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## Differences in sexual risk behaviour between young men and women travelling abroad from the UK

Michael Bloor, Michelle Thomas, Kerenza Hood, Damiano Abeni, Catherine Goujon, Dominique Hausser, Michel Hubert, Dieter Kleiber, Jose Antonio Nieto

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### Summary

**Background** Identification of people who most frequently engage in sexual risk behaviour while travelling abroad would be useful for the design and targeting of health education and promotion campaigns.

**Methods** Eligible participants were people living in the UK aged 18–34 years who had travelled abroad without a partner in the previous 2 years. Respondents were first screened for eligibility as part of representative face-to-face and telephone surveys by a market research company. Eligible individuals who agreed to take part then underwent a computer-assisted telephone interview. Reinterviewing continued until 400 eligible people had been contacted. We also interviewed a control group of 568 young people who had travelled abroad without a partner in the previous 2 years but who did not report a new sexual relationship during their travels.

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School of Social Sciences, Cardiff University, Cardiff, CF1 3AT, UK (Prof M Bloor PhD, M Thomas BSc); Department of Medical Computing and Statistics, University of Wales College of Medicine, Cardiff (K Hood BSc); Clinical Epidemiology Unit, Istituto Dermopatico Dell'Immacolata, Rome, Italy (D Abeni MD); Department de Vaccinations, Hopital de l'Institut Pasteur, Paris, France (C Goujon MD); Institutó de Recherche sur l'Environnement Construit, Swiss Federal Institute of Technology, Lausanne, Switzerland (D Hausser MD); Centre d'Etudes Sociologiques, Facultes Universitaires Saint-Louis, Brussels, Belgium (M Hubert MD); Department of Psychology, Free University of Berlin, Berlin, Germany (Prof D Kleiber PhD); and Universidad Nacional de Educacion a Distancia, Fundacion Universidad-Empresa, Madrid, Spain (Prof J A Nieto PhD)

Correspondence to: Prof Michael Bloor

**Findings** One in ten of the eligible participants reported sexual intercourse with a new partner. Travellers who reported a new sexual relationship abroad were also likely to report large numbers of sexual partners at home. Of the 400 people who had a new sexual partner abroad, 300 (75%) used condoms on all occasions with the new partner. Logistic regression modelling showed differences between men and women in those factors linked to the practice of unsafe or safer sex while travelling. For men, patterns of condom use abroad with casual partners ( $p < 0.001$ ) reflected patterns of use at home ( $p < 0.001$ ), whereas for women, patterns of condom use varied according to their partners' backgrounds ( $p < 0.001$ ).

**Interpretation** Condoms are widely used among young travellers, but patterns of use vary by sex. Campaigns about sexual health targeted at international travellers should continue, not least because young people who meet new sexual partners abroad may be a convenient proxy group for that minority of the population who report most sexual partners at home. Such campaigns should be designed differently for men and women.

*Lancet* 1998; **352**: 1664–68

### Introduction

Sexual risk behaviour among international travellers has become an important issue because of the HIV-1 epidemic.<sup>1</sup> A common assumption is that people are more likely to engage in high-risk sexual behaviour when travelling than when they are at home. Of the several national European studies on sexual behaviour,<sup>2</sup> the Swiss national survey is the only one that collected data

separately on respondents' sexual partners while travelling abroad.<sup>3</sup> There have also been studies on travellers' sexual risk behaviour based on local samples,<sup>4</sup> clinic samples,<sup>5-7</sup> and subgroups of travellers such as sex tourists<sup>8,9</sup> and returning expatriates.<sup>10</sup>

Many European countries have targeted intervention campaigns at international travellers to reduce high-risk sexual behaviour, but such efforts are hampered by the limited information available on those subgroups of travellers who are most likely to engage in such behaviour. Our feasibility study, supported by the European Commission, was designed to lay the groundwork for coordinated individual national studies and interventions in Member States, as projected in the Europe Against AIDS Programme. We collected reports of different risk behaviours to allow a detailed analysis of those subgroups of travellers who might be most appropriately targeted for health promotion. We restricted sampling to young people travelling abroad unaccompanied by a sexual partner, since earlier research<sup>4</sup> indicated that such travellers were those most likely to report a new sexual partner.

## Methods

### Respondents

The easiest way to collect many representative reports of sexual risk behaviour is to use a two-stage sampling strategy. The first stage involves screening a large number of people for eligibility in one heterogeneous survey that is designed to serve various research needs. Such so-called omnibus surveys are carried out on representative samples on a regular basis by market research organisations. Our initial screening work was done by National Opinion Polls plc (NOP) as part of its regular face-to-face omnibus survey (based on a representative sample of households selected from the UK electoral register) and its telephone Telebus survey (based on a representative sample of telephone-owning UK households).

Our participants were selected from 39 000 respondents in 11 NOP omnibus surveys and 17 Telebus surveys carried out between March and July, 1996. Eligible respondents were aged 18-34 years and had travelled abroad without a partner in the previous 2 years. Those who were eligible and agreed to be recontacted were then interviewed again by means of a computer-assisted telephone interviewing (CATI) system.

### Study design

The CATI system involves data entry directly at interview and has advantages over manual interviews—it is easier to protect confidentiality, there are fewer difficulties with data entry because invalid response codes cannot be entered, and it automatically routes the interviewer to the correct next question. Telephone interviews have previously been used in European studies of sexual behaviour.<sup>2,3,11</sup> In our study, women were interviewed only by female telephone interviewers. The interview schedule was designed and piloted specially for our study but contained many questions similar to previous studies to allow comparative analysis. Before the interviewer asked eligible respondents if they wanted to proceed, the respondents were warned that they would be asked some "very personal questions", were reminded of their right to refuse any questions that they felt "unhappy about answering", and were reassured that the study was confidential and anonymous. A short standard explanation of the study was read out to all respondents and a contact telephone number was given to those who wanted to know more about the study.

After the successful pilot, interviews for the second CATI stage took place between May and August, 1996. We intended CATI interviews to continue until 400 anonymous respondents had reported sexual intercourse with a new partner while

travelling abroad in the previous 2 years. In the process of filling this quota of 400 in the target group, data were also generated on a quota of 500 (actually 568) controls who met the eligibility criteria but had not had sexual intercourse with a new partner while travelling during the same period. However, neither the omnibus nor the Telebus interviews provided enough eligible respondents within the project timetable, so 68 individuals in the target group were recruited by additional CATI interviews with eligible respondents at randomly generated telephone numbers. The control-group quota was filled before the target-group quota (and before contacts by randomly generated numbers) but information was collected throughout this time on the number of screened individuals who would have been eligible for inclusion in the control group. These additional eligible individuals provided a basis for weighting of the data. Thus, the total weighted sample was 5676 individuals (of whom the weighted controls comprised 5276), which gave a weighting for the controls of 0.29 to 1.

### Statistical analysis

The main outcome measures were reports of sexual intercourse with a new partner abroad, reports of unprotected intercourse with the last partner abroad, and reports of four or more episodes of unprotected intercourse with the last partner abroad. The last of these variables was chosen because it may be important to identify separately measures of repeated exposure to infection when transmission of disease per exposure is fairly low.<sup>12</sup> Data were also collected on commercial sexual encounters abroad. Associations between the outcome measures and a range of other factors were examined by  $\chi^2$  tests with SPSS software; these other factors included sociodemographic variables, characteristics of the trip abroad, such as its length, and supposed risk factors, such as alcohol consumption.

Since men and women had different propensities to engage in both new sexual relationships and sexual risk behaviour, we decided that further examination of those factors independently associated with high-risk sexual behaviour should be undertaken separately for men and women. We undertook forward stepwise logistic regression modelling using SPSS to analyse separately for men and women the factors that independently discriminate between respondents who used condoms on all occasions with their last partner abroad and those who reported unsafe sex with that partner. We defined unsafe sex as using condoms only sometimes, on the first time only, or never.

## Results

Refusal rates in the 11 first-stage omnibus surveys (which yielded 59% of the achieved sample) varied between 32% and 38%. A similar proportion of men and women refused to take part. A mean of 73% of interviewees agreed to be recontacted. Those who refused to be recontacted were more likely to be older than 65 years and in socioeconomic grades D and E. Refusal rates in the 17 first-stage Telebus surveys (which yielded 33% of the achieved sample) were between 71% and 82%. A mean of 85% of people agreed to be recontacted. The high refusal rate of the Telebus survey is offset by the use of quota controls by sex, age, socioeconomic grade, and region to ensure that our respondents are representative of UK adults in telephone-owning households.

The response rate to the second CATI sample is perhaps more important than the response rate to the first (omnibus) stage, because second-stage refusals may be topic-related. The second-stage response rate could be calculated in various ways. Of particular importance is whether or not screening failures (that is, individuals screened as eligible in the first stage but who seem ineligible at recontact) should be counted as refusals. We therefore used a special recontact exercise with 10% of

	Target group (n=400)	Control group; (n=568, weighted=5276)
<b>Sex</b>		
Male	286 (72%)	290 (51%; w 2694)
Female	114 (29%)	278 (49%; w 2582)
<b>Age (years)</b>		
18-24	231 (58%)	252 (44%; w 2341)
25-34	169 (42%)	316 (56%; w 2935)
<b>Socioeconomic grade*</b>		
A/B	84 (21%)	114 (20%; w 1059)
C1/C2	248 (62%)	368 (65%; w 3418)
D/E	60 (15%)	62 (11%; w 576)
Not known	8	42
<b>Marital status</b>		
Divorced	7 (2%)	11 (2%; w 102)
Separated	10 (3%)	14 (3%; w 130)
Single	332 (83%)	335 (59%; w 3112)
Married	12 (3%)	104 (18%; w 966)
Living with partner (opposite sex)	35 (9%)	102 (18%; w 947)
Living with partner (same sex)	4 (1%)	1 (w 9)
Refused		1 (w 9)

\*Socioeconomic status graded according to ranking of occupation: A/B=professional and senior administrative; C1/C2=less senior non-manual and skilled manual workers; D/E=unskilled manual workers and people in receipt of state benefits.

Table 1: Characteristics of the sample after screening for eligibility

screening failures and concluded that these were indeed omnibus screening failures, rather than disguised refusals. Accordingly, we excluded screening failures and the second-stage response rate was calculated by expressing the number of refusals as a proportion of the number of completed interviews in the achieved sample (n=968) plus the number of control-group interviews closed early because the control-group quota (n=4708) had already been reached. This yielded a response rate of 65%. This rate is similar to that achieved in the UK National Survey of Sexual Attitudes and Lifestyles.<sup>13</sup>

Table 1 shows the demographic characteristics of the sample at the second stage (after screening for eligibility). After weighting of the data, 614 (11%) of 5676 individuals aged 18-34 years who travelled without a

#### Variables associated with reporting new sexual partners abroad

Male (p<0.01)  
 Travelling with friend(s) (p<0.01)  
 Holidaymakers (p<0.01)  
 Carrying condoms (p<0.01)  
 Single (p<0.01)  
 Casual partner(s) in UK in previous 2 years (p<0.01)  
 Age 18-24 years (p<0.01)  
 First reported sexual experience aged <16 years (p<0.01)  
 Trip of ≥15 days (p<0.01)  
 Long-haul destinations such as Australia (p<0.01)  
 Expected a new romantic or sexual relationship on trip (p<0.01)  
 Reported being "a little drunk" more than twice on trip (p<0.01)  
 Smoking (p<0.05)

#### Variables associated with four or more episodes of unprotected sex with respondent's last partner abroad

Female (p<0.05)  
 Travelling alone (p<0.01)  
 Travelling for purposes other than holiday (p<0.05)  
 Not carrying condoms (p<0.01)  
 No condom use with last casual UK partner in previous 2 years (p<0.01)  
 No condom use with regular UK partner in previous 2 years (p<0.01)  
 Socioeconomic grade A/B (professional/senior administrative) (p<0.05)  
 Previous attendance at sexually transmitted diseases clinic (p<0.05)

Correlates calculated by  $\chi^2$ .

partner had "a new romantic or sexual relationship" while abroad in the past 2 years. 400 (65%) of these relationships included sexual intercourse. Among the 400 respondents who reported sexual intercourse, the median number of new sexual partners abroad was two (mean 2.4). These new sexual partners might include encounters on different trips during the 2 years. 13 respondents reported sexual intercourse with a partner of the same sex.

There were several significant associations with reports of sexual intercourse with a new partner abroad. These associations are shown in the top part of the panel; we published a report of these data in 1997.<sup>14</sup> Some of the variables are inter-related, for example, longer trips are associated with long-haul destinations and are more likely to be for a holiday rather than a business trip, and men are more likely to make longer trips than women. Respondents who reported a new sexual partner abroad were also more likely to have had more than one casual sexual partner in the UK during the previous 2 years. 112 (28%) of the target group reported five or more casual partners in the previous 2 years, compared with 28 (5%) of the controls (p<0.01).

Most individuals who had new sexual relationships abroad practised safer sex. 300 (75%) of those who had a new sexual partner abroad also used condoms on all occasions when they had sex with that partner; only 48 (12%) people never used condoms with that partner on any occasion. Information on the correlates of sexual intercourse is therefore of less epidemiological importance than information on the correlates of unsafe sex with a new partner abroad. The correlates of the four or more exposures category are shown in the lower part of the panel and, in many cases, differ strikingly from the variables that were correlated with reports of a new sexual relationship abroad.

Men were more likely than women to report a new sexual relationship (286 [10%] vs 114 [4%], p<0.01), but women were more likely to report four or more sexual exposures (20 [18%] vs 28 [10%], p<0.05). People who travelled with friends were more likely than those who travelled alone to report a new sexual relationship (p<0.01), but solitary travellers were more likely to report four or more sexual exposures (p<0.01). Holidaymakers were most likely to report a new sexual relationship (p<0.01), however, those who travelled for purposes other than a holiday were more likely to report four or more sexual exposures (p<0.05). Individuals who carried condoms on the trip were more likely than those who did not to report a new sexual relationship (p<0.01); those who carried condoms were also more likely to report no episodes of unprotected intercourse (p<0.01). Other variables associated with four or more sexual exposures were socioeconomic grade A or B (p<0.05), and previous attendance at a sexually transmitted diseases clinic (p<0.05). Individuals who reported multiple exposures with their last partner abroad were also most likely to report never having used a condom with a regular partner in the UK during the previous 2 years (p<0.01) and never having used a condom with their most recent casual partner in the UK in the previous 2 years (p<0.01). Within this 18-34 age-group, further division into 18-24 and 25-34 age-bands showed travellers aged 18-24 years were more likely to report a new sexual partner, but showed no association between

Variable	Odds ratio (95% CI)	p
Travelled with business colleague	4.00 (1.01-15.74)	0.05
Expected new relationship	3.07 (1.40-6.70)	0.01
Use of withdrawal method	2.48 (1.48-5.41)	0.03
Per unit increase of alcohol per week in UK	1.02 (1.01-1.04)	0.01
Condom use with last casual partner in UK		0.01
Never*	1	
First time only	1.83 (0.35-9.65)	
On all occasions	0.16 (0.06-0.46)	
On some occasions	0.21 (0.05-0.83)	
Not applicable	0.27 (0.09-0.79)	
Carried condoms on trip	0.20 (0.09-0.46)	0.01
Used condoms in previous 2 years	0.09 (0.02-0.42)	0.01

Reference category is the complement to stated category for each variable (eg, travelled vs did not travel with business colleagues), apart from where indicated. \*Reference category.

Table 2: Factors significantly associated with increased or reduced risk of unsafe sex in men

age-band and the likelihood of multiple exposures with the last sexual partner abroad.

17 respondents (0.3% of the weighted sample) reported paying for sex while abroad. In common with other reports of commercial sexual encounters,<sup>15</sup> in our study, rates of condom use were high: 16 of the 17 used condoms on all the occasions they had sex with a prostitute abroad.

Tables 2 and 3 show, separately for men and women, the results of logistic regression modelling of those factors that independently discriminated between respondents who used condoms on all occasions with their last partner abroad and those who reported unsafe sex with that partner. We expected there to be substantial differences between the variables listed in the panel and table 2—not only does the panel use a more restrictive definition of risk behaviour (four or more exposures), but also some variables (such as being a smoker) are not included in tables 2 and 3 because they are only incidentally, not independently, associated with risk behaviour. Despite this expectation, some of the differences between the panel and tables 2 and 3 are of particular interest. In the panel, alcohol consumption during travel is significantly associated with reporting a new sexual relationship. By contrast, in table 2, alcohol consumption while abroad shows no independent association with risk behaviour for men or women: only average consumption of alcohol in the UK is independently associated with risk behaviour, and then only for men, with the probability of engaging in risk behaviour increasing for each additional unit of alcohol consumed.

Tables 2 and 3 shows that there are differences and similarities between men and women. Carrying condoms was independently associated with practising safer sex. For men the expectation of a new sexual relationship was associated with unsafe sex, whereas for women such expectation was associated with safer sex. The association in table 3 among women between practising unsafe sex and health advice from one's family (as opposed to friends, a travel agent, family doctor, or travel clinic) is puzzling, but may reflect the likelihood that for young women in the UK health advice from one's family is unlikely to include issues of sexual health. The large CI associated with this variable indicates that it may relate to only a few women who practise unsafe sex. The main differences in risk behaviour between men and women seem to be that, for men, such behaviour abroad is consistent with their behaviour at home. If they used

Variable	Odds ratio (95% CI)	p
Received health advice from family	3.68 (1.23-11.02)	0.02
Nationality of last partner abroad		0.01
From another country*	1	
Pre-existing overseas partner	23.00 (2.80-188)	
From host country	13.30 (2.08-84.74)	
UK partner	2.50 (0.51-12.4)	
Number of new partners abroad	1.60 (1.05-2.42)	0.03
Expected a new relationship	0.18 (0.04-0.82)	0.03
Carried condoms on trip	0.13 (0.05-0.39)	0.01

Reference category is the complement to stated category for each variable (eg, travelled vs did not travel with business colleagues), apart from where indicated. \*Reference category.

Table 3: Factors significantly associated with increased or reduced risk of unsafe sex in women

condoms with casual sexual partners in the UK, they were also likely to use them abroad. Similarly, if withdrawal or condoms are usually used as contraceptive methods, then they are likely to be used with partners abroad. By contrast, women's sexual behaviour abroad is not consistent with their behaviour at home. Women's risk behaviour abroad is instead shaped by characteristics of their sexual partners—ie, whether or not the partner is a pre-existing overseas partner, whether the partner is a fellow UK traveller, from the host country, or a fellow traveller from a third country. This finding suggests that the decision on condom use is probably taken by the male partner rather than the female respondent. Women's risk behaviour was not a consequence of sexual inexperience: the more new sexual partners previously encountered abroad, the greater the likelihood of unsafe sex being reported by the woman with her last partner abroad.

## Discussion

Concern about the possible public-health implications of international travel has been stimulated by clinical reports of HIV-1 infection and other sexually transmitted diseases among travellers returning from abroad.<sup>16-18</sup> The proportion of travellers who reported using condoms in this study is therefore encouraging. When the UK National Survey of Sexual Attitudes and Lifestyles (NATSAL)<sup>12</sup> collected data on condom use with a new sexual partner within the previous 4 weeks, the percentages of men and women using condoms on all occasions with their new sexual partner were 34% and 41%, respectively. Comparability of our data with the NATSAL data is limited since: our respondents were younger and use of condoms is more common in this age-group; our data allowed respondents to recall condom use over a longer time, so selective recall was more likely; and our data were collected 6 years after the NATSAL data, during which time there has been an upward trend in use of condoms. Nevertheless, our findings show that condoms are widely used with new sexual partners abroad and with sexual partners at home: 75% of our respondents who had sex with a new partner abroad used a condom on every such occasion. Among those who reported a new sexual relationship abroad in the previous 2 years and one or more casual sexual partners in the UK, 64% said they used condom on every time they had sex with their last casual partner in the UK.

The conclusion that this high rate of condom use makes the continuation of sexual-health campaigns unnecessary is wrong on two counts. First, future

campaigns are needed to sustain the continuance of safer sexual practices and to encourage such practices in the next generations of young travellers. Second, young people who meet new sexual partners while travelling abroad may be a convenient proxy group for the people who are most sexually active. For example, 5% of our controls reported five or more casual sexual partners in the UK during the previous 2 years, which accords with the NATSAL finding that 1.5% of people aged 18–34 years reported five or more new heterosexual partners in the previous year and 15% reported two or more new heterosexual partners in the previous year. Compared with this expected low rate of new sexual partners among the controls, the target group who had a new sexual relationship abroad also had high rates of new sexual partners in the UK: 28% reported five or more casual sexual partners in the UK during the previous 2 years. Thus, targeting young people who are sexually active abroad would also reach the minority of people who have high numbers of new sexual partners at home.

HIV-1 seems to be more readily transmitted from men to women than from women to men,<sup>20</sup> so women are at increased risk of heterosexual HIV-1 transmission and are also more likely to report multiple exposures to infection. Moreover, different independent variables affect the risk behaviour of female travellers compared with male travellers. Men's risk behaviour abroad reflects their behaviour at home, whereas woman's risk behaviour is frequently shaped by the background of their sexual partners. If future campaigns are to be effective, they should continue to be sensitive to sex differences between men and women in sexual risk behaviour.

#### Contributors

Damiano Abeni, Catherine Goujon, Dominique Hausser, Michel Hubert, Dieter Kleiber, and Jose Antonio Nieto were collaborators in the feasibility study for coordinated community action on the improved targeting of HIV/AIDS prevention campaigns among international travellers funded by the EC and took part in two weekend workshops to plan the study and then to interpret the subsequent results. Michael Bloor was the project leader. Michelle Thomas was the full-time research associate and wrote the first draft of the research report on which this paper draws. Kerenza Hood undertook the statistical modelling. Michael Bloor wrote the successive drafts of the paper, which were commented upon and agreed by all the investigators.

#### Acknowledgments

This study was funded by Directorate General V of the European Commission. We thank Nick Moon and Gill Souter of NOP and *The Lancet's* anonymous referees.

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