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ORIGINAL ARTICLE

Reports of sexual violence and alcohol use in Minas Gerais from 2018 to 2022

Notificações de violência sexual e uso de álcool em Minas Gerais entre 2018 e 2022

Notificaciones de violencia sexual y consumo de alcohol en Minas Gerais entre 2018 y 2022

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ABSTRACT

Background and Objectives: Sexual violence is a serious public health issue. Alcohol intoxication acts as a risk factor for its occurrence as it affects both the victim's ability to defend themselves and the aggressors' inhibitions, who tend to misinterpret social cues and act more aggressively. This study aimed to describe the epidemiological characteristics of reports of sexual violence suspected to be associated with alcohol consumption in the state of Minas Gerais from 2018 to 2022. **Methods:** This is a descriptive study, with data analysis based on the epidemiological profile, obtained from reports of sexual violence with suspected alcohol use in Minas Gerais, using secondary data from SINAN, collected by SES/MG through Tabnet. **Results:** Most reports of sexual violence involved women (92.71%), with the highest incidence in the 20–29 age group (24.30%). Regarding education level, a significant portion of the records was incomplete or left blank (25%). Rape was the most prevalent type of violence (74.60%). Most victims did not receive adequate care, with blood collection being the most frequently performed procedure (40.89%). Aggressors were predominantly male (95.66%), acting alone in most cases (74.56%), with most being friends or acquaintances of the victim (31.41%). **Conclusion:** The study reinforces the urgency of public policies aimed at preventing excessive alcohol consumption and supporting victims of sexual violence, in addition to the need to train professionals to improve the completion of reports and strengthen preventive actions.

Keywords: Sexual violence. Alcohol abuse. Health information systems.

RESUMO

Justificativa e Objetivos: A violência sexual é um grave problema de saúde pública. A intoxicação pelo álcool age como fator de risco para sua ocorrência, pois afeta tanto a capacidade das vítimas de se defenderem quanto as inibições dos agressores, que tendem a mal interpretar sinais sociais e agir com maior agressividade. Este estudo objetivou descrever as características epidemiológicas das notificações de violência sexual com suspeita de associação ao consumo de álcool, no estado de Minas Gerais, entre os anos de 2018 e 2022. **Métodos:** Caracteriza-se por um estudo descritivo, com análise dos dados a partir do perfil epidemiológico coletados por meio das notificações de violência sexual com suspeita de uso de álcool, em Minas Gerais, com base em dados secundários do SINAN coletados pela SES/MG por meio do Tabnet. **Resultados:** A maioria das notificações de violência sexual envolveu mulheres (92,71%), com maior incidência na faixa etária de 20 a 29 anos (24,30%). Em relação à escolaridade, uma parcela significativa dos registros estava incompleta ou em branco (25%). O estupro foi o tipo de violência mais prevalente (74,60%). A maioria das vítimas não recebeu atendimento adequado, sendo a coleta de sangue o procedimento mais realizado (40,89%). Os agressores eram predominantemente homens (95,66%), agindo sozinhos na maioria dos casos (74,56%), com a maior parte sendo amigos ou conhecidos da vítima (31,41%). **Conclusão:** O estudo reforça a urgência de políticas públicas que previnam o consumo excessivo de álcool e apoiem vítimas de violência sexual, além da necessidade de capacitar profissionais para melhorar o preenchimento de notificações e fortalecer as ações preventivas.

Descritores: *Violência sexual. Abuso de álcool. Sistemas de informação em saúde.*

RESUMEN

Justificación y Objetivos: La violencia sexual es un grave problema de salud pública. La intoxicación por alcohol actúa como un factor de riesgo para su ocurrencia, ya que afecta tanto la capacidad de defensa de las víctimas como las inhibiciones de los agresores, quienes tienden a malinterpretar señales sociales y a actuar con mayor agresividad. Este estudio tuvo como objetivo describir las características epidemiológicas de las notificaciones de violencia sexual con sospecha de asociación al consumo de alcohol en el estado de Minas Gerais entre 2018 y 2022. **Métodos:** Se trata de un estudio descriptivo, con análisis de datos a partir del perfil epidemiológico, recolectados a partir de notificaciones de violencia sexual con sospecha de consumo de alcohol en Minas Gerais, utilizando datos secundarios del SINAN, recolectados por la SES/MG a través del Tabnet. **Resultados:** La mayoría de las notificaciones de violencia sexual involucraron a mujeres (92,71%), con mayor incidencia en el grupo de edad de 20 a 29 años (24,30%). En cuanto al nivel educativo, una parte significativa de los registros estaba incompleta o en blanco (25%). La violación fue el tipo de violencia más prevalente (74,60%). La mayoría de las víctimas no recibió atención adecuada, y la recolección de sangre fue el procedimiento más realizado (40,89%). Los agresores eran predominantemente hombres (95,66%), actuaban solos en la mayoría de los casos (74,56%), y en su mayoría eran amigos o conocidos de la víctima (31,41%). **Conclusión:** El estudio refuerza la urgencia de políticas públicas que prevengan el consumo excesivo de alcohol y apoyen a las víctimas de violencia sexual, además de la necesidad de capacitar a los profesionales para mejorar el llenado de notificaciones y fortalecer las acciones preventivas.

Palabras Clave: *Violencia sexual. Abuso de alcohol. Sistemas de información en salud.*

INTRODUCTION

Sexual violence, which includes non-consensual sexual interactions such as sexual assault and rape, is recognized as a major challenge to global public health.¹ This type of violence not only compromises human dignity, but also constitutes a serious violation of the victims' human rights. Its roots are linked to social disparities, reflecting gender inequalities and power dynamics related to economic status, the use of physical force, and the presence of weapons.²

The Pan American Health Organization defines sexual violence as any behavior of a sexual nature, attempt to perform a sexual act, or other action directed at someone's sexuality through coercion by another person, regardless of their relationship with the victim or the context involved.³

During their lifetime, approximately one in three women, which is equivalent to around 736 million women, experience physical or sexual violence, and around 20% of these women reported having suffered sexual assault during childhood. It is worth noting that in most cases where these situations occur, the main perpetrators are partners, and therefore these cases are not reported or victims are coerced into silence.⁴

In parallel with this, since 2011, reporting domestic violence, sexual violence, and other forms of violence has become mandatory for all health services, whether public or private, throughout Brazil. In 2014, the list of diseases and conditions subject to mandatory reporting was updated, requiring cases of sexual assault to be reported to municipal health departments within 24 hours.⁵

Studies have established links between risky behaviors and sexual activities in leisure contexts.⁶ Alcohol is often used to increase the chances of sexual encounters or to influence people's behavior and desire, making them more receptive to sex. Its consumption emerges as the main risk factor for non-consensual sexual relations, forced touching, and additional risks. However, its effects differ between men and women: in women, the ability to react to warning signs is diminished, compromising protective behavioral strategies, while in men, impulses are uninhibited, and aggression is intensified.⁶

Regarding the behavior of sexual offenders and alcohol use, studies indicate that alcohol can exacerbate aggression and lower inhibitions, facilitating violent behaviors. The pharmacological mechanisms of alcohol reduce cognitive functioning, while the psychological mechanisms involve the interaction between perpetrators' beliefs about the effects of alcohol and its actual repercussions. When intoxicated, aggressors tend to misinterpret social cues, focusing more on immediate cues such as sexual arousal and frustration, and less on long-term

consequences and empathy for the victim. This increases the propensity to commit sexual assault.⁷

This study is relevant because it addresses the critical intersection between alcohol consumption and sexual violence, an area of great impact on public health and human rights. Considering the issues outlined above, this study aims to describe the epidemiological characteristics of reports of sexual violence suspected to be associated with alcohol consumption in the state of Minas Gerais.

METHODOLOGY

This is a descriptive study of the epidemiological profile of reports of sexual violence involving suspected alcohol use. The data were collected from secondary sources of the Notifiable Diseases Information System (SINAN) managed by the Minas Gerais State Health Department (SES/MG).

The SINAN data were collected using the Health Information Tabulator tool (Tabnet) tool on the SES/MG website and exported to Microsoft Excel 365 software between December 2023 and February 2024. They comprise reports registered by health services in Minas Gerais between 2018 and 2022 related to the place of residence. The variables analyzed were: characterization of victims of sexual violence; data on victims of sexual violence; type of sexual violence; procedure performed; data on the probable perpetrator of the violence; and the relationship between sexual violence and alcohol use. Data analysis was performed using simple descriptive statistics with absolute and relative values and presented in tabular format.

The study was conducted using publicly available data published on the SES/MG website (vigilancia.saude.mg.gov.br), without the possibility of identification, and thus does not require review by the Research Ethics Committee, as provided for in Resolution No. 510, dated April 7, 2016.

RESULTS

From the data collected, it was possible to verify that between 2018 and 2022, 62,763 cases of violence related to alcohol use were reported. Of this total, 5,213 refer to cases of sexual violence related to the use of this substance in the same period. The data show that 949, 1,050, 980, 938, and 1,288 cases were reported in 2018, 2019, 2020, 2021, and 2022, respectively.

The results were grouped into five tables for the presentation of the data shown below. Sociodemographic data and characteristics of individuals who were victims of alcohol-related sexual violence during the study period are presented. Among the victims, females (92.71%) were predominant in the reports (Table 1).

A higher proportion of notifications was found in the 20-29 age group (24.30%). Brown race/color was attributed in most cases of notifications (47.29%), followed by white (30.08%). Among reports with valid education data, a high proportion was attributed to the field being unknown or blank (25%), followed by individuals who had not completed 5th to 8th grade of elementary school (16.98%). In the sexual orientation field, there was a predominance of victims who declared themselves to be heterosexual (56.09%). Regarding gender identity, the field was most often described as not applicable (70.08%), followed by being left blank or described as unknown (28.20%).

Table 1. Distribution of victim characterization notifications by gender, according to age group, race/color, education level, sexual orientation, and gender identity, MG, Brazil, 2018–2022

	N (%)
Total	5213 (100.00)
Gender	
Male	380 (7.29)
Female	4.833 (92.71)
Age group	
< 1	44 (0.84)
1 to 4	249 (0.23)
5 to 9	441 (4.78)
10 to 14	897 (17.21)
15 to 19	878 (16.84)
20 to 29	1.267 (24.30)
30 to 39	676 (12.97)
40 to 49	452 (8.67)
50 to 59	199 (8.46)
60 to 69	63 (3.82)
70 to 79	35 (1.21)
> 80	12 (0.67)
Race/color	
Ignored/Blank	358 (0.77)
White	1.568 (30.08)
Black	763 (6.87)
Yellow	40 (0.36)
Brown	2.465 (47.29)
Indigenous	19 (14.64)
Education	

Incomplete elementary education (1st to 4th grade)	344 (6.60)
Elementary education (4th grade)	216 (4.14)
Incomplete elementary education (5th to 8th grade)	885 (16.98)
Illiterate	56 (1.07)
Completed higher education	180 (3.45)
Incomplete higher education	260 (4.99)
Complete elementary education	368 (7.06)
Complete secondary education	664 (12.74)
Incomplete secondary education	467 (8.96)
Ignored/Blank	1303 (25.00)
Not applicable	470 (9.02)
Sexual orientation	
Bisexual	116 (2.23)
Straight	2924 (56.09)
Homosexual (gay/lesbian)	177 (3.40)
Ignored/Blank	818 (15.69)
Not applicable	1178 (22.60)
Gender identity	
Ignored/Blank	1470 (28.20)
Not applicable	3655 (70.11)
Transgender Man	15 (0.29)
Transgender Woman	68 (1.30)
Transvestite	5 (0.10)

Still regarding the victim, in terms of the type of violence that occurred, there was a higher prevalence of rape (74.60%), followed by sexual harassment (33.68%). It is worth noting that the same victim may have suffered more than one type of sexual violence, meaning that there is a chance that more than one field was marked on the notification form (Table 2).

Table 2. Distribution of reports of sexual violence by suspected alcohol use, MG, Brazil, 2018–2022

Type of violence	Yes	No
	N (%)	N (%)
Sexual harassment	1757 (33.68)	3456 (66.32)
Rape	3888 (74.60)	1325 (25.4)
Child pornography	101 (1.94)	5112 (98.06)
Sexual exploitation	177 (3.40)	5036 (96.6)
Other forms of violence		

Ignored/Blank	9 (0.17)	5204 (99.83)
Yes	8 (0.15)	5205 (99.85)
No	184 (3.53)	5029 (96.47)

When analyzing the data on procedures performed on victims of sexual violence with suspected alcohol use, it is noted that most were not performed; however, when performed, most were for blood collection (40.89%), followed by prophylaxis for sexually transmitted diseases (STDs), as shown in Table 3.

Table 3. Distribution of notifications of procedures performed in cases of sexual violence based on suspected alcohol use, MG, Brazil, 2018–2022

Procedure performed	Yes N (%)	No N (%)
STD prophylaxis	1984 (38.05)	3229 (61.95)
HIV prophylaxis	1769 (33.94)	3444 (66.06)
Hepatitis B prophylaxis	1250 (23.97)	3963 (76.03)
Blood collection	2132 (40.89)	3081 (59.11)
Semen collection	378 (7.25)	4835 (92.75)
Vaginal secretions collection	982 (18.83)	4231 (81.17)
Emergency contraception pill	1207 (23.15)	4006 (76.85)
Abortion permitted by law	116 (2.23)	5097 (97.77)

Caption: STD: Sexually Transmitted Diseases; HIV: Human Immunodeficiency Virus

Regarding data on the probable perpetrator, it can be observed that, in most of the cases recorded, sexual violence was committed by one individual (74.56%) and that most perpetrators were male (95.66%), as shown in Table 4.

Table 4. Distribution of notifications of data from the probable perpetrator, MG, Brazil, 2018–2022

	N (%)
Total	5213 (100.00)
Number of people involved	
Ignored/Blank	213 (4.09)
One	3.887 (74.56)
Two or more	1.113 (21.35)
Gender of the probable perpetrator	

Ignored	66 (1.27)
Male	4.987 (95.66)
Female	75 (1.44)
Both genders	85 (1.63)

In parallel with this, in cases where the degree of kinship of the probable perpetrator was recorded, most were committed by friends/acquaintances (31.41%), followed by someone unknown (26.09%) to the victim (Table 5).

Table 5. Distribution of reports of sexual violence by degree of kinship according to suspected alcohol use, MG, Brazil, 2018-2022

Degree of kinship	Yes	No
	N (%)	N (%)
Father	384 (7.36)	4.829 (92.54)
Mother	74 (1.42)	5.139 (98.57)
Stepfather	333 (6.39)	4.880 (93.58)
Stepmother	6 (0.12)	4.207 (80.57)
Spouse	376 (7.22)	4.837 (92.76)
Former spouse	180 (3.45)	5.033 (96.54)
Boyfriend or girlfriend	157 (3.01)	5.056 (96.97)
Ex-boyfriend/girlfriend	126 (2.24)	5.087 (97.57)
Son or daughter	33 (0.63)	5.180 (99.37)
Sibling	75 (1.44)	5.138 (98.58)
Friends/acquaintances	1.637 (31.41)	3.576 (68.60)
Stranger	1.361 (26.09)	3.852 (73.85)
Caregiver	14 (0.27)	5.199 (99.73)
Boss/supervisor	23 (0.44)	5.190 (99.56)
Person with an institutional relationship	20 (0.38)	5.193 (99.61)
Police officer/law enforcement officer	16 (0.31)	5.197 (99.69)
The person themselves	23 (0.44)	5.190 (99.56)
Other relationship	551 (10.57)	4.662 (89.44)

DISCUSSION

A study examining the prevalence and characteristics of sexual violence involving substance use (alcohol or drugs) conducted in the United States showed that the vast majority of people who were victims of sexual violence, whether male or female, reported that the perpetrator was intoxicated at the time of the crime.⁸ Another study conducted in Spain showed that women who drink alcohol tend to be seen by men as vulnerable and/or sexually receptive.⁹ This is consistent with comparative qualitative studies that concluded that alcohol is deliberately used by men as a seduction technique, regardless of whether there is consent or not.¹⁰

To further the discussion on the relationship between alcohol consumption and sexual violence in the Brazilian context, it is relevant to consider a study that investigated the perceptions of women victims of intimate partner violence in the city of Juiz de Fora, Minas Gerais. The study highlighted that alcohol can act as a situational factor, increasing the likelihood of violence by reducing inhibitions and impairing judgment, in addition to being frequently used as a justification for aggressive behavior. Participants reported that, in many cases, alcohol consumption by aggressors was seen as a preferred explanation for episodes of violence, which may reflect an attempt at emotional self-protection in the face of the complexity of abusive relationships.¹¹

According to the results obtained in this study, there was a significant increase in reported cases of sexual violence involving alcohol consumption in 2022. In parallel with this, we should highlight that between 2020 and 2023, the WHO classified the SARS-CoV-2 outbreak, better known as Covid-19, as a Public Health Emergency of International Concern.¹²

In this context, the study that analyzed the increase in sexual violence during the Covid-19 pandemic, although focused on cases involving children and adolescents, offers some conclusions to be explored. The authors highlight that the pandemic and social isolation measures have created favorable conditions for an increase in sexual violence, especially within the households.¹³

The prevalence of victims of sexual violence was female (92%), as in Minas Gerais, a study conducted in a municipality in Colombia shows that females were the majority of victims in reports of this type of violence between 2011 and 2020. In this sense, another study indicates that violence is a manifestation of patriarchal and sexist structures that perpetuate gender inequality. For the author, this framework encourages the objectification and devaluation of women, which leads to an environment where sexual violence is mostly

normalized as a form of control and domination. Furthermore, the difficulty victims face in accessing justice and effective support contributes to the perpetuation of this cycle of violence.¹⁴ Sexual violence affects a large proportion of girls, requiring intervention that not only focuses on increasing social support for survivors, facilitating reporting, and ensuring that perpetrators are convicted, but also aims to reduce alcohol use and alleviate poverty.¹⁵

The predominant age group was 20 to 29 years old (24.30%), and the most common race/color was brown (47.29%). Regarding education, most records had the ‘unknown/blank’ field checked (25%), and among the available data, the most common level was incomplete 5th to 8th grade of elementary education (16.98%). These findings differ from the study by Sousa et al. (2021), who showed, in their study conducted in the state of Maranhão, that reports of sexual violence were more common in women aged 10 to 14 (54%), and corroborated the findings related to the brown race (70.4%) and incomplete 5th to 8th grade of elementary education (39.8%) as the majority of reports.¹⁶

Reflecting on these findings, it is possible to understand that sexual violence disproportionately affects women who occupy vulnerable social positions—young women, black or brown women, and women with lower levels of education. This profile is not merely statistical, but reveals structural dynamics of exclusion. The effects of public policies aimed at combating gender-based violence are not felt uniformly among all women: black women, for example, face historical and institutional processes of subordination that put them at greater risk of victimization and invisibility in terms of access to justice and social protection. These processes are exacerbated by social markers such as race, class, and gender, which are intertwined in a context of structural racism and institutionalized patriarchy.¹⁷

The most commonly reported type of sexual violence was rape (74.60%), which is consistent with data published by the Brazilian Forum on Public Safety in 2020, which recorded 66,348 cases of rape in Brazil, of which 5,009 occurred in Minas Gerais. Of the total, 85% of victims in the country and 86% in the state were female.¹⁸ The results obtained are similar to the findings in the literature, with a study showing that about 78% of the cases of violence reported in Maranhão between 2009 and 2017 were violence involving rape, and in second place in the number of reports was sexual harassment, with 13.6% of cases in the nine years analyzed in this research, which also corroborates the findings of the present study.¹⁶ Among the various forms of violence, rape is an attack that is not limited to the body, but also to the rights of the victim. Those who suffer do not have the right to choose, and the shame of what they have suffered perpetuates this silence.¹⁹ In parallel with this, when discussing rape as gender violence, a study conducted by the Institute of Applied Economic Research in 2011

concluded that only 10% of rapes in Brazil are reported to the police. Based on this data, it can be concluded that many cases go unreported.²⁰

This reality reveals an alarming and persistent issue in the country, where rape and sexual harassment are widely underreported crimes, reflecting a context of impunity and a deeply rooted culture of gender-based violence. The underreporting of rape in Brazil reflects a social structure that minimizes the severity of sexual violence, imposing significant obstacles on victims. Structural sexism, gender discrimination, and social stigma surrounding sexual abuse contribute to the silencing of victims, especially women, who make up the vast majority of rape victims.

According to the results obtained, most post-exposure procedures were not performed, with the majority consisting of blood collection (40.89%) and STD prophylaxis (38.05%). In this context, one of the serious consequences of sexual violence is the possibility of transmission of sexually transmitted infections (STIs), which causes fear and anxiety in victims. According to the Ministry of Health, it is essential to offer immediate assistance, including clinical and laboratory care, post-exposure prophylaxis (PEP) for Human Immunodeficiency Virus (HIV), viral hepatitis, and non-viral STIs (gonorrhea, syphilis, chlamydia infection, trichomoniasis, and chancroid), in addition to psychological and social support. Another important aspect is to provide prevention of unwanted pregnancy and guidance on medical procedures and legal rights, ensuring comprehensive and humanized care for victims.²¹

It is known that 7.6% of women became pregnant after sexual violence, especially those who did not access health services or receive emergency contraception. The same study described that the occurrence of STIs corresponded to 3.5%, being more common among young people aged 15 to 19 or victims of multiple aggressors.²² In addition, the low implementation of post-exposure procedures may be related to structural and institutional factors, such as the lack of adequate preparation on the part of some health professionals, who often do not have in-depth knowledge of specific protocols for caring for victims of sexual violence. This gap compromises the quality of care provided, making it difficult to offer effective and comprehensive assistance when it is most needed. Barriers such as the scarcity of specialized services, the unequal distribution of these services throughout the country, and the lack of emotional and social support also contribute to many victims not receiving the comprehensive care to which they are entitled.

Regarding data on the likely perpetrator, higher prevalences were found for male perpetrators only. Another study describes that sexual assault against adults is about 1.62 times

more frequent when involving a male perpetrator.²³ In Paraná, a study based on consultation of notification forms for cases treated at a referral hospital found that only one aggressor was identified in approximately 79% of reported cases.²⁴

In this study, the perpetrator's degree of kinship was mostly acquaintances of the victim (31.41%), followed by a high proportion of perpetrators unknown to the victim (26.09%). This result contrasts with the findings of a study conducted in the state of Espírito Santo, which indicated that sexual assault by strangers was about nine times more prevalent than that committed by perpetrators who had some connection with the victim.²³

In another study conducted with victims of sexual violence in Piauí, although most cases also involved strangers (44.9%), the authors reported that the literature shows that a large proportion of rape cases occur within an intimate marital context, whether formal or not, and that several studies also demonstrate that the main perpetrators are family members themselves, including fathers, stepfathers, and acquaintances.²⁴ It is also worth mentioning that it is important to consider that the relationship between victim and perpetrator in sexual violence is complex and influenced by multiple sociocultural factors, which may explain the variability of data found in different regions and studies. Although part of the literature points to a predominance of unknown perpetrators, other studies show that sexual violence often occurs in the home or within the victim's circle of trust, which can make reporting difficult and contribute to underreporting.

Studies show that family violence associated with alcohol and drug use, violation of protective measures, and recidivism are strongly linked to alcohol consumption, both in family violence and intimate partner violence. Incidents related to alcohol use were twice as likely to involve serious physical violence, including life-threatening injuries, and were more likely to result in recidivism.²⁵

Excessive alcohol consumption, by disinhibiting behavior and reducing victims' resistance, is a major facilitator of sexual assault. In this sense, accurate and detailed reporting of these cases is essential to strengthen the health surveillance system. Continuous and adequate training of health teams play an essential role in this process, ensuring that reporting forms are completed thoroughly and accurately. This practice not only improves the quality of data on cases of violence, but also ensures that they are properly investigated, referred, and treated in response to the needs of victims.

Furthermore, it is essential that government agencies invest in educational programs and projects aimed at both preventing sexual violence and providing comprehensive support to its victims. Raising public awareness and empowering individuals are essential pillars for

addressing and reducing sexual violence associated with alcohol abuse. It is also important to note that such violence has impacts that go beyond physical harm, damaging the psychological and social well-being of victims, a factor that reinforces the need for a prepared health system and coordinated and effective public policies.

This study has limitations related to the use of data from SINAN, such as underreporting and gaps in records. These problems compromise the completeness of information and the effectiveness of surveillance and prevention actions. In order to mitigate this problem, it is important to highlight the importance of continuous investment in the training of health professionals, with a focus on improving the quality of notifications and ensuring more assertive care for victims. It is important to emphasize the need for this proposal for continuing education in health, as it must be accompanied by the development of interventions aimed at reducing alcohol abuse.

The results highlight the urgency of implementing integrated public policies to raise awareness about the harmful effects of excessive alcohol consumption and to support victims of sexual violence resulting from this use. Given the limitations of this study, further investigation of cases is needed to understand the other mechanisms involved and to develop appropriate intervention strategies. Finally, it is necessary to encourage professionals to, as part of good health practices, accurately complete notification forms to promote the quality of the recorded information and contribute to the effectiveness of the public health actions to be developed.

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Laura Beatriz Andrade Medeiros contributed to the bibliographic research, writing of the abstract, introduction, methodology, discussion, interpretation and description of the results, preparation of tables, conclusions, and review. **João Gabriel Machado Silva** contributed to the literature review, writing of the abstract, interpretation and description of results, and review. **Bruna Betiatti Benatatti Eller** contributed to the literature review, writing of the abstract, methodology, interpretation of results, conclusions, statistics, and review. **Eduarda Henriques Moioli** contributed to the writing of the abstract, content review, and translation of the text. **Ana Paula Alves Goulart** contributed to content review and translation of the text. **Maria Cristina de Moura Ferreira** contributed to the project management, bibliographic research, and content review. **Carla Denari Giuliani** contributed to the project management, bibliographic research, and content review. **Mônica Rodrigues da Silva** contributed to project management, bibliographic research, and content review. **Marcelle Aparecida de Barros Junqueira** contributed to the project management, bibliographic research, writing the abstract, introduction, methodology, discussion, interpretation and description of results, conclusions, and review.

All authors approved the final version to be published and are responsible for all aspects of the work, including ensuring its accuracy and integrity.