Analysis of the sexual exposure trends to human immunodeficiency virus - HIV in Teresina, Piauí state

Análise das tendências de exposição sexual ao vírus da imunodeficiência humana - HIV em Teresina, Piauí

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ABSTRACT

Introduction: In Brazil, approximately 60% of cases of acquired immunodeficiency syndrome (AIDS) are associated with some form of sexual contact, of which almost half are due to unprotected sex between men who have sex with men. However, this profile has been changing, focusing particularly among avowedly heterosexual people living in peripheral areas of large cities and in the interior of the states. **Objective:** To analyze the epidemiological trend of sexual exposure to human immunodeficiency virus (HIV) in the city of Teresina, Piauí State. **Methods:** A time series, descriptive, retrospective, longitudinal, study with a quantitative approach was carried out based on the analysis of cases reported by the National System Diseases Notifications (SINAN). **Results:** Between 1987 and 2013, Piauí presented a total of 3.574 AIDS cases; Teresina city is following the national trends of HIV transmission, especially in relation to the heterosexual tendency, which represents more than 50% of reported cases. Notifications among men were preponderant: 71.9% of cases, which accumulated an average of 92.4 notifications. The proposed linear trend model is explained in about 85% of the reported data and shows a rise in cases among men. **Conclusion:** The proposed objective was achieved, demonstrating that there is a heterosexualization trend of the transmission of HIV/AIDS in Piauí. Teresina follows the configuration of the AIDS epidemic that occurs throughout Piauí. There is a trend of heterosexual transmission of the disease, especially among men.

Keywords: HIV; health vulnerability; men's health.

RESUMO

Introdução: No Brasil, a epidemia da síndrome da imunodeficiência adquirida (AIDS) tem aproximadamente 60% dos casos associados à transmissão sexual, sendo quase metade decorrente de relações desprotegidas entre homens que fazem sexo com homens (HSH). No entanto, esse perfil vem mudando, incidindo, principalmente, sobre pessoas declaradamente heterossexuais, residentes em regiões periféricas das grandes cidades e no interior dos estados. **Objetivo:** Analisar a tendência epidemiológica de exposição sexual ao vírus da imunodeficiência humana (HIV) em Teresina, Piauí. **Métodos:** Realizou-se um estudo descritivo, retrospectivo, longitudinal, censitário, de série temporal, com abordagem quantitativa, a partir da análise dos casos notificados pelo Sistema Nacional de Agravos de Notificações (SINAN). **Resultados:** No período de 1987 a 2013, o Piauí registrou 3.574 casos de AIDS; Teresina está seguindo as tendências nacionais de transmissão do HIV, principalmente no que se refere à tendência heterossexual, que representa mais de 50% dos casos notificados. Predominam as notificações entre homens: 71,9% dos casos, com média de 92,4 notificações. O modelo de tendência linear proposto é explicado em cerca de 85% dos dados notificados e mostra uma ascensão dos casos entre homens. **Conclusão:** O objetivo proposto foi alcançado, demonstrando que no Piauí ocorre a tendência de heterossexualização da transmissão do HIV/AIDS. Teresina segue a configuração da epidemia da AIDS que ocorre em todo o Piauí. Há uma tendência de heterossexualização da transmissão da doença, especialmente entre os homens.

Palavras-chave: HIV; vulnerabilidade em saúde; saúde do homem.

INTRODUCTION

The human immunodeficiency virus (HIV) is a lentivirus that causes the acquired immunodeficiency syndrome (AIDS), which brings about the progressive failure of the immune system, facilitating opportunistic infections and cancers. The invasion of the body may occur by hematogenous, sexual, and/or vertical routes. Thus, contact with body fluids, blood, semen, vaginal content, pre-ejaculatory fluid, breast milk, as well as unprotected sex, sharing contaminated needles or syringes, and perinatal transmission are characterized as the main forms of dissemination of the virus[1].

The first report on the AIDS epidemic happened in the US when a high number of cases in male adults, especially those who adopted homosexual practices, were identified. The increasing number of new cases, especially in poorer countries, led to the conclusion that it was a new disease, probably of infectious and contagious etiology[2].

In Brazil, approximately 60% of reported cases are associated with some form of sexual contact, and almost half are due to unprotected sex among men who have sex with men (MSM). At the beginning of the epidemic, this population group concentrated the most cases; then, AIDS spread among injecting drug users, hemophiliacs and people receiving blood transfusions or blood products. From the mid-1990s of the 20th century, the epidemic has spread among heterosexuals, which is currently the sexual exposure subcategory with the highest number of reported cases of the disease[2].

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According to the Brazilian Epidemiological Bulletin[3] of 2011, there were 241,469 deaths from AIDS in the country from 1980 to 2010. These data reflect the importance of studies on the population at risk and on that affected by HIV. Brazil has shown significant changes in the epidemiological situation of AIDS: there has been a considerable increase in heterosexual transmission and in the number of affected women, thus creating a new profile of people living with HIV/AIDS, which characterizes the trends of heterosexualization and feminization of this epidemic, according to Passos et al.[1] and Felix and Ceolim[2].

It has been observed that people with lower education and income have been affected, which was termed as the "pauperization process," as well as the increase in cases among individuals in the extreme age groups (young and old). In a broad social and geographical perspective, it has also been observed what has been termed as the "infection interiorization," which is the spread of the epidemic to a growing number of remote municipalities of the major metropolitan areas, intensely affecting those who live in communities less assisted by the government[4].

In this context, the following questions have arisen: how have the trends of sexual exposure to HIV been occurring in Teresina, the state capital of Piauí? Has the epidemiological profile of AIDS in Teresina followed the national and global trends?

OBJECTIVE

To analyze, exclusively and individually, the epidemiological trend of sexual exposure to HIV in Teresina, state capital of Piauí.

METHODS

This is a descriptive, retrospective, longitudinal time series census study with a quantitative approach, carried out from the analysis of data reported by the National Diseases Notifications System (SINAN).

Both the population and the sample are composed of all cases of HIV/AIDS reported through SINAN in Piauí between 1987 and July 2013. Data collection took place between September and November 2014 through the SINAN page, using mobile internet in the library of Campus Amilcar Ferreira Sobral at Universidade Federal do Piauí (CAFS/UFPI).

The collected data were exposed for analysis in spreadsheets created using Microsoft Excel, version 2013, filled by double entry (typing) in order to avoid failures in the database. They were analyzed with descriptive and inferential statistics, stating data proportions and means, the incidence of cases year by year and the behavioral analysis of the time series, or historical data, using statistical tests with a significance level of 0.05.

The regression equation of the linear model was estimated from the number of AIDS cases in the state capital for the analysis of trends in heterosexuals, and the percentages of occurrence and their means were calculated. The coefficient of determination (R^2) of the estimated lines was also verified.

Due to the use of secondary and public data, this study is exempt from the approval of an Ethics Committee. However, the guidelines from Resolution No. 466/2012, corresponding to confidentiality and reliability of information, were followed[5].

RESULTS

According to the Brazilian Institute of Geography and Statistics (IBGE), Piauí had an estimated population of 3.195 million people by July 2014. The capital Teresina concentrated 26.3% of the total (840,600), being the most populous city in the state.

Over 7,000 people contract the virus daily, and one person dies every 20 seconds of an AIDS-related disease throughout the world[6]. The region of sub-Saharan Africa remains the most affected, with 60% of people living with HIV – of which 58% are women, as shown in **Figure 1**.

According to SINAN, there were 3,574 cases of AIDS in Piauí between 1987 and 2013. Teresina presented 2,192 such notifications, which represents 61% of the total cases in the state. The records corroborate the heterosexualization profile, as shown in **Figure 2**. Of the total cases registered in Teresina (2,192), 52.9% occurred among avowedly heterosexual individuals.

It may be noted that the number of AIDS cases is higher among men (average of 92.4 cases) every year. However, the cases reported in women have increased significantly, as shown in **Figure 3**. The straight linear trend (y=7.9072; x=18.2560) allows the inference that there is an upward trend (positive angular coefficient), year by year, in cases affecting men. Furthermore, about 85% (R^2=0.8521) of the record variability can be explained by the estimated line.

Teresina has the highest population density of the state, as well as social and economic conditions that make it unique. Such conditions would entail huge imbalance between the reality experienced

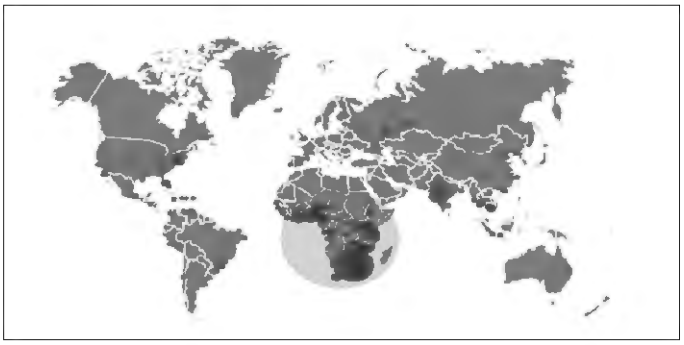

Figure 1 – World map of the areas with the highest estimated number of people living with HIV in 2013. Source: UNAIDS[7].

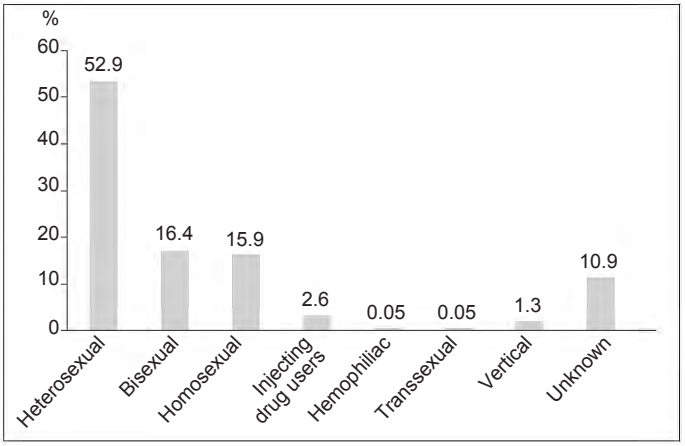

Figure 2 – Total number of AIDS cases in Teresina, by exposure category.

in Teresina and in other cities in the state, due to which the capital greatly influences the high number of cases in Piauí.

In Piauí, as well as in Brazil and the world, the increase in cases in people who claim to be heterosexual constitutes the main trend of HIV infection, as shown in **Figure 4**. Such an event can be explained by the large increase in cases among women and by the association with the statistics of violence against them.

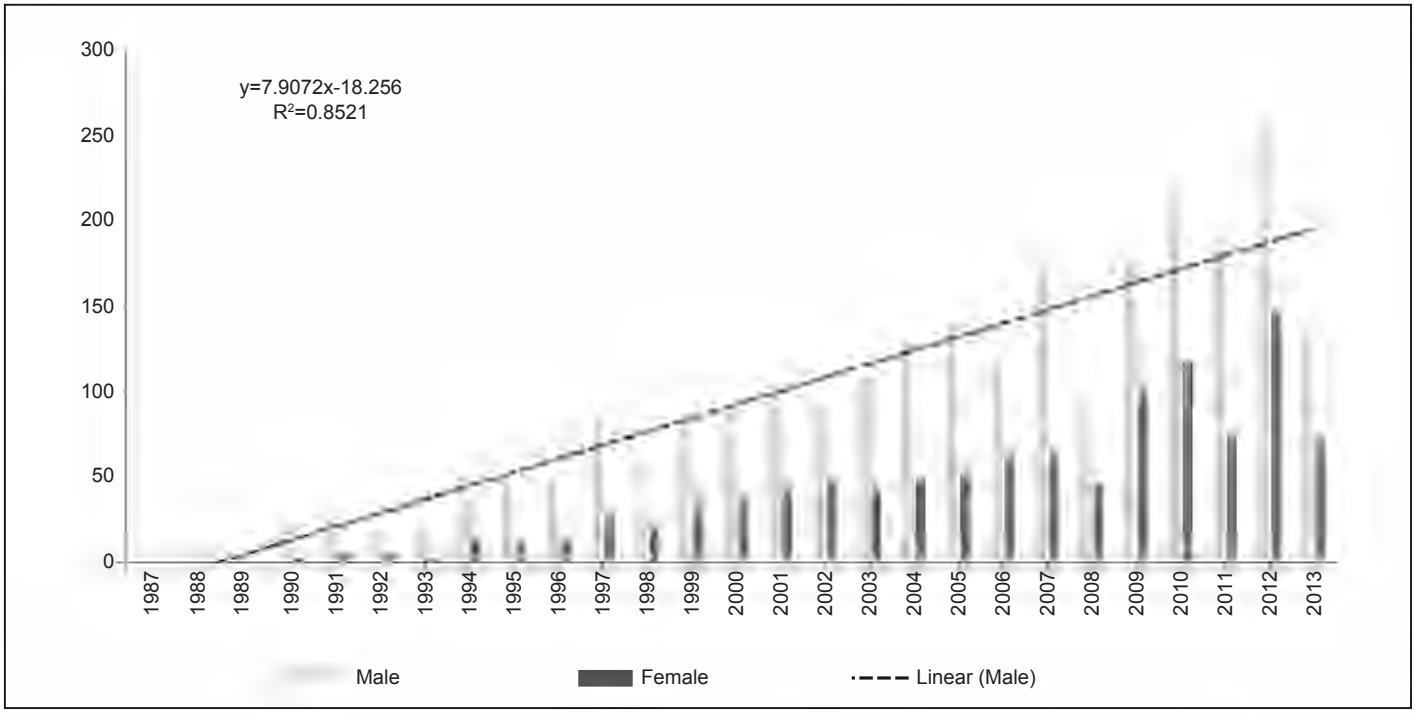

Figure 3 – Absolute frequency distribution of AIDS cases in the state of Piauí, by gender, between 1987 and 2013.

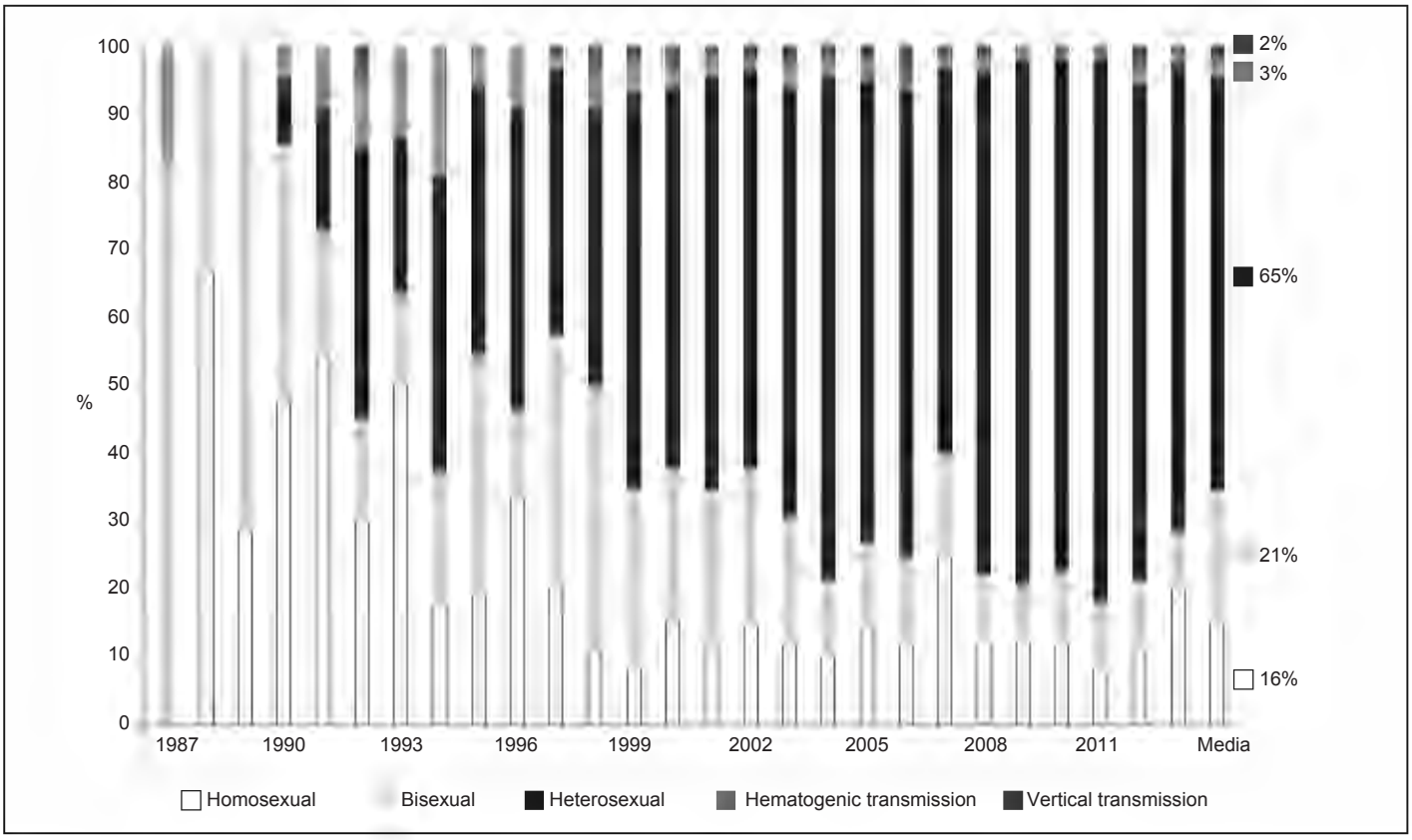

Figure 4 – Percentage distribution of AIDS cases in Teresina, year by year, according to the exposure category.

A downward trend can be observed in the records among the self-declared gay and bisexual people, and an upward trend among heterosexuals. Since the epidemic began in the city, and therefore the state, the reported cases of hematogenic and vertical infection have remained stable.

It was found that Teresina is following national trends, especially with regard to the heterosexual trend, which represents over 50% of all reported cases. The remaining of the most prevalent HIV exposure categories were bisexual and homosexual, which verified the prevalence of sexual transmission of the virus in that area.

DISCUSSION

The number of cases of the disease among men is higher than the number of cases in women, but this difference has been decreasing over the past years. In 2011, were registered 1.7 cases in men for each 1.0 case in women[8].

Despite the predominance of cases among men in the reality of Teresina (71.9% of cases), the occurrence among women has also increased. For Taquete and Meireles[9], a determinant of the vulnerability of women to HIV is the search for a personal identity and sexual-affective curiosity, since, in order to reaffirm themselves as women, some adolescents are exposed to sexual practices earlier, on most occasions with older men, in which their negotiating power is limited. There is still inequality between the genders, in which the incorporation of gender expression puts women at a low level of dignity, increasing their vulnerability to HIV and sexually transmitted diseases in general.

The HIV epidemic in the world continues to have profound effects on women, men and transgenders. Overall, female sex workers are 13.5 times more likely to live with HIV than other women. A study carried out with sex workers in eight Brazilian cities showed higher prevalence rates in Rio Grande do Sul (17.9–19.5%) and lower (1.2–2.4%) in Sergipe[6].

Martins et al.[6] point out that although the interiorization is a current trend of the HIV epidemic, AIDS cases are still concentrated in the most populated municipalities. Between 1987 and 2013, AIDS in Piauí was focused on capital; however, there is a visible increase in the number of inner cities that register cases over the years. Moreover, the dynamics of the virus in Piauí are different from the rest of Brazil and the world, with a prevalence of cases among avowedly heterosexual men.

The significant number of cases of the disease can be explained by factors such as the subservience of women, the dismissal of condom use in relationships considered stable and gender representations, very stigmatized by the marginalized, provincial, and socially vulnerable population[10].

The large cities of Piauí and throughout Brazil are full of people who do not have access to education, health services, and prevention/protection measures against diseases, thus facing significantly higher health risks. Under such social conditions, many diseases, especially HIV, spread more quickly[7].

It is important to note that, in Teresina, when self-reporting as heterosexual, the person stands between those more likely to get the AIDS virus, either by engaging in multiple partnerships, due to lack of awareness about the dangers of unprotected sex, the insufficient public policies, the lack of interest in seeking health services – seeing as some homosexuals self-declare as heterosexuals – or the influence of the increasing number of cases among women[11,12].

Gender-based violence is so culturally naturalized that many men adopt it, but ignore it. In addition, many women do not see themselves as victims of any violence. This behavior is one of the causal factors of the increased vulnerability of women to HIV. Unequal relations between men and women observed in many affective-sexual relationships hinder the safe exercise of sexuality and violate sexual and reproductive rights[9].

As fundamental human rights, sexual and reproductive rights have two distinct and complementary aspects. One points to the individual dimension of these rights and affirms freedom, privacy, intimacy, and autonomy, which presupposes no state intervention in the regulation of sexuality or reproduction. The other aspect is focused on the development of specific public policies to ensure the rights necessary for the free exercise of sexual and reproductive rights of individuals[9].

Thus, state action is necessary to guarantee such rights, among which are access to affordable, safe, and appropriate information; health services and sexual and reproductive education, as well as policies to promote gender equality, not allowing the submission of women and girls; and eliminating any gender discrimination.

The government has a duty to guarantee the rights of the population and, therefore, must formulate and implement actions related to sexual and reproductive health. With regard to adolescents and young people, the challenge is greater, because it is necessary to meet their specific characteristics and respond to their demands, generated by different life situations.[13].

CONCLUSION

The purpose of the study was achieved and, based on the hypotheses raised, it is possible to predict the number of AIDS cases in Teresina with a degree of efficiency of 85%. It has demonstrated the trend of heterosexualization of the transmission of HIV/AIDS in Piauí, which supports the existing literature, indicating the analogy of a predominant epidemiological trend that characterizes the current profile in the country.

Teresina follows the configuration of the epidemic occurring throughout the state of Piauí. There is a trend of heterosexual transmission of HIV/AIDS. However, the infection tends to spread among men.

Throughout the research, some obstacles were present. Among them, the outdated information system, the limited financial resources, and the possibility of information bias due to the reliability of the data, which do not always faithfully portray the reality of the municipalities and the capital, locus of the research.

It is important to stress the need for vigilance on the part of higher authorities of the reliability of public data and the commitment of those responsible for data input in the notifications systems, in order to ensure they are up-to-date and that they correspond to reality.

It is expected that this study base further investigations and assist the redirection of public policies related to the transmission and control of HIV.

Conflict of interests

The authors reported no conflict of interests.

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