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AIDS IN SCIENCE AND BIOLOGY SCIENCE BOOKS

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Abstract: AIDS involves prejudices and taboos. It is essential that education builds new knowledge and deconstructs stigmas. This research aimed to analyze the theme of AIDS in textbooks on Science (PNLD 2017 and 2020) and Biology (PNLEM 2007; PNLD 2012 and 2015), using Bardin's content analysis methodology. Although there is a predominance of aspects related to health and prevention, in the PNLD 2020 science books there is a tendency to discuss more about people and their rights and what the government must guarantee. Many advances are still needed, but discussions that allow a reflection on the subject beyond the biological aspect of health are more present..

Keywords: AIDS, textbooks, Science, Biology.

INTRODUCTION

When AIDS appeared, it was understood as a disease that was restricted to homosexuals (FERREIRA, 1994). Homoeroticism was associated as the great threat and the greatest sexual panic in contemporary history was created. Thus, the name "risk group" was not limited to a biomedical delimiter, but rather to a sanitary-moral cord (PELÚCIO; MISKOLCI, 2009). However, throughout its evolution, HIV infection started to be detected in other segments of society, passing to the use of the term "risk behavior". This change in terminology included other individuals and the broader scope of the epidemic, but it did not prove to be sufficient to reduce stigma and prejudice. (SCHAURICH, 2004).

Thus, according to Ayres (2001) and Seffner (2001), the term was modified, understanding the vulnerabilities in the context of AIDS and realizing that people are not in the same social position when faced with HIV infection. Vulnerabilities have three orders of factors: social (socioeconomic, political and cultural), programmatic (programs and actions) and individual (which is related to the degree of

awareness, not deriving exclusively from the will of the subjects). Therefore, it is essential that the three orders are used when working with prevention (AYRES, 2001; SEFFNER, 2001), focusing not on "risk group" policies, but on socially established relationships in different population groups (SCHAURICH, 2004).

The 2019 Brazilian epidemiological bulletin reveals that the record of new AIDS cases in Brazil has had an annual average of 39,000 cases in the previous five years. The increase in the AIDS detection rate (x100 thousand inhabitants) in young men aged 15 to 24 is highlighted. From 2008 to 2018, among men aged 15 to 19, it increased from 3.7 to 6.0 (BRAZIL, 2019).

Therefore, the school has a central role in the work for the prevention of AIDS/HIV from the perspective of reflection and seeking to reduce vulnerabilities. In this sense, textbooks (DL) can be an important instrument, but for that, they need to be focused on such problematizations, and it is essential to know how they dialogue on the theme of AIDS with their readers. Therefore, it is essential that textbooks do not present, in any way, content that is discriminatory or that is in a wrong way (LAJOLO, 1996).

From the doctoral thesis (CORRÊA, 2017), the theme of AIDS was verified in the Biology textbooks. Continuing this investigation, subsequent research verified how AIDS is included in Science books, considering editions of the PNLD before and after the approval of the Common National Curriculum Base - BNCC. Given the data found so far, we sought to analyze the dialogue of textbooks on Science (PNLD 2017 and 2020) and Biology (PNLEM 2007; PNLD 2012 and 2015) with their/their readers.

METHODOLOGICAL PROCEDURES

Following Cellard's (2012, p.297) perspective, textbooks were considered here as unarchived public documents, defined by the author as those that "include, among others, newspapers, magazines, periodicals and any other type of distributed documents : advertising, advertisements, treaties, circulars, parish bulletins, telephone directories, etc.," when dealing more specifically with the document as a written text, recorded on paper, whether handwritten or printed.

Considering textbooks as documents, a documental research of a qualitative nature was carried out. The content analysis method proposed by Laurence Bardin (2011) was used and developed around "three chronological poles": 1) pre-analysis; 2) exploration of the material; 3) treatment of results, inference and interpretation (BARDIN, 2011). For the investigation of Science DLs, two collections that were most widely distributed in schools across the country were selected, according to statistics on the website of the National Education Development Fund – FNDE (BRASIL, 2020), and which were present in the two editions of the PNLD de Sciences to be analyzed (2017 and 2020), so that it is possible to verify the change in content between editions more clearly. They were: 1. Projeto Araribá (2014;2018); 2. Gewandsznajder and Pacca (2016) and Gewandsznajder (2018).

For the investigation of Biology books, the four collections most distributed in schools were selected, according to statistics from the website of the National Education Development Fund – FNDE (BRASIL, 2012; 2015), and which were present in the three editions of the PNLD analyzed, so that it was possible to verify the modification in the content throughout the editions more clearly. The analyzed collections were from the following authors: 1. Sérgio Linhares and

Fernando Gewandsznajder (2005;2010;2013); 2. César da Silva Júnior, Sezar Sasson and Nelson Caldini Júnior (2005;2021;2013); 3. José M. Amabis and Gilberto R. Martho (2004;2010;2013); 4. Sônia Lopes and Sergio Rosso (2005;2010;2013).

RESULTS AND DISCUSSION

SCIENCE BOOKS

Regarding prevention measures, male and female condoms and diaphragms are indicated, as well as some care with sharp objects, transfusion, prenatal care and breastfeeding. As activities, they bring information about new infections in the world and ask about regions and group activities entitled "this way it catches, it doesn't catch it". In the 2020 collection, the website aids.gov.br appears in addition to the update of the term STD (Sexually Transmitted Disease) for STI (Sexually Transmitted Infection). The books work on the deficiency in the immune system, the contagion (sexual, blood and organ transfusion, artificial insemination and from mother to child).

For the 7th year, in both editions (PNLD 2017 and 2020) they present AIDS in the unit on the classification of living beings. There is talk of viral reproduction and viruses and AIDS is cited as an example. The second collection analyzed, the AIDS theme for the 8th year, is in the units on the functions of nutrition (when talking about blood) in the PNLD 2017 edition. In the PNLD 2020 edition, it features a unit on reproduction, with a specific chapter on sexuality and contraceptive methods and another on STD.

In 2017, the following AIDS history line was made: 1981 with the first cases, 1982 the acronym AIDS, 1983 discovery by Gallo and Montagnier, 1985 and the first tests, 1987 and the AZT (first drug), 1991 and Montagnier as the true author of discovery. It was talked about the HIV serotypes and primates as their

origin and it was highlighted that the students had already studied the immune system in the chapter on blood and it explains the action of HIV. The 2020 edition has a similar story line, but 1885 to 1991 were withdrawn.

Rosa (2019), in her research with the PNLD 2018 Biology DL, also found a history that is directed towards medical achievements and that does not include the struggles of social movements, as found by Corrêa (2017), analyzing Biology books of the PNLD 2017, 2012 and 2015. It is noteworthy that one of the authors of the textbooks analyzed by Corrêa (2017) is also an author in the second collection verified here.

PNLD 2020 deals with the nomenclature STD and IST, citing AIDS when talking about condoms and IST. A text on sexual and reproductive health is presented, highlighting AIDS among the Millennium 2000 goals for the UN and fighting HIV. It is about basic attention to health and sexual health in general, showing an image of a campaign by the Ministry of Health and a condom (“Better life without AIDS. There is still no cure”). AIDS is cited as an example of STD and questions are asked about risky behavior. The teacher guidance suggests explaining that the book kept the DST nomenclature due to the BNCC guidance (because the nomenclature is more widespread) and in the body of the text explains why IST is more correct.

In PNLD 2017 transmission is indicated with the routes: sexual, transfusion, sharp objects, mother to child and diffusion (placenta), insemination. It is noteworthy that it is not transmitted by contact and others, kissing on the cheek, etc. and that there are no vaccines (explains rapid mutation and drugs). It explains the importance of tests, that AIDS has no cure and the importance of prevention, suggesting government websites. The exercises call for visits to entities and doctors, and ask about prevention, forms of

transmission, evolution in the country, groups of people and measures taken. In PNLD 2020, the transmission is worked in the same way as in 2017, but insemination as a factor was removed, and the aspects that do not transmit are the same as 2017.

With regard to prevention and treatment, he explains that there are no vaccines (explains about mutations and medicines) and talks about PEP (post-exposure) offered in the SUS up to 72 hours after exposure, but warning that it does not replace condoms. It reinforces the importance of tests and brings an image of a test campaign for the city of Garuva/SC to be treated. Highlights tests for prenatal care for carriers of the virus and that tests have reduced transmission by diffusion and warns that rapid tests are carried out in SUS Counseling Centers (CTA), but that positive cases must be confirmed.

Also in PNLD 2020, the second collection addresses the reduction of viral load (and transmission) through the use of antiretroviral drugs, highlighting transmission by people with HIV and without symptoms. In a text about the anti-HIV barrier, he speaks of PrEP as something that prevents HIV, but warns that the lack of condoms increases other STIs, being still the best form of prevention. In this sense, there is a poster saying: choose your form of prevention (condom, PEP, prenatal care, treatment and testing).

Rosa (2019) and Corrêa (2017) also found the focus on the use of condoms as prevention, as well as syringes, blood transfusions, mother to child, but did not find indications for pre- and post-exposure prophylaxis (PrEP and PEP). What differs from the present work, in the editions of PNLD 2020 in Science books. Pereira (2013), in a research with DL of Sciences, indicated a preventive and prescriptive bias in the approaches to risks of contamination by STDs/AIDS, which goes against the perspective found in this

research, as well as an approach based on heteronormative discourse.

Thus, the analysis of the content of the collections analyzed here revealed a primarily biological aspect when dialoguing with readers with a focus on prevention through condom use and emphasis on forms of transmission. Research such as Rosa (2019), Corrêa (2017) and Pereira (2013) also revealed aspects more directed towards AIDS prevention. However, important advances in the dialogue of the Science/Biology LD on the theme of AIDS emerged in the latest edition of the PNLD, in Science books.

BIOLOGY BOOKS

In PNLEM 2007 there were aspects indicated as those that increased the “risk” of becoming infected with HIV, such as alcoholism, injecting drugs, international travel and prostitution; in addition to the vulnerability of indigenous people, due to contact with whites, regarding the use of tattoos, *piercings*, syringes, needles and earrings, which was proposed in the exercise. They were taken from the following editions, PNLD 2012 and 2015.

However, in PNLD 2015 collections the term “risk group” was still found, as well as a situation about dentist, blaming the patient for the transmission. The textbooks emphasize that, for ethical reasons, the person living with HIV needs to be responsible and inform other people about their “situation”, carrying out early diagnosis so that the person does not transmit it to “healthy” people. The reduction in the number of partners and abstinence as a preventive measure also remained in the PNLD 2015.

Suggestions were also found for carrying out group work, such as a survey on factors that increase the occurrence of AIDS and other STIs and another survey on measures taken to reduce AIDS cases in Brazil, what tests to do

and care for young people to prevent AIDS and STIs. It is observed that the questions in the example above are asked about the “groups” in which AIDS is increasing.

In general, less numerical data on homosexuals, bisexuals and transsexuals appear in the most recent editions of the PNLD, but they bring aspects about the issue of incidence in younger age groups and among women, as well as cases of HIV/AIDS in university students. These contents verified in the LD show that even in the most recent editions of the PNLD there is still the blame of another person for the HIV infection, who tries to fit into certain “groups”, or who develop certain sexual behaviors, hence suggesting themselves in the books, including sexual abstinence. Schaurich (2004) is resumed, when he emphasizes that the subjects do not see themselves as having behaviors that would be “risk”, but accuse the other.

The fact that there is transmission through unprotected sex leads to speculation in society, as it apparently exposes an aspect of the HIV carrier’s sexual life (SEFFNER, 2001). According to Carvalheiro (1998) there has always been the aspect of prohibiting free circulation, in the sexual or social sense. Furthermore, as highlighted by Daniel and Parker (1991), the image of the AIDS patient as a male homosexual with promiscuous sexual behavior, which dominated the initial discussions about the epidemic, still plays a central role in the popular conception of the disease. From this perspective, the discussion of the different social positions that subjects find themselves in relation to AIDS and the three orders of vulnerability factors (social, programmatic and individual), worked on by AYRES(2001) and SEFFNER (2001) are fundamental, but appear little in the LD.

FINAL CONSIDERATIONS

The analysis of Science LDs revealed that the collections verified in this study reduced and/or removed AIDS from the 7th grade books in PNLD 2020. In the 8th grade books, the content remained and tended to be broader than in the PNLD 2017.

The Biology textbooks, even in more recent editions, such as PNLD 2015, use, in large part, the perspective of groups to work on the theme of AIDS, as well as the blaming of the subject, which has built little in education for prevention and encourages even more prejudice. In some situations found in textbooks, such as research activities, there is a direction for reflection on factors that contribute to the increase in cases, but the opportunity is lost for discussions to be addressed that go beyond the prevention of the subject, but of inclusion of Government responsibility and problematization of the notion of “risk groups”.

Although there is a predominance of aspects related to health and prevention, in the PNLD 2020 of Sciences, in general, there is a tendency to discuss more about people and their rights and what governments must guarantee. Therefore, it was found that discussions that allow reflection on the subject beyond health became more present. However, many advances in this regard and research with textbooks are still needed, so that there is a movement in this direction, providing opportunities for materials in the classroom that encourage such discussions.

REFERENCES

AMABIS, J.M.; MARTHO, G.R. **Biologia**: livro do professor. 2. ed., v1, São Paulo: Moderna, 2004 (v1-3).

_____. **Biologia**: livro do professor. 2. ed., v1, São Paulo: Moderna, 2010 (v1-3).

_____. **Biologia em Contexto**: livro do professor. v1, São Paulo: Moderna(v1-3).

AYRES, J. R. C. M. Vulnerabilidade dos jovens ao HIV/Aids: A escola e a construção de uma resposta social. In: SILVA, L. H. (Org.). **A Escola Cidadã no Contexto da Globalização**. Petrópolis: Vozes, 2001, p.413-423.

BARDIN, L. **Análise de conteúdo**. Tradução de Luís Antero Reto e Augusto Pinheiro. Tradução do original: L'Analyse de contenu. São Paulo: edições 70, 2011. 279p.

BRASIL. Fundo Nacional de Desenvolvimento da Educação. **Dados estatísticos - PNLD. 2020**. Available on the website: <<https://www.fnnde.gov.br/index.php/programas/programas-do-livro/pnld/dados-estatisticos>> Acesso em: 16 set. 2020

_____. Ministério da Saúde. Secretaria de Vigilância em Saúde. **Boletim epidemiológico HIV-AIDS/2019**. Número especial, dez. 2019. Available on the website: <<http://www.aids.gov.br/pt-br/pub/2019/boletim-epidemiologico-de-hiv-aids-2019>> Acesso em: 16 set. 2020.

_____. Fundo Nacional de Desenvolvimento da Educação. Programas, PNLD. **Histórico**. 2015. Available on the website: <<http://www.fnnde.gov.br/programas/livro-didatico/livro-didatico-historico>> Acesso em: 20 mar. 2015.

_____. Fundo Nacional de Desenvolvimento da Educação. Programa Nacional do Livro Didático - PNLD: **PNLD 2012 - Coleções mais distribuídas por componente curricular**. 2012. Available on the website: <<http://www.fnnde.gov.br/component/k2/item/3010?Itemid=1296>> Acesso em: 27 jul. 2017.

CARVALHEIRO, J. R. Epidemiologia da Aids: garimpendo novos paradigmas. VERAS, R. P., *et al.* (orgs). **Epidemiologia: contextos e pluralidade** [online]. Rio de Janeiro: Editora FIOCRUZ, 1998. 172 p. (Epidemiológica series).

CELLARD, A. Análise documental. In: POUPART, J. *et al.* **A pesquisa qualitativa: enfoques epistemológicos e metodológicos**. Tradução de Ana Cristina Arantes Nasser. 3ed. Petrópolis: Vozes, 2012. Tradução de: La recherche qualitative.

CORRÊA, L. M. C. **Aids nos livros didáticos de Biologia: PNLEM 2007, PNLD 2012 e 2015**. 2017. 196 f. Tese de Doutorado. Universidade Federal de Uberlândia, Uberlândia, 2017.

DANIEL, H.; PARKER, R. **AIDS, a terceira epidemia: ensaios e tentativas**. São Paulo: Iglu, 1991.127p.

FERREIRA, C.V.L. **Aids e vida: um estudo clínico-psicanalítico com pacientes com HIV**. São Paulo: Lemos editorial, 1994.158p

GEWANDSZNAJER, F. Telaris: **Ciências**. 2ed., São Paulo, 2016 (7º e 8º ano).

GEWANDSZNAJER, F; PACCA, H. Telaris: **Ciências**. 3ed., São Paulo, 2018 (7º e 8º ano).

LAJOLO, M. Livro Didático: um (quase) manual de usuário. **Em Aberto**, Brasília, ano 16, n. 69, jan./mar. 1996. Available on the website:

< <http://rbep.inep.gov.br/ojs3/index.php/emaberto/article/view/2368/2107> > Acesso em: 16 set. 2020

LINHARES, S.; GEWANDSZNAJER, F. **Biologia Hoje**: livro do professor. São Paulo: Ática, 2005.

_____. **Biologia Hoje**: livro do professor. São Paulo: Ática, 2010 (v.1-3).

_____. **Biologia Hoje**: livro do professor. São Paulo: Ática, 2013 (v.1-3).

LOPES, S.; ROSSO, S. **Biologia**: livro do professor. São Paulo: Saraiva, 2005.

_____. **Biologia**: livro do professor. São Paulo: Saraiva, 2010 (v.1-3).

_____. **Biologia**: livro do professor. São Paulo: Saraiva, 2013(v.1-3).

PELÚCIO, L.; MISKOLCI, R. A prevenção do desvio: o dispositivo da aids e a repatologização das sexualidades dissidentes. *Sexualidad, Salud y Sociedad - Revista Latinoamericana*, n.1, p.125-157, 2009.

PROJETO ARARIBÁ: **Ciências**. São Paulo: Moderna, 2018 (7º e 8º ano).

_____: **Ciências**. São Paulo: Moderna, 2014 (7º e 8º ano).

ROSA, R. T. **Análise sobre a abordagem do conteúdo hiv/aids nos livros didáticos de biologia do ensino médio triênio 2018, 2019 e 2020**. Trabalho de Conclusão de Curso. Universidade do Sul de Santa Catarina, Tubarão, 2019.

SCHAURICH, D. Dos Grupos de Risco à Vulnerabilidade: Reflexões em Tempos de HIV/Aids. **Revista Contexto & Saúde**, Editora Unijuí, n.6, p. 115-127, Jan./Jun. 2004

SEFFNER, F. Aids e (é) falta de educação. In: SILVA, L.H. (org.). **A escola cidadã no contexto da globalização**. Petrópolis: Vozes, 2001. p. 397-412.

SILVA-JÚNIOR, C.; SASSON, S. **Biologia**: livro do professor. 8ª ed., v1, São Paulo: Saraiva, 2005 (v.1-3).

SILVA-JÚNIOR, C.; SASSON, S.; CALDINI-JÚNIOR, N. **Biologia**: livro do professor. 10ª ed.,v1, São Paulo: Saraiva, 2010 (v.1-3).

_____. **Biologia**: livro do professor. 10ª ed.,v1, São Paulo: Saraiva, 2013 (v.1-3).