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HUMAN IMMUNODEFICIENCY VIRUS (HIV) AND THE CONDOM.

A study of the knowledge, attitudes and behaviour of population groups at increased risk of HIV infection.

VOLUME TWO.

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CHAPTER 5.

GENITO-URINARY MEDICINE PATIENTS STUDY.

5.1 Results:Text.

The questionnaire was completed by 485 of the 550 men (88%) and 337 of the 350 women (96%) to whom it was offered. Forty men (8%) and 4 (1%) women indicated that they were exclusively homosexual and were excluded from the analysis. None of the respondents was known to have HIV infection.

The 445 male respondents had a mean age of 27.4 years (SD 7.0) compared with 24.5 years (SD 5.9) for the 333 women. The age distribution by sex is shown in Table 1 and Figure 1. These show that about 80 percent of all the respondents were aged between 20 and 34 years, with the commonest age group being 20 to 24 years.

Seventy per cent of the respondents were single or separated and 30 percent were married or living with a regular partner.

All social classes and educational levels were represented, including 12.6 percent unemployed and 10 percent students. The social class distribution of the sample was similar to that of Glasgow city as a whole.

Around 90 percent of the respondents were attending the clinic for a sexually transmitted disease or a "check up". Only 3.5 percent of the men and 2.4 percent of the women reported using intravenous drugs.

The number of different sexual partners in the last 12 months reported by respondents is shown in Table 2 and Figure 2. These show that about 69 percent of men and 48 percent of women had had more than one sexual partner during the previous 12 months with over 16 percent of men, but less than 5 percent of women, reporting more than five partners.

Figure 3 shows the reported number of sexual partners in the last 12 months by respondents' sex and age. Those in their teen and early twenties reported more sexual partners, and were probably more sexually active than the older respondents with more than 50 percent of them having more than five partners.

Table 3 and Figure 4 show the reported number of sexual partners in the past 12 months by sex and marital status.

About 64 percent of all single or separated respondents reported having more than one sexual partner compared with about 50 percent of those who were married or living with a regular partner (chi-square = 13.1, 3df, p = 0.005).

Table 4 and Figure 5 show the reported number of sexual partners by reported condom use. About 60 percent of the condom users and non users had more than one sexual partner.

The stated number of times the respondents had sexual intercourse every week is shown in Table 5. This shows that the ranges of reported numbers of times male and female respondents normally had sexual intercourse each week were very similar. About 40 percent of the respondents had sexual intercourse at least five times every week. Similar findings were noted even among those who reported condom use. The number of sexual partners or frequency of intercourse appeared unrelated to educational status or occupation.

Knowledge.

Responses to questions about HIV transmission and its prevention are given in Table 6. This shows that for most questions there were no significant differences between male and female responses. Transmission of HIV through male homosexual sexual intercourse, and heterosexual intercourse was mentioned by over 85 percent of all respondents. Sex without full penetration was not thought to be associated with HIV transmission by a majority of respondents. Although slightly more men more often than women associated HIV transmission with oral sex, there was no clear cut majority regarding this possible route of HIV transmission. Most respondents believed that the condom was an effective HIV control method. Abstention from sex was seen by almost two thirds of the respondents as a way of preventing HIV infection.

In response to the question about having seen or heard anything about the condom during the previous two years, 752 (97%) of all the respondents recalled seeing or hearing about the condom in the previous two years.

The responses to questions about where and what respondents had seen or heard about the condom in the past two years are shown in Table 7. This shows that the main source of information about the condom for all respondents

irrespective of sex was television, while the radio was least mentioned. In all, the condom was reported to have been mentioned more often in connection with AIDS and least as a contraceptive.

When respondents were asked to give a reason in favour of using the condom, and a reason against using the condom, their spontaneous responses were as shown in Table 8 and Figures 6 and 7. About 50 percent of both sexes replied that the condom could protect against AIDS. Contraception was cited by only 15 percent of the males and 24 percent of the females. The respondents' spontaneous responses regarding a reason against using the condom show that more than one third of the men and about half the women did not provide out with any specific reason against the condom. Reduced sensitivity the most commonly cited reason.

Condom use.

Use of the condom was approved by 78 percent of the men and 84 percent of the women, with only 2 percent of the men and 3 percent of the women disapproving on religious grounds.

A total of 210 (27.0%) of respondents indicated that they used the condom, comprising 131 (29.4%) of the male and 79 (23.7%) of the female respondents.

The reasons for using the condom are given in Table 9 and Figure 8. These show that the commonest cited reason was to prevent sexually transmitted diseases generally, while AIDS was specifically mentioned by only 15.3 percent of male users and 3.8 percent of female users.

Condom use appeared unrelated to age, marital status, the number of sexual partners or the frequency of sexual intercourse. However, condom use appeared to be significantly associated with eight other variables. These were used in the logistic regression model, and they were:

1. The respondents' attitude towards the condom; chi-square = 17.5 1df, $p < 0.001$
2. Education; chi-square = 10.4 1df, $p = 0.001$
3. Weekly frequency of sexual intercourse; chi-square = 9.8 4df, $p = 0.04$
4. Respondents who believed that HIV could be spread by women having sex together; chi-square = 7.4 1df, $p = 0.007$
5. Respondents who believed that HIV could be spread during sex without full penetration; chi-square = 6.4 1df, $p = 0.01$
6. Whether respondents had received sex education at school; chi-square = 6.0 1df, $p = 0.01$

7. Respondents who believed that the condom could prevent the spread of other sexually transmitted diseases; chi-square = 5.0 1df, p = 0.02.

8. Whether the respondent had seen or heard anything about the condom during the past two years; chi-square = 4.6 1df, p = 0.02

Table 10 shows that five of the variables emerged as being independently associated with condom use. These included:
a attitude towards the condom (Odds Ratio 2.8)

2 The respondent had seen or heard anything about the condom during the past two years (Odds Ratio 2.4)

3. Respondent had received farther education after leaving school (Odds Ratio 1.7)

4. Respondent believed that the condom could prevent the spread of other sexually transmitted diseases (Odds Ratio 1.6)

5. Respondent had received sex education at school (Odds Ratio 1.5)

About 33 percent of male users and 75 percent of female users had used the condom for less than one year, while 26 percent of male users and 2.5 percent of female users had used it for more than five years (p < 0.001).

The reported frequency of their condom use is shown in Table 11. Only about 40 percent of all condom users indicated that they always used the condom. Twenty-three percent of male users and 14 percent of female users indicated that they had been advised to use the condom by the clinic personnel, and all of these indicated that they always used the condom.

Table 12 shows condom users' responses regarding being persuaded by their partners not to use the condom. About one half of male and one third of female condom users indicated that they could be persuaded by their sexual partners not to use the condom.

Table 13 shows the condom users by their frequency of condom use who felt they could be persuaded by their partner not to use the condom. This shows that about 20 percent of the men and 15 percent of the women who reported always using the condom felt they could be persuaded by their sexual partners not to, rising to almost 60 percent of the men and 50 percent of the women among those who reported using the condom sometimes.

The reasons for not using the condom given by non condom users are shown in Table 14 and Figures 9a and 9b. Whereas use of another form of contraceptive was the commonest response for both men and women as the reason for not

using the condom, the men alone more frequently cited reduced sensation and the women were more likely to mention the reluctance of their partner.

5.2 Tables and Figure

Table 1.

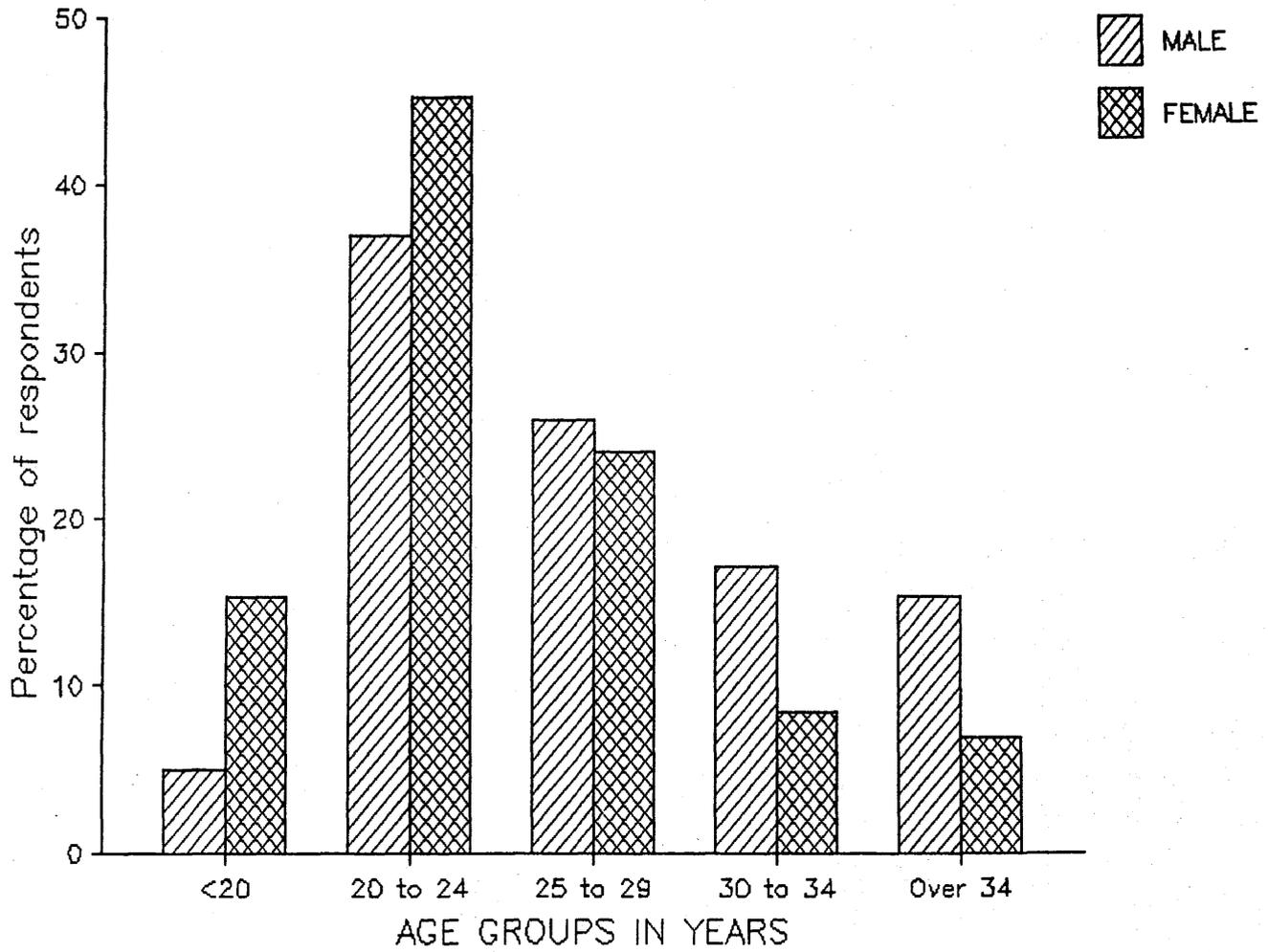
The respondents age distribution by sex.

Sex of respondent	age distribution in years.					Total
	below 20	20-24	25-29	30-34	Over 34	
Male	22	164	115	76	68	445
%	4.9	36.9	25.8	17.1	15.3	100.0
Female	51	151	80	28	23	333
%	15.3	45.3	24.0	8.4	6.9	100.0
Total	73	315	195	104	91	778
%	9.4	40.5	25.1	13.4	11.7	100.0

Chi-square = 47.6 (4df) p less than 0.001

Figure 1.

The respondents' age distribution by sex.



Tables 2.

Reported number of different sexual partners in the last
12 months reported by sex of respondents.

Number of different sexual partners	Sex of respondents		Total
	Male	Female	
0-1	139	172	311
%	31.2	51.7	40.0
2-5	231	147	378
%	51.9	44.1	48.6
6-10	60	12	72
%	13.5	3.6	9.3
Over 10	15	2	17
%	3.4	0.6	2.1
Total	445	333	778
%	100.0	100.0	100.0

Chi-square = 49.0 (3 df) p less than 0.001

Figure 2.

Reported number of different sexual partners in the last 12 months.

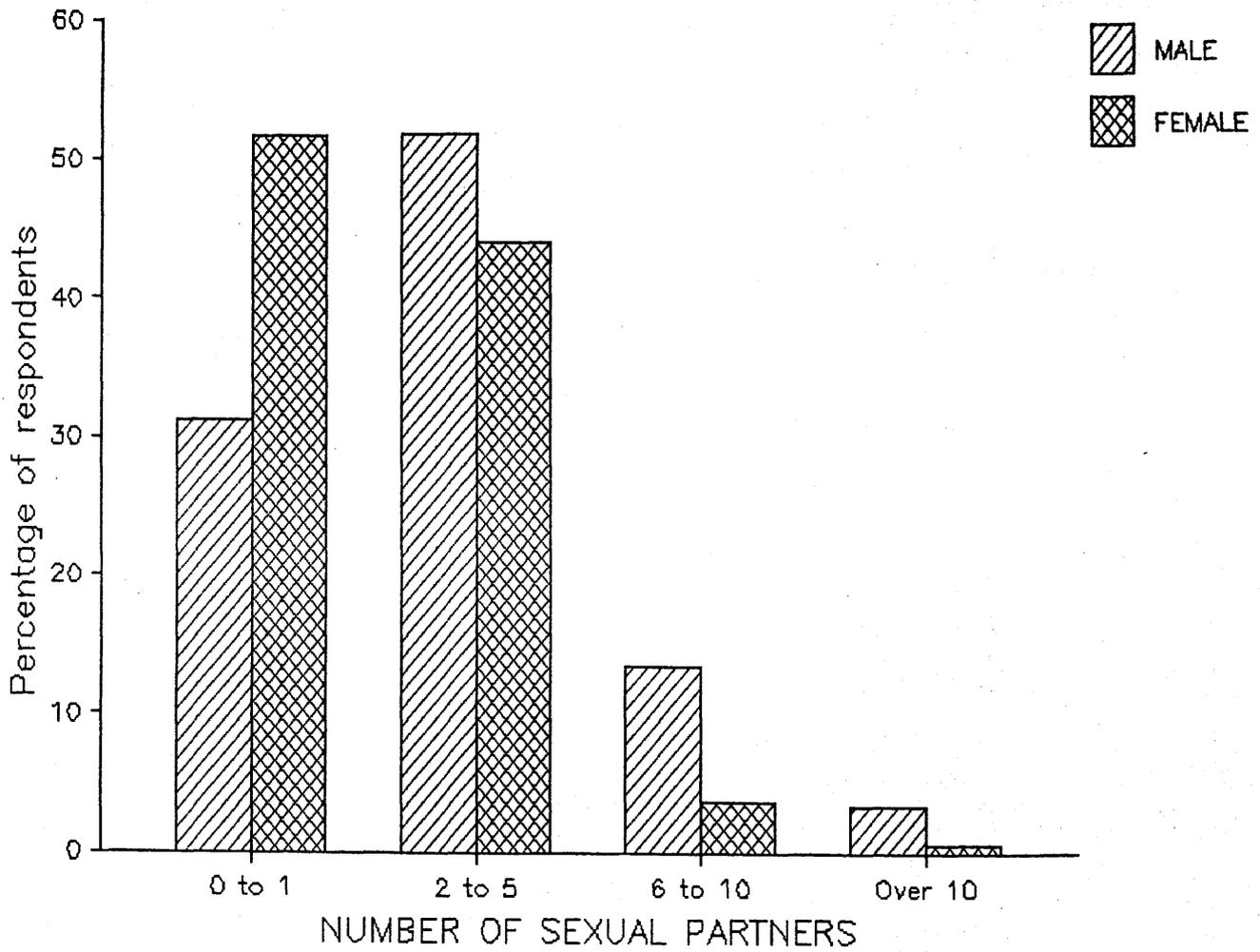


Figure 3.

The reported number of sexual partners in the last 12 months by sex and age.

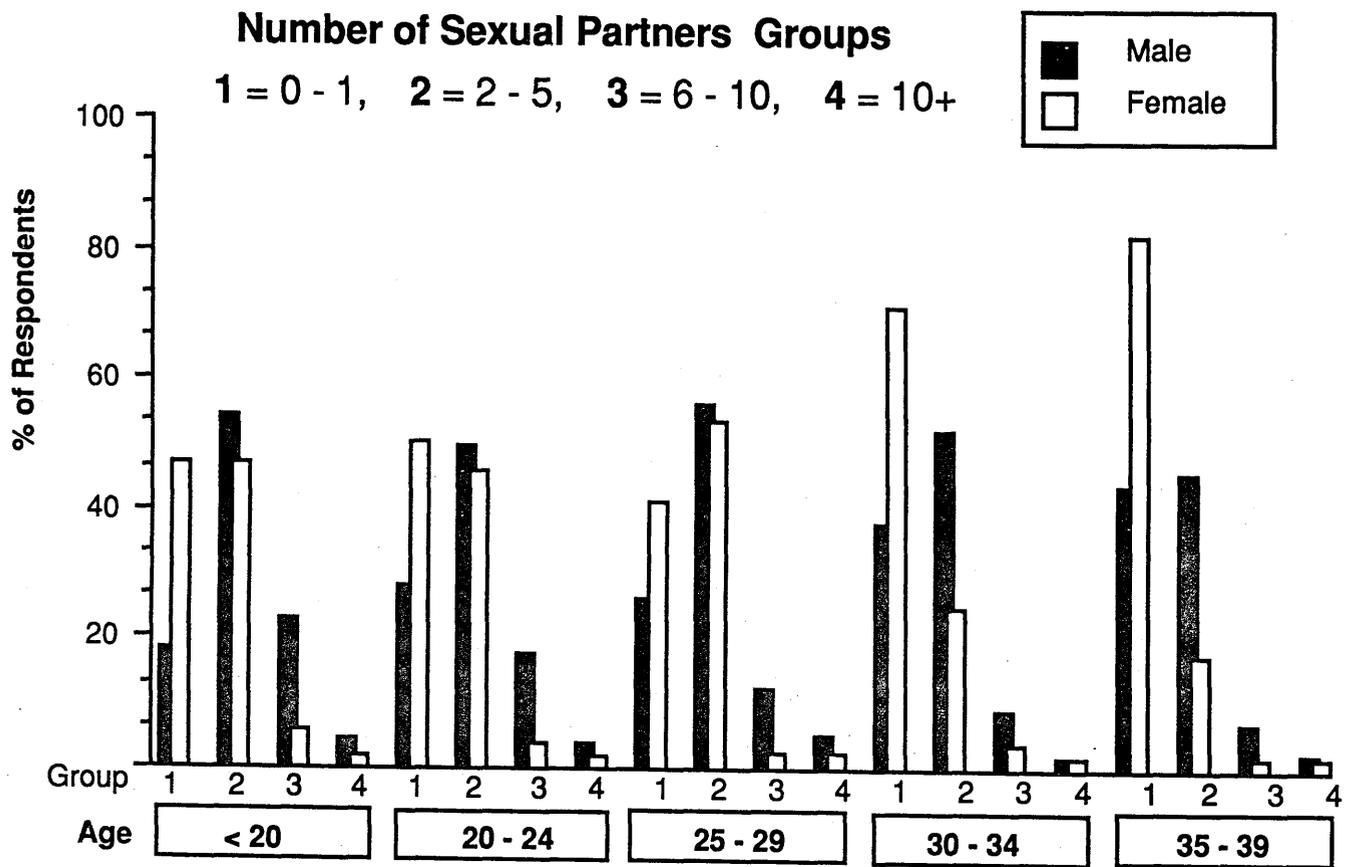


Table 3.

The reported number of sexual partners in the last 12 months by sex and marital status.

		Number of sexual partners				Total
		0-1	2-5	6-10	Over 10	
sex and marital status of respondent						
Single						
Male		89	168	46	14	317
%		28.1	53.0	14.5	4.4	100.0
Female		110	111	12	0	233
%		47.2	47.6	5.2	0.0	100.0
Chi-square = 35.8 3df, p less than 0.001						
Married						
Male		50	63	14	1	128
%		39.1	49.2	10.9	0.8	100.0
Female		62	36	0	2	100
%		62.0	36.0	0.0	2.0	100.0
Chi-square = 19.8 3df, p less than 0.001						

Total		311	378	72	17	778
%		40.0	48.6	9.3	2.2	100.0

Figure 4.

Reported number of sexual partners in the last 12 months
by sex and marital status.

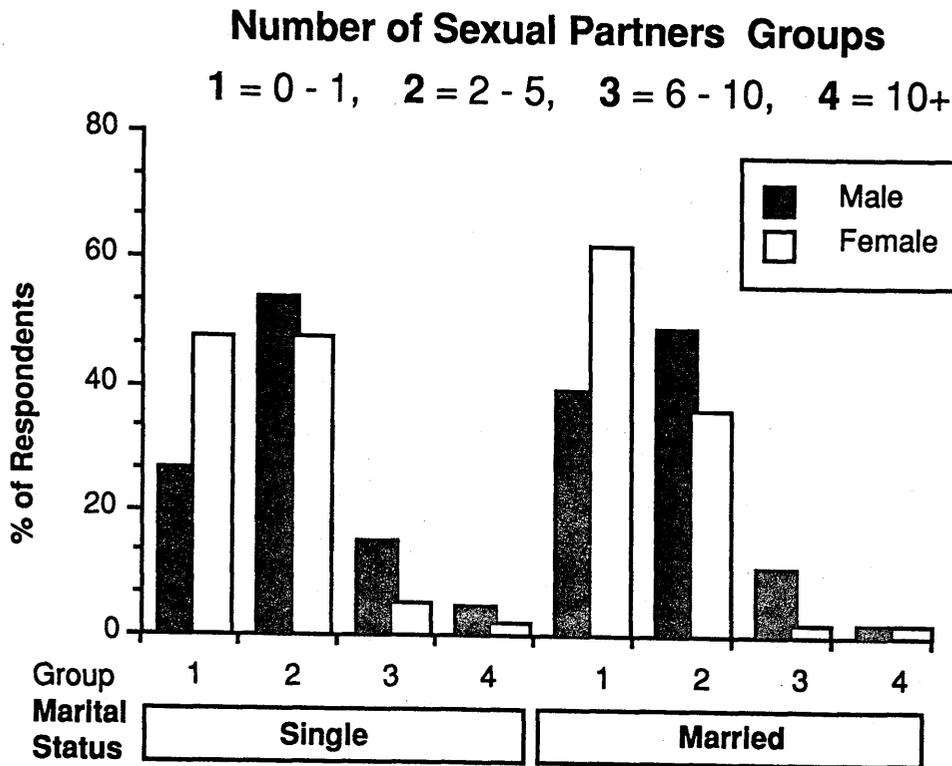


Table 4.

Reported number of partners in past 12 months by reported condom use.

Condom usage	Number of different sexual partners				Total
	0-1	2-5	6-10	11 or more	
Users	79	103	19	9	210
%	37.6	49.0	9.0	4.4	100.0
Nonusers	232	275	53	8	568
%	40.8	48.4	9.4	1.4	100.0
Total	311	378	72	17	778
%	40.0	48.6	9.3	2.2	100.0

Chi-square = 6.2 (3df) p = NS

Figure 5.

Reported number of partners in past 12 months by reported condom use.

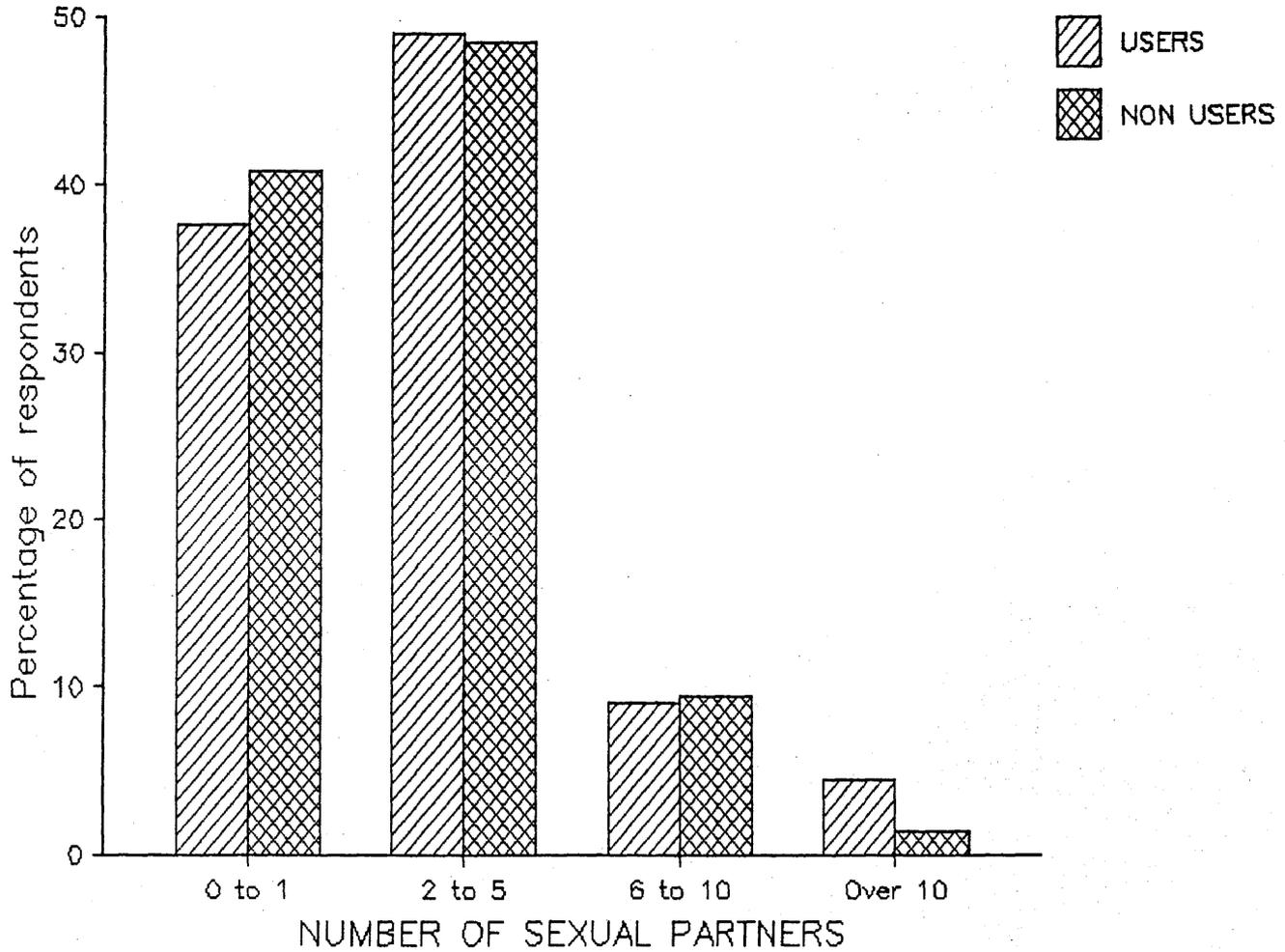


Table 5.

The stated number of times the respondents had sexual intercourse every week.

Sex of respondents	Male	Female	Total
Weekly frequency of sexual intercourse			
1-2 %	132 29.6	98 29.5	230 29.5
3-4 %	128 28.8	102 30.6	230 29.6
5-9 %	141 31.7	101 30.3	242 31.1
10 or more %	44 9.9	32 9.6	76 9.8
Total %	445 100.0	333 100.0	778 100.0

Table 6.

Responses to HIV transmission and prevention.

	% Male (n= 445)	% Female (n= 333)	χ^2	p value
<u>HIV can be spread by:</u>				
Male homosexual sexual intercourse	91	92	0.3	NS
Heterosexual sexual intercourse	86	87	0.1	NS
Oral sex	55	40	18.7	0.001
Female homosexual intercourse	30	25	2.5	NS
Sex without full penetration	23	30	4.7	0.03
Dry kissing	3	1	2.1	NS
Petting	2	3	0.7	NS
<u>The spread of AIDS can be prevented by</u>				
The condom	90	93	4.1	0.04
Abstinence from sex	64	64	0.0	NS
IUCD (coil)	5	2	6.6	0.01
The pill (oral contraceptive)	1	0.3	1.7	NS

* Some respondents gave more than one answer, that is why the percentages add to more than 100.

Table 7.

Sources and content of information about the condom
in the past 2 years.

	% Male (n= 427)	% Female (n= 325)	χ^2	p value
<u>Sources</u>				
Television	90	93	3.3	NS
Newspapers	62	48	14.5	0.001
Magazines	50	63	12.3	0.001
Radio	34	26	6.1	0.01
<u>Content</u>				
AIDS	59	61	0.4	NS
General advertisiments	39	41	0.4	NS
Other STDs	24	25	0.0	NS
Contraception	5	15	23.0	0.001

n= only those respondents who recalled seeing or hearing about the condom in the previous two years.

Some respondents gave more than one answer, that is why the percentages add to more than 100.

Table 8.

The respondents' stated reasons in favour and against the condom.

	% Male (n= 445)	% Female (n= 333)	χ^2	p value
<u>Reasons in favour</u>				
Control of HIV	54	51	0.6	NS
Control of STDs	29	21	6.4	0.01
Contraception	15	24	10.0	0.002
No reason	2	4	2.5	NS
<u>Reasons against</u>				
No reason	35	44	6.6	0.01
Reduced sensitivity	25	20	2.5	NS
Inconvenient	22	18	1.9	NS
Uncomfortable	12	15	1.6	NS
Unsafe	6	3	3.9	0.05

Figure 6.

The respondents' stated reasons in favour of the condom.

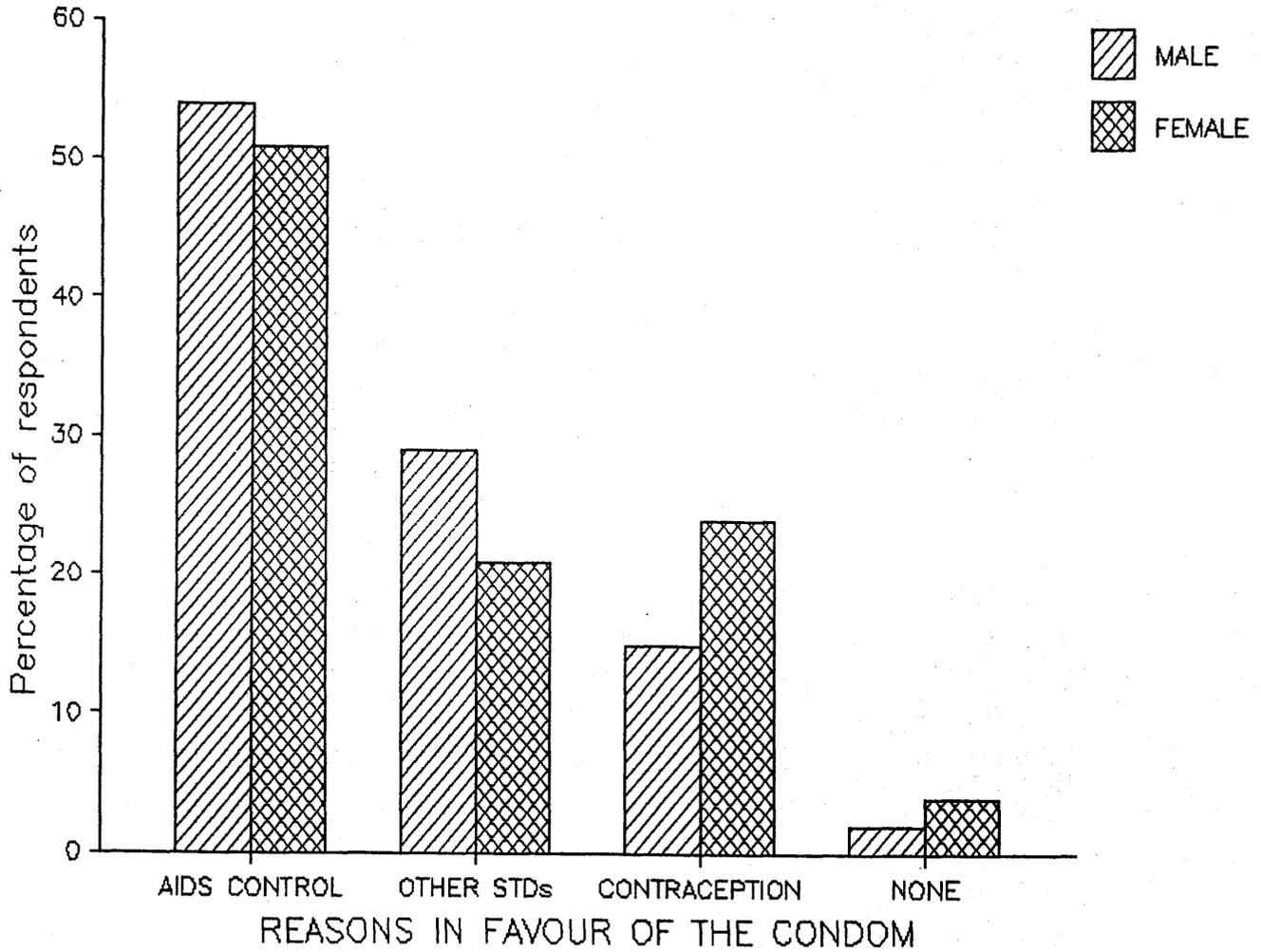


Figure 7.

The respondents' stated reasons against the condom.

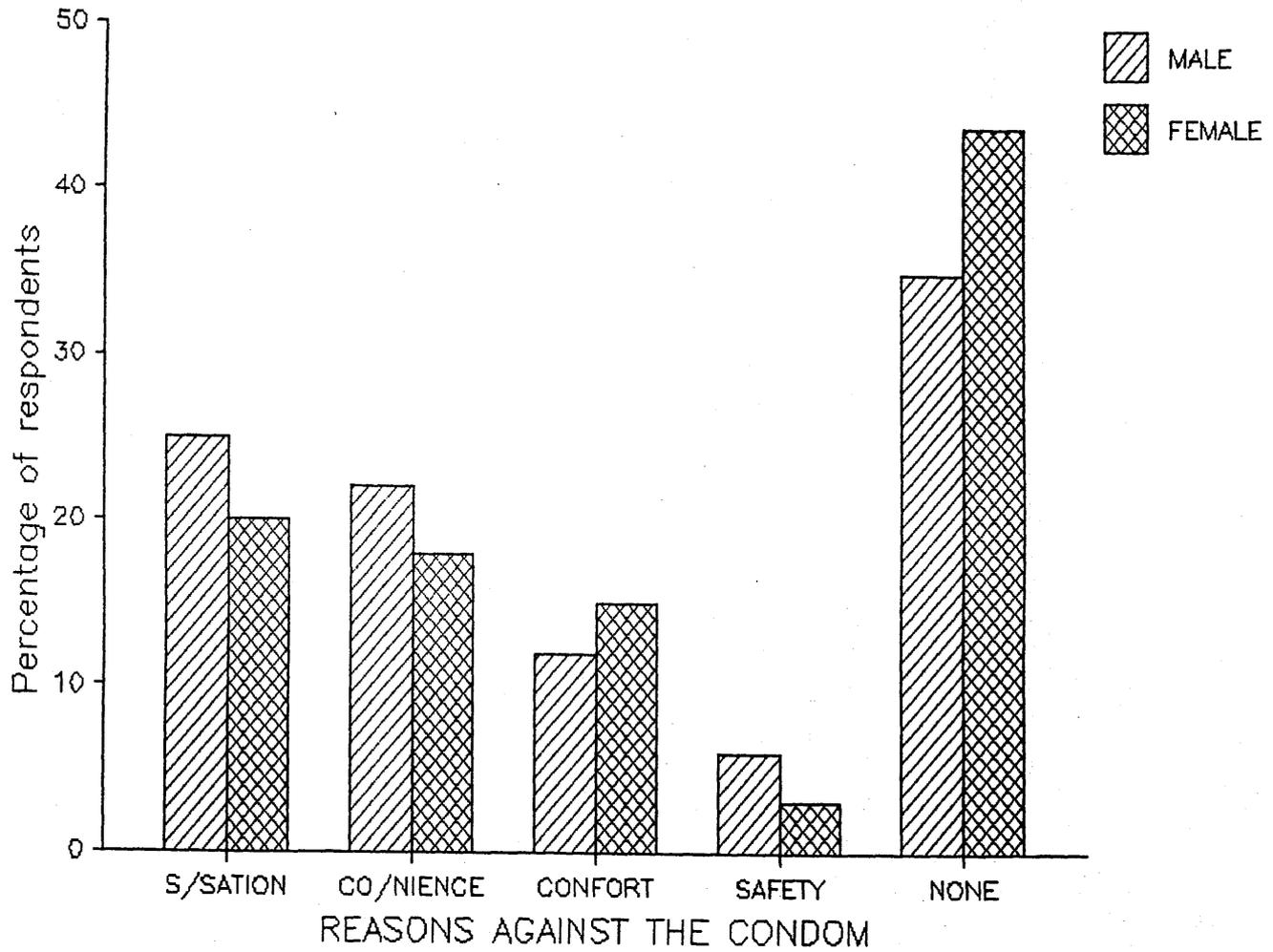


Table 9.

The stated reasons for using the condom given by condom users.

	Male	Female	Total
Other STDs	71	52	123
%	54.2	65.8	58.5
Contraceptive	40	24	64
%	30.5	30.4	30.5
AIDS	20	3	23
%	15.3	3.8	11.0
Total	131	79	210
%	100.0	100.0	100.0

Chi-square = 7.1 p = 0.007

Figure 8.

The stated reasons for using the condom given by condom users.

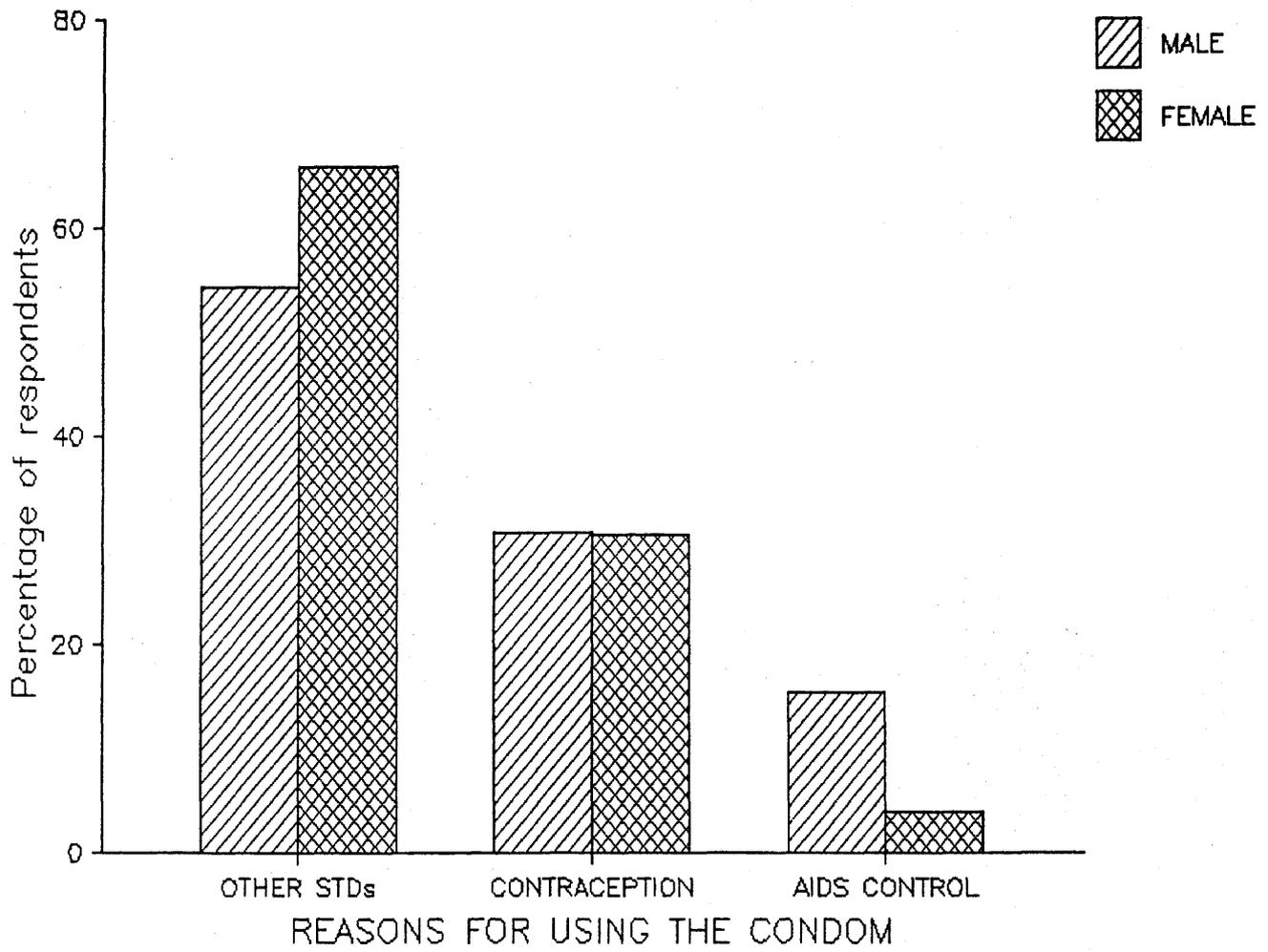


Table 10.

The variables associated with condom use.

VARIABLE	ODDS RATIO	95% C.I	χ^2	p value
Positive attitude to condom	2.8	1.6-4.7	17.5	0.001
Seen literature about the condom during the past two years	2.4	1.0-5.8	4.6	0.03
Education	1.7	1.2-2.5	10.4	0.001
Believed the condom prevents STDs	1.6	1.1-2.4	5.0	0.02
Received sex education at school	1.5	1.1-2.1	6.0	0.01

Table 11.

The respondents frequency of condom use.

	Frequency of condom use			Total
	Always	Mostly	Sometimes	
Male	52	29	50	131
%	39.7	22.1	38.2	100.0
Female	27	23	29	79
%	34.2	29.1	36.7	100.0
Total	79	52	79	210
%	37.6	24.8	37.6	100.0

Chi-square = 1.4 p = NS

Table 12.

The condom users reponses regarding being persuaded by their partners not to use the condom.

	Yes	No	Don't know/ not sure.	Total
Male	62	61	8	131
%	47.3	46.6	6.1	100.0
Female	26	47	6	79
%	32.9	59.5	7.6	100.0
Total	88	108	14	210
%	41.9	51.4	6.7	100.0

Chi-square = 4.2 p = NS

Table 13.

The condom users who felt they could be persuaded by their partners not to use the condom by frequency of condom use.

	frequency always	of condom mostly	use sometimes	Total
Male	13	12	37	62
%	21.0	19.4	59.6	100.0
Female	4	9	13	26
%	15.4	34.6	50.0	100.0
Total	17	21	50	88
%	19.3	23.9	56.8	100.0

Chi-square = 2.4 p = NS

Table 14.

The reasons for not using the condom given by non condom users.

	(%) Male (n= 314)	(%) Female (n= 254)	χ^2	p value
I/partner use another form of contraception	30.9	46.5	14.5	0.001
No reason / don't know	18.2	11.8	4.4	0.05
It reduces sensation	17.8	6.3	16.9	0.001
No need (I have one partner)	16.2	13.0	1.2	NS
Partner doesn't allow	6.7	17.3	15.7	0.001
It is un-comfortable	5.4	2.8	2.5	NS
It is inconvenient	4.8	2.4	2.3	NS

Figure 9a.

The reasons for not using the condom given by non condom users.

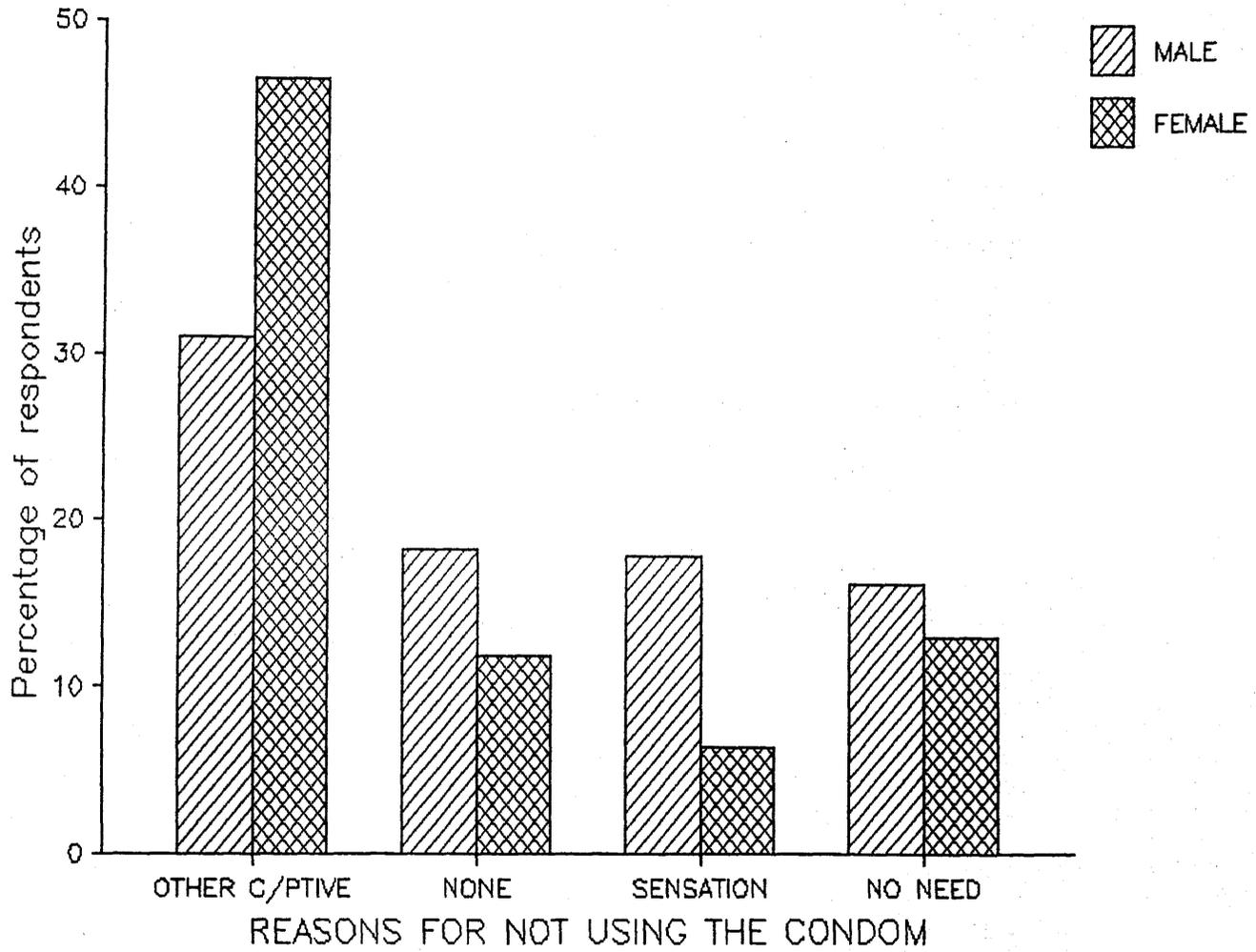
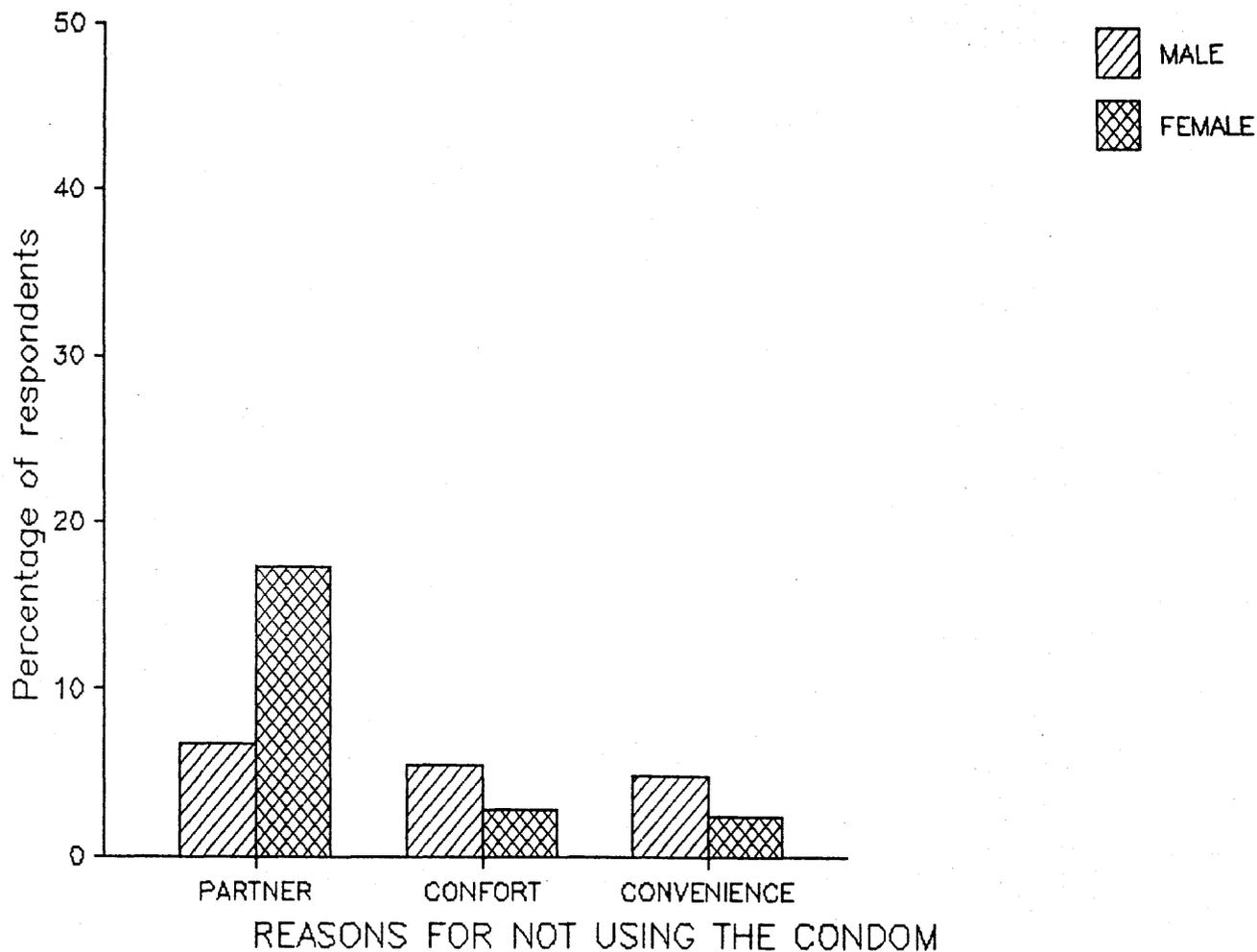


Figure 9b.

Reasons for not using the condom given by non condom users.
(CONTINUED)



5.3 Discussion.

Patients attending a genito-urinary medicine clinic were selected for this study because they were considered at risk for HIV, using the Centers for Disease Control criteria for HIV transmission risk factors [USCDC 1987]. A relatively high prevalence of HIV among heterosexual visitors of STD clinics has been reported in several studies for example, [*Piot et al. 1987, Laga et al. 1989, Johnson et al. 1989*], many showing that the risks of sexual transmission of HIV increase with a history of sexually transmitted disease in the previous five years. This therefore indicates that this group is at increased risk of heterosexual transmission of HIV.

Although at present in the United Kingdom this risk is relatively low [*Evans et al. 1988*], it is on the increase [*Johnson et al. 1989, Loveday et al. 1989*]. Indeed the available data on HIV seropositive rates in the study clinic points to the occurrence of heterosexual HIV transmission in this population [*Joshi et al. 1988, Loveday et al. 1989*].

The decision to include everyone who attended the clinic during the time of the survey was taken for two main reasons. The first was to eliminate selection bias, and

the second was to complete the survey of the preselected number of participants (as calculated from the results of the pilot study) in the shortest time possible to minimise duplication of responses, as some people do come back for return appointments. Though this could have been avoided by asking those who had completed the questionnaire before not to do it again, it was considered better to avoid this as much as possible.

In this cross-sectional study, the response rates of 88 percent for males and 96 percent for females were remarkably high. In part this reflects the co-operation given the author by the clinic staff.

All the participants whose responses were analysed, engaged in heterosexual sexual intercourse.

With a mean age of 27.4 years (SD 7.0) for men and 24.5 years (SD 5.9) for women, and with all social classes and educational levels represented, respondents were typical attenders of a genito-urinary medicine clinic, being mainly young adults with very varied educational backgrounds and occupations [*Belsey and Adler 1981, Sonnex et al. 1989*]. At the same time, this is the age range in which the highest number of HIV and AIDS cases have been reported [*Mann et al. 1988*]. Probably as expected, and as reported from other similar studies [*Belsey and Adler*

1981], the majority of the respondents were single or separated.

It was of particular importance to note that around 90 percent of the respondents were attending the clinic for a sexually transmitted disease or a "check up" because of a possible infection with a sexually transmitted disease. This further confirms that this group were at an increased risk of sexually transmitted HIV. It was interesting to observe that only 3.5 percent of men and 2.4 percent of women reported using intravenous drugs. This means that for the majority of the respondents' only risk of HIV infection related to heterosexual behaviour.

The reported number of sexual partners in the present study is markedly different from that reported in comparable populations, and that observed in the general population in the United Kingdom [**Schofield 1973, FP Research Network 1988**]. In the present study, about 69 percent of men and 48 percent of women reported more than one sexual partner in the previous 12 months. In a study carried out in a similar clinic in Edinburgh, Richardson found that only 8 percent of 517 respondents reported multiple sexual partners [**Richardson 1990**]. In the present study, the mean number of partners in the last year of 3.5 for men and 2.0 for women compares with only 1.1 and 0.9 respectively in the recent pilot study of sexual

lifestyles in Britain [**Johnson et al. 1989**]. The mean of 2.8 partners for both sexes observed in the present study is inconsistent with means for both sexes of 1.5 in the Anderson and Johnson study [**Anderson and Johnson 1990**], and 0.9 in the British Market Research Bureau (**BMRB**) study [**BMRB 1987**]. In their dataupdate of October 1989, Professor McQueen and his colleagues [**McQueen 1989**], found that nearly 80 percent of their respondents reported that they had a steady partner, although that percentage was related to age with 54.6 percent of the 18-21 year old compared to 83.5 percent of the 30-39 year old group reporting that they had a steady partner. Although the number of partners in the present study was similarly age related, those in their teens and early twenties reported more sexual partners than those in their late twenties and thirties. The present study's finding of an inverse relation between age at the time of survey and the number of partners in the previous year has also been reported in a recent study of women attending family planning clinics [**FP Research Network 1988**]. The overall percentage of those reporting no or only one sexual partner in the previous 12 months was 40 percent.

Although in the present study only a small proportion of people, about 2 percent, reported more than 10 partners, they are a vital group, since they may have an important role in determining the spread of HIV in the heterosexual

population. This is because such high numbers of partners are most likely to include prostitutes, and it has been suggested that prostitutes are the commonest means by which HIV spreads into the heterosexual community in the western nations, including the United Kingdom [*Delamothe 1989*].

Another striking finding is that half of those respondents who were married or living with a regular partner reported having had more than one sexual partner during the previous twelve months. Such a high level of extramarital sex has been reported in studies carried out in Africa [*Kreiss et al. 1986, Mann et al. 1987*], mainly involving prostitutes, and the United States of America [*USCDC 1987*], where it is usually associated with intravenous drug use. However, it has not featured much in studies carried out in the United Kingdom, including those carried out in sexually transmitted diseases clinics. If not changed such behaviour could have far reaching implications. Should one of the married couple get infected, onward transmission to a spouse or future baby could occur.

There was no significant difference between condom users and non users in their reporting of multiple partners, with about 60 percent of each reporting more than one sexual partner. This is not at all surprising, since the

great majority of the respondents were attending the clinic for a sexually transmitted disease, and it is clear that there is an association between multiple sexual partners and increased risk of acquiring sexually transmitted diseases [**Rabkin et al. 1986, Evans et al. 1988**].

More than 70 percent of the respondents reported having intercourse at least three times per week and 40 percent at least five times. Studies of young adults in the United States suggest an average frequency of intercourse of two to three times per week [**USCDC 1988**]. Studies carried out in the United Kingdom show that on average British people have sex once or twice a week [**Schofield 1973**]. This sample was thus both much more promiscuous and more sexually active than the general population. Although a number of studies have found no association between the risk of HIV transmission and the frequency of sexual contacts [**Evans et al. 1988**], others have noted the risk of HIV transmission to be higher for couples with repeated unprotected sexual contacts. However, in many cases other risk factors were present, including other STDs, full blown AIDS in one of the partners (in all reported cases the man), and the practice of anal intercourse [**Gottlieb et al. 1981, Friedman-Kien 1981, USCDC 1982**].

Clearly, the validity of the data in this study on sexual history is dependent on respondents remembering and telling the truth. A possible source of error is that some people may have under- or over- estimated the numbers of their sexual partners, and their frequency of sexual intercourse. Although possible, it is not considered probable by the author. For as James [**James 1987**] in view of the reliability of reporting of frequency sexual intercourse, concluded, "*in general human subjects are most likely to report and record the truth about their sex lives*".

The findings described in this study concerning HIV and condom knowledge show clearly that for the majority of respondents, general knowledge of the sexual transmission and prevention of HIV infection was generally accurate, with over 85 percent of all respondents mentioning that HIV can be transmitted through male homosexual intercourse, and heterosexual intercourse. This finding is in agreement with those of other studies [**BMRB 1987, Campbell and Waters 1987, UKHEA 1988**]. The main areas of confusion were on transmission by oral sex, although slightly more men than women associated HIV transmission with this possible route of transmission. This response perhaps reflects the uncertainty of informed opinion on the possibility of HIV being transmitted by oral sex.

About 90 percent of respondents believed that the condom would be protective against HIV. This belief is consistent in both sexes, and among all age groups, and similar findings have been reported in other studies elsewhere in the industrialised nations [**Johnson et al. 1989, Kegeles et al. 1989, Richardson 1990**]. This gives some grounds for optimism as a step in the right direction in the fight against the spread of HIV.

About 60 percent of respondents, of either sex thought that abstention from sex was a way of preventing HIV infection. This was not a spontaneous response, but rather one of the options given on the questionnaire, and cannot be taken to mean that many of these respondents see abstention from sex as a realistic way of preventing the spread of HIV. As can be seen from their reported sexual behaviour, only 3 men (0.7%) and 3 women (0.9%) reported no sexual partners during the previous 12 months, the rest being sexually active during that period.

The fact that almost 98 percent of respondents reported that they had seen or heard something about the condom during the previous two years, seems to support findings of other studies that AIDS education campaigns have reached most of the British people [**BMRB 1987, UKHEA 1988, Kegeles et al. 1989**], but contradict the negative reports that the heterosexuals were not warned early enough about

the risks, and prevention of HIV [**Research and Development Co-operation 1986**].

It is notable that the television seemed to be the most memorable source of information about the condom with over 90 percent of respondents saying so. The radio was mentioned by only about a third of respondents. This shows that television is a very important medium for passing on information to the general public, irrespective of their sex. Generally more men than women cited newspapers as a source of information about the condom whereas more women than men cited magazines.

It was encouraging to note that 60 percent of respondents, reported that the condom was mentioned in connection with AIDS. Likewise, it was encouraging to note that when the respondents were asked to give a reason in favour, and a reason against using the condom, more than 80 percent of men, and over 70 percent of women, spontaneously replied that the condom would be protective against sexually transmitted diseases, including HIV. On the other hand, about 40 percent of all respondents could not give any specific reason against the condom. About 20 percent of all respondents gave reduced sensitivity as a reason against the condom.

The results of this study clearly show a close correspondence between the belief that the condom can prevent the spread of HIV and a positive attitude to the condom. A very big percentage of respondents, about 80 percent, approved of the use of the condom. This positive attitude towards condoms especially since the AIDS epidemic has been reported in other studies as well. For example Turner et al. found a positive change in attitudes towards condoms when they compared the results of research on the sexual behaviour of Oxford University students in 1977, 1982 and 1987 [**Turner et al. 1988**]. This most likely suggests that the AIDS campaigns have succeeded in influencing attitudes.

Only about one quarter of all respondents, being about 30 percent men and about 24 percent women, indicated that they used the condom. Such a finding is inconsistent with observations made in other studies on heterosexual subjects attending genitourinary clinics in London [**Sonnex et al. 1989**], and New York [**Quinn et al. 1988**] where rates of only 8 percent and 5 percent respectively have been reported. There is no obvious explanation for this difference. Perhaps the respondents in this clinic were more informed about reducing the risk of HIV infection or the London and New York studies only reported those who always used condoms. Although a much higher percentage of respondents in this study reported condom use than that

reported from other genito-urinary medicine clinics, the percentage was much lower than the overall 60 percent reported in the **CATI** study by McQueen et al. [**McQueen et al. 1989**]. That study however was on the general population rather than any particular HIV risk group. Which goes further to emphasise that this population group takes more risk than the general population.

Paradoxically, although the majority of the respondents were attending the clinic because of a sexually transmitted disease, almost 60 percent of condom users indicated that they used the condom to prevent sexually transmitted diseases in general. Only about 10 percent mentioned prevention of HIV as a reason for using the condom. This does not of course mean that if the condom is not used for the purpose of preventing HIV, it can not prevent HIV.

On the other hand, personal reasons for not using the condom were many and varied, with the most common being use of another form of contraception. Other previous studies on the use of condoms among heterosexual men have emphasised decreased sensitivity during sexual intercourse and inconvenience as reasons for condom underutilization. For instance, a United States survey of 1,874 men and women found that 63 percent of men and 33 percent of women felt that condoms reduce sensation [**Free and Alexander**

1976]. Whether condoms really do reduce sensation and, if so, how much, has never been precisely measured. However, in the present study decreased sensation and inconvenience were rarely given as a reason, particularly by women.

About half the condom users reported that they had used condoms for less than one year and about 17 percent for over five years. This increase in the percentage of users over the past one year or so, may have been the result of the AIDS education campaigns. However, less than half of the condom users reported using the condom always. Furthermore, about 40 percent of the male condom users and 30 percent of the female condom users could be persuaded by their partners not to use the condom. This paints a grim picture of the actual condom use in this population group, with implications for the spread of HIV among the heterosexual population, which as observed from the available data is on the increase in the United Kingdom [*Mihill 1990, Pub Hlth Lab Serv. 1990*] and other western countries [*Johnson 1989*].

The results from the logistic regression model show that a number of factors did influence condom use. Highest on the list was the positive attitude to the condom, followed by whether or not the respondent had seen or heard anything about the condom during the previous two years. The respondents' education seemed to have played a role as

well. This would mean that informing people about the condom and changing their attitude towards it may be followed by an increase in condom use. However, as the results of present study show, the majority of respondents had received information about the condom and had a positive attitude about it, yet only about a quarter of them reported using it.

The present study's finding that knowledge of the risk factors of unprotected sexual intercourse, and a positive attitude to the condom were not always associated with condom use is in agreement with Hecker and Ajzen's [**Hecker and Ajzen 1983**] assertion that the relation between concern for health risks and change in health related behaviour is complex. This finding is also in agreement with other reports indicating that accurate knowledge of high risk sexual practices is not necessarily related to subsequent sexual behaviour.

These data also support the view that condom use is a relatively complex behaviour which is influenced by a number of different variables [**Valdiserri et al. 1988**]. Prevention programmes which focus solely on emphasizing the need for changes in sexual practices may not adequately address other factors which influence the use of condoms for the prevention of HIV infection. Ngugi and his colleagues [**Ngugi et al. 1988**] suggested that health

education based on individual counselling is effective and leads to the use of condoms and therefore a reduction in the spread of HIV and other STDs. The present study seems to support that view. For its findings showed that all the respondents who had been advised to use the condom by the clinic personnel reported using it "always" and of these, most claimed they could not be persuaded by their sexual partners not to use it.

Similarly, a study of Greek registered prostitutes [Anastasia et al. 1988] showed that close personal intervention could be more effective in achieving changes of sexual behaviour than exposure to information in the mass media alone.

5.4. Conclusions.

The study sample of 778 respondents was obtained from people attending a sexually transmitted disease clinic, and the findings of the study justify the inclusion of this population group into the study. For the results have provided conclusive evidence that this study sample was of that section of the population who engage in potentially high risk sexual behaviour, and are therefore at risk for sexually transmitted HIV.

The study showed that the sample was made up of young sexually active and promiscuous individuals, almost all of whom attended this clinic because of a sexually transmitted disease. In addition to the sexually transmitted diseases, over two thirds of the men and about half of the women reported multiple sexual partners during the past twelve months. Though there was a significant difference between the unmarried male and female respondents in relation to the number of reported sexual partners (chi-square = 63.8, $p < 0.001$), no difference was observed between the condom users and non users.

The general knowledge of condom use, and the sexual transmission and prevention of HIV infection were generally accurate, with about 90 percent of respondents correctly indicating the sexual activities that are most

commonly associated with HIV transmission. In addition, about the same proportion of respondents knew that the condom could protect against HIV. This is a very good indication of how successful the AIDS education campaign has been in reaching these people.

It was noted that the television was the most memorable source of information about the condom during the past two years, and AIDS was most commonly mentioned as being the content of the information. Furthermore, the main areas of confusion were on transmission by oral sex and between lesbians, the former perhaps reflecting the uncertainty of informed opinion. While these findings emphasise the importance of television in the AIDS education campaign, they also point to the need for clear information regarding oral sex as a route of HIV transmission.

The study showed that 78 percent of men and 84 percent of women respondents approved of the use of the condom. This finding, like the findings of the knowledge questions, suggests that the AIDS public educational campaigns have succeeded in informing people and influencing attitudes.

The study found that knowledge of the risk factors of unprotected sexual intercourse and a positive attitude to the condom were not associated with condom use, for only 27 percent of the respondents indicated that they used the

condom. This shows that accurate knowledge of high risk sexual practices is not necessarily related to subsequent sexual behaviour.

The logistic-regression analysis showed that those respondents who had received information about the condom, and had a positive attitude to the condom, were most likely to use it. This is a further proof of the impact AIDS education has had on this population sample.

The study also showed that the majority of condom users did not use it always, and could be persuaded by their partners not to.

The precise reasons given for not using the condom were many and varied with the most common being use of another form of contraception. However, decreased sensation, partner's reluctance and inconvenience were also given as reasons for not using the condom. This calls for more emphasis to be put on the protective aspects of the condom in order to encourage more of people in this population group to use the condom.

CHAPTER 6.

INTRAVENOUS DRUG USERS STUDY.

6.1. Results:Text.

The questionnaire was fully completed by 93 of the 100 male (93%) and 28 of the 30 female (93%) intravenous drug users to whom it was offered giving a male : female ration of 3.3:1. The 9 questionnaires were excluded because they were improperly completed.

The male respondents had a mean age of 22.3 years (SD 3.1) and the females 22.1 (SD 3.0) years. The age distribution of the sample is shown in Table 1 and Figure 1. These show that the age distribution was about the same for both sexes.

About 72 percent of the respondents were single or separated and 28 percent were married or living with a regular partner. Over 95 percent of respondents had left school at or before the age of 16 years, and 85 percent were unemployed. All of the respondents reported regular intravenous drug use and were attending the scheme for the purpose of exchanging syringes and needles. None of the

respondents indicated that they were exclusively homosexual but two men and one woman indicated that they were bisexual.

Table 2 and Figure 2 show the reported length of time the respondents had injected drugs. The mean number of years the male respondents had injected drugs was 5 years (SD 2.7) and the females 6 years (SD 3.6). About 45 percent of all respondents had injected drugs for over five years, with 47 percent of the men and 36 percent of the women indicating that they had injected for more than five years.

The number of different sexual partners in the last 12 months reported by respondents is shown in Table 3 and Figure 3. These show that the male respondents had had slightly more different sexual partners than the female respondents, but the difference was not statistically significant. Over 70 percent of men and about 64 percent of women had had more than one sexual partner during the previous 12 months with a quarter of either sex reporting more than five partners.

The reported number of different sexual partners in the last twelve months by sex and age is shown in Figure 4. Those in the age range 20 to 24 years were the most sexually active (chi-square 18.2 6df, $P= 0.006$).

The reported number of partners by sex and marital status is shown in Table 4 and Figure 5. Over 75 percent of all single or separated respondents reported having more than one sexual partner during the previous twelve months, compared with about 53 percent of those who were married or living with a regular partner (Chi-square = 8.5 p = 0.04).

The stated number of times the respondents had sexual intercourse every week is shown in Table 5 and Figure 6. This shows that the ranges of reported numbers of times male and female respondents normally had sexual intercourse each week not significantly different. However, more than half the female respondents reported having intercourse at least 10 times per week and more than three quarters of all respondents reported intercourse at least five times every week.

Knowledge

Responses to questions about the sexual transmission of HIV and its prevention are given in Table 6. Transmission of HIV was associated with male homosexuality and heterosexual intercourse by over 90 percent of all respondents. More men than women believed that HIV could

be transmitted through oral sex. For about 90 percent of men and over 70 percent of women indicated that HIV could be transmitted through oral sex (chi-square = 6.4, $p = 0.01$), and over three-quarters of the women and 57 percent of the men associated HIV transmission with non-penetrative sex (chi-square = 4,3, $p=0.04$). Abstention from sex and the condom were seen by most respondents as possible ways of preventing HIV infection.

About 77 percent of all respondents; being 80 percent of the men, and 68 percent of the women, recalled seeing or hearing about the condom in the previous two years. The sources and context of information about the condom in the previous two years are shown in Table 7. In particular, radio and television were more frequently reported as sources of information by males than females. About 90 percent of either sex could recall that the condom was mentioned in connection with AIDS.

When all respondents were asked to give a reason in favour of using the condom, and a reason against using the condom, their spontaneous responses were as shown in Table 8 and Figures 7 and 8. Almost 70 percent of both sexes replied that the condom could protect against AIDS. 30 percent of male respondents and 14 percent females mentioned that the condom could also protect against other sexually transmitted diseases, while contraception was

cited by 10 percent of women and only 2 percent of the men ($p = 0.05$). For a reason against using the condom, more than two thirds of the men and about quarter of women gave reduced sensitivity. About 10 percent of men and 4 percent of the women could not come out with any specific reason against the condom.

About 30 percent of the male respondents and 26 percent of the females thought they were at risk of catching HIV due to their sexual behaviour. Of these, 31 percent of the males and 17 percent of the females said that it was difficult for them fully trust to their sexual partners. Nearly 70 percent of the men and over 80 percent of the women said that they were at risk because they had had more than one sexual partner.

About 40 percent of the males and 57 percent of the females said that their sexual behaviour had been affected by the HIV epidemic. Of these, 66 percent of the males and 50 percent of the females said that they had reduced the number of their sexual partners; and 34 percent of the men and 50 percent of the women had started using the condom.

Condom use.

The condom was approved of by 67 percent of the male respondents, with 3 percent being uncertain and 30 percent disapproving. This compares with 57 percent, 3 percent and 40 percent respectively of the women. Religion appeared not to have influenced attitudes to the condom.

Almost 41 percent of the male respondents and 29 percent of the female respondents, reported that they had used the condom. The reasons they gave for using the condom were as follows: prevention of AIDS, 60 percent males and 50 percent females; contraception, 26 percent males and 38 percent females; prevention of other sexually transmitted diseases, 16 percent males and 13 percent females. About one third of male users and 50 percent of female users had used the condom for less than one year, while 18 percent of male users and no females had used it for more than five years.

Table 9 shows the reported frequency of their condom use. Less than 20 percent of all condom users, and 7 percent of all respondents reported using the condom always. The females were more likely always to use the condom than the males, with about 13 percent of the men and 37 percent of the women indicating that they always used the condom. For those who only used the condom "sometimes", the reasons

they gave for doing so were: forgetfulness, 46 percent men, 67 percent women; run out, 31 percent men, 33 percent women; and partner doesn't allow, 23 percent men, and none of the women.

Among condom users, about 35 percent of the men and 40 percent of the women admitted that condom use adversely affected their enjoyment of sex. The effect was reported as: reduces sensation, 42 percent male users, 38 percent female users; inconvenient, 34 percent men, 27 percent women; and unnatural, 24 percent men, 35 percent women.

Almost a half of male condom users provided the condom themselves compared with 65 percent females.

Table 10 shows the reported number of sexual partners during the previous 12 months by condom use. About 72 percent of condom users reported more than one sexual partner, compared to about 70 percent of non users.

Nearly 70 percent of the male condom users thought they could be persuaded by their partners not to use the condom, compared with 75 percent of female users. Table 11 shows those condom users who could be persuaded by their partners, related to their reported frequency of condom use. With reference to Table 9, it can be noted that 20 percent of the men and about 30 percent of the women who

reported always using the condom felt that they could be persuaded by their sexual partners not to, rising to 80 percent in men and 100 percent in women among those who reported using the condom sometimes.

Condom use appeared unrelated to age, age at first sexual intercourse or the weekly frequency of sexual intercourse. However, condom use appeared to be significantly associated with four other variables. These were used in the logistic regression model, and they were:

1. The respondents' attitude towards the condom; Chi-square = 23.3 1df, $p < 0.001$
2. Respondents who had seen literature about the condom during the previous two years; Chi-square = 14.7 1df, $p < 0.001$.
3. Radio as a source of information about the condom; Chi-square = 11.9 1df, $p < 0.001$.
4. Employment; Chi-square = 10.5 1df, $p = 0.001$

Table 12 shows how the four variables emerged as being independently associated with condom use.

1. Respondents who were employed (Odds Ratio 14.2)
2. Positive attitude towards the condom (Odds Ratio 11.0)
3. Respondent had received information about the condom from the radio (Odds Ratio 4.6).

4. Respondent had seen literature about the condom during the previous two years (Odds Ratio 3.5)

The reasons for not using the condom given by non condom users are shown in Table 13 and Figure 9. Reduction in sensitivity was the most important reason given by men for not using the condom, while use of another form of contraceptive was the most important reason for women.

Sharing of syringes and needles.

About 20 percent of males and 22 percent of females reported sharing "works" [syringes and needles]. Of these, 12.9 percent males and 16.7 percent females would lend their "works" to other people, compared with 8 percent males and 33.3 percent females who would borrow other peoples "works". Sixteen percent of the respondents who had injected drugs for less than five years would lend their "works" to other people compared to 8.7 percent of those who had injected drugs for over five years. Similarly, about 10 percent of those who had injected drugs for less

than five years would borrow other peoples "works" compared to 4.3 percent of those who had injected drugs for more than five years. Though about 20 percent of the respondents who were single or separated could lend their "works" compared to 14 percent of those who were married

or living with a regular partner, marital status was not significantly associated with "works" sharing.

Only 8.7 percent of the condom users admitted sharing works, compared to 21.3 percent of those who reported not using condoms.

6.2 Tables and Figures.

Table 1.

The respondents age distribution.

	Age groups in years			
	less than 20	20-24	25-29	Total
Sex of respondent				
Male	17	58	18	93
%	18	63	19	100
Female	6	16	6	28
%	21	58	21	100
Total	23	74	24	121
%	19	61	20	100.0

Chi-square = 0.3 2df, p = NS.

Figure 1.

The respondents' age distribution by sex.

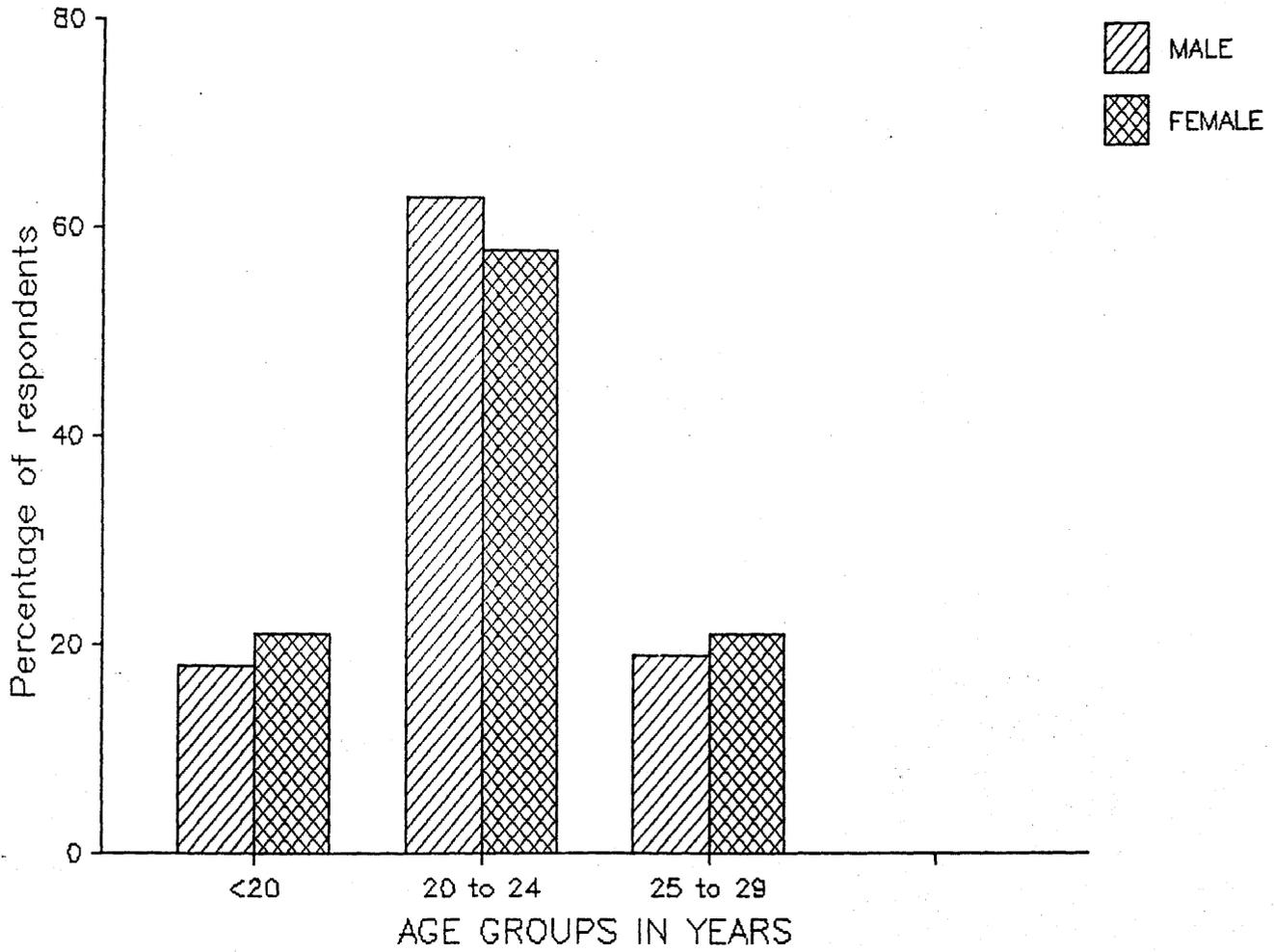


Table 2.

Reported length of time the respondents had
injected drugs.

Sex of respondent	Time in years.			Total
	0-1	2-5	Over 5	
Male	7	42	44	93
%	8	45	47	100
Female	4	14	10	28
%	14	50	36	100
Total	11	56	54	121
%	9	46	45	100.0

Chi-square = 1.8 P = NS

Figure 2.

Reported length of time the respondents had injected drugs.

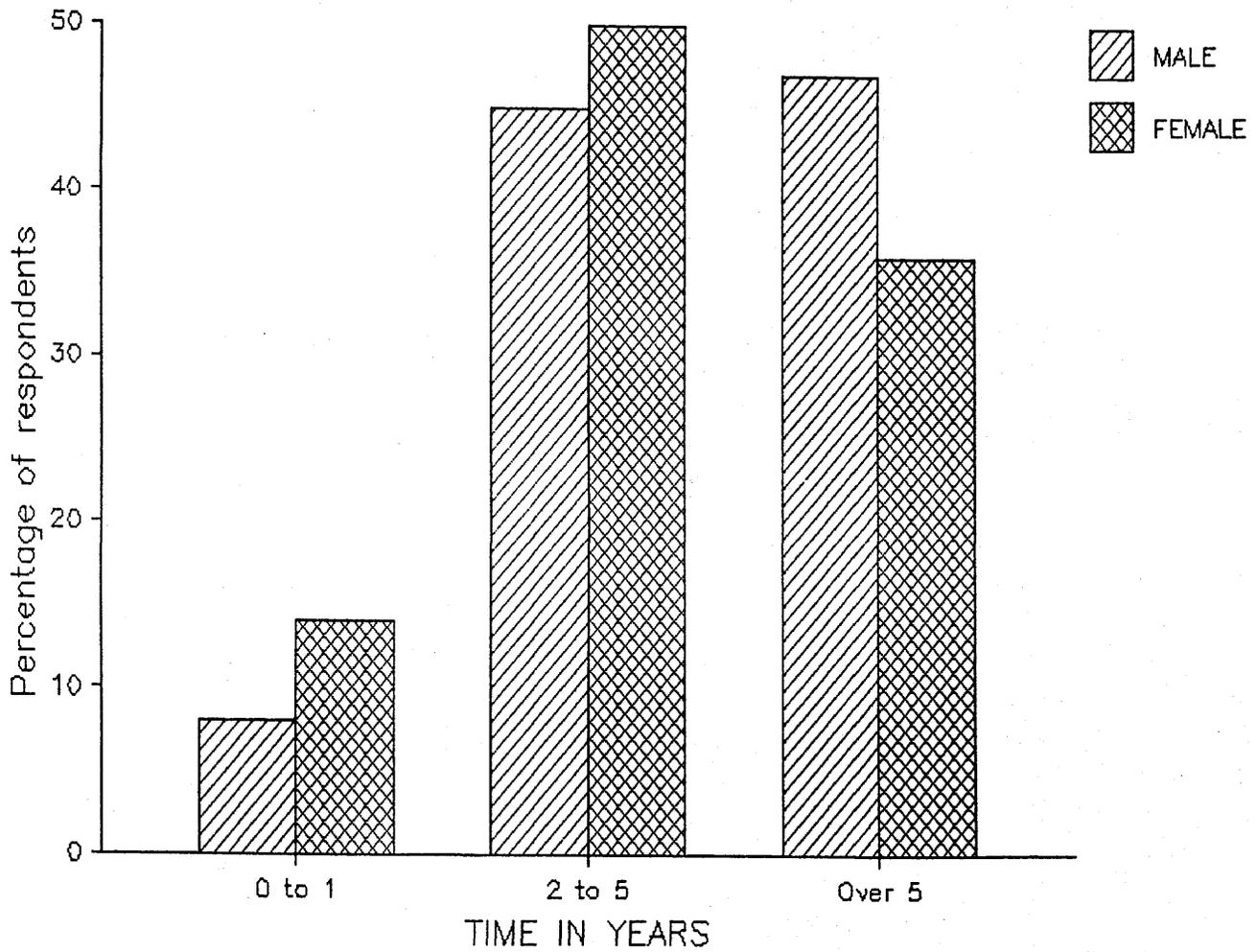


Table 3.

The number of different sexual partners in the last 12 months reported by respondents.

Sex of respondents	Number of different sexual partners				Total
	0-1	2-5	6-10	Over 10	
Male	26	44	19	4	93
%	28	47	20	5	100
Female	10	11	4	3	28
%	36	39	14	11	100
Total	36	55	23	7	121
%	30	45	19	6	100.0

Chi-square = 2.7 p = NS.

Figure 3.

The number of different sexual partners in the last 12 months reported by respondents.

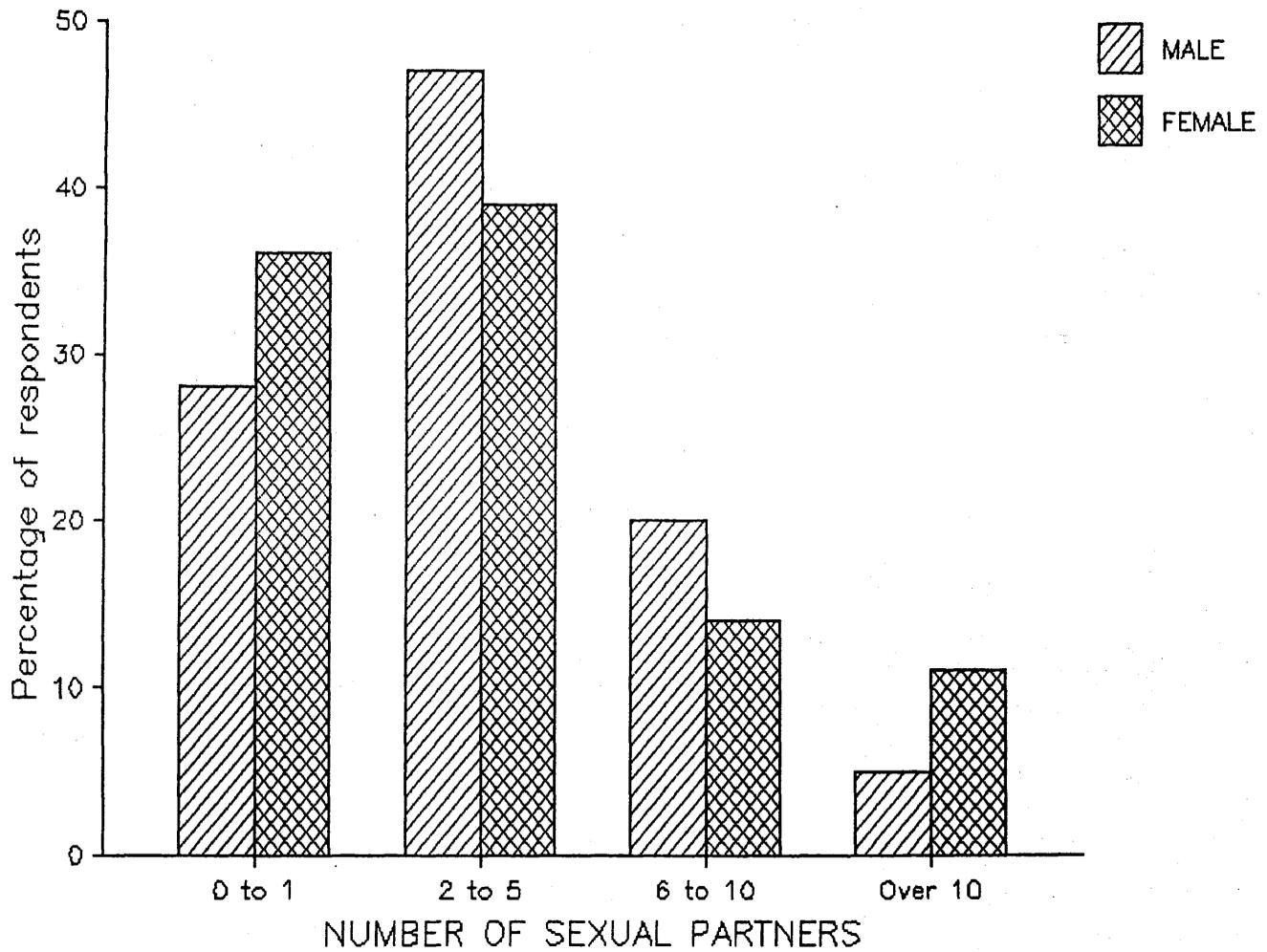


Figure 4.

The reported number of sexual partners in the last 12 months
by sex and age.

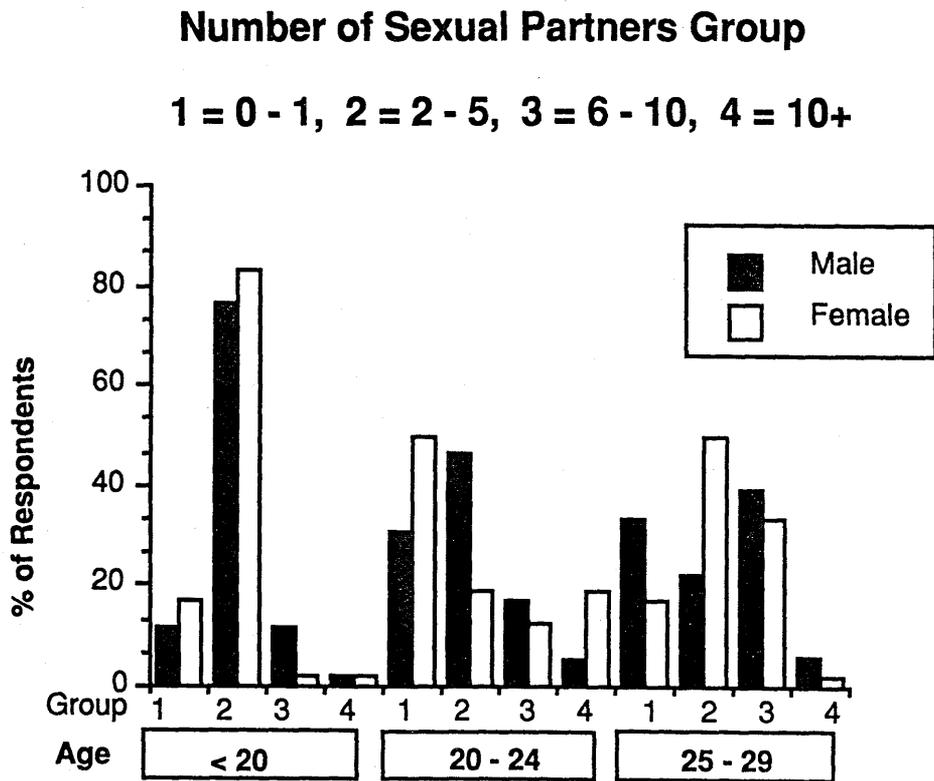


Table 4.

The reported number of sexual partners in the last 12 months by sex and marital status.

sex and marital status of respondent	Number of sexual partners				Total
	0-1	2-5	6-10	Over 10	
Single					
Male	15	37	14	4	70
%	21	53	20	6	100
Female	5	7	2	3	17
%	29	41	12	18	100
Chi-square = 3.7, p = NS					
Married					
Male	11	7	5	0	23
%	48	30	22	0	100
Female	5	4	2	0	11
%	46	36	18	0	100
Chi-square = 0.14, p = NS					
<hr/>					
Total	36	55	23	7	121
%	30	45	19	6	100.0

Figure 5.

The reported number of sexual partners in the last 12 months by sex and marital status.

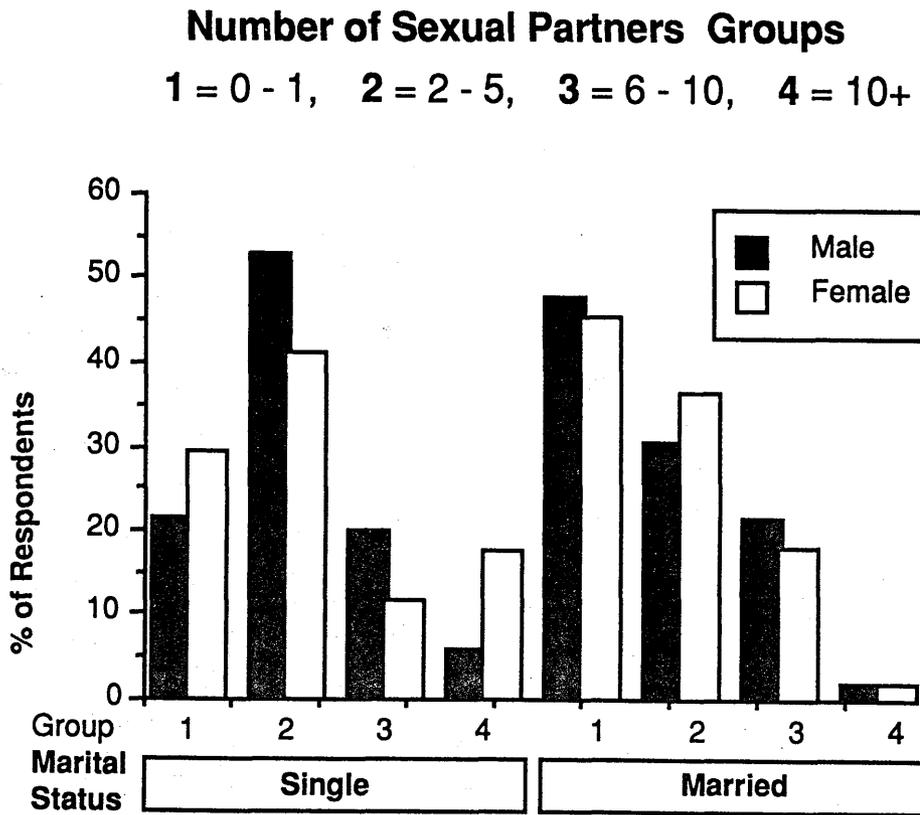


Table 5.

The stated number of times the respondents had sexual intercourse every week.

Sex of respondents	Male	Female	Total
Weekly frequency of sexual intercourse			
1-2	11	2	13
%	12	7	11
3-4	14	2	16
%	15	7	13
5-9	41	9	50
%	44	32	41
10+	27	15	42
%	29	54	35
<hr/>			
Total	93	28	121
%	100	100	100.0

Chi-square = 5.9 p = NS.

Figure 6.

The stated number of times the respondents had sex each week.

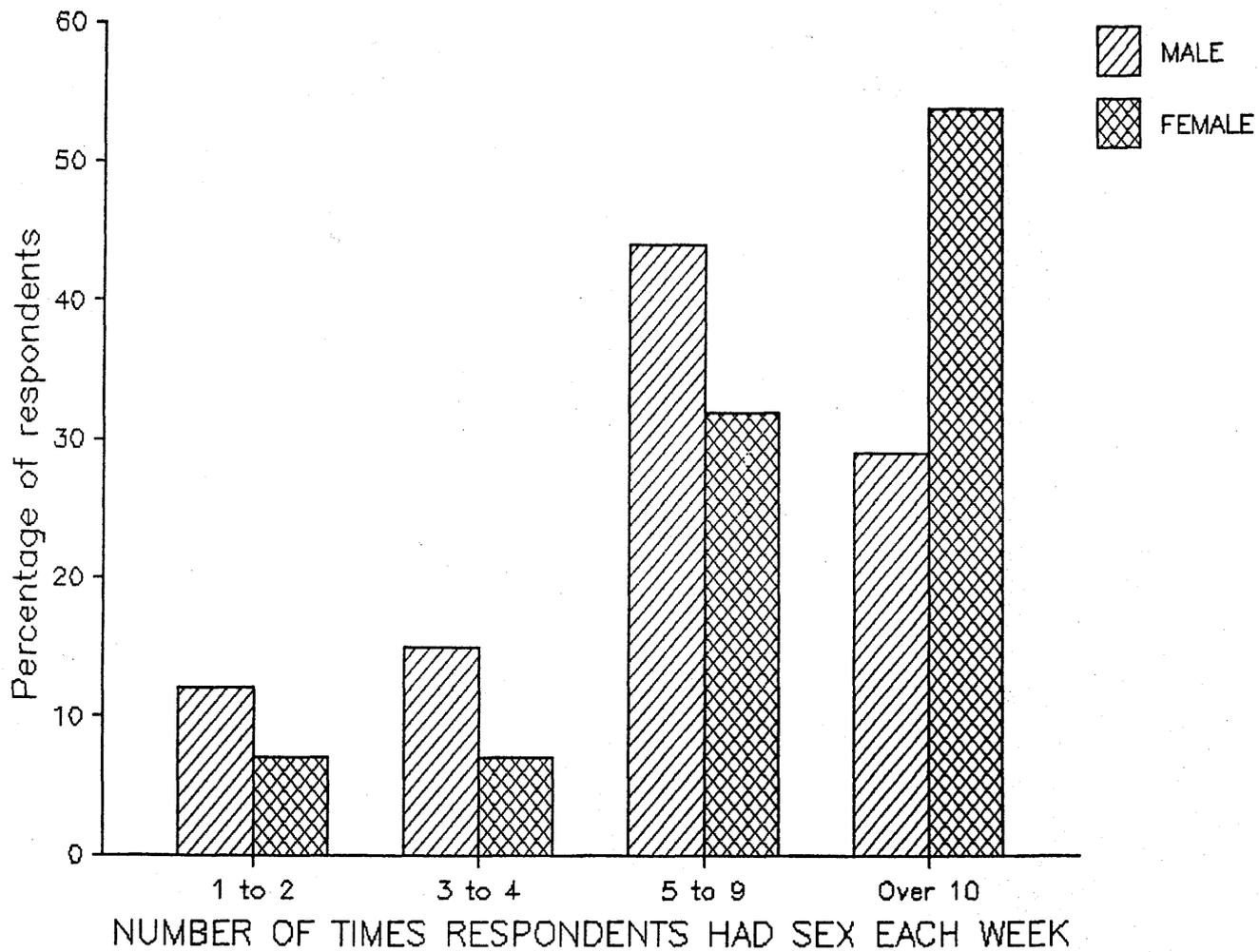


Table 6.

Responses to questions about HIV transmission and its prevention.

	% Male (n= 93)	% Female (n= 28)	χ^2	p value
<u>HIV can be spread by:</u>				
Male homosexual sexual intercourse	98	97	0.2	NS
Heterosexual sexual intercourse	97	93	0.8	NS
Oral sex	90	71	6.4	0.01
Female homosexual sexual intercourse	22	5	0.2	NS
Sex without full penetration	57	78	4.3	0.04
Dry kissing	4	4	0.0	NS
Petting	4	11	1.6	NS
<u>The spread of AIDS can be prevented by</u>				
The condom	90	89	0.0	NS
Abstinence from sex	92	96	0.1	NS
IUCD (coil)	2	4	0.2	NS
The pill (oral contraceptive)	1	0	0.3	NS

* Respondents were free to give more than one answer. That is why the percentages add to more than 100.

Table 7.

Sources and content of information about the condom in the past 2 years.

	% Male (n= 74)	² % Female (n= 19)	X	p value
<u>Sources</u>				
Radio	69	75	0.4	NS
Television	63	32	8.6	0.004
Newspapers	49	50	0.0	NS
Magazines	31	36	0.2	NS
<u>Content</u>				
AIDS	90	91	0.0	NS
General advertisements	87	74	2.4	NS
Other STDs	64	59	0.0	NS
Contraception	15	46	12.2	$\frac{1}{2}$ 0.001

* n= only those respondents who recalled seeing or hearing about the condom in the previous two years.

* Respondents were free to give more than one answer. That is why the percentages add to more than 100.

Table 8.

The respondents' stated reasons in favour and against the condom.

	% Male (n=93)	% Female (n=28)	χ^2	p value
<u>Reasons in favour</u>				
Control of HIV	67	68	0.0	NS
Control of STDs	30	14	2.8	NS
Contraception	2	10	4.0	0.05
No reason	1	8	3.3	NS
<u>Reasons against</u>				
Reduced sensitivity	67	26	15.2	0.001
Uncomfortable	20	30	0.8	NS
No reason	11	4	1.3	NS
Inconvenient	2	40	30.9	0.001

Figure 7.

The respondents' stated reasons in favour of the condom.

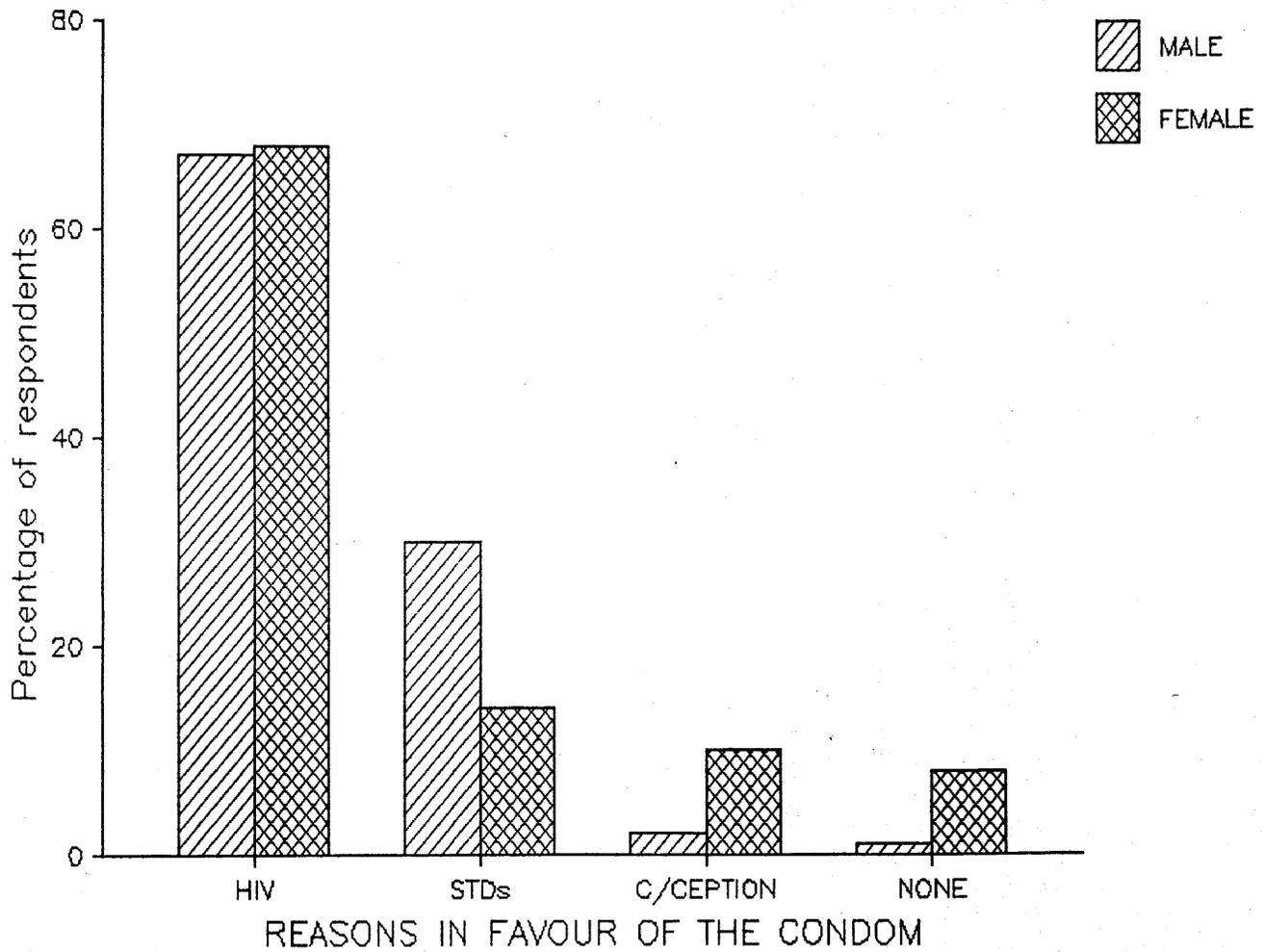


Figure 8.

The respondents' stated reasons against the condom.

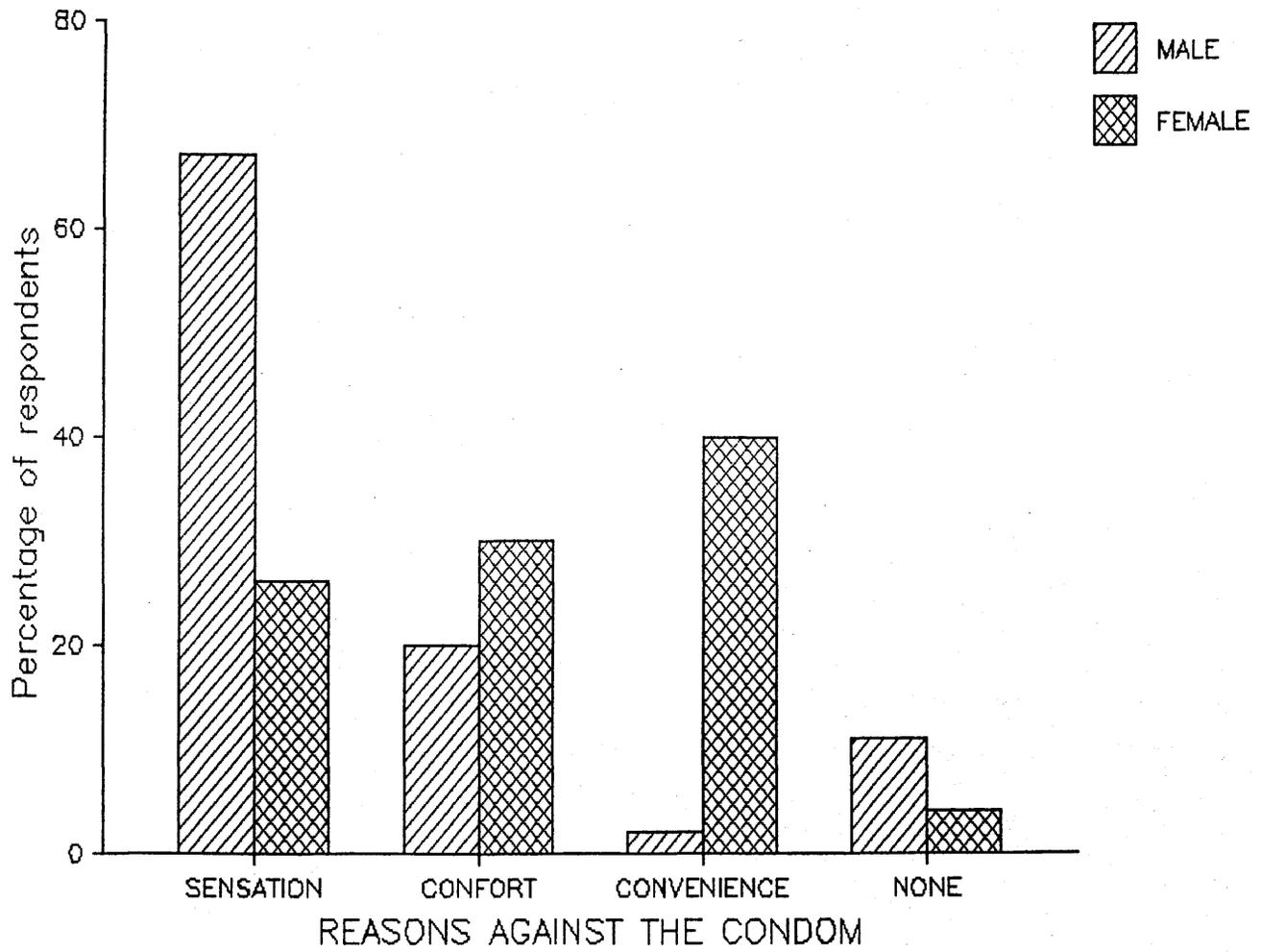


Table 9.

Regularity of condom use

	Always	Mostly	Sometimes	Total
Male	5	8	25	38
%	13	21	66	100
Female	3	1	4	8
%	37	13	50	100
Total	8	9	29	46
%	17	20	63	100.0

Chi-square = 2.8 p = NS

Table 10.

Reported number of partners in past 12 months
by reported condom use.

Condom usage	Number of different sexual partners				Total
	0-1	2-5	6-10	Over 10	
Users	13	21	7	5	46
%	28	46	15	11	100
Nonusers	23	34	16	2	75
%	31	45	21	3	100
Total	36	55	23	7	121
%	30	45	19	6	100.0

Chi-square = 3.9 (3df) p = NS

Table 11.

Proportion of respondents who could be persuaded not to use the condom relating to their frequency of condom use.

	frequency of condom use			Total
	always	mostly	sometimes	
Male	1	5	20	26
%	4	19	77	100.0
Female	1	1	4	6
%	17	17	66	100
Total	2	6	24	32
%	6	19	75	100.0

Chi-square = 1.4 p = NS

Table 12.

The variables associated with condom use.

VARIABLE	ODDS RATIO	95% C.I	2 X	p value
Respondents who were employed	14.2	3.0-68.8	10.5	0.001
Positive attitude to condom	11.0	2.9-42.2	23.3	0.001
Had received information about the condom on radio	4.6	1.7-12.7	11.9	0.001
Seen literature about the condom during the past two years	3.5	1.3-9.9	14.7	0.001

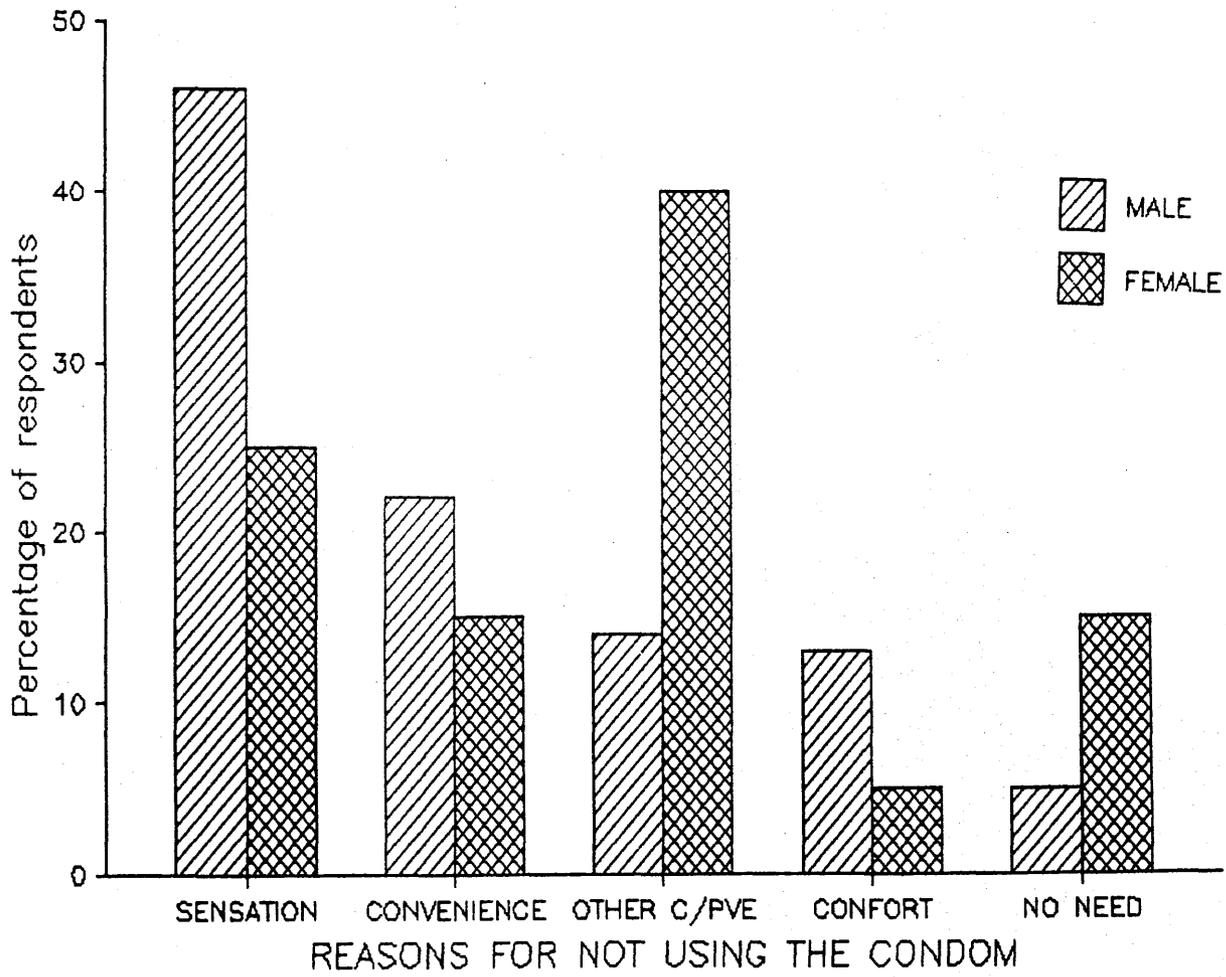
Table 13.

The reasons for not using the condom given
by non-condom users.

	NO.	Male %	Female NO	%
It reduces sensation	25	46	5	25
It is inconvenient	12	22	3	15
I/Partner use another form of contraception	8	14	8	40
It is uncomfortable	7	13	1	5
No need (I have one partner)	3	5	3	15
Total	55	100	20	100

Figure 9.

The reasons for not using the condom given by non condom users.



6.3 Discussion.

Most studies of HIV/AIDS and intravenous drug use notably those in Edinburgh [*Stimson et al. 1988, Donoghoe et al. 1989*], and London [*Ghodse et al. 1987, Hart et al. 1989*] have focused on drug using behaviour and have reported behavioural change of drug users reducing their injecting-related risks for HIV infection. On the other hand, there is less detailed information on the importance of sexual behaviour of intravenous drug users, in the transmission of HIV. However the existing few previous studies on the sexual behaviour of intravenous drug users [*Hart et al. 1989, Donoghoe et al. 1989, Davidson et al. 1990, Anneke et al. 1990*] have demonstrated the potential role of unprotected sexual contact with injecting and non-injecting sexual partners as a source of transmission of HIV infection.

Though the sample size included in this study of 130, with 121 respondents may appear small, compared with other sample sizes in other studies involving intravenous drug users, this sample is relatively big and the variables covered were many. It is thought there were 7,000-11,700 drug injectors in Glasgow in 1989 [*Frischer, unpublished data*] therefore this sample consisted of about 1 percent to 1.7 percent of all intravenous drug users in the city. The HIV infection rate among drug in Glasgow is estimated

to be between 1 and 2 percent. [Gruer 1990]. Furthermore, this study population consisted of people at a needle exchange, and it has been reported that needle exchange schemes have demonstrated their ability to attract injecting drug users who have never been, or are not currently, in contact with other drug user services [Carvell and Hart 1990], and that such a sample is representative of people who use intravenous drugs regularly, since they are regularly getting new supplies of syringes and needles [Power et al. 1988]. In the present study as in a number of other studies on intravenous drug users, women are underrepresented. It has been suggested that this is due to women receiving their "works" from male partners, or buying them from pharmacies [Hooykaas et al. 1989].

Many people working in the field of intravenous drug users' sexual behaviour have expressed the difficulties of judging the validity of the intravenous drug users' answers to questions about HIV risk behaviour [Power et al. 1988, Anneke et al.1990]. It is said that both over and underestimates are common, and cases of intravenous drug users who have given inconsistent answers have been cited [Hooykaas et al. 1989]. Despite those reports, in the present study no evidence was found to support those claims. As questionnaires were completed with a high level of internal consistency.

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The present study may also have advantages over most previous studies which have tended to use intravenous drug users in contact with other drug user services, thereby introducing selection bias. For drug users found in other drug user services, have mostly been referred to these services. The referrals are usually based on some kind of policy or guide-lines, making them much less representative of intravenous drug users as a whole. Although the question of selection bias is not entirely overcome in the present study, in that, possibly those who attend the needle exchange schemes show concern for their health that is not present in other populations of drug users, since they decide to attend the schemes on their own accord. However, that being the case, any bias is most likely to be random. In addition, not too much can be drawn from the apparent differences between male and female responses due to the small size of the sample. And indeed most of these differences were not statistically significant.

The response rates of over 90 percent in this study is well above that reported in many previous studies involving intravenous drug users. Although it is not clear why this is so, the fact that these people freely and willingly attend the needle exchange, appears to have

contributed to their willingness to participate in the study.

In general, the respondents were young men and women with the age range of 17 to 29 years and a mean of 22.3 years (SD 3.1). Recent studies among people who inject drugs have reported a slightly older population than the present study. For example, Hart et al. [**Hart et al. 1989**] in their study among drug users in a London drug dependency clinic reported a mean age of 29 years, and a range of 19 to 47 years. Carvell et al. [**Carvell et al. 1990**] reported mean age of 32 years, with a range of 18-50 years among clients in a needle exchange in London. This could be that since the Easterhouse needle exchange had been opened shortly before by the time the study was carried out, it was the young drug users who first took advantage of the services, or it could have been that the young drug users in Glasgow had been got the AIDS education messages much quicker than their older colleagues. If the latter is true, then it could support previous long-term studies of drug users which have indicated that a drug user of a 10-year duration or more, of drug use, is more likely to be impervious to "knowledge" than a more recent drug user [**Anneke et al. 1990**]. However, other surveys have also shown that most drug users in Glasgow are relatively young [**Frischer unpublished data**].

In the present study, about three quarters of respondents were single or separated. Although the question of marriage is important, as regards to the sexual transmission of HIV, many studies do not seem to make any particular note of it.

The findings that over 95 percent of all respondents had left school at or before the age of 16 years, and that about 85 percent were unemployed were disturbing, but not any different from those reported in previous studies. For example, Hart et al. [*Hart et al. 1989*] study reported unemployment of 78 percent among clients at a needle exchange in London. This seems to support the generally expressed views that intravenous drug users belong to a group of uneducated and unemployed people with a substantial number of social problems [*Marks 1987*], and that they are individuals who are unable to manage their lives [*Power et al. 1988*].

All respondents were currently injecting drugs, and almost 45 percent of them had been injecting for more than five years with a mean of 5.5 years. In the study by Hart et al. [*Hart et al. 1989*], the reported mean of years the respondents had injected drugs was 7 years.

Sexual activity in this population was interesting. About 70 percent of respondents had multiple sexual partners; three women (11%) reported more than 10 partners in the past year, compared with four (4%) men and overall 6 percent. As in most other studies on risk behaviour in this group, this study indicates that the majority of respondents still reported multiple sexual partners. For example, Hart et al. in their study [**Hart et al. 1989**] carried out in a drug dependency clinic in London from November 1986 to November 1987, showed that 69 percent of their study population reported more than one sexual partner. In another recent study, Baxter and Schlect [**Baxter and Schlect 1990**], found that more than half of the 200 intravenous drug users they studied had had more than five sexual partners in the past year. However, these findings are much higher than those reported from the Power et al. [**Power et al. 1988**] evaluation of needle exchange in London from November 1987 to October 1988, which showed that only 26 percent of clients reported more than two sexual partners. Still, the present findings of 11 percent of women reporting multiple sexual partners is about twice that of 5 percent reported by Stimson et al. [**Stimson et al. 1988**] among clients of a needle exchange scheme, but lower than the 14 percent of women (all prostitutes) reported by Hart et al. [**Hart et al. 1989(b)**] in a drug dependency clinic. This shows that

continued encouragement of reduction in the number of sexual partners is indicated.

The finding that over three quarters of all single or separated respondents reported multiple sexual partners, compared with over half of those who were married or living with a regular partner shows the potential for viral spread regardless of marital status. This could also have serious consequences should married couples with one or both HIV positive partners decide to have children. The United Kingdom Multicentre Heterosexual Transmission study group [*Davidson et al. 1990*] has reported an increase in recent years in the number of couples deciding to have children despite one or both of partners being HIV positive.

Another disappointing finding was that there was no significant difference between the numbers of partners reported by those who indicated that they used the condom, and those who said that they did not: about 70 percent of each of group reported multiple sexual partners. This amount of unprotected sexual activity is worrying, both for injecting drug users and their partners who do not use drugs.

There has been recent concern about the association between rates of infection and rates of exposure,

expressed as the frequency of unprotected sexual intercourse with an infected partner [*Hart et al. 1989(b)*]. In the present study, over half the women and nearly a third of the men reported a frequency of at least 10 times a week, with a mean of 7 times (SD 6.0) for all respondents. This is well above the national average of 2 to 3 times a week [*BMRB 1987*]. In the present, study respondents were not asked whether they had directly exchanged sexual intercourse for money within the past year. However, from the reported number of partners and frequency of sexual intercourse, it can be said with some degree of confidence, that some of the respondents, especially the female respondents engaged in prostitution.

The results of the assessment of the respondents' knowledge about the sexual transmission of HIV and its prevention do not support the view that intravenous drug users are less knowledgeable than the general population regarding health issues [*Anneke et al. 1990*]. On the contrary, the majority of the respondents gave correct answers to most of the questions. With over 90 percent of all respondents aware that HIV can be transmitted by both homosexual sexual intercourse, and heterosexual sexual intercourse, and about 85 percent indicating that it could be transmitted by oral sex, and over 60 percent indicating that even sex without full penetration was risky, it is apparent that a large majority of the respondents do know

most if not all the risks associated with sexual transmission of HIV. This probably indicates how successful the AIDS education campaigns have been in reaching this group of intravenous drug users. In addition to their knowledge about the sexual transmission, about 90 percent of respondents regardless of sex, believed that the spread of HIV could be prevented by the condom. This is another encouraging finding, and probably once again suggests that publicity for the condom has increased knowledge. The findings of this study are in agreement with studies in both the United Kingdom [**Stimson et al. 1988, Donoghoe et al. 1989**] and the United States [**Guinan and Hardt 1986, USCDC 1989**] which show evidence that many drug users have the basic knowledge related to their HIV risks, especially the injecting risks. Nevertheless, the finding that about 93 percent of respondents believed that abstention from sex was one of the ways by which the spread of HIV could be prevented, has to be interpreted with caution, given the apparent difference between this response and their reported sexual activity. It is possible that respondents looked at this question from the theoretical point of view. Probably if the question had been stated differently, for example, to ask the respondents if they would abstain from sex in order to eliminate any chances of getting HIV sexually, it could have markedly altered the percentage responses.

The findings that almost 80 percent of men and 70 percent of women had seen or heard about the condom in the previous two years, and that about 90 percent of either sex could recall that the condom was mentioned in connection with AIDS, seem to support the finding that the majority of respondents knew the condom could be protective against HIV.

It is an interesting finding that the majority of respondents, over 70 percent, (69% men and 75% women) reported radio as the source of information about the condom. It is also worth noting that although about two thirds of men reported television as a source of information, only about a third of women did so. There are undoubtedly many reasons for these differences. They may, for example, be a reflection of the type of activities that the respondents of different sexes carry on, on daily basis especially during the late evenings when the condom advertisements are on television. Condom advertisements on radio are usually put on during the commercial breaks throughout the day. Alternatively, messages on television and radio may be recalled differently by the different sexes of these respondents. All this is important in passing on AIDS information to the group of people represented in this study. Both in the United Kingdom and North America, of the few studies which have looked at

sources of AIDS information in the general population, and in HIV "risk groups", none has so far come out with radio as the main source of information. Although radio appears to play a big role in health education in Africa and other developing countries [*Publ Hlth Reports 1988, Tarantola 1989*], it does not seem to have caught on all that well in the developed countries. In fact radio was never mentioned as a source of information about AIDS by respondents in the Edinburgh *CATI* study [*McQueen et al. 1989*].

It appears that almost all men and women clearly remembered that the condom was mentioned in connection with AIDS. This in itself could be another reflection of the reported success of the AIDS campaign in promoting the condom [*UKHEA 1988*].

It is of some concern that fewer respondents spontaneously mentioned the condom as being protective against HIV/AIDS, than those who remembered that the condom had been mentioned in connection with AIDS during the past two years. This means that despite the success of the AIDS campaign to inform people, there is still a long way to go in changing their beliefs. However, if HIV is considered under the general heading of sexually transmitted diseases, then the percentage of those who spontaneously stated that the condom could be protective

against sexually transmitted diseases, goes up to over 90 percent.

It seems that a considerably higher proportion of men than women think that condoms reduce sensitivity. On the other hand, a higher proportion of women than men think that the condom is inconvenient. It is remarkable that about equal proportions of men and women think the condom is uncomfortable. The reasons stated here are similar to those stated by many users and nonusers from different parts of the world [**Free and Alexander 1976, Duncan 1979**].

The finding that only about 30 percent of men, and 26 percent of women thought they were at risk of catching HIV due to their sexual behaviour is of concern.

Most respondents did not report modifying their sexual behaviour substantially as a result of the AIDS epidemic, as the study findings show that about half of respondents indicated that their sexual lifestyles had not been affected by the AIDS epidemic. Although about two thirds of men and half the women indicated they had reduced the number of their sexual partners, it was not very encouraging, as still only about 30 percent of all respondents reported none or one sexual partner during the past year. Hart et al reported similar disappointing findings [**Hart et al. 1989(a)**]. Although the small changes

suggested by the present study point in the direction of more careful sexual behaviour, there is still reason for concern. Studies in other populations of drug users have shown that once introduced, HIV can spread rapidly if risky behaviours, including sexual behaviour are sustained [**Power et al. 1988**].

A relatively higher percentage of male than female respondents reported that they certainly approved of condom use (67% and 57% respectively).

Although little detailed information exists about the sexual behaviour of intravenous drug users, some studies suggest that condoms are rarely used in sexual contact [**Power et al. 1988, Baxter and Schlect 1990**]. In the present study, the reported use of condoms by about 40 percent of men, and almost 30 percent of women, confirms the previous observations that a high proportion of intravenous drug users do not use condoms [**Power et al. 1988, Baxter and Schlect 1990**]. However, it was encouraging to note that almost two thirds of men and half the women had started using condoms because of HIV.

The finding that more women than men supply their own condoms supports the view that many of the female respondents engaged in prostitution.

Though Hart et al. [**Hart et al. 1989(b)**], and Baxter and Schlect [**Baxter and Schlect 1990**] showed a relationship between an increasing number of sexual partners and condom usage, and found that about 60 percent of those respondents with two or more partners reported using condoms. The present study did not show any statistically significant association between reported condom use and an increasing number of sexual partners. The amount of unprotected sexual activity found in this study is worrying, and this finding further supports Moss's [**Moss 1987**] observation that AIDS among the intravenous drug users will be the source of the heterosexual epidemic.

Respondents answers regarding the frequency of their use of the condom, showed that of all condom users, less than twenty percent used them always, with about 13 percent men, and 38 percent women indicating that they used condoms always. The finding that more women than men would insist that their partners use condoms, could probably be explained, that as prostitutes, many of these women always insist on condom use by their partners [**Smith GL and Smith KF 1986, Krogsgaard et al. 1986, USCDC 1987**]. But the numbers involved in this study are too few to make any concrete conclusions.

With use of the logistic regression analysis, this study demonstrated a number of variables which were associated

with the likelihood of using the condom. Condom use was more likely among those who were employed, those who had a positive attitude to the condom, those who claimed to have received information about the condom on the radio, and those who reported having seen literature about the condom during the past two years. This finding supports the view that publicity about the condom had had an impact. However, there is no proof that changes in these variables would have a direct effect on condom use.

When asked why they do not use condoms, about half the men and quarter of the women who did not use condoms, said that condoms reduced sensitivity during sexual intercourse. This finding agrees with what has been reported in several other studies that decreased sensitivity, especially among men, is a major reason for not using condoms [**Free and Alexander 1976, Duncan 1979**]. The most popular reason for not using the condom given by 40 percent of the females who did not use condoms, was use of another form of contraception. This shows that there remains a considerable gap between knowledge that condoms can prevent HIV, and the actual use of condoms to protect against HIV.

Studies in both the United Kingdom [**Power et al. 1988, Hart et al. 1989(a)**], and in the United States [**Friedman et al. 1987, Tuner et al. 1989**], show evidence that drug users can adopt and some have already adopted strategies

to avoid risks related to their use of drugs and HIV. Indeed with the start of needle exchange schemes, more evidence of a reduction in the sharing of needles and syringes has been reported [*Stimson et al. 1988, Hart et al. 1989(a)*]. In the present study, only about 20 percent of respondents reported sharing "works". This finding is different compared to 75 percent reported in the Ghodse et al. [*Ghodse et al. 1987*] study in London in January 1987, and 73 percent reported in the Kall and Olin study in Stockholm in December 1988 [*Kall and Olin 1990*] and over 90 percent reported in the Baxter and Schlect study in Stockport, Manchester in 1988 [*Baxter and Schlect 1990*]. But compares favourably with those reported from Edinburgh between 1986 and 1987 [*Robertson et al. 1988*]. This shows that the respondents in this study were probably fairly well informed about HIV related drug behaviour. Though no evidence of change was asked for in this study, with such a small percentage reporting sharing, it is most likely that there has been a considerable change in the right direction. This could mean that like the Edinburgh study these findings represent the "post AIDS information campaign" responses, where most of the drug users had already made their major behaviour modifications, especially in the field of sharing needles and syringes.

It was also noted in the present study, that those respondents who had injected drugs for five years or less

were more likely either to borrow or lend their "works" than those who had injected drug for more than five years. This finding supports that of Hart et al [**Hart et al. 1989(b)**] who reported that older users were less likely to have shared needles and syringes than young users. This suggests that the greatest risks of bloodborne viral infections are being run by young people who have recently started injecting. With the majority of the respondents in this study having injected for more than five years, probably there may be room for optimism as far as this group is concerned.

6.4. Conclusion.

This sample of 121 respondents at the Easterhouse needle exchange scheme might not have been representative of drug taking population in Glasgow because it was a self selected group and their experiences might have represented one extreme end of the range. However, even if that is the case, the findings of the study highlight some very important points regarding HIV risky sexual behaviour among a subsection of intravenous drug users.

The majority of respondents in this study were young, unmarried, and of low social class. All the respondents were regular drug injectors, with about 80 percent of them having injected for more than five years. All of the respondents also engaged in heterosexual intercourse, which means that they are a potential HIV risk group to the general heterosexual population.

It was clear that these drug injectors were still at increased risk of HIV infection, despite the provision of injecting equipment and condoms to them at the scheme. For some respondents compound their risk of HIV infection by engaging in sexual activity with multiple partners without condoms. About three quarters of the men and two thirds of the women reported multiple sexual partners during the previous twelve months, with about 10 percent

of women, and five percent of men reporting more than ten partners. This further shows what a potential source of spread of HIV infection they are, especially to the heterosexual population. This must be a matter of concern not only to those who deal directly with intravenous drug users in one way or another, but to all those concerned with the public health of the community.

There was a slight significant difference between the number of partners reported by those who were married and those who were single. But no difference was noted between the number of partners reported by condom users, and non users.

The study showed that these respondents, especially the women, were having sex very frequently, with more than half of the women and nearly a third of men reporting a frequency of more than ten times per week.

This study also showed that a large majority of respondents are aware of the important facts about modes of sexually acquiring and preventing HIV infection. For transmission of HIV was associated with male homosexuality and heterosexual intercourse by over 90 percent of all respondents. Similarly the condom, and abstention from sex were associated with HIV prevention by almost 90 percent

of respondents. This means that these respondents are receptive to AIDS education.

The majority of respondents had seen or heard about the condom during the previous two years. Radio was the commonest source of the information, and television came second. The condom, was mostly mentioned in connection with AIDS. This finding further showed that to a great extent the intense media coverage of AIDS seems to have resulted in an increase in the level of AIDS knowledge among these respondents, and suggests that there is need for further use of the radio for condom advertisements. This is especially so in view of the fact that over 95 percent of the respondents had left school before the age of 16, and the findings of the 1987 survey that showed that possibly seven million people in Britain have difficulty in reading a simple fire warning [Vulliamy 1987], there may be people among these respondents who are impervious to written advice.

There was clear evidence of the interaction between knowledge about the condom and the spontaneously stated reasons in favour of the condom. This shows that, not only had the intense media coverage of AIDS resulted in an increase in the level of AIDS knowledge among these respondents, but their beliefs about the condom had been influenced as well. In general most of the male

respondents did not like condoms because they reduce sensation and the women did not like them because they are inconvenient.

Some of the findings of this study showed that AIDS education was still needed to inform these respondents about which sexual activities are risky. For less than one third of respondents thought were at risk of catching AIDS due to their sexual behaviour, and indeed even among these, the majority still had multiple sexual partners, many of whom they did not trust.

Despite the extensive AIDS publicity among the intravenous drug users, the effects of these educational programmes were not proportionally reflected in this study. Just over 40 percent of the males and 57 percent of the females said that their lifestyles had been affected by the HIV epidemic. However, the reported effect of reduction in the number of sexual partners, and the start to use condoms is once again the result of exposure to the education programmes.

In addition to the knowledge, and the positive beliefs about the condom, over two thirds of the respondents approved of condom use. This is another important factor in determining the extent to which these respondents would use the condom. Therefore more is still needed to be done

to bring about more change in the attitude to the condom of these respondents.

The extent to which condom use was reported among these respondents was low. Overall, less than 40 percent reported condom use. While the majority of users used it to prevent AIDS, most had used it for less than one year and only a small minority of users would use it always and not be persuaded by their partners not to.

Another finding of this study, were those variables which were independently associated with condom use. Among the most important were; being employed, having a positive attitude to the condom, and having received information about the condom.

Several reasons for not using condoms were put forward by those respondents who did not use condoms. Reduction in sensitivity was the most important reason given by men for not using the condom, while use of another form of contraceptive was the most important reason for women. This shows that in condom promotion programmes, more emphasis should be put on the role of the condom as a protective measure against HIV.

The respondents in the study sample not only injected drugs but about 20 percent of them also shared equipment.

It is clear from this study that despite availability of sterile needles and syringes, a hard core of these respondents have not abandoned the practice of sharing equipment. Based on the findings of this study, it is uncertain whether this practice will die out eventually as the AIDS education progresses and more of these respondents become aware of the HIV related dangers that can result from sharing equipment.

CHAPTER 7.

MEN ATTENDING GAY BARS AND DISCOS' STUDY.

7.1 Results:Text.

The questionnaire was fully completed by 173 of the 400 Edinburgh gay men (43%) and 83 of the 400 Glasgow gay men (21%) to whom it was offered. This gave a ratio of Edinburgh to Glasgow respondents of 2.1:1. Although the ratios appear reasonable, due to the very small response rate in the Glasgow group, it was not possible to compare the responses between the two cities. Instead, both groups were combined, and comparisons were made between those who reported using the condom, and those who did not. There were 137 condom users (54%) and 119 non-condom users (46%).

The condom users had a mean age of 27.7 years (SD 3.1) and the non users 28.6 (SD 3.9) years. The age distribution of the sample is shown in Table 1 and Figure 1. About 7 percent of the condom users were under 20 years of age compared to about 11 percent of the non users.

About 83 percent of the condom users and 87 percent of non users were employed.

All of the respondents reported being active homosexuals. However, about 20 percent of the condom users and 18.5 percent of the non users indicated that they were bisexual.

Table 2 and Figure 2 show the reported length of time the respondents had been homosexuals. The mean number of years the respondents who reported condom use had been homosexuals was 9.5 years (SD 3.3) and the non users 9.0 years (SD 3.0). Almost 85 percent of the condom users and 70 percent of the non users had been homosexuals for more than five years.

During the last 12 months the condom users had had a mean number of 24.5 (SD 6.5), and a median of 9 male sexual partners; and the non users a mean number of 17.1 (SD 4.3), and a median of 7. The number of different male sexual partners in the last 12 months reported by respondents is shown in Table 3 and Figure 3. These show that more than 90 percent of respondents who reported condom use and about 88 percent of non users had had more than one male sexual partner during the previous 12 months with 64.3 percent of condom users and about 56 percent of non users reporting more than five partners.

Twenty-one percent of respondents reported having had at least one female sexual partner in the previous twelve months (Table 4). Of these about 36 percent reported more than one female sexual partner and half were condom users.

The reported number of different male sexual partners by age and condom use is shown in Figure 4. Though there was no significant difference between the age groups, however, respondents in the age range 30 to 34 years reported the highest number of partners.

Thirty-one percent of the respondents who reported condom use but only 13.6 percent of those who did not, thought they were at risk of catching HIV due to their behaviour (chi-square = 11.3 1df, $p < 0.001$). Of these, 51 percent of condom users and about 44 percent of non users said that as long as they continued having sexual intercourse, they were at risk of HIV. The remaining 49 percent of users and 56 percent of non users said that they were at risk because they still had sexual intercourse without a condom. None of the respondents mentioned having more than one sexual partner as putting him at risk of HIV.

Table 5 shows the reported number of male sexual partners in the past 12 months by self perceived risk category. There was no significant difference in the reported number

of sexual partners between those who thought that their behaviour put them at risk of HIV and those who did not.

Figure 5 shows the reported change in sexual behaviour due to the AIDS epidemic. About 83 percent of the condom users and nearly 70 percent of the non users said that their lifestyles had been affected by the HIV epidemic (chi-square = 6.5 1df, $p = 0.01$). Of these, 36.8 percent of the condom users and 39.5 percent of the non users said that they now only had oral sex; 29.8 percent of condom users and 32.1 percent of non users said that they were now more selective about whom they had sex with; 13.2 percent of condom users and 28.4 of non users said that they had reduced the number of sexual partners; the remaining 20.2 percent of users said that they had started using the condom (chi-square = 22.2 3df, $p < 0.001$).

Table 6 shows the reported number of male sexual partners during the past 12 months by whether the AIDS epidemic had affected the respondents lifestyle. More than 90 percent of those who said that their lifestyle had been affected by the AIDS epidemic and about 86 percent of those who said that it had not, reported more than one sexual partner.

Table 7 shows the number of reported sexual partners by the reasons as to how the respondents had been affected by

the AIDS epidemic. Over 30 percent of those who said that they selected their sexual partners more carefully reported more than ten sexual partner during the last 12 months, while more than half of those who said they had started using the condom reported more than 10 sexual partners.

When asked about details of their homosexual activities during the past one and five years, their responses are shown in Table 8 and Figures 6 and 7. Oral sex without a condom was the most popular sexual activity overall, practised by over 80 percent in both groups. For condom users, the biggest change in sexual activity during a five year period was in the use of condoms during anal sex which rose from about 30 percent to almost 80 percent. While for non condom users, the biggest change was in oral sex without a condom which rose from 40 percent to 85 percent.

Table 9 and Figure 8 show the sexual activities which respondents reported they had normally had during the previous twelve months. These once again show that oral sex without a condom was the most popular sexual activity reported by over 85 percent of all respondents. There was no significant difference between the reported normal sexual activity as reported by those respondents who had been homosexuals for five or more years compared to those

who had been homosexuals for less than that time. For those who reported anal sex without a condom, 24 percent had been homosexuals for less than five years; for anal sex respondents using a condom themselves, it was 15 percent ($\chi^2 = 4.3$ 1df, $p = 0.04$); for anal sex partner using a condom, it was 18 percent; for oral sex without a condom, it was 22 percent; for oral sex respondents using a condom themselves, it was 23 percent; and for oral sex partner using a condom, it was 18 percent.

Attitudes to the condom.

Figure 9 shows the respondents' attitude to the condom. This shows that the condom was approved of by almost 90 percent of condom users, 10 percent were uncertain with no user disapproving, compared with 71 percent, 19 percent and 10 percent respectively of non condom users; ($\chi^2 = 21.0$ 2df, $p < 0.001$).

The reasons given by condom users for using the condom were as follows: prevention of AIDS, 85 percent; prevention of other sexually transmitted diseases, 15 percent. None of the bisexual respondents mentioned using the condom for contraceptive purposes.

About ten percent of users had used the condom for less than one year, while 26 percent had used it for more than five years. In response to the question regarding their frequency of use of the condom, 35 percent of all condom users, reported using the condom always, and the remaining 65 percent reported using it only sometimes.

For those who only used the condom "sometimes", the reasons they gave for doing so were: inconvenience 50.1 percent; run out, 28.3 percent; forgetfulness, 16.7 percent; partner doesn't allow, 4.9 percent.

Among condom users, the effect of condom use on their enjoyment of sex was reported as: good, 13.1 percent; neutral 64.2 percent; and bad, 22.6 percent.

Nearly two-thirds of users indicated that their condoms had never broken while in use; about a third reported occasional condom breakages; and only 3 percent reported that their condoms often broke.

About 56 percent of all respondents reported using some form of lubricant during foreplay. These were used by 63.5 percent of condom users compared to 47.9 percent of the non users (Chi-square = 6.3 1df, $p = 0.01$). Table 10 and Figure 10 show reported lubricants used for foreplay. More than a third of all respondents reported using oil-

based lubricants (vaseline, baby and vegetable oils) for their foreplay. While another 44 percent reported using saliva.

Almost 92 percent of condom users indicated that they use lubricants while using condoms. When requested to name which lubricants they use, the spontaneous answers are shown in Figure 11. These were: KY jelly 54 percent; saliva, 24.6 percent; oil based lubricants (vaseline, baby and vegetable oils), 11.1 percent; and gynol 10.3 percent.

When requested to name the condom brands they mostly used, 45.7 percent mentioned Mates, 24.3 percent Durex, and the remaining 30 percent mentioned both or some other brand.

About 70 percent of users provided the condom themselves. Just over 70 percent of condom users thought they could be persuaded by their partners not to use the condom. Table 11 shows those condom users who could be persuaded by their partners, by their reported frequency of condom use. About 12 percent of the condom users who reported always using the condom felt that they could be persuaded by their sexual partners not to, rising to 88 percent among those who reported using the condom sometimes.

Condom use appeared unrelated to age, employment, number of sexual partners or the kind of sexual activity the respondent was usually involved in. However, condom use appeared to be significantly associated with five other variables. These were used in the logistic regression model, and they were:

1. The respondents' attitude towards the condom; (Chi-square = 13.8 1df, $p < 0.001$)
2. Number of years the respondent had been a homosexual; (Chi-square = 11.8 1df, $p < 0.001$).
3. Believed they were at risk of HIV due to their behaviour; (Chi-square = 11.3 1df, $p < 0.001$)
4. Whether the respondent's lifestyle had been affected by the AIDS epidemic; (Chi-square = 6.5 1df, $p = 0.01$)
5. How the epidemic had affected the respondents lifestyle; (Chi-square = 22.2 3df, $p < 0.001$)

Table 12 shows that three of the variables emerged as being independently associated with condom use. These included:

1. Positive attitude towards the condom (Odds Ratio 4.2)
2. Respondents who believed they were at risk of HIV due to their behaviour (Odds Ratio 4.1)
3. Respondent who had been homosexual for five or more years (Odds Ratio 2.7)

The reasons for not using the condom given by non condom users are shown in Table 13. Participating in oral sex only was the most important reason given by non users for not using the condom; inconvenience and reduction in sensitivity came second and third respectively.

7.2 Tables and Figure

Table 1.

Respondents' age distribution.

	Age groups in years				Total
	below 20	20-24	25-29	30 and over.	
Condom users	9	38	45	45	137
%	6.7	27.7	32.8	32.8	100.0
Non users	13	37	24	45	119
%	10.9	31.1	20.2	37.8	100.0
Total	22	75	69	90	256
%	8.6	29.3	27.0	35.2	100.0

Chisquare = 5.9 3df, p = NS

Figure 1.

The respondents' age distribution by condom use.

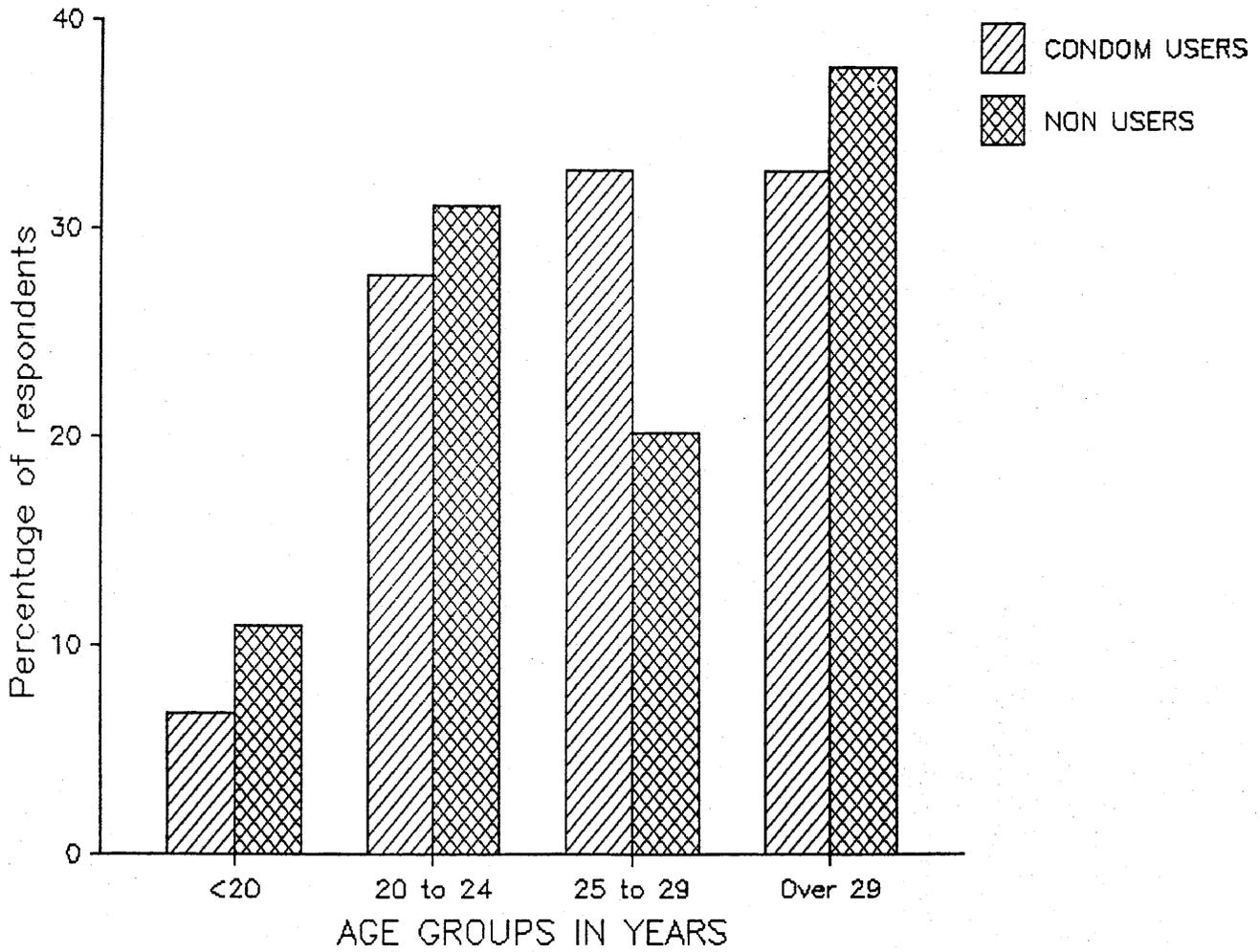


Table 2.

Number of years the respondents had been homosexuals.

	Number of years					Total
	0-4	5-9	10-14	15-19	20-40	
Condom users	20	65	27	14	11	137
%	14.6	47.5	19.7	10.2	8.0	100.0
Non users	35	37	20	14	13	119
%	29.4	31.1	16.8	11.8	10.9	100.0
Total	55	102	47	28	24	256
%	21.5	39.8	18.4	10.9	9.4	100.0

Chisquare = 11.8 p = 0.02

Figure 2.

Number of years respondents had been homosexuals.

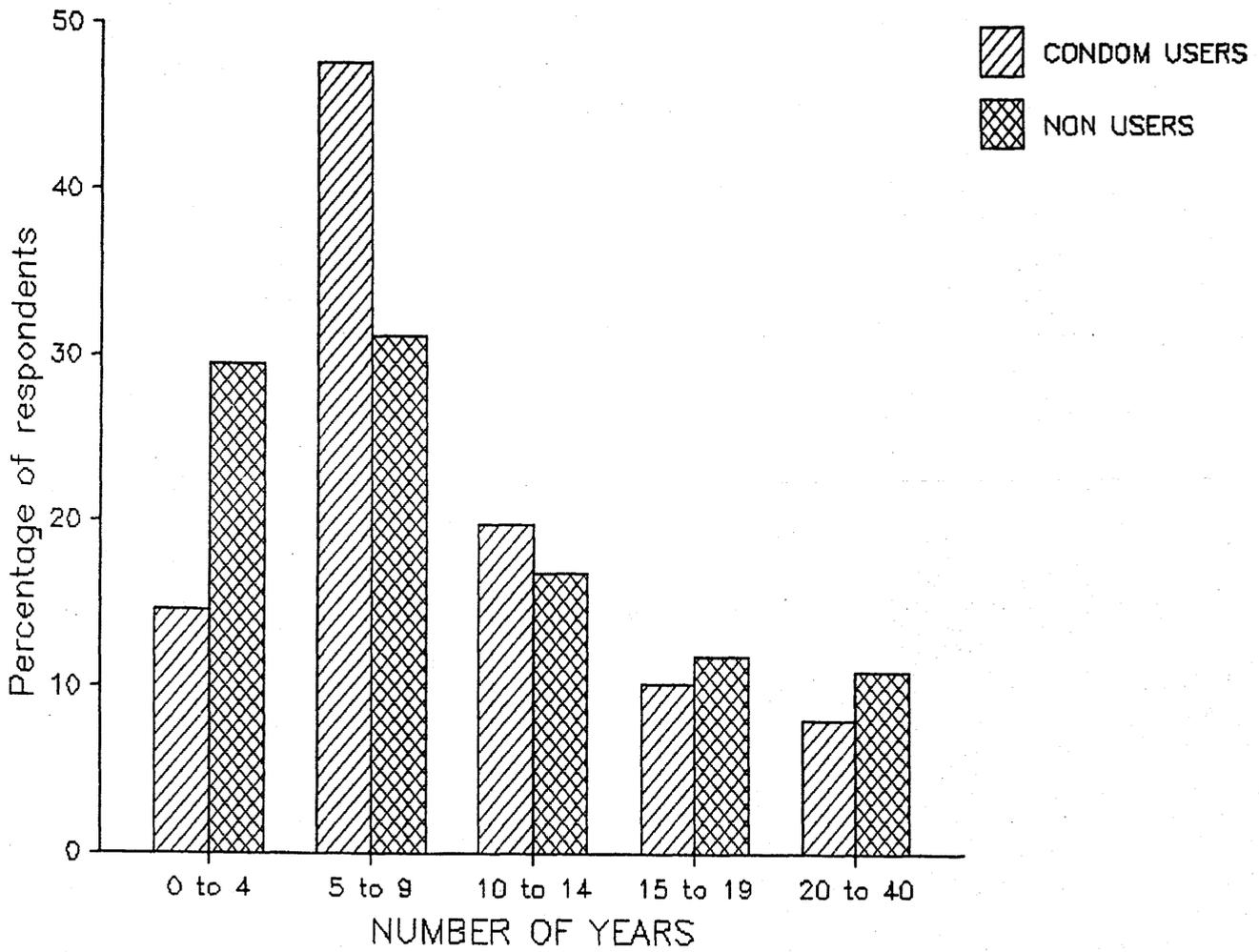


Table 3.

Reported number of male sexual partners during
the past 12 months.

	Number of male sexual partners.				Total
	0-1	2-5	6-10	Over 10	
Condom users	11	38	34	54	137
%	8.0	27.7	24.9	39.4	100.0
Non users	14	39	34	32	119
%	11.8	32.8	28.5	26.9	100.0
Total	25	77	68	86	256
%	9.8	30.1	26.5	33.6	100.0

Chisquare = 4.7, 3df p = NS

Figure 3.

The reported number of male sexual partners in the past 12 months.

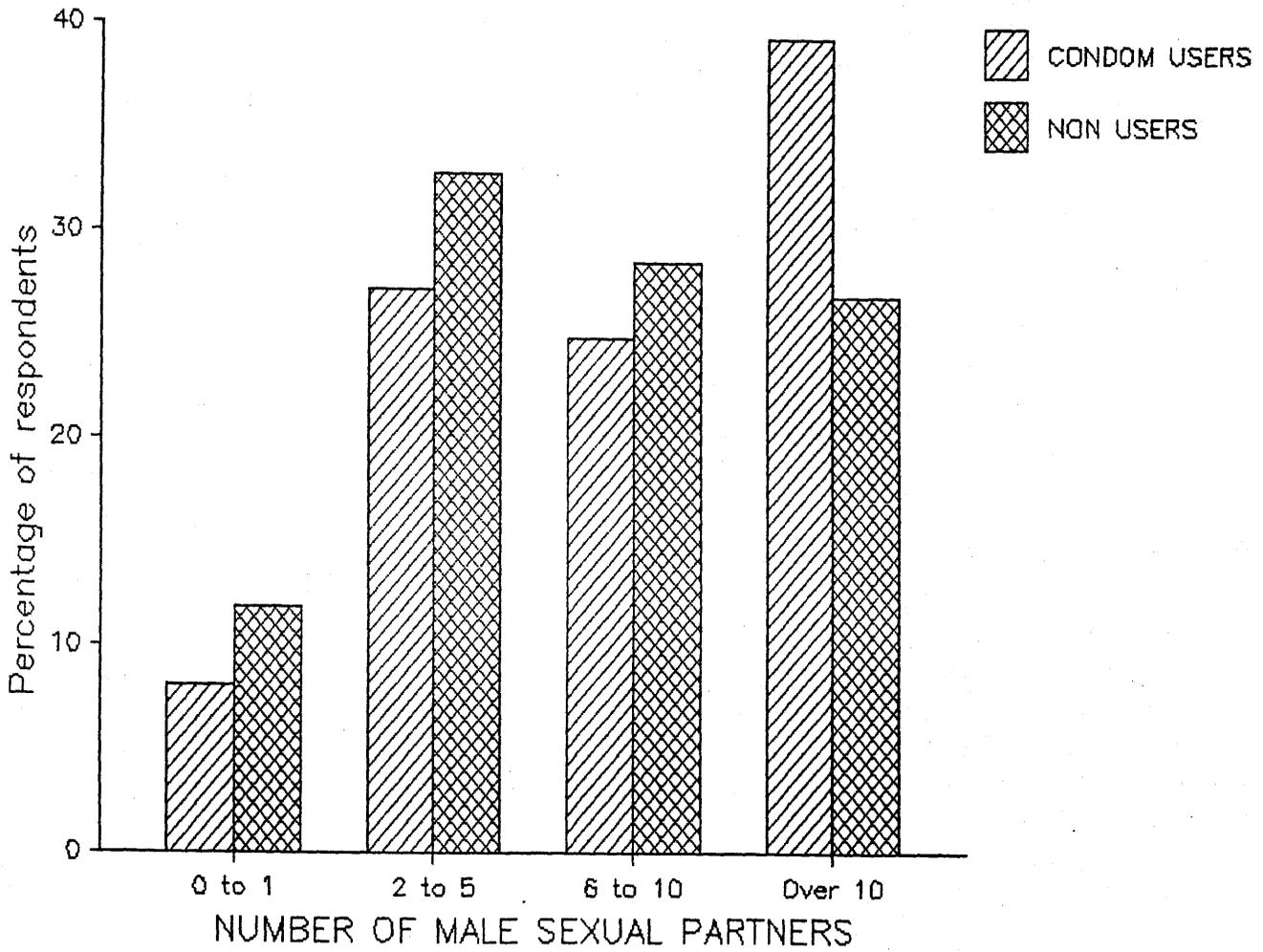


Table 4.

Reported number of female sexual partners during the
past 12 months.

	Number of female sexual partners.				Total
	0	1	2-5	6-8	
Condom users	106	21	9	1	137
%	77.4	15.3	6.6	0.7	100.0
Non users	97	13	8	1	119
%	81.5	10.9	6.7	0.9	100.0
Total	203	34	17	2	256
%	79.3	13.3	6.6	0.8	100.0

Chisquare = 1.1 3df p = NS

Figure 4.

The reported number of male sexual partners in the last 12 months by age.

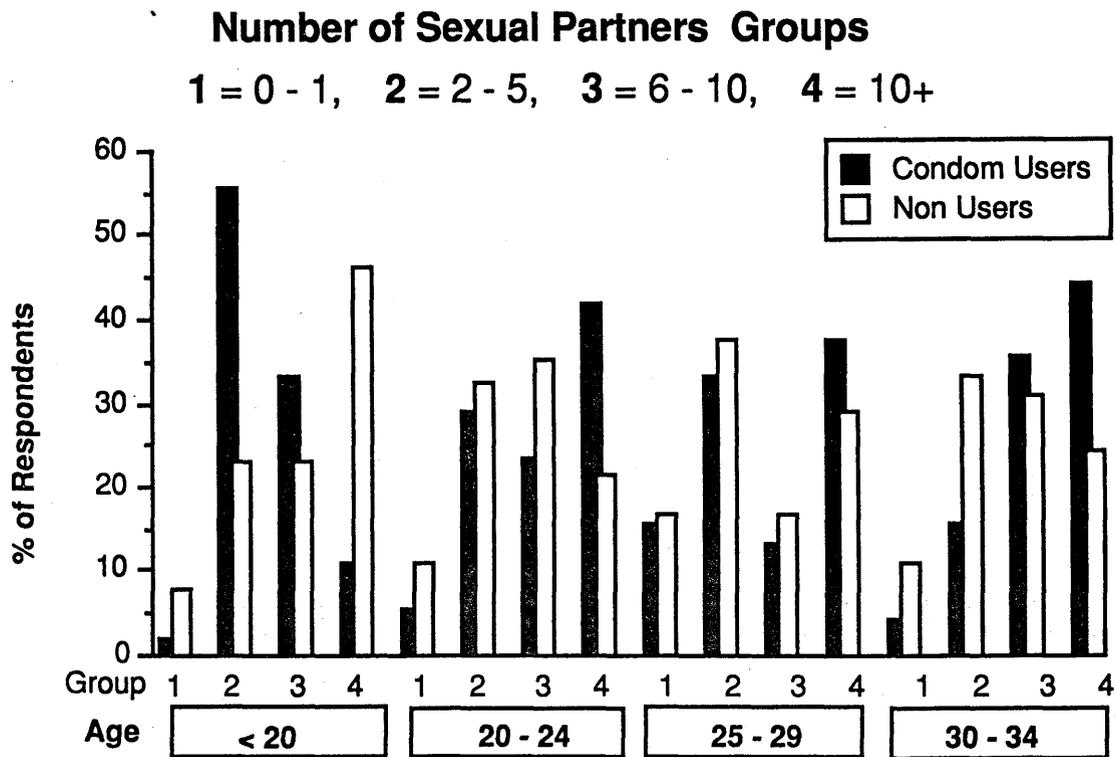


Table 5

Reported number of male sexual partners during the past 12 months by self perceived HIV "risky behaviour."

	Number of male sexual partners				Total
	0-1	2-5	6-10	Over 10	
"Risk" category					
At risk	3	15	14	27	59
%	5.1	25.4	23.7	45.8	100.0
Not at risk	22	61	54	59	196
%	11.2	31.1	27.6	30.1	100.0
Total	25	76	68	86	255
%	9.8	29.8	26.7	33.7	100.0

Chisquare = 3.8 3df, p = NS.

Number of missing observations = 1

Figure 5.

Respondents' reported change in sexual behaviour due to HIV/AIDS epidemic.

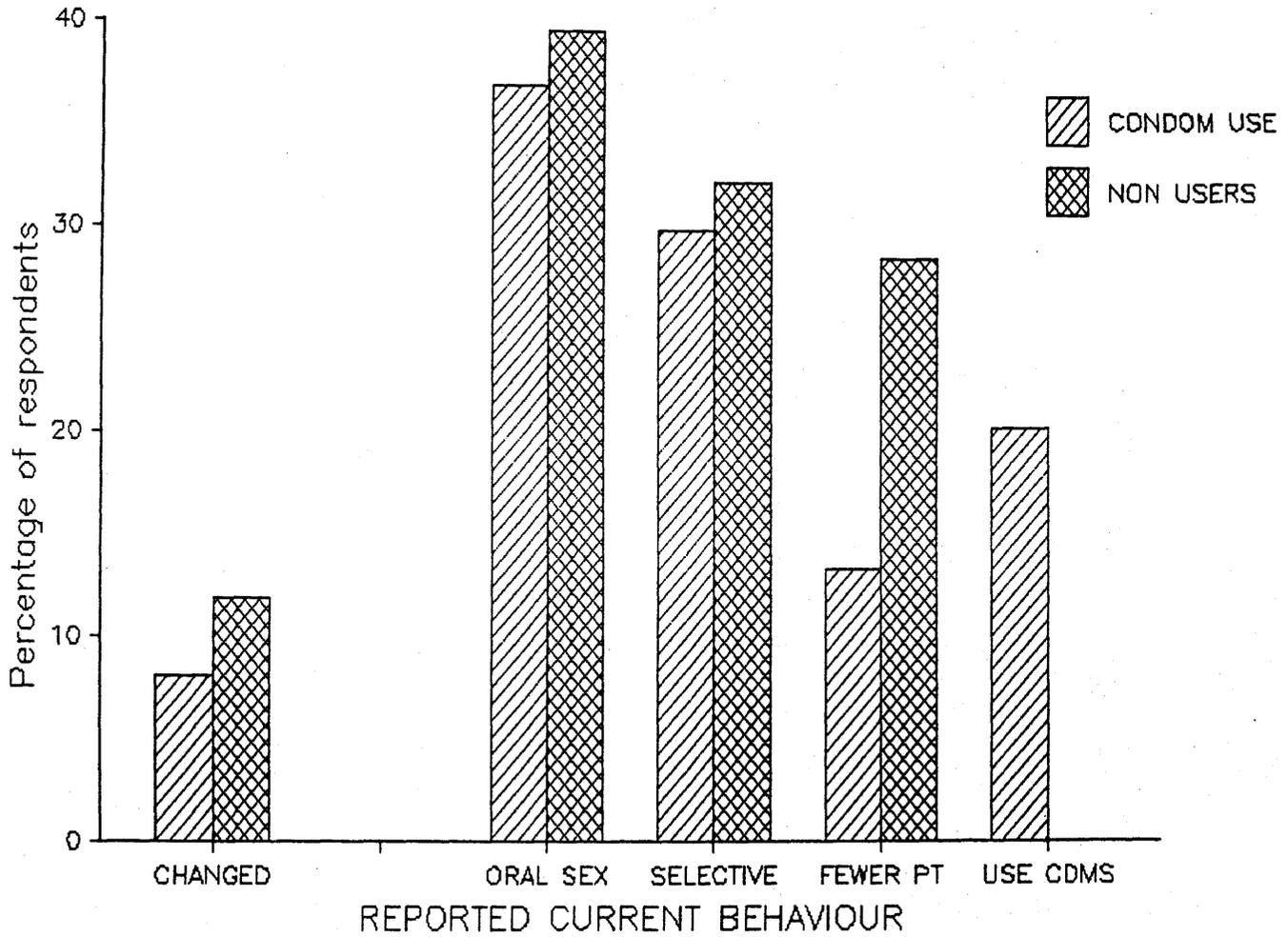


Table 6.

Reported number of male sexual partners during the past 12 months by whether the AIDS epidemic had affected the respondents lifestyle.

	Number of male sexual partners				Total
	0-1	2-5	6-10	Over 10	
Epidemic effect					
Affected	17	58	57	65	197
%	8.6	29.5	28.9	33.0	100.0
Not affected	8	19	11	21	59
%	13.6	32.2	18.6	35.6	100.0
<hr/>					
Total	25	77	68	86	256
%	9.8	30.1	26.5	33.6	100.0

Chisquare = 3.1 3df, p = NS.

Table 7.

Reported sexual partners by the reasons as to how the respondents had been affected by the AIDS epidemic.

Stated reason	Number of male sexual partners				Total
	0-1	2-5	6-10	Over 10	
Have only oral sex now	5	25	20	24	74
%	6.8	33.8	27.0	32.4	100.0
Partner selection	8	16	17	19	60
%	13.3	26.7	28.3	31.7	100.0
Reduced sex partners	3	8	17	10	38
%	7.9	21.1	44.7	26.3	100.0
Started condoms use	1	8	2	12	23
%	4.3	34.8	8.7	52.2	100.0
Total	17	57	56	65	195
%	8.7	29.3	28.7	33.3	100.0

Missing observations = 2

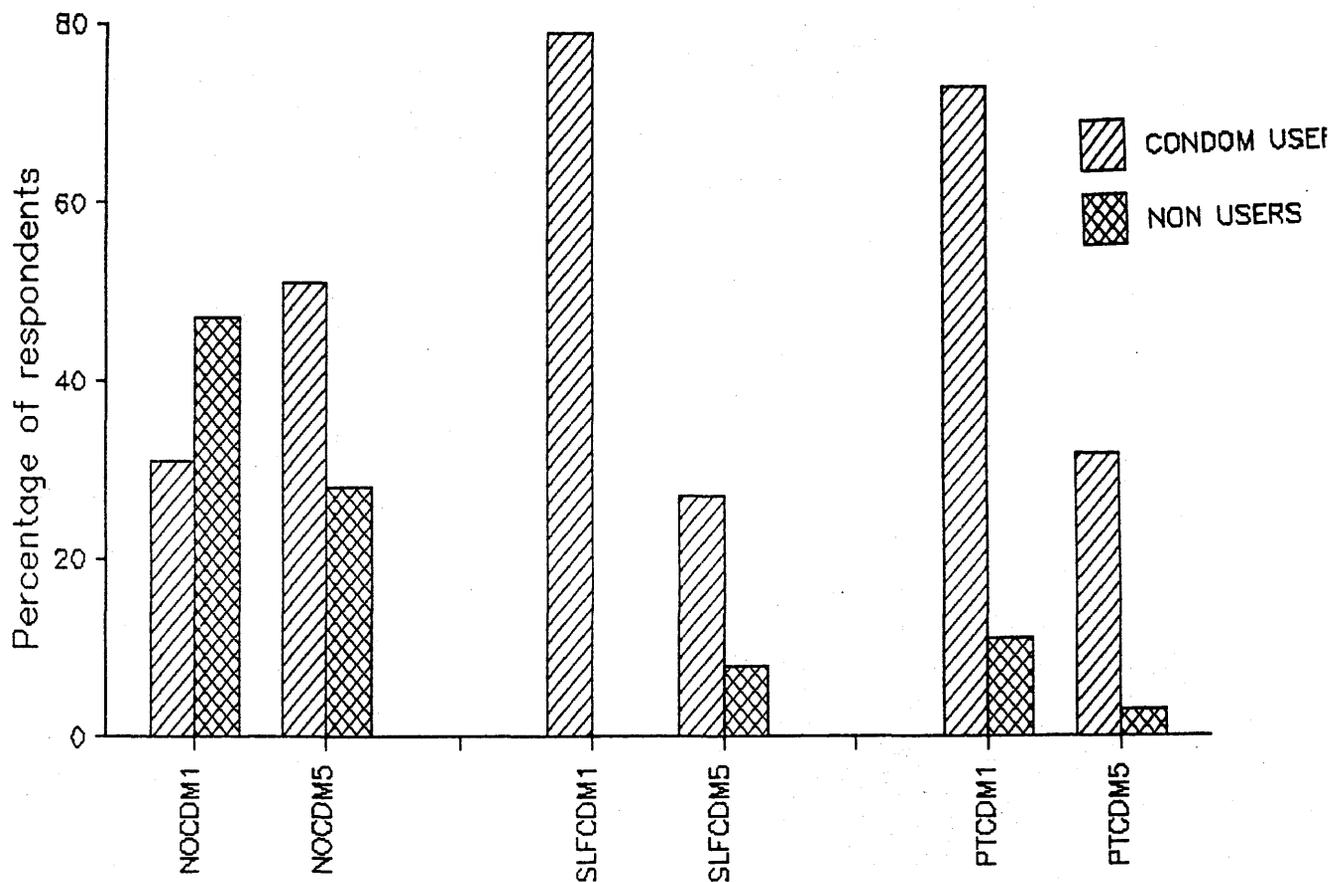
Table 8.

Reported sexual activity during the past one
and five years.

	% Condom users (n= 137)	% Non users (n= 119)	χ^2	p value
Sexual activities during the				
Anal sex without a condom:				
Past 1 year	31	47	6.6	0.01
Past 5 years	51	28	14.5	0.001
Anal sex using a condom yourself:				
Past 1 year	79	0	162.3	0.001
Past 5 years	27	8	16.3	0.001
Anal sex partner using a condom:				
Past 1 year	73	11	99.5	0.001
Past 5 years	32	3	37.2	0.001
Oral sex without a condom:				
Past 1 year	83	85	0.3	NS
Past 5 years	51	40	2.3	NS
Oral sex using a condom yourself:				
Past 1 year	15	0	19.9	0.001
Past 5 years	5	3	0.6	NS
Oral sex partner using a condom:				
Past 1 year	14	6	4.5	0.03
Past 5 years	4	2	0.9	NS

Figure 6.

Reported sexual activity during the past one and five years.
(ANAL SEX)



REPORTED SEXUAL ACTIVITY: ANAL SEX

Figure 7.

Reported sexual activity during the past one and five years.
(ORAL SEX)

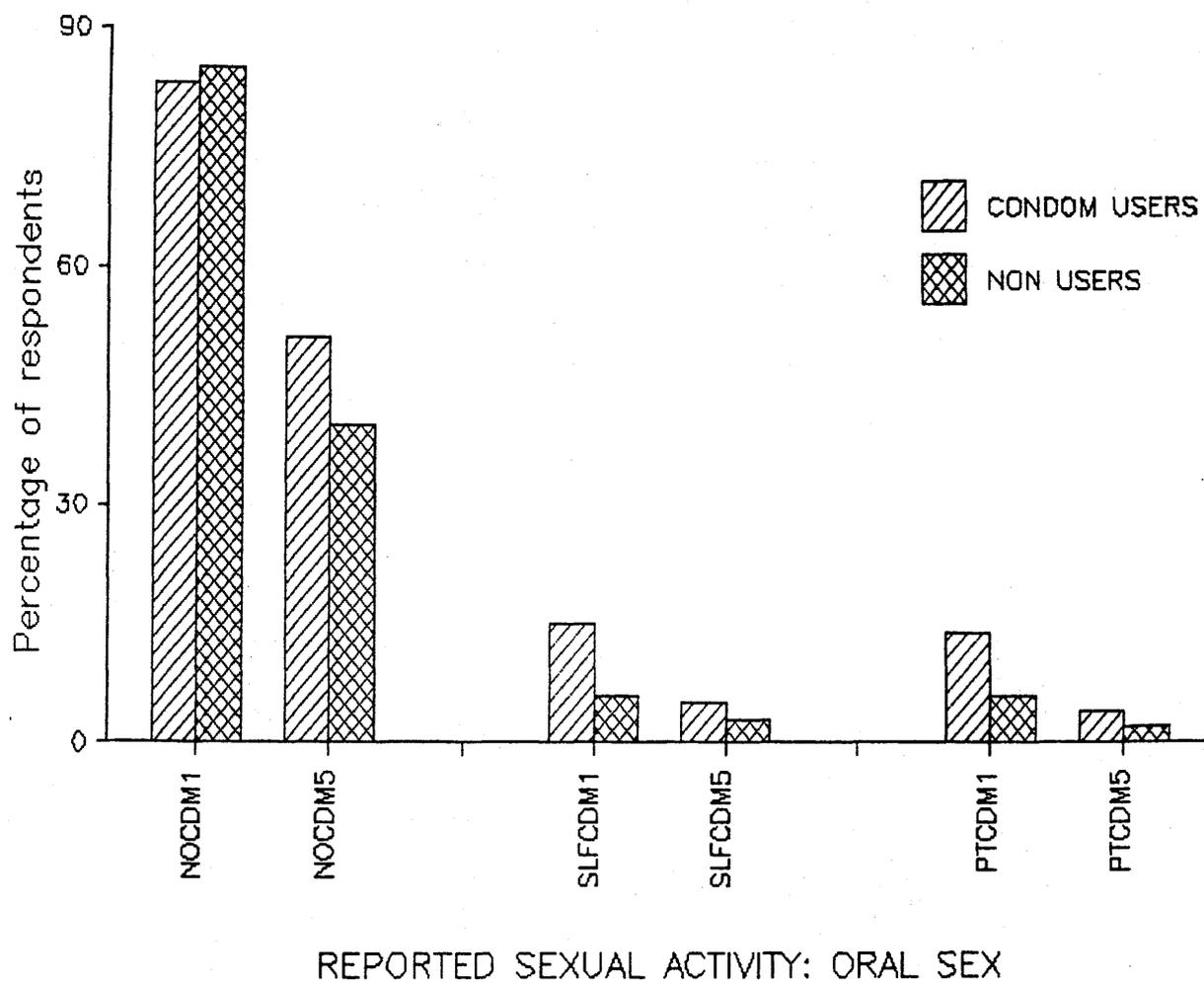


Table 9.

The reported sexual activity which the respondents "normally" had in the past 12 months.

	% Condom users (n= 137)	% Non users (n= 119)	χ^2	p value
Sexual activities during the past 12 months				
Anal sex without a condom	31	49	8.0	0.004
Anal sex using a condom yourself	77	0	157.1	0.001
Anal sex partner using a condom	72	11	95.3	0.001
Oral sex without a condom	83	87	1.2	0.3
Oral sex using a condom yourself	19	0	25.1	0.001
Oral sex partner using a condom	16	4	10.4	0.001

* Though the respondents were free to indicate more than one sexual activity, the activities were individually analysed.

Figure 8.

The reported sexual activity which the respondents "normally" had in the past 12 months.

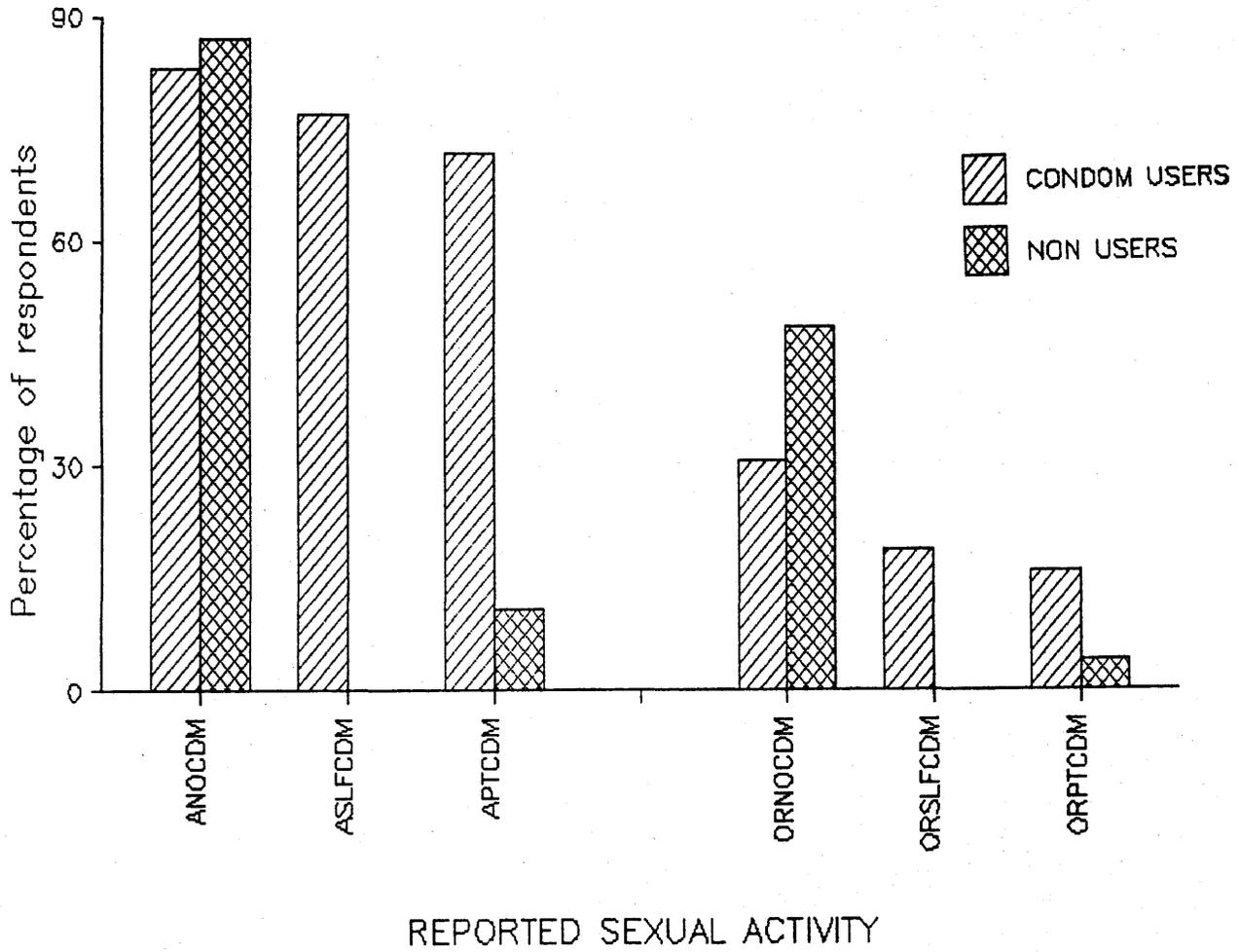


Figure 9.

Respondents' attitude to the condom.

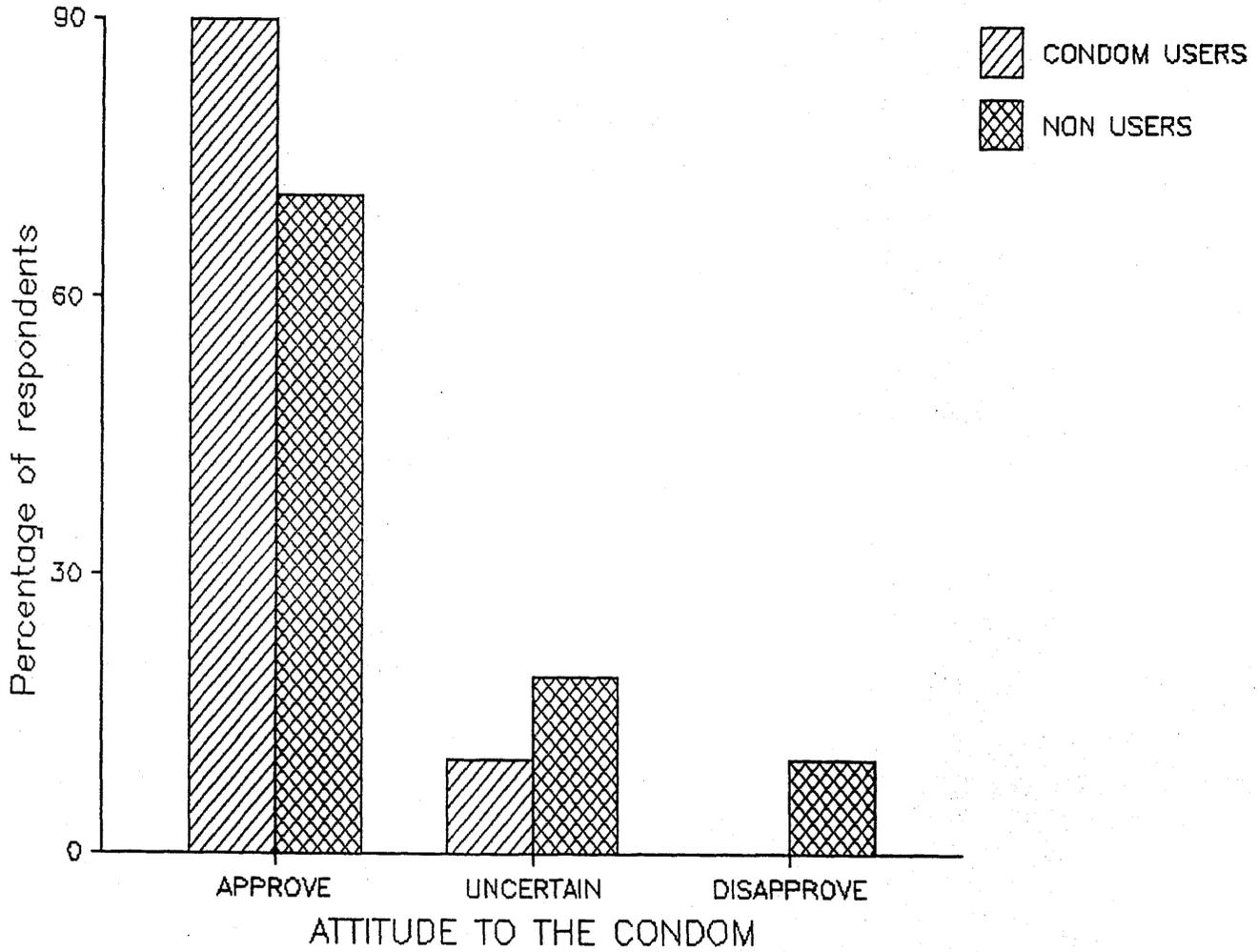


Table 10.

Reported lubricants used for fore play.						
	lubricant					
	Saliva	Vaseline	KY	Baby oil	Veg. oil	Total
Condom users	30	25	23	5	4	87
%	34.5	28.7	26.5	5.7	4.6	100.0
Non users	33	9	6	7	2	57
%	57.9	15.8	10.5	12.3	3.5	100.0
Total	63	34	29	12	6	144
%	43.8	23.6	20.1	8.3	4.2	100.0

Chisquare = 12.6 4df, p = 0.01

Figure 10.

Reported lubricants used in foreplay.

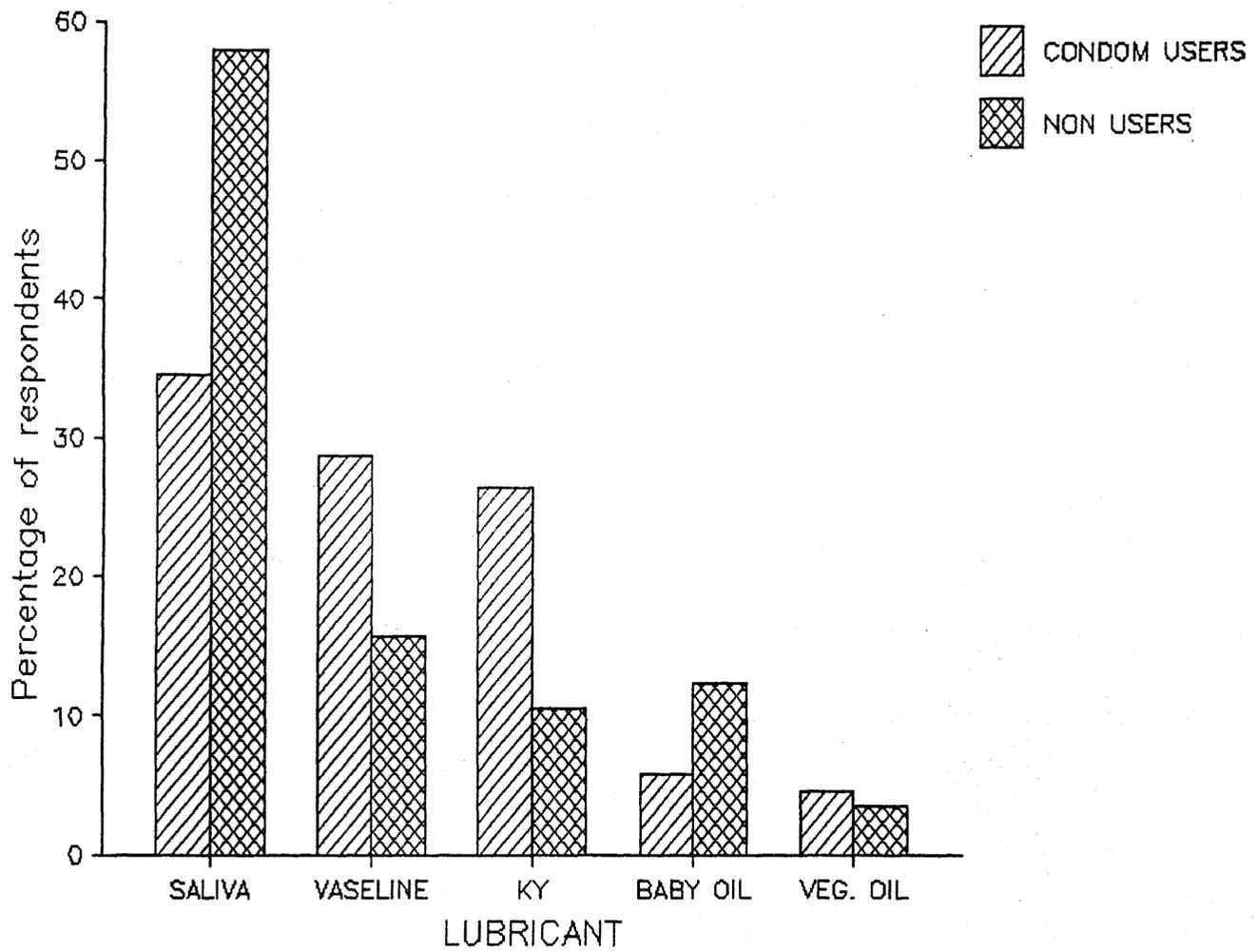


Figure 11.

Reported lubricants used with condoms.

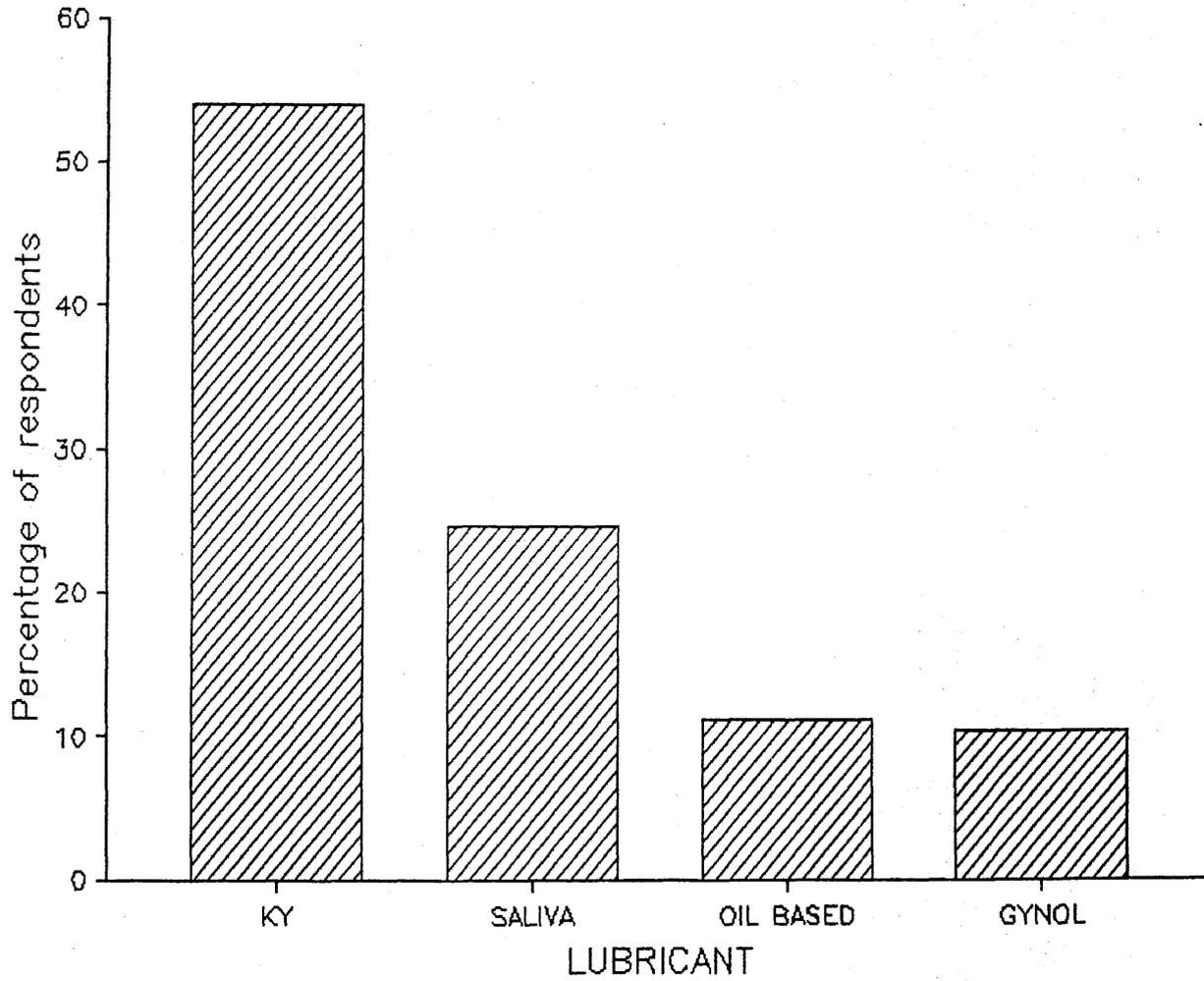


Table 11.

Condom users by frequency of use, who felt they could be persuaded by their partners not to use the condom.

	frequency always	of condom sometimes	use Total
Persuaded	11	84	95
%	11.6	88.4	69.9
Not persuaded	36	5	41
%	87.8	12.2	30.1
Total	47	89	136
%	34.6	65.4	100.0

Number of missing observations = 1

Chisquare = 73.6 1df p less than 0.001

Table 12.

The variables associated with condom use.

VARIABLE value	ODDS RATIO	95% C.I	2 X	p
Positive attitude to condom	4.2	2.1-8.6	13.8	0.001
Had a been homosexual for five or more years	2.7	1.4-5.3	11.8	0.001
Respondent believed was at risk of HIV due to his behaviour	4.1	2.0-8.2	11.3	0.001

Table 13.

The reasons for not using the condom given
by non condom users.

	Number	Percent
I have only oral sex	52	43.5
It is Inconvenient	20	16.5
It reduces sensation	14	11.8
It is unnatural	13	10.6
It is unromantic	8	7.1
Partner disapproves	8	7.1
It is messy	4	3.4
Total	119	100.0

7.3 Discussion.

Control of the epidemics of AIDS and HIV infection, especially in the Western society will not be achieved without changes in sexual behaviour of a section of the male homosexuals. To assess whether this is happening presents considerable problems in sampling and methodology because of the general unacceptability of random sampling of gay men, namely bias in the selection of subjects and in addition, questions naturally arise concerning the reliability and validity of information obtained by questionnaire regarding sexual activity. Although both these issues are relevant to all studies based on questionnaires, they are particularly important in this study which looks at sensitive subjects as AIDS and HIV and the related knowledge and sexual behaviour. However, some reports suggest that both the interviewer administered and self administered questionnaire can provide reasonably reliable data concerning sexual behaviour of gay men (when period of recall is relatively short) [*Saltzman et al. 1987*]. Most of the information requested for in this study always related to sexual behaviour in the year prior to questionnaire completions. Though in order to ascertain real sexual behavioural change since the AIDS epidemic became widely known, a few

questions inquire into the respondents' sexual activities during the past five years.

There are several important points which should be recognised concerning these data. The extent to which the gay men included in this study are representative of the gay men population depends on the criteria used for selecting the sample. As outlined in the methodology section, the choice of recruiting participants through the Gay bars was to chose those gay men who were thought to be more likely to be sexually active, more likely to have multiple sex partners and therefore representing what may be considered gay men at risk of getting HIV. Nevertheless, it must be recognised that gay men who chose to attend gay bars may not reflect the homosexual community at large. Therefore, the main qualifying factors for eligibility for this study were that the respondents should be active gay men, attending gay bars and discos and willing to participate voluntarily. All these qualifications impose limitations on the degree to which the results can be generalised to all gay men.

Overall, therefore, the bias introduced in selecting the sample was probably much smaller and the results much more representative than those of other studies, which have focused on gay men attending sexually transmitted disease clinics. As Fitzpatrick et al. [*Fitzpatrick et al. 1989*]

point out, among the problems associated with gay men recruited from such clinics are; these men are more likely to have had anoreceptive sex than the general gay population, they are more likely than other gay men to have had casual sexual partners, thereby giving an indication of out of proportion risky behaviour. In addition, as many of them have been individually counselled about safe sex, any repeated counselling would also influence the answers given. Though there was no way to finding out whether some of the respondents in this study were individually counselled, the findings of the study do not suggest that was the case.

More of the problem is the 68 percent who did not respond. The men who did not respond may have differed in various aspects,, including HIV/AIDS related knowledge and behaviour patterns from the respondents. For previous studies have reported individuals differences between respondents and non respondents. For example, in 1962 Bell [**Bell 1962**] suggested that responders in population studies have a higher intelligence than non responders. While more recently in 1989 Sonne-Holm et al. [**Sonne-Holm et al. 1989**] found that an increased response rate was independently associated, among other variables, with age (up to 50 years) increasing intelligence, educational level, and social class. Though all the above but age, are closely inter-related psycho-social characteristics, each

single variable still has an independent impact on the response rate [*Sonne-Holm et al. 1989*]. But of course this study does not provide any information to support or oppose the said association. Though of the non responders 79 percent were from Glasgow compared to the Edinburgh 57 percent, there is no indication that the Glasgow respondents were any different from those of Edinburgh. In both cities, those men who gave reasons for not participating (those who refused questionnaires) usually stated that they were too busy or did not like medical surveys. Therefore, there are reasons for believing that the response rate of about 30 percent, while a little disappointing, has not produced significant bias in the findings. In the first place the respondents closely resembled in age distribution those reported in other gay men studies. The response rate was also similar in the age groups, so that interage group comparisons are valid.

In terms of age, mean 28.1 years (SD 8), and the number of years they had been homosexual, 60 percent of respondents reporting five or more years, respondents in this study were similar to other gay men reported in other studies [*Adrien et al. 1987, Ohi et al. 1988*].

Among the factors which influence the rate at which HIV spreads, is the number of sexual partners. For that matter, it was disappointing that some of these

respondents reported up to 150 different sexual partners with a mean 14.1 partners (SD 8.5) during the past 12 months. In addition, three quarters of respondents reported multiple male sexual partners, with over one third of respondents reporting having had more than ten sexual partners during the past year. These findings confirm those reported in a number of different European [*Bauman and Sieger 1987, Fitzpatrick et al. 1989*], and United States studies [*Schecheter 1987, Jones et al. 1987*] which show that despite the reported change in sexual behaviour following the AIDS campaigns, many homosexual men have not made significant modifications in their sexual behaviour in response to the threat of HIV. For example, Evans et al. [*Evans et al. 1989*] looked at the trends in sexual behaviour among homosexual men in London 1984-1987, found that though there had been a drop in the proportion of homosexuals reporting multiple partners from 88 percent in 1984 to 50 percent in 1987, the percentage of those reporting multiple partners was still big enough to cause concern. Similarly, in a New York cohort [*Stevens et al. 1986*], despite the reported substantial change in sexual behaviour, the incidence of HIV infection did not change between 1979 and 1984. Therefore the finding of the present study reaffirms that some gay men still have not changed their sexual behaviour that much.

In this study bisexual behaviour was reported by about 20 percent of respondents. Though this proportion is much higher than that reported in earlier studies, for example the 10 percent in the Evans et al. [Evans et al. 1989] study, the reported range of female partners of one to eight is smaller than eight to sixteen reported by the same Evans et al. [Evans et al. 1989].

One way of attempting to find out about the respondents' knowledge of HIV risky behaviour, was to ask them whether they thought their sexual behaviour put them at risk for HIV. Less than one quarter of respondents indicated that they were at risk because of their sexual behaviour. Further more, there was no significant difference in the number of reported sexual partners between those who thought they were at risk and those who thought they were not. The results from this study, therefore show lack of perception of risk associated with multiple sexual partners. Taking this into consideration, it is unlikely that the majority of respondents will change their sexual behaviour appropriately. On the other hand, of all those who thought their sexual behaviour put them at risk, over one third were condom users, compared to about 14 percent of non condom users.

Surprisingly though, among the reasons the respondents gave for thinking they were at risk for HIV, 56 percent of

those who did not use condoms, gave non use of the condom as the reason for being at risk. But worse still, none of the respondents mentioned having more than one sexual partner as putting them at risk for HIV.

Probably evidence of some positive change as a result of the AIDS epidemic, is seen from the finding that over three quarters of respondents indicated that their lifestyles had been affected by the AIDS epidemic. Such findings have been reported before in other studies. For example Adrien et al. [**Adrien et al. 1987**] who carried out a study similar to this one, among gay men attending gay bars in Montreal, Canada, report that 75 percent of their respondents said that their sexual behaviour had been influenced by the AIDS epidemic. However, once again in the present study, like in previous studies, this reported effect was not reflected in the number of reported sexual partners, since there was no significant difference in the numbers of reported partners between those who said that their lifestyle had been affected by the AIDS epidemic and those who said that it had not. The most plausible explanation for lack of a significant difference may be the kind of sexual activity the respondents were involved in. They could have changed from one kind of sexual activity to another, but not changed the number of sexual partners. This in turn has consequences for interpreting

perceived HIV risk due to the respondents sexual behaviour.

When those respondents who had indicated that their lifestyle had been affected by the AIDS epidemic were requested to state why they say so, nearly 38 percent of them said that they only had oral sex, with about 20 percent mentioning that they had reduced the number of sexual partners. This finding is consistent with the finding that the majority of respondents had not taken the number of partners as a serious HIV, risk factor.

When the respondents were asked about the details of their homosexual activity during the past one and five years, the results were encouraging in suggesting that there were substantial increases in condom use. For among the noted changes in sexual activities during the past one and five years, was the use of condoms during anal sex which rose from about 30 percent to almost 80 percent. Such increases in condom use among gay men have been reported from other studies [*McCusick et al. 1985(a), McCusick et al. 1985(b) Carne et al. 1987*]. Therefore the findings of this study like those others reporting sexual behaviour change among gay men, can be taken as direct evidence of sexual behaviour change taken by the gay respondents in this study.

Nevertheless, the results described in the present study also show clearly that orogenital contact without a condom was by far the most popular sexual activity during the past twelve months, as reported by about 84 percent of all respondents. There was no significant difference between those who reported using condoms and those who did not as regards this sexual activity. Even when the respondents reported the sexual activity which they normally had during the past one year, the majority once again indicated oral sex. Similarly, when Goldberg et al. [**Goldberg et al. 1988**]. interviewed 379 homosexual men in gay bars and discos in Glasgow in 1987, reported that 76 percent of their respondents admitted practising orogenital activities. Although orogenital contact sex as an alternative to anal intercourse is seen by many of the respondents in the present study as a positive move towards reducing the spread of HIV, there have been case reports of HIV infection where the only apparent risk of exposure to HIV were unprotected orogenital sex with an HIV seropositive individual [**Goldberg et al. 1988**]. In addition to that and other long running debates over this route of infection [**Schechter et al. 1986, Kingsley et al. 1987**], Rozenbaum and colleagues [**Rozenbaum et al. 1988**] have expressed the view that orogenital contact should not be completely discounted as a risk factor. Therefore the finding of this study are worrying.

A very big percentage of respondents reported that they approved of the use of the condom, with a small percentage being uncertain, but of much importance was the finding that none of the respondents disapproved of condom use. It is possible that these responses reflect the impact condom promotion has had on these respondents.

Overall, condom use was reported by just over half of respondents. Though such results are encouraging, especially since as already noted there has been a marked increase in the reported use of condoms during anal sexual intercourse by the respondents, basing on these findings it is not possible to say whether this reported condom usage was low, or high. This is mainly because world wide and even in the United Kingdom alone, the reported prevalence of condom use by homosexual men in recent years is very varied, though most of these reports indicate that condom use by homosexuals is increasing. In 1985, a sample of New York City male homosexuals reported condom use of one percent in the year before learning of AIDS, and a 20 percent use in the ensuing year [**Schecheter 1987**]. In 1984, in San Fransisco, 26 percent of men who reported having anal intercourse used condoms [**Jones et al. 1987**]. In 1987, the corresponding figure was 79 percent [**Schecheter 1988**]. While Wigersma and Oud in the Netherlands reported 55 percent condom use among

homosexuals in Amsterdam [*Wigersma and Oud 1987*]. In the United Kingdom, surveys of homosexual men between February 1986 and February 1987 by the Department of Health and Social Security indicate substantial increases in the numbers using condoms during anal intercourse [*DHSS 1987*]. In 1988, Fitzpartrick et al. [*Fitzpartrick et al. 1989*] reported condom use with anoreceptive sex of 79 percent by samples of homosexuals from London, Oxford, Northampton, and Manchester.

In addition to the finding that a relatively high proportion of the respondents reported condom use, a very big majority of condom users did so to prevent the spread of HIV. This finding is similar most previous findings [*Carne et al. 1987, DHSS 1987*] and supports the reported increase in condom use among homosexuals since the AIDS epidemic [*Schecheter 1987, Jones et al. 1987*].

Nearly two thirds of condom users indicated they used condoms only sometimes. Such infrequent use of condoms has been reported in many other previous studies [*Carne et al. 1987, Schecheter 1987, Fitzpartrick et al. 1989*]. Furthermore, it was disappointing to observe that as many as 70 percent of users would be persuaded by their partners not to. This indicates that despite the willingness to use the condom, nearly seven in 10 condom users (65.7%) do not have enough resolve to use them all

the time. This inference is supported by the reasons given for using the condoms only "sometimes", namely; inconvenience by half of users, run out by almost one third of users and forgetfulness by about 17 percent of users.

Surprisingly though, despite the reported infrequent use of condom, only about 20 percent of users indicated that condoms negatively affected their enjoyment of sex.

Nearly two thirds of users indicated that condoms have never had a condom break while in use. Though the fear of failure of condoms to protect against HIV have been

expressed, and there are reports of condoms which have broken, especially during anal intercourse [**Wigersma and Oud 1987, Kelly and St. Lawrence 1987**], more recent studies of the use of condoms by prostitutes, both male and female indicate that failure due to breakage probably occurs infrequently [**Richters et al. 1988**]. It appears therefore, with only 3 percent of users reporting frequent condom breakages, a considerable percentage of homosexual men in this study either use good brands of condoms, or use them properly.

The finding that the over 45 percent of condom users used lubricants which have been known to damage condoms and

cause breakages, namely oil based lubricants, a finding that is in agreement with the reported lubricants respondents used during foreplay is not reflected in the reported condom breakages. This does not mean to disprove the scientifically stated view oil based lubricants can damage condoms and may be the source of considerable breakage of condom during sexual intercourse. This difference in the reported frequency of breakages and lubricants used may be due to the infrequent use of the said lubricants.

The recently demonstrated progressive increase in condom use among gay men has been attributed, at least in part, to fear, after seeing personal friends becoming sick with AIDS and some dying from it [*Gellan and Ison 1983*], and from the condom promotion campaigns. In this study, results from the logistic regression analysis appear to support more of the former than the latter. For in the logistic regression analysis, it was found that condom use was more likely among those who had a positive attitude to the condom, those who believed they were at risk of HIV due to their sexual behaviour, and those who had been homosexuals for five or more years.

However, these results do not give conclusive evidence as to the factors underlying the decisions to use the condom in this population group. Nonetheless the relationship

between positive attitude to the condom and the subsequent use of the condom is well illustrated. Though of course this may be more complex than presented in the analysis. Wigersma and Oud [*Wigersma and Oud 1987*] found that despite the reported apparent increase in condom use by gay men, the overall acceptability of the condom by the homosexual is still very low, and the majority of gay men still consider them unattractive, unnatural and disturbing. Though some of the reasons given for not using the condom by non condom users in the present study were similar to those reported by Wigersma and Oud, and from other studies [*Potts 1982, Sonnex et al. 1989*] namely inconvenience, reduced sensation, and partner's disapproval of the condom, by far the commonest reason given was that the respondent only practised orogenital sex. Perhaps this finding further reflects more on the lack of agreement over the perceived risk of HIV transmission attributable to orogenital sex. Although this study did not set out to provide a definitive answer to the question regarding oral sex as a possible route for HIV transmission, its findings lend support to the need to be sure about the education message to the public about unprotected orogenital sex, which should as much as possible be consistent.

7.4 Conclusion.

In this study, the sample of 256 gay men was obtained from a group of homosexual men in gay bars and discos, who according to the available literature were at increased of acquiring sexually transmitted HIV. The observed results do support those reports.

The study sample consisted of active homosexuals with a mean age of 28.1 years (SD 7.9), about two thirds of whom were from Edinburgh, and the one third from Glasgow, and over 85 percent of them were employed.

Although since the start of the AIDS epidemic it has been made clear to the homosexual community that the prevention of HIV is dependent upon the alteration of sexual behaviour, the results of this study show that many of these respondents had not taken the appropriate actions. For during the previous 12 months, more than 90 percent of condom users, and 88 percent of non users reported multiple sexual partners, with a mean of 24.5 and 17.1 partners respectively. This is important because it may be that, while homosexuals are reported to have changed their sexual behaviour due to the AIDS epidemic, they do not stick to that behaviour when they are under the influence of alcohol. This would suggest the existence of a subgroup

of homosexual men who are at a much more increased risk for HIV.

Though no questions directly related to HIV knowledge were included in this study, it can be concluded from the responses on condom use, and about the effect of the AIDS epidemic on the respondents, that despite the lack of evidence that risk reduction behaviour had occurred among these respondents because of the threat of AIDS, the AIDS information campaign, had reached these respondents, and had increased their information levels. For though only about a quarter of the respondents indicated that they felt at risk of HIV due to their sexual behaviour, over three quarters of the respondents indicated that their lifestyles had been affected by the AIDS epidemic, with about two thirds of them saying that they had either started using condoms, or reduced the number of their sexual partners, or were more selective about with whom they had sexual intercourse.

In the assessment of changes in sexual behaviour over the past five years, the study showed reduction in insertive anal sex without a condom, a substantial increase in anal sex insertive and receptive with a condom, and oral sex without a condom for both the active and passive participant. Though all these changes are encouraging, the change to oral sex without a condom is worrisome and of particular significance, especially because there is no

overall agreement among the "official opinions" on this route of HIV transmission.

The reports of the sexual activity during the previous twelve months showed that condom use during receptive and insertive anal intercourse was common, as reported by over 70 percent of condom users. On the other hand reporting of oral sex without a condom was reported by over 80 percent of respondents. This in one way shows inconsistency in the perceived risk by the respondents, and further creates the difficulties in developing the AIDS education material concerning this transmission route as mentioned earlier.

The respondents' attitudes to the use of the condom, which showed that 80 percent of respondents approved of condom use shows that the respondents are familiar with the need to use the condom to control the sexual spread of HIV. This most likely relates to the respondents' level of HIV knowledge, which in itself reflects on the success of the AIDS education campaigns aimed at the gay community.

One of the very important conclusions to be drawn from this study, is that, given the protective role the condom can play in the control of HIV, a high percentage of these respondents were relatively protected from HIV, as 54 percent of the reported condom use, and all of them had used it for the prevention of a sexually transmitted

disease, with 85 percent of them specifically mentioning AIDS. However, only one third of the condom users used it always, and many of the users could be persuaded by their partners not to use the condom.

The majority of users reported that the effect of the condom on their enjoyment of sex was either good or neutral. While the a small percentage (3%) of the users indicated that their condoms often broke during sexual intercourse.

Despite the reported infrequent breakage of condoms, about half of respondents used, both for foreplay and during sexual intercourse, lubricants known to damage condoms and lead to breakages. The study also found that saliva was a popular form of condom lubricant. This finding highlights a very big gap that exists in the knowledge about the proper use of condom lubricants both for foreplay and during sexual intercourse, and points to the need for having the proper advice to be given a long with the condoms.

The logistic regression analysis showed three variables that were independently associated with condom use: 1. a positive attitude towards the condom; 2. respondents who believed they were at risk of HIV due to their behaviour; and 3. respondent who had been homosexual for five or more

years. These findings are once again likely to be the effect of the education campaign. However the last variable could as well be part of the reported behaviours that were adopted in the early 1980s in response to general concerns about sexually transmitted diseases rather than as a consequence of the AIDS education.

It was once again evident from the reasons for not using the condom that were given by non condom users, that participating in oral sex was regarded as "safe sex". Indeed over half of those who did not use condoms, indicated that it was because of oral sex that they did not use condoms.

Although caution has been expressed about the safety of this sexual practice, an overall picture nonetheless emerges from this study concerning the popularity of unprotected oral sex. In this study, taken together the data concerning sexual behaviour changes show an over 40 percent increase in unprotected oral sex. In light of the available literature, this is not good news.

7.5 Recommendations for United Kingdom based studies.

1. The results of the present studies showed that the main sources of AIDS information were those of mass communication. It is clear from experience that this form of approach is mostly sporadic and this leads to what has been called the "Fireworks syndrome". Knowledge gained during this episodic output of information, quickly fades away like fireworks that fizzle out in the dark of the night. In order to bring about change in AIDS related behaviour, it would be better if: (a) Major AIDS education campaigns are sustained, with at most very short intervals between them, rather than being as sporadic as is the case at the moment. (b) As much as possible AIDS education, especially condom use, should be carried out on an individual basis as this helps to develop the individual's own sense of responsibility. To achieve this more easily, all health-care providers should have basic training in HIV prevention to enable them to pass on this information at every opportunity. (c) Where sexual behaviour change has taken place, continuing efforts are needed to sustain the new behaviour. This should be done using varied messages with the same theme and as many media as possible.

2. The United Kingdom could learn from the Thailand experience in attempting to make condoms much more acceptable, by associating them with health and attractiveness and demonstrating that condoms can be erotic and fun.

3. Changing the British people's understanding of the risks of HIV transmission should be a goal. There is still a need to inform the general public that HIV can be transmitted through heterosexual intercourse. It is essential to inform male homosexuals in particular that unprotected oral sex may lead to HIV transmission.

4. The study demonstrated that high risk behaviour continues among gay men. Therefore there is need to refocus AIDS education campaign on them.

5. Apart from the need for increased condom commercial marketing techniques, there is need to include "condom skills" training in the condom promotion campaigns. The "condom skills" should be; to teach people how to use condoms and the proper lubricants, how to talk with sexual partners about using condoms, and how to insist on their use. The methods used could include group discussion and role-playing to rehearse possible encounters.

6. With people at high risk, multiple strategies will probably work best. For example, more emphasis should be put on condom promotion at needle exchanges and drug projects, free condoms should be more widely available through health care providers who offer services to sexually active men women, particularly in genito-urinary medicine clinics. Also free condoms should be made available in gay bars and discos.

7. The concept of the street drop-in centre which has had some success with female prostitutes in Glasgow and elsewhere should be extended provide condoms, mainly during evenings, to other "at risk groups" such as male prostitutes.

8. The use of entertainment, such as songs and drama, should be used as a means of influencing behaviour.

9. These studies need to be followed by prospective, long term studies on larger scale for a more extensive and careful evaluation of AIDS education using any appropriate and feasible methods.

CHAPTER 8.

THE STUDIES COMPARED.

8.1 Results: Text.

The questionnaires were completed by 822 of the 900 Genito-urinary medicine (GUM) patients (91%), 931 of the 1000 Ugandan students (93%), 121 of the 130 (93%) Intravenous drug users and 256 of the 800 Gay men (32%) to whom it was offered.

The respondents' mean ages were: GUM patients, 26.2 years (SD 6.5); Uganda students 23.4 years (SD 2.5); the Intravenous drug users, 22.3 years (SD 3.1) and the gay men 28.1 (SD 8.0) years. On average, all the respondents were in their twenties with the gay men slightly older than the other groups.

The number of different sexual partners in the last 12 months reported by all respondents is shown in Table 1. This shows that the Gay men generally reported the highest number of sexual partners, with more than a half of them reporting more than five partners. There was a very big

statistical difference between the four groups (chi-square = 497.1 9df, $p < 0.001$). The biggest difference was between the Gay men and the Uganda students (chi-square = 347 3df, $p < 0.001$), while the difference between the GUM clinic respondents and the Uganda students was not statistically significant (chi-square = 4.2 3df).

In order to make the reported number of sexual partners during the previous 12 months in the four studies more comparable, male and female responses were analysed differently. The male respondents were included in the analysis shown in Table 2 and Figure 1. These show that the Gay respondents reported the highest number of partners, with more than 90 percent reporting more than one sexual partner and a third more than 10 sexual partners. Second were male the intravenous drug users with 72 percent reporting more than one sexual partner, compared with 69 percent of male GUM patients and about 63 percent of the male Ugandan students males. The biggest statistical difference was once again between the Gay men respondents and the Ugandan male students (chi-square = 239.7 3df, $p < 0.001$), while the difference between the GUM male patients and the intravenous drug users was not statistically significant.

Table 3 and Figure 2 show the number of sexual partners during the previous twelve months as reported by the

female respondents in the three groups. These show that about half of the GUM clinic females, two-thirds of female the intravenous drug users, and one-third of the Ugandan female students reported more than one sexual partner during the previous twelve months, with a quarter of the female intravenous drug users, about 4 percent of the GUM female

patients females and less than 2 percent of the Ugandan female students reporting more than five partners. The largest difference was between the female intravenous drug users and the Ugandan female students ($P < 0.001$), while the smallest difference was between the GUM female patients and the Ugandan female students ($p = 0.03$).

Knowledge.

This section of the questionnaire was not included in the gay men study.

Responses to questions about HIV transmission and its prevention are given in Table 4. Transmission of HIV was associated with heterosexual intercourse by almost 90 percent of all respondents and this had the smallest statistical difference of all the HIV transmission responses by the three groups ($\text{chi-square} = 12.6$ $p =$

0.002). The majority of the intravenous drug users correctly answered the other questions, although about 60 percent of them associated HIV transmission with non-penetrative sex. The Ugandan students seemed the least informed of the three groups, with over a third of them believing that HIV could be spread through petting. Abstinence from sex was seen by most of the GUM patients and the Ugandan students as a way of preventing HIV infection, whereas only 10 percent of the intravenous drug users believed so. About 90 percent of the GUM patients and the intravenous drug users but only 47 percent of the Uganda students believed that the condom was an effective method of HIV control.

About 90 percent of all respondents admitted to having received information about the condom during the previous two years (Table 5 and Figure 3). Slightly more GUM patients (96%) than Ugandan students (86%) but more than the intravenous drug users (78%), recalled seeing or hearing about the condom in the previous two years (chi-square = 74.6 2df, $p < 0.001$). Though about half of all respondents indicated that they had received the information from newspapers, there was no significant difference between the three groups. Television was a reasonably common source of information about the condom. There was a significant difference between the GUM patients over 90 percent of whom cited the television, and

the Ugandan students of whom less than a half mentioned television as source of information (chi-square = 401.3, $p < 0.001$). However, there was no significant difference between the Ugandan students and the intravenous drug users, 56 percent, of whom had received the information from the television. On the whole magazines provided information about the condom to about half of all respondents. There was a significant difference between the Ugandan students and the intravenous drug users (chi-square = 35.2, $p < 0.001$), while there was no significant difference between the Ugandan students and the GUM patients. Whereas radio provided information to only about 45 percent of all respondents, it was a source of information to more than 70 percent of the Intravenous drug users. The most significant difference in reporting the radio as the source of information about the condom was noted between the GUM patients and the Ugandan students (chi-square = 87.7 $p < 0.001$), while the smallest difference was between the Ugandan students and the intravenous drug users (chi-square 12.3, $p = 0.002$).

Table 6 and Figure 4 show the context of information about the condom in the previous two years. Just less than 50 percent of all the respondents could recall that the condom was mentioned in connection with AIDS. While around 17 percent of the Ugandan students spontaneously volunteered that the publicity had referred to the

condom's unreliability, none of the other two groups did so. On the other hand, about a quarter of the intravenous drug users and 18 percent of the GUM patients said that the condom was mentioned in connection with the control of sexually transmitted diseases, but none of the Ugandan students said this. The biggest significant differences were between the Uganda students and the other two groups.

When all respondents were asked to give a reason in favour and a reason against using the condom, their spontaneous responses were as shown in Table 7 and Figures 5 and 6. More than two thirds of the intravenous drug users, about half the GUM patients and one third of the Ugandan students replied that the condom could protect against AIDS. On the other hand, about 40 percent of the Ugandan students, but only 5 percent of the GUM respondents and 3 percent of the intravenous drug users believed that the condom is not safe enough. The reason given by most of those who thought it was not safe enough was that it could burst too easily. About one-third of the Ugandan students thought that the condom encouraged promiscuity, whereas none of the respondents in the other two groups mentioned this.

Condom use.

Table 8 and Figure 7 show the differences in the respondents attitudes to the condom. Just over half of all the respondents approved of the condom. Only about 27 percent of the Ugandan students, over two thirds of the intravenous drug users and 80 percent of both gay men and GUM patients approved of the condom. While there were large differences between the four groups (chi-square = 581.6 3df, $p < 0.001$) in the attitudes to the condom, the biggest difference was between the respondents at the GUM clinic and the Ugandan students (chi-square = 493.8 1df, $p < 0.001$). There was no significant difference between the GUM patients and the gay men. A quarter of the Ugandan students indicated that they disapproved of the use of the condom on religious grounds, compared with only 2.4 percent of the GUM patients and none of the intravenous drug users or the gay men.

Table 9 and Figure 8 show the reported condom use by the respondents in all the four groups. These show that about one third of all the respondents indicated that they had used the condom. This included about 54 percent of gay men, 38 percent of intravenous drug users, 30 percent of Ugandan students, and 27 percent of GUM clinic respondents.

The reasons for using the condom as given by condom users in the different groups are shown in Table 10 and Figure 9, and were as follows. Prevention of AIDS: almost 85 percent gay men, 57 percent intravenous drug users, 45 percent Ugandan students, and 10 percent GUM clinic respondents; contraception: about 44 percent Ugandan students, 30 percent GUM clinic respondents, 28 percent intravenous drug users, and none of the gay men, even though some were bisexual; prevention of other sexually transmitted diseases, nearly 59 percent GUM respondents, 15 percent of both the gay men and intravenous drug users, and 10 percent of the Ugandan students (chi-square = 278.9, 9df, $p < 0.001$). The most highly significant difference was between the gay men and the GUM respondents (chi-square = 191.6, $p < 0.001$), while there was no significant difference between the Ugandan students and the intravenous drug users.

Table 11 and Figure 10 show the reported frequency of condom use. About one third of all condom users reported using the condom always. The intravenous drug users were the most likely not to always use the condom with only about 17 percent of them indicating that they always used the condom, compared with around 30 percent of the other groups. The difference was slightly statistically significant (chi-square = 8.1, 3df, $p = 0.04$).

Table 12 and Figure 11 show responses when condom users were asked if they thought they could be persuaded by their partners not to use the condom. The Ugandan students were the least likely to be persuaded by their sexual partners. About 70 percent of the intravenous drug users and the gay men, and about 40 percent of the GUM respondents said that they would be persuaded by their sexual partners not to use the condom. (chi-square = 82.8 3df, p <0.001).

The questions regarding respondents HIV risk behaviour and the effect of the HIV/AIDS epidemic on the sexual lifestyles of the respondents were not included in the GUM study questionnaire. For the three studies, Table 13 shows how much they considered themselves to be at risk of HIV. Less than 20 percent of the respondents thought they were at risk of catching HIV due to their sexual behaviour, ranging from 17 percent of the Ugandan students to 29 percent of the intravenous drug users.

Table 14 shows the reasons why they thought they were at risk. About three-quarters of the Ugandan students, half the gay men and about a third of the intravenous drug users said that as long as they still continued having sexual intercourse, they could never totally trust their partners (chi-square = 37.0, 2df, p<0.001). Over 70 percent of the intravenous drug users and about 20 percent

of the Ugandan students, said that they were at risk because they had had more than one sexual partner (chi-square = 47.3 2df, $p < 0.001$). Surprisingly none of the gay men gave this as a reason. Instead all the remaining 50 percent of the gay men said that they were at risk because they either did not use condoms at all, or did not use them all the time. None of the other groups gave non use of the condom as putting them at risk.

In response to the question regarding the effect of the HIV/AIDS epidemic on the respondents' sexual lifestyles, about 61 percent of the respondents indicated that their sexual lifestyle had been affected in one way or the other. This included about 77 percent of the gay men, 59 percent of the Ugandan students, and about 55 percent of the intravenous drug users. (Table 15). The highest statistical difference was between the gay men and the intravenous drug users, while the lowest was between the intravenous drug users and the Ugandan students.

Table 16 shows the reported change in behaviour due to HIV/AIDS epidemic. Almost 50 percent of the Ugandan students, about 60 percent of intravenous drug users, and over one third of gay men said that they had reduced the number of their sexual partners (chi-square = 57.8 2df, $p < 0.001$); about 44 percent of the Ugandan students, nearly 40 percent of the intravenous drug users and 12 percent of

the gay men had started using the condom (chi-square = 63.9 2df, $p < 0.001$). Nine percent of the Ugandan students but none of the other groups said they had stopped sex altogether. While 38 percent of the gay men said that they now only had oral sex, and 31 percent said that they were more selective about whom they had sex with, these reasons were not given by any other study group.

Of the variables which emerged as being independently associated with condom use, and appeared to be significantly associated with its use after they had been used to construct logistic regression models for each study, a positive attitude to the condom appeared in all four, and having received information about the condom during the past two years appeared in all but the gay men study. Figure 12 shows the differences in the odds ratios associated with the above two variables.

The reasons for not using the condom given by non condom users are shown in Table 17. Loss of sensation was the commonest reason given by all four groups. Another popular reason given by all the four groups was its inconvenience. The condom's being unsafe was mentioned only by the Ugandan students, while use of another form of contraceptive was cited by the GUM respondents and intravenous drug users. Partners' refusal was mentioned by some respondents in three of the four groups as a reason

for not using the condom. Having oral sex was a major reason given by the gay men for not using the condom. Other reasons given by some respondents included the condom being uncomfortable, messy or dirty. About 15 percent of the GUM respondents had no reason for not using the condom.

8.2 Tables and Figures.

Table 1.

The reported number of different sexual partners
in the last 12 months.

	GAY MEN	G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS	Total
Number of Patners					
O-1	25	311	36	416	435
%	9.8	40.0	30	44.7	29.9
2-5	77	378	55	417	675
%	30.1	48.6	46	44.8	46.4
6-10	68	72	23	76	220
%	26.6	9.3	19	8.1	15.1
Over 10	86	17	7	22	125
%	33.6	2.2	6	2.4	8.6
Total	256	778	121	931	2086
%	100	100	100	100	100.0

Chisquare = 497.1 p less than 0.001

		G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS
GAY MEN	2 X p	302.5 0.001	53.5 0.001	347.6 0.001
G.U.M CLINIC	2 X p		17.6 0.003	4.2 NS
I.V DRUG USERS	2 X p			23.5 0.001

Table 2.

The the number of sexual partners during the previous twelve months as reported by the male respondents in the four groups.

	GAY MEN	G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS	Total
Number of Patners					
0-1	25	139	26	245	435
%	9.8	31.2	28	37.1	29.9
2-5	77	231	44	323	675
%	30.1	51.9	47	48.9	46.4
6-10	68	60	19	73	220
%	26.6	13.5	20	11.0	15.1
Over 10	86	15	4	20	125
%	33.6	3.4	5	3.0	8.6
Total	256	445	93	661	1455
%	100	100	100	100	100.0

Chisquare = 323.1 p less than 0.001

		G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS
GAY MEN	² X p	167.9 0.001	45.0 0.001	239.7 0.001
G.U.M CLINIC	² X p		3.3 NS	4.5 NS
I.V DRUG USERS	² X p			8.2 NS

Figure 1.

The number of sexual partners during the previous 12 months as reported by the male respondents in the four groups.

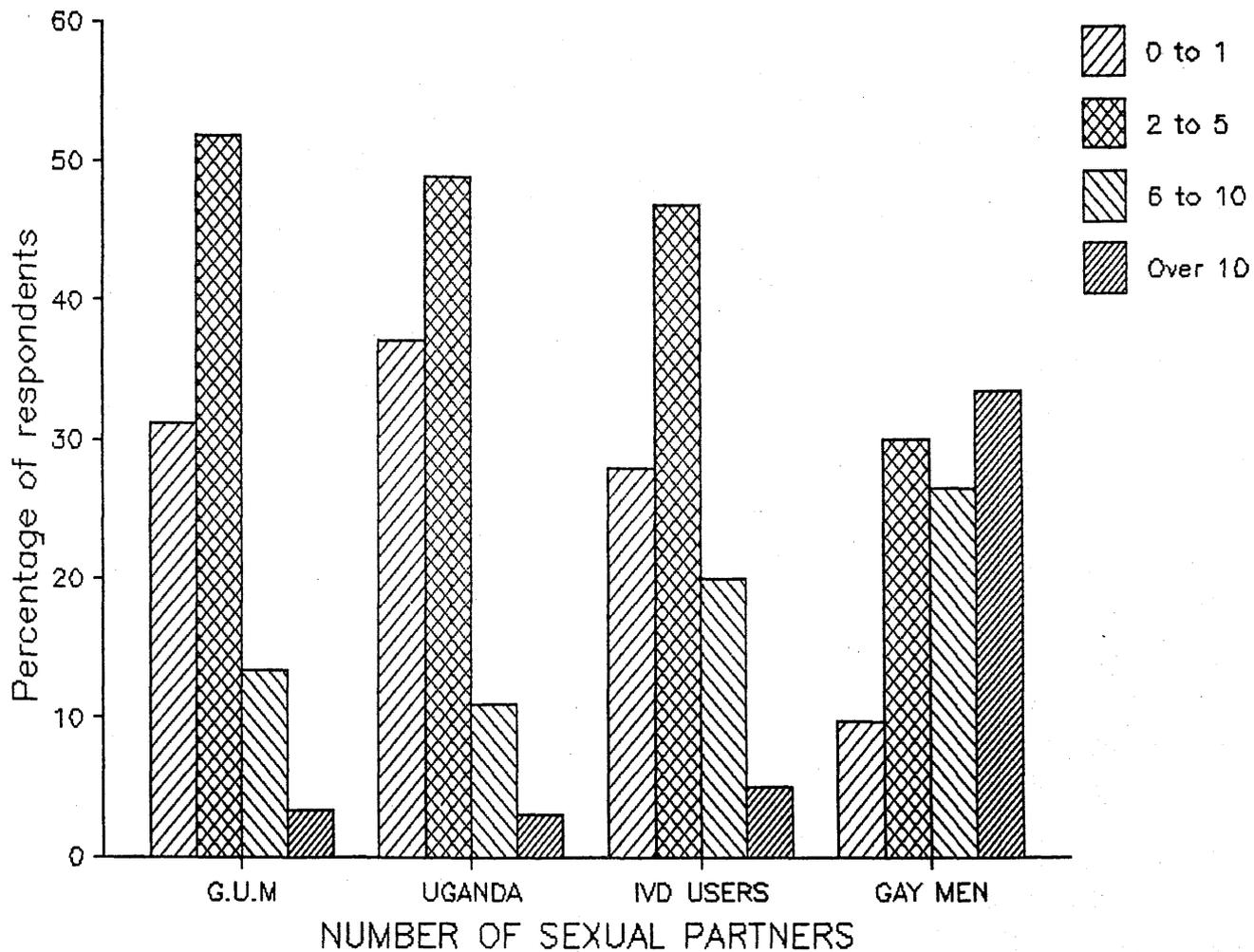


Table 3.

The the number of sexual partners during the previous twelve months as reported by the female respondents in the three groups.

	G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS	Total
Number of Patners				
O-1	172	10	171	353
%	51.7	36	63.4	55.9
2-5	147	11	94	252
%	44.1	39	34.8	39.9
Over 5	14	7	5	26
%	4.2	25	1.8	4.2
Total	333	28	270	631
%	100	100	100	100.0

Chisquare = 42.0 (4df) p less than 0.001

		I.V DRUG USERS	UGANDAN UN. STUDENTS
G.U.M CLINIC	2 X p	20.6 0.001	9.4 0.03
I.V DRUG USERS	2 X p		37.1 0.001

Figure 2.

The number of sexual partners during the previous 12 months as reported by the females in the three groups.

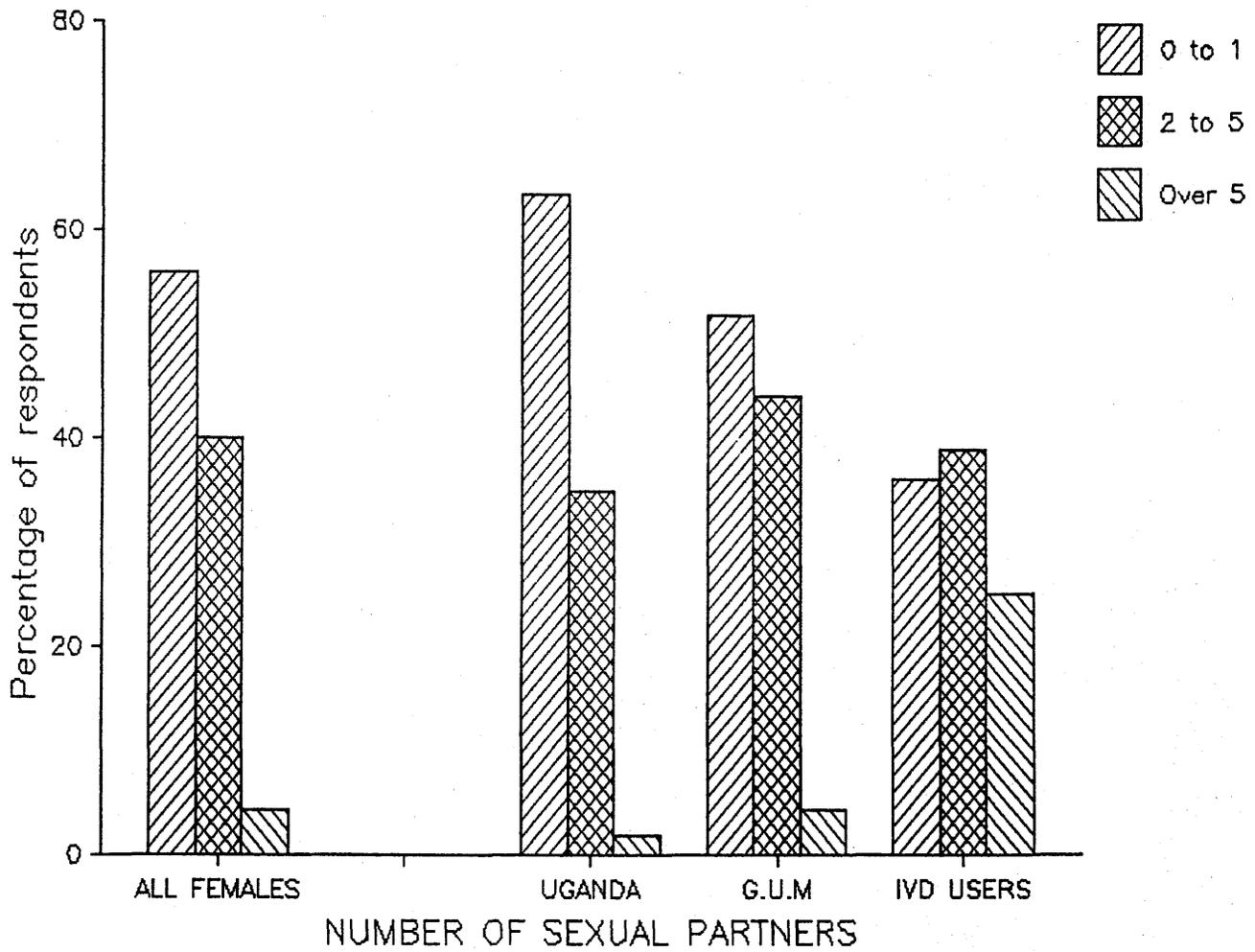


Table 4.

Responses to questions about HIV transmission and its prevention.

	% GUM (n=778)	% UGANDA (n= 931)	% IVDU (n= 121)	χ^2	p value
<u>HIV can be spread by:</u>					
Male homosexual sexual intercourse	92	75	98	120.0	0.001
Heterosexual sexual intercourse	87	91	96	12.6	0.002
Oral sex	47	50	86	64.3	0.001
Female homosexual intercourse	28	55	17	126.0	0.001
Sex without full penetration	26	46	62	101.7	0.001
Dry kissing	2	38	4	357.8	0.001
Petting	2	35	6	313.1	0.001
<u>The spread of AIDS can be prevented by</u>					
The condom	91	47	90	407.8	0.001
Abstinence from sex	64	87	10	360.9	0.001
IUCD (coil)	4	4	3	0.1	NS
The pill (oral contraceptive)	1	2	1	2.3	NS

Table 5.

The respondents who had received information about the condom during the previous two years and the sources of that information.

	% GUM (n=778)	% UGANDA (n= 931)	% IVDU (n= 121)	χ^2	p value
Had received information.	96.3	85.5	78	74.6	0.001
<u>Source of information:</u>					
from Newspapers	56.2	53.0	49	2.8	NS
from the TV.	91.3	45.2	56	402.5	0.001
from magazines.	55.5	60.6	32	35.7	0.001
from the Radio.	30.8	53.4	70	120.6	0.001

Figure 3.

The respondents who had received information about the condom during the previous two years and the sources of that information.

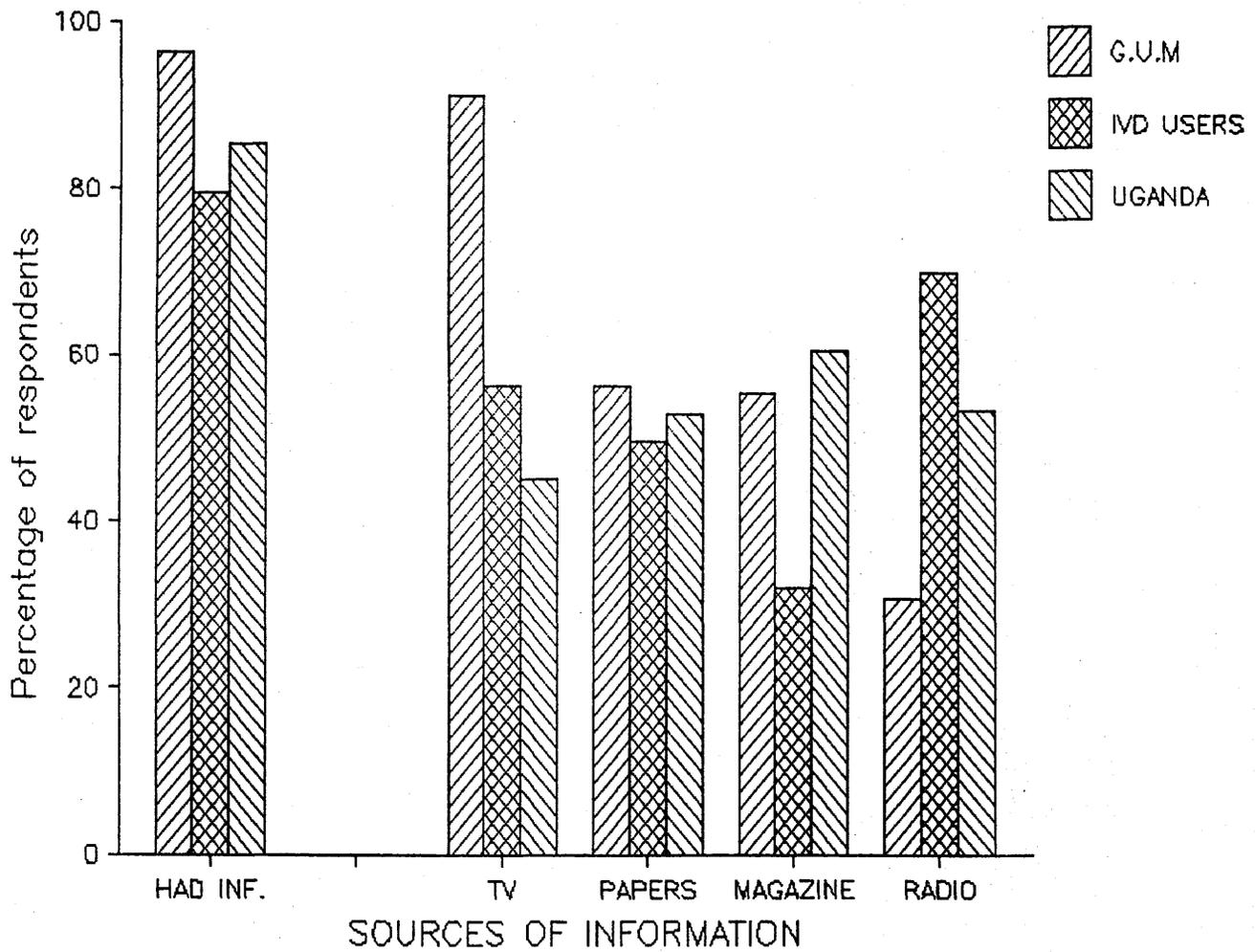


Table 6.

The context of information about the condom in the previous two years.

CONTEXT	G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS	Total
AIDS	466	109	516	1091
%	44.9	35	54.7	47.5
General information	311	102	218	631
%	29.9	32	23.1	27.5
Other STDs	190	77	0	267
%	18.3	24	0.0	11.6
Contraception	72	27	50	149
%	6.9	9	5.3	6.5
Condom's unreliability	0	0	160	160
%	0.0	0	16.9	6.9
Total	1039	315	944	2298
%	100	100	100	100.0

Chi = 462.4 p less than 0.001

* Some respondents gave more than one context that is why the total numbers of respondents add to more than those in each separate study.

		I.V DRUG USERS	UGANDAN UN. STUDENTS
G.U.M CLINIC	2 X p	12.0 0.02	369.2 ½0.001
I.V DRUG USERS	2 X p		315.4 ½0.001

Figure 4.

The context of the information about the condom in the previous two years.

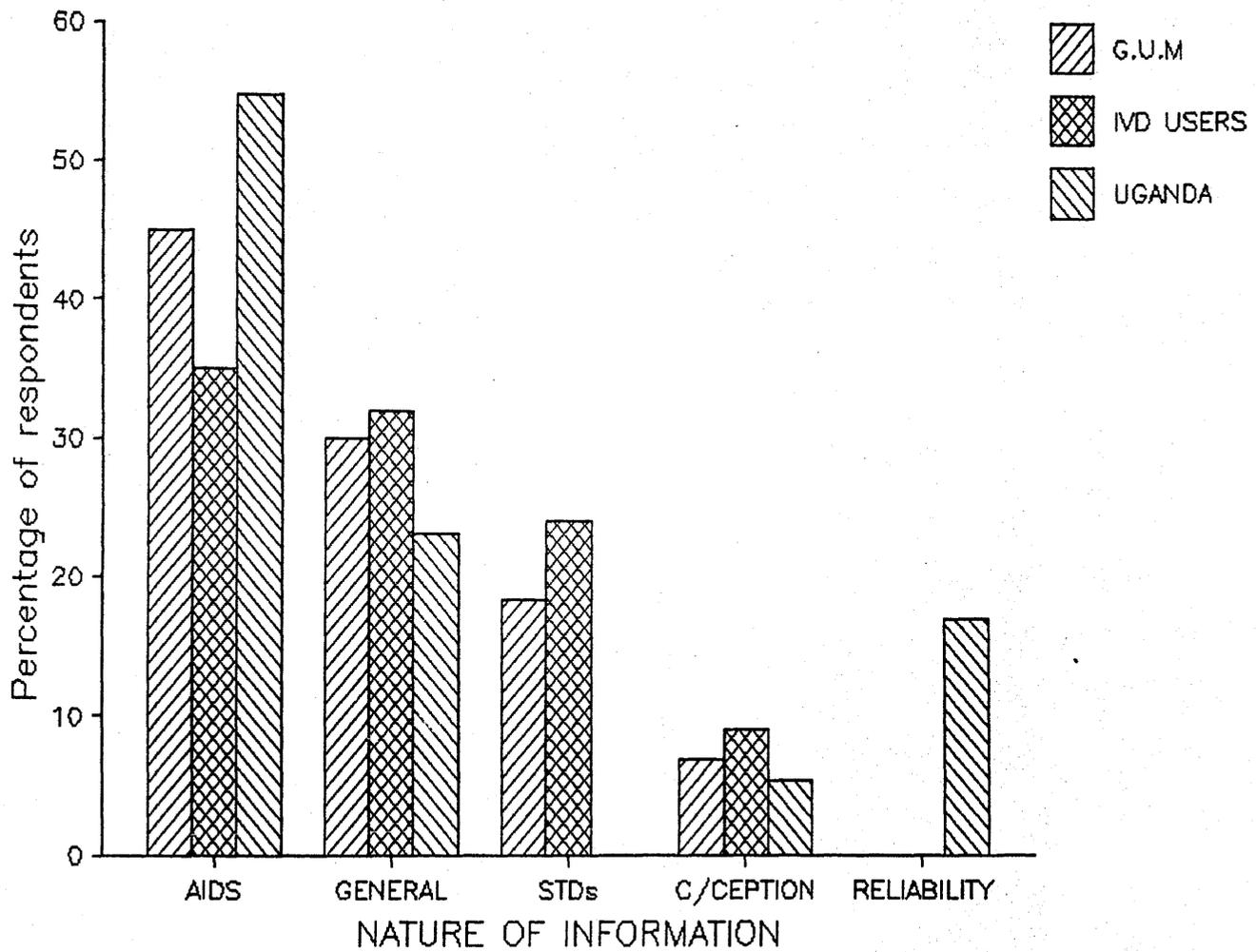


Table 7.

The respondents' stated reasons in favour and against the condom.

	% GUM (n= 778)	% IVDU (n=121)	% UGANDA (n= 931)	χ^2	p value
<u>Reasons in favour</u>					
Control of HIV	53	67	29	128	0.001
Control of STDs	25	27	17	20	0.001
Contraception	19	4	41	135	0.001
No reason	3	2	13	62	0.001
<u>Reasons against</u>					
No reason	39	9	0	458	0.001
Reduced sensitivity	23	57	22	74	0.001
Inconvenient	20	10	0	207	0.001
Uncomfortable/ unnatural	13	21	8	25	0.001
Unsafe	5	3	39	29	0.001
Encourage promiscuity	0	0	31	326	0.001

Figure 5.

Respondents' stated reasons in favour of the condom.

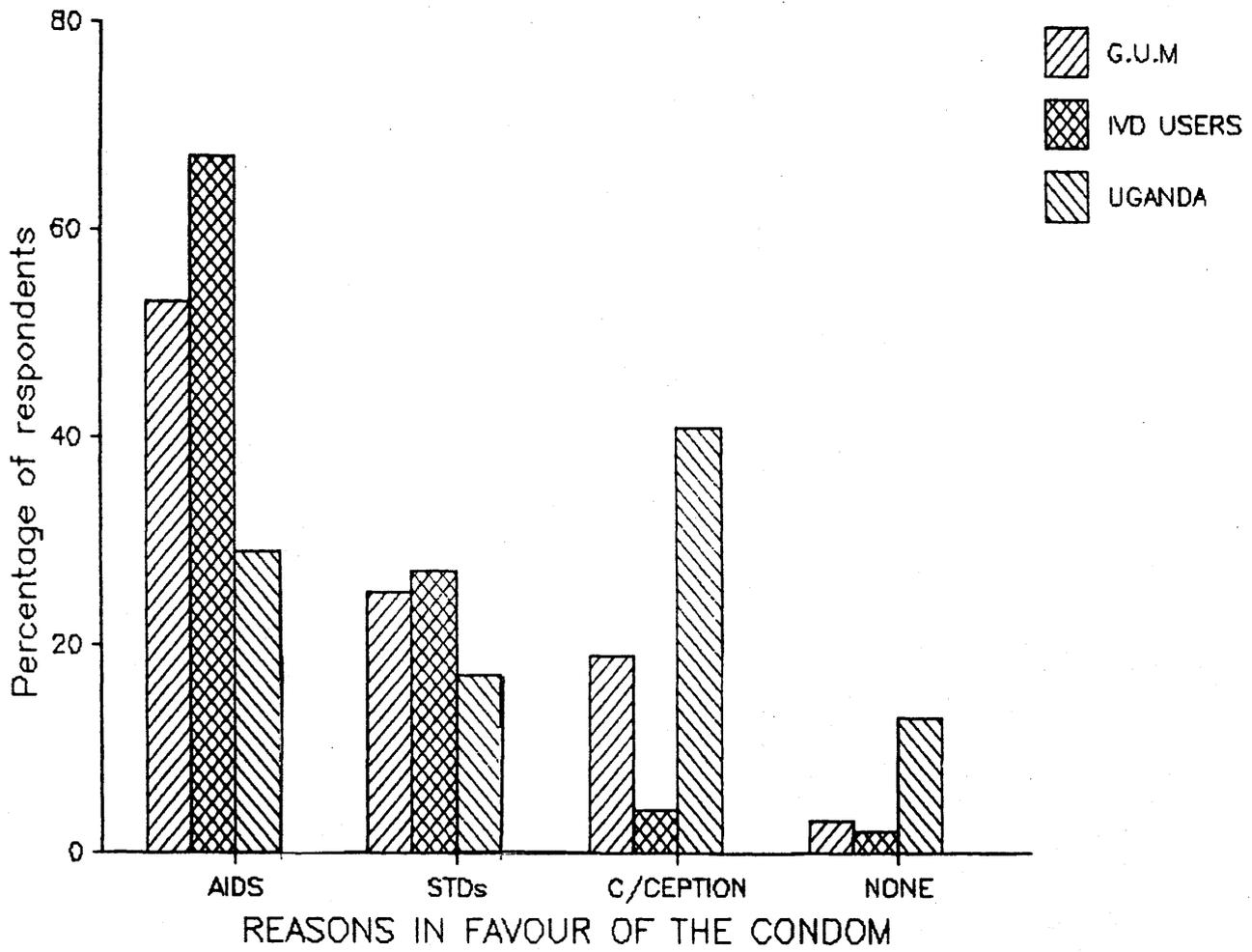


Figure 6.

The respondents' stated reasons against the condom.

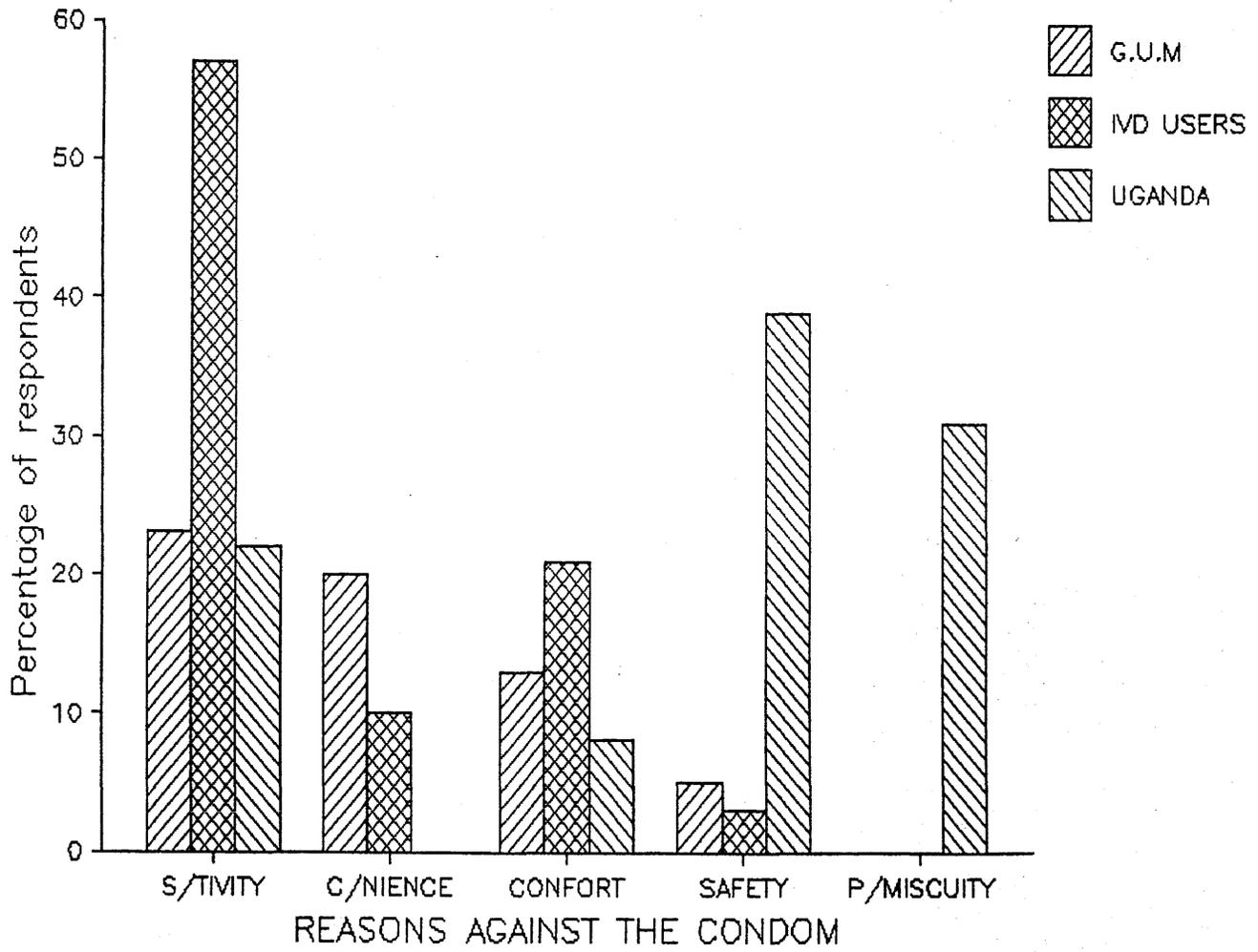


Table 8

The attitudes to the condom among the four groups.

	G.U.M CLINIC	GAY MEN	I.V DRUG USERS	UGANDAN UN. STUDENTS	Total
Attitude to the condom.					
Approve	626	206	78	246	1156
%	80.5	80.5	65	26.5	54.5
Disapprove	152	50	43	683	928
%	19.5	19.5	35	73.5	44.5
Total	778	256	121	929	2084
%	100	100	100	100	100.0

Chisquare = 581.6 p less than 0.001

Number of missing observations = 2 from the Uganda study.

		G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS
GAY MEN	X p	0.00 NS	11.3 0.005	247.9 0.001
G.U.M CLINIC	X p		15.8 0.001	493.8 0.001
I.V DRUG USERS	X p			73.9 0.001

Figure 7.

The respondents' attitude to the condom among the four groups.

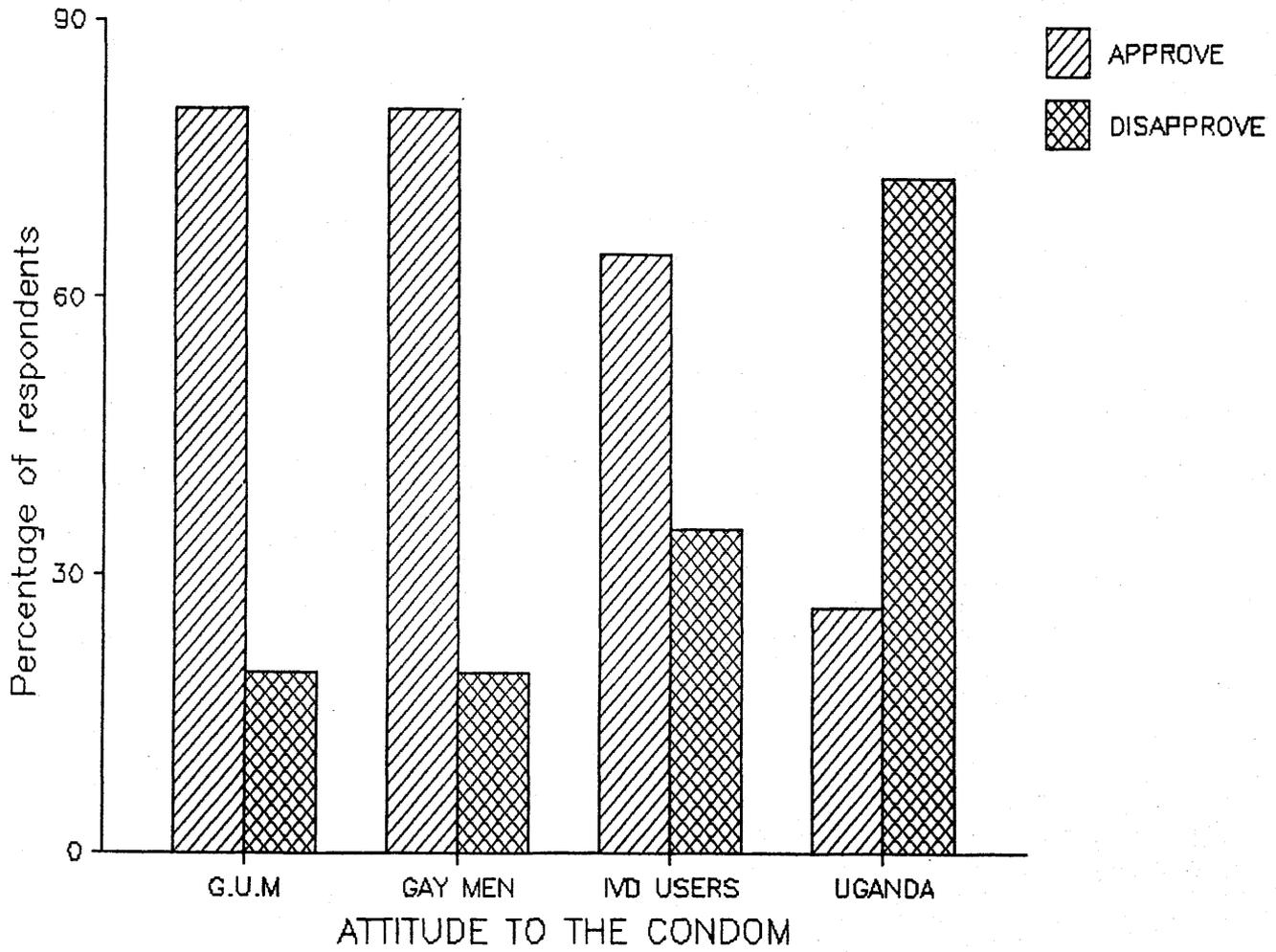


Table 9.

Reported condom use among the four groups.

	GAY MEN	G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS	Total
Condom use:					
Users	137	210	46	280	673
%	53.5	27.0	38	30.1	32.3
Non users	119	568	75	651	1413
%	46.5	73.0	62	69.9	67.7
Total	256	778	121	931	2086
%	100	100	100	100	100.0

Chisquare = 66.7 p less than 0.001

		G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS
GAY MEN	2 X p	60.8 0.001	6.2 NS	48.4 0.001
G.U.M CLINIC	2 X p		6.3 NS	2.0 NS
I.V DRUG USERS	2 X p			3.2 NS

Figure 8.

Reported condom use among the four groups.

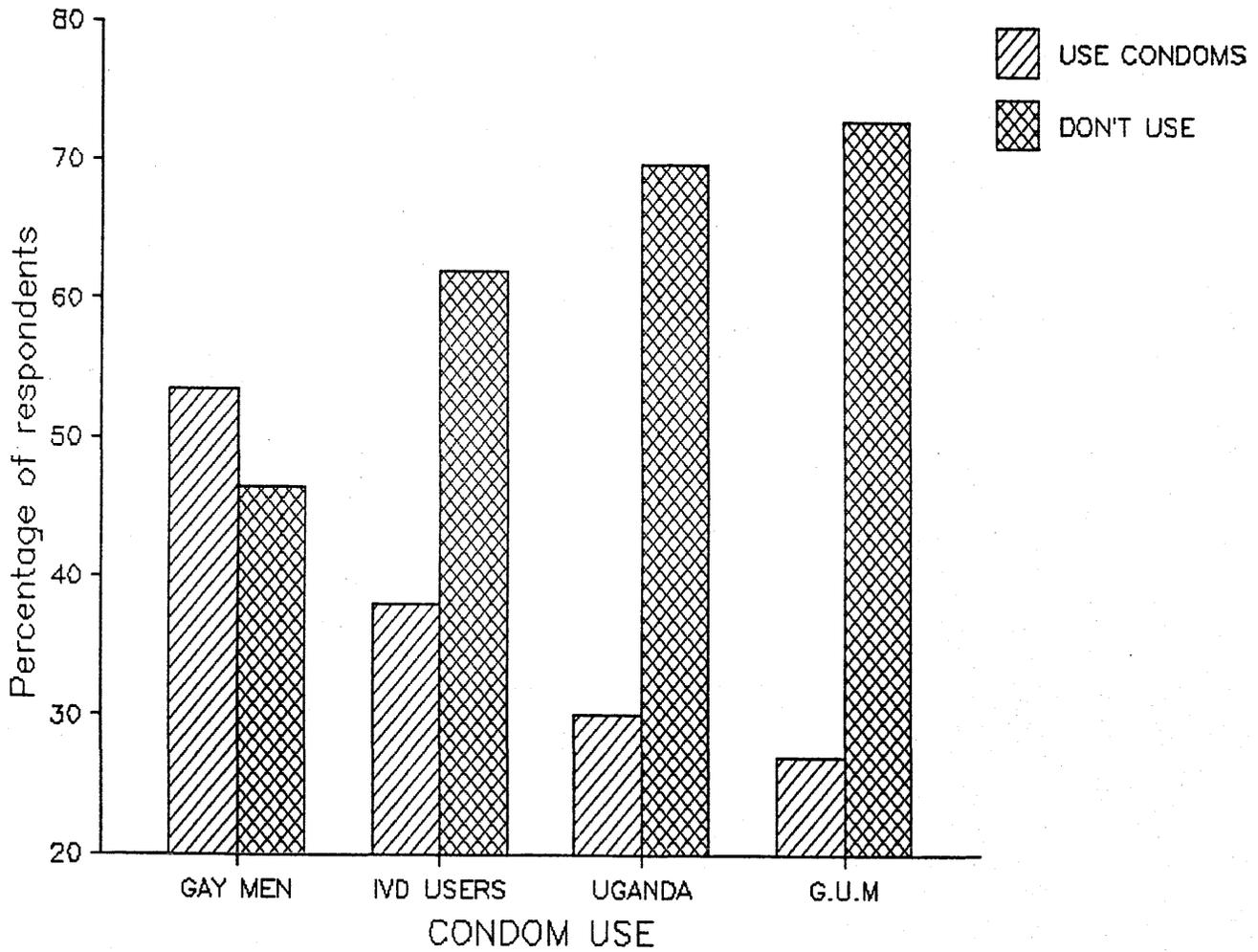


Table 10.

The reasons for using the condom as stated by the condom users.

Reason for condom use.	GAY MEN	G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS	Total
AIDS	116	23	26	127	292
%	84.7	11.0	57	45.3	43.4
Other STDs	21	123	7	31	182
%	15.3	58.5	15	11.1	27.0
Contraception	0.0	64	13	122	199
%	0.0	30.5	28	43.6	29.6
Total	137	210	46	280	673
%	100	100	100	100	100.0

Chisquare = 278.9, p less than 0.001

		G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS
GAY MEN	X ² p	191.6 0.001	42.2 0.001	85.4 0.001
G.U.M CLINIC	X ² p		55.0 0.001	138.0 0.001
I.V DRUG USERS	X ² p			3.9 NS

Figure 9.

The reasons for using the condom as stated by condom users in the four groups.

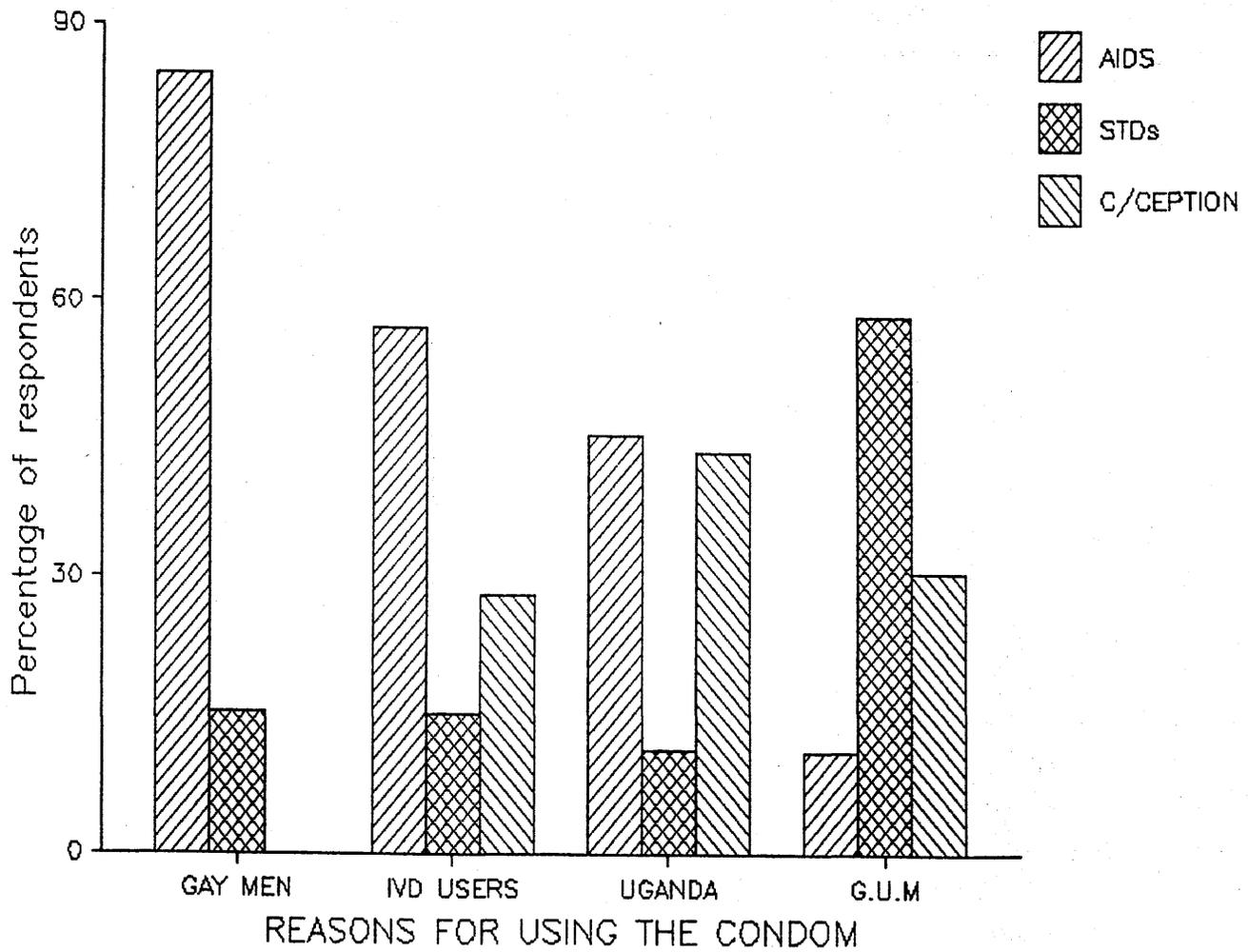


Table 11.

Respondents' reported frequency of condom use.

frequency use:	GAY MEN	G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS	Total
Always	47	79	8	85	219
%	34.6	37.6	17	30.3	32.6
Not always	89	131	38	195	453
%	65.4	62.4	83	69.7	67.4
Total	136	210	46	280	672
%	100	100	100	100	100.0

Missing observation = 1 for gay men.

Chisquare = 8.1, p = 0.04

		G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS
GAY MEN	χ^2 p	0.3 NS	4.8 NS	0.7 NS
G.U.M CLINIC	χ^2 p		6.9 0.05	2.8 NS
I.V DRUG USERS	χ^2 p			3.3 NS

Figure 10.

Respondents' reported frequency of condom use in the four groups.

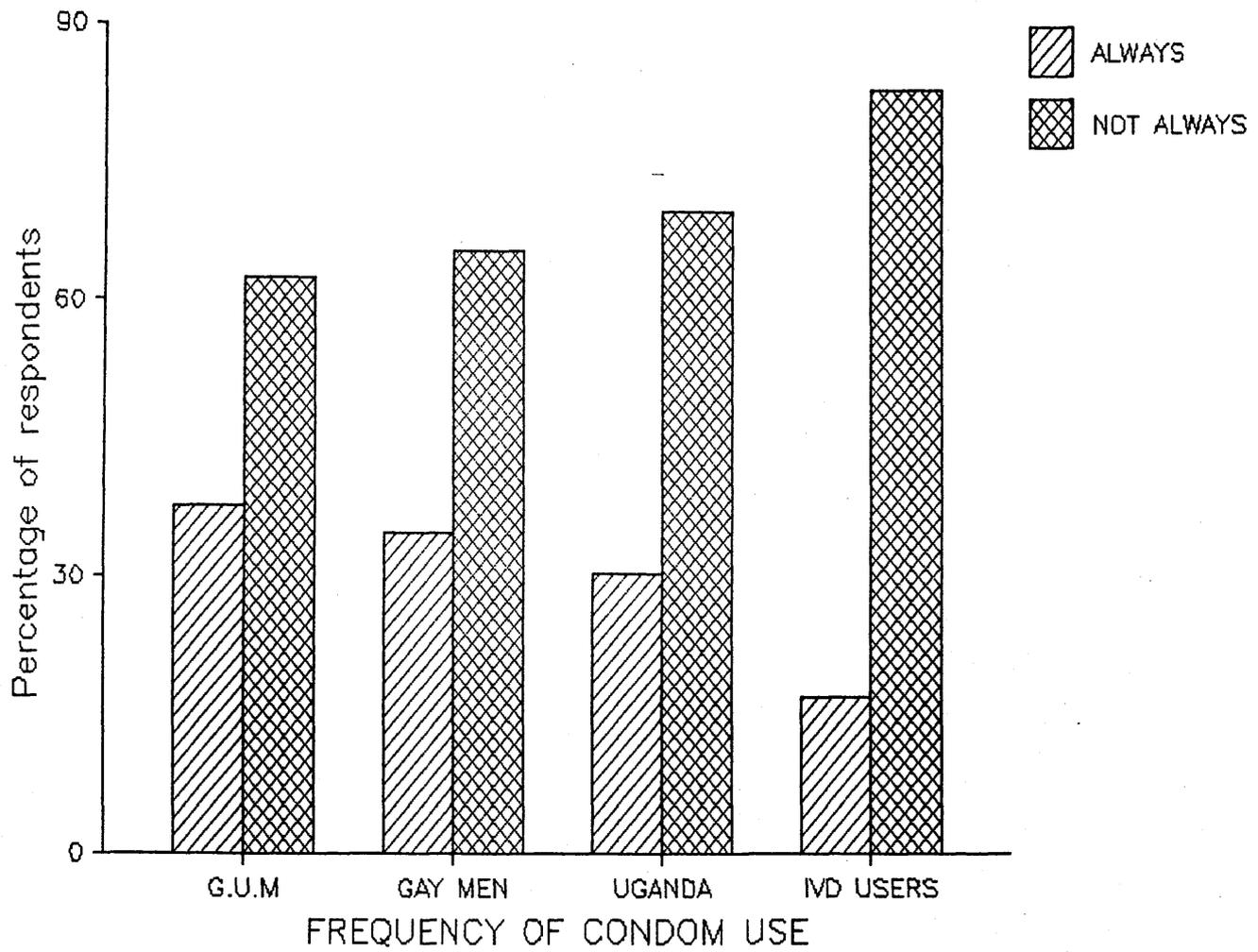


Table 12

The condom users who felt they could be persuaded by their partners not to use the condom.

	GAY MEN	G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS	Total
Condom users.					
Would be persuaded	96	88	32	76	291
%	70.1	41.9	70	27.1	43.3
Would not be Persuaded	41	122	14	204	381
%	29.9	58.1	30	72.9	56.7
Total	137	210	46	280	673
%	100	100	100	100	100.0

Chisquare = 82.8, p less than 0.001

		G.U.M CLINIC	I.V DRUG USERS	UGANDAN UN. STUDENTS
GAY MEN	χ^2 p	26.4 0.001	0.0 NS	70.0 0.001
G.U.M CLINIC	χ^2 p		11.6 0.004	11.7 0.004
I.V DRUG USERS	χ^2 p			32.1 0.001

Figure 11.

The condom users who felt they could be persuaded by their partners not to use the condom.

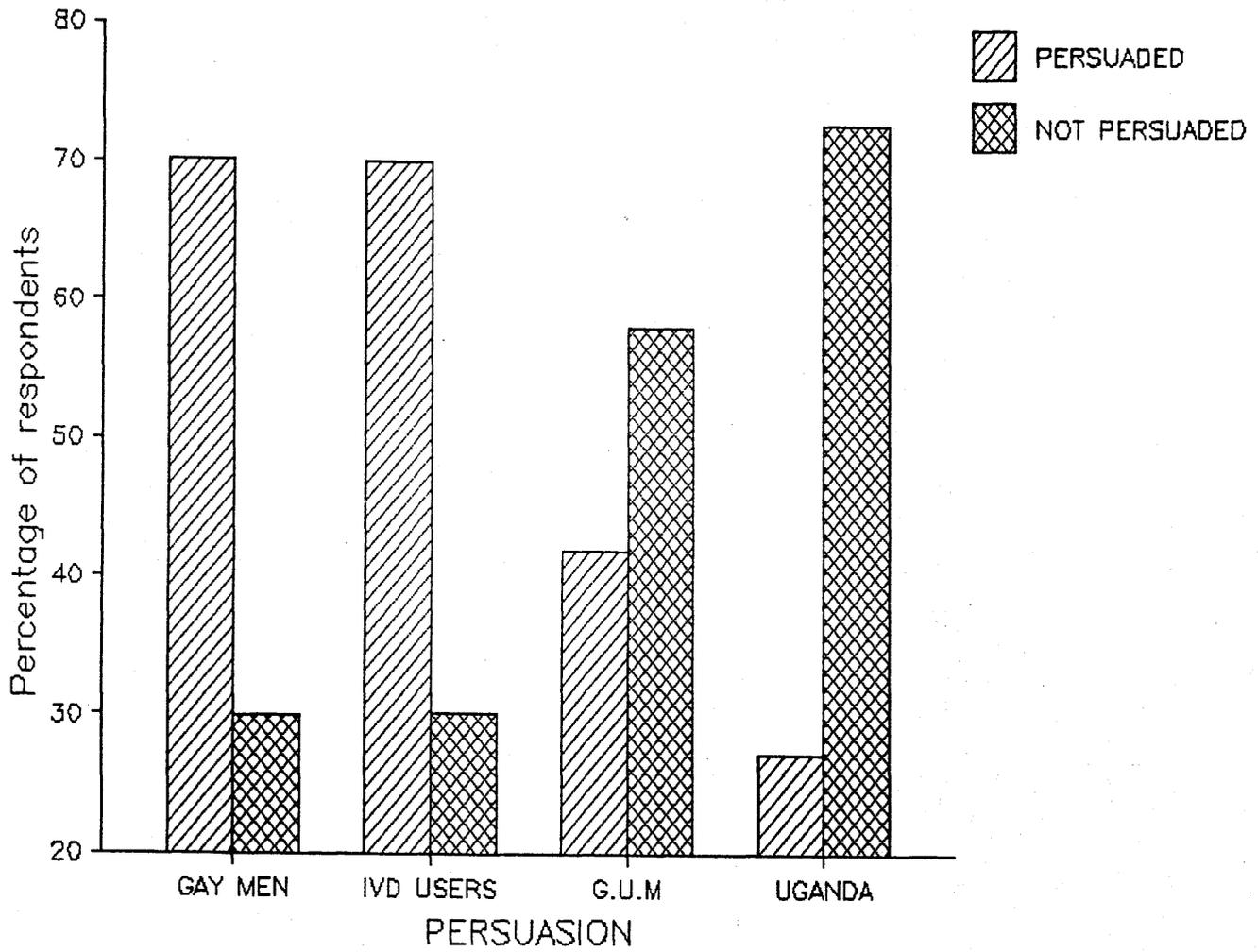


Table 13.

Respondents' perceived HIV risky behaviour.

	GAY MEN	I.V DRUG USERS	UGANDAN UN. STUDENTS	Total
Thought was at risk of HIV %	58 22.7	35 29	157 16.9	250 19.1
Thought was not at risk of HIV %	198 77.3	86 71	774 83.1	1058 80.9
Total %	256 100	121 100	931 100	1308 100.0

Chisquare = 12.7 (2df), p = 0.002.

		I.V DRUG USERS	UGANDAN UN. STUDENTS
GAY MEN	X p	1.7 NS	4.5 NS
I.V DRUG USERS	X p		10.4 0.004

Table 14.

Stated reasons why respondents thought their sexual behaviour put them at risk for HIV, given by those who thought they were at risk.

	% GAY MEN (n= 58)	% IVDU (n=35)	% UGANDA (n= 157)	χ^2	p value
<u>Stated reasons</u>					
Don't trust sexual partners	50	29	78	112.1	0.001
Still had multiple partners	0	71	22	101.0	0.001
Do not use condom	50	0	0	108.6	0.001

Table 15.

Reported effect of HIV/AIDS epidemic on the respondents' sexual lifestyles.

	GAY MEN	I.V DRUG USERS	UGANDAN UN. STUDENTS	Total
Lifestyle was affected	197	54	546	797
%	76.9	45	58.6	60.9
Lifestyle was not affected	59	67	385	511
%	23.1	55	41.4	39.1
Total	256	121	931	1308
%	100	100	100	100.0

Chisquare = 43.2 (2df), p less than 0.001.

		I.V DRUG USERS	UGANDAN UN. STUDENTS
GAY MEN	X p	38.6 0.001	28.7 0.001
I.V DRUG USERS	X p		8.6 0.01

Table 16.

Stated ways in which respondents' sex lifestyle had been affected, given by those whose lifestyle had been affected.

<u>Reason</u>	% GAY MEN (n=197)	% IVDU (n=54)	% UGANDA (n= 546)	χ^2	p value
Reduced number of sexual partners	19	61	47	57.8	0.001
Started using the condom	12	39	44	63.9	0.001
Abstaining from sex	0	0	9	24.0	0.001
More selective of partners	31	0	0	* 240.0	0.001
Only have oral sex	38	0	0		

* In the calculation of the chisquare for the last two reasons, both were combined together, since the expected values were too small and would have therefore made the test invalid.

Figure 12.

The Odds Ratios of the variables associated with condom use in the four groups.

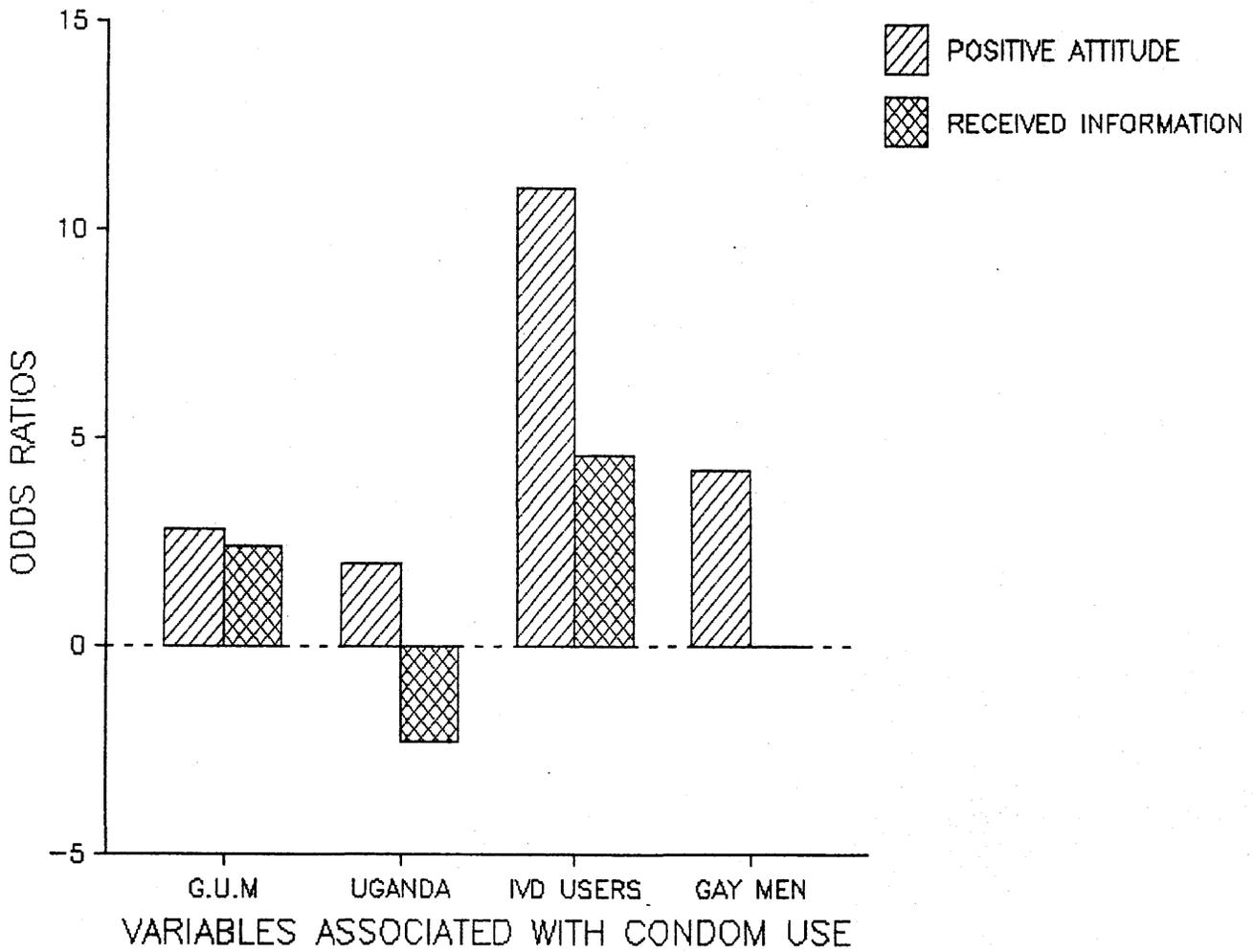


Table 17.

The reasons for not using the condom given by
non condom users

Reason	% GAY	% GUM	% IVDU	% UGANDA	χ^2	p value
	(n=119)	(n=568)	(n=75)	(n=604)		
Use of another form of contraception	0	38	21	0	325.5	0.001
No reason/don't know	0	15	0	0	127.3	0.001
It reduces sensation	22	13	40	24	43.0	0.001
No need (I have one partner)	0	15	8	1	88.6	0.001
Partner does not allow	7	11	0	16	20.9	0.001
It is uncomfortable	0	4	11	0	@ 48.7	0.001
It is inconvenient	27	4	20	5	104.0	0.001
It is unsafe	0	0	0	54	542.4	0.001
Only have oral sex	44	0	0	0	@ 566.5	0.001

Missing observations = 47 in Uganda group. These were not sexually active.

@ Means not a valid chisquare value.

In order to reduce the number of stated reasons, some reasons have been combined together as one reason.

8.3 Discussion.

It is highly appropriate for comparisons to be made between the four studies of populations of people who are potentially at increased risk of HIV infection. Such comparisons may help to assess the impact of the various AIDS education programmes which have so far been available to the different population groups. They may also indicate whether or not the same approach to education and other preventive measures should be taken with each group.

However, they may provide a complementary analysis to large prospective studies which are generally seen as being the source of definitive evidence regarding the effects of population interventions, but which are expensive and time consuming to achieve.

No other published work has attempted to compare different population groups similar to those in this study, in relation to HIV. As a result it is not possible directly to compare this study with other previous relatively similar studies, though an attempt will be made to make indirect inferences.

The number of respondents in the four studies ranged from 931 in the Uganda study to 121 in the intravenous drug users study, while the differences in the response rates

was over 90 percent in three studies but 32 percent in the gay men study. Consequently, the representativeness of the gay male study, and the drug users study which had only 121 respondents is likely to be less than that of the other two studies.

In comparison with other studies among gay men [**Jones et al. 1987, Carne et al. 1987**], those in this study report fewer numbers of sexual partners. This may reflect changes in sexual behaviour. Nevertheless, with over one third reporting over 10 sexual partners in the previous year, compared with 6 percent of intravenous drug users, and about 2 percent of the GUM and the Ugandan respondents, it is clear that as regards sexual partners, the sexual behaviour of gay men in this sample is more conducive to the spread of HIV than that of the other groups. The same pattern was observed when female respondents were excluded from the other groups.

With the female respondents in the three different studies, perhaps as expected, the biggest proportion of those who reported multiple sexual partners was in the intravenous drug users study. This is consistent with the observations that some female intravenous drug users finance their drug habit by prostitution [**USCDC 1987, Hooykaas et al. 1989**]. About two thirds of the females in the intravenous drug users study reported multiple sexual

partners, as compared to about half the female GUM patients and one third of the Ugandan students.

The finding of the comparative analysis provide further evidence that in general respondents were aware of the two main ways by which HIV is transmitted sexually. Male homosexual sexual intercourse, was correctly identified as a route of HIV transmission by almost all the intravenous drug users, 92 percent of the GUM patients and three quarters of the Ugandan students. When considering such responses, two different possible explanations have to be taken into account. First, as regards the one quarter of Ugandan students who did not indicate that HIV could be transmitted by male homosexual intercourse, this response could have reflected lack of knowledge of the existence of male homosexual intercourse, since it is almost non existent in Uganda. Second, the finding that almost all intravenous drug users knew of this route of HIV transmission, could reflect an attempt to put the blame for the spread of HIV on the gay community, and less on themselves. This reasoning could be further supported by the finding that of all the respondents who associated oral sex with HIV transmission, by far the biggest proportion were intravenous drug users. However, this is not consistent with the knowledge of heterosexual HIV transmission, where 98 percent of the intravenous drug users correctly identified it as a route of HIV

transmission compared with 91 percent of the Ugandan students and 87 percent of the GUM respondents. This finding shows that perhaps some of GUM respondents are at risk of catching HIV without actually knowing it could be transmitted by heterosexual intercourse. This finding could support those who urge that in the United Kingdom the risk of HIV to the heterosexual population was not given early enough.

The results of the assessment of the respondents knowledge about the possible different ways of preventing the spread of HIV suggested that a very big difference existed between the Ugandan students and the other two study groups. While a very big majority of the GUM respondents and the intravenous drug users believed the condom to be protective against HIV, less than half of the Uganda students thought so. On the other hand, the biggest majority of Ugandan students thought that abstention from sex was the answer. This same response was given by only 10 percent of the intravenous drug users, and about 65 percent of the GUM respondents. These differences in responses can be explained by the different AIDS education messages which have been given in Uganda and the United Kingdom. The Uganda government advocates abstention from sex, while that of the United Kingdom advises condom use.

Of major interest in this comparison is the finding that a very big proportion of respondents in each of the three study groups indicated that they had seen or heard about the condom during the previous two years. The GUM respondents were most likely to have indicated so, and the intravenous drug users the least likely. These differences can not explained in terms of availability of condom promoting materials, since a bigger proportion of Ugandan students than the intravenous drug users had seen or heard about the condom. Probably the difference between the GUM respondents and the intravenous drug users is due to differences in levels of education, employment and less exposure to media especially television to the intravenous drug users. These factors have important association with ability to read and or remember information [**Sonne-Holm and Sorensen 1986, Sonne-Holm et al. 1989**] and therefore the responses in these two groups may be expected to be different.

Detailed comparisons of the sources of information about the condom during the previous two years revealed interesting findings. With the exception of the newspapers from which about half of each study group respondents had received information, there were marked differences regarding other sources. Over 90 percent of the GUM respondents indicated that they had seen the information on television, while only about 45 percent of the Ugandan

students had done so. Although only about one third of intravenous drug users had received the information from magazines, the difference with other study groups was small. The other big difference was noted in the reporting of the radio as a source of information. The radio was reported by 70 percent of drug users, but only about 30 percent of the GUM respondents. These differences in the various sources once again raise the question as to whether differences in condom promotion practices may account for the findings. However, once again this will not explain the differences in responses between the GUM responses and the intravenous drug users. Therefore it seems reasonable to believe that it is the different sources of condom promotion in the United Kingdom that have attracted different audiences, and it can be said that the findings of these studies represent real differences in the popularity of different media among these study groups.

In the three different studies considerable effort went to obtaining details of the contents of the information about the condom. It was therefore a very important finding that the reported contents of the information were unsatisfactory throughout the three study groups, though there were significant differences in the responses. Overall less than half of respondents indicated that the condom had been mentioned in connection with AIDS, with

about 55 percent of the Uganda students, about 45 percent of the GUM respondents and one third of drug users saying so. Most disappointing was the finding that about 17 percent of the Ugandan students reported that the condom had been mentioned in connection with its unreliability. This once again reflects the different, and sometimes conflicting messages about the condom that are given out.

Because condom use is most likely to be influenced by the beliefs of the would be user, it was felt appropriate to compare the spontaneously given reasons in favour, and against the use of the condom. The fact that the condom is protective against HIV came out very strongly. This was mentioned by about two thirds of intravenous drug users, over half of GUM respondents, but perhaps not surprisingly by less than one third of the Ugandan students. Although there was no big difference between the three study groups in their mentioning that the condom is protective against STDs, the intravenous drug users mentioned it most commonly, and the Ugandan students mentioned it the least. On the other hand, over 40 percent of the Ugandan students said that the condom could be used as a contraceptive, compared to 19 percent of the GUM respondents, and only 4 percent intravenous drug users. About still, 13 percent of Ugandan students did not give any reason in favour of the condom, compared to less than 5 percent of other groups.

Similarly, the spontaneous reasons against the condom were many and varied. The biggest differences were noted in the that a relatively big proportion of Ugandan respondent gave no reason against the condom, said the condom was unsafe, and could encourage promiscuity. Non of these reasons was given by the other two groups. The likely influence and final impact of these beliefs on actual condom use is unclear, but one would expect a higher rate of condom use among those respondents who gave more positive reasons than those who did not.

The overall finding that just over 50 percent of all respondents had a positive attitude to the condom conceals the very big differences that existed between the four groups. The analysis showed that about 80 percent of the gay men, and the GUM respondents, nearly two thirds of the intravenous drug users, but only about one quarter of the Ugandan students approved of the condom. In view of the interest about the use of the condom in the prevention of the spread of sexually transmitted HIV, the observed differences in attitudes to the condom in these study populations are of particular interest. If as reported in previous studies on health related behaviour [**Hecker and Ajzen 1983**], attitude change precedes behaviour change, then the findings of this study show that a big majority of gay men and GUM attenders in this study have gone a long way towards accepting the condom. Though not so big a

proportion, the intravenous drug users have made a relatively good progress. However, the rate of condom approval is least in the Ugandan students. It is possible that the big differences in attitudes between the Ugandan students and the other groups are due to the contents of the condoms campaigns, or basically due to the cultural differences. For in Uganda, many people have not accepted the condom due to cultural attitudes [Okware 1988].

Many disturbing issues are raised by the reported use of the condom. First and foremost, despite the very good knowledge and attitude to the condom, overall less than one third of respondents reported using condoms. More than half of the gay men reported condom use compared to 38 percent of intravenous drug users, 30 percent Ugandan students, and 27 percent GUM respondents. Among the Ugandan students, slightly more respondents reported condom use than those who had a positive attitude. In the other three studies, fewer respondents reported condom use than those who had positive attitude. The findings of these studies are similar to those of previous studies showing that condom use does not directly follow acquisition of knowledge or a positive attitude. As Professor Alain Pompidou said " Being informed does not necessarily mean knowing; being aware does not necessarily mean taking steps; and deciding does not necessarily mean doing." [Anon 1988].

In addition, although the reasons given by condom users for using the condom give reason for optimism, less than half of respondents indicated that they used the condom to prevent the spread of HIV. This was least stated by the GUM respondents, but commonly stated by the gay male respondents. This could be taken to show how seriously each of these groups had taken the HIV/AIDS information regarding risky sexual behaviour. Many heterosexual individuals still take HIV as being remote from their sexual behaviour. This study further supports those previous studies that many gay men, more than any other group, are aware of the threat of HIV [*Muckusick et al. 1985, Adrien et al. 1987, Carne et al. 1987*].

Although the GUM group had the smallest proportion of condom users, it reported the highest percentage of those who would use it always. The intravenous drug users were the least consistent users. The most likely explanation for this is probably the method of approach to advising individuals to use the condom. Most of the condom users in the GUM study who reported using the condom always had been individually advised to use the condom by the clinic staff. On the other hand, most condom users in the other three study groups would have received their information from the media. This finding supports Ngugi et al.'s [*Ngugi et al. 1988*] recommendation that for condom use to

be successful, individual, as opposed to group counselling should be used.

Among the condom users, about 70 percent of the gay men and the intravenous drug users said they could be persuaded by their partners not to use the condom. This compares with about 40 percent of the GUM respondents and a quarter of the Ugandan students. This finding is bad news for the future use of the condom in the control of HIV particularly with respect to the gay men and the intravenous drug users. The inconsistent use of the condom appears to reflect a low perceived risk of HIV even among condom users. This is further reflected in the finding that only about 23 percent of the gay men, 29 percent of the intravenous drug users, and 17 percent of the Ugandan students thought that they were at risk of HIV due to their sexual behaviour. Among the stated reasons why the respondents thought their sexual behaviour put them at risk of HIV, was that they still had multiple sexual partners. Although this is an encouraging statement, it was never given by any of the gay male respondents, and yet they reported the highest number of sexual partners. On the other hand, 50 percent of them indicated that they were at risk because of not using the condom. The lack of trust of one's sexual partners featured predominantly as a reason for being at risk for HIV. However, despite the mistrust, the majority of respondents

continue with multiple sexual partners. In the light of the reported number of sexual partners, these findings have far reaching implications, given the association of increased risk to HIV infection with increased numbers of sexual partners [*Plummer et al. 1987, Simonsen et al. 1988, Berkley et al. 1989*]. Unless such complacency among these respondents changes, the control of HIV will become an almost impossible task.

The finding that over three quarters of gay men, about 45 percent of intravenous drug users and nearly 60 percent of the Ugandan students indicated that their sex lifestyle had been affected by the HIV/AIDS epidemic is probably an indication of the success of the AIDS campaigns.

The responses as to how the epidemic had affected their sexual lifestyles varied between the study populations. Though some respondents in each group indicated that they had reduced the number of sexual partners, the study design did not permit any assessment of these claims.

With use of logistic regression analysis, several variables in the different studies emerged as being independently associated with condom use. However, only a positive attitude to the condom was associated with condom use in all four studies. Having received information about the condom in the past two years was also independently

associated with condom use in all the studies except the gay men one. Unfortunately as already explained, the later variable had a negative contribution to condom use in the Uganda study. This finding suggests that if the condom is promoted in a positive way, attitudes can be influenced, and as a result the use of condoms can be increased.

Several reasons for not using the condom were given by non-condom users. Only two reasons; loss of sensitivity and inconvenience, were given by respondents in all the study groups. The claim that the condom was unsafe was made by only the Ugandan students, while 44 percent of the gay men who did not use condoms said that it was because they were having only oral sex. Use of another form of contraceptive was most commonly given by respondents in the GUM study. These findings provide further evidence of the different effects of the AIDS education and condom promotion messages reaching different groups of people. For example while in Uganda the condom is said to be unsafe, the gay men are advised to practise "*safer sex*" which includes oral sex. Since the number of reasons given for not using the condom were many and varied, it seems unlikely that a single approach to condom promotion will be adequate even for use with a particular population group.

8.4 Conclusions.

The intention of including in this study four different population groups of people who are potentially at increased risk of HIV infection was to possibly draw some appropriate conclusions regarding the benefit of the various AIDS education programmes which have so far been available to these different population groups. But of course one has to bear in mind that usually long term and large scale studies can achieve scientifically acceptable evidence that an education programme does (or does not work). These studies were neither long enough or large enough, to provide concrete conclusions. On the other hand, the findings of the compared results of the four different studies, point to some very important successes and failures of the various AIDS education programmes which have so far been available to these different population groups. Therefore the conclusions drawn could possibly be used to assist in the control of the spread of HIV.

This part of the study compared the responses of 778 respondents from the Genito-urinary medicine clinic (GUM), 931 Ugandan university undergraduate students, 121 intravenous drug users at a needle exchange scheme, and 256 gay men in gay bars and discos.

The majority of all respondents were in their twenties and sexually active. This an indication that these respondents were at risk of catching HIV through sexual intercourse, should the sexual partner be infected.

With about two thirds of all male (almost 90% of gay men) reporting multiple sexual partners during the previous twelve months, there is clear evidence that the majority of the male in all the four groups have not modified their sexual behaviour in line with the information provided in the AIDS education campaigns. This is a very disappointing finding in view of the present and future attempts to control the spread of HIV.

However, a much less proportion of female respondents, about 44 percent, reported multiple sexual partners in the previous twelve months. These data may suggest a possible sex difference in risk taking for HIV, or it may be that the majority of the female respondents were positively responding to the AIDS education campaign. On the other hand, many of the female respondents in the intravenous drug users' study, still reported multiple sexual partners.

Despite the fact that on the whole the knowledge HIV risk factors was very good, with about 90 percent of respondents in each study group correctly indicating that

HIV could be heterosexually transmitted, and with almost all intravenous drug user respondents, 92 percent of the gay men respondents, and three quarters of the Uganda students indicating that HIV could be spread by male homosexual sexual intercourse, it is clear that there is still some confusion over the role of oral sex as a route of HIV transmission.

It was clear from these studies that the intensive condom publicity campaigns by both the United Kingdom and Ugandan governments, and other organisations had reached the majority of the respondents. Television was the most memorable source of information about the condom during the past two years for the GUM respondents, radio was for the intravenous drug users, and magazines for the Ugandan students. These findings are probably not surprising. In the United Kingdom; considering the different times of the day when messages about condom are transmitted over television (mainly late evening), and radio (mainly during the day), and considering the proportion of those in employment among the intravenous drug users (15%), and the GUM respondents (87.4%). For the Uganda students, once again it was not surprising that the majority indicated that magazines were the main source of information about the condom. For many of the students read magazines printed in the Western countries, and some of these

magazines mention the condom more than the Ugandan radio and television.

The condom, was mostly mentioned in connection with AIDS by all the respondents in the different study groups. These once again showed that to a great extent the AIDS and condom campaigns have resulted in an increase in the level of knowledge among these respondents.

There were significant differences between the responses of the Ugandan students and the United Kingdom based study groups with regard to the role of the condom in the prevention of HIV. With about 90 percent of the United Kingdom based study groups, and less than 50 percent of the Ugandan students indicating that the condom could be protective against HIV. This is some evidence of the success of the condom promotion programme in the United Kingdom, and an indication of the failure of the Ugandan one.

Further success of the condom AIDS campaign in the United Kingdom was shown by the spontaneous responses to the reasons in favour, and against the use of the condom, with the majority of the GUM and intravenous drug users respondents mentioning that the condom could be used to control HIV. This was mentioned by only 29 percent of the Ugandan students.

The knowledge about the role of the condom in the fight against HIV was further reflected in the respondents attitude to it. About 80 percent of the gay men and the GUM respondents, almost two thirds of the intravenous drug users, but only about one quarter of the Ugandan students had a positive attitude to the condom. This showed that for the United Kingdom study groups, not only had the AIDS campaign resulted in an increase in the level of AIDS and condom knowledge, but their attitudes had been positively influenced. This was not the case with the Ugandan students.

Though more than half of the gay men respondents reported condom use, overall the extent to which condom use was reported among the respondents in all the four study groups was low, with about a quarter of the GUM respondents, about 30 percent of the Uganda students and 38 percent of the intravenous drug users reporting condom use. Despite the respondents accurate knowledge about the role of the condom in the prevention of HIV transmission, these studies showed that in all the four groups gaps exist between this knowledge of the uses of the condom, and the actual use of the condom. With the Ugandan students worst affected. However, the majority of respondents had used it for the control of a sexual.

disease including HIV, which in it self was a good indicator of the success of the AIDS education campaign.

Worse still, the majority of users did not use condoms always. The intravenous drug users were the least likely to use the condom always. This has very serious implications.

If the intravenous drug users constitute a major source of HIV to the heterosexual population in the United Kingdom, it can be expected that the HIV will continue to be spread among the heterosexual population.

In addition, 70 percent of the gay men condom users, and about the same percentage of intravenous drug users who also used condoms, indicated that they could be persuaded by their partners not to. The corresponding percentage for the GUM respondents was about 40, and surprisingly only 27 percent of the Ugandan condom users could be persuaded by their partners not to. This shows the Ugandan students who decide to use the condom are much more determined to do so than those respondents in the United Kingdom studies. There was ample evidence of the lack of acceptance of engaging in HIV risky behaviour. Overall, less than 20 percent of respondents perceived themselves as being at

risk for HIV due to their sexual behaviour. And only the gay men thought that having sex without a condom put them at risk. This lack of association between individual risky sexual behaviour and HIV transmission, raises the possibility that the present AIDS education campaigns are not targeted to individuals but to groups, and therefore less effective in reaching people as individuals.

Given the reported low condom usage, it could have been easy to conclude that the AIDS epidemic had not affected these respondents sex lifestyles. On the contrary, the sex lifestyles of over three quarters of the gay men respondents, about 60 percent of the Ugandan students, but less than half of the intravenous drug users, had been affected by the AIDS epidemic. Many of them had either reduced the number of sexual partners, or started using the condom. Although the effect of AIDS education on sex behaviour change remains speculative, this is a very important finding. These data seem to show that the efforts of the AIDS education campaigns have started to yield some positive sex behaviour results, though slowly, and to different extents in different HIV risky groups.

Although the reasons for not using the condom given by non condom users were many, loss of sensation and inconveniency were mentioned by respondents in all the four study groups. The greatest significant difference was

the mention of participating in oral sex as a reason for not using the condom. This was by the gay men only. This further shows that differences still occur in knowledge levels about HIV safe sex practices. Certainly some of these knowledge gaps about safe sex behaviour can be harmful.

APPENDICES: QUESTIONNAIRES

APPENDIX 1.

THE UGANDAN STUDENTS STUDY QUESTIONNAIRE.

CONFIDENTIAL.

MAKERERE UNIVERSITY RESEARCH.

Date ____ / ____ / 19 ____.

We hope that you will help in this important enquiry. A cross-section of University students are being asked to fill in this form.

The answers will help us to understand more about the use of the condom. Some questions are very personal; we hope you will answer them.

THE FORM IS COMPLETELY ANONYMOUS AND CANNOT BE TRACED BACK TO YOU IN ANY WAY.

PLEASE DO NOT PUT YOUR NAME ON THE FORM.

Thank you very much for your help.

If you do not wish to fill in this form
please tick this box

Q1. What is your sex? Male _____, Female _____.

Q2. What is your age? _____ years.

Q3. Please say whether you are: a) Single _____,
b) Married _____, c) Living with regular partner _____,
d) Divorced _____, e) Widowed _____.

Q4. What is your faculty

Q5. What is your year of study? _____

Q6. What is your home district? _____.

Q7. Have had sexual intercourse before?

YES _____, NO _____.

Q8 If YES, at what age was your first sexual
intercourse? _____.

Q9. How many different people have had sex with since
you started having sexual intercourse? _____.

Q10. How many different sexual partners have you had
in the last 12 months? _____.

Q11. About how many times do you have sex each
week? _____.

Q12. In the past 12 months, have directly exchanged
money for sex? YES _____, NO _____.

Q13. Have had any sexually transmitted disease (VD)
during the past 12 months? YES _____, NO _____.

IF YOU OR YOUR PARTNER USE THE CONDOM, ANSWER QUESTIONS
14 TO 23, THEN GO TO QUESTIONS 26 TO 41.

IF YOU OR YOUR PARTNERS DO NOT USE THE CONDOM GO TO
QUESTIONS 24 TO 41.

Q14. Do you use condoms; Because of: a) sexually transmitted diseases (VD) _____, b) AIDS _____, c) CONTRACEPTION (prevent pregnancy) _____, d) Other reasons _____.

Q15. For how long have you used condoms?

a) 1-6 MONTHS _____, b) 7-12 MONTHS _____,
c) 1-2 YEARS _____, d) 2-5 YEARS _____,
e) MORE THAN 5 YEARS _____.

Q16. Does it have any effect on your enjoyment of sex? Yes _____, No _____.

Q17. If yes, what is the effect?

a) REDUCES SENSATION _____, b) MESSY _____,
c) INCONVENIENT _____, d) UNNATURAL _____.

Q18. Do you use condoms? Always _____, Mostly _____, Sometimes _____.

Q19. If you use condoms only sometimes, why is that so?
_____.

Q20. Who provides the condom? you or your partner?

a) Self ____, b) Partner ____, c) both _____.

Q21. Where do you usually obtain condoms from?

a) Chemist ____, b) Family Planning Association ____, c)

University Hospital _____,

d) Other sources _____

Q22. If your partner **DID NOT** want you to use a condom,

would you accept? Yes ____ No ____.

Q23. About how many condoms do you use per month?

_____.

IF YOU OR YOUR PARTNER DO NOT USE CONDOMS,

Q24. Why don't you use condoms? _____

_____.

Q25. If you partner **WANTED TO USE A CONDOM** would you

accept? Yes ____, No ____.

Q26. Do you recall seeing or hearing anything about the

condom in the newspapers, magazines, on TV or the radio

in the last two years? Yes ____, No ____.

Q27. If yes, where? a) Posters ____, b) Newspapers _____,

c) Magazines ____, d) TV ____, e) Radio ____.

Q28. What was it about? _____

_____.

Q29. Can you think of any good reason(s) for using a

condom? (specify) _____

_____.

Q30. What about some reason(s) against using a condom?

_____.

Q31. Which of the following could lead to the spread of AIDS? a) Kissing____, b) Petting____, c) Oral sex____, d) Sex without full intercourse____, e) intercourse between man and woman _____, f) intercourse between men____, g) intercourse between women ____.

Q32. Which of the following could prevent the spread of AIDS? a) contraceptive pill _____, b) condom _____, c) total abstinence from sex _____, d) intrauterine contraceptive device (coil) _____.

Q33. Are your sexual partners a) Women only _____, b) Men only _____, c) Both Women and Men _____.

Q34. What is your attitude towards the use of the condom? a) Strongly approve _____, b) Approve _____, c) Uncertain _____, d) Do not approve _____, e) Strongly disapprove _____.

Q35. Have you any religious objection to the use of condoms? Yes _____, No _____.

Q36. Did you get any sex education at school? Yes _____, No _____.

Q37. If yes, was the condom and its use discussed? Yes _____, No _____

Q38. Do you think your sexual behaviour puts you at risk of HIV infection? YES _____, NO _____.

Q39. If YES, why _____.

_____.

Q40. Has the AIDS epidemic affected your sexual
behaviour? YES _____, NO _____.

Q41. If YES how? _____

Thank you again for your help.

APPENDIX 2.

GENITO-URINARY MEDICINE CLINIC STUDY QUESTIONNAIRE.

CONFIDENTIAL.

GENITO-URINARY RESEARCH.

Date ____ / ____ / 19 ____.

We hope that you will help in this important enquiry. Everyone attending this clinic is being asked to fill in this form.

The answers will help us to understand more about the use of the condom. Some questions are very personal; we hope you will answer them.

THE FORM IS COMPLETELY ANONYMOUS AND CANNOT BE TRACED BACK TO YOU IN ANY WAY.

PLEASE DO NOT PUT YOUR NAME OR YOUR NUMBER ON THE FORM.

Thank you very much for your help.

If you do not wish to fill in this form _____
please tick this box _____

Q1. Why did you attend the clinic today? _____

Q2. What is your sex? Male _____, Female _____.

Q3. What is your age? _____ years.

Q4. Please say whether you are: a) Single _____,

b) Married _____, c) Living with regular partner _____,

d) Divorced _____, e) Widowed _____.

Q5. At what age did you leave school? _____

Q6. Did you receive any more training after you left
school? Yes _____ No _____.

Q7. If yes what was it? _____.

Q8. What is your occupation? _____.

Q9. How many different sexual partners have you had in the
last 12 months? _____.

Q10. About how many times do you have sex each
week? _____.

IF YOU OR YOUR PARTNER USE THE CONDOM, ANSWER QUESTIONS

11 TO 20, THEN GO TO QUESTIONS 24 TO 36.

IF YOU OR YOUR PARTNERS DO NOT USE THE CONDOM GO TO

QUESTIONS 21 TO 36.

Q11. Do you use condoms; Because of:

a) sexually transmitted diseases (VD) _____,

b) AIDS _____,

c) CONTRACEPTION (prevent pregnancy) _____,

d) Other reasons _____.

Q12. For how long have you used condoms?

a) 1-6 MONTHS _____, b) 7-12 MONTHS _____,

c) 1-2 YEARS _____, d) 2-5 YEARS _____,

e) MORE THAN 5 YEARS _____.

Q13. Does it have any effect on your enjoyment of sex? Yes _____, No _____.

Q14. If yes, what is the effect?

a) REDUCES SENSATION _____, b) MESSY _____,

c) INCONVENIENT _____, d) UNNATURAL _____.

Q15. Do you use condoms? Always _____, Mostly _____, Sometimes _____.

Q16. If you use condoms only sometimes, why is that so?
_____.

Q17. Who provides the condom? you or your partner?

a) Self _____, b) Partner _____, c) both _____.

Q18. Where do you usually obtain condoms from?

a) Chemist _____, b) Family Planning Association _____,

c) Family Doctor (GP) _____, d) Slot machine _____,

e) Mail order _____, f) Hair dresser _____,

g) Other sources _____.

Q19. If your partner **DID NOT** want you to use a condom, would you accept? Yes _____ No _____.

Q20. About how many condoms do you use per month?
_____.

IF YOU OR YOUR PARTNER DO NOT USE CONDOMS,

Q21. Why don't you use condoms? _____

_____.

Q22. Would you use condoms if they were provided in this clinic? Yes _____ No _____.

Q23. If your partner WANTED TO USE A CONDOM would you accept? Yes _____, No _____.

Q24. Do you recall seeing or hearing anything about the condom in the newspapers, magazines, on TV or the radio in the last two years? Yes _____, No _____.

Q25. If yes, where? a) newspapers _____,
b) magazines _____, c) TV _____, d) radio _____.

Q26. What was it about? _____

_____.

Q27. Can you think of any good reason(s) for using a condom? (specify) _____

Q28. What about some reason(s) against using a condom?

_____.

Q29. Which of the following could lead to the spread of AIDS? a) Kissing____, b) Petting____, c) Oral sex____,
d) Sex without full intercourse____, e) intercourse between man and woman _____, f) intercourse between men____, g) intercourse between women _____.

Q30. Which of the following could prevent the spread of AIDS? a) contraceptive pill _____, b) condom _____,

c) total abstinence from sex _____,

d) intrauterine contraceptive device (coil) _____.

Q31. Are your sexual partners a) Women only _____,

b) Men only _____, c) Both Women and Men _____.

Q32. What is your attitude towards the use of the condom?

a) Strongly approve _____, b) Approve _____,

c) Uncertain _____, d) Do not approve _____,

e) Strongly disapprove _____.

Q33. Have you any religious objection to the use of condoms? Yes _____, No _____.

Q34. Did you get any sex education at school?

Yes _____, No _____.

Q35. If yes, was the condom and its use discussed?

Yes _____, No _____.

Q36. Have you ever injected drugs? Yes _____,

No _____, Never _____.

Thank you again for your help.

APPENDIX 3.

INTRAVENOUS DRUG USERS STUDY QUESTIONNAIRE.

CONFIDENTIAL

NEEDLE EXCHANGE RESEARCH

Date _____ / _____ /19 _____.

We hope that you will help in this important enquiry. Everyone attending this clinic is being asked to fill in this form.

The answers will help us to understand more about the use of the condom. Some questions are very personal; we hope you will answer them.

THE FORM IS COMPLETELY ANONYMOUS AND CANNOT BE TRACED BACK TO YOU IN ANY WAY.

PLEASE DO NOT PUT YOUR NAME ON THE FORM.

Thank you very much for your help.

If you don't want to fill in this form tick -----
this box -----

Q1. What is your sex? MALE _____, FEMALE _____.

Q2. What is your age? _____ years.

- Q3. Please say whether you are; SINGLE _____,
b) MARRIED _____, c) LIVING WITH REGULAR PARTNER _____, d)
DIVORCED _____, e) WIDOWED _____.
- Q4. At what age did you leave school? _____.
- Q5. Do you have a job? YES _____, NO _____.
- Q6. How many people have you had sex with in the
last 12 months? _____.
- Q7. About how many times do you have sex each
week? _____.
- Q8. Have you had sex with a) WOMEN ONLY _____,
b) MEN ONLY _____, c) BOTH WOMEN and MEN _____.
- Q9. For how long have you injected drugs? _____ years.
- Q10. Do you ever let other people use your works?
YES _____, NO _____.
- Q11. Do you ever use other people's works?
YES _____, NO _____.

**IF YOU OR YOUR PARTNER USE CONDOMS ANSWER QUESTIONS ON
PAGES 2 AND 3, IF YOU DO NOT ANSWER QUESTIONS ON PAGE 4.**

**ANSWER QUESTIONS ON THIS AND NEXT PAGE ONLY IF YOU OR YOUR
PARTNER USE CONDOMS.**

Q12. Do you use condoms; Because of:

- a) sexually transmitted diseases (VD) _____,
- b) AIDS _____,
- c) CONTRACEPTION (prevent pregnancy) _____,
- d) Other reasons _____.

Q13. For how long have you used condoms?

- a) 1-6 MONTHS _____, b) 7-12 MONTHS _____,
- c) 1-2 YEARS _____, d) 2-5 YEARS _____,
- e) MORE THAN 5 YEARS _____.

Q14 Do they have any effect on your enjoyment of sex?

YES _____, NO _____.

Q15. If yes how? a) REDUCES SENSATION ----, b) MESSY _____,

c) INCONVENIENT _____, d) UNNATURAL _____.

Q16. Do you use condoms a) ALWAYS _____,

b) SOMETIMES _____.

Q17. If you use condoms SOMETIMES, why is it so? _____

Q18. Who provides the condom? a) SELF _____,

b) PARTNER _____, c) BOTH _____.

Q19. If your partner did not want a condom used,

would you accept? YES _____, NO _____.

Q20. Do you recall seeing or hearing anything about the condom in the newspapers, magazines, on TV or the radio in the last two years?

YES____, NO_____.

Q21. If yes, where? a) NEWSPAPERS _____,

b) MAGAZINES _____, c) TV _____, d) RADIO _____.

Q23. What was it about? _____
_____.

Q24. What is your attitude towards the use of the condom?

a) APPROVE _____, b) UNCERTAIN _____, c) DISAPPROVE _____.

Q25. Have you any religious objection to the use of condoms? YES _____, NO _____.

Q26. Can you think of any good reason(s) for using a condom? (specify) _____
_____.

Q27. What about some reason(s) against using a condom?

Q28. Which of the following could lead to the spread of

AIDS? a) KISSING____, b) PETTING____, c) ORAL SEX____, d)

SEX WITHOUT FULL INTERCOURSE____,

e) MEN SCREWING WOMEN _____, f) MEN SCREWING MEN _____,

g) WOMEN SCREWING WOMEN _____.

Q29. Which of the following could prevent the spread of AIDS? a) CONTRACEPTIVE PILL _____, b) CONDOM _____, c) TOTAL ABSTINENCE FROM SEX _____, d) INTRAUTERINE CONTRACEPTIVE DEVICE (coil) _____.

Q30. Do you think your sexual behaviour puts you at risk of HIV infection? YES _____, NO _____.

Q31. If YES, why _____.
_____.

Q32. Has the AIDS epidemic affected your sexual behaviour? YES _____, NO _____.

Q33. If YES how? _____

Thank you very much.

ANSWER QUESTIONS ON THIS PAGE IF YOU OR YOUR PARTNER HAVE NOT USED CONDOMS.

Q12 Why don't you use condoms ? _____

Q13. If your partner WANTED A CONDOM USED, would you accept? YES _____, NO _____.

Q14. Do you recall seeing or hearing anything about the condom in the newspapers, magazines, on TV or the radio in the last two years? YES _____, NO _____.

Q15. If yes, where? a) NEWSPAPERS _____,
b) MAGAZINES _____, c) TV _____, d) RADIO _____.

Q16. What was it about? _____

Q17. What is your attitude towards the use of the condom?

a) APPROVE ____, b) UNCERTAIN ____, c) DISAPPROVE _____.

Q18. Have you any religious objection to the use of condoms? YES _____, NO _____.

Q19. Can you think of any good reason(s) for using a condom? (specify) _____.

Q20. What about some reason(s) against using a condom?
_____.

Q21. Which of the following could lead to the spread of AIDS? a) KISSING ____, b) PETTING ____, c) ORAL SEX ____, d) SEX WITHOUT FULL INTERCOURSE _____,
e) MEN SCREWING WOMEN _____, f) MEN SCREWING MEN _____,
g) WOMEN SCREWING WOMEN _____.

Q22. Which of the following could prevent the spread of AIDS? a) CONTRACEPTIVE PILL _____, b) CONDOM _____, c) TOTAL ABSTINENCE FROM SEX _____, d) INTRAUTERINE CONTRACEPTIVE DEVICE (coil) _____.

Q23. Do you think your sexual behaviour puts you at risk of HIV infection? YES _____, NO _____.

Q24. If YES, why _____.

Q25. Has the AIDS epidemic affected your sexual behaviour? YES _____, NO _____.

Q26. If YES, how? _____

Thank you very much.

APPENDIX 4.

GAY MEN STUDY QUESTIONNAIRE.

CONFIDENTIAL

This questionnaire is designed to find out more about sexual behaviour of gay men. We would be grateful if you would answer the following questions. Some questions are very personal; we hope you will answer them.

**THE FORM IS COMPLETELY ANONYMOUS AND CANNOT BE TRACED
BACK TO YOU IN ANY WAY.**

PLEASE DO NOT PUT YOUR NAME ON THE FORM.

Thank you very much for your help.

If you don't want to fill in this form tick -----
this box -----

Q1. What is your age? _____ years.

Q2. Are you employed? YES _____, NO _____.

Q3. How many years have been sexually active
as a homosexual? _____.

Q4 How many male sexual partners have had
in the past year? _____.

Q5. How many female sexual partners have had
in the past year? _____.

Q6. Which of the following have you had with another man?

During: Past 1 year Past 5 years

a) Anal sex without [] []

a condom

b) Anal sex using

a condom yourself [] []

c) Anal sex where your

Q13. If your partner wanted sex **WITHOUT** a condom, would you accept? YES _____, NO _____.

Q14. While using condoms, have they ever broken? NEVER _____, OCCASIONALLY _____, OFTEN _____.

Q15. When using condoms, do you use lubricants? YES _____, NO _____.

Q16. If yes, which ones? _____

Q17. Which lubricants, if any, do you use for foreplay? _____.

Q18. What brand and type of condom do you usually use? _____.

Q19. What is your attitude towards condoms?

- a) I strongly approve _____,
- b) I approve _____,
- c) I am uncertain _____,
- d) I do not approve _____,
- e) I strongly disapprove _____.

20. Have you any religious objection to the use of condoms? YES _____, NO _____.

Q21. If you don't use condoms, why not?

- a) They reduce sensation _____,
- b) They are messy _____,
- c) They are inconvenient _____,
- d) They are unnatural _____,
- e) They are unromantic _____,
- f) my partner(s) disapprove of their use _____.

Q22. Do you think your sexual behaviour puts you
at risk of HIV infection? YES _____, NO _____.

Q23. If YES, why _____
_____.

Q24. Has the AIDS epidemic affected your
sexual behaviour? YES _____, NO _____.

Q25. If YES, how _____
_____.

Thank you very much.

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