual activity than did their higher SES and lower SES contemporaries. Thus, although there is evidence of a socioeconomic dimension in early sexual activity, the findings are not conclusive.

Lammers et al. (2000) found high parental care as perceived by the adolescent to be associated with delayed intercourse debut. The findings are fairly consistent, in that adolescents from dual-parent families report later sexual debut (Lammers et al., 2000; Smith, 1997) than do other members of their cohort; however, one study (Meschke, Zweig, Barber, & Eccles, 2000) found this to be the case only for girls. It has been suggested that the effect of dual-parent families may be caused by divorced parents having more permissive attitudes or providing lower levels of parental supervision than do families with single parents (Miller, Norton, Curtis, & Hill, 1997).

Although there are sufficient data to indicate that parents have an important influence on adolescent sexual activity, several variables could confound the relationship. Parental alcohol problems, for example, may cause family disruption and conflict, which could lead to general behavioral problems in their adolescents. Thus, we need to acquire greater knowledge about the different dimensions of parental influence on the timing of intercourse debut and about the way in which the mechanisms operate.

#### BIOLOGICAL FACTORS AND PUBERTAL MATURATION

Hormones, pubertal development, and sexual behavior have been related in a number of studies. Pubertal development begins with the production of hormones that have a direct influence on sexual motivation but also involves an indirect influence through the development of secondary sexual characteristics, making puberty a marker for entry into adolescence (Smith, 1989). Testosterone levels are associated with sexual behavior in males (Kim, Smith, & Palermi, 1997), but the findings are not as clear for females. However, Udry and Cluett (1982) identified a behavioral sequence linking females' age at menarche to the time of first sexual intercourse, and later, to the time of the first childbirth.

Thus, previous findings strongly suggest that the timing of pubertal maturation plays an important role in early sexual development. However, new research indicates that the onset of puberty is influenced by different family factors

—factors related, in particular, to social class, alcohol problems (Malo & Tremblay, 1997), and degree of emotional closeness to parents (Kim et al., 1997). Thus, such variables should be controlled when investigating the association between pubertal development and intercourse debut.

### EDUCATIONAL ASPIRATIONS AND RELIGION

A number of studies suggest that a host of school-related variables are important correlates and predictors of early intercourse debut. In a study by Costa et al. (1995), for example, low school achievement and low expectations for later academic success were less common among virgins of either gender. Lammers et al. (2000) also found poor school performance to be a predictor of early intercourse debut, yet in Smith's (1997) longitudinal study, low school aspirations were a predictor of virginity only for girls. However, we know that indicators of parental SES in general are predictors of school achievement, and studies of the association between school-related variables and intercourse debut have usually not controlled adequately for parental socioeconomic status.

Frequent church attendance and religious involvement have also been inversely associated with early intercourse debut. In fact, religious involvement is reported to be the most important factor for delaying sexual intercourse past the age of 20, particularly for males (Lammers et al., 2000; Paul et al., 2000).

### DEPRESSION AND PROBLEM BEHAVIORS

Whitbeck, Hout, Miller, and Kao (1992) have shown depression to be a forerunner of early intercourse debut in samples of rural American girls. In these studies, it was suggested that low-quality relationships with parents resulted in depressed emotional states that later increased the girls' vulnerability to peer influence. Smith (1997) found that depression was a predictor of early sexual intercourse for girls but not for boys, and has suggested that early intercourse debut may be experienced as a more negative phenomenon for women than for men. However, one should also note that the prevalence of affective depression increases in adolescence, particularly for females. In light of this phenomenon, Noelen-Hoeksema and Girgus (1994) have argued that depression may not emerge as a predictor for risky sexual behavior until mid-adolescence, when it becomes more prevalent. However, note that early puberty is correlated with depressed mood (Wichstrøm, 1999) and is likely to predate an increase in depression.

One of the most consistent findings in this research area is that early intercourse debut is part of a broader cluster of problem behaviors. In their longitudinal study, Bingham and Crockett (1996) found that for both genders, early intercourse debut was associated with minor delinquency (such as shoplifting, truancy, and cheating in exams) and substance use (alcohol and illegal drugs). Costa et al. (1995) found early intercourse debut to be related to a composite measure of delinquency, problem drinking, and marijuana use.

A diagnosis of conduct disorder in the Paul et al. (2000) study was a predictor of early sexual intercourse for boys, and Miller et al. (1997) reported fighting at school to be a predictor for boys but not for girls. In the Miller-Johnson et al. (1999) study, early aggression was particularly predictive of very early pregnancy. Thus, although the predictors of early childbearing differ from those of early coitus, it seems reasonable to distinguish among different dimensions of conduct problems where those with an aggressive component should be investigated in greater detail.

Thus, early sexual debut is part of a broader cluster of substance use and problem behaviors. However, there are problems in earlier research. First, crude measures of conduct problems and delinquency have been used in some of these studies, although such problems vary greatly in their severity. Second, recent research indicates that there are important gender-related differences with regard to the possible consequences of conduct problems. Although females are less often affected, their risk of developing comorbid conditions is higher (Pedersen, Wichstrøm, & Mastekaasa, 2001). Generally too little emphasis has been given to possible gender differences in the associations between early sexual debut and problem behaviors.

### INTEGRATION, LONELINESS, AND ROMANTIC APPEAL

As the review has shown, most studies conceptualize early intercourse debut within a framework of poor resources, poor monitoring, and psychosocial problems. However, a small handful of findings form an interesting contrast to this picture. First, there is some evidence that early sexual intercourse is not associated with poor-quality peer relationships, and that, on the contrary, those who report late intercourse debut seem to be more lonely and isolated than their peers (Bingham & Crockett, 1996). Furthermore, early intercourse debut has been linked to high self-esteem (Paul et al., 2000) and to high levels of body pride (Lammers et al., 2000). Thus, possibly we can foresee certain elements in a rather different pattern from the one traditionally reported: Early intercourse may also—at least in some adolescents—be associated with high integration in the peer group, with a favorable self-concept, and with high levels of body pride.

In this context, note the attention contemporary social theory lavishes on the self, self-identity, and individual subjectivity. Questions concerning the social construction of the self have moved to the research frontier, and among the myriad ways in which individuals are constituted as identities, those associated with intimate relations and sexuality have also gained increasing importance (Elliott, 2001). In this context, the domain of *romantic appeal* seems to be particularly interesting. It taps the respondent's belief that he or she is able to initiate intimate relations and that others are interested in initiating intimate relations with the respondent (Harter, 1990). Although formulated by Harter as a subdimension of the self-concept, the measure of romantic appeal asks for prediction of one's own future behavior toward the opposite sex, namely self-efficacy. Self-efficacy and attitudes have

generally been found to be particularly important in the forming of new behavior and of lesser importance once habits are established. Generally, the closer the correspondence between an attitude or self-esteem and the behavior to be predicted, the better the prediction (Ajzen & Fishbein, 1980). Self-concept, attitudes, and self-efficacy have previously been shown to play an important role in early debut of other adult role markers in early adolescence, such as consumption of alcohol (Aas, Leigh, Anderssen, & Jakobsen, 1998) and smoking (Fearnow-Kenney, Hansen, & McNeal, 2002).

We thus hypothesized that a positive self-concept in the domain of romantic appeal may predict early intercourse debut. Further, we investigated in more detail the relative importance of this dimension of the self-concept versus dimensions associated with general social acceptance. Moreover, we highlighted such aspects as integration in the peer group and perceived loneliness in this context. There has yet, to the best of our knowledge, been no investigation into these possible relationships.

### AIMS OF THIS STUDY

First, we wanted to investigate factors that had been previously associated with intercourse debut. Second, we assumed that the predictors would vary with age, such that intercourse debut in the early teens would be associated with factors different from those associated with intercourse debut in the mid or late teens. Third, early intercourse debut may obviously be associated with limited resources and psychosocial problems. However, there is also some evidence of a link to body pride and high self-esteem, and special attention was given to such factors in this study. Finally, we used appropriate statistical methods, in particular accounting for the fact that the dependent variable in the study was censored and that intercourse debut age was known to exceed the age of several subjects at the end of follow-up.

### METHODS

#### *Participants and Procedures*

The data reported here stem from the *Young in Norway* study, which has been described in more detail elsewhere (Wichstrøm, 1999). In 1992 (Time 1 or T1), a sample of Norwegian pupils completed a self-administered questionnaire at school. Every school in the country was included in the register from which the schools were selected. The sample was stratified according to geographical region and school size, which, in Norway, is closely related to degree of urbanization. The number of students sampled in each stratum was proportional to the total number of students in the stratum (proportional allocation). Within each stratum, schools were drawn with probability proportional to size. All the students at each selected school were included in the study. (Note that in Norway, 98.5% of the cohorts between 12 and 16 years of age attend the compulsory public junior high schools.)

Consent was obtained from the Ministry of Education, Research and Church Affairs, the local school authorities, and the school boards. Pupils were required to give written consent based on oral and written descriptions of the project formulated according to the standards drawn up by the Norwegian Data Inspectorate. Written consent was also obtained from parents. Mentally handicapped young people and recently arrived immigrants or refugees (1.5 %) were excluded from the study because of lack of reading skills. The initial response rate was 97.0%. The sample was followed up in 1994 (T2) and in 1999 (T3).

At T2, a sizeable proportion of the students had left the school they had attended at T1. These students received the questionnaire by mail. Students who still attended their original school completed the questionnaire at school according to the procedure used in the initial survey (T1). From those who were still at their original school, 91.8% responded. Only students who completed the questionnaires at school at T2 ( $N = 3,476$ ) were followed up at T3 (1999). Because the study had originally been planned as a two-wave study, new informed consent was obtained for the third wave. Those consenting at T2 ( $N = 3,142$ ; 90.4%) received questionnaires by mail at T3, and data were collected from 2,695 subjects (85.8%). The overall response rate was therefore 69.1%.

Discriminant analysis identified the following measures at T1 as predictors of attrition at T3: male gender, young age, little time spent on homework, poor grades, suburban or urban residence as opposed to rural or small-town residence, smoking, and subjects' prediction of manual work as their occupation at age 40.

Because we aimed to investigate intercourse debut prospectively, we limited the present analyses to the youngest students in the sample. In the age group 12 to 14, 17 students (1.2%) reported an intercourse debut age below 11—a situation that seems reasonable to interpret as incest or another form of sexual abuse. Thus, we excluded these respondents from the further analyses, leaving 1,399 persons (646 boys and 753 girls) with valid information for all relevant variables. In 1992, the mean age of the sample was 13.4 years ( $SD = 0.57$ ). In 1999, after the 7-year follow-up, the age range was 19 to 22 with a mean age of 20.6 years.

#### *Measures*

*Sociodemographic factors.* The country was divided into five geographical regions: northern, mid, western, southern, and eastern Norway. Degree of urbanization was measured on a 5-point scale based on independent information about school location. The categories were as follows: large towns (> 100,000 inhabitants), small towns (< 100,000 inhabitants and official status as incorporated town), suburban areas (less than 25 km from the capital Oslo or another large town), and village or countryside (not fulfilling any of the previous criteria).

*Socioeconomic status.* Parental SES was measured by classifying father's and mother's occupation according to the ISCO-88, the official classification standard of the International Labour Organization. We recoded the infor-

mation on a 5-point scale ranging from *owners/professional leaders* to *manual workers*. A separate question was asked about whether the mother or the father was on social welfare or was unemployed. We also asked about parental education and classified the answers on three levels: neither parent with college-level education, at least one parent with college-level education, and at least one parent with university-level education.

*Parental relationships and family characteristics.* We used the Parental Bonding Instrument (PBI) to measure the emotional relationship between respondents and their parents (Parker & Asher, 1987). This instrument captures two dimensions of the parent-child relationship: One group of statements is connected with care ("Have been affectionate towards me") and another with control or overprotection ("Have allowed me to decide things myself"). Cronbach's alpha was acceptable for the overprotection dimension (0.72) and for the care dimension (0.71). We used an instrument of parental monitoring, with questions relating to perceived parental norms and parental knowledge of the adolescent's actions (Olweus, 1989). Examples include "Do they know your friends?" and "Do they know where you are at weekends?" ( $\alpha = 0.85$ ). Information about parental divorce and parental smoking habits was also collected. Two questions measured possible parental alcohol problems: "Have you seen your parents intoxicated?" (5-point scale: never, a few times, a few times a year, a few times a month, or a few times a week), and "Would you say that your parents drink too much?" (7-point scale ranging from *absolutely agree* to *absolutely disagree*).

*Sexual behavior.* To create the variable intercourse debut age, we asked respondents at T1, T2, and T3, "Have you ever had sexual intercourse?" Respondents who answered "yes" were asked to proceed to the question "How old were you the first time?"

*Romantic appeal, social acceptance, and depression.* A revised version of Harter's Self-Perception Profile for Adolescents (SPPA) was used to measure romantic appeal and social acceptance (Wichstrøm, 1995). Harter's theory is based on the idea that the self becomes increasingly differentiated during adolescence, and has previously been widely used to measure adolescents' self-evaluations in different domains. The romantic appeal dimension consists of items such as "I feel that other people my age will be romantically attracted to me" and "I usually don't go out with the people I would really like to date." The SPPA is built around statements answered on a 4-point scale (from *describes me very poorly* to *describes me very well*). Alpha was 0.75, and this dimension was divided into three levels: low, average, and high. The social acceptance dimension of the SPPA captures social competence and popularity and consists of items such as "I find it hard to make friends" and "I am popular with others my age." Alpha was 0.75, and this variable was also divided into three levels: low, average, and high. Six items from Johns Hopkins Symptom Checklist served as a measure of depressed mood. We asked how often the respondents had been "bothered or

troubled" by such states as "feeling too tired to do things" and "feeling unhappy, sad or depressed." Alpha was 0.80, and the instrument was previously reported to have good validity (Wichstrøm, 1999). Loneliness was measured by the question "Do you feel lonely?", with answer options on a 4-point scale from *often* to *never*.

*Perceived relative puberty development.* This variable was measured by the question "When you look at yourself now, do you think that you are more or less physically mature compared to other girls/boys of your age?" The scale had four values from *less than others* to *much more*. Although we used only one item, several authors have noted adequate construct validity for this measure (Dubas, Graber, & Petersen, 1991).

*School-related variables.* We asked about grade levels in three major subjects (Norwegian, English, and mathematics). The average grade level was classified as high, medium, or low. We asked respondents if they would leave school if they obtained a job. We also asked what kind of education they assumed they would attain and classified the answers according to whether they assumed they would obtain a college-level education (yes or no). Furthermore, we administered the Academic Self-Concept subscale of the SPPA ( $\alpha = 0.68$ ). Academic aspirations were divided into three levels: low, average, and high.

*Smoking, alcohol, and drugs.* We asked students about cigarette smoking and gave the following options: "no," "yes, but not on a daily basis," and "yes, daily." Alcohol intoxication during the past 12 months was measured on a 3-point scale with values of "never," "1-10 times," and "11+ times." The respondents were also asked if they had used cannabis during the past 12 months (yes or no). To measure peers' use of substances, we asked questions about daily smoking, alcohol intoxication, and use of cannabis for a subject's two best friends.

*Conduct problems (CP).* We used 15 items closely related to criteria for conduct disorder in the Diagnostic and Statistical Manual of Mental Disorders (3rd ed., Rev.) to measure CP during the preceding 12 months (Pedersen et al., 2001). We have previously identified three dimensions in such problems: serious delinquent acts (e.g., stealing cars, burglary), conduct problems related to aggression (e.g., cursing in front of teacher), and items related to covert nonaggressive norm violations (e.g., playing truant, sneaking onto a bus or into a cinema without paying; Pedersen et al., 2001). The three dimensions were correlated at a moderate level ( $r = 0.37-0.47$ ), and alpha was acceptable (serious = 0.75; aggressive = 0.72; covert = 0.65).

*Religion.* The adolescents were asked if they regarded themselves as Christian or as belonging to another religion (yes) or if they perceived themselves as having no such associations (no).

### Statistical Methods

Our dependent variable was age at first sexual intercourse. However, as the adolescents were only followed to the beginning of their 20s, a proportion had not yet had sexu-



al intercourse. The data thus fell into the framework of censored survival data (Kleinbaum, 1997), or more generally, time-to-event data (Hosmer & Lemeshow, 1999). The probability of first sexual intercourse having occurred before different ages could thus be estimated using the Kaplan-Meier curve and the median intercourse debut age as the age when this curve crosses the value 0.5. Differences between groups were tested by log-rank statistics. We used this approach in the bivariate analyses.

Under the assumption that the rates of first sexual intercourse follow a proportional hazard model, we could also assess the effect of covariates multivariately using Cox regression. This effect is expressed in terms of rate ratios (RR). The RRs may be interpreted approximately as relative risks of intercourse debut at a certain age among subjects who had not had their intercourse debut before this age.

The proportional hazard model requires that relative risks are the same at all ages. It may be speculated that covariate values obtained at T1 may eventually lose their predictive power, after additional covariate values are obtained at T2, for instance. This possibility was checked by running separate Cox models on the intervals T1 to T2 and T2 to T3. The analyses on the T2 to T3 interval models were run with (a) covariates from both T1 and T2 included in the same model and (b) with only T2 covariates included in the model. It should be noted that as age at T2 differed among subjects, the analyses on T2 to T3 required software for left-truncated Cox regression (Hosmer & Lemeshow, 1999).

One problem presented by these data is that age at first sexual intercourse was given only in whole years. The data set is heavily tied, therefore, and the survival analysis methods required adjustment. Our routine approach to dealing with ties was simply to add a random number between 0 and 1 to the censored survival times. For estimation of medians, this simple method was evaluated by comparing the results with similar results obtained from the life-table estimator (Hosmer & Lemeshow, 1999) for discrete survival data. Generally there was little difference, except when the groups were very small. To counter this problem, we reestimated the medians 10 times with different random numbers and we report the average of these estimated medians here. The simple tie-correction method applied to Cox regression was evaluated by comparing the results with other tie-correction methods, such as the Efron

method, the Monte-Carlo EM method (Sihna, Tanner, & Hall, 1994), and ordered logistic models for discrete time survival data (Hosmer & Lemeshow, 1999, pp. 268-269). Again, differences were small. In the tables, we report slight modifications of the Cox regression that take into account the fact that the events are only known to lie within a known interval. (Results from the alternative ways of modeling these associations are not reported here but are available from the authors upon request.)

## RESULTS

At T3, 81.6% of the sample ( $n = 1141$ ) had had their intercourse debut: 78.2% of the boys and 84.5% of the girls,  $\chi^2(1) = 9.1$ ,  $p = 0.002$ . Yearly incidence of intercourse debut and the cumulative intercourse debut age are presented by gender in Table 1. The table shows that a larger proportion of boys had had their intercourse debut in the earliest teenage years, but from 16 years onward the picture was reversed and more girls than boys had had their intercourse debut. Median intercourse debut age was 17.94 years for boys (95% CI = 17.70-18.19) and 17.31 years for girls (95% CI = 17.10-17.52),  $\chi^2(1) = 11.3$ ,  $p = 0.001$ .

Adolescents from northern Norway had a lower median intercourse debut age than did adolescents from other parts of the country ( $p < 0.01$ ). There were no associations between age of intercourse debut on the one hand and parents' social class, parents on social welfare, or unemployed parents on the other hand. There was, however, an association between age of intercourse debut and parents' level of education, but only for girls ( $p < 0.001$ ).

In Table 2, median age at first sexual intercourse is shown in relation to other family and parental characteristics measured at T1. Adolescents who had experienced parental breakup had a lower intercourse debut age. For both genders, there were significant associations between age of intercourse debut and parental rearing practices. Poor parental monitoring, low care, and high overprotection were all associated with early intercourse debut, as were parental smoking and alcohol habits. Most of these associations were stronger for girls.

Table 3 shows the associations among age of intercourse debut and a number of individual characteristics measured at T1. There were marginally significant associations with timing of pubertal maturation, grade level, and academic

**Table 1. Age at First Experience of Sexual Intercourse, by Gender**

|              | Age in years |     |     |      |      |      |      |      |      |
|--------------|--------------|-----|-----|------|------|------|------|------|------|
|              | 11           | 12  | 13  | 14   | 15   | 16   | 17   | 18   | 19   |
| Boys         |              |     |     |      |      |      |      |      |      |
| New cases    | 8            | 9   | 12  | 51   | 67   | 90   | 93   | 103  | 49   |
| Debut in %   | 1.2          | 1.4 | 1.9 | 7.9  | 10.4 | 13.9 | 14.4 | 15.9 | 7.6  |
| Cumulative % | 1.2          | 2.6 | 4.5 | 12.4 | 22.8 | 36.7 | 51.5 | 67.0 | 74.6 |
| Girls        |              |     |     |      |      |      |      |      |      |
| New cases    | 0            | 2   | 15  | 39   | 113  | 163  | 120  | 124  | 48   |
| Debut in %   | 0            | 0.3 | 2.0 | 5.2  | 15.0 | 21.6 | 15.9 | 16.5 | 6.4  |
| Cumulative % | 0            | 0.3 | 2.3 | 7.4  | 22.4 | 44.1 | 60.0 | 76.5 | 82.9 |

Note.  $N = 1,399$ .

**Table 2. Age at First Experience of Intercourse, by Sociodemographic and Family Characteristics**

|                           | Boys     |        |           |                                  | Girls    |        |           |                                  |
|---------------------------|----------|--------|-----------|----------------------------------|----------|--------|-----------|----------------------------------|
|                           | <i>n</i> | Median | 95% CI    | $\chi^2$ ( <i>df</i> ), <i>p</i> | <i>n</i> | Median | 95% CI    | $\chi^2$ ( <i>df</i> ), <i>p</i> |
| Total                     | 646      | 17.9   | 17.7-18.2 |                                  | 753      | 17.4   | 17.2-17.6 |                                  |
| Sociodemography           |          |        |           |                                  |          |        |           |                                  |
| Region                    |          |        |           |                                  |          |        |           |                                  |
| North Norway              | 82       | 17.3   | 16.8-17.9 |                                  | 94       | 16.8   | 16.3-17.5 |                                  |
| South Norway              | 40       | 18.4   | 17.7-19.5 |                                  | 36       | 18.6   | 17.8-19.8 |                                  |
| Other areas               | 524      | 18.0   | 17.7-18.3 | 8.1 (2), .019                    | 623      | 17.4   | 17.1-17.6 |                                  |
| Parental education        |          |        |           |                                  |          |        |           |                                  |
| No college                | 427      | 17.9   | 17.5-18.2 |                                  | 511      | 17.1   | 16.9-17.4 |                                  |
| College                   | 127      | 17.9   | 17.4-18.6 |                                  | 150      | 18.0   | 17.5-18.4 |                                  |
| University                | 92       | 18.0   | 17.6-18.6 | <i>ns</i>                        | 92       | 18.0   | 17.3-18.7 | 15.7 (2), <.001                  |
| Family and parents        |          |        |           |                                  |          |        |           |                                  |
| Parental breakup          |          |        |           |                                  |          |        |           |                                  |
| No                        | 492      | 18.1   | 17.8-18.3 |                                  | 597      | 17.5   | 17.3-17.8 |                                  |
| Yes                       | 154      | 17.4   | 16.9-18.0 | 4.7 (1), .030                    | 156      | 16.7   | 16.4-17.2 | 13.8 (1), <.001                  |
| Parental monitoring       |          |        |           |                                  |          |        |           |                                  |
| Adequate                  | 458      | 18.1   | 17.9-18.4 |                                  | 579      | 17.6   | 17.4-17.9 |                                  |
| Poor                      | 188      | 17.1   | 16.6-17.8 | 6.4 (1), .011                    | 174      | 16.7   | 16.4-17.0 | 18.7 (1), <.001                  |
| Parental care             |          |        |           |                                  |          |        |           |                                  |
| Adequate                  | 532      | 18.1   | 17.8-18.4 |                                  | 646      | 17.5   | 17.2-17.8 |                                  |
| Poor                      | 114      | 17.1   | 16.7-17.9 | 11.0 (1), .001                   | 107      | 16.9   | 16.3-17.4 | 16.9 (1), <.001                  |
| Parental overprotection   |          |        |           |                                  |          |        |           |                                  |
| No                        | 578      | 18.0   | 17.7-18.2 |                                  | 683      | 17.4   | 17.2-17.7 |                                  |
| Yes                       | 68       | 17.4   | 16.6-18.5 | <i>ns</i>                        | 70       | 17.1   | 16.6-17.7 | <i>ns</i>                        |
| Parental smoking          |          |        |           |                                  |          |        |           |                                  |
| None smoke                | 326      | 18.4   | 18.2-18.8 |                                  | 363      | 17.9   | 17.6-18.2 |                                  |
| One daily smoker          | 172      | 17.8   | 17.4-18.2 |                                  | 232      | 17.0   | 16.7-17.5 |                                  |
| Both daily smokers        | 148      | 17.1   | 16.7-17.6 | 19.6 (2), <.001                  | 158      | 16.8   | 16.5-17.2 | 43.6 (2), <.001                  |
| Parental alcohol problems |          |        |           |                                  |          |        |           |                                  |
| No                        | 527      | 18.1   | 17.8-18.3 |                                  | 641      | 17.5   | 17.2-17.7 |                                  |
| Some or clear             | 119      | 17.3   | 16.7-18.0 | 5.4 (1), 0.020                   | 112      | 17.0   | 16.6-17.5 | 4.2 (1), 0.040                   |
| Total                     | 646      | 17.9   | 17.7-18.2 |                                  | 753      | 17.4   | 17.2-17.6 |                                  |

*Note.* Medians and 95% confidence intervals obtained from Kaplan-Meier estimator of survival function. Differences between groups assessed by log-rank test.

self-concept for both genders, and for females an association with aspirations for higher education. However, for both genders the association with smoking, alcohol intoxication, and different dimensions of conduct problems were stronger than any of the three previously mentioned variables. Adolescents with religious beliefs had higher intercourse debut age than did those without such beliefs. Finally, there were no associations between intercourse debut and depression, integration, social acceptance, or loneliness, but self-perceived romantic appeal was significantly associated with intercourse debut age for both boys and girls.

A series of Cox regressions were then performed, in which all the explanatory variables shown in Tables 2 and 3 were used as potential predictors. Note that family variables and individual characteristics were measured both at T1 and T2, though only T1 measures are shown in Tables 2 and 3. We conducted separate analyses for each gender in two stages. At Stage 1 ("early adolescent intercourse debut"), we included the entire sample in the analyses, used predictors measured at T1, and made age at intercourse debut (if it occurred before T2) the dependent variable. (Note that a small proportion had had their intercourse debut already before T1; thus, for this group we can

not consider the relationships causal, as the temporal ordering between the measured variables and first intercourse is ambiguous.) At Stage 2 ("mid adolescent intercourse debut"), we excluded those who had had their intercourse debut before T2 ( $N = 255$ ) from the analyses, used predictor variables measured at T2, and made age of intercourse debut (if it occurred after T2) the dependent variable. Insignificant variables ( $p > 0.05$ ) for both genders and at both stages were eliminated from the analyses in the final models. In initial models, we used variables obtained both from T1 and T2 to explain sexual debut after T2, but the T2 variables proved to be the better predictors. The results are presented in Table 4.

None of the sociodemographic variables had any impact. Furthermore, none of the variables related to parental monitoring or care had any effect. However, early intercourse debut was associated with parental smoking and alcohol problems. Parental smoking habits had effects at both levels (one or both parents daily smokers) and in both stages (early and mid adolescence) for girls, while for boys there was an effect in mid adolescence if both parents were smokers. For boys, we found an effect from possible parental alcohol problems for early intercourse debut.

**Table 3. Age at First Experience of Intercourse, by Individual Characteristics**

|                                   | Boys     |        |           |                                  | Girls    |        |           |                                  |
|-----------------------------------|----------|--------|-----------|----------------------------------|----------|--------|-----------|----------------------------------|
|                                   | <i>n</i> | Median | 95% CI    | $\chi^2$ ( <i>df</i> ), <i>p</i> | <i>n</i> | Median | 95% CI    | $\chi^2$ ( <i>df</i> ), <i>p</i> |
| Pubertal timing                   |          |        |           |                                  |          |        |           |                                  |
| Late                              | 147      | 18.5   | 18.1-19.0 |                                  | 160      | 18.0   | 17.6-18.4 |                                  |
| Average                           | 408      | 17.9   | 17.7-18.2 |                                  | 511      | 17.2   | 17.0-17.5 |                                  |
| Early                             | 91       | 16.8   | 16.2-17.5 | 15.5 (2), <.001                  | 82       | 16.8   | 16.5-17.5 | 10.4 (2), .005                   |
| Peer deviance                     |          |        |           |                                  |          |        |           |                                  |
| No                                | 519      | 18.2   | 18.0-18.5 |                                  | 640      | 17.6   | 17.4-17.8 |                                  |
| Yes                               | 127      | 16.5   | 16.1-17.0 | 25.1 (1), <.001                  | 113      | 16.3   | 16.0-16.7 | 28.8 (1), <.001                  |
| School, education                 |          |        |           |                                  |          |        |           |                                  |
| Grade level                       |          |        |           |                                  |          |        |           |                                  |
| High                              | 31       | 18.1   | 17.0-21.0 |                                  | 38       | 18.2   | 17.3-20.2 |                                  |
| Medium                            | 503      | 18.1   | 17.8-18.4 |                                  | 649      | 17.4   | 17.2-17.6 |                                  |
| Low                               | 112      | 17.2   | 16.5-17.8 | 6.8 (2), .034                    | 66       | 16.7   | 16.4-17.6 | 7.0 (2), <.030                   |
| Academic self-concept             |          |        |           |                                  |          |        |           |                                  |
| High                              | 349      | 18.1   | 17.8-18.5 |                                  | 353      | 17.7   | 17.4-18.0 |                                  |
| Average                           | 171      | 17.8   | 17.3-18.3 |                                  | 233      | 17.2   | 16.9-17.7 |                                  |
| Low                               | 126      | 17.4   | 16.8-18.0 | 6.2 (2), .045                    | 167      | 16.9   | 16.6-17.4 | ns                               |
| Want to quit school               |          |        |           |                                  |          |        |           |                                  |
| Yes                               | 484      | 18.4   | 17.8-18.4 |                                  | 654      | 18.0   | 17.2-17.7 |                                  |
| No                                | 162      | 18.0   | 17.0-18.0 | ns                               | 99       | 17.3   | 16.4-17.7 | ns                               |
| Aspiration higher education       |          |        |           |                                  |          |        |           |                                  |
| No                                | 314      | 18.1   | 17.8-18.5 |                                  | 345      | 17.7   | 17.4-18.0 |                                  |
| Yes                               | 322      | 17.7   | 17.4-18.1 | ns                               | 408      | 17.1   | 16.9-17.4 | 13.3 (1), <.001                  |
| Substance use                     |          |        |           |                                  |          |        |           |                                  |
| Smoking                           |          |        |           |                                  |          |        |           |                                  |
| No or recreational                | 631      | 18.0   | 17.7-18.2 |                                  | 721      | 17.5   | 17.3-17.7 |                                  |
| Daily smoking                     | 15       | 15.1   | 14.3-16.8 | 24.4 (1), <.001                  | 32       | 15.6   | 15.0-16.4 | 39.3 (1), <.001                  |
| Alcohol intoxication              |          |        |           |                                  |          |        |           |                                  |
| No episodes                       | 547      | 18.2   | 18.0-18.5 |                                  | 657      | 17.6   | 17.4-17.8 |                                  |
| 1-10 episodes                     | 89       | 16.4   | 15.9-16.8 |                                  | 87       | 16.0   | 15.6-16.4 |                                  |
| 11+ episodes                      | 10       | 15.0   | 14.3-16.8 | 69.5 (2), <.001                  | 9        | 14.4   | 13.7-15.5 | 61.3 (2), <.001                  |
| Conduct problems, suicide attempt |          |        |           |                                  |          |        |           |                                  |
| Aggressive                        |          |        |           |                                  |          |        |           |                                  |
| 0                                 | 387      | 18.4   | 18.1-18.7 |                                  | 576      | 17.7   | 17.5-18.0 |                                  |
| 1-2                               | 132      | 17.5   | 17.0-18.1 |                                  | 112      | 17.0   | 16.6-17.5 |                                  |
| 3+                                | 127      | 16.7   | 16.3-17.2 | 34.8 (2), <.001                  | 65       | 16.0   | 15.6-16.4 | 90.2 (2), <.001                  |
| Covert                            |          |        |           |                                  |          |        |           |                                  |
| 0                                 | 457      | 18.2   | 17.9-18.5 |                                  | 583      | 17.7   | 17.5-18.0 |                                  |
| 1-2                               | 115      | 17.8   | 17.3-18.4 |                                  | 90       | 16.6   | 16.2-17.0 |                                  |
| 3+                                | 74       | 16.3   | 15.8-17.0 | 19.2 (2), <.0001                 | 80       | 16.2   | 15.7-16.7 | 53.0 (2), <.0001                 |
| Serious                           |          |        |           |                                  |          |        |           |                                  |
| 0                                 | 574      | 18.1   | 17.9-18.4 |                                  | 739      | 17.4   | 17.2-17.6 |                                  |
| 1+                                | 72       | 16.0   | 15.5-16.9 | 33.4 (1), <.0001                 | 14       | 15.4   | 14.4-18.2 | 16.9 (1), <.0001                 |
| Suicide attempt                   |          |        |           |                                  |          |        |           |                                  |
| No                                | 615      | 18.0   | 17.7-18.3 |                                  | 583      | 17.5   | 17.3-17.7 |                                  |
| Yes                               | 31       | 16.2   | 15.2-17.7 | 9.1 (1), .0030                   | 53       | 15.7   | 15.3-16.5 | 38.1 (1), <.0001                 |
| Romantic appeal, religious belief |          |        |           |                                  |          |        |           |                                  |
| Romantic appeal                   |          |        |           |                                  |          |        |           |                                  |
| Low                               | 69       | 20.1   | 18.8-21.4 |                                  | 120      | 17.8   | 17.3-18.3 |                                  |
| Medium                            | 429      | 18.0   | 17.7-18.3 |                                  | 539      | 17.4   | 17.2-17.7 |                                  |
| High                              | 148      | 17.0   | 16.6-17.5 | 34.5 (2), <.001                  | 94       | 16.7   | 16.3-17.1 | 16.5 (2), <.001                  |
| Believe in God                    |          |        |           |                                  |          |        |           |                                  |
| No                                | 562      | 17.7   | 17.5-18.0 |                                  | 643      | 17.2   | 17.0-17.4 |                                  |
| Yes                               | 84       | 19.2   | 18.5-21.4 | 19.6 (1), <.001                  | 110      | 18.6   | 18.1-19.3 | 26.2 (1), <.001                  |

*Note.* Medians and 95% confidence intervals obtained from Kaplan-Meier estimator of survival function. Differences between groups assessed by log-rank test.

**Table 4. Cox Regression of Age of Intercourse Debut on Predictor Variables (rate ratios [RR] with 95% confidence intervals)**

| Variables                    | Boys                               |                                  | Girls                              |                                  |
|------------------------------|------------------------------------|----------------------------------|------------------------------------|----------------------------------|
|                              | Early adolescent intercourse debut | Mid adolescent intercourse debut | Early adolescent intercourse debut | Mid adolescent intercourse debut |
|                              | RR (95% CI)                        | RR (95% CI)                      | RR (95% CI)                        | RR (95% CI)                      |
| Parental smoking habits      |                                    |                                  |                                    |                                  |
| No daily smokers (ref)       | 1.00                               | 1.00                             | 1.00                               | 1.00                             |
| One daily smoker             | 0.87 (0.55-1.37)                   | 1.03 (0.80-1.33)                 | 1.45 (0.95-2.23)                   | 1.29 (1.04-1.59)                 |
| Both daily smokers           | 1.15 (0.74-1.78)                   | 1.45 (1.11-1.90)                 | 1.70 (1.05-2.74)                   | 1.70 (1.34-2.17)                 |
| Parental alcohol problems    |                                    |                                  |                                    |                                  |
| No (ref)                     | 1.00                               | 1.00                             | 1.00                               | 1.00                             |
| Yes                          | 1.71 (1.13-2.60)                   | 0.79 (0.59-1.07)                 | 1.23 (0.78-1.93)                   | 1.09 (0.84-1.42)                 |
| Peers' deviance              |                                    |                                  |                                    |                                  |
| No (ref)                     | 1.00                               | 1.00                             | 1.00                               | 1.00                             |
| Yes                          | 1.28 (0.82-2.00)                   | 1.38 (1.10-1.74)                 | 1.52 (0.95-2.43)                   | 0.77 (0.60-0.97)                 |
| Pubertal onset               |                                    |                                  |                                    |                                  |
| Average (ref)                | 1.00                               | 1.00                             | 1.00                               | 1.00                             |
| Early                        | 1.46 (0.94-2.29)                   | 1.01 (0.75-1.36)                 | 0.95 (0.55-1.62)                   | 1.06 (0.82-1.38)                 |
| Late                         | 1.17 (0.73-1.87)                   | 0.76 (0.57-1.00)                 | 0.54 (0.30-0.99)                   | 0.99 (0.78-1.26)                 |
| Academic self-concept        |                                    |                                  |                                    |                                  |
| Good (ref)                   | 1.00                               | 1.00                             | 1.00                               | 1.00                             |
| Average                      | 1.37 (0.89-2.09)                   | 0.80 (0.63-1.03)                 | 1.81 (1.17-2.79)                   | 0.76 (0.60-0.95)                 |
| Low                          | 1.30 (0.81-2.08)                   | 0.77 (0.56-1.08)                 | 1.37 (0.82-2.27)                   | 1.12 (0.87-1.44)                 |
| Aspirations higher education |                                    |                                  |                                    |                                  |
| Yes (ref)                    | 1.00                               | 1.00                             | 1.00                               | 1.00                             |
| No                           | 1.10 (0.76-1.59)                   | 1.01 (0.82-1.25)                 | 1.12 (0.76-1.65)                   | 1.40 (1.16-1.69)                 |
| Alcohol intoxication         |                                    |                                  |                                    |                                  |
| No episodes (ref)            | 1.00                               | 1.00                             | 1.00                               | 1.00                             |
| 1-10 episodes                | 1.16 (0.70-1.93)                   | 1.57 (1.24-2.00)                 | 1.80 (1.10-2.93)                   | 1.78 (1.41-2.24)                 |
| 11+ episodes                 | 2.22 (0.91-2.51)                   | 2.44 (1.37-4.32)                 | 3.41 (1.28-9.08)                   | 2.48 (1.44-4.28)                 |
| Aggressive conduct problems  |                                    |                                  |                                    |                                  |
| 0 (ref)                      | 1.00                               | 1.00                             | 1.00                               | 1.00                             |
| 1-2                          | 1.65 (1.05-2.59)                   | 1.20 (0.90-1.61)                 | 1.12 (0.68-1.85)                   | 1.35 (1.07-1.70)                 |
| 3+                           | 1.53 (0.93-2.51)                   | 1.47 (1.11-1.97)                 | 1.00 (0.55-1.83)                   | 1.61 (1.13-2.30)                 |
| Covert conduct problems      |                                    |                                  |                                    |                                  |
| 0                            | 1.00                               | 1.00                             | 1.00                               | 1.00                             |
| 1-2                          | 0.77 (0.46-1.28)                   | 1.15 (0.87-1.50)                 | 1.84 (1.12-3.00)                   | 1.34 (1.06-1.70)                 |
| 3+                           | 1.25 (0.70-2.25)                   | 1.05 (0.77-1.43)                 | 1.65 (0.97-2.83)                   | 1.30 (0.96-1.76)                 |
| Believe in God               |                                    |                                  |                                    |                                  |
| No (ref)                     | 1.00                               | 1.00                             | 1.00                               | 1.00                             |
| Yes                          | 0.59 (0.28-1.25)                   | 0.62 (0.43-0.88)                 | 1.20 (0.61-2.35)                   | 0.64 (0.48-0.87)                 |
| Romantic appeal              |                                    |                                  |                                    |                                  |
| Low (ref)                    | 1.00                               | 1.00                             | 1.00                               | 1.00                             |
| Moderate                     | 1.93 (0.82-4.53)                   | 2.41 (1.48-3.92)                 | 1.06 (0.61-1.84)                   | 1.24 (0.95-1.62)                 |
| High                         | 2.96 (1.22-7.21)                   | 2.79 (1.63-4.79)                 | 1.17 (0.59-2.33)                   | 1.39 (0.98-1.99)                 |

Peers' substance use was a significant predictor at both stages for boys, but only marginally significant in early adolescence for girls.

Among individual characteristics, there were minor associations for school-related variables for females; however, alcohol intoxication was important for both genders. There were moderately strong associations with aggressive behaviors for males and females, and covert conduct problems played a role in early intercourse debut only for girls. Religious belief was associated with delayed onset of intercourse debut for both genders. Finally, we found a gender difference as regards romantic appeal. Although the variable had a large impact for boys (RR between 2 and 3) at both levels (average and high) in both early and mid adolescence, there were no effects for girls.

In the analyses reported in Table 4, only predictors from T2 were used at the last stage. However, one can hypothesize that covariates measured at T1 could still have an effect in mid adolescence. Thus, we estimated new models for mid adolescence where T1 covariates were included in addition to those from T2. However, only a few of these variables (alcohol intoxication for boys, aggressive behaviors for girls, and romantic appeal for both genders) still had an effect, and these effects were small.

## DISCUSSION

### *Main Findings*

The present investigation gave support to previous research, in that intercourse debut age was associated on

the one hand with factors related to sociodemography and family and on the other hand with individual biography and individual characteristics. Further, we replicated previous research in that a number of problem behaviors were among the most important of such individual characteristics. However, a new finding was the strong association observed for boys between early intercourse debut and self-evaluated "romantic appeal." Thus, at least in the Scandinavian countries, the one-sided focus on poor resources and psychosocial problems as forerunners of early intercourse debut seems not justified.

### *Romantic Appeal, Social Competence, and Integration*

It is a common notion that traditional concepts of the self seem to be destabilized in present society while new subjectivities emerge. Identity is no longer something you are born into or that remains fixed all your life; it is rather something you mould for yourself as part of what has been called "the reflective project of the self" (Giddens, 1992). Along these lines, contemporary identities are seen as "projects" and "narrative quests" (Butler, 1990). However, this does not imply a dissolution of the self, but a recognition that the task of finding an anchor for the self involves invention and self-invention along several dimensions (Plummer, 1995). Our findings in this study indicate that the aspect of the self labeled *romantic appeal* seems promising when it comes to concrete investigations of the psycho-sexual identity formation in childhood and adolescence. The importance of such a variable may not come as a surprise, and it may have intuitive validity. Still, one should note that emphasis has rarely been placed on such variables in previous research on early intercourse debut.

Erikson (1968) identified the formation of romantic relationships as an important developmental task in the general psychosocial development. He described late childhood as a period of asexual latency, whereas puberty was regarded as the usual starting point for the development of sexual relationships and sexual interest. Yet, the available empirical evidence suggests a different developmental route. Thorne (1986) reported that prepubertal children often use language such as "going with" someone or having "a crush on" someone. Cross-chasing games were common in her study, and the names of the games, such as "chase and kiss," suggested their sexual nature. The older the children, the more sexualized the chasing, with elaborate touching and avoidance of touching as part of the game. One should also note that the most consistent predictor of coital sex is precoital sex. The progression from more innocent forms of sex, such as French kissing and petting, to coital sex follows a highly predictive pattern (Jakobsen, 1997). Thus, sexuality in a broad sense of the term plays an important role in the ordinary development of children's and adolescents' self and identity. Further, we note that in contemporary research, sexuality is regarded as a culturally specific linkage of numerous elements: bodily potentials, desires, practices, concepts, identities, and institutional forms (Weeks, 1998). Sexuality is not a thing

in itself: It can not be detached from the body, nor cut off from the mind.

It came as a surprise for us that romantic appeal was of no importance for the girls, whereas it had a major importance for boys. Even if intercourse debut age is now considerably lower for females than for males in Norway, and despite decades of efforts to minimize gender-role differences, this finding is an indication that boys are still expected to play the more active role in dating and in initiating sexual relationships. Male adolescents also appear to require less commitment than do females before engaging in a sexual relationship, and males are more likely to cite pleasure while females are more likely to express a desire for emotional commitment as a reason for having sex (Træen & Kvalem, 1996b). One might assume that positive precoital experiences foster a positive self-concept, but self-confidence, over and above the effect of precoital experiences, may also give boys the courage to take the initiative in sexual intercourse.

It seems reasonable to surmise that early romantic relationships constitute an overlapping subset of general peer relationships. Moreover, we can assume success in romantic relationships to have its roots in general peer competence. In line with this hypothesis, we did in fact find that romantic appeal was highly correlated with social acceptance in our data ( $r = 0.49$ ,  $p < 0.001$ ). On this basis, it came as a surprise that we found no associations between intercourse debut on the one hand and social acceptance, social integration, or loneliness on the other. Thus, our findings suggest very specific associations between self-evaluations in the dating and romantic context and future sexual behaviors. In other words, we do not foresee the contours of generally self-conceited, integrated, and popular young boys as the early intercourse debutants. Rather, the associations seem to be to the partial subdimensions of the self-concept associated with self-confidence in the romantic, intimate, and sexual domain.

### *Problem Behaviors and Gender*

An advantage of the present data set was the dimensional approach to conduct problems. We observed associations between early-developing aggressive problems and intercourse debut for both genders. This finding echoes previous research indicating that aggressive behaviors are precursors of other risk-taking behaviors, including intercourse behaviors (Miller-Johnson et al., 1999). It may be that adolescents with such characteristics display a restricted and inflexible behavioral repertoire that affords few options for dealing with new challenges. For girls, this would include lack of self-protective responses to pressure for sex with older males. Furthermore, aggressive adolescents are often members of social groups of other antisocial adolescents, and they may have a tendency to encourage behaviors, including early sexual activity, that meet with adult disapproval. Note that aggression was also a predictor of intercourse debut for girls. Recent research indicates that, by and large, the similarities between the

genders in the developmental processes with regard to aggression clearly outweigh the differences, even though girls develop nonconfrontational aggressive techniques more often than boys do (Cairns & Cairns, 1994).

An interesting finding in this study was that covert conduct problems played no role in the timing of intercourse debut for boys, but they predicted early intercourse debut for girls. Webster-Stratton (1996) suggested that typical female conduct behaviors may be less detectable, but may also seem less serious to parents and teachers. Earlier studies have indicated that differences between the behavior of girls with conduct problems and the behavior of their normative same-sex peer group often seem more extreme than is the case for boys. Girls with such problems may face greater peer rejection and coercive reactions from parents and may experience a greater attraction to deviant peer groups. The attainment of adult privileges through nonconformance to norms and by freedom from adult surveillance is at the core of covert conduct problems. Alternatively, adolescent sexuality may be seen as part of such a behavioral repertoire, and not caused by it. Because this cluster is relatively more important in the makeup of the problem behavior of girls, it can also be expected to be more predictive of the subsequent sexuality of girls rather than boys.

Alcohol intoxication was highly associated with intercourse debut age at both stages (early and mid adolescence) and for both genders. First, we should note that many Norwegian adolescents have their intercourse debut while intoxicated (Træen & Kvaem, 1996a). They may also have the expectation that alcohol makes it easier to make sexual advances, and thus they may use alcohol intentionally for achieving such a purpose. However, alcohol is also widely reputed to reduce sexual inhibitions and to promote riskier sexual behavior. Note also that, although our bivariate results showed a strong association between age of intercourse debut and cigarette smoking, this effect disappeared when other variables were controlled. This finding may indicate that alcohol as opposed to cigarettes is more than a marker of general problem behaviors, and that alcohol does have a specific sexual-inhibition-reducing effect, which smoking, of course, does not have.

The associations between problem behaviors and early intercourse debut has been reported previously, and the evidence indicates that the association is partly due to social and family variables associated with both adolescent conduct problems and sexual behavior (Fergusson & Woodward, 2000). One should also note that previous studies have found conduct problems to be correlated with poor self-control and impulsivity (Gottfredson & Hirschi, 1990), factors that can obviously play a role in sexual behavior as well. Unfortunately, data on impulsivity were not available in the present study. Another explanation of the link between conduct problems and sexual behavior may be related to the mechanism previously labeled *cumulative continuity* (Caspi, Bem, & Elder, 1989). Cumulative continuity occurs when an adolescent's interactional style leads him or her to select and create an environment that

reinforces deviant behavior. More precisely, one could hypothesize that substance use and conduct problems alienate adolescents from ordinary youth groups with more restrictive sexual norms and lead them to foster relationships with deviant youth. Our data gave support to such an interpretation, as friends' substance use was a predictor of early intercourse debut for both genders, although the influence of peers was significantly stronger for boys than for girls in mid adolescence (test for interaction:  $p < 0.001$ ).

Alternatively, one could also hypothesize that adolescents with high consumption of substances and behavioral problems develop loneliness and depression due to problematic social relations, and therefore seek intimacy in sexual relationships. For girls, in particular, there is some evidence for this pattern (Smith, 1997). The fact that we did not find an association between intercourse debut age and depression does not exclude the possibility that such a mechanism may operate in subgroups.

### *Religion and Social Background*

Let us finally briefly review some of the other findings in the present study: We observed associations between late pubertal timing and delayed age of first intercourse. They were, however, not of a large magnitude. Religious involvement played a stronger role for both genders in delaying the age of intercourse debut, although the variable did not reach statistical significance until mid adolescence. Today, few Norwegian adolescents would be willing to accept rules prohibiting sexual behavior outside of marriage. It is more reasonable that religious involvement is associated with an emphasis on attaining commitment, respect, and trust before entering into a sexual relationship. Furthermore, religion could also provide a sense of meaning in life, which in turn leads to considered decision-making, including decisions about the meaning of sexual relationships.

The adolescents' socioeconomic background played no role in their intercourse debut when other variables were controlled. A reasonable interpretation would be that Norway is a welfare state with small social differences. However, a previous Norwegian study in an adult population revealed rather large differences in intercourse debut age as a function of respondents' own social class and educational level (Sundet et al., 1992). Thus, one's *own* education and future social class may play a more important role than does background class, a possibility reinforced by an association in this study between the respondents' educational level at T3 (mean age 20.6 years) and median intercourse debut age. Those adolescents without education above compulsory level reported a median intercourse debut age of 16.5 years, whereas the corresponding figure for those with university education was 18.3 years ( $\chi^2 = 47.4$ ,  $df 4$ ,  $p < 0.0001$ ).

Further, one should note that parental smoking and alcohol habits were important predictors. Although it may seem contrainuitive that parental smoking habits should play a role in this picture, there are two possible explana-

tions for this finding. First, smoking is becoming more widespread in segments of society with low education, and has increasingly become a marker of low social class (Trinder, Croft, & Lewis, 2000). Second, smoking habits are highly correlated with use of other psychoactive substances, suggesting that parental smoking habits may serve as a marker of social marginality and of the level of alcohol and substance use in the home. One should also note that parents' smoking was more important for girls than for boys, a finding in line with previous studies showing that cigarettes play a more central role in substance-use socialization for females than for males (Kandel, Yamaguchi, & Chen, 1992).

Parental alcohol habits also played a role in this study, and this effect could be due to the well-documented finding of reduced level of care and monitoring in families with high levels of alcohol use and alcohol problems. However, one could also hypothesize that the effects of parental alcohol habits were indirect, as the timing of alcohol debut is influenced by parental alcohol consumption (Pedersen & Skrondal, 1998).

### Conclusions

The results of the present study are consistent with results from previous studies, in that the timing of first sexual intercourse seems to be interwoven in a mixture of influences from the broader social milieu, from parents, and from a host of individual characteristics. In a Norwegian context, low social class and poor resources seem to have little impact, while high religious involvement delays the age of intercourse debut. Furthermore, early intercourse debut seems to be part of a pattern of problem behaviors, wherein alcohol intoxication is an important predictor for both genders. Conduct problems also play a role, but in this domain, etiologies seem to be gender-specific. Finally, we found no associations between age of intercourse debut and loneliness, degree of social integration, or level of social acceptance. However, self-perceived romantic appeal was an important predictor of age of intercourse debut for boys. Thus, boys at risk for early onset of sexual activity may be characterized by problem behaviors, but they may at the same time have a positive self-concept in the domain of romantic appeal and perceive themselves as popular with the opposite sex. This last finding may, of course, have implications for preventive efforts, and we suggest that more research should be conducted along this line.

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