



Internet Journal of Medical Update

Journal home page: <http://www.akspublication.com/ijmu>

Brief Communication

Bender-Gestalt Test correlates of prognosis in Unipolar Depression

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(Received 18 November 2009 and accepted 19 March 2010)

ABSTRACT: The Bender-Gestalt test (B-G test) was administered to examine its prognostic implications in an Ethiopian sample with unipolar depression. Total 30 patients with moderate level of depression were included in study and their time taken was compared against the performance on the B-G test. Finally, a significant difference was found between time taken and Z-scores of the test supporting the prognostic value of this test in unipolar depression.

KEY WORDS: Unipolar depression; B-G test; Prognosis

INTRODUCTION

The Bender-Gestalt test (B-G test) is the most widely administered graphic test of constructional apraxia (inability to copy the given figures). It was developed for assessing maturational level of children¹. Today, it is primarily employed as an important, valid and reliable psychological test for screening brain dysfunctions and in ruling out diagnostic confusion. For example, florid schizophrenia is manifested by disassociations, spatial separations and tendency of gestalt exaggeration, gross distortion, features of primitive scribbling, and immature looking drawing of pictures. Similarly, the features of paranoid schizophrenia on B-G test include exaggerated meticulousness, and variation in size or shape of original drawings². It has also been equally implicated in identifying the nature of some other psychological disorders, their prognosis and evaluating therapeutic recovery in all age groups. Recently, researches have studied the role of the B-G test in identifying visuomotor dysfunction as an indicator of dysfunctional cognitive abilities, as defective intellectual functioning in intellectual disabilities is not restricted to higher cognitive functions but also to more basic functions³. Murayama et al found that children with

intellectual disabilities had deficits in perceptual organisation which correlated with the severity of intellectual disabilities. In addition, higher correlations between the spatial subtests of the Developmental Test of Visual Perception and the Performance subtests of the Wechsler Intelligence Scale for Children suggested that the spatial skills and cognitive performance may have a similar basis in information processing. Studies have examined the usefulness of the B-G test in differentiating dementia with Levy bodies (DLB) and Alzheimer's disease and found that the DLB group showed significantly higher (that is worse) B-G Test scores than the other groups⁴. Similarly, McCarthy et al⁵ has used this test as a measure of visual memory. This test has also been used as a test of memory. To investigate the short-term visual memory ability of children and adolescents with severe psychiatric disorders, 82 child and adolescent inpatients and day hospital patients in a state psychiatric hospital were administered the Bender-Gestalt Test as part of a psychological assessment and then asked to reproduce the designs from memory. No significant differences were found between groups on either the Bender-Gestalt Recall, or the Wechsler Intelligence Scale for Children (WISC)-III IQs and the Digit Span and Symbol Search subtests for Psychotic Disorders (Schizophrenia, Schizoaffective Disorder, and Psychosis Not Otherwise Specified), Attention Deficit Hyperactivity Disorder, Mood Disorders or Mood Disorders with co-morbid Attention Deficit Hyperactivity Disorder (ADHD). The Coding subtest scores of the Psychotic Disorders group

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were significantly lower than the ADHD group. Analyses showed that the Bender-Gestalt Recall was related to age, performance IQ and sex. Finally it was concluded in terms of both the poor cognitive functioning of children and adolescents with persistent, severe mental illness, and the importance of developmental level when using the B-G test as a rough measure of short-term visual memory. White⁶ explored variations of Bender-Gestalt constriction and their relation to depression. He selected 20 subjects showing constriction of drawings on the upper half-page and 20 subjects showing constriction of drawings on the left half-page. The results were compared with regard to Minnesota Multiphasic Personality Inventory's (MMPI) Depression scores. Although, no significant difference was found between these groups, when the constricted groups were combined and then compared with 40 subjects who did not show constriction of Bender drawings, the constricted group had significantly higher ($p < .05$) MMPI Depression scores. Thus, variations in Bender constriction are not differently related to depression, but presence of constriction is an indicator. Zgorzalewicz and Mojs⁷ used this test in differentiating primary headaches. They selected 90 patients of migraine and 35 patients of tension headache for study and found that patients with migraine in comparison to patients with Tension Type Headache (TTH) showed important disturbances in ability of visuomotor integration on the B-G test. They concluded that diagnosed selected cognitive dysfunctions in children with primary headaches can disturb accomplishment of tasks connected with education but they do not have any important influence on general intellectual functioning.

In relevance to the present investigation, for the first time, Sahay and Singh⁸ studied time factor as a prognostic indicator and the Z-scores from Bender-Gestalt records of 62 psychiatric in- and outpatients. These patients were classified into three groups, patients with low Z-scores and good therapeutic outcome, patients with high Z-scores and poor therapeutic outcome and, patients with low Z-scores still showed poor response to treatment (The cut-off scores are not given in the reference). Total time taken by each patient in performing on B-G test was also noted. Results indicated that Z-score was a significant prognostic indicator for persons with schizophrenia, affective disorders, brain dysfunction with psychotic features, anxiety and conversion reactions, but not for obsessive compulsive disorder. Thus, time taken for performing on the B-G test proved to be an important prognostic factor, as patients who did not respond satisfactorily to the treatment took significantly more time than those who responded well to treatment. Nonetheless, the abovementioned study comprised of the sample size of 62 including

several categories of psychiatric diagnoses and did not describe the size of sample in individual category of diagnosis and included bipolar disorders (mania and depression both) along with some other psychological problems. In fact, the unipolar depression was not included in the investigation by the authors, as well as, the level of depression was also not reported which can also affect the performance on the B-G test. In addition, so far there has not been any such study in the context of Ethiopia or Africa with relevant results. Therefore, the present study was focused on the Ethiopian sample with unipolar depression only and aimed at investigating whether Z-score on B-G test (B-G test, Pascal & Suttell)⁹ could be a prognostic indicator in this disorder. It was hypothesized that the low z-scores would be found as a prognostic factor in unipolar depression.

METHODOLOGY

Sample

30 patients (18 males and 12 females) were selected from the Department of Psychiatry, Gondar University Hospital, University of Gondar, Gondar, Ethiopia. As the study was a time-limited investigation, therefore, the sample size was modest. The mean age of subjects was 26 years, S.D. = 3.46 and mean educational level was 10.21 (S.D = 1.96). All patients were from low socio-economic status and were matched on socio-demographic profile. The persons with unipolar depression on the criteria of the Diagnostic Statistical Manual of Mental Disorders-IV- Text Revised (DSM-IV-TR) were selected through purposive sampling. The patients with anxiety disorders, organic psychiatric disorders or impairment, psychotic disorders, bipolar affective disorders, co- or multiple morbidity, incomplete test performance and poor psychiatric compliance were not included in the study.

Measures

In addition to the B-G test, guidelines for psychiatric diagnosis of the DSM-IV-TR and a scale of measuring depression, Beck Depression Inventory (BDI) were also used in the study. The Diagnostic Statistical Manual of Mental Disorders-IV-Text Revised (DSM-IV-TR) is a fifth revised version of the Diagnostic Statistical Manual of Mental Disorders¹⁰ (DSM) on diagnostic criteria in Psychiatry. The BDI¹¹ is a reliable, valid and clinically useful scale of depression. Internal consistency studies found a correlation coefficient of .86 for the test items, and the Spearman-Brown correlation for the reliability of the BDI yielded a coefficient of .93. Similarly, the validity coefficient was .77 between the inventory and psychiatric

rating. In this scale, each category of items describes a specific behavioural manifestation of depression and consists of a graded series of four to five self-evaluative statements. The statements are ranked to reflect the range of severity of the symptom from neutral to maximal severity. Numerical values from 0-3 are assigned each statement to indicate the degree of severity. In many categories, two alternative statements are presented at a given level and are assigned the same weight. These equivalent statements are labelled 'a' and 'b' to indicate that they are at the same level. The items are chosen on the basis of their relationship to the overt behavioural manifestations of depression and do not reflect any theory regarding the etiology or the underlying psychological processes in depression.

Procedures

To accomplish this task, firstly the persons with psychiatric disorder were diagnosed for unipolar depression on the Diagnostic Statistical Manual of Mental Disorders-IV-Text Revised (DSM-IV-TR) and their level of depression was measured on the Beck's Depression Inventory (BDI). Thereafter, performance of persons with moderate level of unipolar depression was examined on the B-G test, and the time taken during performance was carefully noted in minutes. The test performance was interpreted as per the guidelines of the relevant manual prepared by Pascal and Suttell⁹.

RESULTS AND DISCUSSION

The present study was conducted to find out whether the Z-score and time taken in performance on the B-G test could be a prognostic indicator. The t-test was employed and patients were compared with their time taken against the performance scores on the B-G test. The mean scores of time taken in performance and the scores on the test were 3.26 (SD = 1.09) and 75.5 (SD = 17), respectively. In the statistical analysis, a significant difference was found between time taken in performance by the subjects and their Z-scores on the B-G test ($t = 20.29 < .01$) ($p = 2.462$). The t-value was found quite high than the p-value at .01 levels which could be due to huge difference between the two means. Specifically, patients with more psycho-social prognostic factors (e.g. early onset, low socio-economic status, rural background, acute onset with life events, occupation etc.)¹² and low scores on the test were found improving more quickly than the patients with high scores in qualitative analysis. However, little was reported about the role and interactive effect of the psycho-social prognostic factors on test performance.

Further research is needed to investigate whether less complicated and severe performance on this test could be a prognostic indicator. This is because the subjects emphasized more on additions, perseveration, embellishments and exaggerated use of erasure etc., which are considered serious psychopathological signs in complicated performance. They did not emphasize less severe clinical signs, e.g., omission, closure, separation etc. The number of attempts differentiated them from schizophrenia and OCD in the qualitative interpretation of the study (Sahay and Singh⁷). Although the small size of the sample (as a large sample on unipolar depression was not available during the given time period) may limit the significance of findings, its clinical significance cannot be denied with limited application of the results at least in relation to the psychiatric population of unipolar depression in northern Ethiopia. Furthermore, prospective researches are desirable to compare the abovementioned findings with other major psychiatric disorders, e.g., anxiety disorders, different types of schizophrenia, delusional disorders, childhood psychiatric disorders, geriatric psychiatric disorders etc as well as in cross-cultural research. It is also advisable to investigate whether psycho-social factors affect the prognosis of persons with these disorders. Lastly, its applicability in case of children could also be an area of investigation

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