



## Early sexual debut in Norwegian youth with epilepsy: A population-based study



Morten I. Lossius<sup>a,\*</sup>, Kristin Å. Alfstad<sup>a</sup>, Betty Van Roy<sup>b</sup>, Petter Mowinckel<sup>c</sup>, Jocelyne Clench-Aas<sup>d</sup>, Leif Gjerstad<sup>e,f</sup>, Karl O. Nakken<sup>a</sup>

<sup>a</sup> The National Center for Epilepsy, Division for Surgery and Clinical Neuroscience, Oslo University Hospital, Oslo, Norway

<sup>b</sup> Division of Mental Health, Akershus University Hospital, Lørenskog, Norway

<sup>c</sup> Department of Pediatrics, Oslo University Hospital, Oslo, Norway

<sup>d</sup> Division of Mental Health, Norwegian Institute of Public Health, Oslo, Norway

<sup>e</sup> Department of Neurology, Division for Surgery and Clinical Neuroscience, Oslo University Hospital, Rikshospitalet, Norway

<sup>f</sup> Faculty of Medicine, University of Oslo, Oslo, Norway

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### ABSTRACT

**Objectives:** In comparison with controls, youth with epilepsy (YWE) have greater psychosocial problems. However, information about their sexual behavior is sparse. We have performed a large, population-based questionnaire study to examine differences in sexual behavior between YWE and controls.

**Methods:** A randomly chosen cohort of youth (13–19 years) from Akershus county, Norway ( $n = 19,995$ ) was asked to complete a questionnaire anonymously with questions on epilepsy and sexual activity.

**Results:** The response rate was 85%. Two hundred forty-seven participants reported having or having had epilepsy, i.e., a lifetime epilepsy prevalence of 1.2%. Compared with controls, a higher proportion of YWE reported having had sexual intercourse (43.6% vs. 35.3%,  $p = 0.009$ ). The mean age at sexual debut was significantly lower in YWE than in controls (14.0 years vs. 15.0 years,  $p < 0.001$ ), and this was particularly marked among boys. A higher proportion of YWE reported not having used contraceptives at their last sexual intercourse compared with controls (31.6% vs. 22.3%,  $p = 0.03$ ). Ten percent of YWE, compared with 2% of the controls, reported that they had been forced into their first sexual intercourse.

**Conclusion:** In YWE, some aspects of sexual behavior differ from those of their peers, with earlier sexual debut and less frequent use of contraceptives. More attention should be directed toward this subject, aiming at avoiding unwanted pregnancies and potential emotional traumas in this already vulnerable patient group.

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### 1. Introduction

The teenage years can be a challenging period, and an unpredictable and possibly stigmatizing disease like epilepsy may make this period even more troublesome. Besides struggling to find their own identity, many have their first sexual experiences during these years.

In people with epilepsy, sexual functions may be negatively affected by the underlying etiology, the seizures, the treatment, and psychosocial factors [1–5]. Sexuality in youth with epilepsy (YWE) has received surprisingly little attention in the literature to date [6]. As these youths have more psychosocial problems than their healthy peers [7–9], it might be assumed that this also applies to sexual difficulties.

We have previously shown that YWE struggle with peer relationships, using data from the same cohort [7]. Contributing to peer problems is probably also a lower level of social skills and social adjustment found in YWE [10,11]. Poor self-esteem due to a feeling of being

stigmatized is likely to be particularly difficult during the years of identity formation and may well influence romantic and sexual desires [12]. In a questionnaire study of US high school students, only 31% of youths stated that they would date a person with epilepsy [13].

However, whether such peer problems, reduced social skills, and stigmatization really affect sexual behavior in YWE is not known. A Canadian population-based study of people with juvenile myoclonic epilepsy (JME) reported many pregnancies outside a stable relationship [14]. Adverse social outcome is also found among those with other epilepsy syndromes, e.g., living alone and never in a long-term romantic relationship [15]. In these studies, a wide range of psychosocial and psychiatric problems was found. An increased prevalence of psychiatric comorbidity in the population with epilepsy is well established [16]. It is tempting to assume that such problems may also affect sexual functions and behavior [17,18]. Thus, it might be reasonable to believe that teenagers with epilepsy generally have a later sexual debut than their peers who do not have epilepsy.

In a large population-based study in Norway, we investigated various aspects of sexual activity in YWE and their peers, including

\* Corresponding author.

E-mail address: [mortenl@ous-hf.no](mailto:mortenl@ous-hf.no) (M.I. Lossius).

age of sexual debut, use of contraceptives, and whether the first sexual intercourse was consensual.

## 2. Material and methods

### 2.1. Data collection

Anonymous school-based questionnaires were collected from a large population-based cohort from mainstream schools, including students in the age range of 13–19 years ( $n = 19,995$ ) from a Norwegian county (Akershus). The response rate was 85%. From this comprehensive dataset, we present the information relating to differences in sexual behavior between youth with epilepsy (YWE) and controls [19]. The specific questions on sexual behavior were the following: “Have you ever had sexual intercourse?”; if yes, “What was your age at first intercourse?”, “Did you use contraception at last intercourse?”, and “Was your first experience of intercourse consensual?” The issue of consensual intercourse was only addressed by participants in senior high school ( $n = 10,571$ ; with epilepsy,  $n = 116$ ).

The study was conducted in an area that surrounds the Norwegian capital, Oslo, and comprises urban, suburban, and rural areas. In order to obtain a representative sample, schools and classes at each level were chosen randomly for participation.

The question concerning epilepsy was: “Do you have, or have you had, epilepsy?”

### 2.2. Approval and ethics

The study was approved by the Regional Committee for Medical and Health Research Ethics (REK, ref. 40-02022).

### 2.3. Statistical analysis

Possible group differences were tested using Pearson's chi-square for categorical variables and independent samples *t*-test for continuous variables. A multivariate linear regression analysis was conducted with age at sexual debut as the dependent variable. Independent variables were the following: having epilepsy or having had epilepsy, low family income, or living with a single parent. The question concerning family income at the time of the survey could be answered as follows: very low, low, medium, quite high, or very high. Low family affluence was defined as low or very low income. Living with a single parent was

defined as reporting not living with both parents. The results of the multivariate linear regression analysis are presented as beta with 95% confidence intervals and *p*-values. All tests were two-sided and performed at a 5% significance level. Statistical Package for the Social Sciences for Windows Statistical Software Version 21 was used for all analyses. Missing data in the analysis are due to failure to complete questionnaires.

## 3. Results

### 3.1. Sexual experience among students with or without epilepsy

Among the students answering the questionnaire, 247 reported having, or having had, epilepsy (lifetime prevalence of 1.2%). In the whole group of youths, 35.3% of controls (4.6% nonresponders), compared with 43.6% of YWE (8% nonresponders), reported having had sexual intercourse (Table 1;  $p = 0.009$ ).

Among boys with epilepsy, 49.2% reported having had sexual intercourse compared with 35.3% of controls (Table 1;  $p < 0.001$ ). No statistically significant difference was found among girls with epilepsy and controls.

### 3.2. Age of sexual debut and use of contraceptives among students with or without epilepsy

Of those teenagers reporting that they had had sexual intercourse, YWE had a significantly lower age of debut: 14.0 years in those with epilepsy compared with 15.0 years in controls ( $p < 0.001$ ). Boys with epilepsy had an even earlier sexual debut: 13.8 years compared with 14.8 years in boys without epilepsy (Table 1;  $p = 0.007$ ). Of those reporting having had sexual intercourse and responding to the question concerning contraceptives, 31.6% of YWE, compared with 22.3% of controls, had not used contraceptives at last intercourse (Table 1;  $p = 0.03$ ).

### 3.3. Consensual or nonconsensual sexual debut among students with or without epilepsy

Among YWE, 11.7% ( $n = 7$ ) reported that their first sexual intercourse was forced compared with 1.8% ( $n = 82$ ) of controls ( $p < 0.001$ ).

**Table 1**  
Sexual behavior in youth with epilepsy compared to controls.

	Youth with epilepsy N = 227	Controls N = 16,916	<i>p</i> -Values
Mean age in years (SD <sup>a</sup> )	16.3 (1.66)	16.3 (1.67)	NS <sup>b</sup>
Female, n (%)	108 (44.1)	8569 (48.9)	NS <sup>b</sup>
Have had sexual debut, n (%)	99 (43.6)	5971 (35.3)	0.009
Boys only, n (%)	60 (49.2)	32,782 (35.3)	<0.001
Girls only, n (%)	39 (37.8)	3155 (37.5)	NS <sup>b</sup>
Nonresponders to question on sexual intercourse	20 (8.8)	693 (4.1)	
Mean age at first intercourse (years (SD <sup>a</sup> ))	14 (2.5)	15 (1.7)	<0.001
Boys only (years (SD <sup>a</sup> ))	13.8 (2.38)	14.8 (2.03)	<0.001
Girls only (years (SD <sup>a</sup> ))	14.3 (2.63)	15.2 (1.52)	<0.001
Includes only those who answered yes to having had sexual intercourse	Youth with epilepsy N = 95	Controls N = 5859	<i>p</i> -Values
No use of contraceptives at last intercourse, n (%)	30 (31.6)	1301 (22.2)	0.03
Senior high school, including only those who answered yes to having had sexual intercourse	Youth with epilepsy N = 99	Controls N = 5971	<i>p</i> -Values
Nonresponders to question concerning consensual or nonconsensual sex, n (%)	39 (39.4)	639 (24)	
Forced into first intercourse, n (%)	7 (11.7)	80 (1.8)	<0.001

<sup>a</sup> SD = standard deviation.

<sup>b</sup> NS = not significant compared with controls ( $p > 0.05$ ).

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