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High school students and their knowledge about HIV/aids: what has changed in ten years?

ESTUDANTES DO ENSINO MÉDIO E O CONHECIMENTO EM HIV/AIDS: QUE MUDOU EM DEZ ANOS?

ESTUDIANTES SECUNDARIOS Y CONOCIMIENTO SOBRE EL VIH/SIDA: ¿QUÉ HA CAMBIADO EN DIEZ AÑOS?

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ABSTRACT

An exploratory, descriptive, comparative study with a quantitative approach, whose objective was to compare the knowledge of high school students from two public state schools ofPeruíbe, SP, Brazil, about Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS), in the years 1999 and 2010. In both of these years, the predominant population studied was female students, under 18 years old, unmarried and white. A statistically significant difference was found with respect to knowledge about HIV/AIDS among the groups studied. It was found that even with ten-year interval between the studies, the two groups of students did not consider themselves vulnerable to HIV and presented doubts as to the correct knowledge about the topic, which indicates the need for a continuous approach with young adolescents

DESCRIPTORS

HIV
Acquired Immunodeficiency Syndrome
Students
Education Primary and Secundary
Knowledge
Public health nursing

RESUMO

Estudo exploratório, descritivo, comparativo, com abordagem quantitativa, cujo objetivo foi comparar o conhecimento de estudantes do ensino médio de duas escolas estaduais públicas de Peruíbe, SP, Brasil, sobre o Vírus da Imunodeficiência Humana (HIV) e da Síndrome da Imunodeficiência Adquirida (aids), nos anos de 1999 e 2010. Nos dois anos, na população estudada predominaram estudantes do sexo feminino, menores de 18 anos, solteiros e de cor branca. Foi encontrada diferença estatisticamente significativa quanto ao conhecimento sobre HIV/aids entre os grupos estudados. Verificou-se que mesmo havendo intervalo de dez anos entre os estudos, os dois grupos de estudantes não se consideraram vulneráveis ao HIV e apresentaram dúvidas quanto ao conhecimento correto sobre o tema, o que indica a necessidade de sua abordagem contínua com adolescentes jovens.

DESCRITORES

HIV
Síndrome de Imunodeficiência Adquirida
Estudantes
Ensino Fundamental e Médio
Conhecimento
Enfermagem em saúde pública

RESUMEN

Estudio exploratorio, descriptivo, comparativo, de abordaje cuantitativo, objetivando comparar el conocimiento de estudiantes secundarios de dos escuelas estatales públicas de Peruíbe-SP-Brasil, sobre el Virus de Inmunodeficiencia Humana (VIH) y el Síndrome de Inmunodeficiencia Adquirida (SIDA) en 1999 y 2010. En ambos años, predominaron en la población investigada estudiantes de sexo femenino, menores de 18 años, solteros, de raza blanca. Se encontró diferencia estadísticamente significativa respecto del conocimiento sobre HIV/SIDA entre los grupos estudiados. Se verificó que, incluso existiendo un intervalo de diez años entre los estudios, los dos grupos de estudiantes no se consideraron vulnerables al VIH y expresaron dudas sobre el correcto conocimiento del tema, lo cual indica la necesidad de un abordaje continuo de la temática con adolescentes jóvenes.

DESCRIPTORES

VIH
Síndrome de Inmunodeficiencia Adquirida
Estudiantes
Educación Primaria y Secundaria
Conocimiento
Enfermería en salud pública

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INTRODUCTION

This study falls within the research line of the *Nursing Diagnosis and Intervention in Public Health* of the Graduate Nursing Program (PPGE), and integrates the production of the Research Group *Vulnerability, adherence and health needs*, registered in the CNPq, linked to the Department of Community Health Nursing, School of Nursing of the *Universidade de São Paulo* (EEUSP).

This is a research group which is based on the concepts of vulnerability, adherence and health needs and the theoretical – methodological instruments of Classical and Critical Epidemiology to guide the development of studies in the field of Community Health Nursing. Among its studies is the development of investigations related to diseases prevalent in the epidemiological profiles of Brazilian society, among which are tuberculosis, AIDS and others, contributing to the formulation and implementation of public health policies.

The HIV/AIDS epidemic continues to be a serious health problem in Brazil and in the world, and nursing has an important role in developing actions of health promotion, prevention and assistance of the STDs/HIV/AIDS among young people[1].

It is estimated that, worldwide, young people between 15-24 years of age are responsible for 45% of new infections by HIV, and that 370,000 children under 15 years became infected in 2007[2].

In Brazil, the report of AIDS in young people 13-19 years of age, from 1980 to 2009, was of 5,457 cases; and, in the age group from 20 to 29 years, there were 81,547 cases. This indicates that many of these young people may have been infected in adolescence[3]. One should remember that, the group between 10 to 20 years of age currently represents approximately 21% of the Brazilian population[4].

It is known that there are many aspects that relate to the vulnerability of young people to AIDS, such as: the feeling of omnipotence, the lack of adequate information, prejudices, socioeconomic barriers, the need for exploration of what is new, a poor educational system that discourages learning, the difficulties of choice, the blurring of identity, the urgency for the future, shortages, poor quality of health services, professionals unprepared to deal with the adolescent, the lack of institutional resources for this group, the need for group affirmation, family breakdown, economic dependency, low notion of citizenship (he is at the beginning of his construction of citizenship) and the initiation of sexual activity with all his insecurity, his fantasies and, very often, these are hidden[5-6].

With respect to vulnerability, this has three interdependent dimensions: the *individual*, which considers the ability of people to incorporate knowledge and transform behaviors that make them susceptible, or not, to HIV/AIDS; *programmatic*, which considers the structure and organization of health services to combat STD/AIDS; and, *social*, composed by the economy, public policies, particularly in education and health, culture, ideology and gender relations that define individual and programmatic vulnerability[7-10].

It is noteworthy that, individual vulnerability refers to the degree and quality of information that individuals have about health problems, their development and application in practice, understanding that there are contexts in the absence of preventive attitudes related to personal characteristics (age, gender, race, among others), emotional development, perceptions of risk, knowledge about Sexually Transmitted Diseases (STDs/HIV/AIDS), sexuality, negotiation of safe sex practices, beliefs, values, among others. It is also considered that adverse situations in life, are unevenly distributed, according to the individuals, regions and social groups and related to poverty, with economic crises and with educational level[11].

Youth do not consider themselves vulnerable, because they trust their boyfriends/girlfriends, and associate AIDS to fear, death, incurable disease, and continue being the most difficult for prevention, according to a study on the reflections of a decade of work on AIDS prevention in youth and adolescents.

Youth do not consider themselves vulnerable, because they trust their boyfriends/girlfriends, and associate AIDS to fear, death, incurable disease, and continue being the most difficult for prevention, according to a study on the reflections of a decade of work on AIDS prevention in youth and adolescents[6].

With respect to individual vulnerability, specifically related to knowledge, a study performed with 360 young people in the state public high schools, in the municipality of Peruíbe, SP, Brazil in 1999, showed that 50.5% still believed, erroneously, that donation of blood can infect the donor; 30% reported they did not know whether an insect bite transmitted HIV; 12% confirmed that it was possible; 36.7% believed that *the transmission of AIDS occurs with the use of disposable syringes for injectable drug use (UDI)* and 53.2% considered they were not at risk or at low risk for HIV[12].

In Peruíbe, the municipality of the study, public policies such as the First Journey of Adolescent Health of Peruíbe in 2009 have been developed, where the Program for Comprehensive Care of the Adolescent (PAI) was launched. The Adolescent House of Peruíbe also already exists in the city of Peruíbe (CADOL).

With these actions in place, and ten years having passed since the first study, was there a change in knowledge and risk perception of students about HIV/AIDS?

Faced with these considerations, this study aimed to compare the differences in the demographic profile, knowledge of high school students about HIV/AIDS and the risk perception of the studies in 1999 and 2010[12-13].

The purpose of this study was to obtain data that can serve as support for the sectors responsible for the health and education of the city, to construct prevention programs in HIV/AIDS, for high school students of the public schools in accordance with the reality presented by the same.

METHOD

This was an exploratory-descriptive, comparative study with a quantitative approach. The data analyzed in this study referred to the findings of the survey *Study of the factors related to AIDS among high school students*[13] conducted in 1999, and compared with the research, *Vulnerability to HIV/AIDS in high school youth: what changed in ten years*, conducted in 2010.

The research participants consisted of a sample of students enrolled in two state public schools in Peruíbe, SP, Brazil.

In research conducted in 1999, 2,219 students were enrolled in the two schools. Probability sampling was used, resulting in 360 students, 15% of the total elective population.

In research conducted in 2010, there were 1,512 students enrolled in the two schools. For definition of the sample of students, a ratio of the *knowledge about sex of the high school students in the first study (67%)* was used, establishing a margin of error of 0.05%, which resulted in a sample size of 323 students. However, 226 students effectively participated in the research. The loss of 30% occurred because, despite the receptivity of the students and the school, some students did not bring the signed Terms of Free and Informed Consent Form (TFIC), others refused to receive the TFIC to collect the signatures of a responsible adult, and others missed the day of delivery of the terms, or the day of data collection.

For the collection of data, the choice of the rooms was a simple random drawing of the first, second and third year of high school, of the three periods: morning, afternoon and evening of the two schools. Data collection occurred over two days in the month of June of 1999 and two days in the month of February, 2010, marked in conjunction with the school directors, two days for each school. A feedback session was held in the participating schools.

In 2010, the anonymous and self-administered questionnaire-type instrument that was used in 1999 was administered[13]. Composed of two parts, the first characterized general socioeconomic data of the students, and the second addressed issues related to knowledge, beliefs, values, attitudes and practices related to the experience of sexuality and vulnerability to HIV, totaling 51 questions. The questionnaire contained closed questions, some were multiple choice, developed conforming to Likert-type scales.

For measurement of the demographic profile, questions considered were related to age, gender, skin color, marital status; for knowledge, questions related to attending classes or lectures about HIV/AIDS, correct condom use, transmission of the virus, and evaluation of knowledge and the risk of acquiring HIV/AIDS.

In both of the studies the responses contained in the questionnaires were entered into *Microsoft Office Excel* 2007, constituting two spreadsheets, one for the year 1999 and another for 2010.

The two worksheets were grouped and processed with the Statistical Package for Social Sciences (SPSS) version 18, and comparisons were made with the chi-square test (with continuity correction, when necessary) or the likelihood ratio test (when the expected proportions were less than five, on more than 20% of cells) with a 5% significance level.

Both projects were approved by the Committee on Ethics in Research (CEP) of the Nursing School of the *Universidade de São Paulo* (EEUSP), under protocol nº 05/1999 and protocol nº 871/2009.

RESULTS

In both studies, regarding the results of the demographic profile, the prevalence was for female students, less than 18 years of age, single, and with white skin color (Table 1).

Table 1 – Caracterization of the demographic profile of high school students in two public state schools in Peruíbe, 1999 and 2010

Demographic Data†	1999	2010	p
	n (%)	n (%)	
Sex			
Male	145 (40.6)	99 (43.8)	0.500
Female	212 (59.4)	127 (56.2)	
Marital Status			
Single	322 (91.7)	201 (90.1)	0.611
Married/Living together	29 (8.3)	22 (9.9)	
Color			
White	259 (76.2)	123 (55.7)	0.000
Black/Mulatto	62 (18.2)	94 (42.5)	
Yellow	19 (5.6)	4 (1.8)	

† Incomplete data were removed

The mean age was 18.7 years in 1999 (minimum of 15 years and maximum of 48 years), and in the 2010 study, it was 16.8 years (minimum of 13.2 years and maximum of 30.3 years).

In 1999, the percentage of students who reported having a lecture/class in school about HIV/AIDS was higher than in 2010, with this decrease being statistically significant. The percentage of students with knowledge about the modes of transmission of the virus and about correct use of condoms was also decreased, with these being significant differences (Table 2).

Table 2 – Comparison of knowledge about HIV/AIDS in high school students in two public state schools in Peruíbe, 1999 and 2010

Knowledge†	1999 n (%)	2010 n (%)	p
Had a lecture/class in school			
Yes	308 (85.8)	143 (63.3)	0.000
No	51 (14.2)	83 (36.7)	
Know about modes of HIV transmission			
Yes	317 (88.5)	187 (82.7)	0.001[a]
No	- (0.0)	7 (3.1)	
Had doubts	41 (11.5)	32 (14.2)	
Know how to put on and remove (use) a male condom			
Yes	247 (70.0)	148 (65.5)	0.033
No	30 (8.5)	35 (15.5)	
Had doubts	76 (21.5)	43 (19.0)	
The transmission of HIV/AIDS, can occur through an infected mother to the fetus			
Yes	307 (86.5)	145 (65.6)	0.000
No	14 (3.9)	23 (10.4)	
Don't know	34 (9.6)	53 (24.0)	
A person with AIDS can appear healthy			
Yes	271 (76.6)	134 (59.8)	0.000
No	49 (13.8)	48 (21.4)	
Don't know	34 (9.6)	42 (18.8)	
AIDS transmission can occur with the common use of pools			
Yes	16 (4.5)	13 (5.8)	0.000
No	262 (73.6)	120 (53.3)	
Don't know	78 (21.9)	92 (40.9)	
AIDS transmission can occur on bus or toilet seats			
Yes	91 (25.9)	69 (30.9)	0.000
No	221 (63.0)	93 (41.7)	
Don't know	39 (11.1)	61 (27.4)	
AIDS transmission can occur during sexual relations with an infected partner			
Yes	357 (99.7)	148 (65.5)	0.000
No	1 (0.3)	10 (4.5)	
Don't know	0 (0.0)	68 (30.0)	
The use of bathrooms, glasses, cutlery or towels after use by a carrier of AIDS, carries a risk of transmission			
Yes	48 (13.7)	69 (30.7)	0.000
No	242 (68.5)	89 (39.5)	
Don't know	63 (17.8)	67 (29.8)	
The act of donating blood can infect those who are donating blood with the AIDS virus			
Yes	182 (51.1)	128 (56.9)	0.000
No	137 (38.5)	52 (23.1)	
Don't know	37 (10.4)	45 (20.0)	
AIDS transmission occurs by using injectable drugs with disposable syringes			
Yes	132 (36.7)	88 (39.0)	0.000
No	194 (54.0)	88 (39.0)	
Don't know	33 (9.3)	50 (22.0)	

† Incomplete data were removed
[a] Likelihood Ratio

It was observed that after 10 years, fewer students knew that AIDS transmission could occur by means of an infected mother to the fetus; that a person with AIDS may seem healthy; and, that AIDS transmission could occur when having intercourse with an infected partner.

The percentage of students who had doubts whether AIDS transmission could occur with the common use of pools, increased from 21.9% to 40.9%. Lack of knowledge as to whether AIDS transmission occured from bus or toilet seats also increased, from 11.1% to 27.4%, with the increase in those who believed this was yes, and these differences were statistically significant

There was an increase from 13.7% to 30.7% of students who said that the use of bathrooms and household utensils, after use by a person with HIV/AIDS, carried a risk of transmission; and, belief in the possibility of a blood donor becoming infected with the virus increased from 10.4% to 20.0%.

Comparing the 1999 study to the 2010 study, about the assessment of students as to their own knowledge of HIV/AIDS, it was noticed that there was a statistically significant difference, however they still do not consider themselves to be at risk (Table 3).

Table 3 – Comparison of the evaluation of knowledge and the risk of acquiring HIV in high school students in two public state schools in Peruíbe, 1999 and 2010

Knowledge†	1999 n (%)	2010 n (%)	p
Evaluate own knowledge on HIV/AIDS			
I know the subject Very Well / Well	239 (69.2)	127 (57.8)	0.012[a]
I know the subject Little / Very Badly	106 (30.6)	90 (40.9)	
I do not know anything	1 (0.2)	3 (1.3)	
Evaluate the risk of acquiring HIV			
No risk / low risk	190 (55.6)	118 (53.8)	0.754
Moderate risk	57 (16.6)	33 (15.1)	
High risk	29 (8.5)	24 (10.9)	
I do not know	66 (19.3)	44 (20.2)	

† Incomplete data were removed
[a] Likelihood Ratio

DISCUSSION

There was no statistically significant difference, in either of the studies, with respect to demographic, gender and marital status data; the predominance of female and single individuals continued.

About the age of the students, it was apparent that the high school students in the 2010 study were younger than the students in 1999. This may reflect the increased enrollment rate of young people, aged 15 to 17 years, that has been occurring in the country. There was a 33% increase in the last ten years to 82.4%, in 2003. One of the analyses is that the demands of the labor market contributed to the increase in demand for secondary education[4].

Although the percentage of students who were considered to be white was higher in both studies, there was a significant increase of students who considered themselves black/mulatto (from 17.2% in 1999 to 41.6% in 2010).

The Fourth National Monitoring Report on the Millennium Development Goals (MDGs) showed that there has been a higher percentage of blacks in high school. In 1992, the proportion of whites of 15 to 17 years of age, enrolled in school (27.1%) was almost three times the proportion of blacks (9.2%). In 2008, the difference had fallen to 44% (61% among whites, 42.2% among black or mixed). This increase in the percentage of blacks in high school may reflect greater access to schooling. However, this same report showed differences in this access for black boys and girls, showing how much the gender component adds; the report indicates that fewer black girls attend schools, they present a lower mean years of education, and a greater lagging behind in school[14].

There was a significant reduction in the percentage of students who had a class/lecture in schools from 1999 to 2010. One student, in the third year of night high school at one of the schools, reported he had not attended a lecture on HIV/AIDS since the seventh grade.

In a similar way, a study of 4,929 students from thirty-eight state high schools in the city of São Paulo, showed that 36.9% of respondents had never had classes or activities addressing gender/sexuality in school. Also in this study, the majority (55.7%) said they had never received educational materials on these subjects[15].

It is believed that lectures contribute to the promotion of the acquisition of knowledge, healthy and protective behaviors in youth in regard to STDs/AIDS, but do not solve the issue, since these subjects are fraught with concepts, prejudices and emotions[16]. But, it is believed that to promote opportunities for young people to express their doubts, fears and desires in groups, without embarrassment, has importance.

Also, there were significant differences about the knowledge regarding the modes of HIV transmission, how much the students knew about the HIV/AIDS topic, respectively, and how to put on and remove the male condom; in the 2010 study, the students knew less.

Of the students in the 2010 study, 34.5% did not know or had questions about the correct way to put on the male condom, this suggests that sexual orientation workshops have been conducted, contributing to the use of this method, both as contraception, and as STD/AIDS prevention. The younger the age, the more natural it is to have

doubts about the correct way to use a condom, it is also natural for the girls to have more questions than boys, since the condom is *masculine*. This shows the need for girls to receive further guidance on this subject, to avoid one partner discouraging the other from using protection at the time of sexual intercourse[12].

In a study about condom use, trends between 1998 and 2005 in the Brazilian population concluded it was necessary to deepen the discussion around actions that aim to increase consistent condom use, especially among populations with lower educational levels[17].

By analyzing condom use in the first sexual intercourse among Brazilian adolescents, also for the periods of 1998 and 2005, the decrease in condom use among young people who initiated sex before age 14 was confirmed, significantly in the southeastern region and among the most educated. It reinforced the increase in condom use at first sexual intercourse[18].

The primary motivation for condom use, in a study conducted with 4,929 students, was the prevention of pregnancy (72.3%) and prevention of STD/AIDS (63.7%). However, 19.3% of boys said they would have sex without a condom, compared to 53.2% of the girls[15].

Regarding the risk of contracting HIV, there was no significant difference between the two studies, demonstrating that students did not see themselves as being vulnerable to HIV/AIDS.

Unlike the result of our study, a study about the level of knowledge and risk perception of the general Brazilian population about HIV/AIDS, in 1998 and 2005, indicated a decrease in the proportion of people who reported having some type of risk for AIDS, decreasing from 51.1% in the previous survey to 33.8% in 2005. This same behavior was observed in the population segment of young people, aged 16 to 24 years, in high school[19].

The national household survey, conducted in 2008, with 8,000 individuals, found among young people 15-24 years, that the proportion with incorrect knowledge of the forms of HIV transmission was nearly 48%; it was 47.1% among men and 49 6% among women[20].

For young people, aged 16 to 24 years, there was a significant increase in those who had minimal information with respect to HIV/AIDS[18].

Despite the fact that there has been some kind of activity for HIV prevention in 70% of schools in the country, it is known that in recent years there has been a reduction in the level of knowledge about AIDS among the population aged 15 to 24 years, and higher among groups with lower education[21].

The results of this study are worrisome because, with the difference in ten years between the studies, the students were found to have less correct concepts about HIV/AIDS today.

With the results presented, we suggest that health promotion actions are important forms of openness for dialogue between schools and healthcare services. It is important to create networks for health promotion and, above all, to maintain a communication channel for exchanging information and the establishment of linkages necessary to meet the problems of sexual and reproductive health. These actions may be lectures in schools, health care services or in the community; debates; group work; workshops and networking meetings between school and service. It is necessary that there are jointly organized actions and the conducting of a survey of the main problems and needs that affect the school population[16].

CONCLUSION

We can conclude, according to the proposed objectives, that with ten years between the two studies, the high school students of the schools surveyed in 2010, may be more vulnerable to HIV/AIDS than the high school students in the 1999 study. More questions hovered around these students, about the correct knowledge about HIV/AIDS. As for the risk, it stayed the same, but they did not consider themselves vulnerable to HIV, indicating that it is necessary to address this issue with young people in schools, consistently and in a continuous manner.

REFERENCES

1. Nichiata LYI, Gryschek ALFPL, Ciosak SI, Takahashi RF. Atividades de prevenção às DST/HIV e a aids desenvolvidas pela enfermagem nas unidades básicas de saúde. In: Borges ALV, Fujimori E, organizadores. DST e AIDS. Barueri (SP): Manole; 2009. p. 370-411.

2. UNAIDS. 2008 Report on the Global AIDS epidemic [Internet]. Geneva; 2008 [cited 2010 Feb 10]. Available from: http://data.unaids.org/pub/GlobalReport/2008/jc1510_2008_global_report_pp29_62_en.pdf

3. Boletim Epidemiológico AIDS. 27ª a 52ª Semanas Epidemiológicas. Brasília: Ministério da Saúde. 2009;6(1).

4. Instituto Brasileiro de Geografia e Estatística (IBGE). Síntese dos Indicadores Sociais traz um retrato do Brasil em 2003 [Internet]. Rio de Janeiro; 2005 [citado 2010 out. 20]. Disponível em: http://www.ibge.gov.br/home/presidencia/noticias/noticia_visualiza.php?id_noticia=317&id_pagina=1

5. Ayres JRCM. HIV/aids, DST e abuso de drogas entre adolescentes: vulnerabilidade e avaliação de ações preventivas. São Paulo: Casa de Edição; 1996.

6. Paiva V, Peres C, Blessa C. Jovens e adolescentes em tempos de AIDS: reflexões sobre uma década de trabalho de prevenção. Rev Psicol USP [Internet]. 2002 [citado 2010 ago. 5];13(1):55-78. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-65642002000100004

7. Mann J, Tarantola DJM, Netter T. A Aids no mundo. Rio de Janeiro: Relume-Dumará; 1993.

8. Ayres JRCM, França Junior I, Calazans G, Salletti H. Vulnerabilidade e prevenção em tempos de Aids. In: Barbosa R, Parker R, organizadores. Sexualidade pelo avesso: direitos, identidades e poder. Rio de Janeiro: IMS/UERJ; 1999. p. 49-72.

9. Ayres JRCM, Dalmaso ASW, Novaes HMD, Schraiber LB, Nemes MIB, Peduzzi M. Caminhos da integralidade: levantamento e análise de tecnologias de cuidado integral à saúde em Serviços de Atenção Primária em região metropolitana. São Paulo: FMUSP; 2010.

10. Bertolozzi MR, Nichiata LYI, Takahashi RF, Ciosak SI, Hino P, Val LF, et al. The vulnerability and the compliance in Collective Health. Rev Esc Enferm USP [Internet]. 2009 [cited 2010 Sep 17];2(spe 2):1326-30. Available from: http://www.scielo.br/pdf/reeusp/v43nspe2/en_a31v43s2.pdf

11. Muñoz-Sánchez AI, Bertolozzi MR. Pode o conceito de vulnerabilidade apoiar a construção do conhecimento em Saúde Coletiva? Ciênc Saúde Coletiva. 2007;12(2):319-24.

12. Val LF, Meneghin P. Aids-related factors among high school students. Saarbrücken, Germany: VDM Verlag Dr. Müller; 2010.

13. Val LF. Estudo dos fatores relacionados à aids entre estudantes do ensino médio. [dissertação]. São Paulo: Escola de Enfermagem, Universidade de São Paulo; 2001.

14. Programa das Nações Unidas para o Desenvolvimento (PNUD). Desigualdade entre negros e brancos cai na educação, mas não na renda [Internet]. Brasília; 2010 [citado 2010 out. 7]. Disponível em: http://www.pnud.org.br/Noticia.aspx?id=2296

15. Figueiredo R, Alves MCGP, Escuder MM, Pupo LR. Comportamento sexual, uso de preservativos e contracepção de emergência por adolescentes do município de São Paulo - estudo com estudantes de escolas públicas de ensino médio. São Paulo: Instituto de Saúde; 2008.

16. Figueiredo R, Kalchkmann S, Bastos S. Sexualidade, prática sexual na adolescência e prevenção de DST/AIDS e gravidez não planejada, incluindo contracepção de emergência. São Paulo: Instituto de Saúde; 2008.

17. Berquó E, Barbosa RM, Lima LP. Uso do preservativo: tendências entre 1998 e 2005 na população brasileira. Rev Saúde Pública. 2008;42 Supl 1:34-44.

18. Paiva V, Calazans G, Venturi G, Dias R. Idade e uso de preservativo na iniciação sexual de adolescentes brasileiros. Rev Saúde Pública. 2008;42 Supl 1:45-53.

19. Ferreira MP. Nível de conhecimento e percepção de risco da população brasileira sobre o HIV/AIDS, 1998 a 2005. Rev Saúde Pública. 2008;42 Supl 1: 65-71.

20. Pascom ARP, Ferraz DAS, Arruda MR, Brito I. Conhecimento e práticas sexuais de risco associados ao HIV na população brasileira de 15 a 64 anos, 2008. Rev Tempus Actas Saúde Coletiva [Internet]. 2010 [citado 2010 out. 30];2(2). Disponível em: http://www.tempusactas.unb.br/index.php/tempus/issue/view/83/showToc

21. Villela WV, Doreto DT. Sobre a experiência sexual dos jovens. Cad Saúde Pública. 2006;22(11):2467-72.

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