

PREDICTING WORK SUCCESS FOR PSYCHIATRIC PATIENTS WITH THE KUDER PREFERENCE RECORD

ALLEN M. GOSS¹
Houston VA Hospital

A number of investigators have shown the usefulness of a profile type analysis of the Kuder Preference Record—Form CH (KPR). Elevated scores among neuropsychiatric patients have frequently been reported (Feather, 1950; Steinberg, 1952; Forer, 1953; Newman, 1955; Stauffacher and Anderson, 1959; Klugman, 1960). A frequently reported finding is the “aesthetic triad”—elevated Artistic, Literary, and Musical scales. Among psychiatric patients the Social Service scale has also been found to be frequently elevated. Certain other scales have been found to be below the base norms. These frequently depressed scales are Mechanical and Scientific. Pool and Brown (1964), using 27 physically handicapped males in a VA Hospital, investigated Kuder-Strong discrepancies and found the greatest discrepancies in the Literary, Computational, and Mechanical areas. Drasgow and Carkhuff (1964) have found the KPR a sensitive instrument in measuring therapy progress and noted decreases in Artistic, Musical, and Literary scales after completion of “successful” therapy. Stauffacher and Anderson (1959) found pattern differences within a mixed group of schizophrenics.

While the KPR scores have proved useful in vocational counseling (Forer, 1955; Pool and Brown, 1964) and in investigating

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therapy outcome (Drasgow and Carkhuff, 1964), little has been done in making predictions from KPR scale scores. The first hypothesis of the present study was that KPR scales would differentiate patients in a Vocational Rehabilitation Program who gained employment prior to discharge from those patients who did not. The second hypothesis was that diagnostic groups would show different patterns on the KPR and that the differences would be important in making predictions to the employment criterion.

Procedure—Subjects. The Ss were 67 male neuropsychiatric patients accepted for the Vocational Rehabilitation Program at the VA Hospital, Houston, Texas, during the year 1965. Patients accepted to this ward receive Vocational Counseling, Industrial Therapy through supervised work experience in the hospital and/or Educational Therapy, as well as job placement assistance.

Tests. All Ss were given the Kuder Preference Record just prior or subsequent to admission for the rehabilitation program. The tests were not used in the vocational counseling of the patients, nor were the scores readily available to the counselors.

Method. The criterion employed in the study was related to the discharge of the patients. If the patient was discharged from the ward with suitable employment he was considered a "success," if he was discharged from the ward in any other category he was considered a "failure." Each scale of the KPR was analyzed with respect to the success-fail criterion for the following population categories: (1) Total population, (2) Alcoholic (*ALC*) population, (3) Anxiety-Depression (*A-D*), (4) A group designated (*P-D*) comprising patients with physical disabilities, and (5) A schizophrenic (*SCH*) population. The population categories had only minimal differences with respect to age, education, and number of previous hospitalizations.

Results. Contrary to the first hypothesis, the ten subtest areas that make up the KPR did not significantly differentiate the total population on the success-fail criterion. The means for the total population indicate that the ward population scored below the 50th percentile on Mechanical (35th), Computational (47th), and Scientific (45th) and above the 50th percentile on Artistic (70th), Literary (85th), Musical (51st), and Social Service (65th). These results are similar to results found by previous investigators. To be consistent with the implications of the first hypothesis, scores for

the success group should be above the fail group on the first three and below the fail group on the last four. Three of the scores are in the correct direction (Mechanical, Literary, Musical), two are in the wrong direction (Computational, Social Service), and two areas have the same scores (Scientific and Artistic).

Substantiation is given to the first part of the second hypothesis because differences between the success-fail populations were observed when diagnostic groups were analyzed separately. The *ALC* population had substantial raw score mean differences on Mechanical (S , 45.92; F , 37.10; $P = .12$), Scientific (S , 39.50; F , 46.60; $P = .13$), and Clerical scales (S , 41.50; F , 50.00; $P = .12$). The *A-D* group exhibited limited difference on Persuasive (S , 48.46; F , 38.43; $P = .17$); while *P-D* population showed some differentiation on Scientific (S , 40.67; F , 32.60; $P = .13$), Persuasive (S , 33.50; F , 40.40; $P = .12$), Artistic (S , 30.50; F , 21.20; $P = .06$), and Literary scales (S , 14.67; F , 22.40; $P = .09$). The *SCH* group showed the greatest differentiation on Artistic (S , 22.44; F , 30.80; $P = .10$), Literary (S , 12.78; F , 22.40; $P = .01$), Social Service (S , 54.67; F , 45.40; $P = .14$), and Clerical scales (S , 49.33; F , 41.20; $P = .13$). Complete tables of results for all groups are available (Goss, 1966).

Since the main concern of the study was to explore the possibility of predicting to a vocational-criterion, items with large P -values were included to reduce beta error and to increase power. Scores which had P -values of less than .20 were included as predictors; however, weights assigned to these scores depended on the P -value of the items. Items which had P -values between .00 and .10 were weighted + 2, 0, or - 2, depending on the relation of the item scores to the mean of the success or fail group. If a value was equal to, or exceeded the success mean, it was given the weight assigned that item; if the value was between the success and fail mean, it was given a zero; and if the value was equal to or beyond the mean fail value, it was given a minus weight. Similarly, weights of one were assigned to items with P -values between .10 and .20.

By algebraically summing the positive and negative weights of the predictor values, total weight scores of a plus, zero, or minus value were derived for each individual in the various diagnostic groups, and from these values the predictions were made. Pre-

dictively, positive values indicated success, negative values indicated failure, and zero values registered an area of unpredictability. Comparisons between the predictive derivation and the success-fail discharge criterion are shown in Table 1. It is interesting to note that the predictive percentages are well above the success base rate for the *ALC*, *P-D*, and *SCH* populations. The predictive percentage is below the success base rate for the *A-D* population; the population in which the success base rate was highest and which contributed one KPR item to the prediction. If cutting lines had been selected to maximize the predictive rates, the zero values could have been assigned to a criterion class which would have increased the predictive percentage; i.e., 70 per cent correct for the entire *A-D* population and 91 per cent correct for the entire *P-D* population.

TABLE 1
Predictive Derivation for Success-Fail Discharge Criterion

		Score Weights				% Predicted For	% Correct	Ward Employment Base Rate
		+	-	0	Total			
<i>ALC</i>	Success	9	2	1	12	86	79	.48
	Fail	2	6	2	10	75	67	.73
<i>A-D</i>	Success	6	3	4	13	82	89	.52
	Fail	2	4	1	7	100	79	.54
<i>P-D</i>	Success	5	1	0	6			
	Fail	0	3	2	5			
<i>SCH</i>	Success	8	1	0	9			
	Fail	2	3	0	5			

Discussion. The most important finding from the present research is that KPR scores usually found elevated or depressed in psychiatric patients are more specifically related to diagnostic categories than to the general "psychiatric" category. Drasgow and Car-khuff (1964) noted that, "The most frequently reported elevated scales have been Artistic, Literary, and Musical. However, all attempts to rank-order these elevated scales reveal disagreement in the order of ranking," p. 67. Results have often varied from one investigator to another, largely on the basis of the population

sample employed in the investigation. Drasgow and Carkhuff (1964) used a wide range of diagnostic categories in their study and found the Artistic, Literary and Musical scales elevated prior to therapy, as well as many of the Social Service scales; Mechanical scales were among the lowest reported. Pool and Brown (1964), using physically handicapped males, found the Computational, Mechanical, Literary, and in some cases the Persuasive areas to be the most sensitive indicators of maladjustment. Stauffacher and Anderson (1959) used 100 schizophrenics and found scores below the base norm on Mechanical, Computational, and Scientific, while scores significantly above the base norm occurred on the Literary and Social Service scales. By subdividing the schizophrenic group (i.e., paranoid, chronic undifferentiated) they found significant differences within the schizophrenic class.

The results of this study are most consistent with previous studies when comparisons are made to appropriate categories. The sixteen patients which constituted the *P-D* population are most similar to the population which Pool and Brown (1964) employed, with the exception of the Computation scale which likely resulted because of their KPR-Strong discrepancy analysis. Similar results are observed in comparing our *SCH* group with the findings of Stauffacher and Anderson (1959) and Klugman (1960).

Another important finding was that predictions well above the base rate of success were possible for this population, but only when predictions were made with respect to the diagnostic category of the patients. Without the diagnostic information to indicate which variables to include in the prediction model, successful predictions were not possible. It is important to note that several of the scale area means were in opposite directions for various diagnostic groups. For example, a high score on Clerical interests accompanies those who fail in the *ALC* population, but is associated with those who succeed in the *SCH* population. A high score on Persuasive interests in the *A-D* population score suggested failure. A high Artistic score suggests success for the *P-D* population, but failure for the *SCH* group. Finally, a high score on Scientific interests suggests failure for the *ALC* group, but a low Scientific score suggests failure for the *P-D* group. These results may be interpreted to indicate that different types of employment are appropriate for different diagnostic groups.

The fact that specific diagnostic groups relate to different fields of interest is a curious finding. This type of result indicates the necessity for extensive statistical analysis of variables. For example, if the results had been evaluated for only the success and fail populations, no differences in interest would have been found. This may be one reason for the large number of negative findings in earlier studies which have employed psychological tests in attempting to predict work success.

Results from the present study support the need for norms which are appropriate for diagnostic groups, increased use of behavior relevant criteria, as well as further study (replication) of the relationships between diagnosis and employment success of psychiatric patients.

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