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The association between exposure to violence, alcohol, and drugs and psychosocial and behavioral outcomes among Mexican-American adolescents of low socioeconomic status

La asociación entre la exposición a la violencia, alcohol y drogas en el perfil psicosocial de adolescentes México-Americanos de bajos recursos

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Resumen

El objetivo de este estudio es estudiar la asociación que la exposición a la violencia, las drogas y el alcohol tienen en la configuración del perfil psicosocial de los adolescentes mexicano-americanos de bajo nivel socioeconómico. Se trata de un estudio transversal, conducido con una muestra de 881 adolescentes de origen mexicano que describieron su exposición a la violencia, las drogas y el alcohol; mientras que sus padres respondieron a un cuestionario para determinar problemas sociales, emocionales y de conducta de sus hijos. La información sobre los participantes se extrajo de bases de datos electrónicas de seis clínicas pediátricas en El Paso, Texas, en la frontera de Estados Unidos con México. Un total de 463 adolescentes (52,6%) informó no haber estado expuesto a ninguno de los riesgos. Los 418 adolescentes restantes (47,4%) indicaron una sola categoría de exposición: violencia (25,1%), alcohol (24,9%) y drogas (8,6%). Además, algunos adolescentes informaron sobre exposiciones combinadas: violencia y alcohol (13,4%), alcohol y drogas (14,6%) o, violencia, alcohol y drogas (13,4%). La asociación entre la exposición combinada a la violencia, las drogas y/o el alcohol y los perfiles psicosociales y de conducta de estos adolescentes muestra un aumento del riesgo de problemas emocionales y de conducta. Existe poca información sobre la salud mental de estos adolescentes viviendo en la pobreza en barrios de frontera entre EEUU y México que están expuestos a los riesgos del alcohol, la violencia y las drogas. Éstos resultados muestran la importancia de la asociación entre la exposición a estos riesgos y la necesidad de intervenciones efectivas dirigidas a estos subgrupos de jóvenes mexicano-americanos y sus familias.

Palabras clave: adolescentes, exposición a la violencia, exposición a las drogas, exposición al alcohol.

Abstract

The objective of this study was to investigate the association exposure to violence, drugs and alcohol has in shaping the psychosocial and behavioral profiles of Mexican American adolescents of low socioeconomic status. A cross-sectional study was conducted in which 881 Mexican-American adolescents described their exposure to violence, drugs, and alcohol, while their parents responded to a questionnaire about their children's behavioral, emotional, and social problems. Participant information was extracted from electronic record databases maintained in six university-based clinics in El Paso, Texas on the U.S. side of the border with Mexico. A total of 463 (52.6%) adolescents reported they had not been exposed to violence, alcohol, or drugs. The remaining 418 (47.4%) adolescents indicated only a single category of exposure: violence (25.1%), alcohol (24.9%), or drugs (8.6%). In addition, some adolescents reported combined exposure to violence and alcohol (13.4%), alcohol and drugs (14.6%), or violence, alcohol, and drugs (13.4%). The association between combined exposure to violence, drugs, and/or alcohol and the psychosocial and behavioral profiles of these Mexican-American adolescents showed an increased risk of emotional and behavioral problems. Little is known about the mental health of Mexican Americans who are exposed to alcohol, violence, and drugs, especially adolescents living in poverty in neighborhoods along the U.S.–Mexico border, who are at a high risk for these exposures. These findings highlight the risks associated with adolescent exposure to violence, drugs, and alcohol and the need for effective interventions within this subgroup of Mexican-American youth and their families.

Key words: adolescents, exposure to violence, exposure to drugs, exposure to alcohol.

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Exposure to alcohol, violence, and drugs puts adolescents at high risk for developing current and future maladaptive and antisocial behaviors (Aldridge-Gerry et al., 2011; Coelho, 2012; Cyders et al., 2010; J. Wang et al., 2009). Evidence suggests that engagement in heavy drinking during adolescence has profound consequences for brain development, mainly associated with neurocognitive dysfunction (Colby et al., 2012; Elofson, Gongvatana, & Carey, 2013; Squeglia, Schweinsburg, Pulido, & Tapert, 2011). A variety of other adverse health outcomes are also related to drinking during adolescence, including engagement in high risk behaviors such as drunk driving (Dhami, Mandel, & Garcia-Retamero, 2011; Kuntsche & Muller, 2012), substance-abuse (Ahlm, Saveman, & Bjornstig, 2013; Hensing, 2012; Huang, Lin, Lee, & Guo, 2013), physical fighting (Fraga, Ramos, Dias, & Barros, 2011; Rudatsikira, Siziya, Kazembe, & Muula, 2007), and/or unsafe sexual behaviors (Hipwell, Stepp, Chung, Durand, & Keenan, 2012; Imaledo, Peter-Kio, & Asuquo, 2012; Jackson, Sweeting, & Haw, 2012). Alcohol exposure at an early age also makes adolescents vulnerable to interpersonal violence, both as victims and perpetrators, suggesting it plays a role in recurring cycles of violence (Cui, Ueno, Gordon, & Fincham, 2013; Haynie et al., 2013; Reed et al., 2013; Thornberry & Henry, 2013; P. W. Wang et al., 2013).

Risk factors such as violence, drugs, and alcohol often cluster, and they are generally accompanied by poverty, which is another strong risk factor for behavioral problems. Studies of multiple risk factors indicate the existence of both independent and additive effects (Zeiders, Roosa, Knight, & Gonzales, 2013). The accumulation of risk factors is more important than the presence of any individual risk factor in determining the life trajectory of an adolescent (Adam et al., 2011; Smith, Park, Ireland, Elwyn, & Thornberry, 2013); the more risk factors to which an adolescent is exposed, the greater the potential for problems to arise, especially psychosocial and behavioral problems (McCarty et al., 2013).

A number of studies have reported the behavioral effects of individual exposures among adolescents living in the USA, with a concentration on tobacco, alcohol, and drug use; however few of these studies have focused on Latinos (Chun, Devall, & Sandau-Beckler, 2013). Roughly 51 million Latinos reside in the USA, almost 65% of them self-identifying as Mexican in origin. Puerto Ricans, the next largest subgroup in the USA, account for only 9% of the total US Latino population (Motel & Patten, 2012; Wilkinson et al., 2012). Most Latino groups have household incomes below the median, but those that live in USA-Mexico border cities typically live in poverty, making them especially vulnerable (Leiner et al., 2012; Mier et al., 2008; Pisani, Pagan, Lackan, & Richardson, 2012). There is a paucity of studies on Mexican-Americans, especially on Mexican-American children and adolescents living in poverty. In particular, little is known about the mental health of Mexican Americans exposed to alcohol, violence, and drugs, especially adolescents living in poverty in neighborhoods along the U.S.–Mexico border, who are at high risk for these exposures (Vaeth, Caetano, Mills, & Rodriguez, 2012). In this study, our objective was to investigate the effects that exposure to violence, drugs, and alcohol had upon the psychosocial and behavioral profiles of low socioeconomic status, Mexican-American adolescents.

Methods

The study design was cross-sectional. Information was retrieved from medical records obtained from six university-based clinics in El Paso, Texas, a large metropolitan city located on the US side of the border with Mexico. Data were extracted for cases that met the following criteria: 11 to 17 years old, of Mexican-American origin, enrolled in Medicaid or lacking insurance, presence of self-responses to selected questions included in the Guidelines for Adolescent Preventive Services (GAPS), and presence of parent responses to the Child Behavior Checklist (CBCL). Medicaid participation was considered an indicator of low socioeconomic status, as enrolled families have family incomes at or below 185% of the Federal Poverty Level. In addition, adolescents without insurance were selected because they do not qualify for any coverage and comprised less than 3% of the sample.

A total of 881 records were extracted. Records were obtained from 463 (52.6%) females and 418 (47.4%) males, with ages ranging from 11 to 17 years old (mean age: 13.2 ± 1.7 years).

The study was approved by the Institutional Review Board at Texas Tech University Health Sciences Center.

Instruments and procedures

While waiting for non-emergency services, adolescents responded to the Guidelines for Adolescent Preventive Services (GAPS) questionnaire, which was developed by The American Medical Association (Copperman, 1997) to focus on social and behavioral factors that may contribute to adolescent illness. The GAPS consists of two different questionnaires, depending on the adolescent's age (72 items for those 11-14 years old and 60 items for those 15 to 17 years old).

Exposure status was determined based on the adolescent's responses to questions related to exposure to violence, alcohol, and drug exposure. Exposure was defined as being in the presence of or subjected to one of these entities.

Exposure to violence: Sample questions

11–14 years old - Have you ever been in a physical fight where you or someone else got hurt.

15–17 years old - Have you been in a physical fight during the past 3 months?

Exposure to alcohol: Sample questions

11–14 years old - Have you ever tried beer, wine, or other liquor (except for religious purposes)?

15–17 years old - In the past month, did you get drunk or very high on beer, wine, or other alcohol?

Exposure to drugs: Sample questions

11-14 years old - Have you ever taken things to get high, stay awake, calm down, or go to sleep?

15-17 years old - Do you ever use marijuana or other drugs, or sniff inhalants?

Simultaneously, one parent responded to the Child Behavior Checklist (CBCL) (Achenbach & Rescorla, 2001), describing the adolescent's behavior. The CBCL for Ages 6–18 (CBCL/6–18) is a standardized measure completed by the parent/caretaker who spends the most time with the child. It provides ratings for 20 competence and 120 problem items that yield scores on internalizing (Anxious/Depressed, Somatic Complaints, and Withdrawn Problems), externalizing (Aggressive and Delinquent), and total problems (Social, Thought, and Attention Problems). Higher scores on these scales are associated with more psychosocial and behavioral problems.

Raw CBCL scores were converted to T scores to determine scores in the normal and clinical ranges. A T score of 65 was considered the clinical/subclinical cutoff point for the syndrome scales, and 60 was used as the cutoff for total and problem subscales, according to the author's recommendations (Achenbach & Rescorla, 2001).

Child Behavior Checklist (CBCL): Sample question

All ages: Argues a lot

Statistical Analyses

Statistical analyses were conducted using the SPSS statistical package (SPSS, Inc., Chicago, IL) version 19. Categorical data analysis was performed using frequency distribution, cross-tabulation, and χ^2 tests. Statistical relationships were investigated between categorical demographic variables and exposure to violence, alcohol, or drugs (individual or combined). The χ^2 test was used to test the association between age and gender. An unpaired T-test was used to determine differences among age.

Logistic regression analysis was used to assess the relationship between categorical exposures and clinically abnormal CBCL T scores. Independent effects of exposure to violence, alcohol, and drugs were investigated including interactions. In order to determine OR of exposure combinations all exposures were integrated into one single variable: no exposure, violence, alcohol, violence and alcohol, violence and drugs, violence and alcohol, alcohol and drugs, and violence, alcohol, and drugs. Because only a few cases had combined violence and drug exposure, this particular combination was not analyzed. Unadjusted and adjusted ORs and their 95% confidence intervals were computed as the ratio of the odds of clinically abnormal scores for the group with individual or combined exposure relative to the odds of clinically abnormal scores in the unexposed group. Models were adjusted for gender and age group (11–14 or 15–18 years old).

Results

Descriptive Analysis

Reports of exposure to violence, drugs, or alcohol, individually as well as combined, are presented in Table 1. Overall, a total of 418 of 881 (47.4%) adolescents reported individual or combined exposure. A total of 277 of 881 (31.4%) reported individual or combined exposure to alcohol, 217 (24.7%) reported individual or combined exposure to violence, and 153 (17.4%) reported individual or combined exposure to drugs.

A significant gender difference was found in reports of exposure to violence alone, with boys reporting higher exposure than girls. A significant gender difference was also found for combined exposure to violence and alcohol, with boys reporting higher exposure than girls. Finally, girls reported greater exposure to the combination of alcohol and drugs than boys.

Table 1
Characteristics of adolescent participants and their exposure to violence, alcohol, and drugs

	Total 881 (n, %)	Male 418 (n, %)	Female 463 (n, %)	p-value[1]
Age (Mean, SD)	13.2 (1.7)	13.2 (1.7)	13.2 (1.7)	NS
Unexposed	463 (52.6%)	215 (46.4%)	248 (53.6%)	NS
Exposures:	418 (47.4%)	203 (48.6%)	215 (51.4%)	
Only Violence	105 (11.9%)	71 (67.6%)	34 (32.4%)	<.001
Alcohol	104 (11.8%)	44 (42.3%)	60 (57.7%)	NS
Drugs	36 (4.1%)	13 (36.1%)	23 (63.9%)	NS
Violence and Alcohol	56 (6.4%)	39 (69.6%)	17 (30.4%)	<.001
Alcohol and Drugs	61 (6.9%)	14 (23.0%)	47 (77.0%)	0.015
Violence, Alcohol, and Drugs	56 (6.4%)	22 (39.3%)	34 (60.7%)	NS

[1] Gender differences in continuous variables were assessed using unpaired t-tests, while categorical variables were assessed using the Chi square test. NS = Not significant

Relationship between exposure to risk factors and psychosocial problems

As shown in Table 2, among children classified as unexposed, 12.3% presented internalizing problems, 6% presented externalizing problems, and approximately 8% presented total problems, according to the CBCL assessment. Internalizing problems were around 20% when adolescents were exposed to alcohol, violence or drugs. Exposure to violence and alcohol problems accounted for 33.75% and those exposed to violence, alcohol and drugs represented 35.75%. Externalizing problems due to exposure to alcohol or drugs accounted for approximately 16%, 26.8% for those exposed to alcohol and violence, and 50% for exposure to violence, alcohol, and drugs.

Table 2
Percentage of adolescents presenting borderline/clinical problems, stratified by exposure

	Psychosocial and Behavioral Problems		
	Internalizing	**Externalizing**	**Total**
Unexposed	12.3%	6.0%	7.8%
Only Violence	18.1%	17.1%	18.1%
Alcohol	21.2%	14.4%	13.5%
Drugs	22.2%	16.7%	19.4%
Violence and Alcohol	33.9%	26.8%	32.1%
Alcohol and Drugs	29.5%	26.2%	31.1%
Violence, Alcohol and Drugs	35.7%	50.0%	48.2%

Child behavior outcomes in response to exposure to violence, alcohol, and/or drugs

Logistic regression models were used to calculate crude and adjusted ORs (with 95% confidence intervals) to examine the association between exposure to violence, alcohol, and/or drugs and combinations in a single variable and the internalizing, externalizing, and total problem scores in the borderline/clinical range. Additionally, exposure to violence, alcohol and drugs were step-wisely selected with criteria of $p<0.05$ for entry and $P<0.10$ for removal. The results, presented in Table 3, reveal a significantly higher OR for internalizing problems in association with exposure to alcohol alone. Similarly, significantly higher ORs for externalizing and total problems were also found in association with exposure to violence alone. Higher odds of psychosocial and behavioral problems were found among all combined exposures, even after adjusting for possible confounders such as gender and age group. These results suggest that exposure to these risks increased the OR of presenting psychosocial and behavioral problem, with the highest clinical OR found among adolescents exposed to violence, alcohol, and drugs.

Discussion

Our study investigated the prevalence of psychosocial and behavioral problems among low socioeconomic status,

Table 3
Odds ratios for the presentation of internalizing, externalizing, and total problems in adolescents exposed to violence, alcohol, and/or drugs[1]

	Unadjusted OR (95% CI)	**p-value**	**Adjusted OR (95% CI)**	**p-value**
Internalizing Problems				
Unexposed	1.0		1.0	
Only Violence	1.7 (0.9–3.5)	0.12	1.8 (0.9–3.8)	0.09
Alcohol	2.7 (1.2–4.4)	0.01	2.3 (1.2–4.5)	0.01
Drugs	2.2 (0.8–6.0)	0.13	2.2 (0.8–6.0)	0.14
Violence and Alcohol	3.3 (1.6–7.0)	0.002	3.6 (1.7–7.7)	<0.001
Alcohol and Drugs	4.0 (2.0–8.1)	<0.001	3.9 (1.9–8.1)	<0.001
Violence, Alcohol, and Drugs	3.7 (1.8–7.6)	<0.001	3.6 (1.7–7.5)	<0.001
Externalizing Problems				
Unexposed	1.0		1.0	
Only Violence	3.8 (1.7–8.5)	0.002	3.9 (1.7–9.1)	<0.001
Alcohol	1.3 (0.4–4.0)	0.67	1.3 (0.4–4.0)	0.67
Drugs	2.9 (0.8–10.7)	0.11	2.9 (0.8–10.6)	0.11
Violence and Alcohol	4.6 (1.8–11.9)	0.002	4.8 (1.8–12.8)	<0.001
Alcohol and Drugs	4.2 (1.6–10.8)	0.003	4.0 (1.5–10.6)	0.005
Violence, Alcohol, and Drugs	19.2 (9.0–41.1)	<0.001	19.0 (8.9–40.6)	<0.001
Total Problems				
Unexposed	1.0		1.0	
Only Violence	2.9 (1.4–6.0)	0.006	3.2 (1.5–6.9)	0.003
Alcohol	1.8 (0.8–4.3)	0.16	0.8 (0.8–4.3)	0.16
Drugs	1.3 (0.3–5.8)	0.73	1.3 (0.3–5.6)	0.77
Violence and Alcohol	6.0 (2.8–13.2)	<0.001	6.9 (3.1–15.5)	<0.001
Alcohol and Drugs	4.9 (2.2–10.8)	<0.001	4.5 (2.0–10.1)	<0.001
Violence, Alcohol, and Drugs	9.7 (4.7–19.9)	<0.001	9.4 (4.6–19.6)	<0.001

[1]OR, odds ratio; CI, confidence interval AOR adjusted by age and gender

Mexican-American adolescents exposed to violence, alcohol, and/or drugs. As expected, we found that adolescents reporting a single or combination of exposures were more likely to present behavioral and emotional problems. In this sample, almost half of the adolescents reported exposure to at least one risk factor, and almost 75% of those exposed had a borderline or clinical psychosocial or behavioral problem. Poverty is a significant risk factor for psychosocial/behavioral problems in adolescents, because it is linked to other risk factors, including an insecure and vulnerable environment, which has been demonstrated to have detrimental effects upon mental health (Carballo et al., 2007; Sindelar-Manning, Lewander, Chun, Barnett, & Spirito, 2008). The accumulation of chronic adversity is significantly associated with an increase in the rate of mental health problems (Carballo et al., 2007; Sindelar-Manning et al., 2008).

Studies show that among Latinos, Mexican-Americans men and women drink more than other groups (Ramisetty-Mikleret et al., 2010). In this sample the prevalence of drinking among adolescents showed to be higher than what has been found when compared to other groups, including whites and African-American adolescents (Chung, Kim, Hipwell, & Stepp, 2013). These adolescent were exposed to poverty that has shown to have a detrimental effect on their psychosocial and behavioral health with profound consequences at short and long term. It has been found that the principal individual-level mediators of poverty, crime, and drug and alcohol abuse are adverse educational and employment outcomes (Valdez, Kaplan, & Curtis, 2007). A better understanding of adolescents with these risks can frame approaches for interrupting and reversing the cascade of risk exposure through individual, family and community interventions.

This study had several limitations. First, responses related to exposure to violence, alcohol, and drugs could be subject to over- or under-reporting by adolescents, in which case associations with psychosocial and behavioral profiles could be spurious. Second, because the study draws on data collected from clinics in one city, it may not be generalizable to Mexican American children in other cities or communities or to those of higher socioeconomic status. Third, the cross-sectional nature of the study precludes us from establishing causal relationships. Fourth, assessment of psychosocial and behavioral problems was detected using the CBCL and not a clinical diagnosis. As a result, it is possible that the prevalence of clinical diagnoses could be higher or lower. Despite these limitations, this study benefits from a large sample size, and our results indicate a significant association between psychosocial and behavioral problems detected using the CBCL and self-reported exposure to violence, alcohol, and drugs in adolescence.

Our findings highlight the risks associated with adolescent exposure to drugs, alcohol, and violence, and emphasize the importance of targeting these problems with effective interventions within this subgroup of Mexican-American youth and their families.

Conflict of interest

The authors have no conflicts of interest to declare.

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