# PSYCHOSOCIAL AND BEHAVIORAL FACTORS ASSOCIATED TO STD / AIDS RISK AMONG HEALTH STUDENTS

*Elma Mathias Dessunti*[2]
*Alberto Olavo Advincula Reis*[3]

Dessunti EM, Reis AOA. Psychosocial and behavioral factors associated to STD/AIDS risk among health students. Rev Latino-am Enfermagem 2007 março-abril; 15(2):267-74.

*This study aimed to identify and compare psychosocial and behavioral factors associated to STD/AIDS risk among students enrolled in the first and last years of the Nursing and Medical Undergraduate Programs at State University of Londrina. A convenience sample was selected from 263 enrolled students, and the 183 students who were sexually active (70.4%) had their data assessed. The Aids Risk Reduction Model framework was used to design the questionnaire in which a 5% statistical significance level was considered. Some risk factors were identified such as the perception of invulnerability, multiple sexual partners, consumption of alcoholic beverages before intercourse, and the discontinuous use or no use of condom. The risk factors are common both to the freshman and senior students, with no significant differences related to the passage of time or to the students' higher educational level. Senior students tend to be monogamous which makes them feel safer and decrease the use of condom with their sexual partners.*

*DESCRIPTORS: acquired immunodeficiency syndrome; sexually transmitted diseases; risk factors; sexual behavior; prevention & control*

## FACTORES PSICOSOCIALES Y COMPORTAMENTALES ASOCIADOS AL RIESGO DE ETS / SIDA ENTRE ESTUDIANTES DEL ÁREA DE LA SALUD

*Este estudio tuvo como objetivo identificar y comparar los factores psico-sociales y comportamentales asociados al riesgo de ETS/sida entre estudiantes del primero y del último año de los cursos de Enfermería y Medicina de la Universidad Estatal de Londrina. Fue seleccionada una muestra por conveniencia, compuesta por 263 alumnos matriculados, de los cuales fueron analizadas las informaciones de 183 estudiantes sexualmente activos (70,4%). Para la elaboración del cuestionario, se utilizó la estructura del Modelo de Reducción de Riesgo de Sida, adoptándose el 5% como nivel significativo. Algunos factores de riesgo fueron identificados tales como, la percepción por la falta de vulnerabilidad, múltiples compañeros sexuales, el uso de bebidas alcohólicas antes de las relaciones sexuales y la falta de uso o uso descontinuado del preservativo. Se concluyó que, esos factores son comunes a los dos grupos, no generándose cambios significativos al paso del tiempo, ni con el incremento en el nivel educativo de los mismos. Los alumnos del último año tienden a adoptar un único compañero, lo que les genera mayor seguridad, disminuyendo por tanto el uso de preservativo con sus parejas sexuales.*

*DESCRIPTORES: síndrome de inmunodeficiencia adquirida; enfermedades de transmisión sexual; factores de riesgo; conducta sexual; prevención & control*

## FATORES PSICOSSOCIAIS E COMPORTAMENTAIS ASSOCIADOS AO RISCO DE DST / AIDS ENTRE ESTUDANTES DA ÁREA DE SAÚDE

*Este estudo objetivou identificar e comparar os fatores psicossociais e comportamentais associados ao risco de DST/aids entre estudantes do primeiro e do último ano dos cursos de Enfermagem e Medicina da Universidade Estadual de Londrina. Selecionou-se uma amostra de conveniência, composta pelos 263 alunos matriculados, tendo sido analisados os dados dos 183 estudantes sexualmente ativos (70,4%). Utilizou-se a estrutura do Modelo de Redução de Risco da Aids para a elaboração do questionário, adotando-se 5% como nível de significância estatística. Alguns fatores de risco foram identificados como a percepção de invulnerabilidade, a referência a múltiplos parceiros sexuais, o uso de bebidas alcoólicas antes das relações sexuais e o uso descontínuo ou não uso do preservativo. Conclui-se que esses fatores são comuns às duas séries, não havendo mudanças significativas com o passar do tempo e com a maior graduação dos alunos. Os alunos do último ano tendem a adotar a parceria única e parecem sentir-se mais seguros, diminuindo o uso do preservativo com seus parceiros sexuais.*

*DESCRITORES: síndrome de imunodeficiência adquirida; doenças sexualmente transmissíveis; fatores de risco; comportamento sexual; prevenção & controle*

[1] Study extracted from Doctoral Dissertation; [2] PhD Professor at State University of Londrina, e-mail: elma@sercomtel.com.br; [3] PhD Professor University of São Paulo College of Public Health

## INTRODUCTION

This study aimed to identify psychosocial and behavioral factors associated with the risk of sexually transmitted diseases (STD) and AIDS among health students. This group of future professionals will directly or indirectly intervene in educative actions linked to these diseases. Thus, the knowledge of psychosocial and behavioral factors associated to the risk of STD/AIDS is extremely important to identify this population's current stage of preparation to deal with people vulnerable to these diseases.

The political, economic and social impact of STD/AIDS is of great importance in underdeveloped and developing countries because it is the cause of great morbidity among women between 15 and 44 years old[1]. In developed countries, there has been a decline in STD rates, despite an estimated 12 million cases per year for the United States[2]. The World Health Organization (WHO) estimated that 40 million adults and children were living with HIV until the end of 2001, one third of whom are young people between 15 and 24 years old[3].

During the epidemic phase of HIV/AIDS, the incidence and prevalence of SDT needs to be monitored, because the presence of genital wounds favors the penetration of HIV, increasing infection risks by up to 18 times, when one of the partners has an untreated SDT[4]. Another reason to monitor STDs is that they are transmitted during sexual intercourse, presuming negligence regarding the consequences of the sexual relationship, such as not using condoms.

Young adults are exposed to the risk of acquiring HIV because they get involved with multiple partners and many of them do not use a condom in all sexual intercourse. In addition, most adolescents is initiating sexual activity earlier, exposing themselves to the risk of STD at a younger age.

In this context, many STD/AIDS prevention programs have been implemented all over the world in the attempt to contain these infections. Undergraduate courses, especially in the health area, have tried to address the issue. However, a tendency towards a biologistic focus on the issue is observed, to the detriment of preparation for preventive education.

The lack of special education in medical or psychology course curricula compromises the training of future professionals to address sexuality[5]. The university has a fundamental role in STD/AIDS prevention strategies through its teaching, research, care and extension functions.

In human resource training, the university must consider that its students constitute a group of adolescents and young adults with a high risk of STD, including HIV, since they are initiating sexual activity at an early stage and frequently change partners[6].

A study performed with college students in the health area showed that the majority presents precarious knowledge, reinforcing the need to implement specific and continuous educative actions for this group[7].

This population must also be prioritized in research, since it is comprised of young people, one of the priority segments for preventive actions. In addition, college students in the health area are considered capable of assessing their own risk and associated factors, approaching other than biological aspects related to AIDS transmission.

The analysis of medical course curricula revealed that STD/AIDS are unsatisfactorily addressed, both qualitatively as quantitatively, since not all subjects that have an interface with the theme address it, and those that do are limited to clinical aspects, to the detriment of psychosocial, cultural and behavioral aspects[8].

The didactic activities developed in the undergraduate Nursing course at Londrina State University (UEL) involve student participation in different care levels, benefitting contact between faculty and students from various courses. This allowed us to experience diverse situations in the relationship between students and patients with STD/AIDS, many of which involve prejudice, fear, insecurity, communication difficulties, among others. On the other hand, it can be perceived that the students avoid talking about their sexual lives and seem to treat problems related to STD/AIDS as "the others' problems", which gives the idea they are "untouchable" by the epidemic.

This situation made us inquire about the sexual behavior of these students, who are future professionals and health educators. That is, what are the psychosocial and behavioral factors related to the risk of STD/AIDS among health students, especially those from Nursing and Medical undergraduate courses? Do these factors differ between first and last-year students from each course? Did the contents, personal and group experiences provided by university life contribute to any change in the

psychosocial and behavioral factors, to the extent that fifth-year students are in a different phase than first-year students?

Thus, in view of these questions, this study proposed the following objectives: identify and compare the psychosocial and behavioral factors associated to the risk of infection by HIV or other STD among first and last-year students from the Nursing and Medical undergraduate courses at UEL.

This study is expected to provide support for STD/AIDS prevention work among health students, preparing them for professional actions that are more adequate to reality.

## METHOD

An analytical survey was performed with college students from the Nursing and Medical programs at Londrina State University (UEL). This research was carried out at the UEL Health Science Center in Londrina, Northern Paraná, Brazil.

An intentional sample was selected from first- and last-year Nursing and Medical undergraduate students at UEL (263 registered students) in 2000. This sample is composed of 260 students (98.9%) who answered the research instrument. Through this sample, which represents all first- and last-year students of the above mentioned courses, an inferential analysis can be made from the results observed in the study with the students of the two proposed years.

The instrument was structured on the basis of the variables of the AIDS Risk Reduction Model – ARRM. Only data from sexually active students were considered, that is, 183 (70.4%) of those who answered the questionnaire. This criterion was adopted as necessary to use the model variables, since they are centered on populations with non-zero risk of acquiring STD/AIDS.

The ARRM was proposed by Catania, Kegeles and Coates in 1990 and, among health behavior models, it provides a structure that covers several psychosocial and behavioral factors associated to the risk of STD/AIDS, approaching the individual vulnerability aspects mentioned by Mann and Tarantola[9]. The ARRM identifies three stages that could influence the risk of acquiring STD/AIDS: 1) recognition and identification of one's own sexual behaviors as risk factors; 2) commitment to reduce high-risk sexual behavior and increase low-risk activity; 3) search and adoption of strategies to reduce high-risk sexual behavior[10].

Thus, some instrument questions refer to data that characterize the sample (age, gender, course, year, marital status) and data that characterize sexual activities (age of sexual initiation, number of sexual partners, use of contraceptive methods, stable and/or occasional relationship), while others refer to the ARRM variables, from which the following were selected: knowledge about transmission forms, perceived vulnerability, discussion about STD/AIDS, stereotyped health beliefs, type of sexual relationship, condom use, use of alcoholic beverages before sexual intercourse[10-12]. A large majority of the answers were closed and the variables could be measured on an ordinal scale.

The structured questionnaire was previously tested and data were collected after authorization by the Research Ethics Committee and after contacts and clarifications to the respective course boards. Students were oriented about the research objectives and, after they had agreed to participate, they filled out the instrument. Participants were instructed not to identify themselves, thus guaranteeing the secrecy of the answers. Moreover, to keep the privacy of the answers, the questionnaire was accompanied by a "term of responsibility" signed by the researcher, assuming responsibility for the collected data and for total secrecy about the individual answers. After being filled out, the questionnaire was put in a sealed envelop, with the researcher's guarantee that it would only be opened after the return of all answered questionnaires per year and course.

Data were tabulated through the epi-info program, version 6.04. Other computer programs used were Microsoft Excel for Windows 97, S-Plus 4.5 and SPSS 8.0. To characterize the group profile of the students under study, an exploratory analysis with descriptive measures is presented (mean, median and standard deviation), and frequency tables and Box-Plot charts are constructed. Some questions were also analyzed descriptively, using the result of the frequency tables.

To compare students per course year, homogeneity tests were used for categorized data (Chi-square and Fisher's exact test) and the non-parametric test for ordinal data (Mann-Whitney). The statistical tests were calculated at a significance level of 0.05 (5%).

## RESULTS AND DISCUSSION

In total, 260 (98.9%) Nursing and Medical students answered the questionnaire. We analyzed the answers of those sexually active, that is, 183 (70.4%) students.

A study of the sexual behavior of the Brazilian population, performed in 1998[13], showed that approximately 60% of people between 16 and 19 years old had already initiated sexual activity, increasing to 92.3% between 20 and 24 years old. Specifically among college students from a city in the interior of São Paulo, it was found that 63.2% had an active sexual life[14].

The data that characterize the sample of sexually active college students are presented in Table 1.

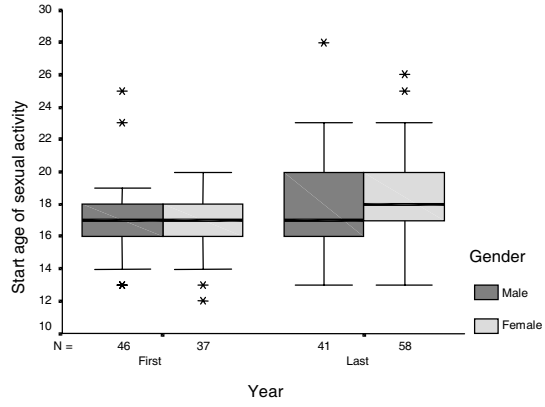
Table 1 - Distribution of the number and percentage of first- and last-year Nursing and Medical students according to age, gender, marital status and course

| Variables | Total | Course Year | | P Value |
|---|---|---|---|---|
| | n = 183 (%) | First n = 83 (%) | Last n = 100 (%) | |
| **Age** | | | | |
| 17 to 19 years old | 46 (25,7) | 46 (56,8) | 0 (0,0) | 0,000** |
| 20 to 22 years old | 69 (38,5) | 30 (37,0) | 39 (39,8) | |
| 23 to 25 years old | 52 (29,1) | 3 (3,7) | 49 (50,0) | |
| 26 to 45 years old | 12 (6,7) | 2 (2,5) | 10 (10,2) | |
| Missing results = 4 | | | | |
| **Gender** | | | | |
| Male | 87 (47,5) | 46 (55,4) | 41 (41,0) | 0,052* |
| Female | 96 (52,5) | 37 (44,6) | 59 (59,0) | |
| Missing results = 0 | | | | |
| **Marital Status** | | | | |
| Single | 170 (92,9) | 82 (98,8) | 88 (88,0) | 0,007** |
| Married/Consensual Union | 13 (7,1) | 1 (1,2) | 12 (12,0) | |
| Missing results = 0 | | | | |
| **Course** | | | | |
| Nursing | 78 (42,6) | 30 (36,1) | 48 (48,0) | 0,106* |
| Medicine | 105 (57,4) | 53 (63,9) | 52 (52,0) | |
| Missing results = 0 | | | | |

*Pearson's Chi-Square Test; **Fisher's Exact Test

Table 1 shows no significant difference between first- and last-year students in terms of course or gender. As expected, there was a significant difference regarding age and marital status, although only 7.1% of the students were married or had a consensual union.

Figure 1 shows that these students reported a start age of sexual activity between 12 and 28 years old. The younger individuals (first year) are initiating sexual activity earlier than the senior students, regardless of gender. First-year students were similar across both genders, with 50% of the cases varying between 16 and 18 years old (mean 16.9 for men and 16.6 for women). A greater variability is perceived among last-year students, with men initiating sexual activity between 16 and 20 (mean 17.7) and 50% of women initiating between 17 and 20 years old (mean 18.4).




**One blank answer was excluded

Figure 1: Start age of sexual activity of first- and last-year Nursing and Medical students, according to gender and course year. (n=182**)

A study performed with the general Brazilian population found a lower mean age for the first sexual intercourse among men than in the present study (15.6 years old). In the case of women, the mean age found is similar to that of first-year students in this study (17 years old)[13]. Among medical students at Ceará Federal University, the mean age for the first sexual intercourse was 15.8 years old, that is, between 9 and 27 years old[15].

The number of sexual partners reported by UEL students varied between one and 15 in their life, and the general mean is 3.07 (DP=2.42) partners for first-year and 3.42 (DP=3.26) for last-year students. The majority (68.2%) reported having sexual intercourse with two or more partners during the period, with no significant difference between course years. To better evaluate the significance of this indicator, the existent proportion between the number of partners and age can be established. However, our sample has a larger concentration of people between 17 and 25 years old, which dispenses with this care. It is important to mention that the number of sexual partners of unknown serological state and several expositions increase the risk of STD/HIV/AIDS.

In the last 12 months, the number of sexual partners among UEL students varied from zero to six

and the general mean was 1.24 (DP 0.90) sexual partners among first and 1.45 (DP=1.18) among last-year students. The majority of them (71.9%) reported sex with only one partner in the last year, with no significant difference between course years.

It should be mentioned that neither 23 students who reported having several partners during their life without determining how many, nor seven other students who did the same regarding the last 12 months were included in the mean estimations. This could increase the above mentioned means, especially in the first case. The data presented in this research are similar to data presented in the literature, showing that many UEL students are getting involved with multiple partners, regardless of the course. This can lead them to acquire STD/AIDS, especially if condom use is not consistent.

The continuous use of a contraceptive method during the whole period of sexual active life was reported by 67.6% of the studied students, with no statistical difference between the years. The most cited contraceptive methods of continuous use were condom (34.1%), contraceptive pill (28.6%), calendar method (6.0%) and coitus interruptus (withdrawal), (4.4%).

We found a significant difference between the two years (p=0.01) regarding the use of oral contraceptives, with a higher proportion of users among last-year students. However, the use of this method has made many young adults abandon condom use, since there is a great concern to avoid pregnancy, to the detriment of STD/AIDS prevention.

Although the difference in condom use as a contraceptive method was not significant, the proportion of first-year students who use it on a regular basis is higher than among last-year students (40.2% and 29.0% respectively). It is important to emphasize that 65.9% of all students reported discontinued use or no use of condoms, which results in higher risk of exposure to HIV and other STD.

The contingent of young people who maintain unprotected sexual intercourse is still very large and, even under contraceptive protection, young people who have many partners and do not use condoms systematically are unprotected against STD and AIDS.

The level of knowledge about AIDS transmission forms was established according to a codification of items that ranged from 14 (higher knowledge) to 70 points (lower knowledge). The sum of mean values was 18.8 and 18.2 points for first- and last-year students, respectively, showing a very good level of knowledge, with no statistical difference between the years. In general, the knowledge level about AIDS found among students was high. Although considered necessary, many researchers have shown that this high level of knowledge is not sufficient to reduce sexual activities of risk[6,10].

Knowledge about HIV transmission constitutes the first step in the reduction of risk behaviors, but perception or belief in personal risk is necessary and essential for a change in behavior with a view to risk reduction.

This risk perception, one of the variables of the ARRM model, can be evaluated by the degree of concern/anxiety related to the danger of acquiring STD/AIDS. However, it is important to highlight that the perception of risk should not be considered only at the individual level, but also in the social and cultural context, clearly influencing preventive actions. In our study, a low degree of concern or anxiety about having acquired STD/AIDS in the past can be observed, with some degree of concern regarding the possibility of acquiring it in the future, both among first- and last-year students. When this variable is analyzed in terms of probability, it is clearly perceived in Table 2 that the STD/AIDS are seen as “other people’s disease”.

Table 2 - Descriptive statistics of the perception of personal risk of acquiring STD/AIDS among first- and last-year Nursing and Medical students

| Probability | Course Year | | | | | | Mann Whitney U Test |
|---|---|---|---|---|---|---|---|
| | First | | | Last | | | p |
| | Mean | Median | Standard Error | Mean | Median | Standard error | |
| Of acquiring the AIDS virus in the next five years | 4,12 | 4 | 0,68 | 4,09 | 4 | 0,64 | 0,71 |
| Of someone your age acquiring the AIDS virus | 1,89 | 2 | 0,86 | 2,04 | 2 | 0,87 | 0,24 |
| Of acquiring some STD in the next five years | 4,01 | 4 | 0,76 | 4,06 | 4 | 0,72 | 0,68 |
| Of someone your age acquiring some STD | 1,87 | 2 | 0,84 | 2,04 | 2 | 0,89 | 0,18 |

The perception of personal risk was analyzed on a scale from 1 to 5. The scores close to 1 indicate a very high probability of acquiring STD or AIDS

Both first- and last-year students judge themselves with little or no probability of acquiring STD/AIDS, while individuals of the same age are seen with high probability of acquiring these diseases.

This low perception of risk among UEL students is confirmed, since 62.8% of them classify themselves as "low risk" and 23.9% as "no risk" regarding the possibility of acquiring STD/AIDS.

Although the perception of personal risk is low among the UEL students who participated in the study, 8.2% of them reported having presented some STD in the past.

Being acquainted with someone who has AIDS or knowing about someone who has AIDS can lead people to a higher perception of vulnerability to the infection. Hence, last-year UEL students should have a higher perception of risk than first-year students, since they had several contacts with patients with HIV/AIDS during the course. However, no statistical difference was observed between students of both years.

To adopt preventive actions, people should be convinced of their personal risk of acquiring HIV/AIDS, which many times is determined by their beliefs. Thus, heterosexual men who do not use drugs and also women tend to underestimate their personal risk, due to AIDS being popularly associated to masculine homosexual practices and to the consumption of injection drugs.

Students in general do not present stereotyped beliefs regarding people with AIDS, which was demonstrated by the low scores of the analyzed variables, which could totalize from 7 to 35. The general sum of the means was 9.4 for first-year students and 9.8 for last-year students, without difference in terms of behavior between the two groups. However, alternatives such as "I am not the kind of person who could get AIDS" and "I don't have a sexual relationship with the kind of person who could have AIDS" presented the highest mean scores and highest standard errors for students of both years, confirming the perception of invulnerability regarding infection by HIV/AIDS.

The analysis of data in Table 3 indicates that not all students have stable sexual partners, with a significant difference between students of the two years, prevailing more stable relationships between last than between first-year students, both in the last 12 months and in recent relationships. Likewise, the duration of the stable relationship is longer among last-year students (p=0.002).

Table 3 - Distribution of the number and percentage of first- and last-year Nursing and Medical students, according to the type of relationship in the last 12 months, existence of stable relationship and duration of the relationship

| Variables | Total | Course Year | | P Value |
|---|---|---|---|---|
| | n = 183 (%) | First n = 83 (%) | Last n = 100 (%) | |
| **Type of relationship in the last twelve months** | | | | |
| Stable | 88 (48,1) | 31 (37,3) | 57 (57,0) | 0,004** |
| Stable and eventual | 41 (22,4) | 18 (21,7) | 23 (23,0) | |
| Eventual | 42 (22,9) | 29 (34,9) | 13 (13,0) | |
| None | 12 (6,6) | 5 (6,0) | 7 (7,0) | |
| Values lacking = 0 | | | | |
| **Existency of current stable relationship** | | | | |
| Yes | 114 (62,3) | 39 (47,0) | 75 (75,0) | 0,000* |
| No | 69 (37,7) | 44 (53,0) | 25 (25,0) | |
| Values lacking = 0 | | | | |
| **Term of stable relationship (n=114)** | | | | |
| <1 year | 23 (20,5) | 13 (34,2) | 10 (13,5) | 0,002** |
| 1\|-3 years | 33 (29,5) | 12 (31,6) | 21 (28,4) | |
| 3\|-5 years | 29 (25,9) | 11 (28,9) | 18 (24,3) | |
| 5 or more years | 27 (24,1) | 2 (5,3) | 25 (33,8) | |
| Values lacking = 2 | | | | |

*Pearson Chi-square test; **Fisher's Exact Test

Among the 42 students who reported involvement with eventual partners in the last 12 months, 69% are first and 31% last-year students.

Table 4 - Distribution of number and percentage of first- and last-year Nursing and Medical students, according to condom use in the last 12 months and some variables related to their use

| Variables | Total | Course Year | | P Value |
|---|---|---|---|---|
| | n (%) | First n (%) | Last n (%) | |
| **Condom use during vaginal or anal intercourse in the last 12 months (n=183)** | | | | |
| Yes | 94 (55,6) | 49 (65,3) | 45 (47,9) | 0,067* |
| Sometimes | 46 (27,2) | 17 (22,7) | 29 (30,8) | |
| No | 29 (17,2) | 9 (12,0) | 20 (21,3) | |
| Missing values = 14 | | | | |
| **The condom escaped in the last 12 months (n=140)** | | | | |
| At least once | 37 (26,8) | 17 (26,6) | 20 (27,0) | 0,951* |
| No | 101 (73,2) | 47 (73,4) | 54 (73,0) | |
| Missing value = 2 | | | | |
| **The condom broke in the last 12 months (n=140)** | | | | |
| At least once | 32 (22,9) | 11 (16,9) | 21 (28,0) | 0,120* |
| No | 108 (77,1) | 54 (83,1) | 54 (72,0) | |
| Missing values = 0 | | | | |

*Pearson Chi-square

Among UEL students who reported sexual relationships in the last 12 months, 44.4% indicated eventual use or no use of condoms (Table 4). It is also observed that many students report that it broke or escaped at least once in the last 12 months. Some

questions can be posed here, such as not choosing the condom by its quality, not being accustomed with its use, not having access to an adequate condom size, placing it incorrectly and using inadequate lubricants.

When questioned about who took the decision to use the condom, 71.9% of the students reported the couple, probably due to good communication between the partners.

Descriptive statistics of condom use frequency with stable and eventual partners in vaginal and anal sexual relationships demonstrated a higher tendency of less condom use among last-year students in vaginal intercourse with eventual partners than among first-year students. That is, last-year students with stable relationships are the ones who least use condoms on a regular basis in their sexual relationships.

Analyzing the possibility of condom use being influenced by the duration of the relationship among non married heterosexual adults, a study showed that the condom was used at the beginning of the relationship. However, as the relationship continued and trust was established, the preservative was no longer used[16].

The use of alcoholic beverages before sexual intercourse, seen as strong predictors of risk behavior, was reported by 68.8% of students who answered the question. This can interfere negatively in condom use, leading to the risk of acquiring STD/AIDS. The use of other drugs was reported by 4.0% of the students.

The use of substances that disinhibit sexual repression, such as alcohol for example, or the use of injection drugs is correlated with a higher probability of involvement in sexual risk behavior. In Brazil, study performed with college students in Ceará found that 18.3% of men and 2.7% of women reduce condom use when they consume alcoholic beverages[15].

In general, this study showed the magnitude of the STD/AIDS risk among college students, a group which does not consider itself at risk of acquiring these infections, with many students who have not incorporated safe sex practices in their sexual activities.

## CONCLUSIONS

College students from the health area at UEL are well informed about AIDS transmission. This is expected, since it is a differentiated clientele among the social-cultural strata. However, some factors of risk to STD/AIDS are highlighted, such as the perception of personal invulnerability among freshmen and seniors. This was verified by the low degree of preoccupation/anxiety of acquiring these diseases in the past and the little concern about acquiring them in the future. Still, a majority considers itself with little or no probability of acquiring STD/AIDS, while individuals of the same age are seen with great probability of acquiring these infections. Another factor considered of risk is the reference to multiple sexual partners during life, both by first- and last-year students. The latter tend to adopt a single partner, which perhaps justifies the higher percentage of eventual or no use of condoms in sexual relationships. This risk is even higher for seniors who report continuous use of contraceptive pills, which can contribute to non-use of condoms, with a significant difference from first-year students. Regarding condom use as a contraceptive method, there was no statistical difference between the two course years, but it can also be consider a factor of risk if we analyze that the majority of them report no or discontinued use. Most students also report the use of alcoholic beverages, which can lead to non-use of condoms in sexual intercourse. In general, students showed themselves very similar on the different items under study, and there were no significant changes over time or according to graduation level.

The psychosocial and behavioral factors associated to the risk of STD/AIDS among college students, as well as the similarity observed regarding these factors among first- and last-year Nursing and Medical students at UEL indicate the that educative programs must be directed to adolescents and continued in college, preparing these future professionals for educative activities, emphasizing not only biological, but also psychosocial and behavioral ones. The different approaches to vulnerability must be highlighted, not only the individual, but also the programmatic and the social, thinking about these students as agents that transform reality.

## REFERENCES

1. Adler MW. Sexually transmitted diseases control in developing coutries. Genitourin Med 1996; 72: 83-8.

2. Boyer CB, Barrett DC, Peterman TA, Bolan G. Sexually transmitted disease (STD) and HIV risk in heterosexual adults attending a public STD clinic: evaluation of a randomized controlled behavioral risk-reduction intervention trial. AIDS 1997; 11(3): 359-67.

3. World Health Organization. UNAIDS. AIDS epidemic update – December 2001: Global overview. [Acesso 10 Mar 2002]. Disponível em: URL: http://www.unaids.org/Epidemic_update.
4. Ministério da Saúde (BR). Secretaria de Projetos Especiais de Saúde. Coordenação de Doenças Sexualmente Transmissíveis e AIDS. Manual de controle de doenças sexualmente transmissíveis. Brasília (DF): Ministério da Saúde; 1997.
5. Paiva V. Sexualidades adolescentes: escolaridade, gênero e o sujeito sexual. In: Parker R, Barbosa R, organizadores. Sexualidades brasileiras. Rio de Janeiro: Relume-Dumará; 1996. p. 213 –34.
6. Svenson LW, Carmel S, Varnhagen CK. A review of the knowledge , attitudes and behaviours of university students cocerning HIV/AIDS. Health Promot Int 1997; 12(1): 61-8.
7. Gir E, Moriya TM, Hayashida M, Duarte G, Machado AA. Medidas preventivas contra a aids e outras doenças sexualmente transmissíveis conhecidas por universitários da área de saúde. Rev Latino-am Enfermagem 1999 janeiro; 7(1): 11-7.
8. Lima SR, Matias LPC, Medeiros AC, Nascimento MFF. Abordagem de DST e aids no currículo do curso de medicina da UFPB. J Bras Doenças Sex Transm 2000; 12(5): 87.
9. Mann JM, Tarantola DJM. Aids in the world II. New York: Oxford University Press; 1996.
10. Catania JA, Kegeles SM, Coates TJ. Towards an Understanding of Risk Behavior: An AIDS Risk Reduction Model (ARRM). Health Educ Q 1990; 17(1): 53-72.
11. Catania JA. Health protective sexual communication scale. In: Davis CM, Yarber WL, Bauserman R, Schreer G, Davis SL. Handbook of sexuality-related measures. Thousand Oaks, California: Sage Publications; 1998. p. 544-7.
12. Catania JA. Psychosocial measures for studies of AIDS Risk Behavior. San Francisco, California: Center for AIDS Prevention Studies; 1990.
13. Berquó E, Souza MR, Pinho MDG, Bussab W, Loyola MAR, Correia M et al. Comportamento sexual da população brasileira e percepções sobre HIV e aids. CEBRAP – Centro Brasileiro de Análise e Planejamento. Brasília(DF): Ministério da Saúde; 1999. [Acesso 14 Mar 2000]. Disponível em: URL:http://www.aids.gov.br/geral.pdf .
14. Bento I, Bueno S. Sexualidade e DST/Aids em uma população universitária. J Bras Doenças Sex Transm 1999; 11(2):17-25.
15. Façanha MC, Justino MWS, Da Silva VLP. Estudo preliminar do comportamento sexual de estudantes de medicina no Estado do Ceará. J Bras Doenças Sex Transm 2000; 12(5): 88.
16. Catania JA, Coates TJ, Kegeles S. A test of the AIDS Risk Reduction Model: psychosocial correlates of condom use in the AMEN cohort survey. Health Psychol 1994; 13(6): 548-55.

Recebido em: 4.5.2006
Aprovado em: 13.9.2006