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PREVIEW

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**Clinical and statistical prediction: A five and ten year follow-up
study of adolescents in a residential treatment center**

Goldstein, David, Psy.D.

Pace University, 1991

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Ann Arbor, MI 48106**

PREVIEW

**Clinical and Statistical Prediction:
A Five and Ten Year Follow-up Study of
Adolescents in a Residential Treatment Center**

David Goldstein

PREVIEW

**A Doctoral Project Submitted in Partial fulfillment of the
Requirements for the Degree of Doctor of Psychology in the
Department of Psychology at Pace University,
New York, February 1991**



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A Five and Ten Year Follow-up Study of
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Abstract

Clinical and Statistical Prediction: A Five and Ten Year Follow-up Study of Adolescents in a Residential Treatment Center

by

David Goldstein

The purposes of this study was to explore the issue of statistical versus clinical prediction and to examine variables that are predictive of future psychological adjustment. The population consisted of adolescents who were discharged from placement at a residential treatment center between the years of 1977 and 1978 and the years of 1982 and 1983. Detailed follow up interviews were conducted in order to determine the current adjustment of these individuals. Twenty-five cases were used in this study. The clinical staff at the same residential treatment center was asked to make assessments of current functioning based on past case record material. Demographic and "factual" data was be used to determine its utility in making accurate predictions. Both methods of prediction were compared to determine their relative utility and accuracy when used in conjunction as well as separately. Additionally, variables that have strong predictive validity by themselves or in combination with other variables were delineated.

Results of this study indicated that the statistical method had more predictive value than the clinical method

when predicting future adjustment. Subsets of statistical (demographic) data contributed significantly toward the prediction of Overall Psychological Health of the former resident. Intelligence proved to be a very powerful variable in predicting future success in many Outcome Domains. This study identified some variables and strategies that are most efficient in making accurate predictions of outcome. With this knowledge, clinicians will be better able to meet the needs of their clients. Another contribution of this study was to further address the issue of Statistical versus Clinical prediction. Although no definitive answer as to which method is more accurate is possible, this study addressed some of the provocative issues that have surrounded this question for decades.

Chapter 1

Introduction

The desire to predict the future appears to be a universal human characteristic. Throughout history the existence of fortune tellers, such as tarot card readers, astrologers, and psychics have reflected the strength of this desire to know the future. This desire is found not only in the occult world, but is also present in scientific fields of inquiry. Psychologists are deeply concerned with understanding and, consequently, predicting human behavior. Psychologists are often called upon to make such predictions of human behavior in such arenas as the courtroom, personnel selection and in clinical practice. As a result, psychologists have developed methods to aid them in making such predictions.

One avenue that may help in this endeavor is long term follow up studies. Long term follow up studies provide a unique opportunity for clinicians to test out their predictions as to how individuals will turn out. Unfortunately there is a paucity of these types of studies due to difficulty in conducting long term research.

This study was an attempt to integrate statistical and clinical prediction with a long term follow up study. Former residents of a residential treatment program were followed up five to ten years after their discharge to

determine their current adjustment. Clinicians were asked to predict the future adjustment of these residents based on materials collected during the resident's stay in the treatment facility.

In this chapter the literature on follow up studies and prediction studies is reviewed. There are few studies that incorporate both aspects of prediction and follow up studies, thus necessitating that the literature be presented in two separate sections.

Follow up Studies

All personality theories from psychoanalytic to cognitive-behavioral models stress the importance that childhood experience has on adult personality development yet few studies have tested this assumption. Only in the last thirty years has there been an effort to test the assumption that emotional and behavioral disorders of childhood lead to adult maladjustment. In part, this is due to the difficulty of conducting research that follows an individual from childhood to adulthood.

Studies conducted prior to 1960 differ significantly from those conducted after 1960. Prior to 1960, adolescents were not given differentiated services and were grouped together with adults in psychiatric institutions. The treatment approaches relied less on therapeutic intervention but emphasized the use of custodial care, organic therapies and strict educational methods. The studies conducted

during this time tended to be detailed in their diagnostic groupings and treatment outcomes but lacked descriptions of the therapeutic milieu. Additionally, outcomes tended to be evaluated at discharge rather than after a period of time had elapsed post-placement. Thus, while these studies measured the patient's progress in the treatment setting they failed to assess the adjustment of patients to their community (Garber, 1972).

Follow up Studies Prior to 1960

Nevertheless, several important studies were conducted prior to 1960 that remain relevant. Most notable is, James Masterson's (1958) study of 153 adolescents treated at Payne Whitney Psychiatric Clinic. These adolescent patients were admitted to Payne Whitney between March 1936 and March 1950. Masterson's study assessed the relationship between twenty clinical prognostic factors and later adjustment. These patients were interviewed five to nineteen years after termination of outpatient treatment.

The patients were grouped into four diagnostic categories based upon a review of their charts. The categories utilized were schizophrenic, psychoneurotic, psychopathic, and affective disorders. The study found that for the schizophrenic group, the following factors were related to negative outcome: age of 14 or below on admission; diagnostic sub-group of hebephrenic or simple schizophrenia; length of hospitalization of more than four

months; length of onset of more than twelve months; history of poor pre-illness social adjustment; history of poor pre-illness school adjustment; poor prognosis at discharge; and unimproved at discharge.

The following factors were related to positive outcome: age of fifteen or over upon admission; history of good pre-illness social adjustment; history of good pre-illness school adjustment; good prognosis at discharge; confusion, disorientation, and/or fear exhibited in the psychopathology; and rapid improvement without relapse. In the other three diagnostic groups, no clear pattern of factors contributing to outcome could be determined.

Carter (1942), studied the affects of family history on the treatment success of hospitalized adolescents. He found that a family history with an isolated instance of psychosis, delinquency, epilepsy, alcoholism, neurosis, or behavior disorder did not predict outcome of the adolescent. However, in cases where there were multiple signs of family disturbance, treatment outcome was almost invariably poor.

Follow up Studies After 1960

After 1960, clinicians began to recognize the need for separate treatment programs for adolescents. These programs focused on the unique needs of the adolescent in crisis. Adolescents were no longer placed on adult wards and were treated with a variety of therapeutic approaches. There was

less of an emphasis on organic treatments and more on a multidisciplinary approach.

During this time, follow-up studies explored a variety of predictive variables. The focus was no longer on diagnostic categories, but rather on individual symptoms and other demographic and treatment variables. Gossett, Meeks, Barnhart, and Phillips (1973) conducted a follow-up study of 55 inpatients at Timberlawn Psychiatric Hospital Adolescent Service. They sought to determine which factors were related to treatment outcomes. Outcome was determined by a face-to-face interview conducted two to four years post discharge. The interviewer assessed the following areas: current living situation; peer relationships; psychopathological symptoms; current drug and alcohol usage; legal difficulties; academic functioning; work adjustment; subjective contentment; parents and/or spouse evaluation; plans for the next few years; and outpatient or inpatient treatment after discharge. The outcomes were categorized as good, fair, or poor.

Findings of this study suggested that the most powerful predictor of outcome were the age of onset of symptomatology and whether or not the pathology was reactive or developmental. As one might expect, subjects who had later onset and reactive disorders had the most positive outcomes. In fact, youngsters with reactive disorders almost invariably were doing well at follow-up whereas only

one-half of the youngsters with developmentally based disorders showed a positive outcome.

In 1961, Cass and Thomas (1979) embarked on a longitudinal study of two hundred adults who were seen as children at the Washington University Child Guidance Clinic between the years of 1961 and 1965. Children were divided into two groups: those that received therapy and those that did not. Assignment was not random. The study had three main objectives: firstly, to determine if the social and personal adjustment of adults can be predicted from behavioral symptoms and social data collected at childhood; secondly, to determine which symptoms and personality variables are associated with later adjustment; and thirdly, to determine the difference between a group that had therapy as children and those who did not.

The initial data collected at childhood included the following: demographic information; symptom checklist; developmental questionnaire; school report; and a diagnostic evaluation. The follow-up data consisted of factual data (e.g., age, marital status, education) and clinical data (e.g., school functioning, therapy, crises, present self-concept). From the chart review, patients were rated on the Child Social Adjustment Rating Scale (CSSA) which assessed functioning within the family, school and/or work performance, relationship to peers, and an overall adjustment rating.

From a follow up interview conducted ten to fifteen years after termination at the clinic, ratings were made on the Adult Social Adjustment Scale (ASSA), which consisted of the same items on the CSSA modified for use with adults.

The following factors were found to correlate significantly with ASSA: CSSA; intensity of disturbance; full scale IQ; and school behavior. There was no significant difference in ASSA between the group that had therapy and the group that did not. Clearly the two groups were not equivalent in that the group that did not receive therapy might not have been as disturbed and thus not seen as a priority to the clinic staff. Thus, comparisons made between the two groups may not be valid.

Levy (1969) conducted a follow up study at Children's Hospital of the Menninger Clinic. He studied 100 children and adolescents treated in a residential setting who were discharged between 1945 and 1960. About two-thirds of the patients made "ordinary" or "marginal" adjustment and about one-half were clearly helped by their stay in the hospital. Low Intelligence was found to be associated with poor prognosis, particularly when coupled with psychosis and violence. Less than one-half of the sample was married at follow up. It was also noted that follow up studies are a "...relatively easy opportunity for a clinical institution to learn something about its therapeutic effects."

Davids and Salvatore (1975), studied the outcomes of residential treatment in a sample of 325 patients who were admitted to Emma Pendleton Bradley Hospital in Rhode Island between August 1953 and July 1969. In 1971, questionnaires were mailed to the parents of these former child patients. The children, at the time of follow up, ranged in age from ten to 28 years. Of the 325 questionnaires, 79 were returned. Of these 79, 71 were used for purposes of this study.

Using the parents' ratings of their child's overall emotional adjustment at time of follow up, the former patients were categorized into the following three groups: good (29), fair (22), and poor (20). These groups were compared on a number of variables including: problems presented at time of admission (pretreatment variables), experiences during the treatment, and several specific indicators of adequacy of adjustment immediately following discharge from the residential setting.

Among the pretreatment behavioral variables, a number were found to differentiate the three groups. The following behaviors were found to differentiate among the three groups: argumentativeness, lying, and peculiar behavior or thinking. There were significantly more children in the "poor" category that demonstrated these behaviors. That is, the children in the "poor" group were more likely to be

described to be argumentative, to lie, and as demonstrating peculiar behavior.

Among the "during treatment variables" there were no significant differences among the three groups in age at admission or age at discharge. Nor were there any differences among the groups due to length of stay in the treatment center. A greater percentage of the cases in the "good adjustment" group had parents who participated in the casework while the child was in care. The number of therapists a child had while in placement did not differ significantly among the three groups. There was also no significant relationship between the type of therapist (i.e. M.S.W., Ph.D. or M.D.) and outcome. Comparisons of IQs obtained from the time of admission and at the time of discharge, revealed that 55% of the children's IQs increased and 37% decreased. These changes in IQ did not differentiate between the good and poor groups. However, there was a relationship between the fair group and showing an increase in IQ during treatment. Finally, an attempt was made to relate prognosis ratings (good, fair, and poor) at time of discharge and outcome ratings at the time of follow up. It was found that the prognosis of "good" is not discriminating among the former patients. Cases described as having a good prognosis were distributed equally among the three outcome groups. In the cases where a discharge prognosis of poor was given, 35% of the children were found