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BRIEF REPORT

AN EVALUATION OF THE EFFECTS OF RORSCHACH *EB* STYLE ON THE DIAGNOSTIC UTILITY OF THE DEPRESSION INDEX

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Several empirical studies have found the Rorschach Depression Index (*DEPI*) to have questionable diagnostic utility. Studies using adolescent samples suggest that the *DEPI* has limited sensitivity and fails to differentiate effectively between adolescents with and without depression diagnoses. The present study was conducted to evaluate Viglione, Brager, and Haller's suggestion that the *DEPI* may have better discriminative ability for individuals with extratensive problem-solving styles, measured by the Rorschach *EB* (Erlebnistypus) variable, compared to those with introversive and ambient styles. Comparisons were conducted between adolescents with depression-related diagnoses and adolescents with other diagnoses for each of the three *EB* groups. The results failed to support the hypothesized greater discriminative power of *DEPI* for depressed extratensives, and suggest caution in using the *DEPI* to evaluate adolescent depression.

Keywords: DEPI, EB, Rorschach, projective, adolescent, depression

The Comprehensive System for the Rorschach, first developed by Exner in 1974, has been in a dynamic state of evolution over the last 25 years. One of the important areas of expansion in this system has been the development of indices or constellations, such as the Depression Index (*DEPI*), intended to identify features relevant to diagnosis and treatment planning. The focus of this study is on the diagnostic efficacy of the *DEPI* in adolescent clinical samples.

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The original form of the *DEPI* was provided by Exner (1986) based on Rorschach variables that were found useful in distinguishing depressed from non-depressed psychiatric patients. The index was comprised of 5 criteria: Vista greater than 0, Color-Shading Blend greater than 0, an Egocentricity Index value lower than average based on age norms, the sum of Achromatic Color variables exceeding 2, and presence of more than 3 Morbid content features. The overall *DEPI* score could range from a minimum of 0 to a maximum of 5. Exner (1986) proposed that a score of 3 suggested the presence of some depressive features whereas a score of 5 indicated the presence of a significant level of depression. Revised by Exner in 1990, the

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current version of the *DEPI* contains 14 variables organized into 7 criteria. The variables that were added to increase the index's sensitivity to depression relate to excessive introspection (Form Dimension > 2), angry negativism (Space > 2), avoidance of affective stimulation (Affective Ratio < .46), low levels of psychological complexity (Blends < 4), reliance on intellectualization (Intellectualization Index > 3), a sense of isolation (Isolation Index > .24), and inability to anticipate positive relationships (Cooperative Movement < 2). Exner (1993) stated that a score of 5 suggests the presence of some depressive features while scores of 6 and 7 are more definitive indicators of depression.

The original and revised *DEPI* have been subjected to considerable scrutiny and empirical evaluation, particularly in adult psychiatric samples. While Exner has suggested that the index is promising for diagnostic and descriptive purposes, a number of independent research investigations have reported it to lack sufficient sensitivity to depressive phenomena. For example, Viglione, Brager, and Haller (1988) found that only 20% of their sample (11 of 54 participants) with a Major Depression diagnosis produced a critical *DEPI* score of 3 or 4. Thus, the index was not useful in identifying psychiatric patients with depressive symptoms. More recently, Meyer (1993) evaluated the diagnostic utility of the revised *DEPI* in a sample of 90 adult patients and found that *DEPI* total scores were not significantly different for patients with and without depression diagnoses.

The diagnostic utility of the *DEPI* has been found even more questionable in adolescent clinical samples. For example, Lipovsky, Finch, and Belter (1989) evaluated the original *DEPI*, among other Rorschach variables, in a sample of adolescents with and without a diagnosis of depression and found no significant *DEPI* score differences between diagnostic groups. Archer and Gordon (1988) used the original *DEPI* from the Rorschach to predict clinicians' diagnoses of depression in an inpatient sample of 134 adolescents. Their analyses produced a hit rate of only .49 using the *DEPI* at cutoff scores of 3, 4, or 5. The *DEPI* was, at best, able to correctly identify only 10% of depressed adolescents, reflecting a high rate of false negatives. Further, *DEPI* scores were no higher for

depressed adolescents than for teenagers with schizophrenia, personality disorders, or conduct disorder. Archer and Krishnamurthy (1997) attempted to replicate and extend the results of the Archer and Gordon study using the revised *DEPI*. Their sample of 152 adolescent patients contained a subgroup of 56 participants who had received depression-related diagnoses independent of test findings. Among the depression-related Rorschach variables examined in the study (*DEPI*, Affective Ratio, Vista, Color-Shading Blend, Egocentricity Index, Morbid, and Sum Shading), the only variable that showed significant differences between depression, conduct disorder, and other diagnoses was Vista, with depressed adolescents producing a higher frequency of Vista than all other groups. Evaluation of the classification accuracy of the *DEPI* at cutoff scores of 4, 5, and 6, respectively, produced modest hit rates of .53, .58, and .59, respectively. Thus, the overall classification accuracy of the *DEPI* did not appear to be substantially improved by the revision effort. Ball, Archer, Gordon, and French (1991) compared the diagnostic classification accuracy of the original and revised *DEPI* in a sample of 67 outpatient and 99 inpatient children and adolescents. They reported diagnostic hit rates for the original and revised *DEPI* of 51% and 46%, respectively, for outpatients, and 41% and 40%, respectively, for inpatients. The original *DEPI* yielded a 0% sensitivity rate for all participants, whereas the revised *DEPI* produced improved but markedly low sensitivity rates of 12% and 18%, respectively, for outpatients and inpatients.

Different reasons have been extended for the relatively poor diagnostic performance of the *DEPI*, such as the high mean Lambda typically produced by adolescents (e.g., Lipovsky et al., 1989). Among the most interesting propositions is the suggestion by Viglione et al. (1988; reiterated by Viglione, 1999) that the relationship between (original) *DEPI* scores and depression diagnoses in adult samples may be particularly strong for individuals with an extratensive *EB* (problem-solving) style. They found, for example, that 9 (82%) out of the 11 participants in their study who produced *DEPI* values greater than 3 were extratensives, and that these patients did not differ from other patients in

severity of self-reported depression as measured by the Beck Depression Inventory (Beck & Steer, 1987). Viglione et al. concluded that the *DEPI* may have greater discriminative power for extratensives than for introversives and ambitents. The present study was undertaken to test the hypothesis, in an adolescent clinical sample, that a significant relationship would be found between *DEPI* scores and depression diagnosis for extratensives.

Method

Participants consisted of 152 adolescents, ages 13 through 18 years, who had previously been used in research evaluating Rorschach and MMPI-A interrelationships. The demographic information for this sample is provided in Archer and Krishnamurthy (1997). All of the participants had received a *DSM-III-R* (American Psychiatric Association, 1987) diagnosis independent of assessment data and produced valid Rorschach records. The predominant diagnostic codes for the sample involved Mood Disorders (41%), and Disruptive Behavior Disorders (34%), followed by Adjustment Disorders (9%) and Substance Abuse Disorders (5%).

Participants were divided into two groups on the basis of diagnostic classification: those producing depression-related diagnoses (i.e., Major Depression, Dysthymia, Bipolar Disorder-Depressed, or Depressive Disorder NOS; $n = 56$) and those with all other diagnoses ($n = 96$). The sample was also divided based on *EB* style into Introversives ($n = 41$), Extratensives ($n = 27$), and Ambitents ($n = 84$).

The Rorschachs were administered using Comprehensive System procedures and coded by the first author. Thirty of the Rorschach protocols were also coded by an independent rater, who was a Master's level psychologist/doctoral trainee with extensive supervised experience in coding Rorschachs using the Comprehensive System, in order to evaluate interrater reliability for relevant variables. Specifically, kappa-corrected reliability values ranged from .98 for Pairs to .66 for Form Quality. The Pearson product-moment correlation for raters' *DEPI* coding was $r = .97$, and the same value was obtained using the Spearman's rank-order correlation statistic.

Results

Preliminary descriptive statistics indicated that the majority of the sample obtained a *DEPI* score of 4 ($n = 41$), with scores of 3 ($n = 35$) and 5 ($n = 33$) being second and third most common. Thirty-two percent of the sample obtained a *DEPI* score at or above the cutoff score of 5. To evaluate the role of *EB* style as a moderating variable, a series of chi-square analyses were conducted for the total sample, and separately for Introversive, Extratensive, and Ambitent *EB* groups, to examine the relationship between the *DEPI* and depression diagnoses based on a *DEPI* cutoff score of equal to or greater than 5 versus less than 5. The results of these analyses were nonsignificant. Specifically, no significant relationship was found between *DEPI* score and depression diagnosis for the 3 of 11 depressed participants with an extratensive style who had a *DEPI* score equal to or greater than 5, and the 9 of 16 nondepressed extratensives who had a *DEPI* score of equal to or greater than 5, $\chi^2 (1, N = 27) = 2.22$, $p > .05$. Similarly, the results were nonsignificant for the 4 of 14 depressed introversives and the 4 of 27 nondepressed introversives who had *DEPI* scores equal to or greater than 5, $\chi^2 (1, N = 41) = 1.11$, $p > .05$, and for the 13 of 31 depressed ambitents and 15 of 53 nondepressed ambitents scoring at *DEPI* > 5, $\chi^2 (1, N = 84) = 1.64$, $p > .05$. These results were similar to those found for the total sample, $\chi^2 (1, N = 152) = 0.70$, $p > .05$, when *EB* style was not considered in the analysis. The chi-square analyses were repeated using a *DEPI* cutoff score of equal to or greater than 6 versus less than 6, and *DEPI* equals 7 versus less than 7 for the three *EB* groups and the total sample, and also yielded nonsignificant results. For Introversives, the results at the cutoff scores of 6 and 7 were $\chi^2 (1, N = 41) = 0.24$ and 0.02, ($p > .05$) respectively. The obtained values were, $\chi^2 (1, N = 27) = 2.32$ and 0.71, ($p > .05$) respectively, for Extratensives; $\chi^2 (1, N = 84) = 0.23$ and 0.59 ($p > .05$), respectively, for Ambitents; and $\chi^2 (1, N = 152) = 0.74$ and 0.02 ($p > .05$), respectively, for the total sample.

Discussion

The *DEPI*, originally proposed by Exner in 1986 for the purpose of facilitating detection of serious

affective disturbance, has had a controversial history with scholarly debates largely revolving around issues of concurrent validity and diagnostic sensitivity. Viglione et al. (1988) attempted to address the question of the *DEPI*'s diagnostic utility by suggesting that the relationship between *DEPI* scores and diagnostic assignment is partly contingent on the participants' *EB* style. The results of the present study do not lend empirical support to Viglione et al.'s proposition. It may be observed that there was a very small trend toward greater diagnostic differentiation for extratensives, compared to introversives and ambitents, using the *DEPI*. However, this trend was actually in the opposite direction from that proposed by Viglione in that extratensive adolescents who were diagnosed with depression tended to show a greater frequency of *lower* range *DEPI* scores. Thus, while our current results are limited by a small sample size and an associated limit to statistical power for detecting proposed relationships, the direction of our results do not suggest that a larger sample would have, in itself, revealed a meaningful relationship between *DEPI* and depression diagnosis for adolescents with an extratensive *EB* style. Viglione et al. may have identified an issue of potential significance, but the phenomenon described by them appears both elusive and limited.

Exner (1993) stated that the original *DEPI* did discriminate reasonably well between depressed and nondepressed groups but yielded a high rate of false positives. Interestingly, several independent research studies have found the index to *lack* sufficient sensitivity for identifying depressive conditions, and this is particularly characteristic of adolescent samples. In a provocative article, Wood, Nezworski, and Stejskal (1996) discussed how the revision of the *DEPI* was prompted by research evidence that the original *DEPI* missed a large proportion of depressed patients. They also discussed Exner's (1993) claim that the new *DEPI* had acceptable levels of sensitivity and specificity based on his findings that 75% of inpatient depressives, but only 3% of nonpatient adults in his samples, obtained scores of 5 or higher on the revised *DEPI*. However, Wood et al. pointed out that other researchers have failed to find associations between *DEPI* scores and

either clinicians' diagnosis or patients' self-report of depression. Wood et al. suggested that one reason why the *DEPI* performed well in analyses involving the Comprehensive System's depressed reference sample, but poorly in independent replications, may be shrinkage in cross-validation. This phenomenon of cross-validation shrinkage is typically found for indices that are empirically derived from a particular sample and then applied to new samples in prediction tasks. In the case of the *DEPI*, as observed by Wood et al., the shrinkage appears to have been so extensive that the index retained little predictive power.

Given the numerous studies that have failed to find evidence of its diagnostic utility, for example the findings of Ball et al. (1991), the use of the *DEPI* in assessing adolescent depression appears suspect. Exner (1996), in his response to Wood et al., acknowledged that the Ball et al. (1991) study "raises a serious question about whether the revised *DEPI* is applicable to children and adolescents." (p. 12). The current findings furnish further evidence of the limited relationship between the *DEPI* and depression diagnoses.

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