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Patterns of Sexual Behaviour and Reported Symptoms of STI/RTIs among Young People in Croatia – Implications for Interventions' Planning

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A B S T R A C T

This paper describes some of the results of the first national-level survey on sexual behaviour and the distribution of risks to sexually transmitted infections (STIs), including human immunodeficiency virus infection (HIV), among youth in Croatia, and the nature and the extent of their vulnerability to these adverse health outcomes. The study was a cross--sectional, probability-based household survey conducted in 2005, and included 1093 respondents aged 18–24. This paper aims to describe the findings related to the knowledge of HIV transmission, key behavioural outcomes relevant for potential transmission of HIV and STIs, and correlates of genital discharge in young men and young women. More than 80% of young people know that the correct use of condoms protects against HIV and that HIV can be transmitted by someone who looks healthy. Fifty-nine percent of young men and 52.4% of young women reported using condoms during the first sexual intercourse, and 59.3% of men and 46.1% of women used condoms during the last sexual intercourse with a casual partner. This points to the gap between knowledge of condom use and the actual use of condoms as a high proportion of risky sexual contact remain unprotected. Having sexual intercourse frequently or regularly while consuming alcohol was reported by 19.2% of men and 7.6% of women. Much lower proportion are using drugs frequently or regularly during sexual intercourse (3.7% of men and 2.1% of women). Among those sexually experienced, 11.8% of men and 44.1% of women reported ever having a genital discharge. Higher presence of genital discharge in women is suggestive of reproductive tract infections that are not necessarily sexually transmitted. In the multivariate analysis, the lack of knowledge of whether chlamydial infections is an STI and having more than five partners in life were correlates of genital discharge in men, while in women the correlates included having more than five partners in life and not using condoms during the first sexual intercourse. Higher burden of STI-related symptoms was found among men who have men as sexual partners, those who paid for sex, and those with concurrent partnerships. These findings point out to the immediate need to strengthen sexual health education among young peopll and to the necessity for further development of other broad-based interventions to prevent adverse sexual health outcomes among both men and women, as well as those targeted towards more vulnerable subgroups.

Key words: *sexual behaviour, young people, genital discharge, condom use, homosexual*

Introduction

Adverse outcomes of sexual behaviour often occur at younger ages and leave their consequences throughout the lifespan, which becomes particularly relevant in the context of an increasing burden of chronicity of some sexually transmitted infections (STIs), such as human immunodeficiency virus (HIV), human papillomavirus (HPV) and hepatitis B infection. Interpretation of the trends and underlying causes of STIs in a population depends on a number of elements such as the existence and quality of the survey and surveillance data, health seeking behaviours and availability of health services for STIs, structure and characteristics of data sources and

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the type of data that is being collected, and finally reliability, validity and generalisability of such data.

The purpose of the survey on sexual health among young people in Croatia, whose results will be presented in this paper, was to enable precise estimates of patterns of sexual behaviours at the population level and to provide evidence for shaping public health policies on sexual health. A number of population-based sexual health surveys were done in other countries with the aim of providing information on sexual health outcomes and behavioural epidemiology of STIs and HIV, such as the National Survey of Sexual Health and Attitudes in the United Kingdom[1], Longitudinal Study of Adolescent Health in the United States (US)[2], French National Survey of Sexual Behaviour (Analyse des Comportments Sexuels en France)[3] and the Australian Study of Health and Relationships[4]. In Eastern Europe, a similar survey of the general population was carried out in Slovenia[5]. In the US, there is also a National Health and Nutrition Survey that includes a random sample of the population and is carried out every 10 years to assess the prevalence of health conditions and nutritional status of the population. Most of these surveys used biological specimens (blood and urine) to test on hepatitis B and C infection, herpes virus types 1 and 2, chlamydia and gonorrhoea[6].

We present the results of the first national-level survey on sexual behaviours among young people aged 18–24 in Croatia that describe knowledge of HIV and STI transmission, sexual behaviours that are linked to HIV and STI transmission, reported symptoms of STIs and reproductive tract infections (RTIs) measured in terms of reporting genital discharge, and discuss the relevance of these findings for planning prevention and control responses. The study is a part of the project »Enhancing the HIV/AIDS prevention and control in Croatia» and was carried out in the framework of the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) funded project. The objectives of the study were: (I) To explore the distribution and correlates of risky sexual behaviours; (II) To examine the demographic and behavioural correlates of self-reported symptoms of STIs and RTIs; (III) To describe the links between knowledge and attitudes related to sexual behaviours and HIV; and (IV) Based on these findings, to suggest needs for HIV and STI-related prevention and control measures.

Methods

This cross-sectional household survey included 1093 respondents aged 18–24 years and achieved an 80% response rate. The survey used a cross-sectional design based on probability sampling techniques. The key advantage of this type of studies is that the estimates obtained are robust and representative of the population they cover. The sample was designed using a multi-stage stratified probability design. Firstly, the settlements (urban and rural) across Croatia were chosen randomly proportionally to the number of people aged 18–24 years living there, secondly, households within the selected settings were chosen randomly, and thirdly in case there was more than one resident aged 18–24 per household, we chose the one who had the birthday most recently. Furher details about the study, including explanations of the sampling method used are available in the report[7]. All interviewers were specially trained, particularly regarding the needs to ensure privacy, anonymity and confidentiality during data collection. The questionnaire consisted of two parts. The first part was completed in the face-to-face interview and included questions on demographic and socio-economic characteristics of respondents, their knowledge and attitudes towards HIV, while the second was completed by respondents alone as it contained questions related to sexual behaviours and experiences. The questionnaire was pretested among 100 students of two secondary schools in Zagreb.

The analysis of self-reported symptoms suggestive of STIs and RTIs included those who had at least one sexual partner in life. Self-reported symptoms of STIs/RTIs were assessed as ever having a genital discharge, accompanied or not by dysuria and discomfort. Discharge is a more specific symptom of STIs in men than in women, as in majority of women vaginal discharge is suggestive of RTIs (candidiasis, bacterial vaginosis). Respondents also answered questions about ever having specific STIs (genital herpes, trichomonasis, gonorrhoea, syphilis, chlamydia, warts, candidiasis, non-specific urethritis, and other STIs) but the number of those answering positively was low, and we estimated that these data suffer from poor validity. Analysis of data was performed using the survey functions of STATA statistical software (Release 8.0) thus accounting for clustering and weighting of the sample[8]. The analyses were done with weighted data to correct for unequal selection probabilities. The bases for the proportions of individuals in the tables are given for both weighted and unweighted data. Missing values were excluded from the analyses. Estimates for the weighted proportions, with 95% confidence intervals (95% CI), were computed for reporting of genital discharge across selected demographic and behavioural characteristics. Univariate analyses of associations between outcome and explanatory variables were done using the two way tables for complex survey data using the Pearson chi-squared statistics corrected for the survey design (the default). Univariate analyses were also done using logistic regression for survey data to obtain pseudo-maximum likelihood estimates of odds ratios as a measure of association with 95% confidence intervals (CI) and tests of significance using adjusted Wald test. The weighted bases for estimates of proportions and odds ratios (ORs) in the tables are rounded to the nearest integer.

Results

Firsty, we present the results related to respondents' knowledge of ways HIV can be transmitted. We then proceed to outline the main behavioural indicators that came out of the survey, suggesting the level of risk taking in sexually active young people in Croatia. The utility of

the survey data is also illustrated by examining the proportions of population that engage in higher risk behaviours, and the burden of the self-reported symptoms of STIs/RTIs that they disproportionally bear. These sections also provide the indicators that the governmental institutions are collecting and reporting to the international organizations such as the Joint United Nations Programme on HIV/AIDS (UNAIDS)[9]. Finally, we descibe the findings related to self-reported symptoms of genital discharge, and the patterns of HIV testing.

Knowledge of the ways of HIV transmission

Table 1. shows the level of knowledge about modes of HIV/AIDS transmission. Knowledge of young women seems to be consistently higher, though not significantly so, compared to men. A relatively high proportion of respondents do not recognise some of the modes of transmission, and more than a quarter think that HIV can be transmitted by mosquito bite and by sharing food with someone who is HIV infected. A quarter of young people do not know that HIV/AIDS is an incurable disease. Over 80% of respondents know that the correct use of condoms protect against HIV and that HIV can be transmitted from someone who looks healthy. Overall, 38.5% of men and 43% of women answered correctly on all five questions (Table 1) on the ways HIV can be transmitted, without differences in the level of knowledge by gender (p=0.15).

Distribution of the risky sexual behaviours

Sexual intercourse was reported by 77.2% (n=427) of men and 77.0% (n=414) of women. The mean age of sexual intercourse was 17.2 years in men and 17.6 years in women. Table 2. describes the levels of risky sexual be-

TABLE 1
THE PROPORTION OF RESPONDENTS CORRECTLY ANSWERING THE QUESTIONS ABOUT WAYS OF HIV TRANSMISSION

	Men (%)	Base (UW, WT)	Women (%)	Base (UW, WT)	p-value
Is it possible to protect oneself against HIV/AIDS by having sexual intercourse with only one, uninfected and faithful person?	75.6	511, 545	81.1	570, 535	0.113
Is it possible to protect oneself against HIV/AIDS by correctly using condoms?	82.3	517, 552	84.5	572, 536	0.0835
Can HIV/AIDS be transmitted by sexual intercourse with someone who looks healthy?	85.5	516, 550	86.7	573, 537	0.2231
Can HIV/AIDS be transmitted by mosquito bite?	61.7	514, 549	67.4	570, 535	0.0049
Can HIV/AIDS be transmitted by sharing food with someone who is HIV/AIDS positive?	72.2	515, 550	77.1	570, 534	0.0942
Can HIV/AIDS be cured if the treatment starts on time?	76.2	512, 548	76.8	571, 536	0.8089

UW – unweighted, WT – weighted. All proportions are caluclated using weighted analysis.

TABLE 2
DISTRIBUTION OF RISKY SEXUAL BEHAVIOURS AMONG YOUNG MEN AND WOMEN AGED 18–24 IN CROATIA

	Men (%)	Base (UW, WT)	Women (%)	Base (UW, WT)
Condom use during the first sexual intercourse	59.0	404, 427	52.4	446, 414
Intercourse with a casual sexual partner in the past year	38.4	403, 426	21.8	445, 412
Last sexual intercourse was with a casual partner	29.4	402, 425	14.7	440, 408
Estimates that will not have casual sexual partners in the next year	29.1	435, 461	61.0	454, 419
Did not use condoms during last intercourse with the casual partner	40.7	122, 124	53.9	61, 60
Have partners only of the opposite sex	93.2	436, 462	92.5	458, 423
Casual partner as the last sexual partner if orientation is exclusively heterosexual	29.9	411, 426	12.9	415, 385
Casual partner as the last sexual partner if orientation is not exclusively heterosexual	42.6	22, 31	45.1	36, 31
Sexual intercourse while taking alcohol (frequently or regularly)	19.2	434, 461	7.6	458, 423
Sexual intercourse while using drugs (frequently or regularly)	3.7	434, 461	2.1	454, 417

UW – unweighted, WT – weighted. All proportions are caluclated using weighted analysis

TABLE 3
PREVALENCE OF SELF-REPORTED GENITAL DISCHARGE IN MEN IN LIFETIME, AND RESULTS OF UNIVARIATE AND MULTIVARIATE ANALYSIS OF ASSOCIATIONS

	Genital discharge (%, 95% CI)	Base (UW, W)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Prevalence	11.4 (8.5–15.1)	397, 421		
Total number of partners			p=0.008	p=0.042
<4	7.5 (4.7–11.9)	219, 245	1.0	1.0
≥5	16.7 (11.5–23.7)	178, 176	2.48 (1.27–4.84)	2.03 (1.02–4.01)
Only heterosexual partners			p=0.016	p=0.06
Yes	10.1 (7.3–13.6)	376, 391	1.0	1.0
No	28.9 (13.1–52.3)	21, 30	3.65 (1.27–10.47)	2.85 (0.94–8.63)
Most of my friends think that it is good to have a lot of sexual experience			p=0.963	p=0.810
No	11.5 (6.3–19.9)	102, 116	1.0	1.0
Yes	11.3 (8.0–15.7)	295, 304	0.98 (0.46–2.09)	0.91 (0.40–2.03)
Knows that chlamydia can be sexually transmitted			p=0.008	p=0.009
Yes	7.2 (4.4–11.7)	146, 157	1.0	1.0
No	16.8 (11.4–24.1)	233, 245	2.60 (1.29–5.23)	2.55 (1.26–5.14)
Used condom during first sexual intercourse			p=0.366	p=0.965
Yes	10.1 (6.9–14.7)	251, 273	1.0	1.0
No	13.4 (8.3–20.9)	143, 145	1.37 (0.69–2.72)	0.98 (0.45–2.12)

95% CI – 95% confidence interval, UW – unweighted, W – weighted; OR – odds ratio

haviours stratified by gender. Though the use of condoms during the first sexual intercourse is fairly similar in both genders, men do seem to report higher levels of risky sexual behaviours. Sexual activities while taking drugs seem to be infrequent. However, one fifth of men reported frequent or regular alcohol consumption. Almost a third of young men reported that their last sexual partner was casual, which was significanlty more common compared to women (14.7, $p<0.0001$). Almost twice as many men than women reported that they might have a casual sexual partner in the next year. The last sexual intercourse with a casual partner was unprotected in 40.9% of men and 53.9% of women. Stratification of the sample according to the gender of partners revealed that young people who have partners of the same gender reported much higher frequencies of casual sexual partners as the last sexual partners.

Self-reported symptoms of STIs and RTIs

Tables 3 and 4 show the prevalence of ever having genital discharge according to the selected variables, and results of univariate and multivariate logistic regression analysis exploring the joint effects of different factors on reporting of genital discharge. The independent variables were chosen to reflect behavioural factors that influence transmission of STIs (number of partners, gender of partners), condom use as a protective factor, knowledge of whether chlamydial infection is an STI, and peer pressure measured in terms of »friends thinking that it is good to have a lot of sexual experiences«. The model included knowledge of an STI (chlamydia) as an independent variable of interest, and not knowledge of HIV transmission ways. This is because the outcome variable (reporting ever having genital discharge) is suggestive of an STI-related symptom. Among those sexually experienced, 48 (11.4%) men and 180 (44.1%) women had a genital discharge at least once in life, followed by dysuria and discomfort.

Characteristics significantly associated with reporting of genital discharge in men in the bivariate analysis are all the variables in the model except condom use during the first sexual intercourse and the variable that assessed the peer pressure related to engaging in sexual activities**.** In the multivariate model, the variables that remained significantly associated with the experience of genital discharge was not knowing that chlamydia is a cause of an STI and lack of knowledge was associated with two times higher probability of reporting genital discharge (adjusted OR=2.6; 95% CI 1.3–5.1; p=0.009), and having more than five sexual partners in life (adjusted OR=2.0; 95% CI 1.0–4.0; p=0.042).

As can be seen from the Table 4, the risk profile of women is rather different. In the bivariate analysis, variables significantly associated with reporting of genital discharge were having more than five partners in life, not using condoms during the first sexual intercourse

TABLE 4
PREVALENCE OF SELF-REPORTED GENITAL DISCHARGE IN WOMEN IN LIFETIME, AND RESULTS OF UNIVARIATE AND MULTIVARIATE ANALYSIS OF ASSOCIATIONS

	Genital discharge (%, 95% CI)	Base (UW, W)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Prevalence	44.1 (39.2–49.1)	442, 409		
Total number of partners			p=0.001	p=0.005
<4	39.5 (34.1–45.2)	333, 313	1.0	1.0
≥5	58.9 (48.7–68.5)	109, 95	2.19 (1.36–3.53)	2.08 (1.25–3.46)
Only heterosexual partners			p=0.554	p=0.644
Yes	43.5 (38.5–48.7)	407, 378	1.0	1.0
No	49.4 (31.5–67.4)	34, 29	1.27 (0.58–2.76)	0.83 (0.37–1.85)
Most of my friends think that it is good to have a lot of sexual experience			p=0.032	p=0.102
No	40.6 (34.8–46.6)	302, 287	1.0	1.0
Yes	52.3 (43.4–61.1)	140, 122	1.61 (1.04–2.48)	1.47 (0.93–2.32)
Knows that chlamydia can be sexually transmitted			p=0.207	p=0.419
Yes	45.6 (40.2–51.2)	366, 344	1.0	1.0
No	37.1 (26.2–49.4)	71, 60	0.70 (0.40–1.22)	0.77 (0.44–1.36)
Used condom during first sexual intercourse			p=0.012	p=0.014
Yes	38.8 (32.7–45.3)	266, 246	1.0	1.0
No	52.0 (43.9–59.9)	170, 156	1.71 (1.12–2.59)	1.72 (1.12–2.65)

95% CI – 95% confidence interval, UW – unweighted, W – weighted; OR – odds ratio

and friends' opinion that it good to have a lot of sexual experience. In the multivariate analysis, two variables remained significantly associated with the outcome. Young women who had more than five partners in life had two times higher odds of reporting genital discharge (adjusted OR=2.1; 95% CI 1.3–3.5; p=0.005) compared to those with less than five partners, and those who did not use condoms during the first sexual intercourse had 1.7 times higher odds (adjusted OR=1.7; 95% CI 1.1–2.7; p=0.014).

Other analyses showed that the significantly lower proportion of women who used condoms during the last intercourse with a casual partners reported genital discharge ever (35.2%) compared to those that did not use condoms (67.4%, p=0.012). In men, on contrary, 23.8% of those who used condoms during such intercourse reported a genital discharge, compared to 4.7% of those who did not use it (p=0.015).

The gender differences in recognising specific STIs were statistically significant. Sixty-one per cent of men and 83% of women were able to recognise chlamydia as an STI. Slighty more men (68%) and 81% women identified human papilloma virus as a cause of an STI.

Ability of the survey to identify groups at higher risk

Ninety-three per cent of men and women had partners of the opposite gender only, and 4.9% of men and 6.0% of women reported mainly having partners of the same gender. Only two men and one women had exclusively homosexual partners. Those who had the same sex partners had significantly higher number of partners, compared to those with only heterosexual partnerships. Men that had men as sexual partners reported significantly higher frequencies of genital discharge (28.9%, p=0.011), as well as those that paid for sex (34.5%, p=0.002). Overall, 4.8% of sexually active men reported paying for sex. It is important to emphasise that those who have sex workers as partners are a bridging population for STI transmission as they can transmit infections to their regular partners, more so than men who have sex with men.

Another group important for STI acquisition and transmission are those who have concurrent partners, that is more than one partner at the same time. In our study, 31.1% of young men and 16.6% of young women had concurrent partnerships at least once in life. Among men who had concurrent partners, 17.9% reported genital discharge, compared to 8.7% of those who did not have concurrent partners (p=0.014). In women who had concurrent partners ever, 52.3% reported a genital discharge, compared to 42.1% of those who did not have such partnerships (p=0.131).

Testing on HIV

Six per cent of young men and 4.7% of young women had an HIV test. Higher proportion of men who had sex with another men tested on HIV (16.1%). Among those who had more than five partners in life, HIV test had 5.8% of young men and 10.5% of young women. Women with more than five partners in life tested significantly

more often than those with less than five partners (p= 0.005), while in men there were no differences across the number of partner categories (p=0.664).

Discussion

This first nationally representative study on sexual knowledge, attitudes and behaviours in young people has an important role in the ongoing process of developing surveillance of HIV in Croatia, enabling identification of population subgroups at increased risk in terms of gender, residence, sexual orientation and patterns of sexual behaviours. In this respect, the study makes a contribution to development of behavioural surveillance of HIV and in providing the evidence-base for development of interventions to enhance sexual health of young people. Behavioural surveillance is a component of the second generation HIV/AIDS surveillance defined as an ongoing systematic collection, analysis and interpretation of behavioural data relevant to understanding trends in the transmission of infection[10].

It is recognised that the STI prevention and control programmes are more effective if they are targeted towards high risk groups that sustain the STI epidemics in the population[11]. Finding out these high-frequency transmitters is the key aspect of STI control, particularly those that are infected with STIs and have high rates of sex partner change. Although our study included the general population of young people in Croatia, it was possible to observe that some population subgroups disproportionally bear the higher burden of STI-related symptoms, which needs to be considered in further development of targeted STI prevention and control programmes.

Besides providing us with the much needed data on the levels of knowledge that young people have about STIs, the utility of this survey is evident by providing the estimates about the size of the populations at higher risk of STIs, for example, those that have same-sex partnerships and concurrent partnerships. In our study, 31.1% of young men and 16.6% of young women had concurrent partnerships at least once in life. Five per cent of men reported mainly having partners of the same gender, and in the bivariate analysis these respondents reported genital discharge more frequently than those exclusively heterosexual. Similarly frequent was paying for sex in men (4.8%). Almost a fifth of young men take alcohol frequently or regularly before a sexual intercourse, while this is much less common in women (7.6%). It is encouraging to observe that over 82% of respondents know that the correct use of condoms protect against HIV and that HIV can be acquired by intercourse with someone who looks healthy. However, other data show that men often engage in casual sexual partnerships, and in 41% of cases these were not protected. Women reported lower frequencies of casual sex, but they reported lower condom use than men. Fifty-four per cent of women reported not using condoms during the last intercourse with the casual partner. This points to the need for the prevention programmes to address the gap between knowledge of importance of condom use and its actual use. Behavioural interventions should also address the links between alcohol consumption and unprotected sex.

Having more than five partners in life and not recognising an STI (in this case chlamydia) came out as an important correlate of genital discharge in men, while in women not using condoms during te first sexual intercourse and having more than five partners in life were associated with STI/RTI-related symptoms. Association with the lower condom use is suggestive of the lower negotiating power of young women in couples' decision making over condom use. In other studies on sexual health, women reported higher frequencies of STIs and lower levels of risky sexual behaviours, which has been explained by more frequent visits to health care providers and higher biological susceptibility of women to STIs[12]. However, in our study, high frequency of genital discharge in women seems to be more related to RTIs, and to the presence of vaginal discharge. Results also suggest that women who are exposed to the higher levels of risk measured in terms of the higher partner change rate, seem to undertake an HIV test more often than men with similarly frequent partner changes. This points to the need to provide interventions targeted to men who report higher frequencies of concurrent partnerships and causal sex which in many cases remains unprotected.

This study shows that men have lower knowledge of STIs and ways of HIV transmission (though not significantly so), and report higher levels of risky sexual behaviours. What implications has this finding for interventions planning? One of the most obvious answers points into the direction of introducing consistent, sustainable and scientific-based education on sexual health in the primary and secondary schools, and media campaigns that would target the younger audiences and inform them about healthy sexual behaviours. These should include gender-specific approaches, and be conducted in a way that sensitise the individuals towards the need to understand and appreciate partner's decisions and be able to negotiate the use of prevention measures. Several European studies reported the higher condom use and better knowledge of sexual health matters in young people that have been exposed to sexual education in schools[13,14]. Such programmes, including life-skills programmes, should be included in the primary and secondary schools' curricula, and should address issues relevant to preventing STIs including HIV, unplanned conception, delaying the premature first sexual intercourse and gender issues in order to empower women for better control of their sexuality. Clinic and population-based data suggest that women are more likely than men to acquire STIs at the lower levels of the number of partners so prevention messages and counselling should contain the information that STIs are not necessarily acquired by frequent changes of partners which also indicates the importance of knowing partner's infection status[15]. The need to include men in screening for chlamydia and other preven-

tion efforts is increasingly being recognised as screening both genders is a more cost-effective strategy than screening women alone[16–18].

It has to be acknowledged that behavioural studies, such as this one, face problems of data validity and reliability, relying as they do on voluntary participation and reported behaviours, with attendant problems of veracity and recall. Random probability sampling methods used in population-based surveys avoid volunteer bias but do not usually provide robust estimates of behaviours of smaller population sub-groups that are important in STI transmission. Self-reported data on STIs, without the laboratory confirmation of the presence of infections, underestimates the frequency of STIs in the population. Self-reported measures of STI history have limited validity, though this has been less described in the literature compared to the validity of other measures such as condom use[19]. Some studies have found substantial underreporting of STIs in self-reports, compared with the history of STIs from corresponding medical records[20,21]. The bias in STI histories may result from individuals not recognising symptoms, not seeking care, or not remembering diagnosis. Other sources of underreporting of STIs include:

(I) respondents were not tested and given a diagnosis when they had an STI; (II) respondents were tested but unaware of a diagnosis because results were not received or not understood; (III) respondents were tested and aware of a diagnosis but did not report it; (IV) high proportion of STIs are asymptomatic and therefore many people are not aware that they have an infection. Lack of understanding of STIs, intentional denial due to concerns about confidentiality or social desirability are other sources of measurement error[22,23]. Another limitation of our survey is that, regretfully, no biological specimens were collected, and we think that in the next surveillance round urine samples should be taken to test on chlamydial infection because of the higher expected prevalence of chlamydia among younger age groups.

Surveillance surveys such as this one are the instruments that can help to guide policy decisions, primarily in terms of identifying target groups in which the interventions can yield the greatest impact. The main objectives of STI surveillance are to estimate the magnitude of the burden of STIs in order to assist in defining the resources needed and advocating for the necessary support for STI prevention and control from policy-makers[24,25]. Aral argues that comparison of STI morbidity across populations and implementation and evaluation of similar interventions in different settings often yielded different results, which highlights the importance of obtaining country-specific determinants for STI prevention and control[26,27]. Lack of or insufficient evidence can be seen as one of the most important contributors to less than adequate public health interventions.

Data on prevalence of STIs among sex workers and men who have sex with men remain rather sparse in Croatia, along with the efforts to systematically assess and synthesise determinants of STIs and HIV in the high risk groups and characteristics of their sexual networks. The focus of STI and HIV surveillance has been mainly on the universal case reporting and interpretation of trends in aggregated national rates of STIs which obfuscates the variations in the incidence of infections by age and behavioural characteristics and hides the disproportionate burden of disease in particular behavioural groups. In order to be more able to interpret patterns of STI and HIV-related behaviours and characteristics of STI and HIV epidemiology in Croatia, strengthening surveillance systems should be perceived by policy makers as an effective tool to fight the epidemic.

Conclusion

This study aims to provide more valid estimates of sexual behaviours of young people, being able to indentify population subgroups that are more vulnerable to adverse sexual health outcomes. Our data suggest that interventions should address the gap between the knowledge of the condom use as a means to protect against STIs and its actual use. Sixty per cent of men and sligthly over 50% of women used condoms during the first sexual intercourse while its use was low during casual sex in the past year (41% and 54%, respectively). Higher levels of reported genital discharge were observed in men who reported the same sex partnerships. We therefore argue that young people should be provided with the evidence-based, gender-specific and sustainable interventions to enhance their sexual health. Other surveillance surveys, both community and institution-based, are necessary in order to establish the profile of STI epidemics in Croatia in the groups that are at higher risk of STI acquisition and transmission. Finally, such studies should be also used to estimate the current coverage with interventions which enhances their utility as tools used for strategic planning.

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REFERENCES

1. JOHNSON, A. M., C. H. MERCER, B. ERENS, A. J. COPAS, S. MCMANUS, K. WELLINGS, K. A. FENTON, C. KOROVESSIS, W. MACDOWALL, K. NANCHAHAL, S. PURDON, J. FIELD, Lancet, 358 (2001) 1835. — 2. MANEY, D. W., D. A. HIGHAM-GARDILL, B. S. MAHONEY,, J. Sch. Health, 72 (2002) 157.— 3. SPIRA, A., N. BAJOS: Sexual Behaviour and AIDS. (Aldershot Bookfield, Avebury, 1994). — 4. GRULICH, A. E., R. O. DE VISSER, A. M. SMITH, C. E. RISSEL, J. RICHTERS, Aust. N. Z. J. Public Health, 27 (2003) 234 — 5. KLAVS, I., L. C. RODRIGUES, K. WELLINGS, D. KESE, R. HAYES, Sex. Transm. Infect., 80 (2004) 121. — 6. LAFFERTY, W. E., Herpes, 9 (2002) 51. — 7. ŠTULHOFER, A., D.

AJDUKOVIĆ, I. BOŽIČEVIĆ, K. KUFRIN: HIV/ AIDS i mladi – Hrvatska 2005. Informiranost o HIV/AIDS-u, stavovi i seksualno ponašanje u nacionalnom uzorku mladeži (18–24). (Croatian Public Health Institute and Ministary of Health and Social Welfare of the Republic of Croatia, Zagreb, 2006). — 8. STATA Statistical Software: Release 8.0. (STATA Corporation: College Station, TX, 2003). — 9. UNAIDS: National AIDS Programmes. A guide to monitoring and evaluation. (UNAIDS, Geneva, 2000). — 10. WORLD HEALTH ORGANIZATION: Guidelines for Second Generation HIV Surveillance. (WHO, Geneva, 2002). — 11. GARNETT, G. P., F. J. BOWDEN, Sex. Transm. Dis., 27 (2000) 588. — 12. FENTON, K. A., C. KOROVESSIS, A. M. JOHNSON, Lancet, 358 (2001) 1851. — 13. HUBERT, M., N. BAJOS, T. SANDFORT: Sexual Behaviour and HIV/ AIDS in Europe. (UCL Press, London, 1998). — 14. WELLINGS, K., J. WADSWORTH, A. M. JOHNSON, J. FIELD, L. WHITAKER, B. FIELD, Brit. Med. J. 311 (1995) 417. — 15. BOŽIČEVIĆ, I.: Integrating evidence for the interpretation of the sexually transmitted infections epidemic in England. Doctorate in Public Health Thesis. (London School of Hygiene and Tropical Medicine, London, 2005) —16. HART, G. J., B. DUNCAN, K. A. FENTON, Sex. Transm. Infect., 78 (2002) 396. — 17. FENTON, K. A., Commun. Dis. Public Health, 3 (2000) 86. — 18. STEPHENSON, J., J. HOPWOOD, A. BABIKER, A. COPAS, M. VICKERS, Sex. Transm. Infect., 79 (2003) 352. — 19. PEQUEGNAT, W., M. FISHBEIN, D. CELENTANO, A. EHRHARDT, G. GARNETT, D. HOLTGRAVE, J. JACCARD, J. SCHACHTER, J. ZENILMAN, Sex. Transm. Dis., 27 (2000) 127. — 20. CLARK, L. R., C. BRASSEUX, D. RICHMOND, P. GETSON, L. J. DŽANGELO, J. Adolesc. Health, 21 (1997) 91. — 21. HORNBERGER, L. L., S. L. ROSENTHAL, F. M. BIRO, L. R. STANBERRZ, J. Adolesc. Health, 16 (1995) 235. — 22. MCHUGH, M. T., V. J. PALUSCI, JAMA, 267 (1992) 1610. — 23. HINGSON, R., L. STRUNIN, Am. J. Prev. Med., 9 (1993) 62. — 24. WORLD HEALTH ORGANIZATION: Sexually transmitted diseases: policies and principles for prevention and care. (WHO, Geneva, 1997). — 25. SHIBOSKI, S., N.S. PADIAN, J. Infect. Dis., 174 (1996) S188. — 26. ARAL, S. O., N. S. PADIAN, K. K. HOLMES, J. Infect. Dis., 191 (2005) S1. — 27. ARAL, S. O., Int. J. STD. AIDS, 12 (2001) 211.

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OBRASCI SEKSUALNOG PONAšANJA I SIMPTOMI SPOLNO PRENOSIVIH INFEKCIJA KOD MLADIH U HRVATSKOJ – KOJA JE NJIHOVA VAŽNOST U PLANIRANJU INTERVENCIJA

S A Ž E T A K

Rad predstavlja rezultate prvog istraživanja koje koristi probabilistički uzorak u općoj populaciji mladih Hrvatske, a ima za cilj istražiti spolno ponašanje i distribuciju rizika od spolno prenosivih infekcija i HIV-a, te karakteristike i opseg njihove ugroženosti ovim neželjenim aspektima seksualnosti. Istraživanje je provedeno tijekom 2005. godine studijom presjeka koristeći probabilistički uzorak domaćinstava u cijeloj Hrvatskoj te je uključilo 1093 osoba starih 18–24 godine. Ovaj rad ima za cilj opisati rezultate vezane za znanje o prijenosima HIV-a, ključne rezultate koji se odnose na spolno ponašanje i koji su bitni za mogući prijenos HIV-a i spolno prenosivih infekcija te korelate genitalnog iscjetka kod mladića i djevojaka. Više od 80% mladih ljudi zna da ispravna upotreba kondoma zaštićuje od prijenosa HIV-a i da se HIV može dobiti od nekoga tko izgleda zdravo. Pedeset devet posto mladića i 52,4% djevojaka je upotrijebilo kondom kod prvog spolnog odnosa, dok je kondom kod zadnjeg spolnog odnosa sa slučajnim partnerom upotrijebilo 59,3% mladića i 46,1% djevojaka. Evidentno je da postoji razlika između znanja i primjene znanja o važnosti upotrebe kondoma s obzirom da je visoki postotak rizičnih seksualnih odnosa nezaštićen. Često ili redovito konzumiranje alkohola kod spolnog odnosa je imalo 19,2% mladića i 7,6% djevojaka. Znatno manje mladih ljudi često ili redovito koristi droge za vrijeme seksualnog odnosa (3,7% muškaraca i 2,1% žena). Simptom genitalnog iscjetka je imalo 11,8% muškaraca i 44,1% žena koji su imali iskustvo spolnog odnosa. Puno veća učestalost iscjetka kod žena ukazuje na infekcije reproduktivnog sustava koje nisu nužno spolno prenosive. U multivarijatnoj analizi, nedostatak znanja o tome da je klamidija spolno prenosiva infekcija i više od pet partnera u životu su korelati simptoma genitalnog iscjetka kod muškaraca, dok su kod žena korelati uključili više od pet seksualnih partnera te neupotrebu kondoma za vrijeme prvog seksualnog odnosa. Češće iskazivanje simptoma spolno prenosivih bolesti nađeno je i kod muškaraca koji imaju spolne odnose sa muškarcima, onima koji su platili spolne usluge te onima koji su imali dva ili više partnera istovremeno. Rezultati ovog istraživanja ističu potrebu za provođenjem spolnog odgoja u školama te za razvojem drugih intervencija u općoj populaciji kao i onih usmjerenih visoko-rizičnim skupinama