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## The Relationship of Hispanic Ethnicity, Drug Use, and Bullying with Suicidal Ideation Among Adolescent Females in the 2013 Youth Risk Behavior Surveillance Survey

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Erin Camp, Student

Alex Howard, DrPH, Committee Chair

Linda Alexander, EdD, Director of Graduate Studies

The Relationship of Hispanic Ethnicity, Drug Use, and Bullying with Suicidal Ideation among  
Adolescent Females in the 2013 Youth Risk Behavior Surveillance Survey

Capstone Project Paper

A paper submitted in partial fulfillment of the  
requirements for the degree of  
Master of Public Health  
in the  
University of Kentucky College of Public Health

By  
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Hopkinsville, Kentucky

Lexington, Kentucky  
April 14, 2015

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## **Abstract**

*BACKGROUND:* There is little research on the relationship of Hispanic ethnicity, drug use, and bully victimization with suicidal ideation among adolescent females. This study investigates all components and their association with suicidal ideation using the 2013 Youth Risk Behavior Surveillance Survey (YRBSS).

*METHODS:* Participants were 6,621 adolescent females who completed a self-administered questionnaire (YRBSS). Students answered a series of questions regarding unintentional injuries and violence and alcohol and other drug use.

*RESULTS:* Results indicated that there was an association between drug use, bully victimization, and suicidal ideation. Bivariate analyses using chi-square tests showed the relationships between these risk factors and suicidal ideation to be fairly strong. The logistic regression model showed marijuana use and being bullied on school property had the strongest association among Non-Hispanic females. Cocaine and illegal prescription drug use along with being electronically bullied had a stronger association among Hispanic females.

*CONCLUSION:* Results support that drug use, bully victimization, and suicidal ideation have a significant relationship among all adolescent females.

## Introduction

Suicide continues to be a serious public health concern among adolescents. For youths 10 to 19 years of age, suicide is the third leading cause of death.<sup>2,7,10,14,16</sup> Each year, approximately 4,600 adolescents take their own life most commonly due to suffocation, poisoning, and firearms.<sup>14</sup> Although adolescent suicide is a disturbing issue, suicidal ideation is concerning because it suggests that adolescents do not feel comfortable communicating about suicide. Because this silence limits the amount of information available for those working in suicide prevention, suicidal ideation is an increasingly public health issue.<sup>14</sup>

Suicidal ideation is associated with multiple risk factors such as previous mental disorders, alcohol use, drug use, socioeconomic status, stress, family structure, and physical/verbal abuse.<sup>13</sup>

While gender is not discussed in these risk factors, there is some evidence of differences in suicidal ideation by gender. Male adolescents are more likely to die by suicide and female adolescents are more likely to present suicidal ideation and attempt suicide.<sup>10</sup> Males surrender to suicide because they are often uncomfortable discussing their feelings and are unable to solve serious issues.<sup>3,4,7,19</sup> Females are more likely to present suicidal ideation or attempt suicide because they are asking for help or seeking out attention.<sup>3,4,7,19</sup> The method and psychology behind suicide also plays a role among both genders. Males are more likely to use firearms due to comfort and familiarity of handling a gun.<sup>10</sup> Females are more likely to attempt suicide by a drug overdose, which in turn takes a longer time period for death.<sup>10</sup> This allows the possibility for someone to intervene and save an individual's life. It would explain the reasoning for attention or as some may call it, a "cry for help," while males are more driven to use a method that would not only be quick, but knowingly successful. Females are also more body image

aware and would not likely choose a method of suicide that would disfigure them. Females often show more empathy in their suicide attempts; they are more concerned for their loved ones and those who may discover them.<sup>10</sup>

Studies indicate that ethnicity may contribute to suicidal ideation. Caucasian and Hispanic adolescents are more likely to indicate ideas of suicide planning than African American adolescents.<sup>7</sup> Hispanics are also more likely to report suicide attempts, and Hispanic adolescents born in the United States are more likely to attempt suicide than those born outside the United States.<sup>2,7,10</sup> Hispanics are the quickest growing ethnic group in the United States and the struggle for acculturation may be an important factor when understanding suicide attempt.<sup>2,10,20</sup> For adolescents, it is essential to feel accepted by their peers; therefore, quickly learning the American culture and establishing a personal identity is meaningful. If this cannot be established, the feeling of being unaccepted may lead to suicidal ideation.

Drug usage plays a vital role in suicidal ideation. Among the most commonly used drugs, such as marijuana, cocaine, and prescription drugs, Hispanic adolescents are more likely to have experienced drug usage due to the pressures of family deterioration, e.g. values, beliefs, attitudes, caused by the relationship between acculturation and acculturation stress.<sup>15</sup> Hispanic culture and family traditions often create stress for those born in the United States.<sup>20</sup> As a Hispanic adolescent's education, social skills, and individuality develop, tension among the family increases. This tension is especially harder for a Hispanic female because they feel more pressured to "display *marianismo*, or nurturing, controlled, family oriented behavior," while males often seek independence and self-confidence.<sup>10(411)</sup> This conflict of individuality and cultural beliefs may lead Hispanic females to partake in drug use.

Bullying is generally initiated by individuals or a group of individuals against someone they perceive to be weaker and more secluded than themselves.<sup>6</sup> Annually, between 20% and 56% of youth are involved in bully victimization, which continues to pose a public health problem.<sup>8</sup> Research has shown that bully victimization leads to higher incidences of depression, self-harm behavior, physical fighting, weapon-carrying, suicidal ideation, and suicidal attempts.<sup>1</sup> Among Hispanic youths, increased acculturative stress and lower family cohesion have been linked to bully victimization.<sup>6</sup>

With such a troubling public health issue among us, it is important to understand why adolescents are experiencing suicidal ideation that could lead to suicide. If drug use, isolation from bullying, and a struggle for independence and acculturation contribute to suicidal ideation in high school, early identification, prevention, and intervention could help adolescents in need and give them the materials to prepare for the college environment where they will likely experience less family support, more independence, and more opportunities for substance misuse. If these risk factors vary by gender and race/ethnicity, understanding these differences may help us target prevention outreach to the needs of specific race/ethnicity and gender groups.

This study hypothesizes that suicidal ideation is more common among Hispanic adolescent females who engage in drug use and are victims of bullying than Non-Hispanic adolescent females. Therefore, this study will investigate the relationship between Hispanic ethnicity, drug use, bullying, and suicidal ideation among 9<sup>th</sup>- 12<sup>th</sup> grade adolescent females participating in the 2013 Youth Risk Behavior Surveillance Survey (YRBSS).

## **Methods**

The Institutional Review Board at the University of Kentucky waived review of this study because of the use of publically available de-identified secondary data.

### ***Study Design and Sample***

The YRBSS was established by the Centers for Disease Control and Prevention to 1) describe the prevalence of health-risk behaviors among youths, 2) assess trends in health-risk behaviors over time, and 3) evaluate and improve health-related policies and programs. The national questionnaire is conducted biennially during February-May of each odd-numbered year.<sup>12</sup> The 2013 sampling frame for the national YRBSS consisted of all regular public and private schools including students in at least one of grades 9-12 in the 50 states and the District of Columbia. This sampling frame was obtained through an information database called the Market Data Retrieval (MDR), which included information on both public and private schools. The national YRBSS used a three-stage cluster sample design in order to produce a nationally representative sample of students from grades 9-12 attending public and private schools. The first-stage sampling frame included 1,276 primary sampling units (PSU's), consisting of counties or areas of smaller, adjacent counties. These PSU's were then categorized into 16 strata according to their metropolitan statistical area (MSA) status and the percentages of Hispanic and black students in the PSU's. Among the 1,276 PSU's, 54 were sampled with probability proportional to overall school enrollment size for the PSU.<sup>18</sup>

### ***Participants***

In the second-stage sampling frame, 193 schools with any grades 9-12 were sampled with probability proportional to school enrollment size. In the third-stage of sampling, random sampling in each of grades 9-12, one or two classrooms from either a required subject, (e.g. social studies), or a required period, (e.g. homeroom), was performed. All students in the sampled classes were eligible to participate and included in the study. Schools, classes and students who refused to partake were not replaced and not included. In order to analyze separate



data for Hispanic and black students, two classes per grade, instead of one, were sampled in schools with high minority enrollment.<sup>18</sup>

### ***Data Collection***

Survey procedures for the national, state, and large urban school district surveys were designed to protect students' privacy by allowing voluntary and anonymous participation. Parental permission was required before a student could be included in the study. Once signed forms were collected, data collectors were sent to schools to administer the questionnaire to the students. Students completed the survey during one class period and recorded their responses on a computer-scannable booklet or answer sheet. Students were then asked to seal their questionnaire booklet or answer sheet before placing it in a box for the data collector. Those who were absent the day of the data collection were still able to partake in the questionnaire as long as privacy could be maintained; if the data collector was unavailable, then a school staff member was able to administer the survey. The national YRBSS contained 92 questions. The CDC's Institutional Review Board approved the protocol for the national YRBSS study.<sup>12</sup>

### ***Measures***

The 2013 national YRBSS includes multiple health topics, such as 1) unintentional injuries and violence, 2) tobacco use, 3) alcohol and other drug use, 4) sexual behaviors, 5) dietary behaviors, 6) physical activity, 7) weight control, and 8) other health topics (e.g. asthma, sun safety, and sleep). This particular study will focus on the effect of race/ethnicity, drug use, and bullying on suicidal ideation.<sup>17</sup>

The prevalence of drug use was measured in regards to how many times the adolescent had used the particular drug, (e.g. marijuana, cocaine, inhalants, heroin, methamphetamines, ecstasy, hallucinogenics, steroids and prescription drugs). Responses included: 0 times, 1 or 2

times, 3 to 9 times, 10 to 19 times, 20 to 39 times, and 40 or more times. For this study, marijuana, cocaine, and prescription drugs without a doctor's prescription were examined since they were the most commonly used substances. Marijuana use was dichotomized into a yes/no variable for any marijuana use during their lifetime. Cocaine use and prescription drug use were combined into a new dichotomous yes/no variable indicating any use of cocaine or prescription drugs in their lifetime. Responses were categorized as "never used" and "ever used."

Bullying was measured with two questions: "During the past 12 months, have you ever been bullied on school property?" and "During the past 12 months, have you ever been electronically bullied?" Responses included yes or no answers.

The prevalence of suicidal ideation was measured for the past 12 months. Students were asked a series of questions about hopelessness, suicide attempts, and seeking treatment. For this study, questions regarding if the student had ever *considered attempting* suicide and if they had *made a plan* were created as a new variable called SI, or suicidal ideation. These questions were selected instead of suicide *attempts* because these suggest suicide ideation and planning, behaviors that may be more readily identifiable and amenable to early intervention. Responses included yes or no answers. The independent variables are Hispanic race, drug use, and bully victimization. The outcome variable is suicide ideation.

### ***Analytic Plan***

This study examined the relationship of ethnicity, drug use, and being bullied with suicidal ideation among adolescent Hispanic females. Bivariate analyses were conducted using chi-square tests to determine the association between drug use and SI and between bully victimization and SI. A logistic regression model with an alpha level set at 0.01 was built to assess the contributions of Hispanic ethnicity, marijuana and drug use, and bully victimization to

SI. All missing and unreported data were excluded within all analyses conducted. Analysis performed using IBM SPSS for Windows, Version 22.0.<sup>9</sup>

## **Results**

This study consisted of a sample size of 6,621 9<sup>th</sup>-12<sup>th</sup> grade females from 193 schools in the United States and District of Columbia. Near even distributions (almost 25%) of students were selected from each grade and most participants were between the ages 15-17 years old (Table 1). For this study, race/ethnicity was broken down into two categories: Hispanic/Latino and Non-Hispanic. Over a fourth of the participants (25.7%) were Hispanic/Latino.

Among this sample, 41% reported ever using marijuana and 17% used cocaine or prescription drugs. One in every five reported being electronically bullied and 22% reported being bullied on school property. Similarly, 22% had seriously considered attempting suicide and nearly 18% had made a plan about how they would attempt suicide (Table 1).

### ***Bivariate Analysis***

The bivariate relationships between these risk factors and suicidal ideation was fairly strong. All adolescent females who used marijuana had odds of SI 1.98 times higher (95% CI 1.77, 2.22) than those who had not used marijuana. Other drug use resulted in odds of SI 3.46 times higher than those who had not used other drugs (95% CI 3.03, 3.95). For bullying, those who were bullied on school property had odds of SI nearly four times higher than those who had not been bullied (OR=3.78 95% CI 3.34, 4.28) and those who were bullied electronically had three times higher odds (OR=3.29, 95% CI 2.90, 3.74) of SI than those who had not been bullied. The association between Hispanic ethnicity and suicidal ideation was weaker, with the odds of SI 1.26 times higher than Non-Hispanic females (95% CI 1.11, 1.42).

### ***Logistic Regression Analysis***

These risk factors were all included in a logistic regression analysis predicting the likelihood of suicidal ideation among all adolescent females in this sample (Table 3). Results indicated that cocaine and prescription drug use (OR=2.66, 95% CI 2.02, 3.50) and being electronically bullied (OR=2.22, 95% CI 1.65, 3.01) had a stronger association with SI among Hispanic females than it did for Non-Hispanic females (OR=2.50, 95% CI 2.08, 3.00). For Non-Hispanic females, marijuana use (OR=1.49, 95% CI 1.28, 1.74) and being bullied on school property (OR=3.06, 95% CI 2.59, 3.63) were stronger predictors of SI than for Hispanic females (OR=1.34, 95% CI 1.05, 1.70) (OR=2.23, 95% CI 1.67, 3.00). Even taking into consideration all of these risk factors, Hispanic females still had slightly higher odds of SI than Non-Hispanic females (OR=1.27, 95% CI 1.11, 1.46).

### **Discussion**

This study found that drug use and being bullied were strong predictors of suicidal ideation among adolescent Hispanic and Non-Hispanic females. In bivariate analyses, Hispanic race, drug use, and being bullied were significantly associated with SI. Logistic regression models revealed that while these risk factors contribute to SI for all females, the strongest predictors differ by ethnicity. For Hispanic females, cocaine and prescription drugs use played the strongest role in SI, followed by both types of bullying. For Non-Hispanic females, being bullied on school property was by far the strongest predictor of SI, followed by drug use.

These findings are supported by *familismo*, values within the family. Studies have indicated that *familismo* presents an association between adolescent depression and family conflicts.<sup>5</sup> Hispanic females may feel more of a conflict between the potential pressure from tradition family to display *marianismo*, or nurturing, controlled, family-oriented behavior, and

the American inclination to seek out independence and personal autonomy.<sup>10</sup> With the overall acculturation experience, Hispanic females may undergo significant stress, which in turn could result to peer and relational problems, parental conflict, and emotional instability.<sup>10</sup>

Sociocultural factors and socioeconomic disadvantages may lead to suicide attempts.<sup>5</sup>

Studies have also indicated that Hispanic 8<sup>th</sup> and 10<sup>th</sup> graders report the highest lifetime, annual, and 30 day prevalence rates of licit or illicit drug use. This rapidly increasing rate potentially heightens the risk among 12<sup>th</sup> graders potentially transitioning to college.<sup>15</sup> Several factors contribute to adolescent drug use: biological status of parents, educational status of parents, socioeconomic status, parents' use of tobacco and alcohol, motivational support from family to complete an education, family relationships, school performance, and knowledge and attitude towards drugs.<sup>11</sup> Hispanic females of lower socioeconomic status report more suicide attempts than Hispanic females of middle socioeconomic status.<sup>20</sup> Parental education and acculturation creates tension among Hispanic adolescent females. As acculturation and education increase, parent-child interaction becomes difficult.<sup>20</sup> Although a rise in adolescent education produces strain among the family and may contribute to drug use, so does lack of education. Hispanic adolescents have a higher dropout rate than their peers.<sup>15</sup> Further research is needed to indicate whether or not Hispanic dropouts report higher drug use.

Although bully victimization had a stronger association among Non-Hispanic females, there was still an association among Hispanic females. As mentioned earlier, the stress and challenges of acculturation for Hispanic youth often lead to distress resulting in substance use and depression. These adolescents may isolate themselves from their peers and become outcasts, or targets for bullies.<sup>6</sup> It was an interesting find to see that Non-Hispanic females had the strongest association with being bullied on school property. This could possibly raise the theory

that minorities who undergo tougher experiences may appear intimidating in person leaving the majority easy targets to bully. Further research is needed to develop this theory.

Even with the association between drug use, being bullied, and suicidal ideation, there are still limitations to consider. Since the data collection was from cross-sectional surveys, it is difficult to determine causality. For instance, did the student initiate drug use before having SI or afterwards? Secondly, the questions from the survey did not specifically ask how many times the students experienced bully victimization. Therefore, it is difficult to determine the relationship between the frequency of being bullied and SI. Also, the drug use variable was not the most ideal giving a sample too small; greater drug use might be related to more SI. Finally, the survey was self-reported leading to the possibility of social desirability bias and recall bias when referencing questions to drug usage.

In conclusion, the data shows that there is a significant relationship between drug use, bully victimization, and suicidal ideation among not only Hispanic adolescent females, but all adolescent females. It is important as public health officials to understand all risk factors and intervene at this early stage in an individual's life. First, adolescents need to feel connected to their school and peers, so it is imperative for school professionals to interact with the youth on a daily basis making them feel included and welcomed. Second, cognitive behavioral programming for students to help develop an increased self-esteem, problem-solving skills, and coping mechanisms needs to be implemented within the school system. This will increase their social intelligence and promote a positive mental health outlook. QPR (Question, Persuade, and Refer), a bystander intervention program for suicide prevention, should also be required for all school personnel. Faculty and staff could offer this training to the students, which would encourage adolescents to become bystanders and recognize suicidal ideation. Creating or

implementing a bystander intervention program to address substance misuse and bullying could also be helpful. Empowering adolescents to be proactive in changing the social norms of negative behaviors will set higher standards and eventually, we will see changes among this high risk group.

As public health officials, it is difficult to manage suicidal ideation among adolescents because they do not feel comfortable discussing the topic of suicide and act out by engaging in drug usage or bullying. If adolescents were to understand all aspects of suicide, then they might feel more comfortable communicating their concerns. Early identification of suicide will help lead to prevention and intervention among adolescents, which in turn will prepare them for adulthood.

**Table 1. Demographic characteristics of 9<sup>th</sup>-12<sup>th</sup> grade females in 193 schools in the United States and District of Columbia, 2013 YRBSS, N=6,621.**

<b>Demographics</b>	<b>n (%)</b>
<b>Age (n=6,594)</b>	
14 years old	720 (10.9)
15 years old	1,575 (23.9)
16 years old	1,543 (23.4)
17 years old	1,700 (25.8)
18 years old or older	1,041 (15.8)
<b>Grade (n=6,591)</b>	
9 <sup>th</sup> grade	1,769 (26.8)
10 <sup>th</sup> grade	1,544 (23.4)
11 <sup>th</sup> grade	1,511 (22.9)
12 <sup>th</sup> grade	1,758 (26.7)
Ungraded or other grade	9 (0.1)
<b>Race/Ethnicity (n=6,539)</b>	
Hispanic/Latino	1,680 (25.7)
Non-Hispanic	4,859 (74.3)
<b>Drug use</b>	
<b>Marijuana</b>	
Never used	3,826 (58.8)
Ever used	2,684 (41.2)
<b>Cocaine or Prescription Drugs</b>	
Never used	5,424 (82.6)
Ever used	1,143 (17.4)
<b>Bully Victimization</b>	
During the past 12 months, have you ever been bullied on school property?	
Yes	1,472 (22.3)
No	5,125 (77.7)
During the past 12 months, have you ever been electronically bullied?	
Yes	1,300 (19.7)
No	5,291 (80.3)
<b>Suicidal Ideation</b>	
During the past 12 months, did you ever seriously consider attempting suicide?	
Yes	1,469 (22.3)
No	5,117 (77.7)
During the past 12 months, did you make a plan about how you would attempt suicide?	
Yes	1,175 (17.8)
No	5,410 (82.2)



**Table 2. Bivariate association between drug use, bully victimization, and experiencing suicidal ideation among 9<sup>th</sup>-12<sup>th</sup> grade females in the 2013 YRBSS.**

All females (n=6,523)	Suicidal Ideation		OR (95% CI)
	Yes (n=1,668)	No (n=4,855)	
<b>Hispanic</b>	29.0%	24.5%	1.26 (1.11, 1.42)
<b>Drug use</b>	32.5%	12.2%	3.46 (3.03, 3.95)
<b>Marijuana use</b>	53.7%	36.9%	1.98 (1.77, 2.22)
<b>Bullied on school property</b>	41.4%	15.7%	3.78 (3.34, 4.28)
<b>Bullied electronically</b>	35.5%	14.3%	3.29 (2.90, 3.74)

**Table 3. Logistic regression predicting the likelihood of suicidal ideation among adolescent females.**

	<b>All females OR (95% CI)</b>	<b>Non-Hispanic females OR (95% CI)</b>	<b>Hispanic females OR (95% CI)</b>
<b>Hispanic</b>	1.27 (1.11, 1.46)	-	-
<b>Drug use</b>	2.55 (2.19, 3.00)	2.50 (2.08, 3.00)	2.66 (2.02, 3.50)
<b>Marijuana use</b>	1.45 (1.27, 1.65)	1.50 (1.28, 1.74)	1.34 (1.05, 1.70)
<b>Bullied on school property</b>	2.82 (2.44, 3.27)	3.06 (2.59, 3.63)	2.23 (1.67, 3.00)
<b>Bullied electronically</b>	1.81 (1.55, 2.11)	1.68 (1.40, 2.01)	2.22 (1.65, 3.01)

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## **Biographical Sketch**

Erin Camp is a previous graduate of Eastern Kentucky University with a Bachelor of Science degree in Biology. She has completed over 275 hours with the University of Kentucky's Office of Wellness Initiatives for Student Empowerment where she has developed and administered program assessments for health behaviors, including the CORE Alcohol and Drug Survey. Erin will graduate from the University of Kentucky in May 2015 with her Master's in Public Health.

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