

KNOWLEDGE ABOUT AIDS AND DRUGS AMONG UNDERGRADUATE STUDENTS IN A HIGHER EDUCATION INSTITUTION IN THE STATE OF PARANÁ

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The main objective of this study was to measure the knowledge of undergraduate nursing students about Acquired Immunodeficiency Syndrome (AIDS) and drugs. The study was carried out in 2007 with a random sample of 289 undergraduate students at a State University in the Northwest of Paraná, Brazil. The students self-applied a questionnaire validated by experts. Questions were divided into three levels of complexity: low, average and high. The level of correct answers was higher in the questions of low complexity, diminishing as the questions' complexity increased. Thirteen percent of questions concerning risk factors and vulnerability to HIV infection among injection drug users (IDU) and biological material for diagnosis of AIDS was correctly answered by 90% of students. Students possessed knowledge concerning AIDS and drugs, however such knowledge was considered insufficient, showing lack of information and gaps in education with a dissociation of interdisciplinary and inter-curricular content.

DESCRIPTORS: adolescent; acquired immunodeficiency syndrome; knowledge; drugs

EL CONOCIMIENTO SOBRE SIDA Y DROGAS ENTRE ALUMNOS DE GRADUACIÓN DE UNA INSTITUCIÓN DE ENSEÑANZA SUPERIOR EN EL ESTADO DE PARANÁ

Este trabajo tuvo como principal objetivo investigar el conocimiento de universitarios sobre el síndrome de inmunodeficiencia adquirida (SIDA) y drogas. La investigación se realizó en el año 2007 a partir de una muestra aleatoria de 289 alumnos de los cursos de graduación de una facultad estatal de la región noroeste de Paraná, en Brasil. Los alumnos respondieron un cuestionario auto aplicable, validado por especialistas del área. Las preguntas fueron divididas en tres niveles de complejidad: baja, media y alta. El índice de aciertos de los alumnos fue mayor en las preguntas de baja complejidad, disminuyendo con el aumento del grado de complejidad. El índice de 90% de aciertos ocurrió en 13% de las preguntas, que se referían a los factores de riesgo y vulnerabilidad para la infección por el virus de la inmunodeficiencia humana (HIV) en usuarios de drogas inyectables (UDI) y el material biológico para el diagnóstico de SIDA. Los alumnos poseían conocimientos sobre SIDA y drogas, sin embargo, este es insuficiente, demostrando falta de información y vacíos en la enseñanza, con disociación de contenidos interdisciplinarios e intercurriculares.

DESCRIPTORES: adolescente; síndrome de inmunodeficiencia adquirida; conocimiento; drogas

CONHECIMENTO SOBRE AIDS E DROGAS ENTRE ALUNOS DE GRADUAÇÃO DE UMA INSTITUIÇÃO DE ENSINO SUPERIOR DO ESTADO DO PARANÁ

Este trabalho teve como principal objetivo investigar o conhecimento de universitários sobre a síndrome de imunodeficiência adquirida (AIDS) e drogas. Realizou-se a pesquisa no ano 2007 a partir de amostra aleatória de 289 alunos dos cursos de graduação de uma faculdade estadual da região noroeste do Paraná. Os alunos responderam um questionário autoaplicável, validado por especialistas na área. As questões foram divididas em três níveis: baixa, média e alta complexidade. O índice de acertos dos alunos foi maior nas questões de baixa complexidade, diminuindo com o aumento do grau de complexidade. O índice de 90% de acertos ocorreu em 13% das questões, que se referiam aos fatores de risco e vulnerabilidade para a infecção pelo vírus da imunodeficiência humana (HIV) em usuários de drogas injetáveis (UDI) e o material biológico para o diagnóstico de AIDS. Os alunos possuíam conhecimento sobre AIDS e drogas, porém, insuficiente, demonstrando falta de informação e lacunas no ensino, com dissociação de conteúdos interdisciplinares e intercurriculares.

DESCRITORES: adolescente; AIDS; conhecimento; drogas

INTRODUCTION

With 18 years of experience in teaching for undergraduate programs we perceived that a significant share of young adults go through visible and rapid behavioral changes that have the potential to compromise their lives. These changes include acquiring responsibilities, financial autonomy and the power to direct their actions and decisions, but they also experience greater contact and opportunity to use alcohol, tobacco and practice unsafe sex.

By observing students' informal conversations, especially nursing students, we perceived that they are not very concerned with the potential risk of being infected by sexually transmitted diseases (STD), though one cannot attribute this lack of concern to lack of information or knowledge about the high chance of being infected by these diseases.

The close relation between people with Human Immunodeficiency Virus (HIV) and those living with Acquired Immunodeficiency Syndrome (AIDS) and "drugs" is acknowledged. The double epidemic, drug use and HIV infection, has been a concern for society, especially in terms of public health. Drug use and associated behaviors can have a strong catalytic effect on the dissemination of HIV among this population⁽¹⁻²⁾.

There is more evidence of vulnerability among young adults because people at this age go through experiences in a phase of life in which biological, social and economic changes occur with greater intensity.

All parameters of vulnerability increase when a young adult leaves secondary school and goes to college, that is, the consumption of alcohol and other drugs increase as well as exposure to risk situations such as unsafe sex. These people are part of a social group who consider themselves so well informed that they are not at risk of being infected by AIDS^(1,3).

Based on the acknowledged relationship between youth and practices that increase the risk of using legal and illegal drugs and to be infected by HIV, and taking into account that these practices are part of the current sociocultural context, preventive measures with a view to generate reflection on the Brazilian culture and practices are needed.

It is important to take into consideration the knowledge young adults possess. This knowledge is composed of information voluntarily and involuntarily acquired, which modifies the way people understand new facts, and also knowledge accumulated over life, whereas knowledge of the peculiarities of the AIDS

epidemic is an essential condition to devise strategies to fight its progression⁽⁴⁾. Studies involving the monitoring of knowledge of factors involved in the transmission of HIV have been acknowledged as important instruments to understand the dissemination of the virus⁽⁵⁾.

A study of undergraduate students from the health field including nursing, dentistry and pharmacy programs, which focused on the students' knowledge of preventive measures related to AIDS and other STD concluded that, though students were able to cite important measures for the prevention of HIV/AIDS and STD, their knowledge on the subject was very poor⁽⁶⁾.

Another study that aimed to identify and compare psychosocial and behavioral factors associated with the risk of being infected by STD/AIDS among nursing and medical students found that although they were well informed about AIDS transmission, they presented some risk factors such as the perception of personal invulnerability⁽³⁾.

Investigating the knowledge of students about the interface of AIDS and drugs is justified by the scarcity of studies addressing this subject in the college population.

We understand that young people receive over their life some type of information about AIDS and drugs and this study aimed to identify the knowledge about HIV, AIDS infection and drugs among undergraduate students from the nursing program and the remaining programs of an educational institution in the Paraná state, Brazil.

This study corroborates other studies addressing this subject and supports educative actions for the undergraduate population both for the students' self-protection and that of others, and the acquisition of competence needed in their professions to be more adequate given the current reality^(3,6).

METHOD

This is a descriptive and cross-sectional study with a random sample composed of students stratified by year and undergraduate program from the State University of Education, Sciences and Letters at Paranavaí (FAFIPA) located in the Northeast of Paraná, Brazil.

The study population was composed of first-year students – regardless of the number of courses

they were attending – and senior year students regularly registered in 2007 in the following programs: Business Administration, Sciences, Accounting Sciences, Physical Education, Nursing, Geography, History, Literature, Mathematics, Education and Social Services, registered in 2007.

Of the 1,172 students estimated for the school year in 2007, a sample of 289 students was drawn using the statistical software EpiInfo version 6. For that, an error of about 5% and sample reliability of 95% were established.

Data used to selected students were obtained from the list of students registered at FAFIPA in 2007 by year and program and from the schedule of three periods of classes provided by the academic office.

The instrument used to collect data was a modular, structured and self-applied questionnaire with closed multiple choice questions divided into three parts: students' socioeconomic information, schooling situation, and specific knowledge on HIV and AIDS infection, and drugs.

The third part was composed of 30 questions including specific knowledge of HIV and AIDS infection and drugs and the correlation between drug use and HIV transmission. A broad research was performed on AIDS and drugs in official documents and other sources such as scientific studies to develop these questions.

Initially, four questions were developed and forwarded to four experts for validation. The four included three nurses and one physician from the Center for Treatment of People with HIV/AIDS of the Specialties Regional Center at Paranavaí, PR, Brazil. Of the three nurses, one was a master's degree and a faculty member at the State University of Maringá, one was the coordinator of the STD/AIDS program from the Health Secretary of Paranavaí, PR, Brazil, and the third was the director of the STD/AIDS program from the State Health Secretary of Paraná.

The experts evaluated each question by considering the following requirements: relation with the study subject, clarity of wording, ambiguity of answers due to questions' lack of clarity, repetition or similarity between questions and level of complexity of knowledge required to answer questions, which were classified as low, average or high.

Based on the experts' suggestions, the questionnaire was reformulated and the final version contained eight questions of low complexity, with five about AIDS and three about drugs; 16 questions of

medium complexity, with nine about AIDS and seven about drugs; and six highly complex questions: three about AIDS and three about drugs.

Health professionals, not hired by the institution, applied the questionnaire. After interviewers agreed to participate in the study, they attended a training meeting where the study objectives, method and management of data collection were explained.

Before the students' first class, the researcher talked to the professors on a pre-scheduled date and asked their permission for students to participate in the study. After receiving the professors' authorization, the interviewers approached students in classrooms. The selected students were sent to another room, where the study's objectives were explained and the free and informed consent agreement was read and then the questionnaires were distributed. There was not a time limit to fill out the questionnaire and this stage took an average of 50 minutes.

Data collection was carried out in three periods: day, evening and night, and students were called according to the availability and needs of each professor, at a scheduled date and time over a period of ten days.

Data were compiled from the questionnaires into an Excel spreadsheet. Scores were established according to the FAFIPA internal rules, which define the parameters of school performance: up to 50% of correct answers – insufficient knowledge; 50.1 to 70% - poor knowledge; and above 70% - satisfactory knowledge.

The study was approved by the Permanent Committee on Ethics in Research Involving Human Subjects (COPEP) at the State University of Maringá (Process No. 049/2007)

RESULTS

A total of 266 students answered the questionnaire with a sample loss of 4.5%. All selected students present in the classrooms at the time answered the questionnaire. The sample was composed of 26 nursing students (14 freshmen and 12 seniors), 250 students from the Business Administration, Sciences, Accounting Sciences, Physical Education, Geography, History, Literature, Mathematics, Pedagogy and Social Work programs (147 freshmen and 103 seniors).

Most of the interviewed students were female, especially in the nursing program. Ages ranged from 17 to 25 years; 25% of nursing seniors were older

than 30 years, and only 10.7% were older than 30 years in the remaining programs.

The majority of the participants from all programs reported being white and single. The students' average income ranged from three to seven times the minimum wage, and 74.3% of them had work contracts with a workload above eight hours/day (Table 1).

The main source of information reported by students was television and only 12% of them did not have access to the Internet. The majority of them (55.8%) rarely read newspapers and read a book every six months. The nursing students presented a smaller percentage for newspapers and books in relation to the remaining, according to Table 1.

To identify and evidence knowledge of students concerning peculiarities of AIDS and drugs, questions were stratified according to their level of complexity and answers were analyzed according to the level of correct answers.

Table 1 – Socioeconomic characterization of undergraduate students, FAFIPA – Paranavaí, PR, Brazil 2007

Variables	Nursing		Other programs		Total	
	N	%	N	%	N	%
Income (MW)*						
<3	5	19.2	34	13.6	39	14.1
3 to 7	18	69.2	179	71.6	197	71.4
>7	3	11.6	36	14.4	39	14.1
Did not answer	-	-	1	0.4	1	0.4
Hour/work (day)						
Do not work	9	34.6	62	24.8	71	25.7
Up to 8 hours	14	53.9	166	66.4	180	65.2
Over 8 hours	3	11.5	22	8.8	25	9.1
Reading/newspaper						
Daily	2	7.7	34	13.6	36	13.1
Almost every day	3	11.6	53	21.2	56	20.3
Rarely	18	69.2	136	54.4	154	55.8
Never	3	11.5	27	10.8	30	10.8
Reading/book**						
Every two weeks	2	7.7	37	14.8	39	14.1
Monthly	8	30.8	52	20.8	60	21.7
Every six months	8	30.8	84	33.6	92	33.3
Once a year	5	19.2	51	20.4	56	20.3
>year	3	11.5	25	10	28	10.2
Never	-	-	1	0.4	1	0.4
Hour/Internet***						
Up to 9	14	53.9	110	44	124	44.9
10 to 20	9	34.6	66	26.4	75	27.1
Over 20	-	-	44	17.6	44	16
Never	3	11.5	30	12	33	12
Hour/TV****						
Up to 9	21	80.8	194	77.6	215	77.9
10 to 20	1	3.8	5	2	6	2.2
Over 20	-	-	26	10.4	26	9.4
Never	4	15.4	25	10.0	29	10.5

*MI – Brazilian minimum wage in 2007, **refers to reading a book, ***refers to weekly hours, ****refers to hours/day

Only five questions (16.6%) were correctly answered by 90% of students in both groups. These questions are related to knowledge about environmental exposure to cigarette pollutants and risk of HIV infection (questions 6 and 14), biological material indicated for AIDS laboratorial diagnosis (question 22), conditions of individual vulnerability to be infected by AIDS (question 26) and use of condoms to prevent other STDs (question 17), all classified under the subtheme AIDS and four of them classified as low complexity questions.

The level of correct answers to low complexity questions was considered satisfactory with a percentage above 70% for all questions in the two groups of students. Four questions were correctly answered by all nursing students and comparing them to students from the remaining programs, the latter obtained lower levels of correct answers by question – no question obtained 100% of correct answers in this group of students.

Table 2 – Number and percentage of correct answers to low complex questions, by group of students, FAFIPA – Paranavaí, PR, Brazil 2007

Question	Correct answers		
	Nursing %	Remaining programs%	Total %
5*	21 (80)	241 (96)	262 (95)
6**	26 (100)	126 (50)	152 (55)
14*	26 (100)	242 (97)	268 (97)
17*	25 (96)	231 (92)	256 (93)
22*	26 (100)	238 (95)	264 (96)
24**	25 (96)	223 (89)	248 (90)
26*	26 (100)	240 (96)	266 (96)
30**	21 (80)	181 (72)	202 (73)

*refer to AIDS, **refer to drugs

Questions 5, 24 and 30 focused on the possibility of HIV transmission through an insect bite, the concept of 'drug' as a broad term to refer to any substance, which once consumed, represents harm to health, and the consequences of drug use among young adults.

For questions of average complexity, the number of correct answers diminished among groups of studied students, 70% of answers for each question were correct; five questions were correctly answered by nursing students and four by each group of students from the remaining programs.

Table 3 – Number and percentage of correct answers to questions of medium complexity by group of studied students, FAFIPA – Paranavaí, PR, Brazil 2007

Question	Correct answers		
	Nursing %	Remaining programs %	Total %
1*	2 (8)	10 (4)	12 (4)
2**	17 (65)	84 (34)	101 (36)
3*	1 (4)	37 (15)	38 (14)
4**	21 (81)	208 (83)	229 (83)
7*	16 (61)	84 (34)	100 (36)
8**	26 (100)	231 (92)	257 (93)
11*	26 (100)	202 (81)	228 (83)
12**	-	41 (16)	41 (15)
13*	17 (65)	129 (52)	146 (53)
15*	19 (73)	163 (65)	192 (69)
16**	12 (46)	143 (57)	155 (56)
19*	13 (50)	73 (29)	86 (31)
21**	3 (11)	21 (8)	24 (9)
23*	10 (38)	29 (12)	39 (14)
27**	7 (27)	105 (42)	112 (40)
28*	22 (85)	188 (75)	210 (76)

*refers to AIDS, **refers to drugs

In the six questions of low complexity with the lowest number of correct answers, there was a balance between those related to AIDS and those related to drugs as shown in Table 3.

Questions 1, 3, 12, 21 and 23 obtained the lowest levels of correct answers in all groups of students. These questions focused on the characteristics of the current AIDS epidemic in Brazil, the most adequate way to refer to the group of people susceptible to HIV infection, the characteristics and effects of cocaine on the body and the relation of the epidemic with the maternal infant field, more specifically to the cycle pregnancy/puerperal and to the vertical transmission of HIV.

Questions 4, 8, 16 and 27 focused on drug use risk factors, knowledge concerning the risks of sharing syringes by injection drug users (IDU), the effect of drugs on the fetus of a woman who uses drugs during pregnancy and the toxicity of syrups, a much used medication among individuals without a medical prescription.

Finally, questions 11, 13, 15, 19 and 28 referred to forms of transmission and characteristics of people infected by HIV, ways to reduce the risk of HIV infection, the use of condoms as the best way to protect from HIV infection in sexual intercourse, clinical manifestations of the disease and forms of HIV transmission.

In regard to highly complex questions, the general number of correct answers was below that obtained in questions of low and medium complexity.

No question was correctly answered for more than 80% of students in the total computation. Question ten, which focused on the difference between legal and illegal drugs, was correctly answered by 21 nursing students (80.8%) and 190 students from the remaining programs (76%).

Questions 9, 18 and 25 included knowledge concerning measures to be taken when exposed to biological material, the latent period of AIDS and signs and symptoms of HIV infection. Questions 20 and 29 asked about the effects of cocaine on the human brain and about the concept of social drug use.

Nursing students correctly answered more questions of high complexity than the remaining students, however, the level of correct answers, even among these students, indicated poor knowledge.

Table 4 – Number and percentage of correct answers of questions of high complexity by group of studied students, FAFIPA – Paranavaí, PR, Brazil 2007

Question	Correct answers		
	Nursing %	Remaining programs %	Total %
9*	21 (81)	128 (51)	149 (54)
10**	21 (81)	190 (76)	211 (76)
18*	12 (46)	44 (18)	56 (20)
20**	3 (11)	79 (32)	82 (30)
25*	9 (35)	56 (22)	65 (23)
29**	5 (19)	53 (21)	58 (21)

*refer to AIDS, **refer to drugs

DISCUSSION

According to data from the National Institute for Educational Studies and Research Anísio Teixeira – INEP, the variable that had the largest impact on the performance of students participating in the National Exam for Secondary Schools in 2001 was family income. Students of families with higher incomes usually have parents with higher educational levels and facilitated access to cultural goods such as books, computers, movies theaters and travels⁽⁷⁾.

Considering that most of the studied students worked eight hours or more a day, attended theoretical classes, supervised training and other activities related to their programs, it was pertinent to investigate other means, those considered non-didactic, that students used to acquire information and knowledge and their availability of time for this acquisition.

The students' excessive load of studies from the biological sciences and health programs reduce

their free time to read books other than those required by their respective programs. This fact might explain the students' habit of not reading many newspapers and books, especially nursing students.

Television was the most cited and used means of information during free time, which is in accordance with the national trend of Brazilian undergraduate students obtaining information mainly through TV. This communication vehicle is currently an important source of information and oftentimes fills gaps in education that should be offered at school and by the family.

A U.S. study reports that television is the main source of information about sexuality for adolescents and the country has the highest rate of STD among this group among Western countries⁽⁸⁾.

Other studies, which also investigated students' knowledge about AIDS, pointed to television as a great informative vehicle on the subject⁽⁹⁻¹⁰⁾. Access to different sources of information, especially television and the Internet, was shown to affect the knowledge of students, both in the total computation of answers as in the analysis of questions by level of complexity. We had expected that students would obtain a larger number of correct answers in low complexity questions regardless of program and period because the issues addressed in these questions are highly disseminated in campaigns of the National Program of STD and AIDS in health services and by the media.

The study's results, if compared to the socioeconomic characterization of studied students seem to be adequate because the majority of them pointed to audiovisual media, especially television and the Internet, as the main sources of information. If one takes into account the high number of correct answers, this result indicates that knowledge is not subject only to the school environment but also to the private, public and family spheres and other social relations⁽¹¹⁾.

We observed that the number of correct answers to questions of average complexity decreased in students from all programs. These questions required students to have technical-scientific knowledge and knowledge acquired through several sources of information including reading on the subject.

Questions of a high level of complexity required knowledge acquired in regular programs in the health field or specific courses on the subject,

that is, students would need knowledge acquired in specific courses in the subject whether through curricular courses, speeches or training. The general number of correct answers was below 50% in the majority of questions of high complexity and in both groups of students, whereas only two questions were correctly answered by more than 80% of nursing students.

It is worth noting the low number of correct answers to questions concerning vertical transmission of HIV because the majority of respondents were female. Considering that the AIDS epidemic has changed its transmission dynamics with the increased number of cases in the female population, the students' low level of knowledge about this aspect is reason for concern, because it is known that maternal-child transmission is the main cause of HIV infection among children^(5,12-13).

Additionally, the low level of knowledge about drugs observed among students is consonant with observations of a study carried out in the south of Brazil, which focused on attitudes and beliefs of nursing students about the phenomenon of drugs and points to the need of sensitizing higher education institutions to invest in the inclusion of content on alcohol and other psychoactive substances to undergraduate students in the nursing program and others⁽¹⁴⁾.

This information can indicate that students answered questions about drugs with knowledge acquired in sources of information other than the programs' curricula. Again, it is possible to relate these findings and sources of information used by the studied students, who use more television and the Internet and rarely use newspapers and books as sources of information.

The knowledge presented by students seems to coincide with the way the media addresses the subject, which privileges illegal drugs, many times in an emotional and alarming tone and can also indicate inadequate complementation of the curricula due to lack of compulsory content in the nursing program or additional content in the remaining programs⁽¹⁵⁾.

Results also revealed that students are informed on the risks that health professionals and other people are exposed to when managing biological material because they correctly reported the procedures to be taken when in contact with such material, such as immediately washing an exposed site with water and soap. This procedure as well as the use of gloves is widely disseminated in the media

to prevent blood-borne diseases, especially AIDS, which justifies the number of correct answers^(11,16).

FINAL CONSIDERATIONS

Access to different sources of information, especially television and the Internet was shown to influence students' knowledge both in the general computation of questions and in the analysis of questions by level of complexity. Questions considered of low complexity, more sensitive to the influence of the media, obtained a large number of correct answers in all groups of students.

The poor level of answers is a worrying fact since it is impossible to address HIV prevention without broadly approaching health, that is, without addressing sexual health and drug use. Thus, it

justifies rethinking the inclusion of specific content into curricula, promoting interdisciplinary and didactic activities in order to integrate programs with a view to disseminate and socialize knowledge.

These results provide support to the reflection about the educational process in the institution and show the need to improve the way AIDS and drugs are addressed in the courses of the nursing program as well as in the curricula of the remaining programs.

The institution focused on in this study promotes education and therefore has an essential role in providing knowledge that will support students' self-protection as well as the protection of others. Its role is to provide conditions promoting the acquisition of competence in undergraduate programs necessary to maximize their professions, preparing the future nurse to care for human beings involved in this context.

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