Revista da Sociedade Brasileira de Medicina Tropical
34(2): 181-186, mar-abr, 2001.

ARTIGO

Use of a condom in sex relations by HIV carriers

Uso de preservativo em relações sexuais por portadores de HIV

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Abstract *The frequency with which condoms are used in sex relations by subjects with HIV was determined by interviewing 132 individuals, 82 men and 50 women, most of them from São Paulo state and some from other regions of the country, all of them seen at an outpatient clinic of the School of Medicine in Botucatu. The women were younger, were of lower educational level and had poorer professional qualification than men. Also, a greater proportion of women were widowed, separated or divorced. We observed that 43.9% of men and 72% of women had been contaminated by the sexual route, but only 41.2% of the men and 31.8% of the women reported the use of a condom after the diagnosis of infection, with most men and women preferring sexual abstinence. The results enable the conclusion that there is still a need to continue to provide information about the use of condoms and to guarantee their free-of-charge distribution due to the low levels of education and professional qualification of the individuals studied. The data also suggest that campaigns for the dissemination of preventive measures should consider the social and cultural differences of infected women.*

Key-words*: Sexual behavior. Condom. Sexual relations. HIV/AIDS.*

Resumo *Para estudar a ocorrência da utilização do preservativo masculino em relações sexuais pelos portadores do HIV, foram entrevistados 132 indivíduos, sendo 82 homens e 50 mulheres. A maioria do Estado de São Paulo e algumas de outras regiões do País, atendidas na Faculdade de Medicina de Botucatu. As mulheres eram mais jovens, tinham menor escolaridade, pior qualificação profissional que os homens, e ainda, maior proporção era de viúvas, separadas, desquitadas e divorciadas. Verificou-se que 43,9% dos homens e 72% das mulheres foram contaminados pela via sexual, mas apenas 41,2% dos primeiros e 31,8% das mulheres referiram utilização do preservativo após o diagnóstico de infecção, a maioria de homens e mulheres preferindo observar abstinência sexual. Os resultados permitem concluir que ainda há necessidade de se manter informação continuada sobre a importância do uso do preservativo, além de se garantir sua distribuição gratuita, pelos baixos níveis de instrução e qualificação profissional dos indivíduos. Sugerem, ainda, que as campanhas de divulgação de medidas preventivas considerem as diferenças sociais e culturais das mulheres que se infectam.*

Palavras-chaves*: Comportamento sexual. Preservativo masculino. Relações sexuais. HIV/AIDS.*

Since the first reports of cases of AIDS at the beginning of the 80's, the number of infected individuals has grown exponentially. According to the World Health Organization (WHO), by November 1999 a total of 2,201,461 cases had been notified all over the world[40].

In Brazil, the country occupying third place in number of infected subjects, new preventive strategies have been elaborated since 1997, by the Health Ministry in order to reduce the number of new HIV infections and to control the epidemic. These strategies contemplate a more adequate approach to the general and specific aspect of transmission of the virus, mass educational campaigns, and intervention in populations at higher risk of infection[27]. In 1998, the Health Ministry added other intervention projects directed at populations in situations of poverty and at workers living on settled land and in encampments[29].

Thus far, no treatment has been considered definitive in restoring the immune response of the patient or in destroying the virus[16 18]. The greatest advances are represented by antiretroviral agents, which do not cure the disease but prolong the life expectancy of HIV carriers[13].

On this basis, the major approach towards the disease is still limited to education with emphasis on preventive and control actions that might reduce the risk

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Recebido para publicação em 07/2/2000.

of infection[18]. To this end, it is essential that, immediately after diagnosis, carriers receive guidance as to the use of methods preventing the propagation of infection to susceptible persons, as well as one's own reinfection or even the acquisition of virus strains resistant to antiretroviral drugs. In this respect, HIV carriers should be counseled to use condoms in a consistent and correct manner, to use individual syringes and needles when they share intravenous drugs, and, for females, to avoid pregnancy. Moreover, they should receive guidance about the donation of blood and organs[18].

Among the modes of transmission of the virus, the sexual route has been particularly predominant since the beginning of the epidemic. According to WHO[39], 68% of AIDS patients in Brazil were contaminated by this route by 1997.

For this reason, one of the main tools for interrupting the chain of HIV propagation is the systematic use of condoms during sexual relations. Such behavior should be mandatory among HIV carriers.

The objective of the present study was to investigate the use of condoms in sex relations in a population of HIV carriers, after diagnosis of the infection. The patients were seen at the outpatient clinic of the School of Medicine of Botucatu. The data obtained were then correlated with the sociodemographic characteristics of the individuals studied.

PATIENTS AND METHODS

A study based on structured interviews was conducted in order to determine the use of condoms in sexual relations, of both sexes between HIV carriers. The questionnaire used was designed to obtain general information about the patient's age, marital status, educational level, residence and professional occupation, as well as specific information about type of exposure to HIV contagion and the presence of sexual activity after diagnosis.

The study was conducted on a population of 132 patients, 82 males and 50 females seen from July 1993 to August 1994 and in September and October 1995 at an outpatient clinic of the School of Medicine of Botucatu.

The following criteria were used for patient selection: a positive serologic test for HIV; being aware of the positive result for at least two months; coming to the hospital for the two previous appointments at the outpatient clinic, and consent to participate in the study. According to these criteria, only 95% of the patients regularly seen at the outpatient clinic could be included in the study. There were no refusals on the part of any patient to participating in the study.

The study was authorized by the local Ethics Committee. The results are reported as absolute and numerical values and were analyzed descriptively.

RESULTS

The individuals were grouped within age ranges according to the pattern followed in the specialized literature: 29 years or younger, 30—39 years and 40—59 years. Infected women were younger than infected men, with 56% of the women being 29 years of age or younger, whereas 64.6% of the men were older than 30 years of age. With respect to marital status, we not only considered the legal situations, but also the different conditions in which there is a sexual relationship. Single men reporting no permanent partner predominated (56%), whereas separated, divorced and widowed women were the majority of the females and were grouped into the category *other* (Table 1).

Schooling was considered according to the official Brazilian classification at the time of the study in order to evaluate the culture of the individuals. Primary school corresponds to the first eight years of school, high school corresponds to primary school plus three years of study, and higher education, refers to the university cycle. Among women, 64% only had primary schooling, which in many cases was incomplete. The distribution of males among the three school levels was more homogeneous (Table 1).

The different types of occupations considered were based on a model adopted by IBGE (Brazilian Institute of Geography and Statistics)[17]. Among men, 54% had occupations that required little intellectual effort (Technical jobs, Agriculture, Industry and Civil Transformation, Transport, and Services). In contrast, most women (54%) were in the *Inactive* category, i.e., in the non-economically active population, represented by housewives (Table 1).

Evaluation in terms of category of exposure revealed that, as observed over the last years, most women (72%) were infected by heterosexual transmission. In contrast, among men the main type of transmission was homosexual, with 30.5% of cases, as opposed to a 13.4% rate of heterosexual transmission. Also noteworthy among men was transmission through the use of injected drugs, with 24.4% of males presenting this condition in an isolated manner, and 19.5% in the category of illicit drugs users and homosexuals (Table 2).

This study was conducted at a time preceding the dissemination of the female preservative, and therefore only the male condom was considered. The most frequent behavior of men and women after infection was sexual abstinence, reported by 58% of the men and 56% of the women. Of the remaining 56 sexually active subjects, when asked about the use of condoms in sexual relations after being informed of their status as virus carriers, only 58.8% of the men and 68.2% of the women reported their use (Table 3).

Table 1 - Distribution by sociodemographic characterization of HIV/AIDS carriers seen at the Outpatient Clinic of the School of Medicine of Botucatu - UNESP.

		Males		Females	
		nº	%	nº	%
Age (years)	- 29	29	35.4	28	56.0
	30-39	34	41.4	14	28.0
	40-59	19	23.2	8	16.0
Marital status	single	46	56.0	14	28.0
	married/cohabiting	23	28.0	15	30.0
	other*	13	16.0	21	42.0
Schooling**	primary school	32	39.0	34	64.0
	high school	31	37.8	10	20.0
	higher education	19	23.2	6	12.0
Types of Occupation***	Inactive	7	8.5	27	54.0
	technical	13	15.9	5	10.0
	administrative	14	17.0	5	10.0
	agricultural	2	2.4	1	2.0
	civil industry and transport	19	23.2	1	2.0
	transports	5	6.1	-	-
	commerce	12	14.7	4	8.0
	services	10	12.2	6	12.0
	undefined	-	-	1	2.0

*Other: Separated, Divorced or Widowed. **Classification into schooling levels includes individual who completed or not their respective levels. ***According to the classification of the "Brazilian Institute of Geography and Statistics"-SP (IBGE)[17]

Table 2 - Distribution by category of exposure of HIV/AIDS carriers seen at the Outpatient Clinic of the School of Medicine of Botucatu - UNESP.

Categories of Exposure	Males		Females	
	N°	%	N°	%
Homosexual	25	30.5	-	-
Heterosexual	11	13.4	36	72.0
Intravenous Drug User (IDU)	20	24.4	10	20.0
IDU and Homosexual	16	19.0	-	-
Transfused with Blood and Blood Derivatives	3	3.7	-	-
Undefined	7	8.5	4	8.0

Table 3 - Distribution according to the use of a condom after the diagnosis of HIV/AIDS of sexually patients active seen at the Outpatient Clinic of the School of Medicine of Botucatu - UNESP.

Sexual Behavior	Males		Femeles		Total	
	n°	%	n°	%	n°	%
Using a condom	14	41.2	7	31.8	21	37.5
Not using a condom	20	58.8	15	68.2	35	62.5
Total	34	100.0	22	100.0	56	100.0

DISCUSSION

In Brazil, guidelines for the Program of AIDS Control were created in 1985, with actions mainly directed at epidemiologic surveillance and medical care. But it was only in 1997 that new strategies were disseminated to contain the propagation of HIV infection by means of changes in behavior[33]. This means that risk factors linked to sexual relations or to the use of illicit injectable drugs should be reconsidered in the light of the knowledge obtained regarding HIV transmission.

However, it is not enough simply to know what to do. It is also important to know 'how to do it' because the composition of the target population is not uniform from a sociocultural viewpoint in different regions of the country. For the proposals to be successfully applied, efforts should be made to clearly characterize both vulnerable individuals and virus carriers. It should also be remembered that the epidemiologic characteristics of transmission of HIV infection change over time.

Since the beginning of the world-wide epidemic, a substantial increase has been observed in the number of infected women, with the man:woman ratio continuing to fall[11]. In Brazil this ratio was 44:1 in 1985, but was 3:1 ten years later, continuing at this level until 1997[34].

With respect to incidence by age range, the present data are close to those of Africa, mainly in terms of the earlier involvement of women[35]. This may reflect the social and economic dependence of women on men in underdeveloped countries, where opportunities for self-sufficiency are denied to women. Thus, a woman must become involved with a man early in order to guarantee her subsistence. This is not the case, for example, in the United States, where women are more economically independent and where the age range of highest infection is the same for both sexes[9].

Most HIV-infected men appear as single in surveys, with no permanent sex partner[5 32 36], a fact meaning more availability for multiple and short-lasting sex contacts. In underdeveloped countries, this fact, together with the lower age range and educational level of infected women, may explain the greater vulnerability to infection of the latter. Because of lack of sufficient maturity and culture for the proper choice of a mate or of the type of relationship they seek, they are exposed to a greater risk of contagion.

Another worldwide observation is the *pauperization* of the epidemic[38], with individuals of lower socioeconomic and educational level[s] becoming increasingly involved[23]. In Brazil, in the early 1980's infected individuals were middle-class persons with higher education. Starting in the second half of that decade, a decreasing level of schooling associated with low income has been observed[10], especially among women[15 32 36], a situation also observed in African and other Latin American countries[3]. Another more common characteristic among female carriers is the lack of professional qualification. In the present study, for example, there was a predominance of housewives who were contaminated by their sexual partners. This situation conforms to the major form of female contamination, i.e., the heterosexual route[7 12 32].

When the first cases of AIDS were related to male homosexual activity at the beginning of the 80's, campaigns clarifying and disseminating information about the disease soon arose, based on combating the discrimination against this sector of the population[37]. However, the pattern of HIV transmission started to alter. Soon transmission changed from sexual/male homosexual to blood transmission among illicit drug users, followed by a return to the sexual route, although now heterosexual, initially involving women and, more recently, men[9 30]. In view of this epidemiologic observation, there should only be a single path, especially among HIV carriers: the use of a condom, the only mechanical resource for protection against HIV infection in all sexual relations. Transverse and prospective studies have shown that the use of a condom in less than half of all sexual relations results in little or no reduction in the risk of HIV infection, whereas its use in all relations is associated with practically zero rates of seroconversion[20]. Carey[6] and Finenberg[12] emphasized this concept and showed that the occasional use of a condom does not prevent seroconversion but only delays the dissemination of the infection. Other surveys conducted in different countries have shown that, even with adequate use of a condom, the risk of seroconversion persists, ranging from 1% to 13%, due to the rupture or dislocation of the condom during the sex act[1].

However, despite all the data demonstrating the efficiency of condoms in the prophylaxis of infection, their use varies widely in the world depending on several factors, among which the cultural aspects are particularly noteworthy.

In Jamaica, for example, the use of condoms by HIV carriers increased from 27% in 1989 to 47% in 1993[11]. In France and Great Britain, the rates of constant use of condoms are 80.9% and 58.8% for men and 71.9% and 47.6% for women, respectively[8]. American homosexuals also regularly use condoms in an attitude of respect towards their partners[14]. However, Marín pointed out the low frequency of condom use among Latin men living in the United States[24], and emphasized that this population has been proportionally more infected by HIV than the native population[12].

In Brazil, Loyola[21] detected a 9.3% rate of use of a condom to avoid AIDS in the non-infected population of Rio de Janeiro, although the device is used in an irregular manner. Another study pointed out low percentages of use of condoms among young adolescents from three Brazilian capital cities, ranging from 12.5% to 40.4% among males and from 2.3% to 15.3% among females[2]. In the city of São Paulo, Jeukens[19] showed that 64.7% of male HIV carriers used a condom as a means to prevent dissemination of HIV, a higher percentage than observed in the present study, due to the fact that the population studied by Jeukens originated from a large urban center where information is better diffused[19].

In studies which classify according to sex, it can be seen that reference to a condom is regularly less frequent among women. This was also the case in the present study in which only 31.8% of women cited the use of a condom, a situation definitely linked to the fact that its use depends on agreement by the male. Several studies have demonstrated that the man is the partner who determines the rhythm and type of sex relations and male rejection of condom use is a problematic question for women[4], since an attempt to negotiate its use can be interpreted as infidelity on their part. In Brazil, another negative factor is *machismo*, a fundamental phenomenon in the process of discussion of safe sex, which often opposes a change in behavior towards the persistent use of a condom[4].

On the other hand, resistance to the use of condoms can also be seen among women, many of whom consider this practice to be related to factors of sex discouragement associated with the idea of promiscuousness and clandestine sex[21 25 31 37] or with the need for contraception and protection against sexually transmissible disease[31]. Among Latin women living in the United States, the use of a condom is seen as a *prostitute thing* - a woman carrying a condom in her purse is viewed as somebody who is *after sex*[(op.cit.31)].

American teenage girls also demand the use of a condom at a lower frequency in heterosexual relations with older partners than with partners of the same age[5].

Analysis of the different groups with behavior involving the risk of acquiring HIV infection shows that male homosexuals and *sex workers* seem to negotiate safer sex better than the general population[14]. In the present study this was not the case since, among those who used a condom, only 28% were male homosexuals (data not shown). On the other hand, intravenous drug users have been reported to be those who most resist any approach about protection during the sex act, creating situations that impair the adoption of measures aiming at a reduction of the incidence of HIV infection[22].

The refusal to use a condom observed in the present study, even where the individuals were aware of their status as virus carriers, has three possible origins. First, it may be related to a lack of understanding regarding the urgent need for its use as the only way to avoid contamination by the sexual route. Second, it may have been simply an irresponsible option of the male or female partner. Third, it may represent an attempt to deny infection.

In summary, although condoms still represent the most practical and effective method for the reduction of HIV dissemination by the sexual route, studies on populations with or free from the virus have shown the low frequency of their use and resistance to them due to strong cultural factors. Education seems to be the approach to modify this situation and should be started as early as possible in order to induce sexually active individuals to behave in a safe manner.

On the basis of the sociodemographic characteristics of the individuals studied here, we conclude that it is necessary to distribute condoms free of charge to the carrier population in addition to providing education. Also, women must be empowered to negotiate the use of adequate protection with their partners. Finally, the sociocultural differences of women who become infected, compared to men, as observed here, should be considered in the campaigns for the dissemination of preventive measures.

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