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Association of depressive phenotype with affective family history is mediated by affective temperaments

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Abstract

Increasing data support an association of cyclothymic temperament with bipolarity, but our knowledge about the relationship of affective temperaments (ATs) to depressive symptoms based on inheritance in a non-clinical population is limited. The aim of this article was to demonstrate how ATs and affective family history relate to the depressive symptoms in a general population. Subjects comprised 501 Hungarian adults who completed a background questionnaire, the TEMPS-A, the Zung Self-Rating Depression Scale (ZSDS) and the depression subscale of the Brief Symptom Inventory (BSI-D). Stepwise linear regression was performed to analyse the role of ATs and affective family history (AFH_0 and AFH_1) in the variance of ZSDS and BSI-D scores. Cyclothymic, depressive and anxious temperaments have a significant role in the explained variance of depression scores, and they are all significantly related to AFH_1. Significant differences were found between AFH_1 and AFH_0 groups in ZSDS and BSI-D scores, and these effects were eliminated if ATs were entered as covariates. The probability of having any dominant temperament was more than two-fold in group AFH_1 compared with AFH_0 (OR=2.33). Our results suggest that a crucial part of inherited factors of depression is mediated by affective temperaments.

Keywords: TEMPS-A; Affective spectrum; Subclinical depression; General population; Dominant temperament; Depressive endophenotype; Family history

1. Introduction

It has been shown in several studies that both inherited and environmental factors play a significant role in affective disorders (Dunner et al., 1976; Levinson, 2006; Sullivan et al., 2000). However, we still do not have sufficient knowledge concerning the inherited background of these disorders and how these influence the manifestation of the illness through interaction with environmental factors. There are data available from case–control studies describing differences between healthy and clinical populations with depression. Although previous studies have proposed that affective disorders need to be interpreted as part of an affective spectrum also involving premorbid, subclinical, atypical or vulnerable subpopulations, research in this field has paid relatively little attention to these so far (Judd and Akiskal, 2000).

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Affective temperaments (ATs) are hypothesized to be associated with the genetic basis and the phenotypic expression of affective disorders (Whittle et al., 2006) and their relevance to endophenotype studies is also proposed (Gonda et al., 2006). ATs may be a genetically determined part of personality, remaining relatively stable during a lifetime, and being a potential nucleus for affective disorders (Akiskal and Akiskal, 2005). Affective temperaments, as defined by Akiskal, are regarded as subaffective manifestations of affective disorders (Akiskal et al., 2003). To date, the majority of results based on family history reports suggest that cyclothymic and hyperthymic ATs could play a significant role in the emergence of bipolarity (Cassano et al., 1992; Chiaroni et al., 2005; Evans et al., 2005; Kelsoe, 2003), and this supports the spectrum concept of bipolarity where the cyclothymic temperament is considered a mild version of a pathological state (Kesebir et al., 2005). Although several authors hypothesized associations between ATs and affective disorders (Akiskal, 1995; Kesebir et al., 2005; Rottig et al., 2007), to our knowledge, there are no studies available concerning the association of family history, ATs and depressive symptoms in a general population representing the affective spectrum.

The aim of our study was to demonstrate how affective temperaments (TEMPS-A) and affective family history relate to the emergence of depressive symptoms (as measured by the Zung Self-Rating Depression Scale (ZSDS) and the Brief Symptom Inventory (BSI)) in a general population.

2. Methods

2.1. Subjects

The study group comprised 501 unrelated Hungarian volunteers (350 women and 151 men). Participants were recruited from the practices of general practitioners, adult students participating in a long-distance learning program and a community-based population. The inclusion of subjects was random and independent of any positive psychiatric anamnesis. The mean age of participants was 33±3.2 years. All subjects were Hungarian and of Caucasian origin, and they gave written informed consent before entering the study. The study was approved by the Central Ethics Committee. The descriptive data of the study population are shown in Table 1.

Table 1
Parameters of the study population.

	n_{males}	$n_{females}$	$\sum n$	$\sum\%$
Gender	151	350	501	100
Education				
No qualification	2	7	9	1.7
GSCEs/O levels	29	33	62	12.3
A levels	98	256	354	70.6
Degree	22	46	68	13.5
Prevalence of depression				
Lifetime prevalence for depression	31	87	118	23.6
One-year prevalence for depression	8	33	41	8.2
Psychiatric family history				
Depression in family history	14	66	80	15.9
Suicide in family history	8	28	36	7.1
Bipolarity in family history	2	8	10	1.9
Total AFH	16	80	96	19.2

2.2. Measures

Detailed background information was obtained from all participants with the background questionnaire developed by our team. This well-structured self-rating questionnaire consists of 22 items and collects detailed information about medical history including psychiatric history and medications, family psychiatric history and socio-economic background. In the family medical history section, subjects had to indicate if depression, bipolar disorder/manic episode/manic depression or suicide was present in their families. We coded this information as a combined binary variable indicating whether any of the above indicators of affective-related positive family history was present or not (AFH_1 and AFH_0). Suicide was included because of the strong evidence on the relationship between depression and suicide and because it has been described previously that relatives of persons with mood disorder who attempt suicide are at a significantly greater risk for mood disorder (Mann et al., 2005).

All subjects completed three self-rated psychological questionnaires: the TEMPS-A, the Zung Self-Rating Depression Scale (ZSDS), and the depression subscale of the Brief Symptom Inventory (BSI-D).

The TEMPS-A questionnaire (Temperament Evaluation of the Memphis, Pisa, Paris and San Diego-Autoquestionnaire) measures affective temperaments. It is a 110-item (109 for males) self-report psychological instrument with subscales representing five affective temperament dimensions: depressive, cyclothymic, hyperthymic, irritable and anxious (Akiskal et al., 2005). Average values were calculated and dominant temperaments (DTs) based on a z-score (mean±2S.D.) were also determined (Kesebir et al., 2005; Vahip et al., 2005; Vazquez et al., 2007). Persons carrying and not carrying any dominant affective temperament based on any subscale score were grouped separately (DT_1 or DT_0).