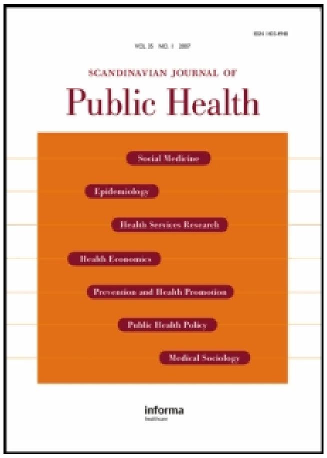

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ORIGINAL ARTICLE

Sexual health among young adults in Finland: Assessing risk and protective behaviour through a general health survey

MINNA NIKULA[1], PÄIVIKKI KOPONEN[2], ELINA HAAVIO-MANNILA[3] & ELINA HEMMINKI[1]

[1]*STAKES (National Research and Development Centre for Welfare and Health), Helsinki, Finland,* [2]*KTL (National Public Health Institute), Finland, and* [3]*University of Helsinki, Department of Sociology, Helsinki, Finland*

Abstract

Objective: To describe the extent of sexual risk and protective behaviours and reproductive health outcomes comparing men and women of 18–29 and assess the demographic correlates of these indicators within genders. *Design*: A module of questions on sexual behaviour and reproductive health outcomes was integrated into a population-based general health survey in Finland. *Methods*: A representative sample of people over 17, including 1,894 individuals between 18 and 29 years, was drawn from the population registry in 2001. Individual interviews and self-administered questionnaires were used with a response rate of 79% for the interview and 68% for the questionnaire. *Results*: It was more common for younger men to stay single and have multiple partners while women of the same age were cohabiting or married and chose a regular sex partner. The mean number of sexual partner for men was 5.0 (SD 5.1) and for women 3.4 (SD 2.1). Besides higher prevalence of multiple partners, men reported also casual sex contacts more often than women, 33% vs. 20%. Both genders reported relatively high and concordant rates of contraception use. However, in casual sex contacts a condom was used consistently only by less than half of both sexes. Marital status was the strongest predictor for behaviour and health outcomes. *Conclusions*: Casual sex is common among young adults in Finland and often occurs without a condom. This study shows that it is feasible to incorporate sexual behaviour questions as part of a larger health survey offering an option for monitoring sexual behaviour when funding for large-scale HIV surveys is decreasing.

Key Words: *Epidemiology, Finland, health surveys, men, risk factors, sexual behaviour, women*

Introduction

The HIV epidemic is strengthening in Europe faster than in any other parts of the world [1]. Yet, data to monitor the patterns and changes in behaviour fuelling this epidemic are limited and mostly available from the least affected areas. According to the European Health Interview and Health Examination Surveys database, from a total of 99 surveys, 13 surveys in 8 countries included questions on sexual behaviour [2]. Of Western European countries, the UK, Sweden, Switzerland, France, and Finland have conducted national sexual attitude and lifestyle surveys and reported comparisons over time [3–10]. Of the Eastern European countries, only Slovenia has published a population-based sexuality survey [11]. There is evidence that migration dynamics will largely determinate the HIV transmission in Europe [12]. This calls for the systematic use of comparable indicators for sexual behaviour and reproductive health outcomes for monitoring epidemics.

In Western Europe, after two decades of HIV, the perceived risk of the epidemic and also funding for large sexuality studies are diminishing [13]. This current study stems from the hypothesis that questions on sexual behaviour can be incorporated into general health surveys to establish an ongoing population-based monitoring of sexual behaviour. Finland's nationwide Health 2000 survey introduced a wider focus on reproductive health including questions on infertility, STIs, contraception,

Correspondence: Minna Nikula, STAKES, PB 220, 00531, Helsinki, Finland. E-mail: minna.nikula@stakes.fi

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sexual risk behaviour, and screening attendance [14]. Finland has been considered a model country because of its low rates of STIs, HIV, and induced abortions, as well as the easy access afforded for reproductive health services [15]. This situation faces challenges as a result of developments observed elsewhere in Europe: increasing prevalence of high-risk sexual behaviour, the reappearance of syphilis in 1995 in parallel with a Russian epidemic, increasing rates of Chlamydia infection and infertility, as well as escalating numbers of injecting drug users [3,5,10,16].

In this paper we explore risk and protective behaviour and reproductive health outcomes reported by 18- to 29-year-old men and women. We analyse and compare the risk and protective behaviours and health outcomes of men and women and also examine the socioeconomic correlates of these indicators within genders.

Material and methods

The Health 2000 survey is designed to obtain comprehensive information on health and the functional ability of men and women aged 18 and over in Finland. For the survey, a representative sample of 9,916 people aged 18+ was drawn from the Finnish population registry, the 18–29 sample (1,894) data being used in this study. A detailed description of the sampling, materials, and methods has been presented previously [14]. The study instruments and data-collection process were tested in two pilot studies. Prior to and during the fieldwork (March and July 2001), an extensive information campaign was launched through local media channels. Study participants were first contacted by means of an information letter followed by a phone call to agree on a schedule for the interview. If the phone number was not available, an interview appointment was proposed by a second letter and confirmed by a return call. The participants who were not reached as scheduled were interviewed by phone, while for those that were not reached at all a final request letter was sent.

Reproductive health topics were asked by a personal interview (at the participant's home) and a self-administered questionnaire, which was returned by mail. Informed consent was signed prior to the interview, which included questions on 11 health themes. In respect of reproductive health, questions on contraception and condom use as well as abortion were asked during the interview (e.g. What contraceptive method do you use or have recently used with your partner? How many induced abortions have you had?). The computer assisted interview (CAPI) lasted on average for 95 min. Most of the more delicate reproductive health-related questions were included in the self-administered questionnaire, which incorporated 114 questions on, for example, sexual activity (e.g. How often do you engage in sexual intercourse with another person and with how many persons have you had sexual intercourse with during the past 12 months?) and casual partnering (e.g. Have you had intercourse with other than regular partner(s) and used condoms on these occasions during the past 12 months?). Sexually transmitted infections were determined through a multiple-choice question listing Condyloma, Chlamydia, Herpes, yeast infection, other vaginal infection, uterus infection, ovarian infection, prostatitis, and orchitis. The survey questionnaires can be viewed at http://www.ktl.fi/terveys2000.

A stratified, two-stage cluster sampling design was used in the survey. In order to obtain a representative sample, the data were weighted to adjust for the unequal probabilities of selection and to match the age, sex, living district, and language profile of the Finnish population. The statistical analyses were done using STATA (version 8), which takes into account the sampling design (stratification and clustering) and is able to incorporate weighting. A bivariate analysis was done by cross-tabulating variables of interest and performing the Wald test to calculate the statistical significance of differences between age and gender groups. Logistic regression was used to calculate adjusted odds ratios to control for any variation in the background characteristics.

Results

A total of 765 men and 738 women were interviewed. The response rate was 79% for the interview (78% men, 81% women). The self-administered questionnaire was returned by 602 men and 680 women, giving a response rate of 68% (61% men, 74% women).

Table I presents the weighted background characteristics of the participants. Overall, men engaged later in marriage or co-habitation than women. The difference in marital status between genders levelled out in the oldest (25–29) age group where approximately one-third of both genders still remained single. The proportion of cohabiting men and women among those aged 18–29 was reported to be slightly higher and education distribution consistent in our

Table I. Percentages of respondents aged 18–29 according to background characteristics in Finland (2000).

	Men				Women			
Age	18–19	20–24	25–29	Total	18–19	20–24	25–29	Total
n	(136)	(338)	(291)	(765)	(138)	(303)	(299)	(738)
Marital status								
Married	1	6	28	14	1	12	36	20
Cohabiting	9	33	40	31	36	45	35	39
Single	91	61	32	55	63	43	29	41
Education								
Low (Comprehensive)	14	10	9	10	8	7	8	8
Middle (High school)	76	45	47	51	57	36	30	37
High (University)	10	45	44	39	35	57	62	55
Residence								
Urban	52	67	65	64	58	73	71	69
Rural	48	33	35	36	42	27	29	31
Total	100	100	100	100	100	100	100	100

study compared with Finnish population statistics [17,18].

The total prevalence of sexual inactivity (never experienced intercourse) was the same among both genders, but the pattern of the onset of sexual activity was different. Based on the proportion of those sexually inactive in different age groups, it appears that women had sex at an earlier age than men (Table II). In the youngest age groups, women also reported having a regular partner (e.g. one partner during the preceding year) more often than men. In the 25–29 age group the gender difference levelled out, with over 90% of both genders reporting having had intercourse and 70% having a regular partner. Having multiple partners (>2 partners during the preceding year) remained more common among men than women in all age groups, although in the oldest age group the gender difference in multiple partnering decreased. Of those who reported multiple partners, the average number of partners in the preceding year was 5.0 for men (SD 5.1) and 3.4 (SD 2.1) for women.

Table II. Percentages of respondents, by selected sexual behaviour indicators, according to gender and age in Finland (2000).

	Men				Women			
	18–19	20–24	25–29	Total	18–19	20–24	25–29	Total
Sexual activity, ever (*n*=602 men/680 women)[a]								
No intercourse	27	12	8	13	15	11	7	10
1 x/month	24	22	21	22	21	15	17	17
weekly	28	42	55	45	42	48	58	51
>=2 times/week	17	23	15	19	19	25	16	20
Missing	4	1	1	1	3	1	2	2
No. of partners, past year (*n*=602/680)[a]								
0	26	14	11	15	14	11	5	10
1	37	56	72	59	62	68	78	71
>1	33	29	17	25	21	20	15	18
Missing	4	1	0	1	3	1	2	1
No contraception, currently (*n*=511/611)[b]	14	14	19	16	7	16	18	15
Condom use, currently (*n*=511/611)[b]	64	49	40	48	56	40	43	52
Intercourse with casual partner(s), past year (*n*=511/611)[b]	52	37	23	33	24	21	18	20
Condom use with casual partner, past year (*n*=214/178)[c]								
Consistently	55	37	41	43	30	36	35	34
Occasionally	25	37	28	31	27	31	21	26
Did not use	6	9	11	9	10	7	16	11
Missing	14	17	20	17	33	26	28	29
Total	100	100	100	100	100	100	100	100

[a]All respondents who returned the self-administered questionnaire included. [b] Only sexually active respondents included. [c]Only respondents who reported casual partners included.

Current contraceptive use, of those sexually active, was determined through interview and sexual activity through a self-administered questionnaire. A concordance between men and women is seen in the reporting of current contraception use as well as current condom use (see Table II). Of those who reported being sexually active, approximately 15% of both men and women did not use any method of contraception. Approximately half of sexually active men and women reported using condoms currently or recently, and it was significantly more common in the youngest age groups.

Casual partnering among sexually active participants was more common among men than women in all age groups (see Table II). Over a third of sexually active men and a quarter of women reported having had sex with casual partners over the preceding year. Men aged 18–19 were almost twice as active as women of the same age group or men of the oldest age group in engaging with casual partners. Analysis not shown in the tables indicates that of those who had sex with casual partners, 15% of men and women were either married or co-habiting. Although men were more likely to have sex with casual partners, they also reported using condoms in these relationships more often than women. Men aged 18–19 who had sex with casual partners indicated consistent condom use more often than older men or women of all age groups. Consistent condom use with casual partners decreased towards older age groups among men, whereas among women it increased by age. Approximately 10% of men and women indicated never using a condom when having sex with casual partners.

Approximately one-fifth of the study cohort had children, while men were less likely to have children than women (Table III); this finding corresponds well with Finnish population statistics [19]. Only women were asked about abortion. Abortion increased by age and women aged over 20 were more than twice as likely to have experienced abortion as women aged 18–19. Women reported having experienced STIs (Condyloma, Chlamydia, and Herpes) twice as often as men.

Multiple logistic regression analysis was used to calculate odds for sexual behaviours and reproductive outcomes within genders, controlling for age, marital status, residence, and education (Table IV). A strong association was found between multiple and casual partners and marital status; the probability of reporting engagement in sexual intercourse with multiple and casual partners over the preceding year was significantly increased among single men and unmarried (including cohabiting) women, and those living in an urban environment. Men with middle education and women with higher education were more likely to have multiple and casual partners than those with lower education (non-significant finding). Consistent condom use in casual sex contacts was significantly positively associated only with men and cohabiting women aged 20–24.

We found that marital status was a stronger predictor for contraception and condom use than age, education, or living environment (see Table IV). Among men, those who were not married were three times more likely to report contraception use. Single men were almost four and single women three times more likely to use condoms. Highly educated women were over four times more likely to use contraception than women with low education.

The risk of reporting ever having had an STI was significantly more common among unmarried women (see Table IV), whereas men who were unmarried were less likely to have an STI (non-significant finding). The proportion of reported STIs was significantly higher among women and men of older age and among women with high education. Having ever had an abortion was strongly associated with marital status; unmarried women had significantly increased odds of ever having had an abortion.

Table III. Percentages of respondents, by selected reproductive health outcomes, according to gender and age in Finland (2000).

	Men				Women			
	18–19	20–24	25–29	Total	18–19	20–24	25–29	Total
Number of children (n=765 men/738 women)								
0	97	89	71	83	94	86	52	74
1	1	7	16	10	5	12	22	14
>1	2	4	13	7	1	2	16	7
Induced abortion, ever (n=0/738)[a]	–	–	–	–	4	8	12	9
STI, ever (n=602/680)[b]	3	9	13	10	11	20	26	21
Total	100	100	100	100	100	100	100	100

[a]Respondents who participated in the personal interview included. [b]Respondents who returned the self-filled questionnaire included. STI includes Herpes, Condyloma, or/and Chlamydia.

Table IV. Associations (odds ratios and 95% confidence intervals) between background characteristics, and sexual behaviour and reproductive health outcomes for men and women in Finland (2000), multiple logistic regression analysis controlling for marital status, age, residence, and education.

	Multiple partners, past year		Casual partners, past year		Consistent condom use with casual partner, past year		Contraception, current		Condom use, current		STI, ever		Abortion, ever
	Men $n=591$	Women $n=602$	Men $n=485$	Women $n=565$	Men $n=178$	Women $n=214$	Men $n=761$	Women $n=738$	Men $n=761$	Women $n=737$	Men $n=590$	Women $n=665$	Women $n=263$
Marital status													
Married	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Cohabiting	3.61	11.9	3.08	10.3	4.30	4.47	3.00	4.31	0.91	1.57	0.87	2.10	2.15
	(0.80–16.4)	(1.6–89.2)	(0.87–11.0)	(1.36–78.9)	(0.26–72.1)	(1.59–1.25)	(1.65–5.45)	(2.39–7.77)	(0.48–1.71)	(0.97–2.52)	(0.34–2.22)	(1.07–4.12)	(0.98–4.72)
Single	30.8	67.8	56.3	134.8	2.81	1.01	2.91	5.67	3.86	2.72	0.85	2.08	5.47
	(7.33–129.4)	(9.2–496.6)	(17.0–186.5)	(18.3–991.2)	(0.22–36.8)	(–)	(1.42–6.00)	(3.01–10.7)	(2.04–7.32)	(1.62–4.58)	(0.35–2.08)	(1.10–3.95)	(2.30–13.0)
Age													
18–19	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.00	1.0	1.0	1.0
20–24	1.34	1.12	1.16	1.09	0.42	1.0	1.0	0.45	0.74	0.62	3.90	1.82	1.65
	(0.83–2.14)	(0.61–2.04)	(0.64–2.11)	(0.55–2.18)	(0.18–0.96)	(0.37–2.68)	(0.46–2.14)	(0.20–1.40)	(0.43–1.29)	(0.38–1.02)	(1.09–13.9)	(0.97–3.40)	(0.48–5.62)
25–29	1.20	1.16	1.33	1.61	0.52	1.33	0.89	0.62	0.79	0.86	5.23	3.12	1.44
	(0.70–2.04)	(0.61–2.18)	(0.58–3.04)	(0.76–3.42)	(0.22–36.8)	(0.43–4.08)	(0.39–2.04)	(0.26–1.49)	(0.43–1.47)	(0.53–1.41)	(1.44–18.9)	(1.59–6.11)	(0.43–4.82)
Residence													
Urban	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Rural	1.09	0.55	1.06	0.79	1.23	1.01	1.11	1.61	0.86	1.33	0.63	0.74	0.57
	(0.71–1.67)	(0.35–0.88)	(0.62–1.80)	(0.49–1.28)	(0.68–2.26)	(0.41–2.83)	(0.63–1.96)	(0.86–3.00)	(0.57–1.3)	(0.93–1.90)	(0.35–1.13)	(0.46–1.20)	(0.23–1.15)
Education													
Low	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Middle	1.41	0.66	0.97	1.59	0.78	6.11	1.21	2.87	1.22	1.95	0.97	0.27	0.67
	(0.61–2.28)	(0.26–1.69)	(0.34–2.79)	(0.52–4.88)	(0.22–2.78)	(0.61–61.1)	(0.49–3.01)	(1.33–6.19)	(0.62–2.41)	(0.90–4.25	(0.31–3.04)	(0.12–0.58)	(0.28–1.60)
High	1.38	0.81	0.68	2.24	0.96	5.34	1.68	4.61	1.3	1.79	0.75	0.39	0.52
	(0.55–3.44)	(0.33–2.01)	(0.23–2.05)	(0.79–6.41)	(0.27–3.54)	(0.56–51.5)	(0.63–4.45)	(2.20–9.67)	(0.62–2.74)	(0.85–3.74)	(0.21–2.66)	(0.20–0.79)	(0.20–1.35)

Discussion

This study explored data from a population-based health survey, comparing estimates of sexual risk and protective behaviour and reproductive health outcomes. We can conclude that it is feasible to incorporate sexual behaviour questions as part of a larger health survey. While funding for large-scale HIV surveys is decreasing, this offers an option to gather urgently needed, comparable, standardized data on sexual behaviour patterns and changes over time.

We chose to perform our analysis among young adults aged 18–29, as they represent an age cohort in which sexual activity is high and therefore is most vulnerable to sexual health hazards. Our study confirms that men begin sexual life and enter steady sexual relationships later than women. Besides higher prevalence of multiple partners, men also reported casual sex contacts more often than women. Both genders reported relatively high and concordant rates of contraception use and condom use as a current contraceptive method. However, in casual sexual contacts, a condom was only used by less than half of both sexes. Marital status was the strongest predictor for behaviour and health outcomes, and eased the influence of age in the multivariate analysis.

The Health 2000 survey has a number of methodological strengths, including the sampling frame, a high survey response rate, well-tested and well-functioning questionnaires, and a low proportion of missing values, as well as concordance of results with previous studies and register data. Some limitations, however, merit further discussion. First, reporting bias on retrospective and highly sensitive data as well as adverse experiences may have led to under- or overestimates in study results. To increase respondents' willingness to provide reliable answers, all questions related to sexual behaviour were asked through a self-administered questionnaire, which is likely to be a more conducive method for sensitive topics than a personal interview [20]. Abortion was determined via one-to-one interview, but integrated with questions on other child-bearing-related events, a method that has been shown to increase reliability in previous studies [21]. Second, the study is limited by the method used to capture data on STIs. Participants were asked for lifetime STIs, which means a longer exposure time and greater likelihood of positive results for older age groups. The STI data are based on subjective information rather than laboratory test results, which is likely to provide underestimates for STIs. Finally, survey data alone poorly capture the social context of any behaviour, which makes their interpretation difficult. Survey data on behaviour and health outcomes become more valuable when trends over a number of years are available.

Cross-study comparisons of sexual behaviour and outcomes are seldom possible since studies use different indicators or time periods of assessment and few incorporate reproductive health outcomes in their analysis. However, our results were contrasted with a previous Finnish sex study [8], a population survey on sexual lifestyles, as well as with the most recent sexuality surveys in Europe [3,5,7,9,22].

Partnering patterns are key risk factors for STI epidemiology at both the individual and the population level. Partnering patterns have been studied through several indicators. We found a higher prevalence of multiple partners than the Finnish sex study in 1999 for the same age cohort [8]. Internationally our definition of multiple partners ($>=2$ partners) is comparable with a US population survey, which reported a similar prevalence of multiple partners in 1995, but higher than what was reported in Sweden (>2 partners) in 1997, and lower than reported in the UK ($>=2$ new partners) in 1999 for the same age groups [3,5,23]. Casual sex has been studied among young adults in Sweden (1997) and Switzerland (1994) [3,7]. Although there are some differences in definition, the occurrence of casual sex seems higher in Finland. Earlier Finnish, Swedish, and British sex studies support this finding. They did not inquire about casual sex contacts but, rather, concordant partnerships, which were also more prevalent in Finland than in Sweden and the UK [4,9,10].

Casual as well as concordant sexual encounters become unsafe when a condom is not used to prevent STIs. We found that a condom was used by just over one-third of those who had casual sex. Given the relatively high prevalence (50%) of condom use as a current contraceptive method, a higher prevalence of condom use with casual partners could be expected. Condom use is found to be much higher with casual partners than with steady or regular partners with the assumption that the risk perception of acquiring an STI increases in regard to casual sex [24]. However, condom use can be challenged by several social, cultural, and economic factors. One potential explanation for poor motivation in condom use and decreased perception of risk may be alcohol consumption prior to having sex. Numerous studies from elsewhere have reported the correlation of excessive drinking and risky sexual behaviour [25]. A separate analysis from our data indicates that almost half of men were using alcohol at least once a week and drinking was excessive enough to provoke a hangover on average 10 times during the preceding year [26].

We found that being single was negatively associated with risky sexual behaviour and adverse health outcomes for both genders. Our results are consistent with evidence from the Finnish sex study, as well as some international studies, which also found marital status to be a stronger predictor for sexual behaviour than age or education [3,4,12,22,23]. We used education as the estimator of social class. A previous Finnish study of young men indicated lower education as associated with increasing numbers of lifetime and casual partners [27]. Reports from Russia and Estonia on young adults have found men from higher social classes to have more sex partners [28]. In our study, education was not significantly related to risk behaviour or reproductive health outcomes.

Surveys historically have suggested that men and women may have very different goals and attitudes related to sexual behaviour. In particular, women's and men's views on 'one-night-stands' have been divided in many societies [10]. We found a strong concordance between men and women's reporting on specific behaviour such as intercourse activity and contraception, but discordance on partnering patterns. Men reported a higher prevalence of multiple partners, mean numbers of partners, and sex with casual partners than women. Influences of demographic variables were similar for men and women.

Our findings corroborate the Finnish sex study and surveys in other European countries and the USA that indicate gender differences particularly in partnering patterns to be relatively universal [3,5,10,22,23,29]. Some of the gender differences may be explained by sampling (the sample includes a few females who have many sex partners) or reporting biases (men tend to over-report their number of sex partners), or discordance between men and women in age on sexual debut, marital status, or partnering pattern in a particular age bracket of interest. However, studies comparing behaviour over time have found that there has been a stronger increase in the number of sexual partners and the prevalence of casual sex among women than men, and that it is not entirely due to demographic changes. This supports the evidence that differences in attitudes and behaviour around sexuality are diminishing between men and women [5,7,10,22].

This study points out the lack and the heterogeneity of sexual behaviour and reproductive indicators in Europe. We hope that our results will contribute towards improved public health strategies regarding sexual and reproductive health as well as encouraging other countries to incorporate sexual health as an integrated part of general health surveys, thus enabling more effective monitoring of epidemics.

Acknowledgement

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