

Childhood violence, exposure to parental violence and alcohol dependence/abuse in adulthood*

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This article analyses the association between the history of violence in childhood and alcohol abuse and dependence in adulthood. A multistage probabilistic sample was used to select 3,007 individuals aged 14 years or older, living in Brazil, between November 2005 and April 2006. Analyses showed an association between history of physical abuse and exposure to parental violence ($p < 0.001$). A multinomial regression model showed a significant association between history of physical abuse in childhood and alcohol dependence in adulthood. The following variables have greater impact on the probability of alcohol dependence: male sex, exposure to parental violence and history of physical abuse. Thus, the higher the level of exposure, the greater the percentage of severe violence suffered in childhood. Results corroborate previous findings, which suggest the importance of a childhood history of violence in the etiology of disorders resulting from alcohol consumption.

Descriptors: Domestic Violence; Abuse in Childhood; Parental Violence; Alcohol Dependence and Abuse; Cross-Sectional Studies.

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Violência na infância, exposição a violência parental e abuso e/ou dependência de álcool na idade adulta

Este artigo examina a associação entre o histórico de violência na infância e a dependência e uso nocivo de álcool na idade adulta. Uma amostra probabilística multiestágio foi usada para selecionar 3.007 indivíduos de 14 anos de idade ou mais, dos lares brasileiros, entre novembro de 2005 e abril de 2006. As análises mostraram a existência de associação entre o histórico de abuso físico e exposição à violência parental ($p < 0,001$). O modelo de regressão multinomial mostrou uma associação entre o histórico de violência na infância e a dependência de álcool na idade adulta. As variáveis de maior impacto na chance para dependência do álcool foram sexo masculino, exposição à violência parental e histórico de abuso físico. Desta forma, observou-se que quanto maior o grau de exposição, maior a porcentagem de violência severa sofrida na infância. Os resultados corroboram com prévios achados que sugerem que um histórico positivo de violência na infância é um componente importante na etiologia dos transtornos decorrentes do consumo de álcool.

Descritores: Violência Doméstica; Abuso na Infância; Violência Parental; Dependência e Abuso de Álcool; Estudos Transversais.

La violencia infantil, exposición a la violencia de los padres y el abuso y/o dependencia del alcohol en la edad adulta

En este artículo se estudia la relación entre la historia de la violencia en la infancia y la dependencia y el uso nocivo de alcohol en la edad adulta. Una muestra de probabilidad de varias etapas fue utilizada para seleccionar 3.007 individuos de 14 años de edad o más de los hogares brasileños entre noviembre de 2005 y abril de 2006. El análisis mostró que hay una asociación entre la historia de abuso físico y la exposición a la violencia de los padres ($p < 0,001$). El modelo de regresión multinomial mostró una asociación entre la historia de violencia en la infancia y la dependencia del alcohol en la edad adulta. Las variables con mayor impacto en la probabilidad de dependencia del alcohol fueron el sexo masculino, la exposición a la violencia de los padres y la historia de abuso físico. Cuanto mayor sea el grado de exposición, mayor es el porcentaje de violencia grave sufrida en la infancia. Los resultados corroboran hallazgos previos que sugieren que una historia positiva de violencia en la infancia es un componente importante en la etiología de los trastornos derivados del consumo de alcohol.

Descriptor: Violencia Doméstica; Abuso en la Infancia; Violencia de los Padres; Adicción y Abuso de Alcohol; Estudios Transversales.

Introduction

Due to its high incidence and prevalence, domestic violence is an important public health problem

worldwide⁽¹⁻²⁾, and its consequences to mental and physical health have an impact on adulthood⁽³⁻⁴⁾.

Evidences from several studies support that victimization in childhood because of physical abuse

and witnessing violence between parents may lead to a high risk of developing physical health problems⁽⁵⁻⁶⁾ and high rates of psychiatric disorders in adulthood, such as depression, anxiety and abuse of substances^(3,6-7).

Regarding the use of substances, especially alcohol abuse and/or dependence, in previous studies, experiences of violence in childhood were pointed as a risk factor for the development of alcohol-related disorders⁽⁸⁾. Other studies are more incisive and report these experiences as an important aspect in the etiology of alcohol use disorders⁽⁹⁻¹⁰⁾.

Evidence proves that physical abuse and exposure to parental violence tend to occur together, thus indicating these are not isolated events in the life of individuals with a history of violence in childhood^(1,11-12). Thus, the accumulation of these two types of experiences, physical abuse and exposure to parental violence, may have negative results in the short and long terms, and lead to a higher risk of developing behavioral problems^(5,11,13).

This association has been reported in several studies performed in different countries^(9-10,14-15). However, compared to studies performed in developed countries, the Brazilian scientific production on the association between history of violence in childhood and alcohol use disorders is scarce. Thus, the aim of the present study was to assess the effects of physical abuse and exposure to parental violence in childhood on the risk of developing alcohol dependence and abuse in adulthood in a representative sample of the Brazilian population.

Methods

Sampling process and data collection

The present study analyzed data from the 1st Brazilian Nationwide Survey on Alcohol Consumption Patterns⁽¹⁶⁾ conducted by the Research Unit on Alcohol and Drugs (Portuguese acronym: UNIAD) of the Universidade Federal de São Paulo (UNIFESP). Data were collected between November 2005 and April 2006 in 143 Brazilian cities, totaling 325 census tracts. The stratified probability sampling method was used in three steps, namely: Step 1: Systematic random selection of cities, probabilistically selected by Probability Proportional to Size (PPS) and based on the population of each city. Step 2: selection of two census tracts for each city, except for the 14 larger cities, totaling 325 census tracts, and also using the PPS. Step 3: in each tract, eight households were selected by simple random sampling, followed

by the selection of a household resident, who was subsequently interviewed using the 'technique of the individual whose birthday comes next', beginning with the date when the household was listed.

The sampling methodology was designed to cover Brazil as a whole, representing the entire Brazilian population aged 14 years or more, of both sexes, and without the exclusion of any part of the country, including rural areas. Special populations such as Brazilian indigenous, army officers and those living in institutions such as prisons were not included in the sample.

The sample comprised 2,522 interviews with participants aged 14 years or more, and an extra quota of 485 interviews exclusively for the population aged between 14 and 17 years hence, totaling 3,007 interviews. A face-to-face interview lasting one hour was conducted in respondents' homes by qualified interviewers, who used a standardized, close-ended questionnaire. Response rate was 66.4%. Refusal was higher among individuals with high socioeconomic level.

All respondents signed an informed consent form referring to the original study, which was approved by a human subjects/internal review board process at the university.

Measurements

The instrument used to collect data from the 1st Brazilian Nationwide Survey on Alcohol Consumption Patterns was a version of the questionnaire employed by the Hispanic Americans Baseline Alcohol Survey – HABLAS⁽¹⁷⁾. This questionnaire was translated by research coordinators and underwent a process of adaptation to the sociocultural reality of the Brazilian population.

- *History of violence*: HABLAS items used to assess physical abuse in childhood were adapted from the Conflict Tactics Scales - CTS, Form R⁽¹⁸⁾, and Revised Conflict Tactics Scales – CTS2⁽¹⁹⁾. Thus, in the present study, the term 'abuse' was restricted to intra-family physical abuse, characterized by the parents' and/or caretakers' use of physical force against children and adolescents, as well as parental violence, also characterized by the use of physical force aiming to cause harm to the intimate partner, according to criteria from Straus & Gelles⁽²⁰⁾.

Physical abuse in childhood: Respondents were asked whether parents or adults who raised them during their childhood and/or adolescence had ever beaten them with an object, burned or scalded them, threatened

them with a knife or fire arm, or used a knife or fire arm against them. Based on their responses, individuals were divided into three groups namely, without history of physical abuse in childhood, moderate physical abuse (interviewee had been beaten), or severe physical abuse in childhood (interviewee had been beaten with an object, burned or scalded, threatened with a knife or fire arm, or hurt by a knife or firearm).

Exposure to parental violence in childhood: Respondents were asked if during their childhood or adolescence, they had witnessed their parents or those who raised them threaten each other with physical violence or actually commit physical violence against each other. Based on their responses, individuals were divided into three groups, namely: without exposure to parental violence (never observed a threat of violence or actual physical violence between parents), moderate exposure to parental violence (witnessed threat of violence between parents) and severe exposure to parental violence (witnessed both threat of and actual physical violence between parents).

- *Alcohol dependence and abuse:* Data to verify alcohol abuse or dependence were obtained from questions of the Composite International Diagnostic Interview-Substance (CIDI-SAM)⁽²¹⁾. Symptoms present in the last 12 months were observed to assess time of occurrence. Therefore, 'abuse' and 'dependence' terms are understood as follows: *Abuse:* when there was a positive response to at least one out of the six CIDI questions about alcohol abuse; *Dependence:* when there was a positive response to at least three out of the seven CIDI questions about dependence.

- *Sociodemographic variables:* The variables used were: sex; age; ethnic group; marital status; educational level; household income; employment status; geographical region of the country.

- *Statistical analysis:* Analyses were performed using the SPSS software, version 13.0. Descriptive analyses were made for sample characterization and distribution of history of violence in childhood and alcohol use disorders. Next, the Pearson chi-square test was used to establish an association between the history of physical abuse and exposure to parental violence in childhood with a diagnosis of alcohol abuse or dependence. A multinomial regression model was used. First, the following were included as explanatory variables: sex, age, marital status, household income, geographical region, ethnic group, employment status, exposure to violence in childhood and history of violence in childhood. Variables that were not significant at a 5% level were excluded from the one-at-a-time

model (backward method). The complex structure of the sampling plan was considered in all analyses by using the SPSS Complex Samples.

Ethical considerations: The study was approved by a human subjects/internal review board process at the university (code: CEP 1672/04). All respondents signed an informed consent form and were assured of the confidential nature of the study before the interview.

Results

Characteristics of the sample studied

The study population included 1,285 men (47.9%) and 1,722 women (52.10%). Mean age was 36.84 years for men and 38.01 for women (age range of 14-91 years). Half of individuals were white (men= 51.4%, women= 49.7%), 35.2% were mixed race (men= 34.7%, women= 35.6%), 11.3% were black (men= 10.9%, women= 11.7%) and 3% belonged to other ethnic groups. As regards marital status, 55.4% were married or cohabiting (men= 58.2%, women= 52.8%). Approximately 34% of individuals showed low educational levels (men= 34.2%, women= 33.9%), of which 23% had never been to school or had only completed the first grades of elementary school. In terms of employment status, 70.5% of individuals performed a certain type of paid activity (men= 83.2%, women= 58.7%). In addition, 25% of women reported being housewives. About two fifths of the sample (39.1%) reported their monthly household income was up to R\$ 450.00.

The sample included individuals from all Brazilian regions, thus showing national representativeness. These results have also been reported by Zanoti-Jeronymo et al.⁽¹⁾.

Prevalence of history of violence in childhood

According to data from Table 1, 44.1% of individuals in the sample reported a history of physical abuse in childhood (men= 45.5%, women= 42.8%). Of these, 33.8% (men= 35.8%, women= 32.0%) reported moderate physical abuse and 10.3% (men= 9.7%, women= 10.8%) reported severe physical abuse. The prevalence of exposure to parental violence in childhood was 26.1% (men= 24.1%, women= 27.9%), of which 7.5% witnessed moderate parental violence (men= 8.3%, women= 6.7%) and 18.6% witnessed severe parental violence (men= 15.8%, women= 21.2%).

Table 1 - Prevalence of physical abuse and exposure to parental violence in childhood

	Male	Female	Total
<i>History of violence in childhood</i>	100%	100%	100%
No abuse	54.5%	57.1%	55.9%
Moderate physical abuse	35.8%	32%	33.8%
Severe physical abuse	9.7%	10.8%	10.3%
<i>Exposure to parental violence</i>	100%	100%	100%
No exposure to parental violence	75.9%	72%	73.9%
Moderate exposure to parental violence	8.3%	6.7%	7.5%
Severe exposure to parental violence	15.80%	21.20%	18.60%

There was a strong association between exposure to parental violence and history of physical abuse in childhood (Table 2). Among individuals without a history of exposure to parental violence, the percentage of individuals who had suffered a certain form of violence ('moderate physical abuse' or 'severe physical abuse') did not surpass 40%, both in men and women. In

contrast, among individuals who had already had some form of exposure, this percentage was much higher (more than 55%). Likewise, both men (42.5%) and women (58.0%) with a history of severe physical abuse tend to have been more exposed to severe parental violence in childhood.

Table 2 - Association between parental violence and physical abuse in childhood

Characteristics	Relative frequency							
	Male				Female			
	No abuse	Moderate physical abuse	Severe physical abuse	Total	No abuse	Moderate physical abuse	Severe physical abuse	Total
Exposure to parental violence	54.7%	35.5%	9.8%	100%	57.1%	32.1%	10.9%	100%
No exposure to parental violence	62%	33%	5.1%	100%	64.1%	30.7%	5.1%	100%
Moderate exposure to parental violence	30.1%	48.6%	21.3%	100%	44.4%	42.5%	13.1%	100%
Severe physical abuse	32.6%	41%	26.4%	100%	37.1%	33.3%	29.6%	100%

* $p^1 < 0.0001$; $p^2 < 0.0001$

Prevalence of alcohol use disorders

Prevalence of alcohol dependence was 8.2% in the sample (men=13.1%, women= 3.6%). Thus, men

tended to show more alcohol dependence than women ($p < 0.0001$). In terms of alcohol abuse, prevalence was of 2.9% (men= 4.9%, women= 1%).

Association between history of violence in childhood and alcohol dependence and abuse in adulthood

Table 3 shows the prevalence of disorders associated with alcohol use, as regards violence in childhood and exposure to parental violence. Analyses showed higher occurrence of the diagnosis of alcohol dependence (men= 21.3%, women= 10.8%) among individuals who had a history of physical abuse in childhood compared to other situations (no alcohol dependence or abuse). Therefore, alcohol dependence became more prevalent among men according to the level of violence suffered

in childhood: none (9.6%), moderate physical abuse (16.3%) and severe physical abuse (21.3%). In contrast, among women, prevalence of no abuse (2.9%) and moderate physical abuse (2.5%) were similar and lower than that of severe physical violence (10.8%).

Men showed similar distributions of exposure according to alcohol abuse and dependence, without significant differences among groups ($p=0.2164$). On the other hand, there was a higher percentage of women with dependence among those who had witnessed moderate parental violence and an even higher percentage among those who had witnessed severe parental violence (6.7% and 8.5%, respectively).

Table 3 - Association between exposure to parental violence and physical abuse in childhood and harmful alcohol use or dependence in adulthood

Characteristics	Male				Female			
	Without abuse and/or dependence	Alcohol abuse	Alcohol dependence	Total	Without abuse and/or dependence	Alcohol abuse	Alcohol dependence	Total
N	1.071	62	143	1.276	1.635	20	62	1.717
Exposure to parental violence	82.2%	4.9%	12.9%	100%	95.4%	1.0%	3.6%	100%
No exposure to parental violence	83.5%	4.6%	11.9%	100%	97%	1.1%	1.9%	100%
Moderate exposure to parental violence	82.1%	6.9%	11%	100%	93.3%		6.7%	100%
Severe exposure to parental violence	75.8%	5.4%	18.8%	100%	90.70	0.7%	8.5%	100%
$p^1 = 0.2164$								
$p^2 < 0.0001$								
History of violence in childhood	82%	4.9%	13.1%	100%	95.4%	1.0%	3.6%	100%
No abuse	85%	5.4%	9.6%	100%	96.2%	1.0%	2.9%	100%
Moderate physical abuse	79%	4.8%	16.3%	100%	96.5%	1.0%	2.5%	100%
Severe physical abuse	75.8%	3%	21.3%	100%	88%	1.1%	10.8%	100%
$p^1 = 0.0063$								
$p^2 = 0.0005$								

Results of multinomial regression

Table 4 shows the variables that remained in the final model of multinomial regression. The analyses of results regarding the probability of being dependent on alcohol in relation to the reference group (without dependence/without abuse) demonstrated that variables

with a greater impact were sex, exposure to parental violence and history of violence, in this order. Thus, the probability of being dependent on alcohol, when compared to without dependence/without abuse, was 4.79 times higher (95% CI= [3.12;7.35]) in men than in women, while controlling for the remaining characteristics.

Table 4 - Variables with the highest impact on the determination of alcohol abuse or dependence in adulthood

Characteristics	Estimate	Std. Error	t	p-value	Odds Ratio
Alcohol dependence					
<i>Sex</i>					
Male	1.566	0.217	7.210	< 0.001	4.79
Female	-				1.00
<i>Marital status</i>					
Married	-0.578	0.171	-3.370	0.001	0.56
Others	-				1.00
<i>Ethnic group</i>					
Non-white	0.614	0.202	3.040	0.003	1.85
White	-				1.00
<i>Exposure to parental violence</i>					
Exposure to severe violence	0.675	0.214	3.150	0.002	1.96
No exposure/ Exposure to moderate violence	-				1.00
<i>Physical abuse</i>					
Severe physical abuse	0.647	0.257	2.520	0.013	1.91
No abuse/moderate physical abuse	-				1.00
_cons	-3.655	0.268	-13.650	0.000	0.03
Alcohol abuse					
<i>Sex</i>					
Male	1.799	0.311	5.790	< 0.001	6.04
Female	-				1.00
<i>Marital status</i>					
Married	-0.105	0.290	-0.360	0.717	0.90
Others	-				1.00
<i>Ethnic group</i>					
Non-white	0.255	0.272	0.940	0.349	1.29
White	-				1.00
<i>Exposure to parental violence</i>					
Exposure to severe violence	0.187	0.413	0.450	0.651	1.21
No exposure/ Exposure to moderate violence	-				1.00
<i>Physical abuse</i>					
Severe physical abuse	-0.321	0.502	-0.640	0.523	0.73
No abuse/moderate physical abuse	-				1.00
_cons	-4.673	0.390	-11.970	0.000	0.01

In addition, the fact that this probability was 1.96 times higher (95% CI=[1.29;3.00]) among those who had been exposed to severe parental violence than others who had never been exposed to such violence or who had only been exposed to threats of parental violence in childhood is noteworthy.

The fact of having suffered severe physical abuse also showed a similar probability (1.91 – 95% CI=[1.15;3.17]), when compared to those who had not suffered physical abuse or had suffered moderate physical abuse in childhood. Moreover, the probability of being dependent on alcohol (in relation to without dependence/without abuse) was 44% lower (odds ratio of 0.56 – 95% CI=[0.40;0.79]) among married individuals, when compared to other marital status groups. Finally, this probability was 85% higher (odds ratio of 1.85 – 95% CI=[1.24;2.75]) among white individuals, when compared to black ones.

In the analyses of alcohol abuse, none of the variables (ethnic group, marital status, exposure to violence) reached a 5% significance level, except for sex, where the probability of abuse in men was six times higher than that of women (95 CI%=[3.27;11.17]).

Discussion

The present study analyzed the effect of physical abuse and exposure to parental violence in childhood on the development of disorders associated with alcohol use (alcohol abuse and/or dependence) later on in adulthood, in a national sample representative of the Brazilian population.

The prevalence of physical abuse and exposure to parental violence in childhood was similar to that reported by studies with representative samples of the general population of other countries^(2,22).

The two types of violence in childhood assessed by the present study were significantly associated with each other. Individuals with a history of physical abuse had a 2.2 times higher probability of having been exposed to parental violence in childhood than the probability of those who did not report any physical abuse (16.8% of individuals who did not suffer any physical violence had been exposed to parental violence in childhood, while 38% of those with a history of violence had been exposed to parental violence in childhood). These associations were statistically significant for each of the types of violence studied. More than half of participants (53.4%) suffered physical abuse in childhood or were exposed to parental violence. Thus, the double history of violence in childhood, i.e. physical abuse and exposure to parental violence, was very frequent in the study population.

These results corroborate other studies that reported the co-occurrence of both types of violence^(5,11,13).

As regards alcohol use disorders, the rates for alcohol abuse and/or dependence are in agreement with other Brazilian studies that used different methodologies⁽²³⁾.

After adjustment for all variables in the model, individuals with a history of violence in childhood, when compared to those without a history of violence in childhood, had higher probabilities of experiencing alcohol abuse and/or dependence in adulthood. More specifically, individuals who had been exposed to parental violence in childhood (controlled for sociodemographic variables) were found to be 1.95 times more likely to show alcohol dependence than those who had not been exposed to this type of violence. In addition, those who had suffered severe physical abuse (controlled for sociodemographic variables) were almost 1.91 times more likely to show alcohol dependence, compared to those who had not been physically abused. The strong relation between history of violence and disorders related to subsequent alcohol use in individuals of the sample, was similar to that found in other studies^(8-9,24).

Moreover, the multinomial regression analysis found that, among men, physical abuse in childhood was what most affected the probability of developing alcohol dependence, while, among women, it was the exposure to parental violence in childhood. Thus, by observing the effect of severe physical abuse, in men, the probability of dependence is about two times higher than that of those who did not suffer any violence. In contrast, the effect of 'exposure to moderate or severe parental violence' on the probability of alcohol dependence in women is about three times higher than that of others who were not exposed.

In this way, the results of the present study confirm that experiences of physical abuse in childhood and exposure to parental violence between parents are risk factors for the development of subsequent problems in life, in this particular case, problems of alcohol use.

Although results suggest that physical abuse in childhood was associated with higher probability of alcohol dependence in adulthood, they do not clarify why violence suffered in childhood would result in adverse effects in adulthood. Further research is necessary to determine whether there are differences in the effects of physical abuse and exposure to parental violence in childhood on the development of alcohol dependence in women and men and how this occurs.

To do so, should be included other types of violence that may co-occur in domestically violent families, such as psychological and sexual abuse and/or parental negligence. Growing up in a violent environment could result in exposures to other risks of mental and physical

health. Future studies investigating these potential paths in more detail with longitudinal data may be useful, thus assessing the cumulative impact of multiple exposures.

The present study has certain limitations that should be considered when interpreting the results. Even though the causal relation between history of violence in childhood and alcohol use disorders in adulthood could not be determined because of the cross-sectional design of this study, an association between these two events was found. Beyond this, data are retrospective and exclusively based on participants' self-reports, which may lead to memory or reporting bias.

Despite these limitations, this is the first study that analyzed the association between physical violence/exposure to parental violence in childhood and the development of alcohol use disorders in adulthood with a representative sample of the Brazilian population aged 14 years or older, of both sexes, and without excluding any Brazilian region (except for those mentioned in the methodology section). The present investigation followed the standards of international probabilistic studies, prioritizing a methodological strictness that resulted in data of high reliability, confirmed by the absence of selection bias, adequate measurements for the proposed goals and intense quality control in all research stages.

Conclusion

The present study showed an association between the occurrence of physical abuse and exposure to parental violence in childhood, as reported by adults. Future studies should investigate why certain individuals who experience violence in childhood subsequently develop alcohol use disorders in life by seeking to identify possible risk and protective factors for the association of such events.

Finally, the results can have important implications for prevention and intervention, as they warn health professionals about the connection between history of violence in childhood and alcohol use disorders in adulthood. Thus, both investigators and clinicians must include physical abuse and exposure to parental violence in the assessment, since these findings can help with the implementation of preventive strategies and intervention programs aimed at the population with alcohol use disorders.

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