THE HTP AS A MEASURE OF CHANGE IN DIALYZED SCHIZOPHRENIC PATIENTS

CAROL FRANCISCO PERKINS AND HERBERT WAGEMAKER

University of Louisville

BETTE LEVY

Bridgehaven, Louisville, Kentucky

Used the House-Tree-Person as a measure of pathology in 10 schizophrenic patients of both sexes between the ages of 19 and 30 before and after experimental hemodialysis treatment. Results obtained through the quantitative HTP scoring method, and reflected in HTP IQs, indicate that significant improvement as a function of treatment is seen in pre- to post-dialysis drawings. Data analysis, using the Two Factor Repeated Measures Analysis of Variance (ANOVA), indicates that drawings done after dialysis improve at the .005 and .001 levels. The HTP evaluations support the continued use of hemodialysis as an effective treatment for schizophrenia.

Hemodialysis as a treatment for chronic schizophrenia has been attracting increasing attention over the past 5 years. Drs. Robert Cade and Herbert Wagemaker initiated research into this treatment modality in the early 1970s (Perkins & Wagemaker, 1977; Wagemaker, 1978; Wagemaker & Cade, 1977, 1978). Since that time, several other investigators have set up programs to evaluate the effectiveness of the dialysis treatment. Supported by funding from the National Institute of Mental Health, Wagemaker currently is conducting a 3-year, double-blind, sham dialysis research protocol with schizophrenic patients on dialysis. The schizophrenic patients described in this paper are those who completed the dialysis protocol prior to the May 1979 initiation of the NIMH study.

A drawing evaluation, administered by a registered art therapist, was included as one of the means of assessing the initial pathology of a patient, as well as the degree of improvement after dialysis treatment. The measure used for the art evaluation was Buck's (1948) House-Tree-Person test (HTP). This technique was chosen because of its reputed sensitivity to emotional disturbance and because of the wealth of projective detail in its three-drawing set. Although the HTP's accuracy cannot approach that of a standard IQ measure, the complex quantitative scoring approach on the HTP does offer a relatively objective standard for the assessment of change in patients' drawings.

A review of the past 30 years' literature on projective drawing techniques reveals as many critics (Adler, 1970; Cressen, 1975; Roback, 1968; Wanderer, 1969) as supporters (Hammer, 1969; Holzberg & Wexler, 1950; Kahn & Jones, 1965; Marzolf & Kirchner, 1970, 1972; Swensen, 1968). The area of hottest dispute appears to be over reliability in the diagnosis of specific disorders when no other data are available to the rater. A definitive answer remains to be given with regard to the exact extent of the usefulness of projective drawings. However, the consensus, even among the critics of the tests, is that these measures are of some positive value, albeit unspecified and unmeasured. Despite the above, and because it is the degree of severe mental disturbance rather than a specific diagnosis that is being measured for this study, the HTP test is thought to be an appropriate and useful tool.

The use of Buck's (1948) quantitative scoring manual to derive an IQ score is a provocative issue. Buck claims no high correlation between his HTP IQ score and IQs obtained by more standardized measures. "The HTP IQ," he states, "must be regarded

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1We gratefully acknowledge the assistance of Elizabeth Lin, University of Louisville, Department of Psychiatry, as statistical consultant.
as an expression of basic intelligence as that basic intelligence has been enhanced and/or depressed by nonintellective factors of the personality [p. 354].”

Whether Buck’s IQ scores are valid indicators of IQ, however, is not at issue in this research. As discussed above, the history of projective drawing techniques has revealed little quantitative material widely accepted by all researchers of the techniques. What Buck has provided, however, is a tool that may be utilized to assess drawings and changes in those drawings. The instrument, regardless of what it measures, is a means by which independent raters may evaluate a drawing. Again, it is not within the scope of this paper to assess how adequately the HTP measures IQ, but rather to set up a system to evaluate changes as a function, in this case, of the effects of the dialysis treatment.

**METHOD**

*Subjects and Procedure*

In the fall of 1976, an art therapist was added to the evaluative team that was working with the dialysis research. Because of limited funds and space, very few new patients were accepted to the research program from that time to the beginning of the NIMH project in 1979. The 10 patients whose drawings are discussed here were the first 10 to complete the protocol after art evaluations were begun. There was no selectivity in the sample once a patient had been accepted for dialysis.

All patients who applied for space in the research program were evaluated by the program’s director and by one other psychiatrist. Only those patients whose hospital and medical records clearly documented schizophrenia and whose clinical interviews presented a clear diagnosis were accepted into the program. All patients who qualified were placed on a waiting list pending admission to the program.

The age range of the 10 patients (6 males and 4 females) was from 19 to 30 years. Each patient was given the HTP drawing test by the art therapist prior to the first dialysis treatment; standard size 8X12 white paper and No. 2 pencils were the only materials used. Each patient was dialyzed once a week for the duration of the research period; the test was administered again at the end of the dialysis protocol, an average period of 12 weeks.

Because the same art therapist administered all pre- and post-dialysis HTP tests, the problem of examiner differences, sometimes cited as a variable in projective evaluations, did not arise.

The sets of pre- and post-dialysis drawings, presented in random order with names deleted, were scored according to Buck’s quantitative scoring manual by 5 independent raters (2 registered art therapists, 1 psychiatric social worker, 1 recreational therapist, and 1 research assistant in psychiatry).

**RESULTS**

Buck’s scoring system yields two principal scores, which then are computed as IQ scores: The percent of raw G score and the net weighted score. The percent of raw G score represents a concrete type of intellectual function, including the patient’s understanding of basic spatial relationships. The net weighted score reflects the patient’s skills in concept formation, or the more abstract intellectual functions.

The percent of raw G scores and the net weighted scores were examined for the pre- and post-dialysis drawings for all Ss as assessed by all raters. The analysis used was the two-factor repeated measures analysis of variance (ANOVA) (Keppel, 1973), through which it was possible to analyze the effect of the dialysis treatment on the pre- and post-treatment drawings for all the Ss. This type of analysis also permitted examination of rater bias as well as the interaction of the three examined variables (dialysis, S, and rater). Table 1 presents the results of this analysis.
The analysis indicates that the drawings done after a hemodialysis protocol improve at the .005 and .001 levels of confidence. It is important to note that rater bias and three-way interaction of variables do influence scores somewhat. These factors, however, are much less significant than is the contribution of the dialysis treatment itself. Rater bias is most likely to be an unconscious response to certain aspects of the drawings, such as style, content, etc. Three-way bias may occur because some of the scorers may respond not only to certain aspects of the drawings, but also to aspects that occur more often in either pre- or post-dialysis drawings. These factors, however, occur to a far lesser degree than the differences in pre- and post-dialysis drawings and make far less significant contribution to variance in scores. From these data, we hypothesize that there is a significant improvement in drawings done prior to and after dialysis treatment, which is attributable primarily to the treatment itself.

Figure 1 illustrates the individual changes in the percent of raw G IQ scores and net weighted IQ scores in pre- to post-dialysis drawings for each of the 10 patients. Improvement is demonstrated in the drawings of 8 patients who were treated with dialysis. This pattern roughly parallels the clinical impressions of the dialysis research team as recorded by the Clinical Global Impressions (CGI). Seven of the same 8 patients whose drawings showed marked improvement, improved from severely or markedly ill to mildly ill or better on the CGI. The 2 patients whose drawings showed no change did not progress beyond the moderately ill category and showed only minimal improvement.

The art therapist examiner also summarized particular types of changes common to the patients’ drawings that were not obvious through simple reporting of scores:

Details. The number of details included in a drawing is considered to be an indicator of mental health in that it reflects, among other things, awareness of reality and attention to external stimuli. An increase in the number of details was seen in the drawings of each of the 8 patients whose scores showed improvement from pre- to post-dialysis testing.
The 2 patients whose drawings showed no change in scores also showed no change in the number of details.

In the House drawings, 4 or more drawings showed an increase in the number of windows, window panes, shading or house materials, chimneys or heating systems. In the Tree drawings, 5 or more showed an increase in the number of branches or in foliage detail. In the Person drawing 5 or more showed an increase in eye detail, mouth detail, fingers, feet or shoes, and completion of necessary clothing detail.

**Bizarre features.** Bizarre features are considered to be indicative of mental illness or poor mental health and are defined for the purposes of this study as inappropriate omissions from or additions to a picture, such as arms without hands, a body without a head, transparencies, faceless heads, hermaphroditic figures and so forth. Reduction of, or omission of, bizarre features, therefore, connotes improved mental status. Seven of the 8 patients showing overall improvements in their drawings reduced the number of bizarre elements in their pictures and added no new ones.

**Line quality.** Four different line characteristics were noted in the pre-dialysis samples: Heavy broken, heavy continuous, shaky, and weak broken. In no drawings did sketchy appropriate lines appear. In the post-dialysis sample, the 8 patients whose scores showed improvement also showed improvement in their line quality: All were well within the limits of what could be termed sketchy appropriate. Two patients showed no improvement.
Other. Other characteristics that may relate to mental status are size of drawing, placement on the page, orientation of the paper, and first sex drawn: No consistent change was noted in the drawings for these variables.

DISCUSSION

As measured by the HTP quantitative scoring method, post-dialysis drawings of schizophrenic patients were shown to be markedly improved at a high level of statistical significance. A descriptive research approach also has shown that 80% of the patients tested showed increase in appropriate details as well as improvement in line quality. These are graphic characteristics generally considered to be indicators of mental status. Seventy percent of the drawings showed reduction in bizarre features with no new bizarre elements added. This, also, is considered to be an indicator of improvement in mental stability. Twenty percent of the drawings showed no consistent change in any area. These findings were in general agreement with the separate clinical evaluation of these same patients by the dialysis research team.

This research effort has been a prototype investigation into the effectiveness of utilizing a hemodialysis treatment for individuals diagnosed as chronic schizophrenic. Although findings are by no means conclusive, based on the small sample size and the limitations of the type of research undertaken, the results of this art evaluation support the continued use of hemodialysis as an effective treatment for schizophrenia. Subsequent research must be conducted to assess: (1) possible change in the drawings of a control group of untreated schizophrenic patients; (2) possible change in drawings of other types of populations, including normal ones, over the same period of time; and (3) the effect of test-retest experience on the drawings of schizophrenic patients, other populations, and normal individuals.

REFERENCES


