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Characterizing Anxiety among Individuals Receiving Treatment for Alcohol and Substance Use Disorders

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Abstract

Background—Despite high prevalence of generalized anxiety disorder (GAD) substance use disorder (SUD) comorbidity, little is known regarding demographic characteristics associated with GAD in SUD treatment-seekers.

Objective—To characterize demographic differences between inpatient SUD treatment-seekers reporting varying levels of GAD symptomatology.

Design—General Linear Models, chi-squares, *t*-tests, and correlational analyses were utilized to assess group differences. Groups included those with no history of significant anxiety (No GAD; *n*=256), subclinical anxiety (Subclinical; *n*=85), and those meeting GAD diagnostic criteria (GAD; *n*=61).

Results—The No GAD group differed substantially from Subclinical and GAD individuals. With the exception of polysubstance use, no differences were found regarding Subclinical and GAD groups.

Conclusion—Individuals with subclinical GAD symptoms and those meeting diagnostic criteria were nearly identical regarding precursors to problematic substance use, severity of use, and key mental health indicators. Findings suggest subclinical levels of GAD should not be overlooked when assessing and treating SUD's.

Keywords

Comorbidity; Generalized Anxiety Disorder; Substance Use Disorder; Treatment; Subclinical

Introduction

Generalized Anxiety Disorder (GAD) is the most prevalent anxiety disorder diagnosed among adults, affecting nearly 40 million people, or approximately 3.5 % of the United States population in any given year (Center for Behavioral Health Statistics and Quality, 2016). Among individuals diagnosed with alcohol and substance use disorders (AUD/SUD), rates of current GAD diagnosis have been found to range between 24% to 46% (Alegria et al., 2010; Smith & Book, 2010). Clinically, GAD is manifested as excessive anxiety and worry, occurring more days than not for at least 6 months, which is difficult for the individual to control (American Psychiatric Association, 2013). The worry is accompanied by multiple physical and/or cognitive symptoms including edginess or restlessness, tiring easily, impaired concentration or one's mind going blank, irritability, muscle aches, and difficulty sleeping (American Psychiatric Association, 2013). GAD can interfere with an individual's ability to function effectively in the workplace, and can create barriers to forming and sustaining healthy relationships (McLean, Asnaani, Litz, & Hofmann, 2011). Moreover, among individuals with comorbid alcohol or substance use disorders, GAD has been associated with heavier drinking, more frequent hospitalizations, increased risk for relapse to substance use after treatment, as well as increased risk for leaving treatment against medical advice, in comparison to non-GAD counterparts (Bruce et al., 2005; Compton, Cottler, Jacobs, Ben-Abdallah, & Spitznagel, 2003; Elmquist, Shorey, Anderson, & Stuart, 2016; Kushner, Abrams, & Borchardt, 2000; Magidson, Liu, Lejuez, & Blanco, 2012; Wittchen, 2002).

Despite the high prevalence of GAD/SUD comorbidity and substantial consequences on wellbeing and recovery, very little is known regarding demographic characteristics associated with GAD in substance using, treatment seeking populations. Multiple personal and structural barriers to treatment access must be overcome in order for an individual to enter SUD treatment (Hewell, Vasquez, & Rivkin, 2017; Priester et al., 2016; Saunders, Zygowicz, & D'Angelo, 2006; Schober & Annis, 1996; Tucker, Vuchinich, & Rippens, 2004). Inpatient treatment seekers are a unique population from non-treatment seekers, given that they have worked through such barriers. However, to date, the preponderance of literature characterizing GAD within substance using populations, employ community sampling.

Accurately detecting and effectively treating GAD is foundational to optimizing AUD and SUD treatment outcomes (Compton et al., 2003; Kushner et al., 2000; Smith & Book, 2010; Staiger, Thomas, Ricciardelli, & McCabe, 2011). Obtaining a more comprehensive understanding regarding demographic differences among AUD/SUD treatment seekers with varying degrees of GAD symptomatology has the potential to provide a more refined understanding regarding who is most at risk for negative consequences associated with GAD. This study was directed toward characterizing potential differences between inpatient treatment-seekers reporting no significant anxiety symptoms (No GAD), those endorsing symptoms without meeting diagnostic criteria (Subclinical), and those meeting criteria (GAD). Initial analyses investigated demographic and affective measures, including sex, education, family history, and endorsement of current anxiety/depressive symptoms.

Subsequent analyses examined potential group differences in patterns and chronicity of substance use, disordered use, and comorbidity of use disorders.

Materials and Methods

Participants included inpatients at 6 substance abuse treatment facilities in the Southeastern United States. Data were gathered during the screening phase of a multisite study focused on understanding cognitive and emotional processing among individuals receiving inpatient treatment for SUD. Procedures were approved by Institutional Review Boards at the University of Florida and University of Kentucky, and participant data was further protected with a Certificate of Confidentiality issued by the National Institutes of Health. All participants provided voluntary, written informed consent to participate in the study. Survey data (paper and pencil questionnaires) was collected during group screening sessions, and diagnostic data was collected during a private interview session with a trained, graduate level research assistant.

Probabilistic diagnoses for GAD, AUD, and SUDs were collected from 402 individuals using the computerized Diagnostic Interview Schedule (cDIS) for DSM-IV (Robins, 2000). To maintain consistency with current DSM-5 classification and comparison to current and future work, a probabilistic diagnosis of abuse or dependence is reported here as a use disorder. Recent depressive symptomatology was assessed using the Beck Depression Inventory- II (BDI-II) (Beck, 1996). State anxiety was assessed using the Anxiety Inventory (AI) (Spielberger, 1983). Participants completed a detailed 4-generation family tree modified from Mann et al. (1985), for alcohol and substance use. Family history was analyzed in a binary fashion, with individuals reporting problem substance use in at least one biological parent considered “family history positive”. Detailed substance use histories were gathered across 12 drug classes. Recent (six month) alcohol consumption (average absolute oz./day) was quantified using the Quantity-Frequency Index (QFI) (Cahalan & Cisin, 1968). Participants estimated their highest quantity (MaxQ) consumed (absolute oz.) in a single drinking occasion in the six months prior to treatment.

Data analysis

Participants were grouped according to probabilistic GAD diagnosis. The No GAD group ($n=256$) failed to report recent or past periods characterized by persistent anxiety symptoms. The Subclinical group ($n=85$) endorsed at least one of the seven GAD symptoms ($M=5.27$; $range=1-7$) but did not meet diagnostic criteria. The GAD group ($n=61$) endorsed at least three symptoms ($M=6.0$; $range=3-7$) and met diagnostic criteria. All analyses were performed with SAS 9.4 (SAS, 2013).

Initial examination of demographic and affective measures utilized chi-square, t-test, and general linear model (GLM) analyses. Where appropriate, significant omnibus results were probed with post hoc comparisons (Tukey) or pairwise chi-squares. As with each cluster of analyses described below, correlations between these measures and GAD symptom count were performed using a collapsed group of Subclinical and GAD individuals. These exploratory analyses were performed in response to lack of agreement in the literature regarding the relative weight afforded symptom quality versus symptom quantity (Wakefield

& Schmitz, 2017). Where significant, correlations were subsequently compared between groups using Fisher's *r*-to-*z* transformation.

This approach was repeated for investigation of use patterns. More granular measures of recent use were available only for alcohol use (quantity). Preliminary analyses indicated that only the subsamples of alcohol, marijuana, and cocaine users were of sufficient size for meaningful milestone analysis (i.e., initial substance use, initiation of regular use). These analyses were limited to those participants endorsing use of the substance in question.

The third cluster of analyses focused on the distribution of SUDs across GAD subgroups. Initial analyses examined proportions of individuals meeting criteria for any current use disorder. Subsequent analyses examined distributions of substance-specific use disorders and their degree of comorbidity.

Results

Demographic & affective measures

Demographic information and affective symptomatology for the overall sample and within groups, is detailed in Table 1.

Race—The sample included primarily African Americans (16%) and Caucasians (81%). The proportion of African American and Caucasian individuals did not differ by GAD group ($p=0.63$).

Sex—The relative proportion of men and women in the No GAD (48% women; $n=121$), Subclinical (46% women; $n=39$), and GAD (43% women; $n=26$) groups was equivalent ($p=0.76$). T-tests revealed no difference in symptom count between men and women in either the Subclinical ($M_s=5.22$ and 5.25 , respectively) or GAD ($M_s=5.91$ and 6.07 , respectively) groups ($p_s>0.59$). Further, endorsement of specific symptoms (e.g., “irritability”) was equivalent between sexes in the GAD group ($p_s>0.13$). In the Subclinical group only endorsement of “muscle tension” differed, with men endorsing this item more often [$X^2=6.19$, $p=0.01$].

Age—No age difference was observed between anxiety groups ($p=0.41$).

Education—Education differed between groups [$F(2, 266) = 8.91$, $p < 0.01$], such that No GAD participants were more highly educated ($M=15.0$ years; $SD=2.8$) than either the Subclinical ($M=13.4$; $SD=2.6$) or GAD ($M=13.9$; $SD=2.6$) groups, which did not differ.

Family history—Endorsement of problem substance use among one or both parents differed by group [$X^2=25.75$, $p<0.01$]. GAD individuals reported higher prevalence of parental problem use (40.0%) than did Subclinical (13.8%) or No GAD (10.0%) groups, the latter groups did not differ.

Affective symptomatology—Depressive symptomatology differed by group [$F(2,230)=36.10$, $p < 0.01$], with No GAD participants reporting lower BDI scores ($M=10.0$;

$SD=7.9$) than both the Subclinical ($M=17.8$; $SD=9.5$) and GAD ($M=20.6$; $SD=10.7$) groups, which did not differ.

A consistent pattern of differences was noted for state anxiety [$F(2,261)=17.95$, $p<0.01$], with lower scores noted among No GAD ($M=45.2$; $SD=10.3$) than either the Subclinical ($M=52.1$; $SD=13.1$) or GAD ($M=55.8$; $SD=12.6$) groups, which did not differ.

Associations with GAD symptom count—Symptom count could range from 1 to 7, and included restlessness, fatigue, impaired concentration, mind going blank, irritability, muscle aches, and difficulty sleeping. Symptom count was higher among the GAD than Subclinical group [$t(144)=1.96$, $p<0.01$]. Significant associations were observed between symptom count and both education ($r=-0.35$) and family history of use problems ($r=0.20$). The slope of these associations did not differ when compared between groups.

Substance use patterns

Recent alcohol use—Descriptive statistics regarding substance use are detailed in Table 2. Among treatment seekers endorsing recent drinking ($N=246$), differences in average daily consumption were noted between groups [$F(2,257)=6.39$, $p<0.01$]. No GAD individuals consumed markedly less alcohol ($M=3.6$ oz./day; $SD=7.2$) than either Subclinical ($M=6.7$; $SD=7.6$) or GAD ($M=7.3$; $SD=8.8$) groups, which did not differ. A consistent pattern was noted for MaxQ [$F(2,193)=8.59$, $p<0.01$], with No GAD individuals consuming less ($M=8.9$ oz.; $SD=10.5$) alcohol during maximal drinking occasions than Subclinical ($M=13.1$; $SD=10.0$) or GAD ($M=16.8$; $SD=12.9$) groups. The latter two groups did not differ.

Alcohol use chronicity—Between-group differences were observed for age at initial consumption [$F(2,273)=8.75$, $p<0.01$], age at initial intoxication [$F(2,266)=9.34$, $p<0.01$], and age at initiation of regular drinking [$F(2, 259)=4.07$, $p=0.02$]. These patterns reflected a relationship between lower severity of anxiety and later milestone experiences; No GAD individuals initiated drinking later ($M=13.5$ yrs; $SD=4.3$) than Subclinical ($M=10.8$; $SD=6.1$) or GAD ($M=11.8$; $SD=3.7$) groups, which did not differ. No GAD individuals experienced intoxication at later ages ($M=16.7$; $SD=4.4$) than the GAD ($M=14.4$; $SD=3.5$), but not Subclinical ($M=15.5$; $SD=6.3$) groups. The No GAD and Subclinical groups did not differ in their age at regular drinking ($M=20.9$; $SD=8.0$ and 21.2 ; $SD=9.3$, respectively), however both experienced a later onset than GAD individuals ($M=17.3$; $SD=4.4$).

Marijuana use chronicity—Among individuals reporting prior experience with marijuana, a difference in the age at initiation of use was observed between anxiety groups [$F(2,211)=3.83$, $p=0.02$], with No GAD individuals initiating use at a later age ($M=17.9$ yrs; $SD=5.8$) than GAD participants ($M=15.1$; $SD=2.5$). Neither differed from the Subclinical group ($M=16.8$; $SD=6.4$). No differences were observed in the ages at initiation of regular marijuana use ($p=.80$).

Cocaine use chronicity—No differences in cocaine use milestones were detected ($p>.36$).

Associations with GAD symptom count—Significant associations were observed between symptom count and both age of initial intoxication ($r = -0.23$) and regular marijuana use ($r = -0.29$). The slope of these associations did not differ when compared between groups.

Substance use disorders & comorbidity

Disordered use—An initial analysis was performed to examine the proportion of the sample meeting probabilistic diagnosis for any use disorder. Out of the total sample, 69% met criteria for at least one use disorder, however this proportion was not distributed equally across anxiety groups [$\chi^2 = 27.05$, $p < 0.01$]; 41% of No GAD ($n = 105$), 19% of Subclinical ($n = 16$), and 6% of GAD ($n = 4$) individuals failed to meet criteria for any use disorder. Subsequent analyses included only individuals meeting criteria for at least one use disorder ($n = 277$).

Comorbidity of use disorders—Descriptive statistics regarding comorbidity of use disorders are detailed in Table 2 and Table 3. The proportion of individuals meeting criteria for a single use disorder versus criteria for two or more differed across anxiety groups [$\chi^2 = 12.32$, $p < 0.01$]. Comorbid use disorders were more common among GAD individuals (79%) than either No GAD (52%) or Subclinical (56%) groups, which did not differ. The degree of comorbidity (operationalized as the sum of use disorders an individual met criteria for) differed in a similar pattern [$F(2,276) = 10.22$, $p < 0.01$]; GAD individuals displayed a greater degree of comorbidity ($M = 3.6$ SUDs; $SD = 2.3$) than either No GAD ($M = 2.3$; $SD = 1.8$) or Subclinical ($M = 2.5$; $SD = 1.9$) groups, which did not differ.

Use disorders by substance—Alcohol was the most commonly observed use disorder in this sample; out of individuals meeting criteria for at least one SUD, 89% met criteria for AUD. No difference in the proportion of AUD individuals was observed across GAD subgroups ($p = .92$). In contrast, disproportionate disordered use was noted for cocaine, marijuana, amphetamines, and sedatives ($ps < .03$); opiate analyses revealed only a trend-level difference ($p = .07$). In all cases, these differences reflected significantly higher proportions of disordered use between the GAD versus No GAD groups ($ps < .03$). The No GAD and Subclinical groups failed to differ for any substance ($ps > .15$). Higher proportions of GAD individuals met criteria for amphetamine ($p < .01$) and opiate (trend-level; $p = .06$) use disorders; proportions meeting cocaine, marijuana, and sedative use disorder criteria failed to differ significantly from other groups, however the pattern of means consistently reflected the higher proportions of disordered use among the GAD group. Although hallucinogens, inhalants, phencyclidine, and “other” SUDs were included in initial analyses, their separate analysis was precluded by insufficient representation ($ns < 10$) in the current sample.

Associations with GAD symptom count—Significant associations were observed between symptom count and degree of comorbid disordered use ($r = 0.36$). The slope of this association did not differ when compared between groups.

Discussion

The presence of GAD is routinely identified as a strong impediment to positive treatment outcomes, within individuals in recovery for SUDs. However, a refined understanding is lacking regarding demographic differences among AUD/SUD treatment seekers, with varying degrees of GAD symptomatology. Our findings reveal several important demographic differences between treatment seekers who meet diagnostic criteria for GAD, those who display subclinical GAD symptomatology, and those that do not endorse any GAD related symptoms.

Findings reveal that individuals who endorse some GAD related symptoms but do not meet diagnostic criteria, and those who meet diagnostic criteria, are strikingly similar regarding key demographic variables. No differences were found between the two groups regarding most substance use behavior, including age of first alcohol and marijuana exposure, age of first alcohol intoxication, quantity and frequency of alcohol consumed in the 6 months preceding treatment, and the maximum amount of alcohol consumed during a peak drinking episode. Additionally, no differences were found between the Subclinical and GAD groups regarding key factors associated with predisposition toward substance use disorder, including, family history of substance abuse, depressive symptoms and state anxiety, as well as years of education. Given the similarity between groups, these findings suggest that subclinical levels of GAD should not be overlooked during treatment planning for SUDs.

In contrast, those who did not experience any GAD related symptoms differed significantly from those who endorsed symptoms. Specifically, those who did not experience any GAD related symptoms differed regarding their substance use behavior, including being older at the time of their first alcohol and marijuana exposure, being older when they first experienced alcohol intoxication, having a lower quantity and frequency of alcohol consumed in the 6 months preceding treatment, and consuming less alcohol during their peak drinking episode. Those without GAD related symptoms also differed from the symptomatic groups regarding key factors associated with predisposition toward substance use disorder, including having a weaker family history of substance abuse, having fewer depressive symptoms and lower state anxiety, as well as having more education. These results are consistent with existing literature indicating that individuals with comorbid SUD/GAD fair poorer than their non-GAD counterparts regarding measures of mental health and severity of substance use disorder (Hoertel et al., 2014; Magidson et al., 2012; Pacek et al., 2013).

Interestingly, the Subclinical and GAD groups were primarily distinguishable by the prevalence of substance use disorder and degree of comorbid use disorders. Prevalence of marijuana use disorder, cocaine use disorder, and degree of comorbid use disorders increased in a stepwise fashion across the GAD groups. The No GAD group had the lowest prevalence of marijuana use disorder, cocaine use disorder, and degree of comorbid use disorders, followed by the Subclinical group, and then the GAD group.

It was also found that a sizable proportion of the sample did not meet diagnostic criteria for any SUD ($N=125$; 31%), despite being in inpatient treatment for SUD. There are several

explanations for this finding. It is possible that in some cases, problematic substance use requiring intervention may not meet the threshold for DSM diagnosis. However, a common criticism of both the DSM IV and DSM 5 is that the threshold for SUD diagnosis is too low, resulting in a too many, not too few people being diagnosed (Denis, Gelernter, Hart, & Kranzler, 2015; Hasin, Auriacombe, et al., 2013; Hasin, O'Brien, et al., 2013). Similarly, a second possibility may be that the cDIS was not sensitive enough to detect mild degrees of SUD. Congruently, inter-observer reliability for AUD and SUD diagnoses have been found to suffer among subthreshold samples, using DSM criteria (Denis et al., 2015). However, the substance abuse and dependence disorders modules of the cDIS have displayed fair to excellent reliability (kappa 0.53 to 0.86) among treatment seeking samples (Dascalu, 2001; Horton, 1998). A third possibility is that some people who are receiving inpatient SUD treatment, may not require addictions treatment. Individuals may enter SUD treatment through social service programs or through court proceedings, which have varying parameters influencing assignment to inpatient treatment (DeMatteo, 2006; Fulkerson, Keena, & O'Brien, 2013). The unanticipated finding that a portion of our sample did not meet diagnostic criteria, reveals a population that warrants further study. To the best of our knowledge, the literature is void of any focused examination of individuals who are receiving inpatient treatment for SUD, who do not meet diagnostic criteria. Future studies examining modes of treatment entry may provide important demographic and sociological information, which could reduce unnecessary treatment admission. None the less, the finding that 31% our sample did not meet diagnostic criteria for any SUD, is noteworthy as clinicians are likely to encounter subthreshold SUD clients in inpatient treatment settings; therefore, results pertaining to this unique group, should not be discounted, regardless of the etiology.

Correlational analyses rendered mixed results. GAD symptom severity was not correlated with the majority of demographic variables under study; with the exception of age of first alcohol intoxication, family history of substance abuse, age of onset of regular marijuana use, and the degree of comorbid use disorders. When the strength of the significant correlations were examined, no differences were found between the Subclinical and diagnosis groups. Failure to find consistent correlations with GAD symptom severity among a majority of variables or following a consistent pattern may be due to the way GAD severity was operationalized. The means of quantifying severity of mental diagnoses within research, has been debated within the literature. Existing studies generally ascertain symptom severity by summing the number of symptoms endorsed. However, there has been a recent movement to examine qualitative differences between symptoms as predictors of health related outcomes, instead of symptom count (Anderson, Slade, Andrews, & Sachdev, 2009; Wakefield & Schmitz, 2017). The only difference in symptom endorsement found within this study was between genders, with men more frequently reporting muscle tension than women, in the Subclinical group. Examination of the relationship between an individual's perception of GAD symptom severity and demographic variables may render more fruitful findings. It is possible that the quality or nature of GAD symptoms experienced would be more strongly associated with variables of interest.

In contrast to existing GAD literature, this study found no sex differences regarding the prevalence of GAD, or the number of GAD related symptoms endorsed. The literature

consistently reports that within the general population, women are more likely to experience anxiety disorders than are men (Angst, Gamma, Baldwin, Ajdacic-Gross, & Rossler, 2009; Kessler et al., 1994; McLean et al., 2011; Vesga-Lopez et al., 2008), with female to male lifetime GAD prevalence ratios approaching 2:1 (Khan et al., 2013; McLean et al., 2011; Vesga-Lopez et al., 2008). Much less is known regarding sex differences among individuals with comorbid GAD/SUD. To the best of our knowledge, no publications are available that are primarily focused on examining sex differences among SUD/AUD treatment seekers with GAD. Findings using National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) data suggest that among a sample of individuals diagnosed with a current AUD/SUD, females are nearly twice as likely as males to have GAD (Magidson et al., 2012). However, NESARC examined civilian, noninstitutionalized adults. The lack of sex difference found within the current study may illustrate an important difference between the general population and treatment seekers. Our findings suggest that once individuals enter into treatment for a substance use disorder, no significant difference remains between men and women regarding prevalence or severity of GAD.

Limitations

Several limitations should be taken into consideration when interpreting these study findings. The cross-sectional, descriptive study design prohibits the ability to establish predictive relationships and temporal sequencing between GAD and our variables of interest. Furthermore, this study was reliant upon self-report measures. Participants were instructed to indicate whether they had ever used, or regularly used specific substances, and to provide their age at first experiencing these events for each substance. Therefore, findings are subject to recall and reporting errors. Additionally, consistent with previous investigations (Haas & Peters, 2000; Hernandez-Avila, Rounsaville, & Kranzler, 2004), 'regular' use was not explicitly defined. Leaving this label open to interpretation provides meaningful information regarding self-perceptions of use and need to seek help or enter treatment.

Strengths of this study include the utilization of multiple statistical approaches to afford a comprehensive understanding of demographic differences between groups. Additionally, three groups with different degrees of GAD were compared in order to provide a more refined understanding of between group differences and trends, which may not be apparent with a two group (ie. No GAD/GAD) comparison. Lastly, the inclusion of multiple inpatient treatment facilities located across two states, serves to improve generalizability of the study findings.

Conclusion

Despite the aforementioned limitations, this study revealed key demographic differences between treatment seeking individuals with GAD symptoms and those without GAD symptoms. Findings suggest that individuals who experience GAD symptoms however do not meet diagnostic criteria for GAD, would likely benefit from treatment planning which takes into account GAD as a contributing factor, since the precursors to problematic substance use, severity of substance use, and mental health implications do not differ between these two groups.

In addition to these findings, this study illuminated the need for further research within several important areas. First, the literature would benefit from future studies utilizing a longitudinal design, to ascertain whether Subclinical GAD cohorts and GAD cohorts differ regarding SUD treatment and recovery outcomes. Second, future methodological studies examining the validity and reliability of using qualitative differences between symptoms versus the quantity of reported symptoms as predictors of health related outcomes are needed. Third, the literature would be strengthened by additional studies replicating the finding that inpatient males and females do not differ regarding the GAD prevalence and severity. Fourth, future studies examining modes of inpatient treatment entry may provide important demographic and sociological information, which could reduce unnecessary admission to SUD treatment facilities.

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Table 1**Demographics & Affective Symptomatology by GAD Group**

	Overall	No GAD	Subclinical GAD	GAD Diagnosis	Differences ($p < .05$)
Age in years M(SD)	40.0(11.5)	41.3(13.5)	39.3(10.9)	39.3(10.2)	<i>no differences</i>
Sex N(%)					
Female	186(46.6)	121(47.8)	39(45.9)	26(42.6)	<i>no differences</i>
Male	213(53.4)	132(52.2)	46(54.1)	35(57.4)	<i>no differences</i>
Education in years M(SD)	14.1(2.7)	15.0(2.8)	13.4(2.6)	13.9(2.6)	Sub/GAD < NG
Family history N(%)	45(16.3)	17(10.1)	8(13.8)	20(40.0)	NG/Sub < GAD
BDI-II M(SD)	16.1(9.4)	10.0(7.9)	17.8 (9.5)	20.6 (10.7)	NG < Sub/GAD
AI M(SD)	51.0(12.0)	45.2(10.3)	52.1(13.1)	55.8(12.6)	NG < Sub/GAD

NG= No GAD symptom group

Sub= Subclinical GAD symptom group

GAD= GAD diagnosis group

Table 2

Substance Use Patterns by GAD Group

	Overall M(SD)	No GAD M(SD)	Subclinical M(SD)	GAD M(SD)	Differences (<i>ps</i> <.05)
Alcohol: Intoxication Age	15.5 (4.7)	16.7 (4.4)	15.5(6.3)	14.4 (3.5)	GAD < NG
Alcohol: Regular Use Age	19.8 (7.2)	20.9 (8.0)	21.2(9.3)	17.3 (4.4)	GAD < Sub/NG
Average Consumption (oz/day)	5.6 (7.9)	3.6 (7.2)	6.6(7.6)	7.3 (8.8)	NG < Sub/GAD
Maximum Consumption (oz)	12.4 (11.1)	8.9 (10.5)	13.1(10.0)	16.8 (12.9)	NG < Sub/GAD
Marijuana: Initial Use Age	16.6 (4.9)	17.9 (5.8)	16.8(6.4)	15.1 (2.5)	GAD < NG
Marijuana: Regular Use Age	16.7 (4.3)	17.1 (4.1)	16.5(3.2)	16.6 (5.7)	<i>no differences</i>
Cocaine: Initial Use Age	21.4 (6.2)	22.0 (5.9)	21.3(6.8)	21.0 (6.0)	<i>no differences</i>
Cocaine: Regular Use Age	23.2 (7.1)	24.2 (8.2)	23.8(7.1)	21.6 (5.9)	<i>no differences</i>
Sum of SUD Diagnoses	2.8 (2.0)	2.3 (1.8)	2.5(1.9)	3.6 (2.3)	NG/Sub < GAD

NG= No GAD group

Sub= Subclinical GAD group

GAD= GAD diagnosis group

Table 3

Comorbidity of Use Disorders by GAD Group

Use Disorders	Total (N=277)	No GAD (N=151)	Subclinical (N=69)	GAD (N=57)	Differences (<i>ps</i> <.05)
Alcohol	246 (88.8%)	133 (88.1%)	62 (89.9%)	51 (89.5%)	<i>no differences</i>
Cocaine	132 (47.7%)	61 (40.4%)	35 (50.7%)	36 (63.2%)	NG < GAD
Marijuana	96 (34.7%)	44 (29.1%)	24 (34.8%)	28 (49.1%)	NG < GAD
Opioids	70 (25.3%)	33 (21.8%)	16 (23.2%)	21 (36.8%)	NG < GAD
Sedatives	57 (20.6%)	23 (15.2%)	14 (20.3%)	20 (35.1%)	NG/Sub < GAD
Amphetamines	56 (20.2%)	24 (15.9%)	9 (13.0%)	23 (40.4%)	NG < GAD

NG= No GAD group

Sub= Subclinical GAD symptom group

GAD= GAD diagnosis group