Journal of Affective Disorders 131 (2011) 37–44

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research report

Confirmation of the factorial structure of temperamental autoquestionnaire TEMPS-A in non-clinical young adults and relation to current state of anxiety, depression and to schizotypal traits

Yannick Morvan [a,b], Feriel Tibaoui [a,b], Marie-Chantal Bourdel [a,b], Henri Lôo [a,b], Kareen K. Akiskal [c], Hagop S. Akiskal [c], Marie-Odile Krebs [a,b,*]

[a] Inserm, Laboratoire de Physiopathologie des Maladies Psychiatriques, Centre Psychiatrie et Neurosciences, U894, Paris, France
[b] Université Paris Descartes, Faculté de Médecine Paris Descartes, Centre Hospitalier Sainte-Anne, Paris, France
[c] VA Hospital and International Mood Center, University of California at San Diego, La Jolla, CA, USA

ARTICLE INFO

Article history:
Received 19 July 2010
Accepted 13 January 2011
Available online 17 February 2011

Keywords:
Temperament
Schizotypy
TEMPS-A
French University students
Confirmatory factor analysis

ABSTRACT

Background: The 39-item TEMPS-A self-rated questionnaire assesses affective temperaments. We examined the factorial structure of its French version in a large sample of young adults and examined the relation to schizotypy, depression and anxiety.
Method: University students were enrolled during their mandatory preventive health visit in the University medical facility (n = 3807, 19.9 ± 2.5 y.o.). They answered to the 39-TEMPS-A questionnaire, the Schizotypal Personality Questionnaire (SPQ) and the Hospital Anxiety Depression Scale (HADS). We performed an exploratory Factorial Component Analysis (FCA) with varimax rotation of the 39-TEMPS-A in half of the sample, randomly selected, followed by a Confirmatory Factor Analysis (CFA) in the remaining subsample. TEMPS-A dimensions were correlated to HADS and SPQ sub-scores.
Results: A five-factor structure was found by PCA and confirmed by the confirmatory analysis. The scale showed a good internal consistency (whole scale Cronbach's α: 0.83 and from 0.78 to 0.59 for *Cyclothymic, Depressive*, *Irritable*, *Hyperthymic*, *Anxious* subscales). *Depressive* and *Anxious* TEMPS-A subscales were moderately correlated to HADS Depression and Anxiety subscales (Spearman ρ = 0.37 to 0.33). *Cyclothymic* and *Depressive* TEMPS-A *subscales* were respectively correlated to SPQ Paranoid (ρ = 0.53) and Negative dimensions (ρ = 0.52).
Limitation: Representativity of the sample (higher education, response rate).
Conclusion: We confirmed the five factor structure of the 39-item TEMPS-A in a large non-clinical population of young adults and found consistent correlations with anxiety – depression state markers and schizotypal traits.

1. Introduction

From a historical perspective, the concept of affective temperament takes its roots in the humorale theory developed by Hippocrates (Akiskal and Akiskal, 2007). The concept was reintroduced by German and French classical psychiatrist such as Kraepelin, Falret, Baillarger (see (Berrios, 1993, 1999) for review). Generally, temperament is considered as a biological and genetic basis of the individual. Akiskal et al. developed a model of affective temperaments which postulates that the temperaments are trait sub-syndromic conditions of the affective pathology which plays evolutionnary role and are likely to represent the liability factors to the development of major emotional disorders (Akiskal and Akiskal, 2005). Hence, temperaments should be found in

* Corresponding author at: SHU, Laboratoire de Physiopathologie des Maladies Psychiatriques, Hôpital Sainte-Anne, 7 rue Cabanis, 75014 Paris, France. Tel.: +33 1 45 65 86 46; fax: +33 1 45 65 81 60.
E-mail address: marie-odile.krebs@inserm.fr (M.-O. Krebs).

0165-0327/$ – see front matter © 2011 Elsevier B.V. All rights reserved.
doi:10.1016/j.jad.2011.01.008

first degree relatives but also in the general population. The temperaments are present since childhood and remain relatively constant throughout the life. Four temperaments (hyperthymic, depressive, irritable, cyclothymic) were initially empirically defined (Akiskal and Mallya, 1987). A fifth factor "anxious temperament" has been more recently added (Akiskal et al., 2005b).

Several assessing tools have been developed. An initial 110-item scale based on the Temperament Evaluation of Memphis Pisa, Paris and San Diego Interview (TEMPS-I) (Akiskal et al., 1998) included dysthymic (item 1–22), cyclothymic (item 23–42), hyperthymique (item 43–63), and irritable (item 64–84) temperaments with 26 additional items describing the anxious temperament. Further studies used self-rated questionnaire derived from the original scale which was developed and validated in both a long and short versions, for example a 50-item clinical version scale (Akiskal et al., 2005a). The short 39-item version (Akiskal et al., 2005b) was built using Factorial Component Analysis (FCA) of the 110-item version (Akiskal et al., 1998). It was designed to measure temperamental variations in psychiatric patients and healthy subjects and the items were formulated on the basis on the diagnostic criteria of the emotional temperaments (cyclothymic, hyperthymic, irritable, depressive, and anxious) (Akiskal et al., 2005a). The TEMPS-A has been translated in several languages: in German (in a likert-scale form) (Erfurth et al., 2005), Japanese (Akiyama et al., 2005), Spanish (Vázquez et al., 2007), Portuguese (Figueira et al., 2008) and Italian (Preti et al., 2010). A French version, derived from the long TEMPS-A version but without the anxious temperament has been used in a clinical sample (Hantouche et al., 1998). The short 39-item self-rated TEMPS-A has been translated, back-translated independently and validated by the original author (Krebs et al., 2006). However, no work of validation of the factorial structure has yet been published for the French version. The recently published Italian TEMPS-A version found the five factor structure to be the best model to fit the data of 440 undergraduate students in a Confirmatory Factor Analysis (CFA) using bootstrapped samples (Preti et al., 2010).

As part of a large survey in students, the present work aimed at validating the French 39-item TEMPS-A, in a large non clinical sample population (3807 students). Firstly the factorial structure was analysed using exploratory FCA, then confirmed by CFA with varimax rotation. We further examined the relation of TEMPS-A temperaments with two self-rated scales that have been well-validated in non psychiatric populations: one assessing the current state of anxiety and depression (Hospital Anxiety and Depression Scale, HADS (Zigmond and Snaith, 1983)) and the other estimating personality trait of schizotypy (Schizotypal Personality Questionnaire, SPQ (Raine, 1991).

2. Method

2.1. Setting

The survey was carried out within a student population seen during their mandatory preventive health visit in a University medical facility: the *Service Inter-Universitaire de Médecine Préventive et de Promotion de la Santé de Paris* (SIUMPPS) (Paris Descartes University, UFR Biomédicale, Site des Saints-Pères, Paris). This facility systematically convenes every first-year students of the different components of 6 Parisian Universities (Paris 1, Paris 2, Paris 3, Paris 4, Paris 5, Paris Dauphine) and also of several higher education public and private schools of engineering, arts politics and economics in order to carry out the preventive health visit which is an compulsory for any student during their first-year of higher education in France. The SIUMPPS receives nearly 24 000 students each year, including 7507 students on the site of Paris Descartes University (19.9 ± 2.6 years, 62% women), during the period when the survey took place.

2.2. Sample

The study was launched at the beginning of 2007, and the inclusions were done until the end of the mid-June 2008. 7507 students were seen on the site of Paris Descartes University (19.9 ± 2.6 years, 62% women), during the survey took place. Because of logistic limitations, the survey took place only two to four days per week. The sample included 3807 students (19.8 ± 2.5 years, 62% women, response rate = 51%). When subjects refused to participate, minimal information was taken in order to test for a potential bias. The local ethical committee agreed the study procedure. The survey was strictly anonymous.

2.3. Assessments

All individuals received self-rated questionnaires, including questions on sociodemographic variables and self-administered scales among which (i) the 39-item TEMPS-A ((Akiskal et al., 2005b), French version (Krebs et al., 2006)) already described above, (ii) HADS ((Zigmond and Snaith, 1983), French version (Lepine et al., 1985a, 1985b)) and (iii) the SPQ ((Raine, 1991), French version (Dumas et al., 2000, 1999)).

The Hospital Anxiety and Depression Scale, (HADS (Zigmond and Snaith, 1983) is a short 14-item self-administered scale (0 to 3 rating) that was designed to screen for the existence depressive and anxiety symptoms during the last week in general medical practice (i.e. non psychiatric patients). A review of 19 studies on the factorial structure of HADS concluded that HADS performed as a bidimensional test (Bjelland et al., 2002). We thus considered HADS Anxiety and Depression seven items subscales for the data analysis.

The Schizotypal Personality Questionnaire encompasses 74 (Yes/No) items and is a self-administered scale that has been designed to assessed the various schizotypal traits in the general population as well as a in first degree relatives in a dimensional way, by contrast to categorial criteria from the DSM (Raine, 1991). A four factorial structure of SPQ (Paranoid, Cognitive-Perceptual, Negative and Disorganized) has been recently showed as the best model to fit data on a 825 undergraduate college students (Compton et al., 2009) and we considered this structure for the data analysis.

2.4. Statistical analysis

Incomplete questionnaires were not included in the analysis. Questionnaires were considered as incomplete if two or more items were not rated (n = 633). When only one