

Comorbidity of Lifetime Alcohol Use Disorder & Major Depressive Disorder in San Juan, Puerto Rico



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BACKGROUND

There is evidence indicating a considerable level of comorbidity between alcohol use disorder (AUD) and major depressive disorder (MDD; Grant et al., 2015; Grant et al., 2004; Lai et al., 2015). Epidemiological estimates for the prevalence of comorbidity between MDD and AUD in Puerto Rico are based on analyses of data collected and reported in 1984 and from 1997-1998. Swendsen et al. (1998), analyzed a 1984 sample of the island population, reported that those with lifetime DSM-III alcohol abuse/dependence were 2.8 times (95% CI: 1.18-6.63) more likely than those without abuse/dependence to have DSM-III major depression. Colon et al. (2002), also analyzed a sample from the island population that was interviewed in 1997-1998, and reported that those with lifetime DSM-IV alcohol abuse/dependence were 2.1 times (95%CI: 1.3-3.5) more likely to have MDD than those without an alcohol diagnosis.

RESULTS

Table 1. Proportion of lifetime major depressive disorder (MDD) by lifetime alcohol use disorder (AUD) status and gender.

	All AUD	No AUD	Mild	Moderate	Severe
Men					
Sample Size	(266)	(428)	(128)	(58)	(80)
MDD	17%***	7%***	11%	19%	26%
Women					
Sample Size	(131)	(685)	(76)	(55) ^a	
MDD	35%***	15%***	35%		35%
All Sample					
Sample Size	(397)	(1113)	(204)	(95)	(98)
MDD	23%***	12%***	19%	26%	27%

^aData for moderate plus severe AUD among women combined because of small Ns. Chi² MDD: All AUD x MDD No AUD: ***Men, p< 0.001; ***Women, p< 0.001; ***All Sample, p<0.001. Chi² MDD: No AUD x MDD Mild AUD x MDD Moderate AUD x MDD Severe AUD: ***Men, p<0.001; ***Women, p< 0.001; ***All Sample, p< 0.001.

Table 2: Multivariate Logistic Regression Predicting Lifetime Major Depressive Disorder among 18 to 64 years old residents of San Juan, Puerto Rico: 2013-2014.

	OR	95% CI
Lifetime DSM-5 AUD (Ref: No AUD)		
Mild	1.78*	1.09-2.91
Moderate	2.58**	1.33-5.01
Severe	3.34**	1.70-6.56
Sex (Ref: Women)		
Men	.45***	.31-.65
Any drug (ref.: No)		
Yes	.95	.59-1.53
Age (Ref: 18-29 years)		
30-39 years	1.57	.96-2.55
40-49 years	1.43	.85-2.41
50+ years	.80	.47-1.34
Family Cohesion (Ref: High)		
Low	2.13**	1.27-3.58
Medium	1.71*	1.13-2.58
Religion (Ref: Catholic)		
Protestant	.78	.51-1.20
Other religious preference	2.79**	1.30-5.98
No religious preference	1.40	.82-2.37
Employment Status (Ref: Employed full-time)		
Unemployed	1.51	.82-2.78
Employed Part-time	.80	.45-1.42
Not in workforce	1.39	.84-2.30
Marital Status (Ref: Married/living with someone)		
Married not living with spouse/separated/divorced	1.17	.70-1.96
Widowed	.55	.18-1.67
Never married	.76	.51-1.14
Education (Ref: College degree)		
Less than high school	.66	.33-1.32
High school diploma	.84	.53-1.35
Some college/technical/vocation	.82	.54-1.26
Income (Ref: up to \$10,000)		
\$10,001-\$20,000	.87	.56-1.37
\$20,001-\$30,000	.72	.37-1.39
\$30,001-\$40,000	.48	.22-1.04
\$40,001-\$60,000	.57	.27-1.18
\$60,001+	.79	.32-1.93

* < 0.05; ** p < 0.01; *** p < 0.001.

The prevalence of lifetime MDD was 11% among men, 17% among women and 14% for both genders; the prevalence of lifetime AUD was 38% among men, 16% among women and 26% for both genders.

Among those with AUD, the rate of MDD was 17% among men and 35% among women.

Among those without AUD the rate of MDD was 7% among men and 15% among women.

Results of multiple logistic regression analysis controlling for gender, illegal drug use, age, level of family cohesion, religion, employment status, marital status, education, and family annual income showed that AUD severity was positively associated with the likelihood of MDD.

OBJECTIVE

The objective of this research is to update epidemiological information on comorbidity between AUD and MDD in the San Juan, Puerto Rico, metropolitan area. The analyses examine lifetime rates of DSM-5 AUD and DSM-IV MDD and provides adjusted odd ratios representing the likelihood of MDD among those with AUD at three levels of AUD severity according to DSM-5: mild, moderate and severe.

METHODS

- ◆ Data are from 1,510 residents of San Juan, Puerto Rico. The survey employed a multistage cluster sampling methodology.
- ◆ The response rate was 83%.
- ◆ Face-to-face interviews were conducted in respondents' homes. The questionnaire was developed in Spanish by the fieldwork team and the Spanish-speaking Principal Investigators. All respondents signed a written informed consent and the Committee for the Protection of Human Subjects of the University of Texas and the University of Puerto Rico approved the study.
- ◆ AUD and MDD identification follow DSM-5 and DSM-IV criteria, respectively, both implemented with the Composite International Diagnostic Interview (CIDI).
- ◆ To account for the multistage cluster sampling methodology, Stata 14.2 "svy" prefix (Stata, 2015) was used for data analyses. Analyses were conducted on weighted data.
- ◆ Multivariate analysis controlled for the effects of gender, illegal drug use, age, level of family cohesion, religion, employment status, marital status, education, and family annual income.

CONCLUSIONS

MDD frequently occurs as a comorbid condition with AUD in San Juan, Puerto Rico. The frequency of occurrence increases as AUD severity increases. AUD treatment providers should therefore be equally prepared to treat these two comorbid conditions.

REFERENCES:

- Colon, H. M., Robles, R. R., Canino, G., & Sahai, H. (2002). Prevalence and correlates of DSM-IV substance use disorders in Puerto Rico. *Boletín, Asociación Médica de Puerto Rico*, 93, 12-22.
- Grant, B. F., Goldstein, R. B., Saha, T. D., Chou, P., Jung, J., Zhang, H., . . . Hasin, D. S. (2015). Epidemiology of DSM-5 alcohol use disorder. Results from the National Epidemiologic Survey on Alcohol and Related Conditions III. *JAMA Psychiatry*, 72, 757-766.
- Grant, B. F., Stinson, F. S., Dawson, D. A., Chou, S. P., Dufour, M. C., Compton, W., . . . Kaplan, K. (2004). Prevalence and co-occurrence of substance use disorders and independent mood and anxiety disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Archives of General Psychiatry*, 61, 807-816.
- Lai, H. M. X., Cleary, M., Sitharthana, T., & Hunt, G. E. (2015). Prevalence of comorbid substance use, anxiety and mood disorders in epidemiological surveys, 1990-2014: A systematic review and meta-analysis. *Drug and Alcohol Dependence*, 154, 1-13.
- StataCorp. 2017. *Stata Statistical Software: Release 15*. College Station, TX: StataCorpLLC.
- Swendsen, J. D., Merikangas, K. R., Canino, G. J., Kessler, R. C., Rubio-Stipec, M., & Angst, J. (1998). The Comorbidity of Alcoholism With Anxiety and Depressive Disorders in Four Geographic Communities. *Comprehensive Psychiatry*, 39, 176-184.

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