Nicholas S. Yatron, Psy.D.
Psychology Resident, Center for Counseling Services, Fort Lauderdale, Florida.

Grant Aram Killian, Ph.D.
Associate Professor of Psychology, Nova University, Fort Lauderdale, Florida.

Alan D. Katell, Ph.D.
Associate Professor of Psychology, Nova University, Fort Lauderdale, Florida.

IMAGE-DB

Jeanne Achterberg and G. Frank Lawlis. Champaign, Illinois: Institute for Personality and Ability Testing, Inc.

Introduction

The Image-DB is a projective drawing technique much like Buck's (1948) House-Tree-Person and Machover's (1949) Draw-a-Person test. On the Image-DB, the respondent is instructed to draw his or her pancreas, the beta cells working to produce insulin, and the insulin working in the body. In the process of doing so, the patient presumably reveals attitudes toward his or her diabetes and the treatment process.

The standardization sample consisted of 45 Type I diabetic patients ranging in age from 14 to 65 years. According to Kline (1986), large samples, in the vicinity of 500 or more subjects, are required for creating norms, and it is preferable to use a stratified sample. He goes on to state that sample size must be considered in relation to the population from which the sample is derived. "A small but representative normative sample is far superior to a large but biased sample" (p. 160). Clearly, the sample size here falls short of Kline's recommendation, and it does not appear as though an attempt was made to select a random or stratified sample of subjects. The sample that was selected is not representative of the diabetic population and is not described adequately in the manual in terms of social status, geographical area, age, and sex (it is, however, described in Stevens, 1983). The Image-DB has been used in two studies since its inception. Kershaw (1979) found visual imagery and relaxation to have no effect on mean insulin dose, Clinitest measures, or symptoms of hyperglycemia or hypoglycemia, while Stevens (1983) found the Image-DB to correlate significantly with blood glucose levels. In other words, imagery receiving more favorable ratings was found to be associated with improved diabetic control.

The Image-DB package includes a cassette tape entitled "Diabetes," an imagery scoring sheet, and an interview record. The imagery scoring sheet is divided into four sections: pancreas, beta cells, insulin, and general or miscellaneous re-

sponse. The interview record similarly is subdivided into four main sections (paralleling the scoring sheet) and includes 16 questions that form a skeletal basis for the interview. The drawings and interview are scored along 16 dimensions using 5-point Likert-type scales. The dimensions include vividness, activity, strength, and size of the pancreas; vividness, activity, numerosity, size, and strength of the beta cells; vividness, quantity, and effectiveness of the insulin; and symbolism, overall strength of imagery, estimated regularity, and clinical opinion of relation of imagery to short-term disease management. The 16 scale scores are summed to yield an overall imagery score, which is then transformed into a standard score (STEN) much like the Image-CA. The manual includes a sample interview record and concomitant drawings with assigned scores as an example of the scoring process.

The Image-DB requires few materials and minimal space. Materials required for administration and scoring include a tape recorder, the cassette tape ("Diabetes"), drawing materials (paper and pencils), and the Image-DB scoring sheet and interview record. Any quiet setting with an electrical outlet, comfortable chair or place to recline, adequate illumination, and a flat drawing surface would be considered adequate. During the drawing phase the examiner's participation is minimal, but it becomes more active when asking subjects to respond to the interview questions.

Detailed information regarding methods and procedures for administering the Image-DB are clearly presented in the manual. The format for administration involves three phases. After the diabetic person is introduced to the procedure and has listened to the relaxation and imagery tape, the examiner recites a script of detailed instructions. The patient is asked to draw his or her pancreas, beta cells, and insulin. In the final phase, the structured interview is conducted.

The manual states, "crayons or paints have been used to increase response interest as well as to enhance details" (p. 209). The manual does not specify how the use of color affects scoring nor are any studies cited that investigate the use of color empirically. The same criticism leveled against the use of color in the House-Tree-Person test (see Killian, 1985) applies here. Colors do not have any absolute or universal meaning. The manual states, "it is sometimes possible to allow the patient to rate his or her own drawing on many of the scales, since the ratings are made from both the interview and the drawings" (p. 209). What is not addressed is how this may affect reliability.

The manual does not specify whether it is possible to administer the Image-DB in a group format. While it might be possible to administer the drawings in this fashion, it is unlikely that the interview could be conducted in this way as it requires variation by the clinician in order to assess the underlying meanings of the drawings most accurately. The manual does not specify the qualifications or training required of the examiner, though those outlined for the Image-CA are probably applicable here.

Practical Applications/Uses

As with the Image-CA and Image-SP (reviewed elsewhere in this volume), practical applications of the Image-DB are largely open to question. Only two studies (Kershaw, 1979; Stevens, 1983) actually have studied its usefulness and the

results have been equivocal. Achterberg and Lawlis (1984) state, "This test was designed to elicit the patient's knowledge of and response to [diabetes], and to serve to inform and redirect false notions about the disease and its impact" (p. 205). Possibly the Image-DB could be used as a vehicle for change in therapy.

As with the Image-CA and Image-SP, the Image-DB conceivably can be administered in any number of settings. Administration is relatively easy; however, scoring and interpretation requires considerable familiarity with the instrument as well as clinical sophistication, making it somewhat cumbersome and limiting in terms of who can use it. The time required to complete the drawings is contingent on the patient's work pace and may vary considerably depending on his or her work style. The post-drawing interview, which is much like Buck's (1948) House-Tree-Person post-drawing interrogation form in design and intent, can be completed within 30 to 60 minutes. Although not specified in the manual, once familiar with the Image-DB it probably takes no longer than 30 minutes to score and interpret.

General descriptions of each of the 16 dimensions are provided in the manual within the section titled "Evaluating the Imagery." Interview excerpts and illustrations of patient drawings are provided as examples of imagery receiving a high score versus a low score on a particular dimension. For each dimension, criteria are specified to aid in scoring the imagery. For example, for dimension 1 the manual states,

> assign a "3" on this scale if the person gives a general description of shape with two additional features such as color, size or temperature. Give a high score if the person expresses intricate details of appearance and a low score if the description of the pancreas is amorphous, colorless, and nondescript. (Achterberg & Lawlis, 1984, p. 221)

These kinds of hints appear throughout the text rather than being organized or clearly delineated in one place, which makes evaluating the imagery quite cumbersome. A chart or table listing scoring criteria for quick and easy reference would facilitate scoring and negate the necessity of flipping through the manual.

The quantitative scoring system involves several simple steps outlined in the manual. Scores for the 16 dimensions of the Image-DB are derived from the drawings and the records of dialogue from the structured interview. Each dimension is rated on a 5-point scale (1=very low, 3=average, and 5=very high), with scores 2 and 4 reserved for those whose images deviate only slightly from average. Each of the scale scores for the 16 dimensions are summed to produce an overall imagery score, which is transformed into a standard score (STEN) by locating the summed ratings on the left side of Table 21 and then reading directly across to find the associated STEN. When a dimension is omitted, as is frequently the case with dimension 16, the examiner is instructed to consult Table 22 and insert the mean for the particular dimension omitted when calculating the overall score. Neither computer nor machine scoring is available (nor are they necessary).

The interpretation of the Image-DB is based on both quantitative scoring and qualitative analysis, much like Buck's (1948) scoring of the House-Tree-Person. A review of Table 21, "Conversion of Raw Scores to Stens," indicates that STEN scores of 5 or 6 fall in the average range, with 3 to 4 and 7 to 8 being slightly below

or above average, and the extreme scores at either end (1 or 2 and 9 or 10) indicate extreme deviation from the mean. The conversion of raw scores to STENS simply allows the test user to determine where a patient falls within a normal distribution. Clinical inferences or interpretations cannot be made using Table 21 without evidence bearing on the validity of those inferences and/or interpretations. Qualitative analysis of the Image-DB, as with any projective technique, requires clinical sophistication and familiarity with the instrument.

Technical Aspects

The Image-DB falls short in meeting acceptable standards of reliability, validity, and normative breadth (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1985). In test construction, the types of reliability (test-retest, alternate forms, and internal consistency) and validity (content, criterion-related, concurrent, and construct) should be presented. Internal consistency (correlations of respective dimensions to the total score) yielded a coefficient of 0.97 (alpha). As specified in the manual, the overall reliability in two separate samples based on two independent scores yielded interrater reliability coefficients of 0.82 and 0.94, respectively. Interrater reliabilities for each of the 16 dimensions are not reported nor are significance levels. Apparently, these two samples are different from the standardization group, but no citation is provided for clarification.

By way of comparison, Stevens (1983) computed a total imagery score for each subject at pre-treatment and at post-treatment, as rated by two independent judges. The interrater reliability coefficient for pre-treatment ratings was 0.67 ($p < .0004$) and for post-treatment, 0.91 ($p < .0001$). Without question, there is sufficient evidence bearing on the reliability of the Image-DB. Unfortunately, the relevant training experience and qualifications of the experts used in establishing interrater reliability are not provided, and sample sizes on which interrater reliability is based fall short of Kline's (1986) recommendations (i.e., minimum of 200 subjects).

There is evidence that concurrent validity is supported at least in part because the Image-DB correlates ($r = .53$, $p < .02$) with blood glucose levels (Stevens, 1983), suggesting that subjects whose imagery is rated high show less variability in urine and blood sugar. In an attempt to establish construct validity (Stevens, 1983), raters' scores on the Image-DB were correlated with vividness subtest and total scores on the QMI (Sheehan's 1967 shortened version of the Questionnaire of Mental Imagery). Only one of the rater's pre- and post-treatment scores correlated with one subtest of the QMI, "kinesthetic" imagery vividness. Steven's findings suggest that the Image-DB is not a strong measure of general imagery vividness nor of vividness across visual, auditory, cutaneous, gustatory, olfactory, or somatic imagery modalities. While scoring of the instrument may be consistent between raters, it is not clear what the Image-DB is actually measuring. Neither content, construct, nor criterion-related validity are adequately demonstrated.

Critique

The Image-DB, one of three assessment instruments published in *Imagery and Disease* (Achterberg & Lawlis, 1984), is designed to elicit knowledge of the patient's

response to diabetes mellitus and to inform and redirect erroneous notions about the disease and its impact. As a projective instrument, the Image-DB has many innovative applications because patients will respond differently, making use of the stimuli in their own creative way. Qualitative analysis of the Image-DB entails deciphering underlying dynamics of patient drawings and interview content; however, evidence of validity for use of the Image-DB in this fashion has not been established.

As cited in the *Standards for Educational and Psychological Testing,*

> Tests and testing programs should be developed on a sound scientific basis. Test developers should compile the evidence bearing on a test, decide which information is needed prior to test publication or distribution and which information can be provided later, and conduct any needed research. (AERA, APA, & NCME, 1985, p. 25)

The authors have not compiled sufficient empirical evidence to support any intended uses of the Image-DB. It appears as though this interesting instrument was released prematurely for publication.

References

Achterberg, J., & Lawlis, G.F. (1984). *Imagery and disease.* Champaign, IL: Institute for Personality and Ability Testing.

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (1985). *Standards for educational and psychological testing.* Washington, DC: American Psychological Association.

Buck, J. (1948). The H-T-P technique, a qualitative and quantitative scoring method. *Journal of Clinical Psychology Monograph Supplement, 5,* 1–120.

Kershaw, C.J. (1979). Effects of visual imagery and relaxation on the psychophysiology of diabetic functioning (Doctoral dissertation, East Texas State University). *Dissertation Abstracts International, 40,* (2-B) 895–896. (University Microfilms No. 7918458)

Killian, G.A. (1985). House-Tree-Person Technique. In D.J. Keyser & R.C. Sweetland (Eds.), *Test critiques* (Vol. I, pp. 338–353). Austin, TX: PRO-ED.

Kline, P. (1986). *A handbook of test construction: Introduction to psychometric design.* New York: Methuen.

Machover, K. (1949). *Personality projection in the drawing of the human figure: A method of personality investigation.* Springfield, IL: Charles C. Thomas.

Sheehan, P. (1967). A shortened form of Bett's Questionnaire upon Mental Imagery. *Journal of Clinical Psychology, 23,* 386–389.

Stevens, L.C. (1983). Programs and meta-programs for the control of diabetic symptomatology: A comparative treatment study (Doctoral dissertation, North Texas State University). *Dissertation Abstracts International, 44,* (11-B) 3567. (University Microfilms No. ADG84-04340)