PREDICTION OF SUICIDE THROUGH DEVELOPMENT OF AN MMPI SCALE

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Wesley C. Jones

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Dale H. Cress

Approved for the Major Department

Harold E. Durst

Approved for the Graduate Council

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Chapter 1

INTRODUCTION

Every thirty minutes someone in the United States kills himself. It is not commonly realized that murder in the United States is not half the problem, statistically speaking, that suicide is.[1] The actual number of deaths by suicide has been estimated at almost three times the number of reported suicides,[2] and when considering that authorities estimate the number of suicide attempts at from six to nine times the number of reported suicides,[3] the enormity of the problem becomes at once apparent.

One of the first questions that is raised when any patient is admitted to a psychiatric hospital is if the patient is a suicide risk. This study looks at only one phase of answering this question--prediction of suicide through construction of a scale for the Minnesota Multiphasic Personality Inventory (MMPI).

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[1]U. S. Bureau of Census. Statistical Abstract of the United States, 1959. Washington, D. C., 1959, Table No. 73, p. 66; Table No. 179, p. 141.

[2]A. E. Bennett, "Suggestions for Suicide Prevention." In Clues to Suicide (E. S. Shneidman and N. L. Farberow, Eds.). McGraw-Hill, New York, 1957, p. 187.

[3]M. Clark, "Smashup." Newsweek, Nov. 2, 1959, p. 62.

The Minnesota Multiphasic Personality Inventory is a standardized inventory designed to elicit a wide range of self-descriptions from each test subject and to provide in quantitative form a set of evaluations of his personality status and adjustment. Each subject is asked to answer 550 different items either true or false as they apply to him, although he may also indicate that some of them do not apply. Scoring of the inventory is objective and may be carried out by clerical workers, either by hand or with machine-scoring equipment. Standard scoring procedures generate a test profile, or psychogram, composed of four validity scales and ten clinical or personality scales, which have come to be known both by abbreviations of the scale names and by code numbers, used interchangeably. The Validity scales are as follows: (1) Cannot say score--?, (2) Lie--L, (3) Infrequency--F, and (4) Correction--K. The Clinical scales are as follows: (1) Hypochondriasis--Hs, (2) Depression--D, (3) Conversion Hysteria--Hy, (4) Psychopathic Deviate--Pd, (5) Masculinity-Femininity--Mf, (6) Paranoia--Pa, (7) Psychasthenia--Pt, (8) Schizophrenia--Sc, (9) Hypomania--Ma, and (10) Social Introversion--Si.[1]

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[1]W. Grant Dahlstrom, George Schlager Welsh and Leona E. Dahlstrom, An MMPI Handbook, Volume 1: Clinical Interpretation, Minneapolis: University of Minnesota Press, 1973, pp. 1-2.

There have been numerous attempts to assess suicidal risk through the MMPI. These attempts have used several designs. They are (1) use of the standard MMPI scales, (2) profile analysis, and (3) scale development. This study will deal specifically with the latter of the three.

THE PROBLEM

In Dahlstrom, Welsh and Dahlstrom's MMPI Handbook, Vol. I, they list the fourteen original scales that make up the MMPI. They also list an additional seventy-five scales that have been developed that may predict everything from psychomotor retardation to familial discord.[1]

However, in all of the eighty-nine scales that are listed there has not been one that was developed to deal specifically with suicide.

In the developing of an MMPI scale it is first necessary to look at the method used in actuarial investigations. Actuarialism is a method designed for solving practical problems of the type commonly encountered by counselors and clinicians in applied situations. In some ways it constitutes a logical extension and quantification of the case study approach. The most essential similarities between the two methods are that both are naturalistic and nonexperimental. They make no attempt to reduce

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[1]Ibid., pp. 1-2.

the complexity of the natural, behavior-determining process that operates in a subject's day-to-day life; and they do not undertake to manipulate independent variables in a systematic fashion. Both face the problem of condensing large amounts of information into convenient and useful forms.[1]

One essential difference between the methods is that actuarial investigations deal with large numbers of subjects or responses. These studies always begin with the discovery and description of general trends or relationships in masses of data, collected from samples with known characteristics. The ultimate purpose is to develop purely mechanical procedures for arriving at highly specific judgments in similar future cases. This development takes place only after extensive information on preliminary samples has been reduced to statistical summarizations.[2]

Another difference between the methods is that data of actuarial studies must all be reduced to numerical expressions and made amenable to statistical analysis. The techniques by which this is accomplished are usually such as to give assurance that the information used is reasonably

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[1]Franklin C. Shontz, "Actuarialism." Research Methods in Personality, Appleton-Century-Crofts, 1965, p. 85.

[2]Ibid., p. 85.

objective and that it is selected and condensed by explicit procedural rules.[1]

A third difference is the importance to actuarialism of the criterion: a final measure, judgment, or decision to which all other available data are related. Criteria usually reflect the practical and clinical sources of the method itself. Investigations using this method are deemed successful if they demonstrate reliable contingencies between sets of quantitative cases or test data and some useful criterion. These contingencies then serve as the basis for making predictions about criterion values in future cases drawn from the same population.[2]

Statement of the Problem

Is there a significant difference in response frequencies to MMPI items for those who commit suicide and those who have not committed suicide?

Statement of the Hypothesis

There is no significant difference in the responses to the MMPI items for those who have committed suicide and those who have not.

Assumptions of the Study

The first assumption made in this study was that suicide may be predicted to a degree by the use of some

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[1]Ibid., pp. 85-86. [2]Ibid., p. 86.

specific items on a standardized personality inventory. It follows from this that:

Persons who later commit suicide are characterized by some common factors which would influence these responses to a standardized structured personality test. Persons not committing suicide are characterized by some common factors.

Purpose of the Study

The purpose of this study was to investigate the responses to MMPI items that may be used in the prediction of suicide.

The items were selected by contrasting two groups of MMPI answer sheets; one group consisting of committed suicides and the other group consisting of psychiatric patients who had also taken the MMPI.

Significance of the Study

The results of literature to date are totally inconclusive in regards to using the MMPI in predicting suicide. It is hoped that this study may show that significant items from the MMPI may be used in the prediction of suicide.

DEFINITION OF TERMS

The terms defined in this study are: actuarial, behavior determining, clinician, conversion hysteria,

depression, familial discord, hypochondriasis, hypomania, masculinity-femininity, nonexperimental, paranoia, psychasthenia, psychiatric hospital, psychogram, psychomotor retardation, psychopathic deviate, quantitative, scale, schizophrenia, self-description, social introversion, standardized, suicide and suicide risk.

Actuarial Investigation

A study of generalizations that embody and state relationships in terms of probability or relative frequency of occurrence.

Behavioral Determining

Any variable having a causal relation to behavior.

Clinician

Any certified physician or psychologist whose task is to work with psychiatric patients.

Conversion Hysteria

A term for a repressed emotion that becomes manifested through a physical symptom.

Depression

A state of inaccessibility to stimulation or to particular kinds of stimulation, of lowered initiative, of gloomy thoughts.

Familial Discord

Problems occurring between members of the same family.

Hypochondriasis

Morbid concern about one's health, with exaggeration of every trifling symptom.

Hypomania

A mild state of mania.

Masculinity-Femininity

State or condition of an organism that manifests the characteristic appearance and behavior of a male; the usual characteristics, taken collectively, of women.

Paranoia

Delusion of grandeur and of persecution, one or both, are most typical, and are defended by the patient with much appearance of logic and reason.

Psychasthenia

A neurosis marked by morbid anxiety, fixed ideas, obsessions.

Psychiatric Hospital

A hospital whose specialty is dealing with the prevention, diagnosis, treatment, and care of mental illness and defect.

Psychogram

A profile representation of an individual's psychological traits.

Psychomotor Retardation

The slowing up of motor effects of psychical processes.

Psychopathic Deviate

A person, who, though possessing normal intelligence, is lacking in moral sensibility, emotional control, and the inhibition of will.

Scale

A representation of magnitude or quantity by a series of numbered spatial intervals.

Schizophrenia

A group of psychotic reactions characterized by fundamental disturbances in reality relationships, by a conceptual world determined excessively by feeling, and by marked affective, intellectual, and overt behavioral disturbances.

Self-Description

Describing one's self.

Social Introversion

Withdrawing from social interaction.

Standardized

A fixed and durable unit of any sort used for comparison and in construction of scales.

Suicide

The termination of one's own life.

Suicide Risk

The possibility that someone may take their own life.

Validity Scale

A scale obtained for determining how far the test items are a representative sample of the universe of behaviors that define the variable to be measured.

LIMITATIONS OF THE STUDY

This study was limited by the choice of suicidal patients and contrast patient group from one geographical area, that is, those in a Veterans Administration Hospital in Kansas.

It was limited further by the use of twenty-five male subjects in the suicide group and twenty-five psychiatric patients randomly sampled in the contrast group.

Since the measurement used for the study was a regularly used standardized personality inventory, this study was not limited by Hawthorne effect. It was limited

however by the fact that previous studies that have used the MMPI to predict suicide have shown little success.

Chapter 2

REVIEW OF RELATED RESEARCH

Attempts to utilize the MMPI to assess suicidal risk have used several designs. They are standard MMPI scales, profile analysis, and item analysis and scale development.

Dahlstrom, Welsh and Dahlstrom stated that scale D of the Minnesota Multiphasic Personality Inventory (MMPI) measures the degree of a person's depression and that frequently this mood state is characterized by preoccupation with death and suicide.[1] Dahlstrom, Welsh and Dahlstrom noted that the implication of high scores on scale D depend upon other features of the MMPI, and upon the behavior of the person taking the test. For instance, it is their conclusion that suicidal risk is greater when a person's MMPI results show a significant elevation on scale D but his behavior does not give any indication of depression and he denies depressive thoughts and feelings, than when the depression indicated by a scale D elevation is clearly reflected in the person's behavior.[2]

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[1]Dahlstrom, Welsh and Dahlstrom, op. cit., p. 189.

[2]Ibid., pp. 186-187.

Simon and Hales examined the standard MMPI clinical scales of fifty male psychiatric patients with suicidal preoccupation and found consistent elevation on scales D and Pt.[1] Similarly, Simon looked at the MMPI scale scores of twenty-two male psychiatric patients tested with the card form of the MMPI after attempting suicide. Except for a peak on scale D, no predominant trends were found.[2]

Farberow looked at the MMPI scale scores of psychiatric patients who had attempted suicide prior to testing, patients who had threatened suicide prior to testing, and non-suicidal patients. Each of the three groups consisted of thirty-two male patients tested with the short form (373 items) of the MMPI. A psychiatrist acquainted with the suicidal patients divided them into seriously suicidal and not seriously suicidal groups on the basis of his judgment of the probability that a patient would successfully commit suicide if left to his own devices.[3] Farberow found that for seven MMPI scales--F,

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[1]W. Simon and W. H. Hales, "Note on a Suicide Key in the Minnesota Multiphasic Personality Inventory," American Journal of Psychiatry, 1949, 106, 222-223.

[2]W. Simon, "Attempted Suicide Among Veterans," Journal of Nervous and Mental Disease, 1950, 111, pp. 451-468.

[3]N. L. Farberow, "Personality Patterns of Suicidal Mental Hospital Patients." In G. S. Welsh and W. G. Dahlstrom (Eds.), Basic Readings on the MMPI in Psychology and Medicine. Minneapolis: University of Minnesota Press, 1956, pp. 427-432.

D, Pd, Pa, Pt, Sc and Ma--the suicide threat group scored significantly higher than both the suicide attempts group and the non-suicidal comparison group. The suicide threat group had the most elevated scale scores of the three groups. With regard to the division of suicide according to the seriousness of suicidal intent, only scales L and Pa produced significant differences for any comparisons among the serious, non-sericus, and non-suicidal groups. The mean L scale score for the non-suicidal comparison group was significantly higher than for the non-serious suicide group, and a mean scale Pa score for the serious suicide group was significantly higher than for the non-serious group. Faberow did not analyze his data in a manner permitting comparison of mean profiles for the various groups of patients.[1]

Rosen, Hales and Simon compared fifty male psychiatric patients who had attempted suicide prior to admission and testing, 100 male patients who had thought about suicide, and 211 non-suicidal male patients. Rosen described their study as a replication of the Farberow study. However, it is not clear that their suicide thought group was comparable to Farberow's suicide threat group. At any rate Rosen analyzed the mean scale scores, both with and without K corrections, in the same manner as Farberow. In general,

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[1]Ibid.

the mean T scores for most scales were higher for the suicide attempt or non-suicidal. Comparison groups, and the mean T scores for the latter two groups were quite similar. The suicide thought group scored significantly higher than the non-suicidal comparison group on scales F, Pa, and Sc. On scale Hy the suicide thought group scored significantly higher than the suicide attempt group. On scales D, Pt, and Si the suicide thought group scored significantly higher than both the suicide attempt and non-suicidal comparison group. On scale Pd both the suicide thought and the suicide attempt groups scored significantly higher than the non-suicidal comparison group. On scale Pd both the suicide thought and the suicide attempt groups scored significantly higher than the non-suicidal comparison group. On scale Hs both the suicide thought and the non-suicidal comparison groups scored significantly higher than the suicide attempt group. On the K scale the non-suicidal comparison group scored significantly higher than the suicide thought group. There were no significant differences in mean scale scores among the three groups for scales L, Mf and Ma. In every comparison where a significant difference was found involving a K-corrected scale score, the comparison would have also been significant without the K correction. If the suicide thought group in the Rosen study was comparable to Farberow suicide threat group, a direct comparison of the results of the

Two studies can be made. Both Rosen and Farberow found fifteen pairwise comparisons to be significant, and eight comparisons were significant in both studies.[1]

Simon and Gilberstadt compared the MMPI results of twenty-six male psychiatric patients who had committed suicide with the three groups of patients included in the Rosen study. The mean scale scores for the suicide group were generally similar to those for the non-suicidal comparison group. Like the suicide attempt and the non-suicidal comparison groups, the suicide group had significantly lower scores than the suicide thought group for scales F, D, Pa, Pt, Sc and Si. For scale Ma the suicide attempt group scored significantly higher than the suicide group.[2]

Broida compared twenty suicidal patients with twenty non-suicidal psychiatric patients matched for diagnosis, age, education, occupation and marital status. Ten of the suicidal patients had attempted suicide, while the other ten were rated by the ward psychiatrist as having excessive suicidal thinking. Only the sixty items of scale

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[1]A. Rosen, W. M. Hales and W. Simon, "Classification of Suicidal Patients," Journal of Consulting Psychology, 1954, 18, pp. 359-362.

[2]W. Simon and H. Gilberstadt, "Analyses of the Personality Structure of Twenty-Six Actual Suicides," Journal of Nervous and Mental Diseases, 1958, 127, pp. 555-557.

D were administered to patients. While this may appear to be questionable, Broida defended his procedure by pointing out that scale D was originally standardized separately from other MMPI items. The mean T score on scale D for the suicide group was significantly higher than the mean T score for the non-suicidal comparison groups.[1]

Lester compared the MMPI scale scores for males who completed suicide using active methods (e.g., shooting) with those using passive methods (e.g., asphyxiation by gas). No significant differences were found. Similarly, no significant differences were found between the scale scores for persons shooting themselves and those for persons hanging themselves.[2] These results are consistent with Simon and Gilberstadt's discovery that there was no apparent relationship between MMPI scale scores and the method chosen by persons who subsequently committed suicide.[3]

Some studies attempting to find ways of using the MMPI to assess suicidal risk have employed profile analysis. Marks and Seeman identified sixteen common profile code

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[1]D. C. Broida, "An Investigation of Certain Psychodiagnostic Indications of Suicidal Tendencies and Depression in Mental Hospital Patients," Psychiatric Quarterly, 1954, 28, pp. 453-464.

[2]D. Lester, "Personality Correlates Associated With Choice of Method of Committing Suicide," Personality, 1970, 1, pp. 261-264.

[3]Simon and Gilberstadt, loc. cit.

types among MMPI records obtained from 1200 psychiatric patients (inpatients and outpatients of both sexes). Each profile code type was defined by a set of explicit rules and was identified by the two or three highest scale scores for that profile. Among the information collected for each patient were suicide attempts, suicidal thoughts, and suicide threats. For each MMPI profile type they reported the percentage of patients among a group of 300 female patients who displayed each of the three types of suicidal behavior. The base rate for suicide attempts, suicide thinking, and suicide threats were 16.9 percent, 23.0 percent, and 4.7 percent, respectively. Patients with either of two profile code types, Pd-Sc-D had attempted suicide, 35 percent had suicidal thoughts, and 10 percent made suicidal threats. For patients with profile type Pd-Pa-D the rates were 26 percent suicide attempts, 32 percent suicidal thoughts, and 16 percent suicide threats. Patients with profile types D-Pt-Sc and D-Sc were high, compared to base rates, for both suicidal thoughts and suicide threats but not for suicide attempts. Patients with profile type Pd-Pa had 39 percent suicide attempts but did not have a high incidence of suicidal thoughts or threats. It is interesting to note that several of the profile types with elevations on scale D had rates for the various suicidal behaviors that were lower than the base rates. This appears to be especially true if, in addition

to an elevation on scale D, the profile was defined by elevations on either scales Hs and Hy or scale Pt.[1]

Devries and Farberow used a multivariate discriminant analysis in attempting to differentiate group of eighty non-suicidal psychiatric patients, a group of eighty-two patients who had threatened suicide prior to testing, a group of seventy-seven patients who had attempted suicide prior to testing, and a group of forty-three patients who had committed suicide. Instead of utilizing the complete profile, only the six MMPI clinical scales (D, Pd, Pa, Pt, Sc, and Ma) previously found to show promise in differentiating suicidal and non-suicidal groups were considered. The mean T scores of the six scales were found to be significantly different for the four groups. The discriminant analysis showed that 52 percent, 17 percent, 59 percent and 28 percent respectively, of the patients in the non-suicidal comparison, suicide attempt, suicide threat, and suicide groups were correctly classified. Using the six MMPI scales to separate patients who will commit suicide from other psychiatric patients, including those showing other suicidal behavior, would result in 75 percent false negatives or misses and 15 percent false positives. In general, the Devries and Farberow results are consistent

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[1]P. A. Marks and W. Seeman, The Actuarial Description of Abnormal Personality. Baltimore: Williams & Wilkins, 1963.

with other research in showing that patients who threaten suicide are most easily distinguishable and patients who commit suicide are least easily distinguishable from other groups of patients.[1]

Ravensborg and Foss examined the MMPI profiles of a group of patients who had committed suicide in a state hospital, a group of patients who died of natural causes in the same hospital, and a random sample of hospital inpatients for whom test material was available. Each group consisted of twenty-three patients of both sexes. Group profiles were analyzed by profile analysis of variance. Since the obtained F ratio was not significant, it was concluded that the MMPI profile could not be used to discriminate psychiatric patients who would subsequently commit suicide from comparison groups.[2]

Devries and Shneidman obtained the MMPI records from five suicidal patients (three males and two females) who took the MMPI monthly for a period of a year. Each

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[1]A. G. Devries and N. L. Farberow, "A Multivariate Profile Analysis of MMPIs of Suicidal and Non-Suicidal Neuropsychiatric Hospital Patients," Journal of Projective Techniques and Personality Assessment, 1967, 31, pp. 81-84.

[2]M. R. Ravensborg and A. Foss, "Suicide and Natural Death in a State Hospital Population: A Comparison of Admission Complaints, MMPI Profiles, and Social Competence Factors," Journal of Consulting and Clinical Psychology, 1969, 33, pp. 466-471.

of the patients also rated the lethality of his suicidal thinking monthly on a nine-point scale. A discriminant analysis of the five groups of profiles correctly grouped all profiles for each patient together. The profiles were by clinicians with 75 percent accuracy. There thus appears to be a very high degree of reliability in a suicidal individual's MMPI profile over time. Of course, the results of this analysis may have been dependent on the degree of heterogeneity among the five patients in this study. Devries and Shneidman correlated each patient's lethality ratings with his score for twelve of the standard MMPI scales (scale 0 was not included). Of the sixty correlation coefficients obtained only nine were statistically significant. No scale correlated significantly with the lethality ratings of more than two patients. Interestingly enough scale D did not correlate significantly with the lethality ratings for any patient. It appears, therefore, that although each of the five patients may have shown increases and decreases in suicidal intent, these changes were not related to changes in MMPI scale scores. Devries and Shneidman concluded that changes in degree of lethality cannot be detected by changes in MMPI scale scores, and that any changes in the MMPI profile of a suicidal patient are in terms of his own profile characteristics. As a suicidal patient becomes acutely suicidal

his MMPI scale scores do not change toward a general suicidal profile.[1]

In a case study of an individual who had been tested three days prior to committing suicide, Holzberg, Cohen and Wilk found the MMPI profile (scale 0 was not included) to be within the normal range.[2]

Simon and Hales examined the MMPI responses of male psychiatric patients who were judged to be preoccupied with suicide. Although they did not compare the MMPI responses for this group with those of a nonsuicidal comparison group, they reported finding seven items in the D scale and ten items in the Pt that were answered in the scored direction of a majority of the suicidal patients. However, item eighty-eight in the D scale "I usually feel that life is worth while," was answered in the negative direction by less than one-sixth of the suicidal patients.[3] Holzberg found the responses of their subjects to be similar to those of Simon and Hales for only one D scale item and four PT scale items.[4]

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[1]A. G. Devries and E. S. Shneidman, "Multiple MMPI Profiles of Suicidal Persons," Psychological Reports, 1967, 21, pp. 401-405.

[2]J. D. Holzberg, E. R. Cohen and E. K. Wilk, "Suicide: A Psychological Study of Self-Destruction." Journal of Projective Techniques, 1951, 15, pp. 339-354.

[3]W. Simon and W. H. Hales, "Note on a Suicide Key in the Minnesota Multiphasic Personality Inventory." American Journal of Psychiatry, 1949, 106, pp. 222-223.

[4]Holzberg, loc. cit.

Simon and Gilberstadt compared the MMPI responses of a group of patients who committed suicide with those of a non-suicidal comparison group in an attempt to derive an empirical scale to predict suicide. An item analysis showed twenty-three of the 550 items to differentiate the groups significantly. However, they concluded, perhaps erroneously, that this number of significant differences could be obtained strictly by chance. Inspection of the set of items revealed a lack of face validity. Apparently the items did not stand up under cross-validation, although no data was presented to support this. Simon and Gilberstadt did not report which twenty-three items were found to differentiate significantly suicidal and non-suicidal patients, and they rejected the idea of attempting to develop a suicide prediction scale for the MMPI.[1]

Farberow and Devries did an item analysis of the MMPI responses of 215 suicidal and eighty non-suicidal male psychiatrict patients. The suicidal patients consisted of three categories of patients. One group of fifty-four patients had committed suicide while in a VA neuropsychiatric hospital. The second group consisted of seventy-nine patients admitted to the hospital as a result of a suicide attempt. The third group consisted of eighty-two patients

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[1]W. Simon and H. Gilberstadt, "Analyses of the Personality Structure of Twenty-Six Actual Suicides," Journal of Nervous and Mental Diseases, 1958, 127, pp. 555-557.

admitted as a result of suicide threats. The total sample of patients was divided in half to allow for both original and replication studies. The MMPI responses of each of the four groups of patients were compared with the responses of every other group. (The .10 level of significance was used for the item analysis in both original and replication studies). Only when the number of significant items in the various comparisons exceeded the number estimated to be expected by chance in both the original and replication studies was it assumed that there was a significant differentiation between the appropriate groups. It was discovered that only the suicide threat group satisfied this criterion; none of the other groups were significantly differentiated from each other in both original and replication comparisons. The fifty-two items which significantly differentiated the suicide threat group from the non-suicidal comparison group in both original and replication studies were selected for development of an MMPI Suicide Threat scale. The standard MMPI scales represented most often among the fifty-two items were scales Sc (nineteen items), Pt (eighteen items), and D (fourteen items).[1]

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[1]A. G. Devries and N. L. Farberow, "A Multivariate Profile Analysis of MMPIs of Suicidal and Non-suicidal Neuropsychiatric Hospital Patients," Journal of Projective Techniques and Personality Assessment, 1967, 31, pp. 81-84.

Ravensborg and Foss scored the Suicide Threat scale for three groups of patients (suicides, natural deaths, and non-suicidal inpatients) in a state hospital, and obtained means of 21.7 for suicides and 22.9 for the other two groups. An analysis of variance was performed on Suicide Threat scale scores. F ratios for main effects were not significant showing that the suicide group did not differ from the other two groups on the scale; neither did males, as a group, differ from females. Overall, these results indicate that the Suicide Threat scale has no value in differentiating patients who subsequently commit suicide from other state hospital inpatients.

Devries, in a follow-up study to that of Farberow and Devries, included a group of seventy-two patients who had attempted suicide, a group of 154 patients who threatened suicide, and a group of eighty-three patients who had both threatened and attempted suicide, and compared these groups with a group of 283 non-suicidal psychiatric inpatients. As in the Farberow and Devries study, the samples were divided in half to allow for both original and replication studies. For both the original and replication studies the MMPI responses of every one of the four patient groups were compared with those of every other group for all short-form MMPI items. In the same way, the three suicidal groups from both original and replication studies were combined and compared with the two combined control groups. All

comparisons of the various suicidal groups with each other were not significant.[1]

Devries' results are clearly at odds with those reported by Farberow and Devries. Of most importance, the two studies differ on whether enough MMPI items can be found to constitute a reliable suicide scale, and on the particular items that differentiate the groups.

Devries has carried out a further study indicating that controlling appropriate variables increases the ability of the MMPI to differentiate suicidal and non-suicidal patients. The definition of suicidal is left ambiguous in this study, however. Starting with 309 suicidal male patients and 283 non-suicidal patients, Devries sorted each population into categories for diagnosis, age, education, occupation, marital status, and number of hospital admissions. After first sorting both populations by diagnostic category, the subcategory with the most patients (psychosis) was selected for further subdivision on the basis of the next variable, age. Again the subcategory with the most patients (younger than forty) was retained for further sorting. Using this procedure the remaining patients were sorted in turn for subcategories of education, occupation, marital status, and number of hospital admissions.

1A. G. Devries, "Identification of Suicidal Behavior by Means of the MMPI," Psychological Reports, 1966, 19, pp. 415-419.

The two matched samples obtained in this manner consisted of eight suicidal patients and thirteen non-suicidal patients. These patients were all psychotic patients who were not over forty years old, had a high school education, were single and employed as service workers or laborers, and had one VA hospital admission. The response frequencies of the two groups were compared for each of the 373 short-form MMPI items. Sixteen items were found to differentiate the two groups. Devries did not report the item numbers and direction of scoring for these items. When random samples of eight suicidal and thirteen non-suicidal patients from the original populations were compared five items were found which significantly differentiated the groups.[1]

To date, neither standard MMPI scales, MMPI profile analysis, nor specially developed MMPI scales have been found to be reliable in predicting suicide at useful levels. The one standard MMPI scale found most frequently to differentiate suicidal and non-suicidal groups is the D scale. However, in two studies, Farberow[2] and Rosen,[3] the D scale scores of patients who attempted suicide did not differ from those of non-suicidal patients. Simon and Gilberstadt[4]

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[1]A. G. Devries, "Control Variables in the Identification of Suicidal Behavior," Psychological Reports, 1967, 20, pp. 1131-1135.

[2]Farberow, loc. cit. [3]Rosen, loc. cit.

[4]Simon and Gilberstadt, loc. cit.

found no difference in D scale for patients who committed suicide and non-suicides. Marks and Seeman's[1] study indicated that whether patients with elevations on the D scale were above or below the base rates for various suicidal behaviors depended upon the pattern of their other MMPI scales. In some studies comparing suicidal and non-suicidal patients on the D scale the suicidal group included patients threatening suicide, and such patients have been found to score significantly higher than patients who either commit or attempt suicide on most MMPI scales. While MMPI profile analysis has shown some promise, there is certainly no evidence for a general suicidal profile. The only MMPI study, Devries and Farberow,[2] to demonstrate a differentiation of patients who commit suicide and other suicidal patients employed profile analysis. Of course, another study, Ravensborg and Foss,[3] found that MMPI profile analysis could not separate patients who subsequently commit suicide from other psychiatric patient groups. With regard to special MMPI suicide scales, the disparity in the results of Devries[4] and Farberow and Devries[5] is discouraging,

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[1]Marks and Seeman, loc. cit.

[2]Devries and Farberow, loc. cit.

[3]Ravensborg and Foss, loc. cit.

[4]Devries, 1966, loc. cit.

[5]Farberow and Devries, loc. cit.

although a later study Devries[1] has offered hope that it may be possible to develop MMPI suicide scales for select groups of patients.

Some of the research exploring the possibility of assessing suicidal risk with the MMPI seems to lose sight of the fact that the true need is for a means of predicting which individuals will attempt or commit suicide. A successful differentiation of suicidal and non-suicidal patient groups on the basis of statistical analysis of MMPI data may be all but useless in an applied setting if the difference between groups are quite small, even though statistically significant, or the nature of the obtained differences is not clear. While researchers attempting to differentiate suicidal and non-suicidal patients have often used patients who have threatened suicide in their suicidal groups, the most pressing need is for the detection of persons who will seriously attempt or complete suicide.

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[1]Devries, 1967, loc. cit.

Chapter III

METHODS AND PROCEDURES

The problem investigated in this study was do people committing suicide respond differently on the MMPI than those who do not commit suicide. A description of the study itself is entered into in this chapter. This includes the population analyzed, the instrument chosen to assess personality characteristics, the design followed during the investigation, the procedure used in collecting the data, and the statistical approach that was used in analyzing the data.

SUBJECTS

The subjects were divided into three groups, a normal group, a criterion group and a comparison group. The criterion group consisted of twenty-two male psychiatric patients who committed suicide while at the Topeka Veterans Administration Hospital, either as inpatients or outpatients. The criterion subjects had taken the booklet form of the MMPI while they were inpatients at the hospital. The tests were administered and scored by a Psychology Technician. The tests were interpreted by Staff Psychologists. The criterion group was selected from the patient population who had committed suicide over the past

fourteen years. To be selected a patient had to be a male and had to have taken the booklet form within a three-year period prior to his committing suicide.

Upon entering the hospital all psychiatric patients are referred for psychological testing. Each patient is assigned a number by the Psychology Technician who administers the test. This number is then attached to the patient's testing file. The random sampling for the comparison group was accomplished by using the method outlined in "Fundamental Research Statistics for the Behavioral Sciences."[1] The method used a table of random numbers from which the sample was drawn. These twenty-two numbers were then coordinated with the assigned numbers on the testing files.

The comparison group consisted of twenty-two male psychiatric patients who had taken the MMPI while in the hospital but had not committed suicide. These subjects were tested with the booklet form of the MMPI which had been administered and scored by a Psychology Technician and were also interpreted by Staff Psychologist. The comparison group was sampled from the V. A. testing files for the past fourteen years.

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[1]J. T. Roscoe, Fundamental Research Statistics for the Behavioral Sciences. New York: Holt, Rinehart, and Winston, 1969, pp. 133-136

The comparison group was followed up by the investigator to check that none of them had committed suicide. The followup consisted of either interviewing the hospital staff currently involved in the patient's treatment or if the patient was no longer hospitalized the investigator interviewed the outpatient staff responsible for following up the patient after discharge. If a patient was unable to be followed up another patient was randomly sampled who could be.

The normal group consisted of twenty-two male students who had taken the MMPI booklet form but had never received any psychiatric care on either an inpatient or outpatient basis or were never involved in any type of individual or group therapy process. This was determined by asking the subjects, "are you involved in any form of psychiatric treatment or have you ever been." If the answer was "yes" they were disqualified and if the answer was "no" they were included.

INSTRUMENT AND MATERIALS

The MMPI was used in this study. To assess personality one should use an instrument that is well known and actively used to enable familiarity with the test results. One must also choose an instrument that possesses both reliability and validity in order to maintain accuracy in information collection. The validity of the MMPI as a tool

for describing personality has been demonstrated by Meehl.[1] He compared the personality description compiled by clinical psychologists to that obtained from the MMPI actuarial description. The latter was 38 percent superior for outpatients and 19 percent superior for inpatients.

The MMPI is based on the testing of over 1200 male and female clinic and hospitalized patients, explicit rules have been derived which identify sixteen personality test configurations which collectively represent approximately 80 percent of all adults encountered in a major psychiatric setting.

The MMPI is designed to assist the practicing clinician concerned with problems of personality assessment of psychological and psychiatric disorders, the student clinical psychologist and student physician, and the research psychologist and psychiatrist interested in maximizing his efficiency at gaining an understanding of the patient.[2]

DESIGN OF THE STUDY

The study was aimed toward determining whether or not a significant relationship can be established between response frequencies to specific MMPI items for those who commit suicide. The male psychiatric patients were obtained

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[1]Marks and Seeman, loc. cit., pp. 29-59.

[2]Ibid., p. XV.

from the Topeka Veterans Administration Hospital, Topeka, Kansas.

DATA COLLECTION

The MMPI was administered to each of the subjects, during the period 1960-1974, with the instructions that they were to try to answer each question and to give their own opinion of themselves. It was explained that if a statement was true or mostly true, as applied to them, they were to answer true. If a statement was false or not usually true, as applied to them, they were to answer it false. There was no time limit for the test.

The answers were placed on a separate answer sheet that was scored by a Psychology Technician. There are thirteen scoring keys, one for each of the ten trait scales and three for the validity scales.

DATA ANALYSIS

The data analysis was carried out by the usual method which determined which MMPI items differentiate between criterion, comparison groups and between criterion and normal. This is set up on a 2 X 2 contingency table for each MMPI item and a chi-square test of association is used.

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[1]E. L. White, Data Analysis: A Statistical Primer for Psychology Students. New York: Aldine-Atherton, 1971.

However, this approach typically ignores the condition that sample size, N, must be large when using a chi-square test. In particular, N (total number of responses from both criterion and comparison groups to an item) must be larger than twenty, and the expected frequency in each of the four cells of the contingency table must be at least five. The latter half of this requirement will sometimes not be met even when N is much larger than twenty. For example, an MMPI item such as "Evil spirits possess me at times," will rarely be endorsed by persons in any group. For such an item the two cells in the contingency table representing "true" response may easily have expected cell frequencies less than five, even when a large number of persons respond to the item. Fisher's exact probability test was used when at least one expected cell frequency in the contingency table for an item is less than five, or when N is not greater than twenty.[1] The data analysis in this study was carried out by a computer program developed by Clopton.[2] A description of the program follows.

This program does an item analysis of the MMPI given the response frequencies of criterion and comparison groups

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[1]W. L. Hays, "Statistics," New York: Holt, Rinehart, and Winston, 1963.

[2]J. R. Clopton, "A Computer Program for MMPI Scale Development with Contrasted Groups," Educational and Psychological Measurement, 34, 1, Spring 1974, pp. 161-163.

for each item and determines for each item whether the chi-square test or Fisher's exact test if appropriate. The program was run on the criterion and normal group. The input for this program consists of a format card, a set of data cards--one for each MMPI item, and a blank sentinel card. The format card specified a format of five F fields to be used in reading the data cards. The first field on each data card contains the MMPI item number. The second field and the third field contain, respectively, the number of "True" responses and the number of "False" responses given to the item by criterion subjects. The fourth field and the fifth field contain, respectively, the number of "True" responses and the number of "False" responses given by comparison subjects.

The program then provides for every MMPI item for which input data is provided. The following information is provided: the item number, the appropriate statistical test (chi-square or Fisher's), the chi-square value (when the chi-square test is used), the two-tailed significance level, and the direction of scoring (response more frequent in the criterion group than in the comparison group) if the item is significant at the .05 level. After the input of information on specific items, appears a list of items to be included in the new scale at the .05 level of significance.

The main program is a set of 96 Fortran IV statements. Seventeen of the 121 cards in the main program are

comment cards. A function subprogram of eight Fortran IV statements is used in computing values for Fisher's exact test.[1]

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[1]Ibid.

Chapter IV

ANALYSIS OF DATA

In this section the process in which the data was analyzed is discussed. Specifically, the response analysis and the statistical analysis is presented.

RESPONSE ANALYSIS

As described in Chapter III, there was a total of sixty-six male MMPIs whose response frequencies were analyzed. Of these sixty-six MMPIs, twenty-two were psychiatric patients, twenty-two were psychiatric who had never been hospitalized or required outpatient psychiatric care.

STATISTICAL ANALYSIS

Either the chi-square test of association or the Fisher's exact probability test, as described in Chapter III, was used to test the null hypothesis that there was no significant difference between the responses of those psychiatric patients and normals who do not commit suicide and the psychiatric patient who does commit suicide. From the comparison of the psychiatric patients and the suicides the items that were found to be significant at the .05 level of significance are listed in Table 1 and Table 2.

TABLE 1

MMPI ITEMS SIGNIFICANTLY DIFFERENTIATING MALE PSYCHIATRIC PATIENTS AND MALE PSYCHIATRIC PATIENTS WHO HAVE COMMITTED SUICIDE

Item Number	Item	Suicidal Patients Response
38	During one period when I was a youngster I engaged in petty thievery.	F (False)
39	At times I feel like smashing things.	F
59	I have often had to take orders from someone who did not know as much as I did.	F
75	I get angry sometimes.	F
117	Most people are honest chiefly through fear of being caught.	F
127	I know who is responsible for most of my troubles.	F
143	When I was a child, I belonged to a crowd or gang that tried to stick together through thick and thin.	F
174	I have never had a fainting spell.	F
224	My parents have often objected to the kind of people I went around with.	F
328	I find it hard to keep my mind on a task or job.	F
426	I have at times had to be rough with people who were rude or annoying.	F
456	A person shouldn't be punished for breaking a law that he thinks is unreasonable.	F

Table 2 presents the significant items differentiating male normal subjects and male psychiatric patients who have committed suicide.

TABLE 2

MMPI ITEMS SIGNIFICANTLY DIFFERENTIATING BETWEEN NORMAL SUBJECTS AND PSYCHIATRIC PATIENTS WHO HAVE COMMITTED SUICIDE

Item Number	Item	Suicidal Patient Response
3	I wake up fresh and rested most mornings.	T
4	I think I would like the work of a librarian.	F
8	My daily life is full of things that keep me interested.	T
9	I am about as able to work as I ever was.	T
13	I work under a great deal of tension.	F
16	I am sure I get a raw deal from life.	F
20	My sex life is satisfactory.	T
21	At times I have very much wanted to leave home.	F
28	When someone does me a wrong I feel I should pay him back if I can, just for the principle of the thing.	F
29	I am bothered by acid stomach several times a week.	F
31	I have nightmares every few nights.	F
32	I find it hard to keep my mind on a task or job.	F
34	I have a cough most of the time.	F
35	If people had not had it in for me I would have been much more successful.	F
38	During one period when I was a youngster I engaged in petty thievery.	F
39	At times I feel like smashing things.	F
41	I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going."	F
43	My sleep is fitful and disturbed.	F
46	My judgment is better than it ever was.	F
51	I am in just as good physical health as most of my friends.	T
54	I am liked by most people who know me.	T

TABLE 2 (Continued)

Item Number	Item	Suicidal Patient Response
61	I have not lived the right kind of life.	F
65	I loved my father.	T
67	I wish I could be as happy as others seem to be.	F
72	I am troubled by discomfort in the pit of my stomach every few days or oftener.	F
73	I am an important person.	T
76	Most of the time I feel blue.	F
86	I am certainly lacking in self-confidence.	F
88	I usually feel that life is worthwhile.	T
93	I think most people would lie to get ahead.	F
99	I do many things which I regret afterwards (I regret things more or more often than others seem to).	F
106	Much of the time I feel as if I have done something wrong or evil.	F
107	I am happy most of the time.	F
116	I enjoy a race or game better when I bet on it.	F
117	Most people are honest chiefly through fear of being caught.	F
122	I seem to be as capable and smart as most others around me.	T
125	I have a great deal of stomach trouble.	F
130	I have never vomited blood or coughed up blood.	T
137	I believe that my home life is as pleasant as that of most people I know.	T
138	Criticism or scolding hurts me terribly.	F
142	I certainly feel useless at times.	F
143	When I was a child, I belonged to a crowd or gang that tried to stick together through thick and thin.	F
148	It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.	F
152	Most nights I go to sleep without thoughts or ideas bothering me.	T
153	During the past few years I have been well most of the time.	T
155	I am neither gaining nor losing weight.	T
157	I feel I have often been punished without cause.	F

TABLE 2 (Continued)

Item Number	Item	Suicidal Patient Response
158	I cry easily.	F
159	I cannot understand what I read as well as I used to.	F
160	I have never felt better in my life than I do now.	T
162	I resent having anyone take me in so cleverly that I have to admit it was one on me.	F
163	I do not tire quickly.	T
168	There is something wrong with my mind.	F
175	I seldom or never have dizzy spells.	T
178	My memory seems to be all right.	T
179	I am worried about sex matters.	F
182	I am afraid of losing my mind.	F
186	I frequently notice my hands shake when I try to do something.	F
187	My hands have not become clumsy or awkward.	T
192	I have had no difficulty in keeping my balance or walking.	T
193	I do not have spells of hay fever or asthma.	F
194	I have had attacks in which I could not control my movements or speech but in which I knew what was going on around me.	F
198	I daydream very little.	T
203	If I were a reporter I would very much like to report news of the theater.	F
204	I would like to be a journalist.	F
205	At times it has been impossible for me to keep from stealing or shoplifting something.	F
206	I am very religious (more than most people).	F
207	I enjoy many different kinds of play and recreation.	T
217	I frequently find myself worrying about something.	F
224	My parents have often objected to the kind of people I went around with.	F
236	I brood a great deal.	F
238	I have periods of such great restlessness that I cannot sit long in a chair.	F
242	I believe I am no more nervous than most others.	T

TABLE 2 (Continued)

Item Number	Item	Suicidal Patient Response
245	My parents and family find more fault with me than they should.	F
252	No one cares much what happens to you.	F
254	I like to be with a crowd who plays jokes on one another.	F
257	I usually expect to succeed in things I do.	T
259	I have difficulty in starting to do things.	F
263	I sweat very easily even on cool days.	F
264	I am entirely self confident.	T
265	It is safer to trust nobody.	F
268	Something exciting will almost always pull me out of it when I am feeling low.	T
274	My eyesight is as good as it has been for years.	T
278	I have often felt that strangers were looking at me critically.	F
279	I drink an unusually large amount of water every day.	F
281	I do not often notice my ears ringing or buzzing.	T
284	I am sure I am being talked about.	F
290	I work under a great deal of tension	F
292	I am likely not to speak to people until they speak to me.	F
294	I have never been in trouble with the law.	T
296	I have periods in which I feel unusually cheerful without any special reason.	T
298	If several people find themselves in trouble the best thing for them to do is to agree upon a story and stick to it.	F
301	Life is a strain for me much of the time.	F
303	I am so touchy on some subjects that I can't talk about them.	F
308	At times I have very much wanted to leave home.	F
310	My sex life is satisfactory.	T
315	I am sure I get a raw deal from life.	F
316	I think nearly anyone would tell a lie to keep out of trouble.	F
317	I am more sensitive than most other people.	F
318	My daily life is full of things that keep me interested.	T

TABLE 2 (Continued)

Item Number	Item	Suicidal Patient Response
328	I find it hard to keep my mind on a task or job.	F
330	I have never been paralyzed or had any unusual weakness of any of my muscles.	T
331	If people had not had it in for me I would have been much more successful.	F
333	No one seems to understand me.	F
335	I cannot keep my mind on one thing.	F
336	I easily become impatient with people.	F
337	I feel anxiety about something or someone almost all the time.	F
338	I have certainly had more than my share of things to worry about.	F
339	Most of the time I wish I were dead.	F
344	Often I cross the street in order not to meet someone I see.	F
345	I often feel as if things were not real.	F
353	I have no dread of going into a room by myself where other people have already gathered and are talking.	T
355	Sometimes I enjoy hurting persons I love.	F
356	I have more trouble concentrating than others seem to have.	F
361	I am inclined to take things hard.	F
362	I am more sensitive than most other people.	F
364	People say insulting and vulgar things about me.	F
366	Even when I am with people I feel lonely much of the time.	F
371	I am not unusually self-conscious.	T
376	Police are usually honest.	T
377	At parties I am more likely to sit by myself or with just one other person than to join in with the crowd.	F
379	I very seldom have spells of the blues.	T
389	My plans have frequently seemed so full of difficulties that I have had to give them up.	F
395	The future is too uncertain for a person to make serious plans.	F
396	Often, even though everything is going fine for me, I feel that I don't care about anything.	F

TABLE 2 (Continued)

Item Number	Item	Suicidal Patient Response
403	It is great to be living in these times when so much is going on.	T
407	I am usually calm and not easily upset.	T
413	I deserve severe punishment for my sins.	F
414	I am apt to take disappointment so keenly that I can't put them out of my mind.	F
431	I worry quite a bit over possible misfortunes.	F
433	I used to have imaginary companions.	F
435	Usually I would prefer to work with women.	F
439	It makes me nervous to have to wait.	F
441	I like tall women.	T
442	I have had periods in which I lost sleep over worry.	F
446	I enjoy gambling for small stakes.	F
449	I enjoy social gatherings just to be with people.	T
456	A person shouldn't be punished for breaking a law that he thinks is unreasonable.	F
467	I often memorize numbers that are not important (such as automobile license, etc.)	T
474	I have to urinate no more often than others.	T
484	I have one or more faults which are so big that it seems better to accept them and try to control them rather than to try to get rid of them.	F
487	I feel like giving up quickly when things go wrong.	F
492	I dread the thought of an earthquake.	F
494	I am afraid of finding myself in a closet or small closed place.	F
497	I enjoy stories of adventure.	T
506	I am a high-strung person.	F
508	I believe my sense of smell is as good as other people's.	T
511	I have a daydream life about which I do not tell other people.	F
519	There is something wrong with my sex organs.	F
522	I have no fear of spiders.	T
526	The future seems hopeless to me.	F
527	The members of mayfamily and my close relatives get along quite well.	T

TABLE 2 (Continued)

Item Number	Item	Suicidal Patient Response
531	People can pretty easily change me even though I thought that my mind was already made up on a subject.	F
532	I can stand as much pain as others can.	T
540	My face has never been paralyzed.	T
542	I have never had any black, tarry-looking bowel movements.	T
543	Several times a week I feel as if something dreadful is about to happen.	F
544	I feel tired a good deal of the time.	F
549	I shrink from facing a crisis or difficulty.	F
551	Sometimes I am sure that other people can tell what I am thinking.	T
555	I sometimes feel that I am about to go to pieces.	F
558	A large number of people are guilty of bad sexual conduct.	F
563	I like adventure stories better than romantic stories.	T

Chapter V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Suicide is a problem to everyone. Several theories have been developed to explain suicide but few offer a solution to the problem. It is obvious that there are many factors which influence a person's behavior before he or she commits suicide but how much and to what extent is unknown. In this study suicide was approached from a psychological point of view, theorizing that the person who commits suicide will respond differently to the MMPI than a psychiatric patient or a normal person. In this section the results of the study are summarized, conclusions are drawn from the data, and recommendations are made for future research in this area.

SUMMARY

This investigation was conducted to determine if a significant relationship exists between the response of a person who commits suicide as compared to psychiatric patients or normals. From the analysis of data performed, (i.e., chi-square or Fisher's exact probability test), one for each item of the MMPI, there was found to be a significant relationship for 175 of the variables at the .05 level. The null hypothesis was rejected in 175 cases.

CONCLUSIONS

From the results of this study it is concluded that the responses of persons who commit suicide and those of psychiatric patients and normals are significantly different, as measured by the MMPI.

From the first group that was analyzed, (committed suicides versus psychiatric patients), the item analysis yielded twelve MMPI questions that differentiated between the suicide and comparison group. The questions and the answers obtained more frequently from suicidal patients are listed in Table 1, page 39.

Inspection of the responses most frequent among suicidal patients showed them to give more socially desirable answers to MMPI items that concern anger, aggression and delinquent behavior. The twelve items did not have face validity as suicide indicators. Only one item (328) of the MMPI Suicide Threat Scale[1] was found to differentiate suicidal and non-suicidal patients. However, the response most frequently used among suicidal patients in this study was opposite to the same item's scoring direction in the Suicide Threat Scale. In any item analysis of MMPI response frequencies for two groups that is performed for all 566

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[1]N. L. Farberow and A. G. Devries, "An Item Differentiation Analysis of Suicidal Neuropsychiatric Hospital Patients." Psychological Report, 1967, 20, pp. 607-617.

items, some items will be found by chance to be significant to differentiate the two groups. Therefore, some of the items found to differentiate suicidal patients in the study were probably of spurious significance. From these findings it is not possible to make any clinical judgments in regard to the prediction of suicide from Table 1, page 39.

In the analysis of the second group (committed suicides versus normals) the item analysis yielded 163 MMPI items that differentiated between the suicide and normal group. The items and the responses obtained more frequently from suicidal patients were listed in Table 2, page 40. Inspection of the response more frequent among suicidal patients revealed a tendency for suicidal patients to give socially desirable answers to MMPI items that concern sexual matters, denial of emotion, somatic concerns, denial of anger, denial of aggression and delinquent behavior. The 163 items did not have face validity as suicidal indicators. Thirty items (8, 20, 43, 76, 86, 88, 94, 107, 152, 168, 182, 207, 217, 236, 238, 264, 278, 284, 290, 292, 301, 317, 328, 335, 337, 339, 344, 345, 355 and 361) of Farberow and Devries Suicide Threat Scale were found to differentiate suicidal and normals. However, the response most frequently used among suicidal patients in this study was opposite to the same item's scoring direction in the Suicide Threat Scale on all thirty.

The results of the first analysis (Table 1, page 39) in this study indicate that few of the 566 MMPI items differentiate suicidal and non-suicidal psychiatric patients and that none of the thirteen standard MMPI scales can be used by itself to predict suicide.

The results from the second analysis (Table 2, page 40) in this study indicate that there is a significant number of items that differentiate the normals from the suicides. The large number of differences between the two tables can be considered somewhat expected. It should be taken into account that when considering the responses of psychiatric inpatients who commit suicide versus those who do not commit suicide that their responses to the MMPI should not be considerably different as Simon and Gilberstadt found.[1] But when considering the differences between psychiatric inpatients who have committed suicide versus normal individuals who have no background of psychiatric difficulties there should be a considerable difference in the way that they respond to the MMPI. However, before trying to generalize these findings to the population at large further studies are needed to demonstrate the generality of the findings of the present study. Nevertheless, there is an indication that suicide can be predicted from the MMPI items in Table 2, page 40, which consists of the personality

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[1]Simon and Gilberstadt, loc. cit.

inventory items. This Table should not be taken as a fact but as a glimmer of hope for using this technique in developing a scale for the prediction of suicide in the future.

RECOMMENDATIONS

For future research in this area it is recommended that a large group of normals and suicides be analyzed using the same technique. A female population should be included in this study. The results should then be factor analyzed to see which items carry the most weight and significance. By factor analysis, hopefully the number of items could be reduced and an average number set which would depict those who should be considered suicidal risks.

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