Journal of Affective Disorders 146 (2013) 142–145

Contents lists available at SciVerse ScienceDirect

Journal of Affective Disorders

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

Brief report

Discriminant and convergent validity of TEMPS-A[P]. Correlation with Occupational Personality Questionnaire (OPQ32) during a stressful situation

Luca Rovai [a,*], Annalisa Leonardi [d], Silvia Bacciardi [a], Angelo Giovanni Icro Maremmani [a,c], Fabio Rugani [a], Liliana dell'Osso [a], Kareen Akiskal [e,f], Hagop S. Akiskal [e], Icro Maremmani [a,b,c]

[a] Department of Psychiatry, University of Pisa, Santa Chiara University Hospital, Via Roma, 67 56100 Pisa, EU, Italy
[b] G. De Lisio Institute of Behavioural Sciences, Pisa, EU, Italy
[c] Association for the Application of Neuroscientific Knowledge to Social Aims, AU-CNS, Pietrasanta, Lucca, Italy
[d] Italian Navy Midshipman, Livorno, EU, Italy
[e] International Mood Center, University of California, San Diego, California, USA
[f] Union Nationale des Dépressifs et Maniaco-Dépressifs, Rouen, France

ARTICLE INFO

Article history:
Received 19 March 2012
Received in revised form
22 June 2012
Accepted 22 June 2012
Available online 21 August 2012

Keywords:
Affective temperaments
Personality traits
Emotional-affective state

ABSTRACT

Background: The Temperament Evaluation of the Memphis, Pisa, Paris and San Diego Questionnaire (TEMPS) has, in its self and rater-wise evaluation form, been designed to evaluate temperamental characteristics in clinical and non-clinical populations.
Methods: In this study we aim to extend the field of correlations of TEMPS to include the Occupational Personality Questionnaire, ipsative version (OPQ32i). These correlations, if present, could provide a partial contribute to the validation process of TEMPS, currently in progress in various countries. OPQ32 is a self-report personality questionnaire designed to give information on an individual's preferred behavior, as assessed in terms of a number of work-related characteristics. In 921 applicants, who were competing to become cadets in the Italian Navy, we assessed, during the entrance examination, the correlations between TEMPS-A[P] and OPQ32i.
Results: Depressive temperament implies a low level of ability to relate to others; hyperthymic temperament implies high levels of feelings and emotions, and the capability to relate to people; cyclothymic temperament appears to be distinguished by creativity and a low level of relationships with others; irritable temperament partly overlaps with cyclothymic temperament, the main difference being the higher level of energy and the lower level of empathy of irritable subjects.
Conclusions: The four affective temperaments, in our sample, proved to significantly differ in the work capacity features measured by OPQ32 factors. These observed correlations between the two tests partially contributes to the ongoing validation process of TEMPS-A[P]. From a personality standpoint this study further supports the hypothesis that temperaments belong to the realm of normality rather than that of pathology, in line with their putative adaptive role.

1. Introduction

After developing the "Temperament Evaluation of the Memphis, Pisa, Paris and San Diego Auto-questionnaire Pisa Version" (TEMPS-A[P]) (Maremmani et al., 2011b), our research team has been committed to improving its validation (1) by extending the field of correlations to other tests (convergent validity); and (2) by demonstrating that the dimensions measured by the test significantly differ both in the field of pathology and in that of normality (discriminant validity).

The correlation between affective temperament and personality has been widely investigated (Akiskal et al., 1985a; Klein, 1990; Levitt et al., 1990; Akiskal, 1992, 1994a,b; Perugi et al., 1999).

In a recent study carried out on candidates applying to become cadets in the Italian Air Force, we investigated the correlation of TEMPS-A[P] with the "Minnesota Multiphasic Personality Inventory" (MMPI) (Butcher et al., 1989) validity and clinical scales, and with an emotional-affective state questionnaire, the "Emotional-Affective State-Rating Scale" (EAS-RS) (Maremmani et al., 2011b), after the academy entrance examination (Maremmani et al., 2011b). Dominant temperamental groups significantly differed in the attitude shown in performing the test, as measured by MMPI validity scales, and in the emotional states following the test, measured by EAS-RS. On the contrary, a low level of linkage

* Corresponding author. Tel.: +39 0584 790073; fax: +39 0584 72081.
E-mail address: lucarovai@yahoo.com (L. Rovai).

0165-0327/$ - see front matter © 2013 Published by Elsevier B.V.
http://dx.doi.org/10.1016/j.jad.2012.06.036

was observed between affective temperaments and abnormal personality traits, as measured by MMPI clinical scales.

In order to continue our work of validation of TEMPS-A[P], in this study we intend to assess the correlations between TEMPS-A[P] and the "Occupational Personality Questionnaire" (OPQ32) (Saville et al., 2010), during a stressful challenge represented by the entrance examination to the Italian Navy. We chose this test because the OPQ32 is generally used to highlight the work capacity of the subjects being investigated, whereas the MMPI provides high-quality information about the presence or absence of personality disorders. Given the low correlation between TEMPS-A[P] and the MMPI pathological traits, we expect to find many more correlations between TEMPS-A[P] and OPQ32. Furthermore, the correlations between these two tests should help us to better understand the role of affective temperaments at the moment when someone chooses a profession.

2. Methods

2.1. Sample

We considered all would-be navy cadets who took part in the 2010 entrance examination to the Italian Naval Academy, in Livorno.

We selected all the applicants who were admitted to the medical and aptitude examinations, and completed TEMPS-A[P] and OPQ32i. All the subjects examined filled up an informed consent form to participate in this study.

The pertinent ethics committees in accordance with internationally accepted criteria for ethical research approved both the consent form and the experimental procedures.

The sample comprised 921 subjects; 723 (78.5%) were male, and 198 (21.5%) were female. Their mean age was 19 ± 1 years, in a range between 17 and 24. No difference between males and females was observed as regards age.

2.2. Instruments

2.2.1. TEMPS-A[P]

The Temperament Evaluation of Memphis, Pisa, Paris and San Diego-auto-questionnaire version (TEMPS-A) is a self-reporting, yes-or-no type questionnaire designed to quantify temperament in psychiatric patients and healthy subjects. It derives from the interview dedicated to the depressive, cyclothymic, irritable and hyperthymic temperaments, based on the diagnostic criteria formulated by Akiskal and his collaborators (Akiskal and Mallya, 1987; Akiskal et al., 1998, 2005). In this study we used a 61-item TEMPS-A Italian version (made in Pisa) directly derived from the Italian version of TEMPS-I (TEMPS-A[P]).

2.2.2. Occupational Personality Questionnaire (OPQ32)

The OPQ32 is a self-report personality questionnaire designed to give information on an individual's preferred behavior on a number of work-related characteristics (Saville et al., 2010).

The questionnaire measures 32 facets of personality that are considered relevant to occupational uses such as selection, promotion, counseling, development, team building, organizational change and audits, training needs analysis and research.

The 32 facets of personality are grouped into three domains that are divided into sub-domains as follows:

1. Relationships with people.
2. Thinking style.
3. Feelings and emotions.

The test contains the "Consistency Scale", a scale that checks any issues in the way the user is responding that could affect the interpretation of the profile. When a subject scores low on the consistency scale, he/she tends to obtain intermediate scores in every item, whereas a subject who scores high on that scale tends to obtain extremely low or extremely high scores in all the items. This reflects the tendency of subjects to describe themselves by highlighting their skills, without taking up a defensive attitude toward the test. It is, therefore, a validity scale.

2.3. Procedure

All subjects filled in the OPQ32i and TEMPS-A[P] in a session during one phase of the examination.

2.4. Data analysis

In order to analyze the relationships between the two questionnaires we used the following procedure. The four (depressive, hyperthymic, cyclothymic and irritable) temperamental scores were standardized as z-scores to facilitate the comparisons between the scores recorded for the four factorial parameters. All the subjects were then grouped into different subtypes on the basis of the highest z-scores obtained for each TEMPS-A[P] factor (dominant temperament). This procedure opens up an opportunity to classify groups of subjects on the basis of the most statistically abnormal temperamental cluster.

The correlations were analyzed by comparing OPQ32 characteristics among the four dominant temperamental groups by means of one-way ANOVA followed by Scheffe's procedure.

Then we used a discriminant analysis (a powerful classification technique), applying the four dimensions of OPQ32 to predict membership of the affectively dominant temperamental group. By comparing predicted group membership with actual group membership, one can empirically measure the success of the discrimination process by observing the proportion of correct classifications. If the proportion of misclassifications is high, then the variables selected are poor discriminators. All statistical analyses were performed using the statistical routines of SPSS (version 20.0). Considering the exploratory nature of the study and the size of the sample, statistical significance was only recognized when $p < 0.01$.

3. Results

The dominant "Depressive Temperament" group comprised 232 subjects (25.2%), the dominant "Hyperthymic Temperament" group contained 406 subjects (44.2%), the dominant "Cyclothymic Temperament" group was made up of 159 subjects (17.3%), and the dominant "Irritable Temperament" group included 122 subjects (13.3%). Looking at mean z-scores and CI (95%) across factors in different dominant groups, the results for the four groups were sufficiently distinct and showed no significant overlap. This finding was confirmed by the discriminant analysis, which revealed a percentage of correctly classified "grouped" cases of 95.5%, and very few cases fell close to multiple categories.

Depressive (19.01 ± 0.9) cyclothymic (19.04 ± 0.9) and irritable (18.99 ± 0.9) dominant subjects tend to be younger ($F = 11.91$, $p = 0.000$) than hyperthymic (19.43 ± 1.1) dominant ones. Males are more frequently present in dominant irritable subjects ($N = 106$; 86.9%) and are less well represented in dominant cyclothymic ones ($n = 114$; 71.7%; chi-square 10.70 df = 3, $p = 0.013$).

Table 1 reports differences among the dominant temperamental groups with respect to OPQ32 factors. Regarding the "relationships with others" factor, dominant depressive applicants obtained scores that were significantly lower, statistically speaking, than their hyperthymic, cyclothymic or irritable peers. In particular,