

THE FAMILY DRAWING DEPRESSION SCALE

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Described the development of a standardized rating scale for scoring Kinetic Family Drawings of depressed patients. The Zung Self Rating Depression Scale (SDS) and a Kinetic Family Drawing (KFD) task were administered to hospitalized depressives who met the DSM-III criteria for Major Depression. Using the Family Drawing Depression Scale (FDDS), family drawings were analyzed in the depressed patients, pre- and posttreatment, and in a group of normal control Ss ($N = 71$). It is concluded that the FDDS is a useful and reliable measure of depression. Potential clinical and research applications are discussed.

The Kinetic Family Drawing (KFD) was introduced by Burns and Kaufman (1970, 1972) as a procedure for exploring the family perceptions of disturbed children. They offered interpretations of the meaning of common graphic representations in family drawings based on subjective evaluations of cases. Validity, reliability, and sensitivity of this instrument were not investigated, but the KFD has since enjoyed wide clinical application (Burns & Kaufman, 1970, 1972; Garai & Frohock, 1978; Levenberg, 1975; McPhee, 1974; Myers, 1978; O'Brian & Patton, 1974; Sobel & Sobel, 1976).

A few authors have reported on attempts at objective scoring of the KFD (Burns & Kaufman, 1972; McPhee, 1974; O'Brian & Patton, 1974). However, no study to date has demonstrated convincingly that the KFD can be scored reliably by different raters, has concurrent validity with other measures, or is sensitive to changes in clinical conditions. The present study was designed to test the hypotheses that family drawings of depressed patients can be differentiated reliably from normal controls and that family drawing ratings improve as depression improves. Development of a clear and reliable scoring method for the KFD was thought to be necessary before these hypotheses could be examined.

METHOD

Scale Development

The Family Drawing Depression Scale (FDDS) was developed by the authors after a review of the literature on the KFD (Burns & Kaufman, 1970; 1972; McPhee, 1974; Myers, 1978; O'Brian & Patton, 1974; Sims, 1974) and art productions of depressed patients (Sandman, Cauthen, Kilpatrick, & Deabler, 1968; Simon, 1979; Wadeson, 1971, 1975; Wadeson & Carpenter, 1976). Items were selected empirically based on a consensus of the authors that the particular measures were likely to detect the expression of depression. Many of the subjective items were suggested by the work of Wadeson (1971, 1975; Wadeson & Carpenter, 1976), who evaluated subtypes of depression with non-standardized, free art drawings. She described several main themes of drawings of depressed patients including hopelessness, isolation, little use of color, emptiness, lack of detail, and poor expenditure of effort. Previous studies have emphasized height of figures as an im-

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portant dimension of family drawings (Koppitz, 1968; Myers, 1978). Figure height measurement was added to the FDDS because it was thought that size of self compared to others could reflect diminished self-esteem.

Many of the core symptoms of depression (Feighner, Robins, Guze, Woodruff, Winokur, & Munoz, 1972) have not been assessed systematically in previous research on art productions. Thus, items on sexual differentiation (libidinal investment), organization (concentration), interest in the environment, energy, and hopelessness (mood of depression) were included in the FDDS. Detection of other core symptoms of depression such as sleep disorder and appetite loss was not attempted. It was reasoned that these biological symptoms probably would not be reflected in graphic representations of the family.

The FDDS is comprised of 15 subscales. Five of these scales are based on objective measurements. These include the number of colors used, size of self (measured by a transparent metric ruler), isolation-objective (measured distance between self and others), and empty space. A transparent grid (28.0 cm × 21.1 cm) that contains 63 square blocks (3.1 cm height & width) is superimposed over each drawing in order to obtain an objective rating on the amount of space occupied by the family drawings.

Ten FDDS subscales are rated subjectively. These include organization, isolation of self-subjective, isolation of family, detail, sexual differentiation, energy of self, energy of family, interest of self, interest of family, and hopelessness. All items are rated on a 5-point scale.³

Research Design

The setting for this study was the Norton Psychiatric Clinic, a university-affiliated, private psychiatric hospital in Louisville, Kentucky. The treatment philosophy of this clinic is organized around constructs from general systems theory (Chase, Wright, & Ragade, 1981).

All depressed Ss were inpatients who met the DSM-III criteria for Major Depression and who had no previous history of other mental disorders such as schizophrenia, phobic neurosis, or organic brain syndrome. No patient had a history of mania. Thus, the experimental population was comprised solely of primary, unipolar depressed patients. A normal control group of persons with no history of psychiatric disorder also were studied. Forty-one depressed Ss and 30 normal controls have been studied to date in this ongoing research project. An attempt was made to match depressed patients and normal Ss on sociodemographic variables, but insufficient numbers have been studied as yet for complete matching across groups. Primary attention was paid to matching groups on level of educational attainment and family size because it was thought that these sociodemographic variables were the ones most likely to affect family drawings.

The FDDS was administered by an experienced art therapist. Ss were presented with a plain sheet of 8½ × 11 inch white paper, seven pencils (orange, brown, green, blue, red, yellow, and black) and an eraser. The standard instructions were to "draw a picture of your family members doing something." In addition, all Ss completed the Zung Self Rating Scale for Depression (SDS), a widely used self-rating depression scale (Blumenthal, 1975; Zung, 1965). Depressed patients were evaluated with these instruments at the beginning of hospitalization and again prior to discharge. Most patients were treated with tricyclic antidepressants, individual psychotherapy and group psychotherapy.

Family drawings were scored by three different raters, who were blind to each other's ratings. No training sessions or discussions between raters were held. Drawings from patients and controls were randomized based on a series of code numbers generated from a table of random numbers. Thus, raters were unaware of whether drawings were from patients or from normal Ss. Two of the raters

³A detailed scoring handbook containing the FDDS and rating criteria for each of the 5-point subscales is available from the authors upon request.

were faculty psychiatrists at the University of Louisville (raters 1 and 2), and one rater was a Master's-degree level art therapist (rater 3). Data were analyzed using the Statistical Program for the Social Sciences.

RESULTS

A comparison of the sociodemographic characteristics of the depressed patients and normal controls found that the groups did not vary significantly in level of educational attainment or in family size. However, it was not possible to match the age of patients and controls as closely. The depressed patients were significantly older ($\bar{X} = 39.10 \pm 11.77$) than normal controls ($\bar{X} = 32.80 \pm 13.17$, $p < .05$). However, age did not correlate significantly with FDDS scores. Although gender distribution also was not equivalent in the two study groups, FDDS scores were not affected significantly by the gender of the Ss. The mean FDDS rating of men was 31.13 ± 15.84 , while the mean score for women was 29.56 ± 17.24 ($p = .33$, *ns*).

The mean SDS scores of normal controls and depressed patients are presented in Table 1. All three raters were able to discriminate between depressed and non-

TABLE 1
MEAN FDDS SCORES NORMAL CONTROLS VS. DEPRESSED PATIENTS

	Rater 1	Rater 2	Rater 3
Normal controls mean FDDS ($N = 30$)	16.07 \pm 10.69	21.83 \pm 9.00	21.72 \pm 10.53
Depressed patients mean FDDS ($N = 41$)	40.65 \pm 11.84	41.89 \pm 9.53	41.62 \pm 9.40
T	8.82	8.70	8.09
<i>p</i>	<.001	<.001	<.001

depressed Ss at a very high level of significance. The mean FDDS scores of depressed Ss (40.7-41.9) were double those of normal controls (16.1-21.8).

Change in FDDS scores associated with treatment is depicted in Table 2. All raters found a highly significant improvement in FDDS ratings after treatment. FDDS scores early in treatment (39.2-40.9) were much higher than those recorded

TABLE 2
MEAN FDDS SCORES DEPRESSED PATIENTS TIME 1 VS. TIME 2

	Rater 1	Rater 2	Rater 3
Mean FDDS Time 1 ($N = 33$)	39.21 \pm 12.27	40.88 \pm 9.48	40.15 \pm 9.48
Mean FDDS Time 2 ($N = 33$)	29.27 \pm 14.39	32.88 \pm 11.34	33.24 \pm 10.75
T	4.27	4.41	3.75
<i>p</i>	<.001	<.001	<.001

at the end of hospitalization (29.3-33.2). For each category of illness, mean ratings of the three raters were strikingly similar. Interrater reliability was measured by product-moment correlations on total FDDS scores. The correlations between raters 1 and 2 ($r = .948$), raters 1 and 3 ($r = .941$), and raters 2 and 3 ($r = .958$) all reached high orders of significance ($p < .001$).

An item analysis of the FDDS is contained in Tables 3 and 4. Wilcoxon matched-pairs signed rank tests were utilized for statistical comparison because the data from individual scale items are ordinal in nature. The data from rater 1 are depicted in these tables, but other raters showed very similar discriminations between treatment groups. A detailed analysis of reliability of ratings on individual items will await collection of a larger research sample. Table 3 demonstrates that

TABLE 3
FDDS ITEM ANALYSIS NORMAL CONTROLS VS. DEPRESSED PATIENTS

Scale item	Z	p
Number of colors	4.76	<.001
Organization	4.42	<.001
Size of figures	2.21	<.05
Size self vs. others	5.08	<.001
Isolation of self-objective	4.92	<.001
Isolation of self-subjective	4.88	<.001
Isolation of family-subjective	4.56	<.001
Detail	4.79	<.001
Sex differentiation	3.76	<.001
Energy-self	5.28	<.001
Energy-family	3.57	<.001
Interest-self	4.98	<.001
Interest-family	4.74	<.001
Hopelessness	5.41	<.001
Empty space	3.70	<.001

TABLE 4
FDDS ITEM ANALYSIS DEPRESSED PATIENTS TIME 1 vs. TIME 2

Scale item	Z	p
Number of colors	.98	<i>ns</i>
Organization	.15	<i>ns</i>
Size of figures	.10	<i>ns</i>
Size self vs. others	2.72	<.01
Isolation of self-objective	2.33	<.05
Isolation of self-subjective	2.50	<.01
Isolation of family-subjective	3.49	<.001
Detail	1.66	<i>ns</i>
Sex differentiation	1.17	<i>ns</i>
Energy-self	2.94	<.01
Energy-family	2.22	<.05
Interest-self	3.05	<.01
Interest-family	2.98	<.01
Hopelessness	2.80	<.01
Empty space	2.72	<.01

all 15 items of the FDDS were significantly different in depressed patients compared to normal controls. However, Table 4 shows that only 10 of the 15 items were significantly improved in depressed patients after treatment. Interest in the environment, energy, hopelessness, and self-image (size of self) showed treatment effects. Organization, detail, and number of colors, items that are perhaps less central to the core symptoms of depression, did not change significantly with treatment. Because the patients had shown variable levels of improvement and many were not yet totally well, it is possible that a more profound treatment effect on scale items would be detected with continued follow-up.

As expected, Zung SDS scores of normal controls ($\bar{X} = 41.3 \pm 6.3$) and depressed patients ($\bar{X} = 65.6 \pm 12.0$) were quite different ($p < .001$). Self-rating of depression on the SDS scale also showed a treatment effect. SDS scores fell from a mean of 64.3 ± 12.1 to 51.3 ± 11.3 after treatment. Thus, mean SDS scores and FDDS ratings moved in the same direction with treatment, and both scales discriminated between normal and depressed Ss at about the same order of magnitude.

The relationship between SDS and FDDS scores in the 71 Ss studied to date was explored by analysis of variance. Ratings on the two instruments were related significantly ($p < .001$). The mean FDDS score for Ss who scored under 50 on the SDS was 19.75 ± 13.82 . SDS scores of 50 to 59 were associated with FDDS ratings of 33.71 ± 19.15 , and SDS scores of 60 to 69 were associated with FDDS ratings of 37.81 ± 12.85 . Finally, Ss with SDS scores over 70 had corresponding FDDS ratings of 42.75 ± 11.30 .

CASE ILLUSTRATIONS

Case One: KFD of a Normal Control, S.J., a 27-year-old Female

An example of a normal control KFD is shown in Figure 1. The total FDDS score by rater 1 on this drawing was 6. The separate items were given a rating

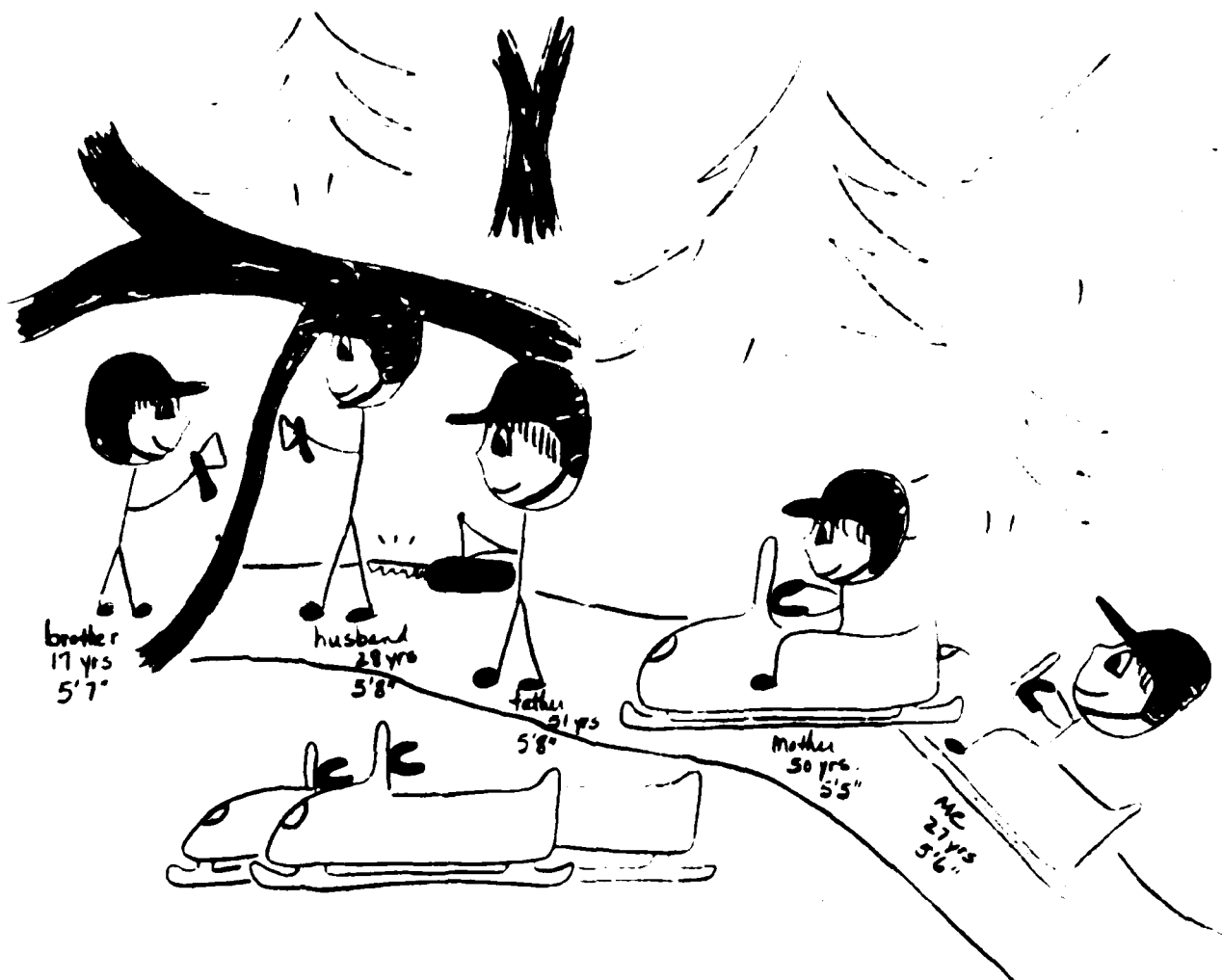


FIG. 1. KFD of a 27 year-old-female normal control.

of zero with the exception of three subscales. The size of self compared to others was given a score of 1 because the artist is slightly smaller than other family members. The objective rating of isolation also was given a score of one because the artist and other family members are closer than 4 centimeters to one another, but are not touching. Sexual differentiation was scored as 4 because there is no discernible difference between the male and female family members.

The artist depicts herself as engaged in close interaction with other family members. The entire family is full of energy, interested in the environment, and is working closely together. Much color and detail are used throughout the drawing.

Case Two: KFD of a Depressed Patient, D.S., a 25-year-old Female at Beginning of Hospitalization

Figure 2 shows the KFD of a depressed patient early in her hospitalization. Blue is the only color utilized in the drawing. Rater 1 observed the following indicators of depressive features in the KFD of this patient: Marked lack of organi-

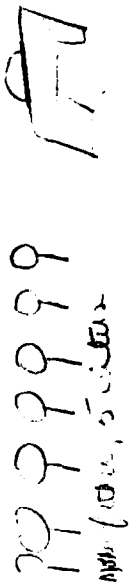


FIG. 2. KFD of a 25-year-old female depressed patient at beginning of hospitalization.

zation, small figure size (height of all figures ≤ 5 cm), omission of self, lack of detail, absence of sexual differentiation in figures, absence of movement or energy in body of artist and family members, lack of interest in the environment of artist and family members, marked intensity of hopelessness, and small percentage of space utilized. The total score given for this drawing by rater 1 was 59. All the items received a score of 4 except color (number of colors used), which received a score of 3.

Case Two: KFD of a Depressed Patient, D.S., Prior to Discharge

Figure 3 shows the KFD of the depressed female patient, D.S., prior to discharge from the hospital. The total FDDS score by rater 1 was 38, a dramatic



FIG. 3. KFD of a 25-year-old female depressed patient prior to discharge.

change from the score of 59 recorded on this patient's first drawing. Many of the FDDS subscales showed significant improvement: Greater use of color, improved organization of lines and forms into whole concepts, self included in the drawing, some attention and interest in the environment, mild intensity of hopelessness, and increased use of space.

D.S. included herself in the family drawing after treatment. She also used more detail in facial expressions and body parts in the second drawing, but use of detail is still not optimal. Although persons appear somewhat more defined in drawing two, the FDDS subscale of sexual differentiation was still scored as 4. Several subscale ratings did not change including energy of self, energy of family members, and size of figures. Comparison of this drawing with the case illustration of the normal control shows obvious differences, which indicates that the graphic representation of D.S. still shows some evidence of depression.

DISCUSSION

Most studies of art productions of depressed patients have been based on series of cases of non-standardized drawings or other art forms. Usually, common characteristics, styles or symbols were identified, which were used in an attempt to understand better how patients express their inner feelings (Sandman, Cauthen, Kilpatrick, & Deabler, 1968; Simon, 1979; Wadeson, 1971, 1975; Wadeson & Carpenter, 1978). Presumably these techniques helped to uncover latent themes or concepts that were not accessible through interviews or other evaluation procedures. This approach has been a valuable part of the clinical assessment and treatment of depression for many years. However, several limitations have resulted. Because techniques of categorizing patients and collecting data have varied widely from study to study, it has been difficult to generalize results. Also, the

lack of clearly defined methods of interpreting or scoring data has kept the research on art therapy in depression at a highly subjective level.

Increased attention to developing standardized administration and rating techniques for art productions, such as family drawings, will be needed before research in this area can be advanced. If studies cannot be compared adequately or reproduced, efforts at improving the diagnostic, predictive, and treatment value of art productions cannot be expected to gain wide acceptance. A full recognition by other disciplines, such as psychology and medicine, of the value of art therapy will demand increased rigor in research methodology. These observations prompted this attempt to develop the FDDS as a research tool.

This study has demonstrated that it is possible to standardize the presentation and scoring of KFDs of depressed patients. Furthermore, the technique described here reliably discriminated KFDs of depressed and normal Ss and detected treatment effects. Interrater reliability of FDDS scores was extremely high. However, further study will be needed before it can be concluded definitely that the FDDS has the necessary validity, reliability, and sensitivity for use in clinical research. Work on an enlarged sample population and inclusion of additional clinical groups is currently underway.

If the reliability and sensitivity of the FDDS is upheld, it could offer possibilities for multiple clinical and research applications. These could include diagnostic assessment, outcome prediction and family systems analysis. Subscale scores could be utilized to suggest target areas for treatment. Currently, the FDDS could be used as an adjunct in the art therapy evaluation of depressed patients. High scores on the FDDS (greater than 35) would be strongly suggestive of depression.

In conclusion, this preliminary study has shown that family drawings of depressed inpatients are markedly different from those of normal controls. Graphic representations of depression described by previous authors were found to be present consistently in drawings of depressed patients. Perceptions of the family system showed definite improvement with treatment. Patients depicted themselves as being more involved in the family, more energy and interest were expressed in the drawings, and more color and space were used when the symptoms of depression had improved. These changes are consistent with well-accepted depressive themes such as decreased self-esteem, low energy and interest, and hopelessness. Thus, the FDDS appears to be a sensitive indicator of depression. More extensive research is needed in order to confirm the value of the FDDS as a systematic tool for interpreting family drawings.

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VARIABLES ASSOCIATED WITH RECIDIVISM AND PROGRAM-TERMINATION OF DELINQUENT ADOLESCENTS

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Reexamined variables—parental status, age at first court contact, amount of pretreatment delinquency, age at admission, diagnosis and intelligence estimates—that have been associated with recidivism of delinquent adolescents ($N = 89$). Groups of recidivating and nonrecidivating delinquents and a third comparison group of prematurely program-terminated delinquents were compared across all variables. The results provided additional support for the association of age and cognitive variables with premature treatment termination and recidivism and generally supported previous research findings.

Studies that compared characteristics of adolescents who do and who do not recidivate after attendance at a residential treatment program for adjudicated delinquents have identified several variables that discriminate between the two groups (Ganzer & Sarason, 1973; Haynes & Bensch, 1981; Maskin, 1974). While these studies have not always focussed on the same variables, the most consistently reported discriminators appear to be IQ scores. This study reexamined the discriminating variables identified by the study with the most comprehensive list of variables (Ganzer & Sarason, 1973) and also included additional cognitive variables such as the Verbal-Performance IQ discrepancy score. This study also included a third comparison group of adjudicated delinquents who were terminated prematurely from the residential program for committing additional legal offenses. This third group was included for the purpose of clarifying the characteristics of those who have completed the residential program.

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