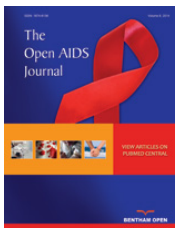

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RESEARCH ARTICLE

Consumption of Sexually Explicit Media and Sexual Conduct of greater Exposure to HIV/AIDS in Brazilians

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Abstract:

Introduction:

We aimed to analyze the association between the consumption of sexually explicit media (SEM) in the sexual practices of Brazilians and the exposure to HIV infection.

Methods:

This is an analytical, cross-sectional national study, conducted with 854 participants. Data were collected from September 2021 to January 2022 and analyzed in SPSS.26 software using the Logistic Regression model, with a robust estimator for the covariance matrix.

Results:

In the results we observed that 558 (65.3%) participants revealed the habit of watching SEM; of these, 58.2% saw up to two scenes per day. The increased chances for involvement in sexual practice of greater exposure to HIV were identified in: being male (ORa=1.36 times); having a homosexual, bisexual, asexual, or pansexual sexual orientation (ORa=1.44); habit of watching SEM or erotic art (ORa=1.47); and being under the age of 12 at the first contact with SEM (ORa=2.74). As such, we can observe that the consumption of sexually explicit media is associated with sexual practices of greater exposure to HIV among Brazilians.

Conclusion:

Therefore, the development of public policies and strategies to prevent practices aimed at the consumption of sexually explicit media becomes relevant, starting with the demonstration of HIV prevention strategies during the sex scenes.

Keywords: Audiovisual media, Sexual conduct, HIV, Acquired immunodeficiency syndrome, Sex, SEM.

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1. INTRODUCTION

The control of the Human Immunodeficiency Virus (HIV) is still a global challenge. In 2020, it was characterized by the UNAIDS Report as a serious public health problem with a worldwide epidemiological situation of 37.7 million people living with HIV, of which 84% were aware of the serological status, while approximately 6.1 million people did not know they were living with the virus [1].

In Brazil, 381,793 cases of HIV infection were reported in the *Sistema de Informação de Agravos de Notificação* (SINAN) (Information System for Notifiable Diseases) between 2007 and June 2021. Of these, 43.3% were in the Southeast Region, 19.7% in the South, 19.8% in the Northeast,

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9.5% in the North, and 7.7% in the Midwest. As for nationwide cases of Human Immunodeficiency Syndrome (AIDS), epidemiological data from 1983 to June 2021 revealed that 1,045,355 cases were reported. In 2020, the AIDS cases were 29,917 in Brazil, with a detection rate of 14.1 per 100,000 inhabitants, representing a 35.7% reduction rate since the year 2012 (22/100,000 inhabitants), which may be related to the underreporting that occurred with the overload of health services during the Covid-19 pandemic [2]. In Brazil, access to antiretroviral therapy (ART) plays a crucial role in the management of HIV/AIDS. In 2020, it is worth noting that the availability and utilization of ART may have influenced the number of AIDS cases in the country. The improved access to ART across different regions in Brazil has been instrumental in reducing the transmission and progression of HIV infection.

To control Sexually Transmitted Infections (STIs), it is important to know their epidemiology since they result from issues that are not only behavioral, but also social, political, technological, and programmatic, which generate conditions of vulnerability to individuals and groups who share similar characteristics and attitudes [3].

The advancement of technology has made it possible to facilitate access to and dissemination of sexual content, especially among males and young people, to whom technology exerts great fascination [4]. Thus, a new component that has worried scholars and health authorities regarding the spread of HIV/AIDS is Sexually Explicit Media (SEM), which encompasses any type of material that depicts genital organs or explicit sexual acts of any nature, capable of stimulating or changing the viewer's sexual feelings or thoughts [5]. SEM largely depicts the positive aspect of sexual behavior, such as pleasure, connection, and orgasm, while ignoring potential problems such as the transmission of STIs and HIV [6].

In the context of media, negative aspects are identified, such as materials showing the practice of unprotected sex, favoring risk-taking [4, 7 - 9]. This divergence may be associated with recent changes in the SEM related to the non-use of condoms during the scenes, especially among the men who have sex with men (MSM) population, with emphasis from 2005, when the homoerotic industry increased the production of films with anal sex without the use of condoms, currently becoming almost universal among producers of gay SEM [10 - 12].

The magnitude, severity, and transcendence of HIV infection, as well as the vulnerability of much of the population to the infection, constitute a health panorama that creates challenges for health professionals and administrators, from planning to assistance and monitoring of the health of those living with the infection. Thus, studies focused on the knowledge of sexual practices that are becoming more popular and may bring risks of spreading HIV/AIDS and other STIs are of great relevance, since the results may lead to the implementation of new strategies for confronting HIV/AIDS, with important implications for future efforts and preventive policies against this infection.

Considering there is significant scientific production on themes related to sexual practices and exposure to HIV/AIDS, studies that address digital media and sexuality are still scarce in Brazil, despite the high consumption of SEM in the country. Thus, it is important to investigate behaviors related to sexual practices that can place the population of any age group at risk of HIV infection. From this perspective, this study may contribute to new research and inform the elaboration of plans and strategies directed at the prevention of sexual practices of risk of HIV/AIDS.

We aimed to analyze the association between the consumption of sexually explicit media (SEM) in the sexual practices of Brazilians and exposure to HIV infection.

2. MATERIALS AND METHODS

This is an analytical, cross-sectional, online, and nationwide study [13] that involved all five geographic regions of Brazil (n=854). We employed a purposive sampling method based on the Brazilian population aged 18 years and older. Participants were recruited using an adapted snowball sampling technique, whereby invitations to participate were sent *via* social networks such as Facebook, WhatsApp, and Instagram. Those who accepted the invitation were then asked to forward it to their acquaintances until the desired sample size was achieved. The invitation included a link to the Informed Consent Form (ICF) and the online questionnaire hosted on Google Forms, a platform that offers customizable surveys and a back-end program suite to ensure that all mandatory questions were answered. Hence, participant responses were only considered valid when all conditions were met.

A total of 948 unique accesses were made to the data collection instrument, of which 854 individuals met the criteria for participation in the research and successfully completed the data collection form. The software G*Power 3.1 was used to evaluate the power of the study's sample size, with post hoc analysis of the sample required for statistics in contingency tables, considering a confidence interval of 95%, alpha of 0.05, and effect size of 0.15. The sample of 854 participants had a power of 99.8%, exceeding the minimum sample requirements.

Data were collected by the study researchers themselves from September 2021 to January 2022, using a questionnaire adapted from a previous study [14] which, although had already been validated, had a different population and context from this study. Then, the adapted instrument underwent content validity analysis by expert judges, resulting in a Content Validity Index (CVI) of 100% agreement.

The dependent variable considered was “involvement in sexual practices of greater exposure to HIV/AIDS”, with the outcomes “yes” or “no”. For the purpose of this study, the definition of sexual practices of higher exposure to HIV was that of the Ministry of Health [15] and Pereira [16], which include the following conditions: multiple sexual partners within the last six months; participation in group sex; use of illicit drugs and/or alcohol during sex; anal intercourse (receptive or insertive) or vaginal intercourse without the use of a condom in the last six months; vaginal or anal intercourse with a person infected with HIV without a condom; oral sex without a condom; and unawareness and/or non-use of PrEP and PEP. It should be noted that the confirmation of a single condition already characterizes the sexual practice of increased

vulnerability to HIV. The independent variables were related to sociodemographic characteristics, consumption of sexually explicit media, and sexual health.

Data were analyzed using IBM® SPSS® 26.0 software. To evaluate the factors related to the involvement with practices of greater exposure to HIV, the Logistic Regression model was adopted with a robust estimator of the covariance matrix. The models were adjusted for each independent variable and $p<0.20$ was established as a criterion to proceed with the multivariate model. The association was considered statistically significant when $p<0.05$. The raw and adjusted Odds Ratio (OR) values, confidence intervals (95% CI), and Wald Test significance (p-value) were presented.

Finally, a hierarchical regression analysis (enter method) was performed to predict the involvement in practices of greater exposure to HIV (1-yes and 2-no) [17]. In the first step, personal characteristics were included. In the second, variables related to sexual health were inserted. In the third and last step, variables on sexually explicit media consumption were added.

The research was carried out according to the recommendations contained in Resolution 466/12 of the National Health Council, which gathers the ethical aspects of research involving human beings [18, 19].

3. RESULTS

The study included participants from all five geographic regions of Brazil. The distribution of participants by region was as follows: Northeast (59.6%), Southeast (25.2%), South (6.8%), Midwest (4.4%), and North (4.0%). It is noteworthy that the majority of participants resided in metropolitan areas, comprising 78% of the sample. The age of participants ranged from 18 to 74 years, with a mean (± standard deviation) of 26.3 (±8.0) years. Females constituted the predominant gender, accounting for 466 (54.6%) participants, with 451 (52.8%) identifying as cisgender and 482 (56.4%) identifying as heterosexual. Students comprised slightly over half of the sample, with 482 (56.4%) participants indicating student status. In terms of sexual health variables, 755 (88.4%) reported no STI diagnosis in the past 12 months, 334 (39.1%) had undergone HIV testing within the previous 12 months, 783 (92.7%) had never used PEP, and 396 (46.4%) had never heard of PrEP (Table **1**).

Table **2** presents the variables related to the consumption of sexually explicit media among the study participants. It was found that 558 (65.3%) reported a habit of watching SEM, with 58.2% watching up to two scenes per day. Furthermore, 60.6% reported changes in their perception of sexual practices after accessing sexually explicit media, and 76.8% perceived that sexual media stimulates sex without the use of a condom. The prevalence of engaging in sexual practices with greater exposure to HIV among the sample of Brazilians in the study was 743 (87.0%). Regarding factors associated with sexual practices, it was found that the majority reported using a condom with a regular partner (38.8%) and a casual partner (53.9%); having a regular partner for sexual activity (62.9%); using dating apps/partner search apps (73.8%); not meeting their current sexual partner through apps (71.7%); using condoms as a preventive measure (76.6%); being unaware of the HIV serological status of their most recent partner (50.0%); being unwilling to have sex with someone known to be HIV positive (57.6%); not engaging/having never engaged in group sex (89.0%); using condoms for vaginal intercourse; not consuming alcohol before or during sex (47.7%); not using illicit drugs before or during sex (82.8%); and not perceiving themselves as vulnerable to HIV infection (71.1%) (Table **3** - **5**).

Table 1. Sociodemographic, sexual, and serological characteristics of the study participants. Teresina, PI, Brazil, 2022. (n=854).

Variables	M ± SD	n (%)
Sex	-	-
Male	-	388 (45.4)
Female	-	466 (54.6)
Gender Identity	-	-
Cis male	-	380 (44.5)
Trans man	-	5 (0.6)
Cis female	-	451 (52.8)
Trans woman	-	6 (0.7)
Non-binary	-	12 (1.4)
Sexual orientation	-	-
Heterosexual	-	482 (56.4)
Homosexual	-	221 (25.9)
Bisexual	-	121 (14.2)
Pansexual	-	14 (1.6)
Asexual	-	3 (0.4)
Prefers not to use terms	-	13 (1.5)
Age (years)	26.3 ± 8.0	-
Occupation	-	-

(Table 1) contd.....

Variables	M ± SD	n (%)
Student	-	482 (56.4)
Teacher/Public servant	-	56 (6.6)
Self-employed, private sector, or unemployed	-	316 (37.0)
Personal income	2,748.53 ± 17,421.20	-
Family income	3,003.10 ± 17,910.30	-
Education (years of study)	-	-
≤12 years	-	243 (28.5)
> 12	-	611 (71.5)
Living arrangements	-	-
Lives alone	-	131 (15.3)
Without partner; with family members	-	153 (17.9)
With partner and/or family members	-	481 (56.3)
With colleagues/friends	-	89 (10.4)
STI diagnosis by a health professional	-	-
Yes	-	99 (11.6)
No	-	755 (88.4)
Tested for HIV	-	-
Yes, within the previous 12 months	-	334 (39.1)
Yes, over 12 months ago	-	235 (27.5)
Never been tested for HIV	-	285 (33.4)
HIV serologic status	-	-
Reactive	-	22 (2.6)
Non-reactive	-	530 (62.1)
Unknown	-	302 (35.4)
Use of PEP	-	-
Yes, within 24 hours	-	57 (6.7)
Yes, within 24 to 72 hours	-	14 (1.6)
No	-	783 (91.7)
Use of PrEP	-	-
Yes, and currently using	-	8 (0.9)
Yes, but have stopped using	-	49 (5.7)
No, but I want/need to	-	90 (10.5)
No, I have no interest	-	311 (36.4)
No, never heard of it	-	396 (46.4)
Total	-	**854 (100.0)**

Table 2. Consumption of sexually explicit media by the study participants. Teresina, PI, Brazil, 2022. (n=854).

Variables	n (%)
Habit of watching SEM or erotic art	-
Yes	558 (65.3)
No	296 (34.7)
Age of first contact with SEM or erotic art*	-
Less than 12 years	70 (12.5)
Between 12 and 14 years	214 (38.4)
Between 15 and 17 years	201 (36.0)
18 years and older	73 (13.1)
Preference for condom use in movies with sex scenes*	-
That the actors use condoms	100 (17.9)
That the actors don’t use condoms	128 (22.9)
It doesn't matter, what matters is the actors’ performance	330 (59.1)
Number of scenes (20 min) of SEM or erotic art consumed per week*	-
Up to 2	324 (58.1)

(Table 2) contd.....

Variables	n (%)
From 3 to 4	115 (20.6)
From 5 to 6	52 (9.3)
7 or more	67 (12.0)
Main form of access to SEM*	-
Free/paid pornography websites (main)	492 (88.2)
Social media only	66 (11.8)
Self-perception on the influence of SEM/erotic art on sexual relations*	-
Yes	298 (53.4)
No	260 (46.6)
Changing concepts about sex after accessing sexual media content*	-
Yes	338 (60.6)
No	220 (39.4)
Access to SEM/erotic art interfering with activities of daily life or work*.	-
Yes	62 (11.1)
No	496 (88.9)
Perception of sexual media stimulation toward unprotected sex	-
Yes	656 (76.8)
No	198 (23.2)
Agreement with the sharing of sexual scenes with behaviors of increased HIV exposure	-
Yes	162 (19.0)
No	692 (81.0)
Total	**854 (100.0)**

Note: Legend: * frequencies only of the "yes" category.

Table 3. Factors related to the sexual practices of the study sample. Teresina, PI, Brazil, 2022. (n=854).

Variables	M ± SD	n (%)
Condom sex with a fixed partner	-	-
Yes	-	331 (38.8)
Sometimes	-	210 (24.6)
No	-	313 (36.7)
Condom sex with an eventual partner	-	-
Yes	-	460 (53.9)
Sometimes	-	210 (24.6)
No	-	184 (21.5)
Type of partnership most often adopted for sex	-	-
Eventual/casual partner	-	202 (23.7)
Fixed partner	-	537 (62.9)
Fixed and eventual partner	-	115 (13.5)
Use of dating/interaction apps	-	-
Yes	-	630 (73.8)
No	-	224 (26.2)
Met their sexual partner(s) through apps	-	-
Yes	-	242 (28.3)
No	-	612 (71.7)
Measures cited as STI/HIV prevention during sex	-	-
Condoms	-	654 (76.6)
Coitus interruptus	-	163 (19.1)
Non-penetrative sex	-	88 (10.3)
PrEP/PEP	-	11 (1.3)
Testing/knowing my status and of my partners	-	138 (16.2)
Number of partners within the previous 12 months**	4.3 ± 15.7	-
HIV serological status of the most recent partner	-	-
HIV-Positive	-	7 (0.8)

(Table 3) contd.....

Variables	M ± SD	n (%)
HIV-Negative	-	420 (49.2)
Unknown	-	427 (50.0)
Would have sex with a person known to be HIV-positive	-	-
Yes	-	291 (34.1)
No	-	492 (57.6)
Maybe/Unsure	-	71 (8.3)
Practices/has practiced group sex at some point in life	-	-
Yes	-	94 (11.0)
No	-	760 (89.0)
Type of relationship where you use a condom*	-	-
Oral	-	392 (45.9)
Anal	-	293 (34.3)
Vaginal	-	399 (46.7)
Types of sexual practices within the previous 12 months*	-	-
Oral sex with a person of the opposite sex	-	424 (49.6)
Oral sex with a person of the same sex	-	273 (32)
Passive anal sex with a person of the same sex	-	272 (31.9)
Active anal sex with a person of the same sex	-	168 (19.7)
Passive anal sex with a person of the opposite sex	-	65 (7.6)
Active anal sex with a person of the opposite sex	-	51 (6)
Vaginal sex with a person of the opposite sex	-	511 (59.8)
Use of alcohol prior to or while having sex	-	-
Yes	-	147 (17.2)
Sometimes	-	300 (35.1)
No	-	407 (47.7)
Use of illicit drugs prior to or while having sex	-	-
Yes	-	75 (8.8)
Sometimes	-	72 (8.4)
No	-	707 (82.8)
Consider yourself at risk/vulnerable for HIV infection	-	-
Yes	-	247 (28.9)
No	-	607 (71.1)
Total	-	**854 (100.0)**

Note: Legend: *: frequencies only of the "yes" category: **: mean ± standard deviation.

Table 4. Multivariate analysis of factors associated with engaging in sexual practices of higher HIV exposure. Teresina, PI, Brazil, 2022. (n=854).

Variables	Sexual Practices				
	Yes n (%)	No n (%)	OR (95%CI)	ORa (95%CI)	*p*
Sex	-	-	-	-	**0.006**
Male	351 (90.5)	37 (9.5)	1.08 (1.02-1.13)	1.36 (1.09-1.70)	-
Female	392 (84.1)	74 (15.9)	1	-	-
Sexual orientation	-	-	-	-	**0.002**
Homosexual, bisexual, pansexual, asexual	339 (91.1)	33 (8.9)	1.98 (1.29-3.05)	1.44 (1.15-1.80)	-
Heterosexual	404 (83.8)	78 (16.2)	1	1	-
Living arrangements	-	-	-	-	**0.013**
Without partner and with family members	146 (95.4)	7 (4.6)	1.11 (1.05-1.15)	1.75 (1.13-2.72)	-
With partner and/or family members	407 (84.6)	74 (15.4)	0.82 (0.47-1.44)	0.90 (0.66-1.22)	-
With colleagues/friends	76 (85.4)	13 (14.6)	0.87 (0.40-1.90)	0.93 (0.61-1.41)	-
Lives alone	114 (87)	17 (13)	1	1	-
Signs/symptoms of STI	-	-	-	-	**< 0.001**
Yes	299 (94.3)	18 (5.7)	3.48 (2.06-5.89)	1.90 (1.47-2.45)	-
No	444 (82.7)	93 (17.3)	1	1	-

(Table 4) contd.....

Variables	Sexual Practices				
	Yes n (%)	No n (%)	OR (95%CI)	ORa (95%CI)	*p*
STI Diagnosis	-	-	-	-	**0.017**
Yes	94 (94.9)	5 (5.1)	3.07 (1.22-7.73)	1.75 (1.14-2.70)	-
No	649 (86.0)	106 (14.0)	1	1	-
Tested for HIV	-	-	-	-	**0.003**
Yes, within the previous 12 months	301 (90.1)	33 (9.9)	2.08 (1.31-3.32)	1.49 (1.16-1.91)	-
Yes, over 12 months ago	210 (89.4)	25 (10.6)	1.92 (1.15-3.20)	1.42 (1.08-1.87)	-
Never tested	232 (81.4)	53 (18.6)	1	1	-
HIV serologic status	-	-	-	-	**< 0.001**
Reactive	22 (100)	-	-	-	-
Non-reactive	469 (88.5)	61 (11.5)	1.53 (1.02-2.28)	1.26 (1.01-1.56)	-
Unknown	252 (83.4)	50 (16.6)	1	1	-
Use of PrEP	-	-	-	-	**0.031**
No, but has interest	85 (94.4)	5 (5.6)	2.87 (1.13-7.23)	1.70 (1.10-2.64)	-
Yes	53 (93)	4 (7)	2.23 (0.79-6.30)	1.51 (0.91-2.51)	-
No interest/unaware	605 (85.6)	102 (14.4)	1	1	-

Note: Legend: OR: Odds Ratio; IC95%: 95% Confidence Interval; p: Wald Test significance.

Table 5. Logistic regression of involvement in sexual practices of greater exposure to HIV and consumption of sexually explicit media. Teresina, PI, Brazil, 2022. (n=854).

SEM Consumption	Sexual Practices				
	Yes n(%)	No n(%)	OR (95%CI)	ORa (95%CI)	*p*
Habit of watching SEM	-	-	-	-	**< 0.001**
Yes	502 (90.0)	56 (10.0)	2.05 (1.37-3.06)	1.47 (1.18-1.83)	-
No	241 (81.4)	55 (18.6)	1	-	-
Age of first contact with SEM (years)	-	-	-	-	**< 0.001**
Under 12 years	68 (97.1)	2 (2.9)	4.38 (3.27-5.87)	2.74 (1.48-5.10)	-
Between 12 and 14	199 (93.0)	15 (7.0)	3.03 (1.66-5.52)	1.79 (1.32-2.42)	-
Between 15 and 17	175 (87.1)	26 (12.9)	1.54 (0.93-2.55)	1.27 (0.96-1.67)	-
18 years and older	60 (82.2)	13 (17.8)	1.05 (0.54-2.05)	1.03 (0.71-1.50)	-
Never had the habit of watching SEM	241 (81.4)	55 (18.6)	1	1	-
Preference for condom use in sex scenes	-	-	-	-	**< 0.001**
It doesn't matter, what matters is the actors' performance	307 (93.0)	23 (7.0)	3.05 (1.82-5.10)	1.79 (1.38-2.34)	-
That the actors don't use condoms	115 (89.8)	13 (10.2)	2.02 (1.06-3.84)	1.46 (1.04-2.05)	-
That the actors use condoms	80 (80.0)	20 (20.0)	0.91 (0.52-1.62)	0.95 (0.70-1.32)	-
Never had the habit of watching SEM	241 (81.4)	55 (18.6)	1	1	-
Number of scenes (20 min) of SEM consumed per week	-	-	-	-	**0.001**
7 or more	65 (97)	2 (3)	7.42 (1.76-31.22)	2.69 (1.44-5.02)	-
From 5 to 6	50 (96.2)	2 (3.8)	5.70 (1.35-24.16)	2.40 (1.26-4.59)	-
From 3 to 4	108 (93.9)	7 (6.1)	3.52 (1.55-7.98)	1.92 (1.30-2.87)	-
Up to 2	279 (86.1)	45 (13.9)	1.42 (0.92-2.175)	1.21 (0.96-1.54)	-
Never had the habit of watching SEM	241 (81.4)	55 (18.6)	1	1	-
Main form of accessing SEM	-	-	-	-	**0.002**
Free/paid pornography websites	440 (89.4)	52 (10.6)	1.93 (1.28-2.91)	1.42 (1.14-1.78)	-
Social media only	62 (93.9)	4 (6.1)	3.54 (1.24-5.13)	1.92 (1.16-3.20)	-
Never had the habit of watching SEM	241 (81.4)	55 (18.6)	1	1	-
Self-perception on the influence of SEM on sexual relations	-	-	-	-	**0.002**
Yes	266 (89.3)	32 (10.7)	1.90 (1.19-3.03)	1.42 (1.10-1.82)	-
No	236 (90.8)	24 (9.2)	2.24 (1.34-3.74)	1.54 (1.18-2.02)	-
Never had the habit of watching SEM	241 (81.4)	55 (18.6)	1	1	-
Changing concepts about sex after accessing sexual media content	-	-	-	-	**0.002**
Yes	301 (89.1)	37 (10.9)	1.86 (1.18-2.91)	1.40 (1.10-1.78)	-
No	201 (91.4)	19 (8.6)	2.41 (1.39-4.20)	1.60 (1.20-2.13)	-

(Table 5) contd.....

SEM Consumption	Sexual Practices				
	Yes n(%)	No n(%)	OR (95%CI)	ORa (95%CI)	*p*
Never had the habit of watching SEM	241 (81.4)	55 (18.6)	1	1	-
Perception of sexual media stimulation toward unprotected sex	-	-	-	-	0.064
Yes	563 (85.8)	93 (14.2)	0.60 (0.36-1.03)	0.77 (0.59-1.01)	-
No	180 (90.9)	18 (9.1)	1	1	-
Agreement with the sharing of sexual scenes with behaviors of increased HIV exposure	-	-	-	-	0.119
Yes	147 (90.7)	15 (9.3)	0.60 (0.36-1.03)	1.27 (0.94-1.70)	-
No	596 (86.1)	96 (13.9)	1	1	-
Access to SEM interfering with activities of daily life or work	-	-	-	-	**0.001**
Yes	61 (98.4)	1 (1.6)	4.38 (3.27-5.87)	3.48 (1.57-7.71)	-
No	441 (88.9)	55 (11.1)	1.83 (1.22-2.74)	1.39 (1.11-1.73)	-
Never had the habit of watching SEM	241 (81.4)	55 (18.6)	1	1	-

Note: Legend: OR: Odds Ratio; IC95%: 95% Confidence Interval; p: Wald Test significance.

Logistic regression was used to determine the association of sociodemographic and sexual health characteristics with sexual practices, from which it was observed that the odds were increased for being male (ORa=1.36 times, 95% CI: 1.09-1.70); of homosexual, asexual, bisexual, and pansexual sexual orientation (ORa=1.44, 95% CI: 1.15-1.80); living with a family with no partner (ORa=1.75, 95% CI: 1.13-2.72); having signs/symptoms of STIs in the penis, anus, or vagina (ORa=1.90, 95% CI: 1.47-2.45); STI diagnosis by the health care provider (ORa=1.75, 95% CI: 1.14-2.70); having been tested for HIV in the past 12 months (ORa=1.49, 95% CI: 1.16-1.91); having negative HIV status (ORa=1.26, 95% CI: 1.01-1.56); and not knowing but wanting/needing to use PrEP (ORa=1.70, 95% CI: 1.10-2.64).

In the analysis of the association between consumption of sexually explicit media on sexual practices and greater exposure to HIV, increased odds were observed for the following variables: habit of watching SEM or erotic art (ORa=1.47); under the age of 12 at the first contact with SEM (ORa=2.74); stating that it doesn't matter if actors use condoms, what matters is the actors' performance (ORa=1.79); watching seven or more scenes per week (ORa=2.69); using social networks as the main form of accessing SEM (ORa=1.42); answered no for self-perception of influence of the type of SEM/erotic art watched on sexual relations (ORa=1.54); access to SEM/erotic art interfering on activities of daily life or work (ORa=3.48) (Table **5**). To assess whether there were any differences in sexual behavior and explicit material consumption by gender, the analyses were adjusted while considering this variable.

4. DISCUSSION

In our sample, sexually explicit media consumption is associated with sexual practices that increase exposure to HIV. The following variables were found to increase the chances of these practices: under 12 years of age at the beginning of media consumption; viewing three or more SEM scenes per week; having no preferences whether condoms were used or not; not noticing a change in concepts about sex after accessing sexual media content; agreement with the sharing of sexual scenes with risky behaviors; access to SEM/erotic art interfering with daily life or work activities; and access to SEM/erotic art with real-time interaction.

The increased chances of risky sexual practices to HIV/AIDS for those whose answer was “it doesn't matter if they use condoms or not” is similar to what was found in another Brazilian study with a cisgender MSM population, which identified anal intercourse without condoms associated with the consumption of bareback SEM, besides the increased chances for multiple sexual partners, opting for bareback scenes, having casual partnerships, knowing the partner's negative HIV serological status [10].

Regarding condom use, a study conducted in the United States examined the use of condoms in sexually explicit material (SEM). The study found that the frequency of condom use in SEM was lower compared to what participants reported in their recent sexual experiences. However, it was observed that fellatio practices were significantly more common in the videos. The producers explained that this difference is primarily driven by their concern for the preferences of the predominantly male consumer base [25].

The consumption of alcohol and/or other drugs before or during sexual intercourse was verified in this study. This event generates concern for protected sexual practice, despite sometimes not being recognized by the individual, as consumption can lead to disinhibition and lapses in memory and decision. It is also possible to consider the discomfort of some PLHIV to inform the serological status of sexual partners and to injectable drug users with whom they share this habit. It is noteworthy that there are people living with HIV who do not identify sexual behaviors as unsafe, or even do not understand the dynamics of virus transmission [26].

Importantly, with HIV combination prevention, other strategies besides condoms can offer this protection, making it optional. In 2011, before the implementation of PrEP and the use of antiretrovirals to suppress the virus in PLHIV and prevent transmission to sexual partners, the porn industry had to stop recording erotic films due to an outbreak of HIV transmission [10, 27]. Thus, combination prevention has been one of the most effective ways to combat the HIV/AIDS pandemic [27].

Besides the consumption of SEM through videos distributed by producers, there is currently the popularization

of other forms of access to erotic content, such as camming (in which there is the transmission of sexual nature through the Internet). The OnlyFans platform, created in 2016 by Tim Stokely, where users can sell varied content - pornographic content being the most sold -, has been used in Brazil mainly after the financial complications caused by the COVID-19 pandemic [28].

Another important finding of the study concerns the greater chances of people with homosexual, asexual, bisexual, and pansexual sexual orientation engaging in risky sexual practice. Research developed in the United States with the population of gay and bisexual men showed a high frequency of bareback SEM consumption, and that these consumers reported high levels of risky behavior. It is noteworthy that this fact can bring harm, because the spectators may not be aware that there are other forms of risk reduction, such as pre-exposure prophylaxis treatment as prevention [6].

A study developed in Portugal with men who have sex with men reveals frequent consumption of sexually explicit online media, with a preference for viewing unprotected anal sex. In addition, those who self-identify as gay men engage in unprotected sex more than those who self-identify as bisexual. Therefore, the study concluded that direct exposure to sexually explicit media is a significant predictor for receptive anal sex without condoms [29].

In this context, with the increasing production and consumption of sexually explicit material (SEM), it is important to consider various strategies to promote safer behaviors and reduce unprotected sex. One approach could be the creation of short second tutorials that provide guidance on condom use. Additionally, advertising campaigns highlighting the benefits of pre-exposure prophylaxis (PrEP) and featuring demonstrations of actors using PrEP can serve as indirect messages promoting safe sex practices, particularly targeting individuals who may have reservations or hesitations. These interventions aim to raise awareness and visibility of other preventive measures such as PrEP, serological testing, treatment as prevention, and more. By diversifying the messaging around sexual health, we can effectively encourage safer behaviors and reduce the risks associated with unprotected sexual activities [6].

This study has several limitations that warrant consideration. Firstly, the utilization of a cross-sectional design restricts the examination of variable associations to a single time point, thus precluding the establishment of causality or providing insights into the temporal sequence of events. Secondly, the reliance on self-reported data introduces the potential for recall bias or social desirability bias. Thirdly, while the research primarily focuses on the association between the consumption of sexually explicit media and sexual practices, the influence of unaccounted variables or confounding factors on the results cannot be dismissed. Variables such as education, socioeconomic status, or access to sexual health resources could potentially impact the findings. Lastly, it is important to acknowledge that the study was conducted with a specific sample of participants in Brazil, limiting the generalizability of the findings to other populations or contexts. Thus, caution should be exercised when applying these results to the broader Brazilian population or to other countries.

CONCLUSION

In our study, the consumption of sexually explicit media is associated with sexual practices that can expose Brazilians to HIV. This fact is also related to certain sociodemographic and sexual health characteristics, such as being male, having had some signs or symptoms and diagnosis by a health professional of Sexually Transmitted Infection, and others that make them vulnerable. It was observed that the use of illicit drugs and alcohol when having sex, followed by vaginal or anal intercourse without a condom, was more frequent in the criteria of risky sexual practice.

This article brings elements to contribute to the debate and research on the subject and help in understanding this reality in Brazil. According to the aforementioned detail, it becomes relevant the development of public policies and strategies for the prevention of risky practices for HIV/AIDS focused on the consumption of sexually explicit media, through the demonstration of HIV prevention strategies during the sex scenes and *via* the control of shared material.

LIST OF ABBREVIATIONS

HIV	=	Human Immunodeficiency Virus
COVID-19	=	Corona VIrus Disease of 2019
PLHIV	=	Person/People Living with HIV
SEM	=	Sexually Explicit Material
STIs	=	Sexually Transmitted Infections

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was submitted to the Research Ethics Committee of the Federal University of Piauí and approved (opinion: 3,915,991 / 2020). This was followed by the "Guidelines for research procedures with any stage in a virtual environment", of February 24, 2021, as established by the National Research Ethics Committee (CONEP). Consent was obtained online.

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committees and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Written consent was obtained from all participants.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data and supportive information are available within the article.

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CONFLICT OF INTEREST

The authors declare no conflict of interest financial or otherwise.

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