Effect of Adolescent Girls' Drug use on Academic and Social Development

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ABSTRACT

Substance abuse, once primarily visible in the U.S. adolescent male population, is an increasing concern for the adolescent girls' population. Mental health challenges, behavioral problems, and academic failure are issues adolescent girls may encounter when they engage in substance abuse. The incidence and impact of drug use on female students' academic and social development at a large suburban school district was unknown.

The purpose of this study was to determine the effect of adolescent girls' drug use on academic and social development. Vygotsky's social development theory and Bandura's social learning theory provided the framework for this cross-sectional survey study that addressed the relationships between adolescent girls' drug use and their academic performance and social development. Bandura's (1977) social learning theory is based on modeling how people learn from others by observing what they will and will not do. This modeling includes observing attention factors, retention coding, reproduction capabilities, and motivation to replicate behavior. Descriptive statistics and analysis of variance were used to examine data from the Dane County Youth Assessment Survey. The sample included the study district's adolescent girls' population consisting of 9,061 students. Results indicated significant relationships between girls' adolescent drug use and social development and academic performance. Increased drug use was related to lower social development and lower academic achievement.

It is recommended that the results be used to develop an adolescent girls' drug prevention program that addressed the effects drugs have on adolescent girls' academic and social development. Implications for positive social change include providing a prevention program to the local district that may help inform adolescent girls so they can make healthier decisions in social settings.

KEY WORDS: Adolescent, Girls, Drug use, Academic Development, Social Development

INTRODUCTION

Adolescent girls' substance abuse has shown a significant increase over the past decades. The National Center on Addiction and Substance Abuse (NCASA, 2011) reported the rate for drug use has increased since 2005 for girls. King and Vidourek (2011) conducted a study to investigate adolescents involved with drugs to measure their mental and physical health. The study results revealed that adolescent girls had increased risks of social impairments, which could have possibly led to negative and legal consequences for drug involvement, which in turn may have led them to be psychologically unhealthy, thus causing a high mortality rate as well as academic failure. According to Cotto et al. (2010), distinctive factors tend to be prevalent and contribute to adolescent girls' drug abuse. Gender, age, and type of substance use are factors that determine whether an adolescent will become a drug abuser (Cotto et al., 2010). Baker, Ashare, and Charvat (2009) found that contributing factors to substance abuse for adolescent girls living in welfare community groups included lack of adult supervision and easy access to drugs.

Adolescent girls in the past were not generally regarded as being substance abusers, smokers, or alcohol drinkers. Therefore, researchers have not targeted that group of individuals because they had no apparent problems to address (Bodinger-deUriarte & Austin, 1999). Adolescent girls' illicit drug behavior was unacknowledged due to perceived stereotypical gender norms. National surveys have brought these hidden girls acts to the forefront. Now, these surveys are showing risk factors and influences on adolescent girls' drug misuse (Bodinger-deUriarte & Austin, 1999). Conway and Vermette (2006) discussed the movie *Thirteen,* which presented a vivid interpretation of the challenges encountered by some middle school female students with no preparation for middle school encounters, little monitoring, and introduction to increased promiscuous behavior. One 13-year-old girl entered into a social environment that turned her from the progressive academic road that she was on and lured her down a destructive path that included skipping school, using drugs, drinking alcohol, and participating in sexual activities. An unstable family environment, negative peer influence, a single parent, single parent who was also a recovering drug abuser, a negative relationship with a friend of the family, and low income were all contributing factors to her behavior change (Conway & Vermette, 2006).

Adolescent girls who experienced low monitoring of their social interactions led to easy access to drugs that affected their social development and academic performance because of lack of adult supervision (Ford, 2010). Previous researchers studied contributing factors for substance abuse and how adolescent girls' academic progress and social abilities were impacted (Ford, 2010). Researchers also examined programs to address their needs (Rieckmann et al., 2011). A goal for this study was the development of a positive drug intervention and mentoring program that equips adolescent girls with leadership skills so they can become successful and productive women within their local, national, and global societies.

Maxwell and Liu (1998) presented results from a survey of substance abuse that was conducted with Texas students in Grades 7-12 from various schools within 66 school districts. The study revealed a 64% increase for girls' substance abuse and 58% for boys. According to Maxwell and Liu (1998), the factors that led to substance abuse included exposure to peers using drugs, uninvolved parents at home, and a lack of positive school activities. Rodney and Mupier (2004) compared juvenile justice system girls to boys

within Texas counties. The results indicated that girls involved with drugs and alcohol had more encounters with law enforcement. Adolescent girls experience challenges when transitioning from elementary school to middle school, middle school to a freshman campus, and a freshman campus to high school. Each transition between grade levels presents different social challenges for these adolescent girls. They also experience other challenges such as adjusting to a variety of social settings that cause them to make uninformed decisions that endanger their health and safety (NCASA, 2011).

Grade level transitions caused adolescent girls to develop various relationships with new peers, new teachers, and uninvolved parents. These relationships (peer pressure) led to encounters with adolescents who possessed different levels of maturity and have strong negative influences (Maurice & Friedlander, 1994). Maturity level and negative influences can contribute to a decline in adolescent girls' self-esteem for reasons such as too much emphasis placed on personal appearance. Adolescent girls also confront a freedom that introduces them to atypical behaviors such as defiance, skipping class, promiscuous sexual encounters, gang membership, incomplete class assignments, and drug experimentation (Richard, Trevino, Baker, & Valdez, 2010). Fetro, Rhodes, and Hey (2010) stated that these youth are involved in behaviors that endanger their health and academic achievement and ultimately lead to long-term consequences.

Currently, these drug-using adolescent girls experience more discipline problems from gang association, peer pressure, truancy, low academic performance, health problems, increased sexual activity, and low school and parental involvement; these problems lead to isolation due to suspensions and alternative school placement (Renes & Strange, 2009). There are several factors that contributed to adolescent girls' involvement with drugs. According to Ford (2010), one prevalent factor for adolescent girls' drug misuse is the lack of relationship building with parents, peers, and school staff. Ford (2010) reported that the bonding, or lack thereof, between parents and adolescents or school and adolescents contributes to their decisions to use drugs. Positive relationship building among students, parents, and teachers is imperative for deterring substance abuse (Ford, 2010). Other factors that contribute to drug use include gender identity, age, state of mind, medical problems, coping mechanisms, socioeconomic status, and academic challenges (Ford, 2010).

PURPOSE OF THE STUDY

This study was needed because the adolescent substance abuse gender gap between adolescent girls and boys is closing, according to the Office of National Drug Control Policy (ONDCP, 2007). According to ONDCP (2007), girls between the ages of 12 and 18 years abuse prescription drugs more than boys. Prescription drug abuse for girls is 9.9% versus boys at 8.2%. For pain relievers, girls have an 8.1% rate versus 7.0% for boys. For tranquilizers, girls have a 2.6% rate versus boys having a 1.9% rate. For stimulants, girls have a 2.6% rate versus boys having a 1.9% rate. Studies have been conducted on adolescent boys' substance abuse or adolescent boys and girls substance abuse combined, but limited data exists for girls. According to Dauber, Paulson, and Leiferman (2011) adolescent race and gender traits need more study to identify distinct characteristics that need to be addressed for that particular substance abuser.

The objective of this study was to analyze archival data to promote the development of an adolescent girls drug program to convey current information about increased girls adolescent substance abuse, what influences adolescent girls to become substance abusers, and how substance abuse affects their social skills and academic performance. Adolescent girl substance abusers often internalize emotions and problems, which leads to misbehavior and substance abuse instead of turning to parents or other family members to help them cope with problems (Webb, 2009). Adolescent substance abuse programs must have a component that addresses gender, background, and specific needs of adolescent girls (Sussman, 2011). This program should enhance students', peers', parents', and school staff's knowledge of adolescent girls drug use to help prepare these girls to observe warning signs of substance abuse. Through enhanced knowledge and skills, parents, peers, school staff, and community leaders can provide strong support systems and be proactive in preventing adolescent substance abuse (Mayberry, Espelage, & Koenig, 2009).

RESEARCH QUESTIONS

Previous studies have focused mainly on adolescent boys' substance abuse because of a preconceived view of boys being more involved with substance misuse (Tanner-Smith, 2010). Adolescent girls' substance abuse has moved to the forefront, and little is known about its development; a study of this emerging issue is needed. Girls have different underlying causes for becoming substance abusers, and the outcome from girls' substance abuse is different from boys' substance abuse (Tanner-Smith, 2010). Previous studies have focused on adolescent boys' involvement with drugs, and more research is needed on adolescent girls' involvement in drugs. There are various factors that contribute to adolescent girls' drug involvement that negatively affect their academic performance and social interactions (Tanner-Smith, 2010).

The purpose of this study was to identify the relationship between adolescent girls' drug involvement and the effect on their social development and academic performance. The guiding questions and hypotheses for this study are as follows:

1. What is the frequency of self-reported drug use of adolescent girls between the ages of 12 and 18 years?

2. What is the relationship between drug use and the social development of adolescent girls?

   $H_0 2$: There is no significant relationship between drug use and academic performance of adolescent girls.

   $H_a 2$: There is a significant relationship between drug use and academic performance of adolescent girls.

3. What is the relationship between drug use and the academic performance of adolescent girls?

$H_0 1$: There is no significant relationship between drug use and social development of adolescent girls.

$H_a 1$: There is a significant relationship between drug use and social development of adolescent girls.

RESEARCH DESIGN AND APPROACH

The study analyzed archival data from the Dane County Youth Assessment survey to examine the relationship between drug involvement in adolescent girls between the ages of 12 to 18 and their academic performance and social development. According to Lodico, Spaulding, and Voegtle (2010), a descriptive survey research design focuses on descriptions of individuals' behavior to collect their insights, views, and approaches pertaining to present issues. The methodology used in this study was a quantitative descriptive survey design to show the existence of a relationship between the variables. The archival data revealed a relationship between adolescent girls' drug involvement and the negative effect that drug involvement had on their academic performance and social development.

SETTING AND SAMPLE

The Dane County Youth Assessment survey was conducted in 2009 for students in Grades 7-12. DCYA was administered anonymously and did not require personal information that would identify individual participants. The participants for this study were from the Clearwater School District, a suburban district in Wisconsin. Clearwater School District had a total population of 18,202 students complete the Dane County Youth Assessment. DCYA is a population-based survey of middle and high school students. The sampling size was a 50% weighted population for Grades 7-12 to allow demographic representation per county and consistency with other school districts. No disabilities were excluded from the survey. Ethnic representation for participants included White (74%), African American (7%), Bi/Multiracial (7%), Hispanic (5%), Asian (4%) other (2%), and Native American (1%); 5.4% identified as lesbian, gay, bisexual, and transgender (Sinclair et al., 2011).

METHODOLOGY

Descriptive statistics were utilized to determine frequency of self-reported drug use of participants for gender and age. Inferential statistics were conducted to compare relationship between adolescent girls drug involvement. Results of the analysis of archival data were presented to address each research question. Descriptive statistics addressed frequency of self-reported drug use of adolescent girls. ANOVA addressed the social development and drug use relationship for adolescent girls. ANOVA also addressed the academic performance and drug use relationship for adolescent girls. ANOVA was used to measure the mean differences between social development and academic development responses among grouped drug users.

DESCRITPTIVE STATISTICS FOR RESARCH QUESTION 1

Data were analyzed using descriptive statistics to summarize and explain the central tendency pertaining to participants' age and gender. All tables referred to are included in the appendix. Descriptive statistics were used to answer Research Question 1 addressing the frequency of self-reported drug use of adolescent girls between the ages of 12 and 18 years. Research Question 1 asked "What is the frequency of self-reported drug use of adolescent girls between the ages of 12 years to 18 years?" Frequency tables were generated to show self-reported drug use from adolescents by gender and ages ranging from 12 to 18 years or older in the past 12 months. Survey participants reported using drugs such as over-the-counter drugs to get high, prescription drugs not prescribed to the survey participants, cocaine or crack, inhalants (glue, paint, spray cans, markers), speed, crystal meth, crank, heroin (smack, junk, china white), ecstasy, bath salts (ivory white, bliss, white lightening), synthetic marijuana (K-2, spice, blaze), and steroids and HGH. The descriptive statistic frequency test conducted for self-reporting categories included the following responses: not at all, less than one time per month, and one time per month or more.

Results for Research Question 1

The results showed higher self-reporting drug use values for ages 14 years to 17 years for female respondents than male respondents for ecstasy, cocaine or crack, speed, crystal meth, or crank, heroin, smack, junk, china white, bath salts, ivory white, bliss, and white lightening usage in all self-reporting categories.

CONSTRUCT VARIABLES

Table 1 (appendix) includes the questions used to measure each variable. Questions for academic performance included grades received on report card with a scale range from mostly As to mostly below Ds. Questions for social development included volunteer work, extracurricular activities, family meals, life-changing events, hopelessness, sadness, suicidal thoughts, school enjoyment, and after graduation plans. Questions for drug involvement included drug use with a scale range from Not At All to Daily. Inferential statistics were calculated to evaluate the relationship between adolescent girls' academic performance and their reported drug use (Table 6). Inferential statistics were calculated to evaluate the relationship between adolescent girls' social development and their reported drug use (Table 2). The 5.00 value in the drug involvement column in Table 1 indicated a negative high score for drug use effect on academic performance and social development always has the same meaning, which is good grades and healthy social interactions. This is showing a reverse in scores.

INFERENTIAL STATISTICS FOR REARCH QUESTION 2

The inferential statistic test conducted for descriptive statistics of social development presented on Table 2 conveyed drug use values 0.00 to 5.00; 0.00 represents Not at All, 1.00 represents Once or Twice, 2.00 represents 1-3 Times per Month, 3.00 represents 1-3 Times per Week, 4.00 represents 4-6 Times per Week, and 5.00 represents Daily. Social interactions included volunteer work, extracurricular activities, family

meals, life changing events, hopeless, sad, suicidal thoughts, school enjoyment, and after graduation plans. This is a construct comprised of respondents' perceptions of drug use and the effect on social development. As the construct score increases, respondents are considered to have healthy relationships and interactions.

Table 3 represents the statistical analysis of ANOVA test of homogeneity of variances for whether social development differs by drug use. A test of homogeneity of variance was conducted to assess assumptions. The results of homogeneity of variances are significant
($p = 0.000$) signifying that the standard F statistic cannot be used. Instead, a more robust, asymptotic F statistic will be utilized (Brown-Forsythe).

Table 4 represents the robust test of equality of means as a proxy for the one-way ANOVA for social development among various levels of drug use. This test was conducted because the assumption test of homogeneity of variance was significant. The results of this test $F(5,281.994) = 78.004$, $p = 0.000$ show a significant difference in social development, based on level of drug use.

To determine where the significant differences occurred among respondents, post-hoc analyses were run. Because the Levene's test was significant, the Games-Howell post-hoc test, which does not assume equal variance among the groups, was utilized to determine the extent of within-group differences.

Results for Research Question 2

Games Howell post-hoc test showed within-group differences in levels of social development for varying levels of drug use. The test addressed Research Question 2, "What is the relationship between drug use and social development?"

Relationship Between Drug Use and Social Development

Post-hoc comparisons showed, in general, that increased frequency of drug use led to lower social development. In particular, respondents who reported that they did not use drugs at all showed significantly higher social development scores, compared with respondents who used drugs. A noted exception was among respondents who reported daily use: These respondents scored as high as those who reported not using drugs (mean difference = 0.2665). This may be a reflection of the bias inherent in self-reporting of sensitive questions. The data clearly show that those who had used drugs once or twice had significantly higher social development scores than those who reported monthly drug use. Those who reported monthly drug use had significantly higher social development scores than those who reported weekly drug use. The complete post-hoc analysis is located in (see Table 5).

INFERENTIAL STATISTICS FOR RESEARCH QUESTION 3

The inferential statistic test conducted for descriptives of grades presented on Table 6 conveys drug use values 0.00 to 5.00; 0.00 represents Not at All; 1.00 represents Once or Twice; 2.00 represents 1-3 Times per Month; 3.00 represents 1-3 Times per Week; 4.00 represents 4-6 Times per Week, and 5.00 represents Daily. Grades received

on report cards ranged from mostly grade A to mostly below grade D. Grades were collapsed for this test. This table is a construct comprised of respondents' perceptions of grades achieved during drug use. As the construct score increases, respondents were considered to have good grades.

Table 7 represents the statistical analysis of ANOVA test of homogeneity of variances for grades differing by drug use. A test of homogeneity of variance was conducted to assess assumptions. The results of homogeneity of variances were significant ($p = 0.000$) signifying that ANOVA results cannot be used. Instead a more robust, asymptotic F statistic was utilized (Brown-Forsythe).

Table 8 represents the robust test of equality of means as a proxy for the one-way ANOVA for academic performance among varying levels of drug use. This test was conducted because the assumption test of homogeneity of variance was significant. The results of this test $F(5,115.665)$, $p = 0.000$ indicate a significant difference in reported grades among different levels of respondents' drug use. To determine where those differences occurred, the Games-Howell post-hoc test was utilized.

Results for Research Question 3

The Games Howell post-hoc test showed within-group differences in levels of grades for varying levels of drug use. This test addressed Research Question 3, "What is the relationship between drug use and academic performance of adolescent girls?"

Relationship Between Drug Use and Academic Performance

Girls who did not use drugs reported significantly higher grades than those who used drugs at any given frequency, except 1-3 times per week and daily use. The largest significant mean difference was 1.520, or approximately 1.5 grade levels. As with social development, the reported high grades among daily drug users may be a reflection of self-reporting and the bias of sensitive questions. The only other significant relationships were between those who used drugs very rarely, once or twice, who reported significantly higher grades than those who used drugs on a monthly basis. The largest significant mean difference was 1.199. The complete post-hoc analysis is located in (see Table 9).

DESCRIPTION OF PROJECT

The results of this study led to the development of a project designed to address the needs of teenage adolescent girls exposed to drug use and the drug culture in urban educational settings. Girls Empowered to Resist drugs to Leverage their Subject knowledge and Social skills (GELS[2]) is a program to improve adolescent girls' academic performance and social development as they transition through their middle and high school years. Program components include interactive modules designed to increase adolescent girls' academic skills, parental modules designed to increase knowledge of the detrimental effects of substance abuse and factors that influence substance abuse, and highly qualified mentors who assist with building positive social development so adolescent girls are equipped to be productive 21st century learners.

DESCRIPTION OF PROJECT GOALS

GERLS^2 will foster academic achievement by increasing organizational and communicative skills to ensure success, by building strong parenting skills to enable monitoring of behavior changes that inhibit positive decision making, by creating a community of health care and educational professionals who have knowledge to share with adolescent girls, and by keeping all participants involved in the program abreast of substance abuse effects and new updates. The GERLS^2 program aims to accomplish these goals:

- Improve adolescent girls' academic performance by building study skills and social skills through engaging and interactive activities about substance abuse effects;
- Increase parental knowledge and awareness of the effects of substance abuse, peer influences, social standards, and contributing factors to adolescent girls' substance abuse;
- Provide professional development and training for school personnel to enhance skills for identification and detection of drug abuse signs;
- Provide highly qualified mentors/counselors who possess drug knowledge and who will focus on building positive relationships, identifying factors that contribute substance abuse, and addressing adolescent girls' social and civic activity.

CONCLUSIONS AND RECOMMENDATIONS

The test results showed adolescent girls that had increased frequency in drug use had low social development scores. Respondents that reported drug use for once or twice had significantly high social development scores. Participants that reported monthly drug use had significantly high social development scores. Additionally, the results revealed an inherent bias may exist due to respondents reporting high social development scores in the daily use of drugs category. The analysis concluded that a relationship does exist between drug use and social development in some categories.

Post-Hoc comparisons showed that adolescent girls that used drugs 1-3 times per week and daily use had significant low grades. This test also found that an inherent bias may exist from respondents in the daily drug use category that reported high grades. The analysis concluded that a relationship does exist between drug use and academic performance in specific categories.

The findings recommend the need for an adolescent girls' drug prevention project that focuses on equipping adolescent girls with knowledge that will assist in enhancing their social development decision making skills and academic performance while transitioning through higher grade levels.

The implications of the relationship between adolescent girls' substance abuse and their academic performance and social development resulted in the development of a project study program. Substance abuse is a growing problem in U.S. society, and this societal ill needs to be addressed. Based on the results of the data analysis, more interventions need to be implemented to address adolescent girls' academic performance and social development. The literature review

showed a lack of knowledge of girls substance abuse in social settings with grade level transitions, which indicated that more studies need to be conducted to address adolescent girls substance abuse and social development issues.

Previous research studies have indicated that more research towards adolescent girls' substance abuse needs to be completed because of the different views that society has for girls versus boys. Past medical and psychological studies mainly focused on males with drug issues which caused a disparity among children that are high risk, psychosocial, other health problems that include adolescent girls (Landsverk & Reid, 2013). This study will add to the limited amount of studies that have been conducted on adolescent girl substance abusers. Future studies focusing on childhood trauma experiences by adolescent girls and the relationship with substance abuse could shed more light on substance abuse influences. Previous studies have focused on the importance of educating family members, especially parents to assist with tackling adolescent girls' substance abuse. More studies on effective parenting during adolescent development are needed. Parents play a significant role in building positive and productive relationships with adolescents during their social developmental phases. Parents need adequate knowledge to guide adolescent girls towards making positive selections of friends and extracurricular activities that will enable them to be productive citizens in our social communities (Bhattacharjee & Choudhury, 2014).

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APPENDIX

Table 1

Construct Variables

Construct	Questions	Scale
Academic Performance	What grades do you usually get on your report card?	(1) Mostly As, (2)Ds (2) Half As and half Bs (3) Mostly Bs (4) Half Bs and half Cs (5) Mostly Cs (6) Half Cs and half Ds (7) Mostly Ds (8) Mostly below Ds
Drug Involvement	How many times do use drugs?	Not all = 0.00, 1.00 = Once or Twice, 2.00 = 1-3 Times Per Month 3.00 = 1-3 Times Per Week, 4.00 = 4-6 Times Per Week *5.00 = Daily
Social Development	Have you done any volunteer work in the last 12months?	(1)No and I am not inter. to(5)Yes, I have volunteered
	How many days per week are you involved in extra-curricular activities?	(1) 0 days to (8) 7days
	How many days a week do you spend time at a youth or community center?	(1) 0 days to (8) 7days
	How many days a week do you play team sports?	(1) 0 days to (8) 7days
	In an average week how many days do you eat evening meals with your family?	(1)0 days to (8) 7 days
	When things go wrong in my life I try Not to think it is my fault…?	(1)Always to (4)Not at all
	During the past 12 months, did you	(1)Yes (2) No

ever feel so sad or hopeless almost
every day for at least two weeks in a
row that you stopped doing some
usual activities?

During the past 30 days, have you   (1)No to
thought seriously about killing yourself? (4)Yes almost all time

What do you think you will do after you (1) Won't finish to
finish high school?   (9) Other

Table 2

Descriptive Statistics of the Social Development of Respondents Based on Their Reported Frequency of Drug Use

Drug Use Frequency	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0.00	9212	2.1959	.50249	.00524	2.1857	2.2062	0.00	4.17
1.00	1308	1.9294	.52605	.01454	1.9009	1.9580	0.00	3.38
2.00	222	1.8529	.54633	.03668	1.7806	1.9252	0.00	3.13
3.00	36	1.3640	.69925	.11647	1.1276	1.6004	0.29	2.67
4.00	34	1.2631	.62463	.10729	1.0448	1.4814	0.29	2.63
5.00	144	2.0614	.71560	.05964	1.9435	2.1793	0.29	3.38
Total	10956	2.1498	.52412	.00501	2.1400	2.1596	0.00	4.17

Table 3

Test of Homogeneity of Variance for Social Development

Levene's Statistic	df1	df2	Sig.
16.265	5	10950	0.000

Table 4

Social Development of Respondents Differing Among Varying Drug Use

	Statistic[a]	df1	df2	Sig.
Brown-Forsythe	78.004	5	281.994	0.000

F distributed.

Table 5

Multiple Comparison Dependent Variable Social Development

(I) Drug use_category	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
				Lower	Upper

					Bound	Bound
.00	1.00	.26650*	.01546	.000	.2224	.3106
	2.00	.34306*	.03705	.000	.2366	.4495
	3.00	.83193*	.11658	.000	.4807	1.1831
	4.00	.93282*	.10741	.000	.6081	1.2576
	5.00	.13454	.05987	.223	-.0384	.3074
1.00	.00	-.26650*	.01546	.000	-.3106	-.2224
	2.00	.07656	.03946	.380	-.0366	.1898
	3.00	.56543*	.11737	.000	.2124	.9185
	4.00	.66632*	.10827	.000	.3396	.9930
	5.00	-.13196	.06139	.268	-.3090	.0451
2.00	.00	-.34306*	.03705	.000	-.4495	-.2366
	1.00	-.07656	.03946	.380	-.1898	.0366
	3.00	.48887*	.12211	.003	.1245	.8533
	4.00	.58976*	.11338	.000	.2509	.9286
	5.00	-.20852*	.07002	.037	-.4096	-.0074
3.00	.00	-.83193*	.11658	.000	-1.1831	-.4807
	1.00	-.56543*	.11737	.000	-.9185	-.2124
	2.00	-.48887*	.12211	.003	-.8533	-.1245
	4.00	.10089	.15835	.988	-.3635	.5653
	5.00	-.69739*	.13085	.000	-1.0837	-.3110
4.00	.00	-.93282*	.10741	.000	-1.2576	-.6081
	1.00	-.66632*	.10827	.000	-.9930	-.3396
	2.00	-.58976*	.11338	.000	-.9286	-.2509
	3.00	-.10089	.15835	.988	-.5653	.3635
	5.00	-.79828*	.12275	.000	-1.1607	-.4359
5.00	.00	-.13454	.05987	.223	-.3074	.0384
	1.00	.13196	.06139	.268	-.0451	.3090
	2.00	.20852*	.07002	.037	.0074	.4096
	3.00	.69739*	.13085	.000	.3110	1.0837
	4.00	.79828*	.12275	.000	.4359	1.1607

*. The mean difference is significant at the 0.05 level.

Table 6

Descriptive Statistics of the Academic Performance of Respondents Based on Their Reported Frequency Drug Use

Drug Use Frequency	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum
.00	8576	3.33	0.840	0.009	3.31	3.35	0	4
1.00	1211	3.01	0.969	0.028	2.95	3.06	0	4
2.00	204	2.69	1.304	0.091	2.51	2.87	0	4
3.00	35	2.60	1.623	0.274	2.04	3.15	0	4

4.00	18	1.81	1.816	0.433	0.90	2.72	0	4
5.00	142	3.07	1.275	0.107	2.86	3.28	0	4
Total	10186	3.27	0.895	0.009	3.25	3.29	0	4

Table 7

Test of Homogeneity of Variance for Academic Performance

Levene's Statistic	*df1*	*df2*	Sig.
52.054	5	10180	0.000

Table 8

Academic Performance of Respondents Differing Among Varying Drug Use

	Statistic[a]	*df1*	*df2*	Sig.
Brown-Forsythe	23.931	5	115.665	0.000

Asymptotically *F* distributed.

Table 9

Multiple Comparisons Dependent Variable Grades Collapsed

(I) Druguse_category		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
.00	1.00	.321[*]	.029	.000	.24	.40
	2.00	.644[*]	.092	.000	.38	.91
	3.00	.732	.274	.108	-.10	1.56
	4.00	1.520[*]	.433	.027	.13	2.91
	5.00	.262	.108	.151	-.05	.57
1.00	.00	-.321[*]	.029	.000	-.40	-.24
	2.00	.323[*]	.095	.011	.05	.60
	3.00	.411	.276	.671	-.42	1.24
	4.00	1.199	.433	.113	-.19	2.59
	5.00	-.059	.111	.995	-.38	.26
2.00	.00	-.644[*]	.092	.000	-.91	-.38
	1.00	-.323[*]	.095	.011	-.60	-.05
	3.00	.088	.289	1.000	-.77	.95
	4.00	.876	.442	.389	-.53	2.28
	5.00	-.382	.141	.075	-.79	.02
3.00	.00	-.732	.274	.108	-1.56	.10
	1.00	-.411	.276	.671	-1.24	.42
	2.00	-.088	.289	1.000	-.95	.77
	4.00	.788	.512	.643	-.77	2.34
	5.00	-.470	.294	.604	-1.35	.41

4.00	.00	-1.520[*]	.433	.027	-2.91	-.13
	1.00	-1.199	.433	.113	-2.59	.19
	2.00	-.876	.442	.389	-2.28	.53
	3.00	-.788	.512	.643	-2.34	.77
	5.00	-1.258	.446	.097	-2.67	.15
5.00	.00	-.262	.108	.151	-.57	.05
	1.00	.059	.111	.995	-.26	.38
	2.00	.382	.141	.075	-.02	.79
	3.00	.470	.294	.604	-.41	1.35
	4.00	1.258	.446	.097	-.15	2.67

*. The mean difference is significant at the 0.05 level.