1959

The Effect of Promazine Hydrochloride on Anxiety as Measured by the Taylor Manifest Anxiety Scale

Vincent D. Pisani
Loyola University Chicago

THE EFFECT OF PROMAZINE HYDROCHLORIDE ON ANXIETY AS MEASURED BY THE TAYLOR MANIFEST ANXIETY SCALE

By

Vincent D. Pisani

A Thesis Submitted to the Faculty of the Graduate School of Loyola University in Partial Fulfillment of the Requirements for the Degree of Master of Arts

February

1959

LIFE

Vincent D. Pisani was born in Chicago, Illinois, July 12, 1932. He graduated from St. Mel High School in June, 1949. He received the degree of Bachelor of Science from Loyola University in June, 1953.

The author began his graduate studies at Loyola University in June of 1953. He was drafted into Military Service in November of 1955 and functioned as a clinical psychologist in the United States Navy until separated from active duty in 1957.

In November of 1957, he accepted an appointment as a Civilian Clinical Psychologist and worked at the United States Naval Hospital, Great Lakes, Illinois until March, 1958. In March, 1958, he accepted the position of Senior Psychologist at the Chicago Alcoholic Treatment Center and is presently employed in that position.

ACKNOWLEDGEMENTS

The author wishes to express his gratitude to Captain H. H. Lipcon U.S.N.M.C. for granting the investigator permission to conduct this study at the U.S.N.H., Great Lakes, Illinois and also to Lt. Donald H. Burk U.S.N.R.M.C., without whom this study could not have been conducted.

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

The use of drugs to allay emotional upheavals is as old as medicine itself. In the last few years however, the development of chemical compounds called "Ataractics" for the purpose of altering mood and quieting excitation has initiated the use of a new era in dealing with and managing emotionally disturbed individuals.

There is disagreement as to whether the ataractics are a widely useful therapy or a specific therapy to be used only with limited categories of patients. There are those who advocate their use for every condition from mild anxiety to the various phobias. Others are extremely reluctant to accept the advice of the overoptimistic who go so far as to urge a reformulation of psychiatric concepts.

It has been said that perhaps the largest group of patients to whom the general practitioner would have occasion to administer the tranquilizing agents are those suffering from acute and chronic anxiety states. The ataractics as a whole do seem to alleviate acute symptomatology to a great degree. However, it seems that they have been less successful in relieving chronic anxiety and tension.

One of the newer additions to the family of ataractic drugs is

Promazine Hydrochloride[1] which is manufactured by the Wyeth Corporation under the trade name of Sparine. Sparine has proven to be effective in the management of patients with acute mental disturbances (3,4). It is also claimed however, that patients who complain of nervous tension and chronic anxiety may be helped with Sparine (5).

There have been several studies describing the clinical effectiveness of Sparine as well as other ataractics in the management of alcohol-induced syndromes and for the control of the acutely disturbed psychotic. More recently Sparine has been used in the management of various medical emergencies and has proven to be a safe and effective agent for long-term control of emotional and behavior disturbances associated with old age (24, 13, 23).

On the other hand, there are virtually no reports describing the effectiveness of Sparine with less dramatic chronic disturbances. Those few studies which have been reported seem to present conflicting evidence as to its effectiveness with the more mild (non-psychotic) chronic emotional disturbances.

Fazekas, Shea and Sullivan (5, p.79) have stated that many patients, even without acute reactions, who frequently complain of nervous tension, as well as subjective somatization of their chronic anxiety state, may be helped with Sparine. This seems to be supported by Resek's study (22) where it was said that psychoneurotic patients became more accessible to treatment and evidenced a relaxation of emotional stress.

---

[1] Hereafter Promazine Hydrochloride will be referred to as Sparine.

Lemere however, (15) maintains that Sparine is not as effective in relieving ordinary nervous tension and anxiety as it is in managing more agitated and disturbed patients. This seems to be supported by Merry, Pargiter and Munro (19) in a related study using oral chlorpromazine on chronic neurotic tension states.

Since there is conflicting evidence as to whether or not Sparine is effective in alleviating nervous tension and anxiety in less disturbed patients, it was felt that a study should be done utilizing the drug with the less dramatic (non-psychotic) emotional disorders. Further, the use of a more objective measure of anxiety should be utilized such as the Taylor Manifest Anxiety Scale.[2]

The purpose of the study then is to investigate the effects of one of the newer additions to the family of ataractic drugs (Sparine) on manifest anxiety as measured by the T.M.A.S. It is hypothesized that if Sparine is effective in alleviating anxiety as measured by the T.M.A.S., then there should be a significant difference in the "anxiety scores" before and after treatment.

---

[2]Hereafter the Taylor Manifest Anxiety Scale will be referred to as the T.M.A.S.

CHAPTER II

REVIEW OF THE LITERATURE

A. Description of the Taylor Manifest Anxiety Scale

The manifest anxiety scale was originally constructed by Taylor for use in a study of eyelid conditioning (26). Approximately 200 items from the Minnesota Multiphasic Personality Inventory were submitted to five clinical staff members. They were to designate those items that they judged to be indicative of manifest anxiety according to Cameron's description of chronic anxiety reactions. Cameron's definition is as follows:

> "We designate as anxiety, the predominantly, covert skeletal and visceral reaction which, for an unhampered and uninhibited person, constitutes the normal preliminary phase of emotional flight, but which for some reason is prevented from going on into its consummatory phase." (2, p. 147)

The sixty-five items on which there was 80 percent agreement or better were then selected for the scale. These items were then supplemented by 135 additional items from the Minnesota Multiphasic Personality Inventory tapping some other dimension and called "buffer" items. These buffer items were uniformly classified by the judges as nonindicative of anxiety. The scale was then administered to 352 students in a course in introductory psychology. The measures which were based only on the sixty-five anxiety items ranged from a low anxiety score of one to a high score of 36, with a median of 14. The distribution was slightly skewed in the direction of high anxiety. Raw

test scores for the non-anxious groups ranged from one through 7 and for the anxious group from 24 through 36.

The scale went through subsequent revision and at present consists of 50 of the original 65 items (27). The buffer items have been changed to include most of the items from the L, K and F scales of the Minnesota Multiphasic Personality Inventory and 41 items taken from a rigidity scale developed by Wesley. At present the total test consists of 225 items (see Appendix III).

A further revision was carried out by Taylor in an attempt to simplify the vocabulary and sentence structure of some of the anxiety items which seem to be difficult to comprehend (see Appendix I and II), especially the non-college population (27). Twenty-eight of the items were rewritten and an experiment was performed to determine the relationship between the old and new versions. The results showed a Pearson product-moment correlation of .85 between the old and the new version. Since subjects used in this study are of a non-college population, it is this new version which was used.

B. Validity of the Taylor Manifest Anxiety Scale

In a review of the literature it was pointed out that the T.M.A.S. has frequently been employed in investigations of anxiety and learning phenomena (12) and significant conclusions have resulted from these studies. However, there have been few studies utilizing it as a purely clinical tool.

The reliability of the T.M.A.S. had been reported as ranging from .81 to .96 (12). More recently the range is reported from .68 to .96. However, most of the studies report retest reliabilities above .80 even after a lapse

of as long as seventeen months (14). This seems remarkable when one considers the diversity of the forms used. Some forms of the T.M.A.S. have used dissimilar buffer items (9, 26, 27); others have changed the number of critical items (9, 11, 26, 27) or substituted for them, while still others have modified the vocabulary and sentence structure of the critical items (1, 27).

Although adequate reliability has been demonstrated in most studies, there have been a limited number of studies concerning its validity. Some studies have provided conflicting evidence as to its validity. In the more recent studies however, there seems to be sufficient evidence to support its validity.

In a study by Holtzman, Calvin and Bitterman (11), they obtained T.M.A.S. and Winne scale scores for a group of subjects. A correlation of .72 was obtained between the scales, which the authors interpreted as evidence for the validity of the T.M.A.S. since the Winne scale is an empirically derived scale of neuroticism.

Taylor has presented some indirect evidence of the scale's validity (27). She obtained the distribution of scores for 103 neurotic and psychotic subjects, and found that the median score was equivalent to the 98.9 percentile for normal subjects. It was assumed that the former exhibit greater manifest anxiety than normals. She concluded that her findings seemed to indicate some relation between T.M.A.S. scores and clinical observations of manifest anxiety.

In a study by Kendall (12) T.M.A.S. scores for a sample of 93 hospitalized tuberculosis patients were obtained, and extreme groups were selected

so as to include the upper and lower 27 percent. Each subject was rated independently by two ward nurses on a manifest anxiety rating scale which was developed by the writer to facilitate ratings. The combined ratings by the two nurses served as the criterion for validation. A test of significance between the mean ratings of these two groups did not make it possible to reject the null hypothesis. A supplementary comparison between the upper and lower 13 percent did make it possible. The results are interpreted as indicating that the T.M.A.S. is valid as a coarse measure of anxiety. It must be added however, that this coarseness could be directly related to the sensitivity of the nurses in their ratings.

On another study, Gallagher (9) attempted to see if there were anxiety stress changes, as measured by various MMPI anxiety scales, from pretherapy to post-therapy, in 42 college students who underwent client-centered therapy. Comparisons were also made between the change in stress measures from pretherapy to the post-therapy test, and the various therapy-success criterion measures. The results showed that all four measures showed a significant decrease in stress from pretherapy to post-therapy. Two of the measures, the T.M.A.S. and the Winne Neuroticism Scale, showed the highest amount of agreement with the therapy success measures.

In a study by Matarazzo, Guze and Matarazzo (17), the T.M.A.S. was administered individually to a clinic sample of medical and psychiatric outpatients. They hypothesized that if the T.M.A.S. measured anxiety and if it is true that psychiatric patients are more anxious than other patients, then the mean anxiety score of a sample of psychiatric patients should be greater than the mean score of a sample of psychiatrically healthy medical

patients. The results showed that the means for the two psychiatric samples were clearly greater than the means of the two medical samples. Thus it was concluded that scores on the T.M.A.S. can with reasonable efficiency distinguish a psychiatric population from a nonpsychiatric one.

In a recent study by Lebo, Toal and Brick (14) an attempt was made to validate the T.M.A.S. directly by applying it to anxious subjects in a stress situation. The anxiety was then directly manipulated in that a certain of them underwent carbon dioxide therapy to alleviate anxiety, while others were not treated therapeutically. A statistically significant improvement in the performance of the experimental group on the T.M.A.S. was obtained. This improvement was also seen in a check test, the Bender Gestalt. The results were interpreted as indicating the validity of the T.M.A.S. as a measure of manifest anxiety.

On the whole then, the more recent studies support the T.M.A.S. as being a valid measure of manifest anxiety.

C. Description of Promazine Hydrochloride (Sparine).

Promazine Hydrochloride is made and distributed by the Wyeth Co. as Sparine Hydrochloride. Sparine is known by the generic term promazine hydrochloride and is 10-(y-dimethylamine-n-propyl)-phenothiazine hydrochloride. It is a white crystalline salt that turns slightly pink on standing. It melts at 178 - 180° centigrade and is readily soluble in water and alcohol. (3)

The structural formula and action of Sparine compares with that of the other phenothiazine compounds (5, 28). They are assumed to exercise a

depressant action at the myoneural junction and directly on the muscle. They seem to have an inhibiting action on the diencephalic centers and a dampening effect on the arousal mechanism in the reticular substance. It has been noted that these compounds exert a curare-like action on the neck muscles, retard motor activity and reduce aggressiveness (10, p. xiii). It seems that they have a selective depressant action on the central nervous system, acting primarily at the subcortical level in the cerebrum, diencephalon, medula and to a lesser extent, on the peripheral autonomic system. Peripherally they have minor antispasmodic, anticholinergic, antihistaminic and adrenolytic action. Their antiemetic effect is believed to result from blocking emetic impulses at the chemorceptor trigger zones and vomiting center in the medulla.

Sparine differs chemically from chlorpromazine hydrochloride only in that the latter has a chlorine atom attached to the phenothiazine nucleus (5). The side effects of Sparine appear to be less intense and fewer than those of other phenothiazine compounds. There is considerable less effect on blood pressure and although it seems to be less potent, it can produce similar calming action when used in sufficient quantity.

D. Uses of Sparine and Related Studies

There have been several studies describing the effectiveness of Sparine in controlling many overt manifestations associated with various alcohol and drug-induced withdrawal syndromes (6, 8, 20) and in the management of patients with acute mental disturbances (3, 4). Sparine has been used in the management of various medical emergencies and specifically for such things as

agitation, anxiety, nausea, vomiting, pain, hiccoughs, and apprehensiveness. More recently, Sparine has proven to be a safe and effective agent for long-term control of emotional and behavior disturbances associated with old age (13, 23).

There are no published reports in which Sparine has been studied exclusively with less dramatic (non-psychotic), chronic emotional disturbances. Those studies which have reported on treatment of the more mild disturbances seem to present conflicting evidence.

Lemere (15) reported his experiences with Sparine in treating approximately 75 patients with various psychiatric problems during a six month period. The cases were about equally divided between psychotic, anxiety, depressive and alcoholic disorders. The dosage varied from 50 mg. four times a day to 400 mg. a day. It was felt that dosage above this was not likely to be any more efficacious unless one is treating a very disturbed patient. Lemere concluded that the:

1. Indications for Sparine therapy are essentially the same as those for other phenothiazine derivatives, namely, tranquilization of the agitated or disturbed patient and the alleviation of anxiety and tension.

2. The effect of Sparine in relieving ordinary nervous tension and anxiety such as seen in office cases are not as dramatic or impressive as its effect on agitated and disturbed patients.

3. Sparine has the added advantage of fewer side reactions and immediate effect through intravenous administration.

4. The initial dosage of Sparine can be approximately twice that of chlorpromazine.

5. Sparine should be used with caution in the severely intoxicated alcoholic patient.

6. Sparine was not habit forming in the cases studied.

Lesse (16) gave an evaluation of Sparine in psychiatric practice. The case material consisted of 50 patients, 45 of whom were seen in private practice and 5 were clinic outpatients. Thirty-six were women ranging in age from 28 to 75 years and 14 were males 35 to 72 years of age. Twenty-two had schizophrenia, 15 had agitated depressions, 11 had psychoneuroses, and 2 severe, acute organic mental reactions. The duration of illness varied from 20 hours to 21 years. All patients were treated with Sparine for more than 2 weeks. The longest period of treatment had been 4 months. The following conclusions were drawn:

1. The drug was effective in one-third of the patients treated, but only in those who demonstrated marked anxiety.

2. Dosage beyond 600 mg. per day does not seem to be any more effective.

3. Adverse side-effects are mild and relatively uncommon when compared to chlorpromazine.

Resek (22) reported on experiences with Sparine in daily practice. Seventy-seven patients suffering from diverse disturbances, each based on or complicated by an emotional problem, were treated with Sparine in private practice. Most of the patients were ambulatory. The total daily dose ranged from 75 to 150 mg. for the ambulatory patients; for bed patients at home, from 100 to 200 mg.; and for hospital patients, the daily dosage ranged to 300 mg. The results indicated complete relief or pronounced improvement was obtained in 83 percent, and partial remission of symptoms in an additional

10 percent. The psychoneurotic patients became more accessible to psychiatric treatment. Control of the emotional components in obesity and neurotic smoking aided management of the underlying disorder. In all cases relaxation of emotional stress either solved the clinical problem or enabled more effective specific treatment. Drowsiness was the only side effect reported in 10 percent of the cases.

Fink and Vlavianos (7) gave their clinical impressions of the response to Sparine therapy. Sparine was administered in total daily doses of 300 mg. to 1.5 Gm. for 2 to 13 months, to 200 ward patients ranging in age from 22 to 70 years. Diagnosis included paranoid, hebephrenic, catatonic or simple schizophrenia (152 patients); manic-depressive psychosis (4 patients), psychoneurosis (7 patients), psychosis with mental deficiency (5 patients), and psychosis resulting from alcoholism (32 patients). All had been ill one to fifteen years and approximately 63 had received other treatment e.g. psychosurgery, electro or insulin shock, or other ataractic drugs. It was concluded that Sparine significantly alleviates the secondary symptoms of psychoses and permits greater amenability to psychotherapy. There was less destructiveness or need for mechanical restraint in the chronically psychotic.

In a related study, Merry, Pargiter and Munro (19) performed a controlled study of the affects of oral chlorpromazine on chronic neurotic tension states. Twenty-one male inpatients were diagnosed as suffering from a chronic neurotic tension state. Half of these were given inert tablets of similar appearance to chlorpromazine. The remaining patients received up to a maximum of 300 mg. of chlorpromazine daily. Prior to treatment the patients were assessed independently by the psychiatrists and a psychologist. After

a period of four weeks of treatment the patients were reassessed by both the psychiatrists and the psychologist. It was concluded that there was no clear difference between the results obtained in the chlorpromazine and control groups, clinically, subjectively or on psychological tests.

In summary then, there is conflicting evidence as to the effectiveness of Sparine and closely allied medications (Phenothiazine derivatives) in alleviating chronic, neurotic tension and anxiety. The reliability and validity of the T.M.A.S. has been adequately demonstrated especially in the more recent studies. However, by the definition used in constructing the T.M.A.S., it seems more a measure of chronic, covert anxiety rather than acute anxiety (2, p. 147). This was indirectly supported by Kendall's study (12).

CHAPTER III

PROCEDURE

All subjects used in the study were enlisted male military personnel who had been admitted to the closed ward of the Neuropsychiatric Service at the U. S. Naval Hospital, Great Lakes, Illinois. Upon being admitted to the Ward, the patients were immediately assigned to a psychiatrist. Approximately 48 hours after admission each individual was interviewed by his assigned psychiatrist and given a tentative diagnosis. Although there were three psychiatrists on this service only one participated in the study. It was he who recommended the patients for the experiment.

It was decided that only those patients who were initially diagnosed as "Emotional Instability Reactions" should be used in the study. This diagnosis is listed under the character and behavior disorders and is sublisted under immaturity reactions. It is defined as follows in the "Joint Armed Forces Nomenclature and Method of Recording Psychiatric Conditions":

> "Emotional instability reaction--In such cases the individual reacts with excitability and ineffectiveness when confronted with minor stress. His judgment may be undependable under stress and his relationship to other people is continuously fraught with fluctuating emotional attitudes, because of strong and poorly controlled hostility, guilt and anxiety which require quick mobilization of defense for the protection of the ego." (29, p.10)

Although only persons with behavior disorders are placed under this category, the psychiatrists on the service agreed that at times, persons who would

normally be considered neurotic in civilian life are placed in this category for administrative reasons. It was agreed however, that no person with a severe emotional disturbance (psychosis or severe psychoneurosis) was to be placed in this nosological group.

After the initial diagnosis was established, the patient was given approximately one week's time to settle down on the ward and during this time he was not administered any medication. This initial rest period was introduced to allow the effect of entering into the hospital to play its part before commencing treatment with medication. It also served as a period during which time the psychiatrist could confirm his initial diagnosis. Each patient was seen approximately the same number of times by the psychiatrist prior to and during treatment and no psychotherapy of any kind was conducted during the patient's hospitalization.

Prior to beginning the experiment, it was concluded that a "double blind" experimental approach would be used. It was understood that the patients would be alternately assigned to one of two treatment methods. In this way, there would be upon completion of the experiment, a control group (patients treated with placebo) and an experimental group (patients treated with Sparine).

After the diagnosis was confirmed the patient was immediately given the T.M.A.S. and alternately assigned to receive either treatment A.A. or treatment X.X. If he was assigned to receive treatment A.A., he was placed on a regimen of medication A.A., which was placebo and considered to be in the control group. If he was assigned to receive treatment X.X., he was placed on a regimen of medication X.X. which was Sparine and considered to be in the

experimental group. The placebo was of the same size, color and weight as the Sparine medication and only the psychiatrist and the experimenter knew the difference between the two. The other ward personnel such as nurse and corpsman believed that both medications were Sparine.

The treatments consisted of oral doses of 100 mg. of medication three times a day for a period of seven days. There is no set dosage but this amount was considered to be effective in treating more severe emotional disturbances. During this period of treatment, the patients received standardized hospital care. After a period of seven days had elapsed, the T.M.A.S. was re-administered to the patient.

The above procedure continued until a total of thirty patients had completed treatment. Half of this number, or 15 were those who had received treatment A.A. (placebo) and considered to be the control group. The other 15 were those who had received treatment X.X. (Sparine) and considered to be the experimental group.

These two groups had been matched according to age, sex, race, anxiety score, diagnosis and time admitted prior to treatment. All subjects had passed their seventeenth but not yet reached their twenty-sixth birthdays. There were seven Navy, two Marine and six Army personnel in the control group and 14 Navy and one Army personnel in the experimental group. The mean chronological age of the control group was 19.6 and that of the experimental group was 19.4. The standard deviations were 2.26 for the control group and 1.66 for the experimental group. The mean anxiety scores for the control and experimental groups prior to treatment were 25.73 and 22.73, respectively. The standard deviations were 8.81 for the control group and 11.07 for the

experimental group.

After the treatment was completed, the difference between the T.M.A.S. scores of the control and experimental groups before and after treatment was tested for significance. It was decided that a distribution-free method of analysis should be employed for the following reasons:

1. The scores from neither group could be assumed to be normally distributed.

2. The sample was relatively small.

It was felt that the median test (21, p. 125), which is essentially a chi-quare technique for testing whether two independent groups differ in central tendency, should be utilized. To perform the test, the median is computed for the combined sample of observations. Then, both sets of scores are dichotomized at that combined median. If the samples do come from populations with the same median, then we should expect about half of them in one set to be above the common median and about half below, similarly for the other set. If the relative proportions are too discrepant, the hypothesis of equality is rejected.

The data is treated in the following manner: Record a plus for any observation above the common median, a minus for any observation below the median. Then, construct a 2 x 2 contingency table and compute the value of chi-square by using the following formula:

$$X^2 = \frac{N(AD-BC)^2}{(A\ B)\ (C\ D)\ (A\ C)\ (B\ D)} \quad (18, p.\ 224)$$

As was stated earlier in Chapter II, the revised T.M.A.S. was used in this study. The changes are minimal (see Appendices I and II) but essential since the subjects used were not of a college population.

CHAPTER IV

RESULTS AND CONCLUSIONS

The purpose of this study was concerned with the effect of Sparine on manifest anxiety as measured by the T.M.A.S. It was hypothesized that if Sparine was effective in alleviating anxiety as measured by the T.M.A.S., then there should be a significant difference in anxiety scores between patients treated with the drug and those treated with inert medication.

Thirty patients were alternately assigned to one of two treatment methods. A total of 15 patients received treatment A.A. which was placebo medication three times a day for a period of seven days. The remaining 15 patients received treatment X.X. which was 100 mg. of Sparine three times a day for a period of seven days. The two groups were matched as to age, sex, race, anxiety score, diagnosis and time admitted prior to treatment.

The mean anxiety score for the control group prior to treatment was 25.73 with a standard deviation of 8.81; the mean and standard deviation for the experimental group prior to treatment was 22.73 and 11.07, respectively. In testing for the difference between the scores prior to treatment, a median test value of 1.20 with a .277 value of probability was obtained. This difference was not considered to be significant.

The mean anxiety score for the control group after treatment was 25.80 with a standard deviation of 7.92; the mean and standard deviation for the experimental group after treatment was 21.67 and 11.94, respectively, (see Tables I and II).

TABLE I

MEANS AND STANDARD DEVIATIONS OF

EXPERIMENTAL GROUP BEFORE AND AFTER TREATMENT

	Pre-Therapy	Post-Therapy
Means	22.73	21.67
Standard Dev.	11.07	11.94

TABLE II

MEANS AND STANDARD DEVIATIONS OF

CONTROL GROUP BEFORE AND AFTER TREATMENT

	Pre-Therapy	Post-Therapy
Means	25.73	25.80
Standard Dev.	8.81	7.92

In testing for the difference between scores after treatment an identical median test value of 1.20 with a .277 value of probability was obtained (see Appendix VI). There is no significant difference and it is concluded that the results of this study do not indicate that Sparine is effective in alleviating anxiety as measured by the T.M.A.S.

There are some important factors which can be pointed out in discussing the data. The results of this study do not indicate that Sparine is effective in alleviating anxiety as measured by the T.M.A.S. Perhaps we can speculate a bit beyond this. As was pointed out earlier in Chapter II, many authors have utilized the T.M.A.S. in clinical as well as experimental research. The more recent studies (9,11,12,14,17) support it as a valid measure of anxiety. However, by the definition used in constructing the scale (2, p. 147), it would seem that the T.M.A.S. is more a measure of "chronic", covert anxiety rather than acute anxiety. The patients selected for this study were those who were suffering from a relatively mild emotional disturbance which was chronic rather than acute in nature. It would seem then that the above results tend to support experimenters such as Lemere (15) and Merry (19) who feel that Sparine is not effective in alleviating chronic anxiety and tension.

In speculating about the above results, the following should be considered:

1. Although adequate reliability has been demonstrated in most studies, there are some which cite low retest reliabilities. However, in the results from this study, the means of each of the sets of scores remained essentially constant after retesting.

2. Acute anxiety in the patients was eliminated to an extent by hospitalization and by giving them a week's hospital rest prior to commencing treatment. This may have lowered their score to some extent. However, it has been pointed out that the T.M.A.S. is a rather coarse measure of acute anxiety and seems more a measure of chronic anxiety and tension.

3. It is possible that a much more refined experimental design would have given a somewhat different picture.

CHAPTER V

SUMMARY

This thesis proposed to investigate the effects of Sparine on anxiety as measured by the T.M.A.S. It was hypothesized that if Sparine is effective in alleviating anxiety as measured by the T.M.A.S., there would be a significant difference in the anxiety scores between patients treated with Sparine and those treated with inert medication.

A "double blind" experimental approach was used whereby 30 enlisted male military personnel, who had been admitted to the closed ward of the Neuropsychiatric Service at the United States Naval Hospital, Great Lakes, Illinois, were alternately assigned to receive one of two types of treatment. All patientswere diagnosed as "Emotional Instability Reactions" and allowed one week's time to get settled on the ward prior to receiving treatment. At this time, the diagnosis was confirmed and the patients were alternately assigned to either treatment A.A. (placebo medication three times a day for a period of seven days) or to treatment X.X. (100 mg. of Sparine three times a day for a period of seven days). Prior to commencing treatment, the T.M.A.S. was administered individually to each patient. During treatment, the patients received standardized hospital care and were seen approximately the same number of times by the psychiatrist. No psychotherapy of any kind was conducted during hospitalization. Upon completion of treatment, the T.M.A.S. was re-administered individually to all patients.

Upon completion of the experiment there were 15 patients who had completed treatment A.A. (control group) and 15 patients who had completed treatment X.X. (experimental group). The means and standard deviations of the T.M.A.S. scores prior to treatment were 25.73 and 8.81, respectively for the control group, and 22.73 and 11.07, respectively for the experimental group. The retest (after treatment) yielded a mean of 25.80 with a standard deviation of 7.92 for the control group and a mean and standard deviation of 21.67 and 11.94, respectively for the experimental group. In testing for the difference between scores in the two groups, an identical median test value of 1.20 with a .277 value of probability was obtained both prior to and after treatment. There is no significant difference and it is concluded that the results of this study do not indicate that Sparine is effective in alleviating anxiety as measured by the T.M.A.S.

In discussing the results, some important factors were considered. As was pointed out in Chapter I, some experimenters feel that Sparine is effective in alleviating chronic as well as acute anxiety (5, 22). Others (15, 19) believe that drugs such as Sparine are not effective in relieving chronic anxiety and tension. It was speculated that since the T.M.A.S. seems more a measure of "chronic" covert anxiety rather than acute anxiety and since the patients selected for this study were considered to be suffering from a relatively mild, chronic emotional disturbance, then it may be that the above results tend to support those who believe that Sparine is not effective in relieving chronic anxiety and tension.

BIBLIOGRAPHY

1. Buss, A. H. "A Follow-Up Item Analysis of the Taylor Anxiety Scale." J. Clin. Psychol., 1955, 11, 409-410.

2. Cameron, N. The Psychology of Behavior Disorders. Houghton Mifflin Co., Boston, 1947.

3. Fazeka, J. F., Sullivan, P. D. and Schultz, J. D. "Use of Di-Methylamino-N-Propyl-Phenothiazine in the Management of Patients with Acute Mental Disturbances." M. Ann. District of Columbia, 1956, 25, 67-69.

4. Fazekas, J. F., Schultz, J. D., Sullivan, P. D. and Shea, J. G. "Management of Acutely Disturbed Patients with Promazine." J.A.M.A., 1956, 161, 46.

5. Fazekas, J. F., Shea, J. G. and Sullivan, P. D. "Ataractics in Medical Practice." G. P., 1956, 14, 75-81.

6. Figurelli, F. A. "The Promazine Treatment of Alcoholism." Indust. Med. 1956, 25, 376-380.

7. Fink, L. and Vlavianos, G. "Clinical Impressions of the Response to Promazine Therapy." Am. J. Psychiat., 1958, 114, 1031-1032.

8. Fox, Vernelle. "The Management of Acute Alcoholism." Am. Pract. & Digest Treat., 1956, 7, 1461-1464.

9. Gallagher, J. J. "Manifest Anxiety Changes Concomitant with Client-Centered Therapy." J. Consult. Psychol., 1953, 17, 443-446.

10. Gordon, Hirsch, L. (ed.) The New Chemotherapy in Mental Illness. The Philosophical Library, New York, 1958.

11. Holtzman, W. H., Calvin, A. D., and Bitterman, M. E. "New Evidence for the Validity of Taylor's Manifest Anxiety Scale." J. Abnorm. Soc. Psychol., 1952, 47, 853-854.

12. Kendall, E. "The Validity of Taylor's Manifest Anxiety Scale." J. Consult. Psychol., 1954, 18, 429-432.

13. Kent, E. A. and Gitman, L. "Promazine for Emotionally Disturbed Chronically Ill Institutionalized Aged." Geriatrics, 1957, 12, 647-652.

14. Lebo, D., Toal, R. A. and Brick, H. "Manifest Anxiety in Prisoners Before and After CO_2." J. Consult. Psychol., 1958, 22, 51-57.

15. Lemere, F. "Promazine (Sparine) in the Treatment of Psychiatric Disorders." Northwest Med., 1956, 55, 790-791.

16. Lesse, S. "An Evaluation of Promazine Hydrochloride in Psychiatric Practice." Am. J. Psychiat., 1957, 113, 984-987.

17. Matarazzo, J. D., Guze, S. B. and Matarazzo, R. G. "An Approach to the Validity of the Taylor Anxiety Scale: Scores of Medical and Psychiatric Patients." J. Abnorm. Soc. Psychol., 1955, 51, 276-280.

18. McNemar, Quinn. Psychological Statistics. John Wiley and Sons, New York, 1955.

19. Merry, J., Pargiter, R. A. and Munro, H. "Chlorpromazine and Chronic Neurotic Tension." Am. J. Psychiat., 1957, 113, 988-990.

20. Mitchell, Earl H. "Treatment of Acute Alcoholism with Promazine (Sparine)." J. A.M.A., 1956, 160, 44-45.

21. Moses, Lincoln F. "Non-Parametric Statistics for Psychological Research." Psychol. Bull., 1952, 49, 122-143.

22. Resek, F. "Experiences with Promazine in Daily Practice." Am. Pract. Treat., 1957, 8, 1409-1414.

23. Settel, E. "Treatment of the Agitated Senile Patient with Promazine." G. P., 1957, XVI, 107-110.

24. Shea, J. G., Ehrmantrant, W. R., Ticktin, H. E., Sullivan, P. D., Jr. and Fazekas, J. F. "Use of Promazine in the Management of Medical Emergencies." Military Med., 1956, 119, 221-227.

25. Spence, K. W. and Taylor, Janet A. "Anxiety and Strength of the U.C.S. as Determiners of the Amount of Eyelid Conditioning." J. Exp. Psychol., 1951, 42, 183-188.

26. Taylor, Janet A. "The Relationship of Anxiety to the Conditioned Eyelid Response." J. Exp. Psychol., 1951, 42, 81-92.

27. -----. "A Personality Scale of Manifest Anxiety." J. Abnorm. Soc. Psychol., 1953, 48, 285-290.

28. Truitt, Edward B. "Pharmacology of the Ataractic Drugs." Mod. Med., 1957, 25, 77-80.

29. United States Joint Armed Forces. Nomenclature and Method of Recording Psychiatric Conditions. U. S. Government Printing Office, Wash. 25, D. C., June, 1949.

APPENDIX I

ITEMS INCLUDED ON THE TAYLOR MANIFEST ANXIETY SCALE AND RESPONSES SCORED AS "ANXIOUS" ITEMS ARE NUMBERED AS THEY APPEAR IN THE COMPLETE BIOGRAPHICAL INVENTORY

---

4. I do not tire quickly. (False)
5. I am troubled by attacks of nausea.* (True)
7. I believe I am no more nervous than most others.* (False)
11. I have very few headaches. (False)
13. I work under a great deal of tension.* (True)
14. I cannot keep my mind on one thing. (True)
16. I worry over money and business. (True)
18. I frequently notice my hand shakes when I try to do something. (True)
24. I blush no more often than others.* (False)
25. I have diarrhea once a month or more.* (True)
26. I worry quite a bit over possible misfortunes.* (True)
27. I practically never blush. (False)
33. I am often afraid that I am going to blush. (True)
35. I have nightmares every few nights. (True)
36. My hands and feet are usually warm enough. (False)
37. I sweat very easily even on cool days. (True)
38. Sometimes when embarrassed, I break out in a sweat which annoys me greatly.* (True)
41. I hardly ever notice my heart pounding and I am seldom short of breath.* (False)
43. I feel hungry almost all the time. (True)
44. I am very seldom troubled by constipation.* (False)
48. I have a great deal of stomach trouble. (True)
51. I have had periods in which I lost sleep over worry.* (True)
54. My sleep is fitful and disturbed.* (True)
56. I dream frequently about things that are best kept to myself.* (True)
66. I am easily embarrassed. (True)
67. I am more sensitive than most other people.* (True)
77. I frequently find myself worrying about something.* (True)
82. I wish I could be as happy as others seem to be.* (True)
83. I am usually calm and not easily upset. (False)

* Statements rewritten for subsequent revision.

APPENDIX I (CONTINUED)

ITEMS INCLUDED ON THE TAYLOR MANIFEST ANXIETY SCALE AND RESPONSES SCORED AS "ANXIOUS" ITEMS ARE NUMBERED AS THEY APPEAR IN THE COMPLETE BIOGRAPHICAL INVENTORY

86. I cry easily. (True)
87. I feel anxiety about something or someone almost all the time.* (True)
94. I am happy most of the time. (False)
99. It makes me nervous to have to wait. (True)
100. I have periods of such great restlessness that I cannot sit long in a chair.* (True)
103. Sometimes I become so excited that I find it hard to get to sleep. (True)
107. I have sometimes felt that difficulties were piling up so high that I could not overcome them.* (True)
112. I must admit that I have at times been worried beyond reason over something that really did not matter.* (True)
117. I have very few fears compared to my friends.* (False)
123. I have been afraid of things or people that I know could not hurt me. (True)
136. I certainly feel useless at times. (True)
138. I find it hard to keep my mind on a task or job. (True)
145. I am unusually self-conscious.* (True)
152. I am inclined to take things hard.* (True)
153. I am a high-strung person.* (True)
163. Life is a strain for me much of the time.* (True)
164. At times I think I am no good at all. (True)
168. I am certainly lacking in self-confidence.* (True)
183. I sometimes feel that I am about to go to pieces.* (True)
187. I shrink from facing a crisis or difficulty.* (True)
190. I am entirely self-confident.* (False)

* Statements rewritten for subsequent revision.

APPENDIX II

THE 28 ITEMS REWRITTEN FOR THE REVISED FORM OF THE TAYLOR MANIFEST ANXIETY SCALE AND RESPONSES SCORED AS "ANXIOUS"

(Items are numbered as they appear in the Biographical Inventory)

---

5. I am often sick to my stomach. (True)
7. I am about as nervous as other people. (False)
13. I work under a great deal of strain. (True)
24. I blush as often as others. (False)
25. I have diarrhea ("the runs") once a month or more. (True)
26. I worry quite a bit over possible troubles. (True)
38. When embarrassed I often break out in a sweat which is very annoying. (True)
41. I do not often notice my heart pounding and I am seldom short of breath. (False)
44. Often my bowels don't move for several days at a time. (True)
51. At times I lose sleep over worry. (True)
54. My sleep is restless and disturbed. (True)
56. I often dream about things I don't like to tell other people. (True)
67. My feelings are hurt easier than most people. (True)
77. I often find myself worrying about something. (True)
82. I wish I could be as happy as others. (True)
87. I feel anxious about something or someone almost all of the time. (True)
100. At times I am so restless that I cannot sit in a chair for very long. (True)
107. I have often felt that I faced so many difficulties I could not overcome them. (True)
112. At times I have been worried beyond reason about something that really did not matter. (True)
117. I do not have as many fears as my friends. (False)
145. I am more self-conscious than most people. (True)
152. I am the kind of person who takes things hard. (True)
153. I am a very nervous person. (True)
163. Life is often a strain for me. (True)
168. I am not at all confident of myself. (True)
183. At times I feel that I am going to crack up. (True)
187. I don't like to face a difficulty or make an important decision. (True)
190. I am very confident of myself. (False)

APPENDIX III

BIOGRAPHICAL INVENTORY

Do not write or mark on this booklet in any way. Your answers to the statements in this inventory are to be recorded only on the separate Answer Sheet.

Print your name, the date, the date of your birth, age, sex, etc., in the blanks provided on the Answer Sheet. Use only the special pencil provided for this test; this pencil must be used because the Answer Sheet will be checked by a machine. If your special pencil runs out of lead, get another pencil from the Examiner. Do not use any other type of pencil. After you have completed filling in the blanks, finish reading these instructions.

The statements in this booklet represent experiences, ways of doing things, or beliefs or preferences that are true of some people but are not true of others. You are to read each statement and decide whether or not it is true with respect to yourself. If it is true or mostly true, blacken the answer space in column T on the Answer Sheet in the row numbered the same as the statement you are answering. If the statement is not usually true or is not true at all, blacken the space in column F in the numbered row. You must answer the statement as carefully and honestly as you can. There are no correct or wrong answers: we are interested in the way you work and in the things you believe.

Remember: Mark the answer space in column T if the statement is true or mostly true; mark the answer space in column F if the statement is false. Be sure the space you blacken is in the row numbered the same as the item you are answering. Use only the first two columns, the ones labeled T and F. Mark each item as you come to it; be sure to mark one, answer space for each item. Here is an example:

	T	F
I would like to be an artist		

If you would like to be an artist, that is, if the statement is true as far as you are concerned, you would mark the answer space under T. If the statement is false, you would mark the space under F.

If you have any questions, please ask them now.

NO NOT MARK ON THIS BOOKLET

APPENDIX III (CONTINUED)

1. I would rather win than lose in a game.
2. I am often the last one to give up trying to do a thing.
3. There is usually only one best way to solve most problems.
4. I do not tire quickly.
5. I am often sick to my stomach.
6. I am in just as good physical health as most of my friends.
7. I am about as nervous as other people.
8. I think that I feel more intensely than most people do.
9. I have had periods in which I carried on activities without knowing later what I had been doing.
10. There is something wrong with my mind.
11. I have very few headaches.
12. My hearing is apparently as good as that of most people.
13. I work under a great deal of strain.
14. I cannot keep my mind on one thing.
15. I do not like everyone I know.
16. I worry over money and business.
17. I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others.
18. I frequently notice my hand shakes when I try to do something.
19. I prefer work that requires a great deal of attention to detail.
20. My neck spots with red often.
21. I seem to be about as capable and smart as most others around me.

(Go right on to the next page)

APPENDIX III (CONTINUED)

22. I have a cough most of the time.

23. I often become so wrapped up in something I am doing that I find it difficult to turn my attention to other matters.

24. I blush as often as others.

25. I have diarrhea (the runs) once a month or more.

26. I worry quite a bit over possible troubles.

27. I practically never blush.

28. I have very few quarrels with members of my family.

29. I think nearly everyone would tell a lie to keep out of trouble.

30. I am against giving money to beggars.

31. Once in a while I put off until tomorrow what I ought to do today.

32. I can sleep during the day but not at night.

33. I am often afraid that I am going to blush.

34. I cannot understand what I read as well as I used to.

35. I have nightmares every few nights.

36. My hands and feet are usually warm enough.

37. I sweat very easily even on cool days.

38. When embarrassed I often break out in a sweat which is very annoying.

39. I have been told that I walk during sleep.

40. I am almost never bothered by pains over the heart or in my chest.

41. I do not often notice my heart pounding and I am seldom short of breath.

42. I have used alcohol excessively.

43. I feel hungry almost all the time.

(Go right on to the next page)

APPENDIX III (CONTINUED)

44. Often my bowels don't move for several days at a time.

45. I like to know some important people because it makes me feel important.

46. I find it hard to make talk when I meet new people.

47. People often disappoint me.

48. I have a great deal of stomach trouble.

49. I prefer doing one thing at a time to keeping several projects going.

50. My parents and family find more fault with me than they should.

51. At times I lose sleep over worry.

52. I dislike to change my plans in the midst of an undertaking.

53. I wake up fresh and rested most mornings.

54. My sleep is restless and disturbed.

55. I have reason for feeling jealous of one or more members of my family.

56. I often dream about things I don't like to tell other people.

57. I love my mother.

58. Some of my family have habits that bother and annoy me very much.

59. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.

60. I find it hard to set aside a task that I have undertaken, even for a short time.

61. My table manners are not quite as good at home as when I am out in company.

62. My mother is a good woman.

63. Most nights I go to sleep without thoughts or ideas bothering me.

64. I love my father.

65. I never miss going to church.

(Go right on to next page)

APPENDIX III (CONTINUED)

66. I am easily embarrassed.

67. My feelings are hurt easier than most other people.

68. My father is a good man.

69. My people treat me more like a child than a grown-up.

70. I would like a position which requires frequent changes from one kind of task to another.

71. I usually maintain my own opinions even though many other people may have a different point of view.

72. Once in a while I feel hate towards members of my family whom I usually love.

73. I usually expect to succeed in things I do.

74. I easily become impatient with people.

75. If I could get into a movie without paying and be sure I was not soon I would probably do it.

76. It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of thing.

77. I often find myself worrying about something.

78. I often worry about my health.

79. My family does not like the work I have chosen (or the work I intend to choose for my life work).

80. I like to study and read about things that I'm working at.

81. The only interesting part of newspapers is the "funnies".

82. I wish I could be as happy as others.

83. I am usually calm and not easily upset.

84. My sex life is satisfactory.

85. I find it easy to stick to a certain schedule, once I have started on it.

(Go right on to the next page)

APPENDIX III (CONTINUED)

86. I cry easily.

87. I feel anxious about something or someone almost all of the time.

88. Children should be taught all the main facts of sex.

89. Criticism or scoulding hurts me terribly.

90. It takes a lot of argument to convince most people of the truth.

91. I do not read every editorial in the newspaper every day.

92. I wish I were not bothered by thoughts of sex.

93. I am very religious (more than most people).

94. I am happy most of the time.

95. I believe women ought to have as much sexual freedom as men.

96. I believe there is a God.

97. I believe in a life hereafter.

98. A minister can cure disease by praying and putting his hand on your head.

99. It makes me nervous to have to wait.

100. At times I am so restless that I cannot sit in a chair for very long.

101. I frequently find it necessary to stand up for what I think is right.

102. I do not enjoy having to adapt myself to new and unusual situations.

103. Sometimes I become so excited that I find it hard to get to sleep.

104. My soul sometimes leaves my body.

105. Sometimes when I am not feeling well I am cross.

106. At times I am all full of energy.

107. I have often felt that I faced so many difficulties I could not overcome them.

(Go right on to the next page)

APPENDIX III (CONTINUED)

108. At times I have a strong urge to do something harmful or shocking.

109. I prefer to stop and think before I act even on trifling matters.

110. I am liked by most people who know me.

111. Sometimes I am sure that other people can tell what I am thinking.

112. At times I have been worried beyond reason about something that really did not matter.

113. As a youngster I was suspended from school one or more times for cutting up.

114. No one seems to understand me.

115. I would not like the kind of work which involves a large number of different activities.

116. I try to follow a program of life based on duty.

117. I do not have as many fears as my friends.

118. I refuse to play some games because I am not good at them.

119. I often think "I wish I were a child again".

120. Often I can't understand why I have been so cross and grouchy.

121. At times I feel like swearing.

122. More often than others seem to, I do many things that I regret afterwards.

123. I have been afraid of things or people that I know could not hurt me.

124. I believe in law enforcement.

125. I have kept a careful diary over a period of years.

126. I wish I were not so shy.

127. It would be better if almost all laws were thrown away.

128. My interests tend to change quickly.

(Go right on to the next page)

APPENDIX III (CONTINUED)

129. I enjoy children.

130. I usually find that my own way of attacking a problem is best, even though it doesn't always seem to work in the beginning.

131. I am never happier than when alone.

132. Even when I am with people I feel lonely much of the time.

133. I am afraid when I look down from a high place.

134. At times I feel like smashing things.

135. I get angry sometimes.

136. I certainly feel useless at times.

137. At periods my mind seems to work more slowly than usual.

138. I find it hard to keep my mind on a task or job.

139. Most any time I would rather sit and day dream than to do anything else.

140. I have difficulty in starting to do things.

141. I dislike having to learn new ways of doing things.

142. I like a great deal of variety in my work.

143. I brood a great deal.

144. Most of the time I feel blue.

145. I am more self-conscious than most people.

146. I have the wanderlust and am never happy unless I am roaming or traveling about.

147. At times it has been impossible for me to keep from stealing or shoplifting.

148. I am a methodical person in whatever I do.

149. I have often met people who were supposed to be experts who were no better than I.

(Go right on to the next page)

APPENDIX III (CONTINUED)

150. What others think of me does not bother me.

151. Once in a while I laugh at a dirty joke.

152. I am the kind of person who takes things hard.

153. I am a very nervous person.

154. Sometimes I feel as if I must injure either myself or someone else.

155. I have not lived the right kind of life.

156. I certainly have had more than my share of things to worry about.

157. If people had not had it in for me I would have been much more successful.

158. I am usually able to keep at a job longer than most people.

159. I believe I am being followed.

160. I think it is usually wise to do things in a conventional way.

161. I always finish tasks I start, even if they are not very important.

162. Someone has been trying to influence my mind.

163. Life is often a strain for me.

164. At times I think I am no good at all.

165. I do not always tell the truth.

166. I have never felt better in my life than I do now.

167. Most people will use somewhat unfair means to gain profit or an advantage rather than to lose.

168. I am not at all confident of myself.

169. Someone has control over my mind.

170. People who go about their work methodically are almost always the most successful.

(Go right on to the next page)

APPENDIX III (CONTINUED)

171. I sometimes keep on at a thing until others lose their patience with me.

172. At one or more times in my life I felt that someone was making me do things by hypnotizing me.

173. When I have undertaken a task, I find it difficult to set it aside, even for a short time.

174. I believe I am being plotted against.

175. Sometimes unimportant thoughts will run through my mind and bother me for days.

176. Often I cross the street in order not to meet someone I see.

177. Someone has been trying to poison me.

178. Someone has been trying to rob me.

179. I often find myself thinking of the same tune or phrases for days at a time.

180. I like to let people know where I stand on things.

181. I gossip a little at times.

182. I have a work and study schedule which I follow carefully.

183. At times I feel that I am going to crack up.

184. There are persons who are trying to steal my thoughts and ideas.

185. I often feel as if things were not real.

186. I usually check more than once to be sure that I have locked a door, put out the light, or something of the sort.

187. I don't like to face a difficulty or make an important decision.

188. I commonly hear voices without knowing where they come from.

189. I am sure I am being talked about.

190. I am very confident of myself.

(Go right on to the next page)

APPENDIX III (CONTINUED)

191. I have never done anything dangerous for the thrill of it.

192. When I am with people I am bothered by hearing very queer things.

193. I commonly wonder what hidden reason another person may have for doing something nice for me.

194. It is always a good thing to be frank.

195. Once in a while I think of things too bad to talk about.

196. When in a group of people I have trouble thinking of the right things to talk about.

197. I get mad easily and get over it soon.

198. I see things or animals or people around me that others do not see.

199. Evil spirits possess me at times.

200. I have a lot more fears than my friends do.

201. I like to visit places where I have never been before.

202. At times I am afraid of losing my mind.

203. I am not afraid to handle money.

204. Sometimes I enjoy hurting persons I love.

205. I can easily make other people afraid of me, and sometimes do for the fun of it.

206. I have a habit of collecting various kinds of objects.

207. It does not bother me particularly to see animals suffer.

208. Sometimes I am strongly attracted by the personal articles of others such as shoes, gloves, etc., so that I want to handle or steal them though I have no use for them.

209. I have periods in which I feel unusually cheerful without any special reason.

210. At times my thoughts have raced ahead faster than I could speak them.

(Go right on to the next page)

APPENDIX III (CONTINUED)

211. Sometimes at elections I vote for men about whom I know very little.

212. I have more trouble concentrating than other people seem to have.

213. Everything tastes the same.

214. I have taken a good many courses on the spur of the moment.

215. No one cares much what happens to you.

216. I believe that promptness is a very important personality characteristic.

217. My interests change very quickly.

218. My way of doing things is apt to be misunderstood by others.

219. It is the slow, steady worker who usually accomplishes the most in the end.

220. I am always careful about my manner of dress.

221. Any man who is able and willing to work hard has a good chance of succeeding.

222. I usually dislike to set aside a task that I have undertaken until it is finished.

223. I am inclined to go from one activity to another without continuing with any one for too long a time.

224. I prefer to do thingsaccording to a routine which I plan myself.

225. I always put on and take off my clothes in the same order.

STOP HERE

APPENDIX IV

TABLE I

STATISTICAL DATA FOR THE EXPERIMENTAL GROUP BEFORE AND AFTER TREATMENT

Subject	Branch of Service	Age	Pre-Therapy T.M.A.S. Score	Post-Therapy T.M.A.S. Score
1	U.S.N.	19	44	38
2	U.S.N.	20	39	40
3	U.S.N.	18	37	37
4	U.S.N.	23	32	38
5	U.S.N.	19	30	27
6	U.S.N.	22	26	32
7	U.S.N.	20	23	19
8	U.S.N.	18	21	18
9	U.S.N.	18	17	14
10	U.S.N.	19	15	9
11	U.S.N.	20	15	11
12	U.S.N.	19	14	11
13	U.S.N.	19	10	13
14	U.S.A.	18	10	7
15	U.S.N.	19	8	11
	Means	19.4	22.73	21.67
	Standard Dev.	1.66	11.07	11.94

APPENDIX IV (CONTINUED)

TABLE II

STATISTICAL DATA FOR THE CONTROL GROUP

BEFORE AND AFTER TREATMENT

Subject	Branch of Service	Age	Pre-Therapy T.M.A.S. Score	Post-Therapy T.M.A.S. Score
1	U.S.N.	17	39	30
2	U.S.N.	18	37	40
3	U.S.M.C.	19	35	34
4	U.S.N.	17	32	32
5	U.S.N.	21	31	22
6	U.S.N.	21	31	30
7	U.S.N.	18	29	32
8	U.S.A.	18	26	31
9	U.S.M.C.	18	25	26
10	U.S.A.	20	24	25
11	U.S.A.	20	22	24
12	U.S.N.	18	21	20
13	U.S.A.	25	13	18
14	U.S.A.	20	12	14
15	U.S.A.	24	9	9
	Means	19.6	25.73	25.80
	Standard Dev.	2.26	8.81	7.92

APPENDIX V

2 X 2 CONTINGENCY TABLE FOR MEDIAN TEST

BEFORE AND AFTER TREATMENT

Pre-Therapy

	Above Median	Below Median	
Treatment X.X. (Experimental Group)	6	9	15
Treatment A.A. (Control Group)	9	6	15
	15	15	30

Post-Therapy

	Above Median	Below Median	
Treatment X.X. (Experimental Group)	6	9	15
Treatment A.A. (Control Group)	9	6	15
	15	15	30

APPROVAL SHEET

The thesis submitted by Vincent D. Pisani has been read and approved by three members of the Department of Psychology.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is therefore given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

March 14, 1959
Date

Frank J. Kobler
Signature of Adviser