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Sexual and HIV risk behaviour in Central & Eastern European migrants in London

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1 **Abstract**

2 **Background:** The accession of ten Central and Eastern European (CEE) countries to the
3 EU resulted in the largest migratory influx in peacetime British history. No information
4 exists on the sexual behaviour of CEE migrants within the UK. Our aim was to assess
5 the sexual lifestyles, and health service needs of these communities.

6 **Methods:** We conducted a survey, delivered electronically and available in 12
7 languages, of migrants from the ten CEE accession states recruited from community
8 venues in London following extensive social mapping, and via the Internet. Reported
9 behaviours were compared with those from national probability survey data.

10 **Results:** 2648 CEE migrants completed the survey. Male CEE migrants reported higher
11 rates of partner acquisition (adjusted odds ratio (aOR) 2.1, 95%CI: 1.3-2.1), and paying
12 for sex (aOR 3.2, 95%CI: 2.5-4.0), and both male and female CEE migrants reported
13 more injecting drug use (men: aOR 2.2, 95%CI: 1.3-3.9; women: aOR 3.0, 95%CI 1.1-
14 8.1), than in the general population; however CEE migrants were more likely to report
15 more consistent condom use and lower reported diagnoses of sexually transmitted
16 infections (STI). Just over 1% of respondents reported being HIV positive. The majority
17 of men and a third of women were not registered for primary care in the UK.

18 **Discussion:** CEE migrants to London report high rates of behaviours associated with
19 increased risk of HIV/STI acquisition and transmission. These results should inform
20 service planning, identify where STI and HIV interventions should be targeted, and
21 provide baseline data to help evaluate the effectiveness of such interventions.

22

1 **Introduction**

2 Over the past decade the United Kingdom (UK) has experienced large migratory fluxes
3 from Central and Eastern Europe (CEE). In particular the accession on 1 May 2004 of
4 Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia
5 (the 'A8') into the European Union (EU), and of Bulgaria and Romania (the 'A2') on 1
6 January 2007, were followed by large-scale, though often circular migration from these
7 countries (1). Circular migration is a form of migration that allows some degree of legal
8 mobility back and forth between two countries.

9 The uptake of safer sex measures and patterns of health service use in these migrant
10 populations are unknown. Also the demographic profile of CEE migrants (young and
11 frequently single)(1); the often high background prevalence of sexually transmitted
12 infections (STIs) and HIV in their countries of origin (2-4); and their lack of experience
13 of the British health system, may place these new migrant communities at higher risk of
14 sexual ill health and reproductive morbidity compared to the general population

15 As research on the sexual behaviour of the general populations of Central and Eastern
16 Europeans is sparse and no information exists on the sexual behaviour of CEE migrants
17 within the UK, our aim was to establish an understanding of the sexual lifestyles and
18 health service needs of these communities. This study is part of the SALLEE project
19 (sexual attitudes and lifestyles of London's Eastern Europeans); papers examining the
20 sexual risk of CEE migrant men who have sex with men(5) and CEE migrant
21 attendance at genitourinary medicine clinics and STI diagnoses (6), also to arise from
22 this project have already been published.

1 **Methods**

2 A detailed description of the methodology has been previously published (7). A brief
3 summary is provided below.

4 **Participants and procedure**

5 Eligible respondents were literate men and women aged over 17 who self-identified as
6 migrants from one of the ten CEE countries. The community sample was recruited in
7 London and the web survey was advertised on websites for CEE nationals in the UK as
8 described in reference 7. Web survey respondents who gave their home post-code
9 outside London were excluded from the study.

10 Fieldwork took place over a nine-month period (July 2008 – March 2009). The nine
11 fieldworkers involved in the recruitment of respondents for the community sample were
12 native speakers of six of the languages of the CEE countries.

13 **Study instruments**

14 The survey instrument was a self-completed questionnaire designed using SNAP 9
15 survey software (8) that was fielded using hand-held computers for the community
16 sample and a web survey for the Internet sample. The community and internet survey
17 questions were identical. The questionnaire was anonymous. The questionnaire was
18 piloted to examine its feasibility and acceptability and to explore understanding of the
19 question items and underlying constructs: the use of the hand-held computers, question
20 routing, and technical usability were also tested during piloting.

1 The questionnaire was translated into 11 languages (the ten official languages of the
2 CEE countries plus Russian) and bilingual native speakers of the 11 languages checked
3 the translation accuracy.

4 **Sampling**

5 There is no adequate sampling frame of this new migrant population from which to draw
6 a probability sample of CEE nationals in London. The study therefore relied on
7 convenience sampling in order to generate a cost-effective sample that would be
8 sufficiently robust for detailed analysis. This study adopted two sampling strategies
9 (community and Internet) in order to ensure representation of key elements of the
10 population, and minimise bias. A detailed social mapping exercise was conducted prior
11 to recruitment of the community sample (7). This provides some confidence that the
12 selected boroughs and locations capture a broad cross-section of CEE migrants in
13 London.

14 **Statistical analysis**

15 Standard statistical tests, e.g. χ^2 test and Student's t-test, were used to examine
16 associations between variables. Multivariate analysis of factors associated with one or
17 more new heterosexual partner in previous 12 months used a backwards-stepwise
18 model; all variables with a p-value <0.1 for the crude association were retained for
19 incorporation in the multivariate model. To evaluate reported behaviours with those of
20 the British population we conducted a comparison with individual-level data from the
21 National Survey of Sexual Attitudes and Lifestyles (Natsal) 2000, the most recent
22 national probability sample survey at the time of writing, conducted between May 1999
23 and February 2001. Logistic regression modelling was used to obtain adjusted odds

1 ratios (aOR) to control for any variation in the age, gender, marital status, and education
2 between the two data sources.

3 Due to the sample size it was not possible to analyse by individual countries. Rather,
4 because of the differing dates of accession (2004 vs. 2007), we grouped respondents into
5 two regions (the A8 and A2). Accession into Europe was dependent on countries
6 fulfilling certain political and economic conditions, both of which potentially influence
7 the sexual attitudes and behaviours of populations; in addition there were tighter controls
8 on A2 (compared to A8) migration to the UK. Also within the socio-political sciences,
9 'Eastern Europe' is often sub-divided into Central Europe (the A8 states) and South-
10 Eastern Europe (the A2). Historically Central European political culture has been
11 characterised as more rational, contractual and individualistic, while South-Eastern
12 Europe is more essentialist, collectivistic and arbitrary. Over the centuries this has
13 resulted in different ways of thinking about individual freedoms, the boundaries between
14 public and private and the role of the state - all of which influences attitudes and
15 behaviours in society (9-11).

16 The sample size of 2000 people provides 80% power to detect as significant the
17 association with an explanatory factor where the difference in prevalence is around 6%.
18 A sample of this size also allows for adequately powered subgroup analysis. Analysis
19 was performed using Intercooled STATA 8.0 (12) and SPSS12.0 (13).

20 The study was approved in 2008 by the Camden & Islington Community Research
21 Ethics Committee, UK (07/H0722/110).

22 **Role of the funding source:**

1 The sponsor of the study had no role in study design; the collection, analysis or
2 interpretation of the data; the writing of the report; or the decision to submit the paper
3 for publication.

4 **Results:**

5 **Sample characteristics:**

6 This CEE population sample (n=2648) was derived by merging the community sample
7 (n=2276) with the Internet sample (n=372). The mean age of respondents was 29.0,
8 51.4% were married or cohabiting, and almost half (48.3%) of respondents were male
9 (Supplementary Table 1). The majority of respondents were Polish (n=1082, 40.9%),
10 Romanian (n=492, 18.6%), or Lithuanian (n=449, 17.0%). The Internet sample was
11 more likely to be born in an A8 country (97.8% vs. 74.2%, $p<0.001$), to be educated to
12 degree level (43.9% vs. 29.4%, $p<0.001$) and in paid employment (84.1% vs. 72.8%,
13 $p<0.001$), than the community sample. Most respondents had migrated post accession,
14 79.3% arriving after May 2004. Those who arrived in the UK post accession had been in
15 the UK for a mean of around 1.5 years (median 17-19 months). Three quarters (74.6%)
16 of respondents had returned to their home country at least once in the past year and
17 15.0% had returned four or more times.

18 **Sexual behaviours:**

19 Partners or sexual partners were defined as people who have had sex together – whether
20 just once, or a few times, or as regular partners, or as married partners. This definition
21 was made explicit within the questionnaire. Table 1 shows the distribution of reported
22 numbers of partners (in the past year and past five years) by age and gender. There was

1 substantial heterogeneity in numbers of heterosexual partners reported in the past five
2 years; 70.3% of men and 48.8% of women reported more than one partner, whereas
3 29.1% of men and 6.9% of women reported more than five. Men consistently reported
4 higher numbers of heterosexual partners than women over all time periods. Same sex
5 partnerships were reported by 3.4% of men and 4.0% of women.

6 Nearly half (44.9%) of men and 29.1% of women had formed a new heterosexual
7 partnership over the past year. The mean number of new partnerships in the past year
8 varied from 5.3 among previously married men aged 25-34 to 0.1 among married
9 women aged over 34. The mean number of new partners declined with increasing age
10 for men but not for women. Younger respondents were less likely to be in a married or
11 cohabiting relationship. Across all age groups and both genders new partner acquisition
12 was highest among the single or previously married. Over half (55.6%) of all male
13 respondents were single or previously married; these men formed 74.0% of all new
14 heterosexual partnerships by men in the past year.

15 Among those respondents reporting sex in the past year a quarter of men and 7.6% of
16 women reported relationships that were concurrent (overlapped or were simultaneous).
17 Just over half (51.5%) of men and most (80.2%) women reported only one partner. The
18 majority of new heterosexual partnerships in the past year were consummated in the UK.
19 Approximately three quarters of most recent sexual partnerships were with nationals
20 from the home country of the respondent (75.6% for men and 71.1% for women). A UK
21 national was the most recent sexual partner for 10.4% of men and 14.5% of women.

22 **Sexually transmitted infections and HIV:**

1 An ever previously diagnosed STI (excluding HIV) was reported by 11.1% of
2 respondents. Most infections had not been diagnosed in the UK (Table 2). A third of
3 respondents had ever had an HIV test, and a third of these had their last HIV test in the
4 UK. Just over 1% of respondents reported they were HIV positive (18 men and 11
5 women), with 31.0% being diagnosed in the UK. The majority of respondents who
6 reported they were HIV positive were Polish (n=23, 79%). Reported risk factors for HIV
7 were: previously injecting drugs (n=2), sex between men (n=1), six (21%) had ever paid
8 for sex but none reported having been paid for sex, and eight (28%) reported a previous
9 STI diagnosis.

10 Amongst the 546 (21%) respondents who reported recreational drug use in the past year,
11 marijuana was most widely used (87.8%), followed by ecstasy (31.0%), cocaine
12 (23.4%), speed (18.6%), and crystal-meth (5.4%).

13 **Risk behaviours by region and sex:**

14 Table 3 presents the prevalence of sexual behaviours, attitudes and drug use by sex and
15 region of origin. Many risk behaviours varied by region and sex. Compared to their A2
16 counterparts, A8 respondents were more likely to report heterosexual oral or anal sex
17 and recreational drug use in the past year. A8 men were more likely to have ever
18 injected drugs (6.6% vs. 1.2%, $p<0.001$), whilst A8 women were more likely to report
19 concurrent relationships in the past year, a same sex partner ever, and more heterosexual
20 partners in the past year than those from the A2. Having paid for sex was widely
21 reported across both regions but was more likely among men from the A2 countries
22 (44.1% vs. 28.5%, $p<0.001$), as was concurrency in the past year (32.2% vs. 23.4%,
23 $p=0.019$). A2 men were also more likely to have had an HIV test than A8 men (37.5%
24 vs. 31.0%, $p=0.032$), and to have used condoms consistently in the past four weeks,

1 especially among those reporting two or more partners in the past year (55.3% vs.
2 34.8%, $p=0.002$). A2 men and women were significantly less likely to be registered with
3 a general practitioner (GP) although this association was lost when adjusted for time in
4 the UK.

5 To examine high-risk sexual behaviour we calculated the odds ratio (OR), 95%CI and
6 the aOR of factors associated with one or more new heterosexual partners in the past
7 year (Supplementary Table 2). Male respondents reporting other risk behaviours in the
8 same time period such as recreational drug use (aOR 1.37, 95%CI 1.01-1.87)), drinking
9 alcohol on average three or more days a week (aOR 1.62, 95%CI 1.14-2.28) and anal
10 sex (aOR 1.89, 95%CI 1.35-2.64) had increased odds of new heterosexual partners, as
11 were those reporting a previous STI diagnosis (aOR 1.69, 95%CI 0.99-2.86) or oral sex
12 (aOR 3.61 95%CI 1.64-3.31); whilst married or cohabiting men and men registered with
13 a GP were less likely (aOR 0.35, 95%CI 0.25-0.47, and aOR 0.69, 95%CI 0.51-0.93
14 respectively).

15 CEE women were more likely to have had new sexual partner(s) in the past year if they
16 reported a same sex partner ever (aOR 2.31, 95%CI 1.26-4.26), anal or oral sex in the
17 past year (aOR 1.48, 95%CI 1.01-2.15 and aOR 1.76, 95%CI 1.23-2.52 respectively),
18 drinking alcohol more frequently (aOR 1.68, 95%CI 1.02-2.80), and a previous STI
19 diagnosis (aOR 1.75, 05%CI 1.13-2.73); they were less likely if they were married or
20 cohabiting (aOR 0.28, 95%CI 0.20-0.38), from the A8 compared to the A2 (aOR 0.60,
21 95%CI 0.37-0.97), and over the age of 24 (aOR 0.71, 95%CI 0.51-0.98).

22 No association between time in the UK and most of the risk behaviours was found (data
23 not shown). The notable exception was reporting of ever having had sex with someone
24 of the same sex, which was more likely with increasing time in the UK ($p=0.034$).

1 **Comparison with British national data:**

2 Among respondents who reported heterosexual sex ever, the CEE sample was younger
3 (27.7 vs. 31.8 yrs, $p < 0.001$) than the Natsal sample, more likely to be single (40.2% vs.
4 35.0%, $p < 0.001$), and less likely to have a degree (31.8% vs. 35.8%, $p < 0.001$).

5 Significant behavioural differences between samples remained after adjusting for socio-
6 demographic variables in multivariate analyses (Table 4). Male CEE respondents were
7 more likely to report two or more partners in the past year (aOR 2.1, 95%CI 1.3-2.1) and
8 in the past five years (aOR 1.7, 95%CI 1.6-2.6), but were less likely to report having had
9 an STI (aOR 0.7; 95%CI 0.5-1.0) than Natsal respondents. CEE men were more than
10 three times as likely to have paid for sex with a woman (aOR 3.2; 95%CI 2.5-4.0) and
11 twice as likely to have injected non-prescribed drugs (, aOR 2.2; 95%CI 1.3-3.9).

12 CEE women were three times more likely to have injected non-prescribed drugs than
13 Natsal women (aOR 3.0, 95% CI 1.1-8.1) and were less likely to report having had an
14 STI (aOR 0.7, 95%CI 0.6-1.0). The proportion of female respondents reporting two or
15 more partners in the past five years and in the past year were similar across surveys.
16 Consistent condom use in the past four weeks was higher in the CEE sample (aOR 1.3,
17 95%CI 1.0-1.8).

18 **Discussion**

19 The accession of ten CEE countries to the EU has resulted in one of the largest
20 migratory influxes in peacetime British history. This project provides estimates of sexual
21 behaviour patterns in these new communities. As would be expected we found wide
22 variability in sexual lifestyles by gender, age, relationship status, and region of origin.

1 Whilst reports of prior STIs are lower than in the general British population, CEE
2 migrants, especially male migrants, report high rates of behaviours associated with
3 increased risk of HIV and STI transmission. The benefits of more consistent condom use
4 may be offset by higher rates of partner acquisition, paying for sex and injecting drug
5 use.

6 Like other communities, heterosexual CEE migrants demonstrate assortative sexual
7 mixing (whereby their most recent partner was from their home country) (14;15). Nearly
8 three-quarters of last sexual partnerships in the general CEE population sample were
9 with a national from the home country of the CEE respondent. Risk of HIV and other
10 STIs may increase as CEE communities become more integrated with the British
11 population. Currently the reported high-risk behaviours appear offset by low prevalence
12 of infections within the CEE migrant community. With increasing time in the UK it is
13 possible that CEE migrants will have sexual partners from more diverse backgrounds,
14 potentially increasing the likelihood of exposure to infections (5).

15 STI screening opportunities differ in the UK compared to many CEE countries (16),
16 which may impact on STI reports, especially on infections that are often asymptomatic.
17 However over 30% of respondents reported ever having an HIV test, higher than the
18 13% reporting an HIV test ever in the last Natsal survey (17).

19 The reported HIV prevalence of 1.1% is substantially higher than the estimated
20 prevalence of 0.09% in the general British population (18). This burden of infection is
21 not, however, reflected in national HIV surveillance data. Although the numbers remain
22 relatively small, there was a tenfold increase between 2000 and 2007 in the total number
23 (8 to 84), and proportion (0.3% to 2.3%), of all new HIV diagnoses that are in people
24 from the A8 (19). Eastern Europe does have the highest rate of HIV across Europe but

1 Poland has one of the lowest (20). In Eastern Europe although mode of acquisition is
2 often unreported (21), the epidemic is believed to be largely driven by injecting drug use
3 (a behaviour reported by ~ 4% of our respondents), although heterosexual transmission
4 is also on the increase (20;21).

5 Only 31% of the reported HIV was diagnosed in the UK. Potentially migrants may be
6 aware of their HIV infection but not accessing services in the UK, and hence not
7 impacting on national surveillance data as yet. This seems unlikely but is not impossible,
8 especially as our qualitative data suggests people continue to access health care in home
9 countries and use the Internet to obtain medications (Burns, unpublished data). In
10 Central & Eastern Europe there is a high degree of stigma and discrimination attached to
11 being HIV positive (22;23;23;24); given this data relies on self-reports a bias towards
12 underreporting of HIV seropositivity would be expected. Conversely HIV positive
13 people may be more interested in sexual health matters which may impact on
14 participation.

15 **Limitations**

16 The dilemma over how to interpret the HIV findings highlights one of the major
17 limitations of our survey, the absence of biological samples. The high-risk behaviours
18 reported suggest that blood-borne virus screening in this population would be
19 informative and should be considered in future studies. A further limitation is that the
20 data is based on self-reports. Central and Eastern Europeans are comprised of
21 heterogeneous populations that differ sociologically in ways that may impact on sexual
22 attitudes and lifestyles, for example religiosity and social liberalism. Numbers precluded
23 analysis by specific country of origin, Polish, Lithuanian and Romanian respondents
24 accounted for 76% of all data. A separate analysis was undertaken to ensure Polish

1 responses did not substantially differ from responses from the other 'A8' nationalities
2 combined; they did not (data not shown). The limitations relating to convenience
3 samples have previously been published (7). Natsal 2000 data was collected nine years
4 prior to this data. It is possible that the frequency of reported behaviours would have
5 changed in the British population over this time. However, there is no more recent
6 survey with which to compare our data until Natsal 2010 data collection is completed. It
7 is also possible that the sampling method may have created participation bias. Internet
8 surveys of men who have sex with men show higher risk behaviours than the general
9 population (ref), however these surveys use social networking sites often used to find
10 sexual partners. None of the websites used to recruit for this study were social
11 networking sites.

12 The economic recession has seen the rate of influx decline, however large numbers of
13 CEE nationals continue to migrate into the UK (1), and many migrants have now made
14 the UK their permanent home. The UK has a duty of care to ensure appropriate risk
15 reduction strategies are in place and that these new communities are aware of and able to
16 access these services. Paying for sex was reported by over a third of all CEE men.
17 Further research is needed on the cultural factors associated with commercial sex, what
18 type of sex is occurring and where, and the risks involved.

19 No association between time in the UK and many of the risk behaviours was found. The
20 notable exception was reporting of ever having had sex with someone of the same sex,
21 which was more likely with increasing time in the UK ($p=0.034$). High-risk behaviours,
22 regardless of time in the UK, support the concept of the migrant as a 'risk-taker'. In
23 Africa migration has been identified as a critical factor in high-risk sexual behaviour
24 independent of marital and cohabitation status, social milieu, or awareness of HIV (25-

1 27); it may be that this also holds true in other populations. Voluntary migrants are
2 individuals who take a risk to travel to, and work in, environments that they hope will be
3 beneficial to them. This risk-taking may permeate into the choices they make in other
4 areas of their lives (28).

5 **Public health implications:**

6 Migrants are often viewed as a health threat, yet evidence shows that the process of
7 migration can present a health threat to migrants themselves. The 'healthy migrant'
8 effect (whereby because of the health and human capital required for migration,
9 immigrants are on average healthier than the population they originate from, and often
10 also the population in their host country (29)) is likely to be evident in these new
11 communities. Research, however, suggests that migrant health deteriorates more rapidly
12 than the general population with time (30). The mobile nature of migrant communities,
13 language barriers and confusion over entitlement to services often means members are
14 unlikely to benefit fully from public health programmes or access to health services.
15 Men in particular were less likely to be registered with a GP yet reported significant risk
16 behaviours for blood-borne viruses. Whilst this study focused on sexual and
17 reproductive health there are, of course, many other aspects to health likely to be
18 relevant to CEE migrants, and subsequently for their host nations. These include high
19 rates of smoking, alcohol consumption, and cardiovascular disease (31-33).

20 A feature of CEE migration to the UK is that many people migrate for relatively short
21 but recurring periods (1). Similarly our respondents returned home frequently. In a
22 borderless EU management of chronic health conditions and surveillance of
23 communicable diseases will increasingly involve trans-national collaborations. Systems
24 to monitor and facilitate trans-national health-care and disease surveillance for migrant

1 communities are needed. Improving health outcomes for migrants are likely to benefit
2 both the receiving (or host) and home countries (34). This study helps to illuminate our
3 understanding of the sexual lifestyles, sexual and reproductive health risks, and health
4 service needs of these migrant communities. Results from this study will help inform
5 service planning and identify where STI and HIV interventions should be targeted. It
6 also provides baseline data to help evaluate the effectiveness of interventions and
7 provides a useful adjunct to interpreting data derived from other community and clinic
8 based surveys.

9

Table 1: Distribution of numbers of partners over past 5 years and past year by gender and age-group

	Men (age-group [years])				Women (age-group [years])			
	18-24	25-34	35 +	All	18-24	25-34	35+	All
Past 5 years								
Heterosexual partnerships	n=374	n=589	n=250	n=1213	n=470	n=637	n=207	n=1314
0 partners	12.8%	7.5%	5.2%	8.7%	11.1%	3.9%	4.3%	6.5%
1 partner	16.3%	19.2%	32.8%	21.1%	35.7%	46.0%	60.9%	44.7%
2 partners	11.2%	13.4%	16.4%	13.4%	28.3%	22.1%	19.3%	23.9%
3 to 5 partners	24.3%	29.5%	28.8%	27.8%	17.7%	19.5%	14.0%	18.0%
6 to 10 partners	18.7%	15.8%	10.0%	15.5%	4.7%	5.7%	0.5%	4.5%
11 or more partners	16.6%	14.6%	6.8%	13.6%	2.6%	2.8%	1.0%	2.4%
2 or more partners in past 5 years	70.8%	73.3%	62.0%	70.3%	53.3%	50.1%	34.8%	48.8%
Same sex partner in past 5 years	n=378	n=606	n=271	n=1255	n=478	n=654	n=222	n=1354
	4.2%	3.6%	1.8%	3.4%	3.6%	4.6%	3.2%	4.0%
Last heterosexual partner among those who've ever had sex:	n=326	n=551	n=247	n=1124	n=420	n=616	n=208	n=1244
From UK	12.9%	10.3%	7.3%	10.4%	10.0%	17.0%	15.9%	14.5%
From home country	69.6%	76.4%	81.8%	75.6%	78.1%	66.6%	70.2%	71.1%
From another country	13.2%	12.0%	9.7%	11.8%	11.4%	15.7%	13.9%	14.0%
Don't know	4.3%	1.3%	1.2%	2.1%	0.5%	0.6%	0.0%	0.5%
Heterosexual partnerships in the past year	n=353	n=559	n=235	n=1147	n=440	n=594	n=196	n=1230
One or more new partners in past year	46.7%	46.9%	37.4%	44.9%	35.0%	27.6%	20.4%	29.1%
Among those who've had sex in the past year:	n=284	n=504	n=201	n=989	n=391	n=569	n=169	n=1129
Only one partner	42.3%	52.6%	61.7%	51.5%	75.7%	82.1%	84.0%	80.2%
Serial monogamy	29.6%	23.2%	14.9%	23.4%	15.1%	10.2%	12.4%	12.2%
Concurrency	28.2%	24.2%	23.4%	25.2%	9.2%	7.7%	3.6%	7.6%
Mean number of UK consummated partners (sd)	1.2 (2.9)	1.1 (2.0)	0.7 (1.8)	1.0 (2.3)	0.5 (0.9)	0.8 (2.0)	0.4 (0.9)	0.6 (1.5)
Mean number of partners without condom (sd) ¹	1.2 (2.0)	1.1 (1.7)	1.0 (1.6)	1.1 (1.8)	1.9 (18.9)	0.8 (1.0)	0.7 (0.6)	1.1 (11.1)

New partners in past year

1+ new heterosexual partners	n=353 46.7%	n=559 46.9%	n=235 37.4%	n=1147 44.9%	n=440 35.0%	n=594 27.6%	n=196 20.4%	n=1230 29.1%
1+ new homosexual partners ²	n=377 1.3%	n=606 1.3%	n=271 0.7%	n=1254 1.2%	n=477 1.0%	n=654 1.4%	n=222 0.0%	n=1354 1.0%
Number of new heterosexual partners in past year								
Married: mean (SD)	2.35 (4.7)	0.72 (1.7)	0.52 (1.2)	0.73 (1.9)	0.33 (0.6)	0.19 (0.7)	0.10 (0.3)	0.19 (0.6)
Cohabiting: mean (SD)	1.19 (2.6)	0.90 (1.9)	0.63 (1.8)	0.96 (2.1)	0.34 (0.6)	0.52 (2.1)	0.6 (1.9)	0.46 (1.6)
Previously married: mean (SD)	5.0 (2.8)	5.31 (10.2)	1.05 (1.5)	2.1 (5.2)	1.0 (1.4)	1.19 (2.1)	0.55 (0.9)	0.73 (1.4)
Single: mean (SD)	2.18 (7.5)	1.69 (2.9)	1.95 (3.6)	1.93 (5.5)	0.66 (1.1)	0.94 (2.6)	0.24 (0.6)	0.75 (1.8)
All: mean (SD)	2.00 (6.6)	1.40 (3.1)	0.88 (1.9)	1.48 (4.4)	0.50 (0.9)	0.52 (1.9)	0.32 (0.9)	0.48 (1.4)

¹ Among those who've had sex in past year

² Only includes men reporting anal intercourse with a homosexual partner

Table 2: Self-reported HIV and sexually transmitted infections¹ and place of diagnosis.

Sexually Transmitted Infection	%, 95% CI, (n) N=2296	Proportion diagnosed in the UK %, 95% CI
Chlamydia	2.7, 2.1-3.4 (63)	44.4, 31.9-57.5
Genital herpes	1.8, 1.3-2.4 (42)	28.6, 15.7-44.6
Genital warts	1.1, 0.7-1.6 (25)	32.0, 14.9-53.5
Gonorrhoea	2.0, 1.4-2.6 (45)	15.6, 6.5-29.5
Non-specific urethritis	0.5, 0.2-0.8 (11)	18.2, 2.3-51.8
Pelvic inflammatory disease (women only)	2.1, 1.4-3.1 (25)	8.0, 1.0-26.0
Syphilis	0.6, 0.3-1.0 (13)	15.4, 1.9-45.4
Trichomonas vaginalis	1.2, 0.8-1.7 (28)	21.4, 8.3-41.0
HIV	1.1, 0.8-1.8 (29)	31.0, 15.3-50.8

¹ Data based on self-reports of ever-diagnosed infections rather than biological samples.

Table 3: Prevalence of sexual behaviours and drug use: Men and women by region of origin

	A8* n=939	Men A2† n=329	p-value‡	A8 n=1097	Women A2 n=264	p-value
Heterosexual practices						
Vaginal intercourse in past month	61.2%	53.4%	0.057	70.1%	76.0%	0.374
Oral-genital contact in the past year	69.0%	60.6%	0.008	61.6%	44.6%	<0.001
Anal sex in the past year	30.6%	23.5%	0.018	22.9%	13.3%	0.001
Condom used on all occasions, past 4 weeks‡ and:	n=224	n=76		n=135	n=18	
One partner past year	31.6%	29.6%	0.913	24.9%	30.1%	0.197
Two or more partners past year	34.8%	55.3%	0.002	34.1%	33.3%	0.950
All	33.6%	42.7%	0.050	27.0%	31.5%	0.389
Risk perception						
More at risk of HIV in UK than home country	n=767 57.0%	n=271 52.0%	0.066	n=884 52.8%	n=225 47.1%	0.271
Sexual partnerships						
Number of heterosexual partners past year: mean (SD)	2.36 (3.7)	3.29 (8.5)	0.064	1.42 (3.8)	1.07 (1.0)	0.010
Ever had homosexual partners	5.0%	2.8%	0.091	6.1%	1.9%	0.007
Concurrent partnerships, past year†	23.4%	32.2%	0.019	8.9%	3.3%	0.010
Ever paid for sex	28.5%	44.1%	<0.001	NA	NA	NA
Where paid for sex (n=382)			0.911			NA
UK#	31.7%	31.6%		NA	NA	
Home country#	35.0%	38.2%		NA	NA	
Both in UK and home country#	17.1%	15.4%		NA	NA	
Elsewhere	16.3%	14.7%		NA	NA	
Drug use						
Ever injected non-prescribed drugs	6.6%	1.2%	<0.001	2.5%	0.0%	NA
Injected non-prescribed drugs past year	2.4%	0.0%	NA	1.3%	0.0%	NA
Recreational drug use in past year (excluding intravenous drugs)	37.3%	14.2%	<0.001	13.3%	5.0%	<0.001
Sexual health						
Ever had HIV test	31.0%	37.5%	0.032	32.4%	34.9%	0.450
Ever diagnosed with a STI (excludes candidiasis)	n=798 8.6%	n=277 11.6%	0.153	n=988 12.8%	n=236 11.0%	0.455
Registered with a GP	45.1%	35.1%	0.002	67.5%	58.6%	0.006

* A8 refers to Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.

† A2 refers to Bulgaria and Romania

‡ Comparing A8 with A2

† Among those who had vaginal or anal sex in the past year

May also include men who have paid for sex elsewhere in addition to UK or home country

‡ Restricted to those reporting sex in past 4 weeks, refers to anal or vaginal sex.

Table 4: Multivariate analysis of risk behaviours comparing SALLEE respondents to Natsal^ψ respondents.

Behaviour	SALLEE [†] (n=2323) %	Natsal [†] (n=2883, 1526)* %	Crude OR (95% CI)	Adjusted OR (95% CI) [¶]	p value
Men	n=1102	n=1216, 773*			
2+ partners (past 5 years)	77.3	58.9	2.4 (1.9, 2.9)	2.1 (1.6, 2.6)	<0.001
2+ partners (past year)	45.0	29.4	2.0 (1.6, 2.4)	1.7 (1.3, 2.1)	<0.001
Ever paid for sex with a woman	35.5	15.8	2.9 (2.3, 3.7)	3.2 (2.5, 4.0)	<0.001
Ever injected drugs	5.9	2.4	2.6 (1.5, 4.5)	2.2 (1.3, 3.9)	0.005
Consistent condom use (past 4 weeks) [#]	36.6	29.2	1.4 (1.1, 1.8)	1.2 (1.0, 1.6)	0.099
Ever diagnosed with STI	8.9	13.6	0.6 (0.5, 0.8)	0.7 (0.5, 1.0)	0.045
Women	n=1221	n=1667, 753*			
2+ partners (past 5 years)	52.9	40.9	1.6 (1.3, 2.0)	1.2 (1.0, 1.5)	0.058
2+ partners (past year)	18.7	15.6	1.2 (1.0, 1.6)	1.0 (0.8, 1.3)	0.915
Ever injected drugs	2.2	0.7	3.3 (1.3, 8.8)	3.0 (1.1, 8.1)	0.035
Consistent condom use (past 4 weeks) [#]	28.2	21.7	1.4 (1.1, 1.8)	1.3 (1.0, 1.8)	0.034
Ever diagnosed with STI	12.8	18.1	0.7 (0.5, 0.9)	0.7 (0.6, 1.0)	0.038

^ψ National Survey of Sexual Attitudes and Lifestyles 2000

[†] Restricted to London respondents aged 18-44 who reported ever having had sex (age range related to Natsal upper limit and SALLEE lower limit).

* Unweighted, weighted denominator

[¶] Adjusted for age, relationship status, education: comparing SALLEE to Natsal respondents

[#] Condoms used on all occasions of vaginal and or anal sex in the past 4 weeks

Key messages:

The accession of ten Central and Eastern European (CEE) countries to the EU has resulted in the largest migratory influx in peacetime British history.

- This is the first study to provide estimates of sexual behaviour patterns in these new communities.
 - High rates of partner acquisition, paying for sex and injecting drug use were reported; behaviours associated with increased risk of HIV and STI transmission.
 - Reports of prior STIs were lower in CEE migrants to London than in the general British population however 1.1% reported being HIV positive.
 - Heterosexual CEE migrants demonstrate assortative sexual mixing.
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All authors declare that the answer to the questions on your [competing interest form](#) are all No and therefore have nothing to declare

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