CROATIAN MEDICAL JOURNAL
CMJ

44(1):80-85,2003

STUDENT *CMJ*

Sexual Practices of Undergraduate Students in Tirana, Albania

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Aim. To assess the prevalence of sexual activity among undergraduate students at the University of Tirana, Albania, their age at first sexual intercourse, and the influence of socioeconomic factors on their sexual practices, including condom use.

Methods. An anonymous questionnaire survey was carried out among 720 undergraduate students (77% women) at the University of Tirana in October and November 2002. The questionnaire inquired about their current or previous sexual activity, age at first sexual intercourse, and use of condoms. Socio-demographic data were also collected. Multiple regression analyses were used to assess the associations between socio-demographic factors and the investigated characteristics of sexual practices of Albanian undergraduates.

Results. The prevalence of current and/or previous sexual activity was higher among men than women (65% vs 34%, $p < 0.001$). Also, men engaged in sexual activity at earlier age than women (mean age, 17.9 years; 95% confidence interval [CI] 17.6-18.2 for men vs 18.8 years; 95% CI, 18.6-19.1 for women). After adjustment for covariates, both parental high education and high income level were strongly and significantly associated with students' engagement in sexual activity (odds ratio [OR], 3.46; 95% CI, 1.11-9.80 for education; and OR, 2.11; 95% CI, 1.14-3.92 for income) and the likelihood of consistent condom use by students who reported having current or past sexual relations (OR, 8.4; 95% CI, 3.9-18.3 for education; and OR, 7.0; 95% CI, 1.9-26.4 for income).

Conclusion. Parental education and income level are strongly associated with sexual behavior (engagement in sexual activity and consistent condom use) of Albanian undergraduates in Tirana.

Key words: *Albania; coitus; condoms; knowledge, attitude, practice; safe sex; sex behavior; socioeconomic factors; students*

In early 1990's, after a long period of a severe communist regime characterized by complete isolation of the country, Albania managed to adapt to a market-oriented system. The transitional period has been difficult and marked by continuous social upheaval and political instability (1,2). Among many changes in social practices during this post-communist period, prostitution and changes in sexual behavior in a broader sense of the word have been most prominent (3,4). However, little has been reported on sexual behavior and practices of sexually active groups in Albania, especially youth. Moreover, there is no information at what age Albanian youth become sexually active.

Our aim was to assess the prevalence of sexual intercourse among undergraduate university students in Tirana, age when they started having sex, and the influence of socioeconomic factors on their sexual practices, including condom use. According to our preliminary data (5), we expected the students born in urban areas and/or those whose parents had a high level of education to be more prone to practice safe sex.

Subjects and Methods

Subjects

The anonymous questionnaire study, performed in October and November 2002, included 779 (74% women) undergraduate students at the University of Tirana (the study sample was described in detail elsewhere, ref. 6). Out of 779 potential respondents, 27 students were either absent during the survey or refused to fulfill the questionnaire (response rate 96%). Eleven questionnaires filled out by students from Kosovo/Former Yugoslav Republic of Macedonia and 21 incomplete questionnaires submitted by Albanian students were excluded from the analysis. This left a total of 720 valid questionnaires to be included in the analysis.

Variables

Socio-demographic data included age, sex, religion (Islamic or Christian), marital status (single or engaged/married), parental education (low, middle, or high, ref. 6), income (reported family revenue, ref. 6), place of birth and residence (rural or urban area), and number of siblings.

Sexual Practices

The assessment of sexual practices of students was based on their reported sexual activity (current or past), age at first sexual intercourse, and practicing safe sex based on condom use.

For the assessment of sexual activity, students were asked whether they were currently sexually active ("By sexual intercourse, we mean vaginal, oral, or anal sex. Do you actually engage in sexual intercourse?") and had they been sexually active ever before ("Have you ever engaged in sexual intercourse?") (7). If they had, they were asked to provide their age at first sexual intercourse ("If yes, how old were you when you had your first sexual intercourse?") (7). The assessment of safe sex practice among students who reported having current or past sexual relations was based on a modified version of a questionnaire from Center for Disease Control, Atlanta, GA, USA (7). They were asked about condom use ("Do/did you or your partner(s) use a condom during sexual intercourse", and if "Yes": "How often: few times, sometimes, almost always/always?"). In the analyses, we dichotomized safe sex variable into consistent condom use (upon reported "almost always/always" use of a condom), and no/irregular condom use.

Statistics

The statistically significant difference in current or past sexual activity and consistent condom use between students of different age, sex, religion, parental education, income, number of siblings, and place of origin and residence was evaluated by univariate binary logistic regression. Odds ratio (OR), 95% confidence intervals (CI), and p-values across different socio-demographic subgroups were also calculated.

Multiple regression analysis was used to assess the influence of socio-demographic factors on age at first sexual intercourse. Mean (age-adjusted) age at first sexual intercourse, 95% CI, and p-values across different socio-demographic subgroups were also calculated.

Multivariable-adjusted binary logistic regression was used to assess the "independent" associations of parental education and origin/residence with current/past sexual relations and consistent condom use (among currently or previously sexually active students). The underlying assumptions of logistic regression models were tested by likelihood ratio and Hoshmer-Lemeshow goodness-of-fit test. To assess collinearities among covariates (tolerance and variance inflation factor), linear regression models were used.

All statistical analyses were performed by use of SPSS 10.0 for Windows (SPSS, Inc., Chicago, IL, USA).

Results

Out of 720 students included in the analysis, 295 (41%) reported having current or past sexual relations vs 425 (59%) students who had never engaged in a sexual intercourse (Table 1). Men had a significantly higher prevalence of sexual relations than women (65% vs 34%, $p<0.001$). Prevalence of sexual intercourse was highest among the eldest students (22 years), and the lowest among the youngest (18-19 years) ($p<0.001$). Students born or living in urban areas were more likely to engage in sexual relations than their rural-born counterparts (OR, 1.43; $p=0.072$ for origin; and OR, 1.91; $p=0.004$ for residence). Students whose parents had a high level of education engaged in sexual activity more often (49% vs 35% and 33% among middle- and low-educated parents, respectively, $p<0.001$). Income was positively associated with students' sexual relations (mid

Table 1. Prevalence of current and/or past sexual activity of 720 undergraduate students at the University of Tirana in 2002, and its association with socio-demographic factors

Socio-demographic factor	No. (%) of students* current/past sexual relations (n=295)	No. (%) of students* never had sexual relations (n=425)	OR (95% CI)†	p (df)‡
Age groups (years):				<0.001 (2)
18-19	66 (28)	167 (72)	1.00	–
20-21	143 (41)	207 (59)	1.75 (1.23-2.50)	0.002
>22	81 (64)	46 (36)	4.46 (2.81-7.06)	<0.001
Sex:				
female	186 (34)	366 (66)	1.00	–
male	109 (65)	59 (35)	3.64 (2.53-5.22)	<0.001
Marital status:				
single	231 (36)	409 (64)	1.00	–
engaged/married	63 (80)	16 (20)	6.97 (3.94-12.35)	<0.001
Place of birth:				
rural area	49 (35)	92 (65)	1.00	–
urban area	236 (43)	311 (57)	1.43 (0.97-2.10)	0.072
Residence area:				
rural	32 (29)	78 (71)	1.00	–
urban	254 (44)	324 (56)	1.91 (1.23-2.97)	0.004
Parental education level (years):				<0.001 (2)
low (<8)	10 (33)	20 (67)	1.00	–
medium (9-12)	136 (35)	252 (65)	1.08 (0.49-2.37)	0.849
high (>12)	149 (49)	152 (51)	1.96 (0.89-4.33)	0.096
Monthly family income (€ per capita):				<0.001 (2)
low (<80)	76 (32)	161 (68)	1.00	–
middle (80-150)	87 (40)	129 (60)	1.43 (0.97-2.10)	0.070
high (>150)	108 (53)	97 (47)	2.36 (1.60-3.47)	<0.001
Religion:				
Islamic	188 (40)	282 (60)	1.00	–
Christian	106 (43)	138 (57)	0.87 (0.64-1.19)	0.375
Siblings:				0.004 (3)
0-1	140 (48)	151 (52)	1.00	–
2	78 (32)	163 (68)	0.52 (0.36-0.74)	<0.001
3	45 (40)	67 (60)	0.72 (0.47-1.13)	0.153
>3	31 (42)	43 (58)	0.78 (0.46-1.30)	0.339

*Discrepancies in totals are due to missing values; percentages are for data in rows.
†Odds ratios (current/past sexual relations vs never sexual relations) and 95% confidence intervals (CI), univariate binary logistic regression. The first value of each socio-demographic factor was taken as a reference.
‡Overall p-value (degrees of freedom).

vs low income OR, 1.43; 95% CI, 0.97-2.10; and high vs low income OR, 2.36; 95% CI, 1.60-3.47). There was no evidence of association between religion and sexual relations, whereas students with the least number of siblings (0-1) engaged in sexual relations more often than their peers with more siblings (p=0.004) (Table 1).

After adjustment for age, sex, marital status, religion, income, siblings, and origin and residence, parental education remained a strong significant predictor of sexual engagement (Table 2; mid vs low education OR, 1.93; 95% CI, 0.64-5.77; and high vs low education OR, 3.46; 95% CI, 1.11-9.80). Place of origin was not associated with sexual relations after adjustment for covariates, whereas students residing in urban areas engaged significantly more in sexual relations than those residing in rural areas (OR, 2.41; 95% CI, 1.02-5.69). Income was a strong predictor of sexual engagement (high vs low income OR, 2.11; 95% CI, 1.14-3.92), whereas religion and the number of siblings were not associated with sexual relations (Table 2).

To assess the influence of socio-demographic factors on the student's age at first sexual intercourse, we run a separate analysis, which included 295 students who reported being in a current or past sexual relations (Table 3). The youngest students (18-19 years) had their first sexual intercourse at significantly younger age (mean age, 17.5 years; 95% CI, 17.2-17.8) than their 20-21-year-old colleagues (mean age, 18.7 years; 95% CI, 18.5-18.9) and and students 22 years old (mean age, 19.0 years; 95% CI, 18.7-19.3). Men engaged significantly earlier in sexual relations than women (mean age, 17.9 years; 95% CI, 17.6-18.2 vs 18.8 years; 95% CI, 18.6-19.1). Urban-born students engaged a bit earlier in sexual relations than rural-born students (18.4 vs 18.8 years). Students with mid-educated parents appeared to engage a bit later in sexual relations than their low and high-educated counterparts, but this finding was not statistically significant. The wealthiest students engaged significantly earlier in sexual intercourse than their mid and low-income counterparts (18.2 vs 18.8 and 18.7 years, respectively) (Table 3).

Among 279 students who reported having sexual experience and provided data on condom use, 99 (35%) used condoms consistently (almost always/always) (Table 4). Students born or living in urban areas were significantly more likely to engage in safe sex than their rural-born counterparts (OR, 15.7; 95% CI, 9.7-26.1 for origin, and OR, 18.4; 95% CI, 8.7-29.3 for residence). Students whose parents had a high level of education (>12 years) reported a significantly higher consistent use of condoms than the students whose parents had 12 years of education (OR, 12.5; 95% CI, 6.5-23.7). Income was positively associated with students' consistent condom use (mid vs low income OR, 3.8; 95% CI, 1.4-9.9, and high vs

Table 2. "Independent" predictors of engagement in sexual activity among 637 undergraduate students at the University of Tirana in 2002*

Independent variable	Engagement in sexual activity OR (95% CI)†	p (df)‡	Comment
Age groups (years):		<0.001 (2)	The older the students, the more they engaged in sexual relations.
18-19	1.00	–	
20-21	1.62 (1.05-2.49)	0.029	
22	4.46 (2.51-7.91)	<0.001	
Sex:			Men engaged significantly more in sexual relations than women.
female	1.00	–	
male	5.51 (3.50-8.65)	<0.001	
Marital status:			Single students were less probable to engage in sexual relations.
single	1.00	–	
engaged/married	9.78 (4.88-19.63)	<0.001	
Place of birth:			Place of origin did not affect engagement in sexual relations.
rural area	1.00	–	
urban area	0.78 (0.33-1.55)	0.394	
Residence area:			Students living in urban areas were more likely to engage in sexual relations.
rural	1.00	–	
urban	2.41 (1.02-5.69)	0.044	
Parental education level (years):		0.007 (2)	The higher the parental education, the higher the likelihood for a student to engage in sexual relations.
low (8)	1.00	–	
middle (9-12)	1.93 (0.64-5.77)	0.242	
high (12)	3.46 (1.11-9.80)	0.033	
Monthly family income (€ per capita):		0.059 (2)	Wealthier students ("high income") engaged in sexual relations more than others.
low (80)	1.00	–	
medium (80-150)	1.44 (0.88-2.38)	0.149	
high (150)	2.11 (1.14-3.92)	0.018	
Religion:			Religion did not affect the likelihood of engagement in sexual relations.
Christian	1.00	–	
Islamic	0.87 (0.58-1.30)	0.495	
Siblings:		0.446 (3)	Number of siblings had no influence on sexual engagement.
0-1	1.00	–	
2	0.87 (0.52-1.47)	0.599	
3	1.05 (0.53-2.10)	0.880	
3	1.56 (0.72-3.36)	0.261	

*Eighty-three students with missing data for at least one covariate were excluded from the analysis.
†Multivariable-adjusted odds ratios (current/past sexual relations vs never sexual relations) and 95% confidence intervals (CI) from binary logistic regression.
‡Overall p-value (degrees of freedom).

Table 3. Influence of socio-demographic factors on age at first sexual intercourse of 295 undergraduate students at the University of Tirana in 2002, who reported having current or past sexual relations

Independent variable	Mean age (95%CI)* at first sexual intercourse	p (df)†	Comment
Age groups (years):		0.012 (2)	Young students (18-19 years) engaged in sexual relations at earlier age than their older counterparts (20 years).
18-19	17.5 (17.2-17.8)	–	
20-21	18.7 (18.5-18.9)	0.019	
22	19.0 (18.7-19.3)	0.080	
Sex:			Men engaged in sexual relations at significantly earlier age than women.
male	17.9 (17.6-18.2)	–	
female	18.8 (18.6-19.1)	<0.001	
Marital status:			Single students had their first sexual experience at earlier age than their engaged/married counterparts.
single	18.4 (18.2-18.5)	–	
engaged/married	19.1 (18.7-19.4)	0.061	
Place of birth:			Urban-born students engaged in sexual relations at a bit earlier age than their rural-born counterparts.
rural area	18.8 (18.5-19.3)	–	
urban area	18.4 (18.2-18.6)	0.125	
Residence area:			Current residence did not affect the age at first sexual experience.
rural	18.7 (18.1-19.2)	–	
urban area	18.5 (18.3-18.6)	0.831	
Parental education level (years):		0.090 (2)	Students with middle-educated parents engaged in sexual relations at later age than students with low-and high-educated parents.
low (8)	18.4 (17.5-19.4)	–	
middle (9-12)	18.9 (18.6-19.1)	0.376	
high (12)	18.2 (18.0-18.4)	0.821	
Monthly family income (€ per capita):		0.041 (2)	Wealthier students engaged in sexual relations at an earlier age than other two groups.
low (80)	18.7 (18.3-19.0)	–	
medium (80-150)	18.8 (18.5-19.1)	0.442	
high (150)	18.2 (18.0-18.5)	0.096	
Religion:			Religion did not affect the likelihood of having sexual relations.
Islamic	18.4 (18.2-18.7)	–	
Christian	18.6 (18.3-18.9)	0.442	
Siblings:		0.039 (3)	Students with no or one sibling and those with >3 siblings engaged in sexual relations at earlier age than students with 2-3 siblings.
0-1	18.4 (18.1-18.6)	–	
2	18.6 (18.3-19.0)	0.420	
3	19.1 (18.6-19.5)	0.034	
3	18.1 (17.6-18.6)	0.172	

*Age-adjusted mean values and 95% confidence intervals (CI) from multiple regression analysis.
†Overall p-value (degrees of freedom).

low income OR, 16.2; 95% CI, 6.5-29.9). There was no evidence of statistically significant associations of age, sex, or number of siblings with safe sex, whereas students of Christian religion were more likely to report a consistent use of condoms than students of Islamic religion (OR, 1.9; 95% CI, 1.2-3.2) (Table 4).

Upon adjustment for covariates, religion, origin, and residence were no longer significant predictors of safe sex (Table 5). Both parental education (high vs middle/low OR, 8.4; 95% CI, 3.9-18.3) and income (high vs low OR, 7.0; 95% CI, 1.9-26.4) were strongly and significantly associated with consistent condom use.

Linear regression models, run to test for collinearity among covariates (origin vs residence, and parental education vs income), did not exhibit any collinearities of concern, neither for engagement in sexual relations, nor for condom use (data not shown).

Discussion

We found positive associations of parental education and income level with sexual activity and consistent use of condoms among undergraduate students in Tirana. The proportion of students who were or had ever been sexually active ("life-time prevalence" of sexual relations) was relatively low, especially among women (34% vs 65% of men). In addition, the mean age at first sexual intercourse in our study sample was 17.9 years for men and 18.8 years for women. Notwithstanding the lack of previous reports on this matter, female Albanian students seem to engage in sexual activity in smaller numbers and at later age.

Students whose parents had a high level of education engaged in sexual activity more often than other students. Despite the reorientation of Albanian population towards a free society, the lower prevalence rate of sexual activity among students with less educated parents might point to the reminiscences of (traditional) "sexually prohibitive" Albanian culture.

The prevalence of consistent condom use among 279 students in our study who reported being or having been sexually active was 35%. This is comparable with the results of a recent report from Hungary, where the rate of consistent condom use among adolescents in Budapest was 40% (8). As opposed to Hungary, Estonia has a far lower rate of consistent condom use (17%); however, the study population included in the Estonian survey was heterogeneous, and not limited to undergraduate students (9).

One of the issues related to safe sex in Eastern European countries that was brought into debate was the availability and affordability of condoms among youths (10). A West-East difference in condom availability has already been documented (10,11). In Western countries, condoms are readily accessible and can be easily purchased not only in pharmacies, but at vending machines in coffee shops, restaurants, universities, and schools (10). This is not the case in

majority of Eastern European countries. Although Albania is conventionally believed to have developed subsidized marketing schemes recently (11), condoms are not available in schools or universities, or restaurant and /coffee shops. Access and affordability of condoms can, therefore, be assumed to vary in subgroups that differ in income status and/or background (parental education). From this point of view, a higher

Table 4. Prevalence of condom use among undergraduate students at the University of Tirana in 2002, who reported having current or past sexual relations, and its association with socio-demographic factors

Socio-demographic factor	No. (%) of students* consistent condom use (n = 99)	no/irregular condom use (n = 180)	OR (95% CI)†	p (df)‡
Age groups (years):				0.225 (2)
18-19	27 (44)	34 (56)	1.00	–
20-21	44 (32)	95 (68)	0.58	0.088
22	28 (37)	47 (63)	0.75	0.413
Sex:				
male	41 (41)	58 (59)	1.00	–
female	58 (32)	122 (68)	0.67	0.126
Marital status:				
single	89 (41)	127 (59)	1.00	–
engaged/married	10 (16)	53 (84)	0.27 (0.13-0.56)	< 0.001
Place of birth:				
rural area	2 (4)	43 (96)	1.00	–
urban area	95 (42)	130 (58)	15.67 (9.71-26.13)	< 0.001
Residence area:				
rural	1 (3)	28 (97)	1.00	–
urban	96 (40)	145 (60)	18.38 (8.72-29.30)	0.004
Parental education level (years):				
low/middle (12)	14 (10)	121 (90)	1.00	–
high (> 12 years)	85 (59)	59 (41)	12.45 (6.53-23.74)	< 0.001
Monthly family income (€ per capita):				< 0.001 (2)
low (< 80)	6 (8)	66 (92)	1.00	–
medium (80-150)	21 (26)	61 (74)	3.79 (1.43-9.87)	0.007
high (> 150)	62 (60)	42 (40)	16.24 (6.45-29.86)	< 0.001
Religion:				
Islamic	52 (30)	123 (70)	1.00	–
Christian	46 (45)	57 (55)	1.91 (1.15-3.17)	0.012
Siblings:				0.146 (2)
0-1	75 (57)	57 (43)	1.00	–
2	17 (23)	57 (77)	0.76 (0.45-1.34)	0.235
3	7 (10)	65 (90)	0.85 (0.66-1.13)	0.095

*Discrepancies in totals are due to missing values, and percentages are for data in rows.
†Odds ratios (consistent condom usage vs. no/irregular usage) and 95% confidence intervals (CI), univariate binary logistic regression. The first value of each socio-demographic factor was taken as a reference.
‡Overall p-value (degrees of freedom).

Table 5. "Independent" predictors of condom use among 258 undergraduate students at the University of Tirana in 2002, who reported having current or past sexual relations*

Independent variable	Condom use OR (95% CI)†	p (df)‡	Comment
Age (1 year)	1.03 (0.82-1.29)	0.831	Age did not affect condom use among students.
Sex:			Men engaged in safe sex more frequently than women.
male	1.00 (reference)		
female	0.57 (0.27-1.21)	0.145	
Marital status:			Single students reported using condoms more frequently than their
single	1.00 (reference)	–	engaged/married counterparts.
engaged/married	0.31 (0.11-0.85)	0.023	
Place of birth:			Urban-born students engaged in safer sex than their rural-born
rural area	1.00 (reference)	–	counterparts.
urban area	3.50 (0.55-22.47)	0.186	
Residence area:			Current residence was not a significant predictor of condom use
rural	1.00 (reference)	–	among students.
urban	1.67 (0.13-22.29)	0.697	
Parental education level (years):			Students with highly educated parents were significantly more prone
low/middle (12)	1.00 (reference)	–	to safe sex than other students.
high (12)	8.40 (3.87-18.25)	< 0.001	
Monthly family income (€ per capita):		0.009 (2)	The wealthier the students, the higher the likelihood of using
low (80)	1.00 (reference)	–	condoms.
medium (80-150)	2.18 (0.70-6.79)	0.178	
high (150)	7.03 (1.87-26.38)	0.004	
Religion:			Religion was not a predictor of condom use among students.
Islamic	1.00 (reference)	–	
Christian	1.13 (0.53-2.43)	0.752	
Siblings (1 brother/sister)	0.67 (0.39-1.16)	0.157	Number of siblings was not a significant predictor of condom use.

*Thirty-seven students with missing data for at least one covariate were excluded from the analysis.
†Multivariable-adjusted odds ratios (consistent condom usage vs no/irregular usage) and 95% confidence interval (CI) from binary logistic regression.
‡Overall p-value (degrees of freedom).

income level might imply a higher condom-affordability among the wealthier students in Tirana. On the other hand, a solid background (parental high education) might exert a direct effect on condom use through engendering greater concerns about sexually transmitted infections or unwanted pregnancy, irrespective of income status.

In our study, after adjustment for covariates, there was no evidence of statistically significant differences in consistent condom use among subgroups differing in place of origin or residence, although students born and/or living in urban areas seemed to engage more frequently in safe sex than their rural counterparts.

There are several possible limitations of our study. Due to the cross-sectional design of the study, we could not draw any conclusions about possible causative relation between parental education and income on the one hand, and sexual relations and condom use, on the other. Also, we could not generalize our findings to all Albanian youth, since we targeted undergraduate students only. Another inherent limitation relates to the assessment of sexual practice, including condom use, in a country that had been very traditional and conservative for a long time. In Albania, sexual practices and behavior were regarded as taboo for over 50 years of the communist era. Therefore, we can not exclude reporting bias as a potential explanation of our findings, although there is no plausible reason for subgroups differing in parental education and/or income to report differently about their sexual practices. Furthermore, our tools for assessing safe sex practices were limited and did not capture the whole spectrum of sexual behavior (condom use) and its determinants, such as condom prices (to assess affordability) or condom outlets (to assess availability and accessibility). However, as this was probably a very first attempt to assess sexual practices among Albanian students, we could not apply other instruments that could have been previously validated in Albania.

Despite these limitations, we believe that our study provides useful information about the magnitude and socio-demographic determinants of sexual activity and condom use among undergraduate students in Tirana.

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Received: December 11, 2002
Accepted: January 20, 2003

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