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A factor analysis of different temperament domains in a border region in rural Southern California

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Abstract

Background—Temperament has been described as an oligogenic model that confers attributes to individuals in their daily functioning. Understanding of these temperaments can help understanding psychiatric status and therapeutic needs of a patient population. As the Latino population grows providers need to become more familiar with their psychiatric status.

Objective—To describe how the characteristics of different temperament domains in a community vs a private practice clinic of patients being treated for a mood disorder.

Methodology—Retrospective record review was conducted in 117 patients with mood disorders who received the Temperament Scale (TEMPS). Forty nine were from a community clinic (CM) and 68 from a private practice (PP).

Results—The following temperament domains were found. In PP: depressed 17/69 (25%); cyclothymic 18/69 (26%); hyperthymic 16/69 (23%); anxious 14/68 (20%); irritable 4/69 (5%). Among CM: depressed 10/49 (20%); cyclothymic 14/49 (28%); hyperthymic 8/49 (16%); anxious 15/49 (30%); irritable 2/49 (5%). Using factor analysis to determine the significant domains among clinics, cyclothymia (0.82) and irritability (0.81) were the most relevant, regardless of psychosocial background and language differences.

Limitations—Cross-sectional retrospective study without longitudinal follow up.

Conclusion—This study elucidates how temperament domains could be considered a valuable tool in evaluating patients in mood disorders clinic. The tool elucidates valuable characteristics that could be applied for guidance in diagnosis and treatment without being biased by different socio-cultural background or language differences. The factor analysis helps elucidate the

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Conflict of interest

- Dr. Camacho has participated in the speaker's bureau of Janssen, Pfizer and Azur Pharma and has been in the advisory board for Janssen.
- Dr. Ng is in the speaker's bureau for Astra-Zeneca, Novartis, Bristol-Myers.
- Dr. Matthews and Dr. Simmons do not have any conflict to disclose.

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None.

pertinence of TEMPS scores that may not be the focus of clinical intervention although they contribute significantly to the structure of an individual's temperament, specifically emotional lability (i.e., cyclothymia and irritability).

Keywords

Temperament; Rural; Cyclothymia

1. Introduction

Temperament has been described as an oligogenic model of dilute phenotypes that confer adaptive advantages to individuals in their daily functioning in society. The different types of temperaments described (Depressive, cyclothymic, hyperthymic, anxious and irritable) help understand the different modalities of coping mechanisms that individuals use to express themselves as human beings in the society (Akiskal and Akiskal, 2005). The different types of temperaments have been correlated with bipolar spectrum disorders. Recent reports have linked these conditions to the individual's ability to function in their community (Nowakowska et al., 2005).

One well validated scale that explores the main temperament subtypes is the Temperament Scale (TEMPS; reference and real full name). This instrument has very good reliability and internal consistency (give values). This scale provides both a continuous measure and cut-off scores for temperament traits. Further work is needed to demonstrate the variation of these domains depending on their co-morbid mood or anxiety disorders among different individuals and in different populations (Placidi et al., 1998; Akiskal et al., 2005).

An important factor that clinicians face in their daily practice is the ethnic distribution of mood and anxiety disorders among certain populations. According to the US Census Bureau, the Hispanic population rose from about 9.1% (22 million) in 1990 to 13.4% (39 million) in 2003 (US Census et al., 2003). Mexican Americans constitute close to 60% of the total US Hispanic population, becoming the largest Hispanic group (Grant et al., 2004). Data from the Mexican American Prevalence and Services Survey (MAPSS) conducted in Fresno County, California in the early 90s, showed that US-born Mexican Americans have higher rates of mood, anxiety disorders compared to Hispanics born in Mexico. These findings were recently replicated and extended to foreign born Non-Hispanic Whites, raising the issue of the increased co-morbidity of mood and anxiety disorders among US born Hispanics (Vega et al., 1998; Grant et al., 2004).

The literature has recently reported the continuum diathesis between bipolar spectrum disorder and co-morbid anxiety conditions among Latino patients seen in a semi-rural community clinic (Dilsaver et al., 2008). Additionally, due to the high prevalence of anxiety disorders, the clinical identification of bipolar spectrum disorders is frequently overlooked. Moreover, treatment with antidepressants, which is the landmark for anxiety disorders could complicate the evolution of a bipolar diathesis (El-Mallakh and Hollifield, 2008). To our knowledge, little attention has been placed to the clinical representation of the different temperament domains as predictors of possible anxiety or mood disorder diathesis, especially among Latinos. Based on the above rationale, we collected TEMPS scores among rural Latino and non-Latino psychiatric out-patients from two different clinic populations, with different educational backgrounds, to educate treating therapists as to the key temperaments variables and the potential informational loadings so as to increase understanding and advance therapeutic goals.

2. Methodology

A retrospective chart review was performed between January 1st of 2005 and December 31st of 2007 looking at the different temperament domains reported by patients diagnosed with an anxiety or mood disorder attending a rural community clinic in Imperial County, California and a private practice located in the same county. The TEMPS is routinely administered in both clinics as a part of the patient's evaluation to better understand how their temperament is influencing their disabling mood or anxiety symptoms. Data of their diagnoses was not collected since the main objective was to look at the different temperament domains. The following data was also extracted: ethnicity, gender, level of education and preferred language. Table 1 describes the demographics of our cohort.

Descriptive statistics were used to describe language preferences, ethnicity and education of patients between clinics. Factor analysis was used to determine the distribution of the different temperament domains among patients attending the two clinics in addition to the frequency among clinics. Factor analysis was done for each group individually with 2 factors retained and results were reported with varimax rotations. The study was approved by the UCSD Human Research Protection Program.

3. Results

A total of 117 subjects were reviewed; forty nine patients from the community clinic (CC) and 68 from the private clinic (PC). The groups differed significantly on percentage Spanish speaking ($\chi^2 = 34.7, p < .001$), percentage Hispanic ($\chi^2 = 29.3, p < .001$), and level of education ($t = 6.7, p < .001$; see Table 1). The following temperament domains were found. In PP: depressed 17/69 (25%); cyclothymic 18/69 (26%); hyperthymic 16/69 (23%); anxious 14/68 (20%); irritable 4/69 (5%). Among CM: depressed 10/49 (20%); cyclothymic 14/49 (28%); hyperthymic 8/49 (16%); anxious 15/49 (30%); irritable 2/49 (5%). Thus the distribution of temperaments did not differ significantly between groups ($\chi^2 = 2.361, p = 0.670$). A repeated measures ANOVA of the TEMPS scores with Hispanic, age, gender, and education co-varied revealed no significant difference overall based on sample ($F(5,107) = 0.436, p = 0.822$), however they did differ significantly on the degree of anxious temperament ($F(5,111) = 2.736, p = 0.023$) (Table 2).

The results of a factor analysis in both samples to determine the significant domains among clinics revealed a highly consistent factor structure where cyclothymia (PP = 0.83; CM = 0.850) and irritability (PP = 0.81; CM = 0.87) were the most representative of the primary factor in both samples, regardless of psychosocial background and language differences (Table 3).

4. Discussion

We studied two distinct sets of out-patients from two rural California clinics, with a heterogeneous set of sub-syndromal psychiatric diagnosis. Inspection of the TEMPS scores revealed that primarily and relevant temperaments were not significantly different between the community and private practice clinics despite demographic differences. Subsequent factor analysis revealed that while depression and anxiety were the most often reported primary temperaments, cyclothymia and irritability were more descriptive of the overall temperaments. Thus it is suggested that although DSM related sub-syndromal diagnosis may more immediately draw clinical attention that subjective distress may be better addressed by therapeutic focus on more bipolar spectrum symptoms, specifically cyclothymia and irritability.

Controversy exists in the field of affectinology regarding diagnosing mood disorders due to the narrow criteria of the DSM-IV-TR. These criteria frequently leave clinicians in daily busy practices with limited options when the symptoms do not fit the rigid criteria. A recent large epidemiological study emphasized the importance of identifying subthreshold mood symptoms, as part of a bipolar spectrum, which usually have considerable clinical significance and caused disabling symptoms among patients (Merikangas et al., 2007).

Temperament domains especially depressive, cyclothymic and irritable have been useful in describing potential association with suicidal behavior (Rihmer et al., 2008). Previous reports have shown that irritable temperament could be part of an affective spectrum commonly seen in major depression and bipolar diathesis (Angst et al., 2008), raising concerns about emerging entities that the literature has described as mixed depressive states (Benazzi, 2008). Our preliminary data showed increased predominance of cyclothymic and irritable temperaments in a rural population where the majority is Hispanic. We did not focus on the specific diagnosis since our cohort presented mainly with non specific complains or depression, anxiety, irritability and dysphoria that, in most cases, do not fit the classic DSM-IV-TR and is consistent with previous report of multiple mood and anxiety complains present in this ethnic group (Dilsaver et al., 2008).

As a brief report, this study has several limitations. It is a cross-sectional study with a relatively small sample and without longitudinal follow up to assess any changes in the patient's temperament domains.

5. Conclusion

This study elucidates how temperament domains could be considered a valuable tool in evaluating patients in mood disorders clinic. The tool elucidates valuable characteristics that could be applied for guidance in diagnosis and treatment without being biased by different socio-cultural background or language differences. This factor analysis helps elucidate the pertinence of TEMPS scores that may not be the focus of clinical intervention although they contribute significantly to the structure of an individual's temperament, specifically emotional lability (i.e., cyclothymia and irritability).

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Table 1

Group demographics mean and standard deviation.

Group	Count	Female	Spanish Speaking	Hispanic	Age	Education
County	49	71%	76%	90%	45.29 (13.11)	8.92 (3.62)
Private	68	71%	25%	35%	35.19 (13.35)	13.03 (3.5)

Table 2

TEMPS scores by groups.

Group	Depressed	Cyclothymic	Hyperthymic	Irritable	Anxious
County	0.61 (0.53)	0.67 (0.55)	0.37 (0.44)	0.42 (0.41)	0.67 (0.55)
Private	0.53 (0.23)	0.55 (0.24)	0.44 (0.23)	0.41 (0.25)	0.55 (0.25)

Table 3

Factor analysis by groups, two factors retained with varimax rotations.

Factor	Private		County	
	1	2	1	2
Eigenvalue	2.525	1.262	2.852	0.945
Depressed	0.541	−0.737	0.670	−0.592
Cyclothymic	0.829	−0.212	0.850	−0.217
Hyperthymic	0.071	0.914	−0.064	0.940
Irritable	0.811	0.249	0.871	0.069
Anxious	0.735	−0.346	0.665	−0.366