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ORIGINAL ARTICLE

Masked Depression: Profile and Severity of Symptoms and Impulsivity in Patients with Generalized Anxiety Disorder

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Abstract
Major depressive disorder may remain underdiagnosed as it can be hidden behind somatic complaints or behavioral problems such as impulsivity, making other symptoms difficult to be recognized. The aim of the study was to determine the presence of depression in a sample of patients first-time diagnosed with generalized anxiety disorder that do not refer symptoms related to depression and to compare anxiety symptoms profile and impulsivity features between depressed and non-depressed patients. A total of 86 patients with DSM-IV diagnosis of GAD were recruited from the outpatient psychiatric services of the General Hospital of Comalcalco, Tabasco. Anxiety symptom severity and impulsivity were assessed with previously validated instruments. Depression was rated with the Hamilton Depression Rating Scale and the sample was categorized in depressed and non-depressed patients. More than half of the patients (54.7%) were identified as clinically depressed. These patients reported more severe anxiety symptomatology and more impulsivity than non-depressed patients; depressed patients also reported more somatic symptoms (e.g., gastrointestinal and hypochondriasis) which patients might identify as anxiety symptoms. In Latin-America, it is very common to use somatic symptoms as idioms of expression of emotional distress. Therefore, in patients with GAD with high levels of somatic complaints and impulsivity, depression should be evaluated.

Keywords Comorbidity · Somatic symptoms · Generalized anxiety disorder · Major depression · Hamilton Depression Rating Scale

Nowadays, mental disorders are considered complex networks of interacting symptoms that causes mild to severe disturbances in thought, feelings, and behavior. Anxiety disorders are among the most prevalent mental disorders with estimates of current prevalence ranged between 0.9 and 28.3%. They can occur at any age and person regardless gender, ethnicity,

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social status, sexual orientation, and religion, although it has been reported that they are more common in younger persons (less than 55 years old), in women and in Euro/Anglo cultures (Baxter et al. 2013). Anxiety disorders have an important negative impact in the quality of life of affected individuals as they interfere in optimal daily functioning (Rickels and Rynn 2001; Vytal et al. 2016).

Comorbidity of psychiatric disorders has received considerable attention in the international literature as it is extremely common. The most common form of comorbidity involving anxiety is the co-occurrence of general anxiety disorder (GAD) and major depressive disorder (MDD) as some epidemiological data suggest that at least 59% of individuals with GAD meet diagnostic criteria for MDD (Carter et al. 2001). Although depression is one of the worldwide leading causes of disability (Kessler et al. 2009), it may remain underdiagnosed. In Mexico, there are social, cultural, and individual factors that prevent or delay early diagnosis and treatment of depression, mainly misconceptions about the condition: negative attitudes, believing it is a weakness of character or a problem that could improve without treatment, not knowing where to get help, among others (Berenzon et al. 2013).

Also, in the case of the comorbidity of GAD and MDD, the core affective and cognitive symptoms of MDD may be hidden behind a variety of somatic complaints or behavioral problems such as impulsivity (Miodek et al. 2007). Impulsivity, defined as a predisposition toward unplanned reactions with diminished regard to the consequences, is a common feature found in several psychiatric disorders affecting behavior and cognitive efficiency. Even though higher levels of impulsivity have been reported in individuals with anxiety disorders or with depression separately (Chachamovich et al. 2009; Jakuszkowiak-Wojten et al. 2015), there are no reports related to its severity in patients with GAD and comorbid MDD.

In general, individuals with this comorbidity have poorer clinical and functional outcomes and lower quality of life (Fried et al. 2017; Hofmeijer-Sevink et al. 2012; Nock et al. 2010). We can also assume that impulsivity features will be more prominent affecting the clinical course of the disorders. However, the negative impact of the comorbidity between GAD and MDD has not been studied among individuals first-time diagnosed with GAD.

Therefore, the aim of the present study was to determine the presence of depression in a sample of patients first-time diagnosed with generalized anxiety disorder that do not refer symptoms related to depression and to compare anxiety symptoms profile and severity as well as impulsivity features between patients with and without depression. We hypothesized that a high proportion of patients with GAD will have depression and those patients will exhibit more prominent anxiety symptoms related to somatic complains and higher levels of impulsivity than those without comorbid depression.

Methods

All procedures of the present study were in accordance with ethical standards of the Helsinki Declaration (World Medical Association 2013). The Ethics Review Board of the General Hospital of Comalcalco where patients were recruited and the University of Tabasco (UJAT-DAMC), Mexico approved the study. After receiving a

comprehensive explanation of the nature and aims of the study, all patients enrolled gave their written informed consent to take part voluntarily in the study.

Patients

A total of 86 patients with GAD according to DSM-IV criteria (American Psychiatric Association 1994) were consecutively recruited from the outpatient psychiatric services of the *General Hospital of Comalcalco, Tabasco.* All patients were on their first contact with a psychiatric facility due to anxiety symptoms and had never received any psychotropic medication for the treatment of these symptoms. Also, none of the patients' referred symptoms is related to depression. Patients with concomitant neurological illness, current substance abuse or a history of substance dependence, or who were agitated during the initial interview were excluded.

Assessments

Demographic data were collected from a direct clinical interview with the patient. Anxiety symptom severity was rated with the Hamilton Anxiety Rating Scale (Hamilton 1969), which comprises 14 items with a total score range from 0 to 56 with higher scores indicating reflecting more severe symptoms and a score $\geq$ 14 suggested as an indicator of severe anxiety (Lobo et al. 2002). It has shown adequate interrater reliability for its use in psychiatric Mexican patients (Berlanga et al. 1991; Nicolini et al. 1988). The 15-item self-administered Plutchik's Impulsivity Scale (Plutchik and Van Praag 1989) scored in a Likert scale from 0 to 4 (score range = 0–45) was used to measure the subject's tendency to engage in impulsive, spur-of-the-moment behaviors. A score $\geq$ 15 was used as an indicative of moderate impulsivity traits in the present study. This scale has been previously validated in Mexican population with adequate construct validity and moderate internal consistency (Cronbach's alpha 0.61) (Páez et al. 1996). In both scales, higher scores are indicative of more severity. The Hamilton Depression Rating Scale (Hamilton 1967) was used to assess the presence and severity of depression. In this 17-item scale, the score ranges from 0 to 54 and has adequate convergent validity and test-retest reliability in Mexican psychiatric population (Berlanga et al. 1992). To categorize our sample in depressed and non-depressed patients, we used a cutoff point of 14 to identify subjects with moderate to severe depression (Apiquian et al. 2000).

Statistical Analysis

All analyses were carried out with version 20.0 of the SPSS statistical software (SPSS, Chicago, IL). Values for categorical variables are presented in frequencies and percentages and with means and standard deviations (S.D.) for continuous variables. Contingency table chi-square tests were used to test differences among depressed and non-depressed patients for categorical variables and independent samples *t* tests were used for continuous variables. The distribution of the analyzed factors was verified by the Kolmogorov-Smirnov test. The effect size was computed for the significant results obtained in the chi-square tests (Cramer's *V*) and of the *t* tests (Cohen *d*). The significance level for tests was established at $\alpha \leq 0.05$.

Results

Sample Description and Clinical Features

From the patients included, 79.1% ($n = 68$) were women, with a mean age of 43.5 (S.D. = 15) years old and the length of education was 6.8, S.D. = 3.4 years. Most of the patients were married ($n = 61$, 70.9%) and were on household activities ($n = 58$, 67.4%), while only 24.4% ($n = 21$) have an economically remunerated activity.

The Hamilton Anxiety Rating Scale score was 25.5 (S.D. = 10.2) indicating severe symptomatology at the time of the study. Mean scores of both psychological (13.2, S.D. = 5.4) and somatic anxiety (12.3, S.D. = 5.6) were similar. Impulsivity features according to the mean total score of the Plutchik's Impulsivity Scale were moderate (21.4, S.D. = 6.2).

In assessing the presence and severity of depression with the Hamilton Depression Rating Scale, the mean score reported by the patients was of 15.9 (S.D. = 6.8) which reflects moderate depression. More than half of the patients with GAD ($n = 47$, 54.7%) were identified as clinically depressed using the cutoff point of 14 in the Hamilton Depression Rating Scale.

Demographic Characteristics, Impulsivity Traits, and Anxiety Severity Between Depressed and Non-depressed Patients

The Kolmogorov-Smirnov test showed normal distribution of the continuous variables on both groups with p values > 0.05.

All demographic features were similar between depressed and non-depressed patients. Depressed patients reported more severe anxiety symptomatology and more impulsive features (in terms of self-control and total impulsivity score) than non-depressed patients, all with a medium to large size effect (Table 1).

Finally, we determined which symptoms of the Hamilton Depression Rating Scale were significantly different between depressed and non-depressed patients. For this, symptoms were categorized in absent (score of 0) and present (score ≥ 1). The comparison between groups is shown in Table 2. The comparison of all symptoms showed a medium size effect with the exception of the symptoms: somatic (gastrointestinal), hypochondriasis, and loss of weight with a small size effect.

Discussion

In the present study, patients with GAD with and without depression where compared in terms of their anxiety severity, profile of symptoms, and impulsive features in order to elucidate the interaction of such variables producing a more complex scenario for those with comorbid major depression disorder (MDD) that includes not only severe clinical pictures but making difficult the diagnosis of MDD itself.

As it was hypothesized, in our sample, those with GAD and depression exhibit more severe anxiety symptomatology and impulsive behaviors. When a detailed analysis of such variables was done, the main difference in anxiety severity between these groups seems to be due to somatic anxiety (especially gastrointestinal and health anxiety or hypochondriasis), while higher scores in impulsivity were explained particularly because of the perception of self-control problems.

Table 1 Demographics, substance use and impulsivity between groups

	Non-depressed patients		Depressed patients		Statistics
	$n = 39$		$n = 47$		
	n	%	*n*	%	
Gender					
Male	8	20.5	10	21.3	$x^2 = 0.008$, df 1,
Female	31	79.5	37	78.7	$p = 0.93$
Marital status					
Single	13	33.3	12	25.5	$x^2 = 0.62$, df 1, $p = 0.42$
Married	26	66.7	35	74.5	
Laboral status					
Unemployed	29	74.4	36	76.6	$x^2 = 0.05$, df 1, $p = 0.81$
Employed	10	25.6	11	23.4	
	Mean	SD	Mean	SD	
Age	43.2	13.9	43.7	17.0	$t = 0.12$, df 84, $p = 0.90$
Length of education (years)	6.5	3.7	7.0	3.1	$t = -0.54$, df 84, $p = 0.58$
Hamilton Anxiety Scale					
Psychological[a]	10.6	4.7	15.3	5.0	$t = -4.44$, df 84, $p < 0.001$
Somatic[b]	10.9	4.7	13.6	6.0	$t = -2.28$, df 84, $p = 0.02$
Total[c]	21.5	8.6	28.9	10.2	$t = -3.59$, df 84, $p = 0.001$
Plutchik Impulsivity Scale					
Self-control[d]	8.1	3.3	10.4	3.3	$t = -3.17$, df 84, $p = 0.002$
Planning of future action	5.7	2.3	5.9	2.1	$t = -0.13$, df 84, $p = 0.89$
Physiological behavior	1.6	1.3	2.0	1.3	$t = -1,08$ df 84, $p = 0.28$
Spontaneous behavior	3.8	2.0	4.5	1.9	$t = -1.63$, df 84, $p = 0.10$
Total[e]	19.5	6.7	22.9	5.3	$t = -2.59$, df 84, $p = 0.01$

Cohen *d* effect size:

[a] 0.96

[b] 0.50

[c] 0.78

[d] 0.69

[e] 0.56

Viewing these results from the perspective of psychopathology, which conceptualizes mental disorders as complex networks of interacting symptoms (Fried et al. 2017), a causal interplay between severe somatic symptoms leading higher levels of hypochondriasis and the perception of being losing self-control may be the features that link both GAD and depression. Congruently, Wittchen et al. (2000) confirmed, through their prospective-longitudinal study, that anxiety disorders including GAD and with the exception of panic disorder are almost always primary conditions that substantially increase the risk for secondary depression and that certain clinical characteristics of anxiety disorders are related with such increased risk to develop major depression.

Given that the comorbidity of anxiety and depression increased impairment and disabilities (Wittchen et al. 2000), depressive symptoms should be evaluated in patients with anxiety disorders, especially in those with GAD and high levels of somatic and/or health anxiety. In this sense, as Fried et al. (2017) suggest, a network analysis of co-occurring symptoms may yield insights toward a more personalized, comprehensive, and effective treatment of our patients.

Nevertheless, in our sample of patients first-time diagnosed with generalized anxiety disorder by a mental health professional at a psychiatric service in a general hospital, none

Table 2 Presence of specific symptoms of depression between groups according to the Hamilton Depression Scale

	Non-depressed patients		Depressed patients		Statistics	Cramer's *V*
	n = 39		*n* = 47		x^2; df; *p*	
	n	%	*n*	%		
Depressed mood	23	59.0	42	89.4	10.66; 1; 0.001	0.35
Feelings of guilt	6	15.4	27	57.4	15.94; 1; < 0.001	0.43
Suicide		0	14	29.8	13.87; 1; < 0.001	0.40
Insomnia early	20	51.3	42	89.4	15.36; 1; < 0.001	0.42
Insomnia middle	3	7.7	28	59.6	24.88; 1; < 0.001	0.53
Insomnia late	3	7.7	21	44.7	14.49; 1; < 0.001	0.41
Work and activities	22	56.4	42	89.4	12.15; 1; < 0.001	0.37
Retardation: psychomotor	10	25.6	29	61.7	11.18; 1; 0.001	0.36
Agitation	31	79.5	43	91.5	2.55; 1; 0.26	–
Anxiety (psychological)	38	97.4	47	100.0	1.21; 1; 0.26	–
Anxiety somatic	35	89.7	46	97.9	2.57; 1; 0.10	–
Somatic (gastrointestinal)	28	71.8	43	91.5	5.74; 1; 0.02	0.25
Somatic symptoms general	34	87.2	46	97.9	3.75; 1; 0.08	–
Genital symptoms	11	28.2	20	42.6	1.90; 1; 0.16	–
Hypochondriasis	29	74.4	44	93.6	6.16; 1; 0.01	0.26
Loss of weight	1	2.6	9	19.1	5.70; 1; 0.01	0.25
Insight	14	35.9	16	34.0	0.03; 1; 0.85	–

was diagnosed with depression. This might be also due to the presence of prominent somatic symptoms as idioms expressing emotional distress (Kirmayer and Young 1998), which is very frequent in Latin-American countries (including Mexico) (Escobar 1987; Goldberg et al. 2016; Isaac et al. 1995; Muñoz et al. 2005). Clearly, and in congruence with Desjarlais (1996), the cultural background influences whether depression will be expressed in psychological, emotional, or in physical terms. Thus, it should be considered part of the diagnostic procedure of common mental disorders.

Conclusion

Despite the limitations of our study, including that we did not explore or control the contribution of several variables that could explain the co-occurrence of depression in our patients (such as the length of GAD and the experience of adverse life events, for example), our findings support previous empirical data regarding the role of impulsivity in increasing the risk of comorbidity of mental disorders (Moeller et al. 2001), this time in the case of GAD and MDD and suggest that somatic symptoms may hide the presence of depression, which highlight the need for its routinely evaluation in this particular group of patients. In addition to the previously mentioned variables, future research should also include the assessment of individual variables (such as personality features) and social context (e.g., family environment) as they may impact the expression of impulsivity as well as GAD and depression. Also, the evaluation of previous knowledge and believes about mental disorders may be important for the incorporation of psychoeducational programs for later identification of symptoms and maybe, relapse prevention. Additionally, behavioral and pharmacological interventions that are effective for treating impulsivity and somatic complains should be incorporated and evaluated as part of the treatment of these patients.

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Compliance with Ethical Standards

All procedures of the present study were in accordance with ethical standards of the Helsinki Declaration (World Medical Association 2013). The Ethics Review Board of the General Hospital of Comalcalco where patients were recruited and the University of Tabasco (UJAT-DAMC), Mexico approved the study. After receiving a comprehensive explanation of the nature and aims of the study, all patients enrolled gave their written informed consent to take part voluntarily in the study.

Conflict of Interest The authors declare that they have no conflict of interest.

Informed Consent All procedure followed were in accordance with the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all patients for being included in the study.

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