9-1949

Some personality factors in tuberculosis

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SOME PERSONALITY FACTORS IN TUBERCULOSIS

BY

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A THESIS
SUBMITTED TO THE GRADUATE FACULTY
OF THE UNIVERSITY OF RICHMOND
IN CANDIDACY
FOR THE DEGREE OF
MASTER OF ARTS IN PSYCHOLOGY

SEPTEMBER 1949

Preface

The author wishes to acknowledge the help and kind consideration of Dr. Merton E. Carver, of the University of Richmond. His advice and suggestions have been invaluable in the preparation of this study. I am also greatly indebted to Mr. Austin Grigg for his interest and cooperation. I wish to express deep appreciation to my mother without whose clerical assistance and encouragement, it would have been very difficult to complete the work successfully.

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Introduction

In my capacity as Occupational Therapist and Rehabilitation Director at Pine Camp Hospital, I have become aware of the urgent need by the patients for constant understanding and encouragement. I became interested in learning more of the personalities of the tuberculous and how they might be helped through any knowledge gained from the administration of personality inventories.

In this study, I have given a brief resume of some of the literature written on the subject of emotions and tuberculosis and how the progress of the disease may be affected because of emotional disturbances. There follows some discussion of the data obtained through the use of the Bernreuter Personality Inventory, the Minnesota Personality Scale and the Minnesota Multiphasic Personality Inventory. Finally an analysis and comparisons with other studies are made and the conclusions reached are presented.

Chapter I

The Personality Approach To The Tuberculous Patient

It has long been recognized by those who have treated persons with tuberculosis that even though the best care and treatment have been provided and there seems to be every chance of recovery, some do not pull through. Why? In reading material published during the past thirty years, it is evident that some gains in the attempt to answer this question have been made. The principal emphasis in much of this literature is that of psychosomatic medicine and its application in the rehabilitation of the tuberculous. Moorman has pointed out the need for the physician and his staff to recognize emotional conflict brought about by a diagnosis of tuberculosis and the separation of families. He quoted Day's estimate of 30% of his cases being sick in mind and body and believed that: "On a broad psychomatic interpretation we can raise the ante to 100 per

cent and not go astray." [1]

To treat the disease and not the "dis-ease" as Day puts it does not make for complete recovery.[2]

Some with psychic upsets who do manage to recuperate long enough to obtain a medical discharge will probably be readmitted if the elements promoting the emotional disturbances have not been removed or alleviated.

> "In no other somatic disease is there such an opportunity for the mind at all its levels to exert its influence from the inception of the malady to its final issue or resolution."[3]

There are several schools of thought on the question of how and when certain tuberculous patients become maladjusted emotionally. Some believe that long before the onset of tuberculosis, the individual has continuously been thwarted and frustrated. His attempts to come to grips with the usual complications of every-day living which normal people successfully overcome are impaired. These continual failures augment his emotional imbalance and lower his bodily

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[1]Lewis L. Moorman, "The Psychology of the Tuberculous Patient," The American Review of Tuberculosis, Vol. LVII, No. 5, (May 2, 1948), p. 529

[2]George Day, "Observation on the Psychology of the Tuberculous," The Lancet, Vol. II, No. 6429, (November 13, 1946), p. 706

[3]Everett F. Conlogue, "Mental and Nervous Phenomena in Tuberculosis," The American Review of Tuberculosis, Vol. XLII, No. 1, (July 1940), p. 161

resistance to the germ most of us harbor throughout our lives so that the tubercle bacili get the chance to go to work:

> "Lowering of the opsonic index in emotional excitement is caused by an increase in the amount of sugar and adrenalin in the blood," says Ishigami. "Impairment in the progress of the disease is caused both by a decrease in the opsonic reaction and in the digestive functions."[4]

The necessity of entering the sanatorium and of undergoing treatment with continual bed-rest and the constant admonitions to rest, not worry, eat well, and learn to be waited upon, is exactly the escape mechanism that the unconscious mind of many patients may be seeking. Hayward puts it this way:

> "No reasonably healthy grownup consciously desires illness just in order to be taken care of. The 'need for illness' is an out-growth of repeated frustration in attempting to handle complicated problems. The solution in illness is presented by the unconscious. It is usually after the illness sets in that the individual will consciously settle for the benefits to be derived from the illness."[5]

In line with Hayward's position, Breuer observes on the basis of 100 consecutive cases:

> "The fact that, in 34 per cent of this series psychic factors contributed to the causation of tuberculous

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[4]Tohru Ishigami, "The Influence of Psychic Acts on the Progress of Pulmonary Tuberculosis," The American Review of Tuberculosis, Vol. II, No. 8, (October 1918), p. 483

[5]Emeline Place Hayward, "Human Emotions and Their Bearings on Tuberculosis," The American Journal of Occupational Therapy, Vol. I, No. 4, (August 1947), p. 207

disease, suggests that modern life has other methods of producing tuberculosis in addition to crowding, lack of air, sun, and proper food. The high-pressure mental pace at which we travel is at present a nonadjusted state, and tuberculosis is one of its penalties."[6]

Munro goes even further and suggests that there is a:

"psychic state specific to, and characteristic to, tuberculosis, and that there is a definite relation between the severity of the disease and the abnormality of the mental state observed." He felt that: "a specific psychoneurosis accompanies the early or moderately advanced case, while a specific psychosis accompanies the advanced case."[7]

If during the stay in the hospital the strains or complicating home situations are not faced and dealt with properly, the eventual return to these same troubles is not welcome and the actual progress of the disease is affected. This is particularly true if the unconscious desire to escape is recognized consciously and feelings of guilt arise. Ludwig reports that:

"previous personality plays a definite part in the type of reaction elaborated. Some individuals actually welcome the disease as an escape from a diffi-

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[6]Miles J. Breuer, "The Physic Element in the Aetiology of Tuberculosis," The American Review of Tuberculosis, Vol. XXXI, No. 2, (February 1935), p. 237

[7]Jerome Hartz, "Tuberculosis and Personality Conflicts," Psychosomatic Medicine, Vol. VI, No. 1, (January 1944), p. 17. Summarized from: D. C. Munro, "The Psychopathology of Tuberculosis," Oxford University Press, 1926

> cult life situation. Conscientious persons may defy their care until the disease is far advanced. The selfish and egocentric hasten to seek care but are usually not bothered by concern for others."[8]

Another contention by some is that the treatment of tuberculosis like that of many other chronic illnesses (in which some of the same personality disturbances are noted) involves a long stay in the sanatorium away from family and friends, with the cessation of the security of a job and steady income, and interruption of future plans. This transplanting of the individual with its accompanying problems of family breakup, etc., is enough to upset the emotional balance of anyone, and, therefore, brings about signs of nervousness, anxiety, worry, fatigue, inability to rest and sleep, which are so commonly observed among such patients. The so-called "spes pthisica" or feeling of elation (supposedly common to all patients) reported upon in the past has been explained by the latest literature as being the outward covering up or mask of inner turmoil. One might really believe it actually existed when ward rounds are made since patients try to display their best smiles to show how well they are doing. Once these rounds are over and threads of the routine are picked up again, quiet visits

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[8]Alfred C. Ludwig, "Emotional Factors in Tuberculosis," Public Health Reports, Vol. LXIII, No. 27, (July 2, 1948), p. 885

and chats with individual patients reveal these cloaked anxieties and upsets. As Rehabilitation Director and Occupational Therapist, I have definitely found this to be true in my own contects with patients. The ones who appear brightest and gayest, with a smile and a few quips, are the ones who admit being worried and afraid and cover up their feelings because they do not want those around them to discover the truth. Fear of tuberculosis, fear of death, and to some extent, fear of facing the future with the restrictions of life and occupation are believed to be the basis of the patients' abnormal reactions and inability to progress properly. Pottenger felt that:

> "man's personality may be altered according to the state of his physical body, so can the functions and likewise the structure of his body can be changed by varying psychological states."[9]

Other writers believe that the actual disease process itself is responsible for the emotional upsets encountered in dealing with the tuberculous. The chronic toxemia developed in the more severe cases definitely relates to the alleviation of some of those reactions when the patients experience remissions of the disease and the reoccurrence of these reactions should the disease become worse again. It

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[9]F. M. Pottenger, "The Psychology of the Tuberculous Patient," Diseases of the Chest, Vol. IV, No. 1, (January 1938), p. 8

is also pointed out by some that when there are definite symptoms, the nervous system is being invaded by the disease organism. Ross and Stanbury present an outline of their concept of the manner in which the purely somatic influence and the psychic influence of the disease, either separately or combined, may bring about the mental change which seems to present a more or less characteristic psychological picture of the tuberculous patient.

"Psychical action of tuberculosis

1 Influence of the organic lesion
   a. Bacillary foci in nervous tissue
   b. Acute or overwhelming toxaemia
   c. Chronic toxaemia
      i. Stimulation
      ii. Depression
      iii. Mixed or alternating stimulation and depression.

2 Influence of the concept of the disease
   a. Conflict not resolved
   b. Conflict successfully resolved
   c. Conflict partially or satisfactorily resolved."[10]

On the other hand, Mary B. Eyre came to the conclusion that a specific toxin is not essential to produce emotional symptoms.[11]

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[10] C. B. Ross and W. S. Stanbury, "The Psychology of Tuberculosis," The American Review of Tuberculosis, Vol. XXVIII, No. 2, (August 1933), p. 218

[11] Mary B Eyre, "The Role of Emotion in Tuberculosis," The American Review of Tuberculosis, Vol. XXVII, No. 4, (April 1933), p. 329

There is also the belief held by some that there is a definite tie-up between genius and tuberculosis and between schizophrenia and tuberculosis. The stories of famous persons such as Chopin, Keats, Elizabeth Barrett Browning are cited with the implication that their particular genius and mental capacity were actually enhanced because of the toxins of the disease process. Others defeat this sort of evidence by pointing out the great number of little people with tuberculosis and the correspondingly small number of geniuses in proportion to the total population of tuberculous patients; also the fact that such persons because of their particular gifts dwell in an unrealistic world and cannot face reality's complications. There is little in the way of sound evidence to support the assumption that there is a connection between schizophrenia and tuberculosis. One must consider the crowded conditions of mental hospitals and the inability on the part of the staff to carry out satisfactory treatment and preventive procedures.

The generally accepted viewpoint today is that a person with tuberculosis entering a sanatorium reacts to the environment, treatment and the disease favorably or unfavorably according to his own particular psychological make-up and ability to adjust. Conlogue sums it up

in this manner:

> "The patient reacts to the diagnosis of tuberculosis with his emotions, his intelligence and his degree of suggestibility, that is, with his personality which is the sum total of all his experience in life, his equipment for living, and therefore, for meeting the emotional crisis precipitated into his existence by tuberculosis and the demands of its treatment."[12]

In much the same vein Forster and Shepard emphasize tuberculosis:

> "as an emotional crisis in the life of the individual toward which he may react either normally or abnormally depending upon his personality make-up before the onset of the disease."[13]

Those who can adjust themselves to the necessary changes in their living conditions reasonably well, who can accept and carry out treatment procedures thoughtfully, who plan realistically for the future, and keep their minds free of upsetting ideas, have an excellent chance of recovery. On the other hand those with an emotional make-up such that all attempts of staff and fellow patients to help them are prevented, who are seriously withdrawn or very aggressive, who make things very unpleasant for nearly everyone, and who will not accept bed rest, treatments, food, etc., do

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[12]Everett F. Conlogue, "Mental and Nervous Phenomena in Tuberculosis," The American Review of Tuberculosis, Vol. XLII, No. 1, (July 1940), p. 164

[13]Alexius M. Forster and Charles E. Shepard, "Abnormal Mental States in Tuberculosis," The American Review of Tuberculosis, Vol. XXV, No. 3, (March 1932), p. 332

not progress nearly so well. Many doctors say that they believe a far advanced, or moderately advanced, well adjusted person has a much better chance of recovering than a minimal case who cannot and will not cooperate because of psychic disturbances. In my opinion, Seidenfeld sums up the issue very well when he writes:

> "Tuberculosis, perhaps, more than any other of the organic diseases, is heavily loaded with psychic components...We cannot say, as yet, with any degree of certainty, that the psychic elements are among the causative factors in the production of the disease or are resultant products. So far we can only point out that in a very large number of patients in sanatoria and out, psychological maladjustments are frequently reported."[14]

Regardless of the theory one is inclined to accept, the important way to help the patient is to take time to discover the presence of any psychic hindrances to recovery, thrash them out, get the patient to understand them, and to improve his adjustments in the various areas of job, family placements, living conditions, and attitudes toward his illness and the future. It is not always necessary, or even advisable, for the physician or other staff members to explain to every patient the kind of personality involvement that may be a part of the disease syndrome.

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[14]Morton A. Seidenfeld, "The Psychological Reorientation of the Tuberculous," The Journal of Psychology, Vol. X, No. 6, first-half, (July 1940), p. 397

How much to attempt along this line must be indicated by the circumstances of the individual case. Jelliffe and Evans feel that:

> "Psychoanalysis cannot change the physical results which are produced by the tuberculosis process, but it can greatly improve the functional activities and the physiological processes by relieving the patient of the great drain on his nerve energy through making known to him the unconscious conflict between the heretofore unknown infantile wishes and demands of conscious life."[15]

The ideal rehabilitation team in a well staffed hospital for tuberculous patients should be composed not only of the doctors and nurses, but also a rehabilitation director, vocational guidance counselor, medical social worker, occupational therapist and teachers. Such a team would make it possible to treat the patient as a total personality, rather than treating him from the physical or medical approach only, important as this is. For example, the medical social worker would assist in straightening out upsetting economic, social or family situations which may be present. The vocational guidance counselor by appraising the skills, interests, aptitudes and abilities could help the patient plan his vocational future more satisfactorily. In this way a patient may even begin

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[15]Smith Ely Jelliffe, and Elida Evans, "Psychotherapy and Tuberculosis," The American Review of Tuberculosis, Vol. III, No. 7, (September 1919), p. 432

his prevocational and actual vocational training while still in the sanatorium under the guidance of the physicians, teachers and occupational therapist. We may note here that to rehabilitate successfully the tuberculous patient is to restore him to the fullest physical, mental, social, vocational, and economic usefulness of which he is capable.[16]

To learn more of the real personality problems and psychological behavior of the tuberculous, it is necessary to improve our psychological techniques of evaluation and measurement. The ability to locate and diagnose psychological difficulties quickly upon admission to the sanatorium would enable the total rehabilitation plan to move more swiftly and effectively and to be guided in terms of the patient's assets and liabilities.

It is therefore the purpose of this study to determine more adequately the extent of personality difficulties as applied to the tuberculous, to test further the possibility of there being definite psychic maladjustments common to most tuberculous patients and to ascertain what effect the morale and the hope for the future have upon the total adjustment of the patients.

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[16]Norvin C. Kiefer, Present Concepts of Rehabilitation in Tuberculosis, (National Tuberculosis Association, 1948), p. 17

Twenty men and twenty women, selected at random were given a series of three personality tests: the Bernreuter Personality Inventory, the Minnesota Personality Scale and the Minnesota Multiphasic Personality Inventory. With few exceptions, all three tests were administered on an individual basis and according to the directions specified in the manuals. Since the Bernreuter Personality Inventory was considered the simplest of the three scales and aroused interest quickly, it was always used first. However, the two remaining inventories were not distributed in any particular order. The patients were instructed to answer the questions and classify the statements, whenever it was possible, according to their opinions at the time of taking the test. Many remarked that their answers were changed considerably from what they would have been had they taken the test before having tuberculosis. No time limits were set for the patients, since hospital routines and individual physical and emotional disturbances cannot be ignored. Everyone was simply asked to finish the inventory as soon as possible and regular visits were made to collect those which had been completed. The women appeared to respond more readily than did the men. Some expressed the desire to take additional tests and were sorry when the series were concluded.

The main interest of the author lay in trying to

determine to what extent, if any, there could be noted any apparent similarities among tuberculous persons with respect to the percentile ranks and individual responses made on the various sections of the above personality inventories. With this objective in mind, the scores, tables and data appearing in Chapter II were analyzed.

Chapter II

Analysis of Data Secured With Three Personality Inventories

The complete sets of Percentile Ranks or Standard Scores made on the Bernreuter Personality Inventory, Minnesota Personality Scale and the Minnesota Multiphasic Personality Inventory by the forty men and women tuberculous patients will be found in the Appendix.

The Bernreuter Personality Inventory is made up of the six following scales:

B1-N. A measure of neurotic tendency. Persons scoring high on this scale tend to be emotionally unstable. Those scoring above the 98 percentile would probably benefit from psychiatric or medical advice. Those scoring low tend to be very well balanced emotionally.

B2-S. A measure of self-sufficiency. Persons scoring high on this scale prefer to be alone, rarely ask for sympathy or encouragement, and tend to ignore the advice of others. Those scoring low dislike solitude and often seek advice and encouragement.

B3-I. A measure of introversion-extroversion. Persons scoring high on this scale tend to be introverted

that is, they are imaginative and tend to live within themselves. Scores above the 98 percentile bear the same significance as do similar scores on the BI-N scale. Those scoring low are extroverted, that is, they rarely worry, seldom suffer emotional upsets, and rarely substitute daydreaming for action.

B4-D. A measure of dominance-submission. Persons scoring high on this scale tend to dominate others in face-to-face situations. Those scoring low tend to be submissive.

FI-C. A measure of confidence in oneself. Persons scoring high on this scale tend to be hamperingly self-conscious and to have feelings of inferiority; those scoring above the 98 percentile would probably benefit from psychiatric or medical advice. Those scoring low tend to be wholesomely self-confident and to be very well adjusted to their environment.

F2-S. A measure of sociability. Persons scoring high on this scale tend to be nonsocial, solitary, or independent. Those scoring low tend to be sociable and gregarious.[1]

In reviewing the scores made on BI-N, Neurotic Tendency, it is noted in Table I that the percentile conversion of average raw score of the men was 75, whereas that of the women was 64; thus making a difference of 11. This would indicate that men tuberculous patients are not as stable emotionally as the women are. 75% of the men scored above the median whereas 55% of the women's scores were above the median.

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[1]Robert C. Bernreuter, Manual for the Personality Inventory, Stanford University Press, Stanford, California, 1935.

TABLE I

BERNREUTER PERSONALITY INVENTORY

	No. Cases	BI-N	B2-S	B3-I	B4-D	FI-C	F2-S
Average Raw Scores:							
Men	20	-9.6	-4.1	-5.9	5.4	28.8	-24.2
Women	20	-0.5	-31.8 (-39.1)*	-0.6	-3.4	51.7	-57.0
%ile:							
Men	20	75	23	68	20	83	35
Women	20	64	30 (24)*	60	35	72	26

Table showing Percentile Ranks of Average Raw Scores of men and women patients on the Bernreuter Personality Inventory.

* If two scores made by two oldest women are ignored.

BI-N..Neurotic Tendency
B2-S..Self-Sufficiency
B3-I..Introversion-Extroversion
B4-D..Dominance-Submission
FI-C..Self-Confidence
F2-S..Sociability

On the Self-Sufficiency Scale the women with a percentile conversion of 30 scored an average of 7 above men which would appear to show that the women studied are somewhat more self-sufficient than the men. However, if the scores of two oldest women are ignored, the average rank of the women would be lowered to 24 which nearly equals that of the men.

The men with an average rank of 68 on the Introversion-Extroversion Scale, 8 higher than that of the women, tend to be more introverted.

Women with a percentile conversion rank of 35, a total of 15 points higher than the average male rank are apparently more dominant than the men. It must be noted, however, that this score of 35 is still below the median. Both men and women studied are below the median for dominance reported by Bernreuter among the normative group.

A rank of 83 places the men an average of 11 points higher than the women on the Self-Confidence Scale. Therefore from these results it might be assumed that more men are hamperingly self-conscious and have feelings of inferiority than do women. Only 22.5% of the total number of patients taking the Inventory are below the median which scores indicate wholesome self-confidence and persons well adjusted to their environment.

On the Sociability Scale with a percentile conversion of average raw scores of 35, men appear slightly less sociable than do the women. There is a difference of 9. 75% of the total number taking the Inventory scored below the median.

In comparing the percentile ranks of men and women on the Bernreuter Personality Inventory according to the eventual prognosis estimated by the physician in charge, it appears that as the prognosis becomes worse, men are consistently more neurotic, more introverted, more submissive, more self-conscious, and somewhat less sociable and gregarious.[2] The only consistent increase in scores noted for women as the prognosis becomes worse is that of introversion. Prognosis, then, appears to influence mens' scores more than womens'. Judging from the data men are also more neurotic consistently as the prognosis is worse than are women.

In analyzing Table III which shows the percentile conversion of average raw scores of men and women on the Bernreuter Personality Inventory according to the number of admissions and readmissions it seems the men decrease neurotic tendency and women slightly increase as the number

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[2]See Table II

TABLE II

BERNREUTER PERSONALITY INVENTORY

	No. Cases		B1-N		B2-S		B3-I		B4-D		F1-C		F2-S	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W
Average Raw Scores:														
Poor	6	5	3.9	-8.2	-7.0	-30.2	-0.1	4.4	-2.1	17.2	44.1	38.6	-18.6	-60.6
Fair	6	5	-4	20	5.7	-48	-5.7	-.2	7.9	30.6	2.9	79.2	-9.8	-68
Good	8	10	-23.9	-6	-9.2	-24.5	-9.6	-3.2	9.2	0.0	4.6	44.6	-39.0	-49.7
%ile:														
Poor	6	5	80	59	23	30	71	68	17	51	87	68	39	24
Fair	6	5	77	71	29	19	68	63	20	59	76	81	45	21
Good	8	10	70	62	20	33	65	59	23	40	78	71	24	30

Table showing Percentile Ranks of Average Raw Scores of men and women patients on the Bernreuter Personality Inventory according to the estimated eventual prognosis.

All raw scores are considered "plus" unless otherwise indicated.

TABLE III

BERNREUTER PERSONALITY INVENTORY

	No. Cases		B1-N		B2-S		B3-I		B4-D		F1-C		F2-S	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W
Average Raw Scores:														
1 Admission	8	10	1.8	-9.6	-18.8	-22.1	1.1	-6.3	-1.4	3.8	42	43.2	-24.1	-53.6
2 Admissions	8	6	-5.4	9	8.8	-49.7	-6.4	0	.25	-10	33.5	61.2	-10.1	-74.2
3 Admissions	4	4	-40.8	10.3	-.5	-29	-19	13	-29.3	-11,3	-7.3	59	-52.3	-39.8
%ile:														
1 Admission	8	10	78	59	16	35	72	58	18	42	86	70	36	28
2 Admissions	8	6	77	67	31	16	67	63	19	33	85	75	45	16
3 Admissions	4	4	64	68	26	31	59	74	8	32	73	74	17	36

Table showing Percentile Ranks of Average Raw Scores of men and women patients on the Bernreuter Personality Inventory according to number of admissions and readmissions to sanatoria.

All Raw Scores are considered "plus" unless otherwise indicated.

of readmissions increases. The more readmissions there are, the less men tend to be introverted and self-conscious, whereas women become more introverted and somewhat more submissive.

From reviewing Table IV, it is strikingly evident that as tuberculous men grow older they become more neurotic, introverted, submissive, self-conscious and less self-sufficient and sociable. On the other hand, tuberculous women, as they grow older, become more stable emotionally, self-sufficient, extroverted, dominant and self-confident.

By comparing the scores in Table V, it appears that as women remain longer in the sanatorium, they decrease in neurotic tendency, increase in self-sufficiency, and become more extroverted. They are more self-confident during the second year. The only reasonable consistent fact noted for the men was that they decrease in self-sufficiency the longer they remain hospitalized.

Five separate measures of individual adjustment are provided by the Minnesota Personality Scale as follows:

Part I- Morale: High scores are indicative of belief in society's institutions and future possibilities. Low scores usually indicate cynicism or lack of hope in the future.

Part II- Social Adjustment: High scores tend to be characteristic of the gregarious, socially mature individual in relations with other

TABLE IV

BERNREUTER PERSONALITY INVENTORY

	No. Cases		B1-N		B2-S		B3-I		B4-D		F1-C		F2-S	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W
Average Raw Scores:														
15-30 years	3	7	-96.7	36.6	15.7	-62.1	-49	21.6	49.7	-29.1	-62.3	93.6	-37.7	-64.4
30-40 years	7	9	5	-5.7	-6.7	-31.3	4.1	-1.9	-1.3	4.6	41.3	50.1	-27.4	-68.6
40-50 years	6	2	1.2	-19.5	-12.3	-32.5	-3.8	-23.5	-3.2	11.5	45.7	24.5	-25.5	-70
Over 50 years	4	2	14	-83.5	-2	73.5	5.8	-49	-7.8	36.5	49.8	-60	-6.3	34
%ile:														
15-30 years	3	7	38	77	36	13	41	81	46	23	51	84	26	22
30-40 years	7	9	80	61	22	29	73	62	17	42	86	72	33	19
40-50 years	6	2	79	53	19	28	69	45	17	47	87	63	35	18
Over 50 years	4	2	83	28	25	69	75	25	15	63	88	28	47	82

Table showing Percentile Ranks of Average Raw Scores of men and women patients on the Bernreuter Personality Inventory according to age groups.

All raw scores are considered "plus" unless otherwise indicated.

TABLE V

BERNREUTER PERSONALITY INVENTORY

	No. Cases		B1-N		B2-S		B3-I		B4-D		F1-C		F2-S	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W
Average Raw Scores:														
0-1 year	8	9	-4.5	26.3	4.9	-44.1	- .6	14.6	5.9	-15.3	33.5	79.1	-13	-60
1-2 years	7	3	-31.3	-32.3	-5.6	-26.3	-16.9	-19	7.3	14.7	8.7	10.3	-38.6	-66.3
Over 2 years	5	8	12.6	-17.6	-16.4	-19.9	1	-10.6	2	3.4	49.2	36.5	-21.8	-50.1
%ile:														
0-1 year	8	9	77	73	29	20	71	76	21	30	85	81	71	24
1-2 years	7	3	67	48	23	32	60	48	22	50	79	57	63	20
Over 2 years	5	8	92	54	16	36	72	54	19	42	88	68	69	30

Table showing Percentile Ranks of Average Raw Scores of men and women patients on the Bernreuter Personality Inventory according to the number of years they have been in the sanatorium on this admission.

All raw scores are considered "plus" unless otherwise indicated.

people. Low scores are characteristic of the socially inept or undersocialized individual.

Part III-Family Relations: High scores usually signify friendly and healthy parent-child relations. Low scores suggest conflicts or maladjustments in parent-child relations.

Part IV- Emotionality: High scores are representative of emotionally stable and self-possessed individuals. Low scores may result from anxiety states or over-reactive tendencies.

Part V- Economic Conservatism: High scores indicate conservative economic attitudes. Low scores reveal a tendency toward liberal or radical points of view on current economic and industrial problems.[3]

From Table VI. it may be noted that the percentile conversion of the average raw score of the nineteen men who completed this Scale on Part I Morale was 70 and that of the women was 40, there being a difference of 30. This would indicate that the men are stronger in their belief of society's institutions and future possibilities than are the women. Scores below the median by 14 of the twenty women point out strongly that women are apparently cynical and lack hope for the future. In discussions with many patients, not only those who participated in the testing, but others as well, it has been apparent that persons from

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[3]John G. Darley and Walter J. McNamara, Minnesota Personality Scale Manual of Directions, The Psychological Corporation, New York City.

TABLE VI

MINNESOTA PERSONALITY SCALE

		No. Cases	Morale	Social Adjustment	Family Relations	Emotion-ability	Economic Conservatism
Average Raw Scores:							
	Men	19	162.1	200.1	129.6#	120.3	104.1#
	Women	20	169.0	186.2	137.2*	142.7	98.2
%ile:							
	Men	19	70	23	69#	25	45#
	Women	20	40	25	30*	16	40

Table showing Percentile Ranks of Average Raw Scores of men and women patients on the Minnesota Personality Scale.

* Based on 19 cases.

\# Based on 18 cases.

the lower economic levels are more familiar with the petty rackets which exist in large cities and have actually seen evidence of dishonesty in our legal system and, therefore, would be justified in scoring somewhat lower than a random sampling of the general population.

There is no significant difference in the average ranks of men and women on Part II-Social Adjustment. Both scores of 23 and 25 were well below the median and characteristic of socially inept or undersocialized individuals.

Men scored an average of 39 points higher than did women on the catagory of Family Relations. A score of 69 for men is well above the normative median and signifies friendly and healthy parent-child relations. Women with 30 score below the normative median which suggests they had conflicts or maladjustments in parent-child relationships. In discussions, several women demonstrated feelings of resentment against their parents because of restrictions in freedom concerning social affairs and also because of the obligations and responsibilities of housework placed upon them as children.

With an average rank of 25, 9 points above the women, men tend to score more emotionally stable and self-possessed as a group than the women are, but actually

both ranks are well below the normative median and may result from anxiety states or over-reactive tendencies.

Judging from the fact that the men's average rank was 45, a total of 5 points higher than that of women, it would appear that women exhibit a tendency to be more liberal or radical on current economic and industrial problems. In my opinion, both ranks are actually invalid since the vocabulary was too difficult for many of both sexes to comprehend. From the questions asked the author by many, it was apparent that they really had no clear understanding of some of the statements. It does stand to reason, however, that men and women from the lower economic levels would possess a tendency to be liberal or radical in their beliefs on current economic and industrial problems.

The data contained in Table VII which compares the scores of men and women on the Minnesota Personality Scale according to the estimated eventual prognosis indicates that men patients with a good prognosis are higher in morale and show a decrease in the anxiety and economic conservatism scales. Women show a more liberal or radical viewpoint on economic and industrial problems when the prognosis is good. It is also interesting to note that women show a good increase in averages on the Family Relations and Emotionality Parts of the test which demon-

TABLE VII

MINNESOTA PERSONALITY SCALE

	No. Cases		Morale		Social Adjustment		Family Relations		Emotionality		Economic Conservatism	
	M	W	M	W	M	W	M	W	M	W	M	W
Average Raw Scores:												
Poor	5	5	157.4	172.4	195.2	197.8	129.8*	136.4	116.8	138.4	108.5*	102.6
Fair	6	5	160.2	161.6	189.5	176	127.8	136.5*	119.2	135	103.3	99.6
Good	8	10	166.5	171	211.1	185.5	130.9	151.6	123.4	148.6	102.4	95.2
% ile:												
Poor	5	5	56	48	19	41	69	29	21	11	59	58
Fair	6	5	65	21	14	15	64	29	24	13	41	48
Good	8	10	81	45	35	24	71	54	31	23	37	26

Table showing Percentile Ranks of Average Raw Scores of men and women patients on the Minnesota Personality Scale according to the estimated eventual prognosis.

* Based on 4 cases.

strates their parent-child relationships and emotional stability are better when the prognosis is good.

The only evidence of any change shown on Table VIII is that as the number of admissions increase the morale of the men in their attitude toward the legal system, education and general adjustment is slightly higher and there is a consistent increase in their economic conservatism. There are no outstanding features shown on a comparison of the women's scores for the number of admissions except that all scores are considerably lower on the second admission.

As the average scores are compared for men and women on Table IX according to the age groups, men show a very definite decrease in morale, social adjustment, emotional stability and an increase in economic conservatism as they grow older. They rank a great deal higher on family relations between 15-30 years and after 50 years than between 30-50 years. As they become older, women show the exact opposite trends in that there is an increase in their morale, social adjustments, family relations, and emotional stability. They compare favorably with the men by showing an increase in economic conservatism.

When men are compared in Table X on their average results according to the length of time they have been in the sanatorium on the present admission, their morale scores in-

TABLE VIII

MINNESOTA PERSONALITY SCALE

	No. Cases		Morale		Social Adjustment		Family Relations		Emotionality		Economic Conservatism	
	M	W	M	W	M	W	M	W	M	W	M	W
Average Raw Scores:												
1 Admission	7	10	161.9	173.3	203.4	188.7	123.6	149.4	112.7	151.6	100.1	98
2 Admissions	8	6	162	161	189	180	137.4	124.8*	127.4	129.7	106.3	97.5
3 Admissions	4	4	162.8	170.3	216.5	189.3	123#	156.5	119.5	139.8	107.3#	99.5
%ile:												
1 Admission	7	10	69	51	26	28	56	50	14	54	30	40
2 Admissions	8	6	70	20	14	19	83	15	41	5	51	38
3 Admissions	4	4	72	43	40	29	55	64	24	13	56	49

Table showing Percentile Ranks of Average Raw Scores of men and women patients on the Minnesota Personality Scale according to the number of admissions and readmissions to sanatoria.

* Based on 5 cases.

\# Based on 3 cases.

TABLE IX

MINNESOTA PERSONALITY SCALE

	No. Cases		Morale		Social Adjustments		Family Relations		Emotionality		Economic Conservatism	
	M	W	M	W	M	W	M	W	M	W	M	W
Average Raw Scores:												
15-30 years	3	7	171	163.3	238.3	168.9	144.3	132.3	138.3	126.6	100.7	92.1
30-40 years	7	9	159.7	170.9	197.9	191.7	122.2*	146.7	115	148.3	101.7*	97
40-50 years	6	2	164.3	163.5	192.7	200	127.8	155#	119	145.5	106.8	102
Over 50 years	3	2	154.3	186	182	208.5	133.3	171.5	117.3	170.5	106.7	120.5
%ile:												
15-30 years	3	7	86	23	89	9	94	22	63	4	33	16
30-40 years	7	9	63	44	22	32	58	47	18	22	37	35
40-50 years	6	2	76	24	16	44	64	62	24	19	54	55
Over 50 years	3	2	46	84	9	56	76	91	21	54	54	96

Table showing Percentile Ranks of Average Raw Scores of men and women patients on the Minnesota Personality Scale according to age groups.

* Based on 6 cases.

\# Based on 1 case.

TABLE X

MINNESOTA PERSONALITY SCALE

	No. Cases		Morale		Social Adjustment		Family Relations		Emotionality		Economic Conservatism	
	M	W	M	W	M	W	M	W	M	W	M	W
Average Raw Scores:												
0-1 years	8	9	160.1	164.8	212.3	182.9	132.3#	148*	120.6	136.8	97.4#	90.3
1-2 years	6	3	161	167	189.7	192	132.3	139.3	132.2	155.3	109.2	95.7
Over 2 years	5	8	166.6	174.5	193.2	187.8	122.6	142.8	105.6	144.5	107.2	107.9
%ile:												
0-1 years	8	9	65	26	36	22	73	49	26	10	23	13
1-2 years	6	3	68	35	13	33	73	34	50	31	60	28
Over 2 years	5	8	81	53	17	28	54	39	7	18	55	77

Table showing Percentile Ranks of Average Raw Scores of men and women patients on the Minnesota Personality Scale according to number of years in the sanatorium on present admission.

* Based on 8 cases.

\# Based on 7 cases.

crease and their family relations scores decrease the longer they remain hospitalized. It is interesting to see that their social and emotional adjustments are much better in their second year at the hospital than in either the first year or after two years stay, and also they are more conservative economically during that time. Their anxiety is definitely worse after the second year and their parent-child relationships and home adjustments are viewed in a more unfavorable light after the second year. The morale of the women is also increased the longer they remain hospitalized and they are definitely more conservative on economic and industrial problems. Women also appear somewhat more stable emotionally after they have remained in the sanatorium over a year; however, their average is still well below the median.

The Minnesota Multiphasic Personality Inventory is designed to measure the following aspects of personality: Hypochondriasis (Hs), Depression (D), Hysteria (Hy), Psychopathic Deviate (Pd), Interest (Mf), Paranoia (Pa), Psychasthenia (Pt), Schizophrenia (Sc), and Hypomania (Ma). Any scores above 70 are considered abnormal and require careful attention and possible medical investigation.

The average T-Scores or Standard Scores made on

each scale have been recorded in Table XI. It is quite apparent there is abnormality present when the average scores for a group of twenty men are 70.4 on Hypochondriasis and 72 on Depression. The average scores for the women on the same scales are 61.7 and 59.8 respectively. This indicates the men are more abnormally concerned about bodily functions and "frequently complain of pains and disorders which are difficult to identify and for which no clear organic basis can be found."[4] The high Depression Score "indicates poor morale of the emotional type with a feeling of uselessness and inability to assume a normal optimism with regard to the future."[5] 45% of the men and 20% of the women scored above 70 on the Hypochondriasis Scale whereas 60% of the men and only 15% of the women scored above 70 on the Depression Scale.

Seven women and six men, or 32.5% of the forty patients ranked above 70 on the Hysteria Scale. This percentage is definitely higher than it would appear in the same number of persons in the general population. On the Psychopathic Deviate Scale men were an average 5.3 points higher

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[4]Starke R. Hathaway, and J. Charnley McKinley, The Minnesota Multiphasic Personality Inventory, The Psychological Corporation, New York, 1943, p. 4

[5]Ibid., p. 4

TABLE XI

MINNESOTA MULTIPHASIC PERSONALITY INVENTORY

	Hs	D	Hy	Pd	Mf	Pa	Pt	So	Ma
Average Standard Rank:									
Men	70.4	72.0	64.6	64.0	58.8	55.3	60.5	55.3	53.6
Women	61.7	59.8	63.2	58.7	48.6	57.9	58.2	56.4	55.7
Difference	8.7	12.2	1.4	5.3	10.2	2.6	2.3	1.1	2.1
No. Scores above 70:									
Men	9	12	6	5	3	1	3	3	1
% Men	45	60	30	25	15	5	15	15	5
Women	4	3	7	1	0	1	1	3	2
% Women	20	15	35	5	0	5	5	15	10
No. Scores on 70:									
Men	2	0	0	0	0	1	0	0	1
% Men	10	0	0	0	0	5	0	0	5
Women	1	0	1	0	1	0	0	0	0
% Women	5	0	5	0	5	0	0	0	0

Table showing Average Standard (T) Scores of men and women patients on the Minnesota Multiphasic Personality Inventory.

than the women and 5 men and only 1 woman ranked above 70.

Men scored 10.2 higher on the Interest Scale and with three ranking over 70 we might assume more "deviation of the basic interest pattern in the direction of the opposite sex" among men than among women.[6]

Women made slightly higher average scores on the Paranoia, Schizophrenia, and Hypomania Scales than did men; however, both three men and three women ranked above 70 on the Schizophrenia. Again men scored 2.3 points higher than women on the Psychasthenia Scale with three men and one woman appearing above 70.

The average Standard Scores of men and women according to the estimated prognosis were compared in Table XII. It is curious to note that men scored 75.5 with poor prognosis and 72.8 with good prognosis on the Hypochondriasis Scale and only 62 for fair prognosis. On the other hand, women scored the highest (67.6) on the fair prognosis average. They ranked the lowest (56.4) on the good prognosis which seems more logical. Men are more depressed with poor prognosis. Women with good prognosis scored most depressed. Both tend to decrease on the Hysteria Scale as the prognosis is better. It is also interesting to find that the

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[6]Ibid., p. 5

TABLE XII

MINNESOTA MULTIPHASIC PERSONALITY INVENTORY

	No. Cases		Hs		D		Hy		Pd		Mf	
	M	W	M	W	M	W	M	W	M	W	M	W
Poor	6	5	75.5	66.4	79	62.4	68	67	65.7	60.8	54.7	47
Fair	6	5	62	67.6	67.2	62.6	62.3	65.6	63.8	61.4	57.7	58.4
Good	8	10	72.8	56.4	70.4	57.1	63.6	60	62.9	56.2	62.9	44.4

	No. Cases		Pa		Pt		Sc		Ma	
	M	W	M	W	M	W	M	W	M	W
Poor	6	5	53.5	57.8	63.5	60.8	55.5	58.8	50.8	55.2
Fair	6	5	55.3	56.6	59.8	59.2	54.7	61.2	57.3	51.8
Good	8	10	56.6	58.6	58.8	56.3	56.9	52.8	52.8	57.9

Table showing average Standard (T) Scores of men and women patients on the Minnesota Multiphasic Personality Inventory according to estimated prognosis.

interest pattern (Hf) for the men becomes more feminine the better the prognosis and women show a marked increase of at least 11.4 points on that scale with a fair prognosis. These results suggest unreliability of Minnesota Multiphasic Personality Scale as indicative of prognosis.

The only significant points we learn from Table XIII which compares men and women according to the number of admissions and readmissions to the sanatorium are: both men and women increase their scores on the Hypochondriasis and Hysteria Scales, women become more depressed, and men show upward trends on the Psychopathic Deviate Scale the more readmissions they experience. Men also show a decrease in the Interest Scale with more admissions.

As seen in Table XIV, men and women's scores on Hypochondriasis Scale increase as they become older. Men definitely become more depressed and women show symptoms of hysteria as they become older.

The more time spent in the sanatorium, the more men become depressed.[7] Men who have been in the sanatorium for less than one year show a higher rank on the Schizophrenia

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[7]See Table XV

TABLE XIII

MINNESOTA MULTIPHASIC PERSONALITY INVENTORY

	No. Cases		Hs		D		Hy		Pd		Mf	
	M	W	M	W	M	W	M	W	M	W	M	W
1 Admission	8	10	65	57	72.4	57.8	62.6	58.6	62.1	55	62.1	45.8
2 Admissions	8	6	72.3	66.7	71.5	60.3	65	65.7	63.1	64.3	59	56.2
3 " and over	4	4	77.3	66	72.3	64	67.5	70.7	69.5	59.3	52	44

	No. Cases		Pa		Pt		Sc		Ma	
	M	W	M	W	M	W	M	W	M	W
1 Admission	8	10	54.5	58.9	60.4	57.8	58	55.7	53.1	57.9
2 Admissions	8	6	54.4	55.5	61.8	60.5	54.8	62.7	54	53.7
3 " and over	4	4	58.8	59	58.3	55.5	53.5	48.7	53.5	53.3

Table showing average Standard (T) Scores of men and women patients on the Minnesota Multiphasic Personality Inventory according to number of admissions and readmissions to the sanatorium.

TABLE XIV

MINNESOTA MULTIPHASIC PERSONALITY INVENTORY

	No. Cases		Hs		D		Hy		Pd		Mf	
	M	W	M	W	M	W	M	W	M	W	M	W
15-20 years	3	7	65.7	60.6	64.3	59.9	69.7	60.1	65	60.7	59.7	51.7
30-40 years	7	9	68.9	57.3	71.3	58.8	62	59	67	56.6	53	46.3
40-50 years	6	2	69.5	74	70	67	63.5	78.5	64.3	62	54.3	54
Over 50 "	4	2	77.8	73	82	57	66.8	77	57.5	57.5	60	42

	No. Cases		Pa		Pt		Sc		Ma	
	M	W	M	W	M	W	M	W	M	W
15-20 years	3	7	52	58.1	56	61.9	50	61.7	52	58.9
30-40 years	7	9	57.6	58.2	62.3	56.1	57.9	52.7	55.7	57.1
40-50 years	6	2	58.7	53	60.2	58	59.5	53.5	56.5	41.5
Over 50 "	4	2	48.8	60.5	61.3	54.5	51	57.5	46.5	52.5

Table showing average Standard (T) Scores of men and women patients on the Minnesota Multiphasic Personality Inventory according to age groups.

TABLE XV

MINNESOTA MULTIPHASIC PERSONALITY INVENTORY

	No. Cases		Hs		D		Hy		Pd		Mf	
	M	W	M	W	M	W	M	W	M	W	M	W
0-1 year	8	9	76.5	58.7	76.5	61.3	70.1	60.2	70.8	57.6	60.3	49.8
1-2 years	7	3	61	57.3	71	55.7	59.9	61.7	58.4	59	53.9	45
Over 2 years	5	8	73.6	66.8	66.6	59.6	62.2	67	61	59.8	63.4	48.5

	No. Cases		Pa		Pt		Sc		Ma	
	M	W	M	W	M	W	M	W	M	W
0-1 year	8	9	62.5	58.2	68	57	64.1	54.6	55.9	58.9
1-2 years	7	3	50	60	54.3	53.7	50	45	45.7	51.7
Over 2 years	5	8	51.2	56.8	57.2	61.1	50.6	62.8	60.8	53.6

Table showing average Standard (T) Scores of men and women patients on the Minnesota Multiphasic Personality Inventory according to length of time in the sanatorium on this admission.

Scale (64.1) than do others. Could this be explained with the assumption that men showing such symptoms would not be content to stay hospitalized for long periods of time? This assumption cannot be upheld too strongly when the highest score on Schizophrenia was also made by the group who were classified as first admissions. On the Psychasthenia Scale men ranked higher during their first year, whereas women slightly increase their ranks after the second year. The manual suggests that: "frequently a psychasthenic tendency may be manifested merely as a mild depression, excessive worry, lack of confidence, or inability to concentrate."[8] In my opinion, this would be the explanation for any high scores made by the tuberculous.

The women score somewhat higher on the Hysteria and Psychopathic Deviate Scales as the length of time in the hospital increases.

When the scores made by both men and women are examined individually, it is found that generally those who do show abnormality will do so on several different scales. This fact is pointed out in the manual as being generally true and high scores are considered more significant when such is the case.

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[8] Ibid., p. 6

There is no section on the Minnesota Multiphasic Personality Inventory which demonstrates the morale of the patients. The author selected a group of questions from the test which do give an indication of how persons feel now and something of their future hopes. The full list is given in the Appendix, however, now a few of the more noteworthy will be presented. On the questions of future morale we have the following enlightening statements:

20-T[9] "These days I find it hard not to give up amounting to something."
17-T "I am certainly lacking in self-confidence."
29-T "I certainly feel useless at times."
6-T "I believe I am a condemned person."
4-T "No one cares much what happens to me."
17-T "I have several times given up doing a thing because I thought too little of my ability."
24-T "My plans have frequently seemed so full of difficulties that I have had to give them up."
20-T "The future is too uncertain for a person to make serious plans."
18-T "I worry quite a bit over possible misfortunes."
10-T "The future seems hopeless to me."

We do find some more positive answers and indications of hope for the future in the following:

24-T "My daily life is full of things that keep me interested."
38-T "Any man who is able and willing to work hard has a good chance of succeeding."

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[9]Number who rated statements as being true.

36-T "I usually feel that life is worth while."
28-T "I am happy most of the time."
38-T "I like to study and read about things I am working at."
37-T "I usually expect to succeed in things I do."

Some of the symptoms of present poor morale and feelings of resentment or enmity are shown by the following statements:

17-T "I feel anxiety about something, or someone almost all the time."
21-T "I have certainly had more than my share of things to worry about."
5-T "Most of the time I wish I were dead."
21-T "I am inclined to take things hard."
19-T "I wish I could get over worrying about things I have said that may have injured other people's feelings."
26-T "People often disappoint me."
21-T "I feel unable to tell anyone all about myself."
31-T "I am apt to hide my feelings in somethings to the point that people may hurt me without them knowing about it."
31-T "I have had periods in which I lost sleep over worry."
14-T "I sometimes feel that I am about to go to pieces."
29-T "I wish I could be as happy as others seem to be."
33-T "My hardest battles are with myself."
27-T "I frequently find myself worrying about something."
16-T "I have periods of such great restlessness that I cannot sit in a chair."
34-T "I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others."

Evidence of good morale in the present is shown by some of the following statements:

37-T "I get all the sympathy I should."
37-F[10] "No one seems to understand me."

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[10] F- indicates persons answered statement as false.

30-F "I easily become impatient with people."
30-F "Even when I am with people I feel lonely much of the time."
35-F "Most of the time I feel blue."
20-T "I don't worry about catching diseases."
32-T "Something exciting will almost always pull me out of it when I am feeling low."

The answers made by tha patients certainly do emphasize the fact that there is a definite need for understanding, patience and sympathy on the part of the staff in a tuberculosis sanatorium. The application of psychosomatic principles is important in the total rehabilitation of the tuberculous.

Chapter III

Critical Evaluation of Findings and Conclusions

On the Bernreuter Personality Inventory the percentile conversion of average raw scores of the men demonstrated that in general men with tuberculosis are more neurotic, introverted, submissive and less self-confident and sociable than women are. It is a debatable point as to whether men are more self-sufficient than the women since the scores of the two oldest women were so much higher than the others on the scale and they were two of the four women to score above the median. By ignoring these two scores, the average percentile conversion would drop from 30 to 24 for the women which would only make a difference of 1 between the men and women's scores.

Irvin T. Shultz at Sunnyside Sanatorium, Marion County, Indiana, reports as follows:

> "A comparison of 82 male and 93 female tuberculous patients...with norms of the Bernreuter Personality

> Test shows that the men are more neurotic than the women, less self-sufficient, less introverted, somewhat more dominant, and more lacking in self-confidence. Men and women are equal in sociability.
>
> Both men and women at Sunnyside are more neurotic, more lacking in self-sufficiency and self-confidence, more introverted, more submissive and more gregarious than the norms of the Bernreuter Personality Test would predict."[1]

The results of this study and Shultz disagree on three scales. Shultz believes men are less introverted with a score of approximately 65 for men and 70 for women, whereas this data gives the average percentile conversion for men as 68, and 60 for women. Shultz finds men are more dominant and this was not true in this study. Where Shultz finds men and women equal in sociability, I find men 9 points higher than women and apparently less sociable.

Shultz reports that:

> "there is apparently a slight tendency for men to grow more neurotic in proportion to the length of time spent in the sanatorium. This is especially noticeable after three years of confinement.
>
> Women, on the other hand, seem to show a slight tendency to become less neurotic in proportion to the length of time spent in the institution until after two years. Then a slight increase is noted. However, so few cases have continued for this length of time that the results may not be reliable. It might also be well to mention that a considerably larger proportion of women than men leave against

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[1]Irvin T. Shultz, "Psychological Factors in Tuberculous Patients," The American Review of Tuberculosis, Vol. LIII, No. 4, (April 1941), p. 564

medical advice. Naturally, the more neurotic the patient, the more likely he is to resent confinement. Thus it may be reasonably assumed that there is a slightly greater weeding-out of neurotic women than men, which may be sufficient to over-balance the normal tendency to grow more neurotic as the length of time at Sunnyside increases."[2]

The study at Pine Camp Hospital partially substantiates these results since men do increase in neurotic tendency after the second year and women show a decrease after the first year. However, the greater the number of readmissions, the more the men decrease in neurotic tendency whereas women show an increase. Women also show a decrease in self-confidence after the first year.

As the prognosis becomes worse, men become more neurotic, more introverted, more submissive and more self-conscious, whereas the only fact to be noted for women is that they become more introverted the worse the prognosis. Neymann found patients become more introverted as the prognosis becomes worse:

"The average tuberculosis patient has a strong leaning toward introvertive qualities. The introvertive qualities decrease as pulmonary tuberculosis becomes progressive and the patient becomes bed-ridden."[3]

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[2]Ibid., pp. 563-564

[3]Clarence A. Neymann, "The Relation of Extroversion-Introversion to Intelligence and Tuberculosis," The American Journal of Psychiatry, Vol. IX, No. 4, (January 1930), p. 694

As men become older, they are more neurotic, introverted, submissive, self-conscious, less self-sufficient and sociable. Women apparently show exactly the opposite tendencies except for sociability. Again it must be brought out, however, that the sociability score for the same women over 50 mentioned before might be considered invalid and if this is true, the women would become more sociable.

Shultz asked the physicians at Sunnyside to judge their patients on the six parts of the Bernreuter Personality Inventory. He reports the coefficients of correlation were:

> "very low, indicating that there is scarcely any relationship between the judgements of physicians and the ranks of the patients on the Bernreuter Test. Since also the coefficients of correlation are consistently low, some even negative, it would seem that the physicians were in agreement among themselves in their judgement of patients."[4]

This statement certainly points out the necessity of using some means to adequately measure personality traits of tuberculous patients.

On the Minnesota Personality Scale it has been found that men rank higher on morale, family relations, emotional stability, economic conservatism than women do.

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[4]Ibid., p. 563

Women are only slightly more adjusted socially in relations with other persons. Actually, the difference is not great enough to be considered significant. It must be emphasized that the mean scores of both men and women are below the median on social adjustment, emotionality, and economic conservatism. Men with a good prognosis are higher in morale and show a decrease in anxiety and economic conservatism as compared with men of poor or fair prognosis. Women show an increase in better family relations, emotional stability, and a more liberal view of current economic and industrial problems when their prognosis is good.

Men increase in economic conservatism the more admissions they have and the older they become. Women increase in economic conservatism also as they become older.

Tuberculous men show a decrease in morale, social adjustment, and emotional stability as they become older and women demonstrate exactly the opposite tendencies and increase in family relations scores.

The longer men remain hospitalized, the higher their morale (attitudes toward the legal system, education and general adjustment) and the lower their social adjustment.

On the Minnesota Multiphasic Personality Inventory men ranked higher than women on the Hypochondriasis, De-

pression, Hysteria, Psychopathic Deviate, Interest and Psychasthenia Scales. Women scored slightly higher on the Paranoia, Schizophrenia, and Hypomania Scales. Men and women decrease on the Hysteria Scale and men increase on the Interest Scale as the prognosis becomes better. Women show a definite increase on the Interest Scale when the prognosis is fair.

The greater the number of admissions, the higher are the ranks on Hypochondriasis and Hysteria Scales for both men and women, the more women become depressed and the more men show a decrease in the Interest Scale. The older men and women become the higher they score on the Hypochondriasis Scale; women show more hysteria. Men are more depressed as they grow older and the longer they are hospitalized.

George W. Albee administering the Minnesota Multiphasic Personality Inventory to a group of 52 veterans with tuberculosis and a group of 61 other chronically ill veterans equated as nearly as possible in intelligence, sex, age, chronic illness, motivation and hospitalization reports the following results:

"(1) Chronically ill patients in general deviate in the direction of maladjustment on each of the scales of the MMPI.

(2) The tuberculous patients were found to be significantly more hypomanic and more feminine than

other chronically ill patients.

(3) The nontuberculous patients were found to be more depressed and more hypochondrical than the tuberculous patients.

(4) No linear relationship between degree of emotional deviation and severity of tubercular infection was found to exist in the present data.

It is felt that the difference found can be explained by the hypothesis that tuberculous patients are made less uncomfortable by their illness than are other chronically ill groups. This, together with their nutritious diet and frustration to normal activity, combine to produce a state of heightened responsiveness which has been labeled euphoria. This explanation would also account for their lower scores on hypochondriasis and depression."[5]

Using a complete individual physical and psychological life-history study, Forster and Shepard in their study of 100 unselected cases of pulmonary tuberculosis at Cragmor Sanatorium find 61% to show normal behavior or:

"a single emotional maladjustment which was rectified during the period of observation. Of the remaining 31 patients, seven showed a persistent simple maladjustment, twenty were diagnosed as definitely neurotic, and four were diagnosed as psychotic. Of the neurotic group, 9 cases of fatigue neurosis (neurasthenia) 10 cases of anxiety neurosis, and one case of conversion hysteria were seen."

They concluded: "No abnormal mental state specific to tuberculosis has been discovered," but a "definite correlation has been found to exist between ab-

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[5]George W. Albee, "Psychological Concomitants of Pulmonary Tuberculosis," The American Review of Tuberculosis, Vol. LVIII, No. 6, (December 1948), p. 659

normal states in tuberculosis and the personality make-up of the individual."[6]

A review of the answers given on the various questions concerning morale which were taken from the Minnesota Multiphasic Personality Inventory indicates the need of tuberculous patients for help and guidance, encouragement and understanding.

Seidenfeld in his comparison of 50 tuberculous with 50 non-tuberculous subjects using the Maller Personality Sketches demonstrates that only 2 of the items (e) "often dream that some people died" and (h) "sometimes feel very happy or sad without knowing why," are indicative of frank psychiatric responses and the reactions of the tuberculous can be explained:

> "in terms of institutional reactions, the failure of society to understand the tuberculous and a lack of proper education of the public regarding the proper attitude to take toward tuberculosis as a contagious disease, and the actual subjective symptoms which are the result of the disease itself."[7]

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[6]Alexius M. Forster and Charles E. Shepard, "Abnormal Mental States in Tuberculosis," The American Review of Tuberculosis, Vol. XXV. No. 3. (March 1932). p. 332

[7]Morton A. Seidenfeld, "A Comparative Study of Responses of Tuberculous and Non-Tuberculous Subjects on the Maller Personality Sketches," The Journal of Psychology, first-half, (1940), pp. 256-257

The general conclusions concerning the reactions of the tuberculous are as follows:

(1) Men are more neurotic, more introverted, more submissive, less self-confident, and less sociable than women are. The Neurotic-Tendency, Introversion-Extroversion, and Self-Confidence Scores for both men and women are above the median. The Self-Sufficiency, Dominance-Submission and Sociability Scores are below the median.

(2) Men have higher average ranks on Morale, Family-Relations, Emotionality and Economic Conservatism than women do.

Both men and women are below the median on Economic Conservatism; however, because of the difficult vocabulary on the particular part of the Inventory, the author does not believe these scores are entirely valid.

(3) Men have average T-Scores on the Hypochondriasis and Depression Scales which are definitely abnormal when compared to the general population. They are significantly higher than the women on the Hypochondriasis, Depression, Psychopathic Deviate and Interest Scales.

(4) Persons with tuberculosis do show evidence of greater abnormality than would the normal population on the Bernreuter Personality Inventory, the Minnesota Personality Scale and the Minnesota Multiphasic Personality Inventory. These three inventories are of definite value in studying the personality traits and emotions of the tuberculous and through their use it is possible to aid the patients by bringing to light hidden anxieties and upsets which may be retarding recovery.

APPENDIX

Appendix A

Bernreuter Personality Inventory
Men-Percentile Scores

	Age	B1-N	B2	B3-I	B4-D	F1-C	F2-S
HA	23	21	31	33	61	28	16
HE	24	62	17	61	34	75	19
BA	26	30	66	22	45	41	44
BT	32	68	13	56	41	78	16
SH	33	75	34	67	21	83	30
PI	33	93	7	86	4	98	32
JN	38	89	33	85	15	92	68
GM	39	62	30	54	60	69	23
DU	39	95	18	92	6	97	66
BV	39	49	29	58	18	62	5
MR	41	89	21	75	4	93	47
ST	42	82	22	80	13	90	47
EL	43	48	17	32	42	58	8
BI	46	17	27	11	58	26	6
BS	47	94	2	90	9	98	19
KE	48	96	48	96	7	99	84
LA	52	60	51	51	25	77	53
AN	62	91	14	86	7	94	33
RC	65	73	18	72	51	78	36
CO	68	93	21	83	3	96	68

Appendix B

Bernreuter Personality Inventory
Women-Percentile Scores

	Age	B1-N	B2-S	B3-I	B4-D	F1-C	F2-C
TA	17	99	7	96	-1	99	42
JO	22	65	3	87	17	89	7
TU	24	36	31	26	44	46	11
MU	25	98	8	96	2	98	58
TG	26	48	8	48	48	70	8
SP	26	48	34	53	61	59	35
DP	27	76	20	88	48	82	6
OL	31	46	52	53	69	45	55
SB	33	40	22	30	40	49	2
BR	33	81	13	81	9	95	11
AM	34	72	12	81	44	76	4
WO	34	66	60	70	65	65	55
VE	35	61	22	62	35	74	22
WD	35	81	28	84	32	84	46
CL	36	23	31	21	57	49	8
ME	39	70	29	76	41	82	8
BR	47	49	49	37	55	51	28
SM	49	60	12	53	40	73	10
GR	52	39	90	26	44	40	87
BU	77	17	88	23	77	16	77

Appendix C

Minnesota Personality Scale
Men-Percentile Scores

	Age	I	II	III	IV	V
HA	23	99	96	96	74	20
HE	24	53	41	96	62	91
BA	26	78	46	90	58	6
BT	32	55	83	87	27	60
SH	33	50	30		45	
PI	33	73	5	58	8	20
JN	38	83	18	70	47	38
GM	39	96	27	30	4	68
DU	39	8	3	29	2	11
BV	39	58	24	48	49	38
MR	41	50	2	68	38	68
ST	42	43	29	25	5	58
EL	43	92	24	72	17	84
HI	46	96	79	82	92	50
BS	47	33	8	60	3	14
KE	48	88	8	85	24	50
LA	52	43	3	89	53	80
AN	62	38	23	94	35	13
RC	65					
CO	68	60	14	40	3	73

Appendix D

Minnesota Personality Scale
Women-Percentile Scores

	Age	I	II	III	IV	V
TA	17	3	2	4	2	12
JO	22	14	37	65	23	8
TU	24	11	21	34	2	35
MU	25	24	1-	74	1-	23
TG	26	78	19	29	7	45
SP	26	78	24	34	14	6
DP	27	15	20	3	3	25
CL	31	25	21	68	24	40
BS	33	35	35	16	40	18
BR	33	80	7	58	25	78
AM	34	30	55	84	7	30
WO	34	22	35	30	8	10
VE	35	43	44	27	31	35
WD	35	48	34	13	19	85
CL	36	89	39	82	55	55
ME	39	22	40	72	9	4
BR	47	13	61		14	20
SM	49	43	28	62	25	85
GR	52	88	30	99	72	99
BU	77	75	81	80	39	85

Appendix E

Minnesota Multiphasic Personality Inventory
Men-Standard (T) Scores

	Age	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma
HA	23	70	60	71	62	71	53	64	59	60
HE	24	57	68	67	69	45	44	48	40	43
BA	26	70	65	71	64	63	59	56	51	53
BT	32	88	77	86	76	51	62	66	48	53
SH	33	85	84	73	90	55	73	77	78	63
PI	33	59	77	60	60	53	53	62	53	43
JN	38	52	41	44	57	61	53	60	48	73
GM	39	77	65	67	57	61	47	52	44	65
DU	39	62	92	60	74	49	62	81	90	60
BV	39	59	63	44	55	41	53	38	44	33
MR	41	54	72	65	62	67	67	62	55	50
ST	42	67	75	60	74	65	59	50	53	48
EL	43	103	80	73	60	59	47	56	57	58
BT	46	54	56	56	55	65	53	52	55	58
BS	47	59	72	65	71	73	56	60	53	55
KE	48	80	65	62	64	57	70	81	84	70
LA	52	72	89	60	67	49	33	62	53	45
AN	62	90	92	78	62	71	62	69	50	40
RC	65	72	72	67	41	57	47	56	50	48
CO	68	77	75	62	60	63	53	58	51	53

Appendix F

Minnesota Multiphasic Personality Inventory
Women-Standard (T) Scores

	Age	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma
TA	17	60	61	56	71	70	62	58	67	53
JO	22	54	59	50	48	47	56	60	44	50
TU	24	76	57	59	64	63	56	56	72	68
MU	25	66	75	77	55	37	59	61	55	50
TY	26	62	51	75	67	49	56	78	72	65
SP	26	52	57	57	60	49	65	65	64	73
DP	27	54	59	47	60	47	53	55	58	53
OL	31	70	63	72	62	47	59	65	49	55
BE	33	44	49	45	48	43	62	41	43	55
BR	33	54	61	56	48	51	59	66	60	55
AM	34	58	65	59	60	53	56	55	40	63
WO	34	58	67	57	55	45	56	51	51	68
VE	35	58	55	68	67	45	59	55	43	45
WD	35	76	76	75	62	45	62	65	67	40
CL	36	54	44	54	43	41	38	41	38	45
ME	39	44	49	45	64	47	73	66	83	88
BR	47	82	75	87	62	59	59	56	49	40
SM	49	66	59	70	62	49	47	60	58	43
GR	52	64	53	75	60	43	59	58	58	50
BU	77	82	61	79	55	41	62	51	57	55

Appendix G

Statements selected from the Minnesota Multiphasic Personality Inventory which are concerned with the hope for the future of the forty tuberculous patients:

Men T.F.	Women T. F.		
9-11	15-5	8.	My daily life is full of things that keep me interested.
0-20	3-16	9.	I am about as able to work as I ever was.
2-18	6-14	16.	I am sure I get a raw deal from life.
11-9	9-11	36.	I seldom worry about my health.
21-0	17-3	83.	Any man who is able and willing to work hard has a good chance of succeeding.
10-8	10-9	84.	These days I find it hard not to give up hope of amounting to something.
11-9	6-14	86.	I am certainly lacking in self-confidence.
19-1	17-2	88.	I usually feel that life is worth while.
1-19	0-20	104.	I don't seem to care what happens to me.
14-5	17-3	107.	I am happy most of the time.
19-0	13-6	122.	I seem to be about as capable and smart as most others around me.
14-6	15-5	142.	I certainly feel useless at times.
19-1	19-1	164.	I like to study and read about things that I am working at.
3-17	3-17	202.	I believe I am a condemned person.
2-18	2-18	252.	No one cares much what happens to me.
20-0	17-3	257.	I usually expect to succeed in things I do.
7-11	4-16	264.	I am entirely self-confident.
8-12	9-11	357.	I have several times given up doing a thing because I thought too little of my ability.
7-13	17-3	389.	My plans have frequently seemed so full of difficulties that I have had to give them up.
11-9	9-11	395.	The future is too uncertain for a person to make serious plans.
10-10	12-6	397.	I have sometimes felt that difficulties were piling up so high that I could not overcome them.
2-18	4-16	411.	It makes me feel like a failure when I hear of the success of someone I know well.
6-14	12-8	431.	I worry quite a bit over possible misfortunes.
5-15	5-13	526.	The future seems hopeless to me.

Appendix H

Statements selected from the Minnesota Multiphasic Personality Inventory which are indicative of the present morale of the forty tuberculous patients:

Men T.F.	Women T.F.		
4-16	4-16	10.	There seems to be a lump in my throat much of the time.
15-4	14-6	67.	I wish I could be as happy as others seem to be.
18-2	16-3	71.	I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others.
3-17	2-18	76.	Most of the time I feel blue.
12-6	10-10	94.	I do many things which I regret afterwards (I regret things more or more often than others seem to).
18-2	15-5	102.	My hardest battles are with myself.
7-11	10-10	129.	Often I can't understand why I have been so cross and grouchy.
17-3	13-7	131.	I don't worry about catching diseases.
11-9	16-4	217.	I frequently find myself worrying about something.
12-8	11-9	234.	I get mad easily and then get over it soon.
10-10	6-14	236.	I brood a great deal.
6-14	6-14	238.	I have periods of such great restlessness that I cannot sit long in a chair.
8-12	15-5	242.	I believe I am no more nervous than most others.
13-7	19-1	268.	Something exciting will almost always pull me out of it when I am feeling low.
11-9	15-5	296.	I have periods in which I feel unusually cheerful without any special reason.
4-16	5-13	299.	I think that I feel more intensely than most people do.
2-18	4-16	305.	Even when I am with people I feel lonely much of the time.
19-1	18-2	306.	I get all the sympathy I should.
1-19	2-18	333.	No one seems to understand me.
3-17	6-14	335.	I cannot keep my mind on one thing.
5-15	5-15	336.	I easily become impatient with people.
6-14	11-8	337.	I feel anxiety about something or someone almost all the time.

Men T.	Men F.	Women T.	Women F.		
10	10	11	9	338.	I have certainly had more than my share of things to worry about.
2	17	3	17	339.	Most of the time I wish I were dead.
9	8	16	4	340.	Sometimes I become so excited that I find it hard to get to sleep.
3	17	9	10	343.	I usually have to stop and think before I act even in trifling matters.
4	16	9	11	356.	I have more trouble concentrating than others seem to have.
8	12	13	6	361.	I am inclined to take things hard.
3	17	7	13	362.	I am more sensitive than most other people.
2	18	8	12	366.	Even when I am with people I feel lonely much of the time.
17	3	12	8	371.	I am not unusually self-conscious.
13	7	17	3	374.	At periods my mind seems to work more slowly than usual.
9	11	8	11	381.	I am often said to be hotheaded.
6	14	13	7	382.	I wish I could get over worrying about things I have said that may have injured other people's feelings.
12	7	14	6	383.	People often disappoint me.
11	8	10	10	384.	I feel unable to tell anyone all about myself.
9	11	13	6	402.	I often must sleep over a matter before I decide what to do.
12	8	7	13	407.	I am usually calm and not easily upset.
17	3	14	6	408.	I am apt to hide my feelings in some things, to the point that people may hurt me without their knowing about it.
14	6	17	3	442.	I have had periods in which I lost sleep over worry.
1	19	3	17	543.	Several times a week I feel as if something dreadful is about to happen.
8	11	6	12	549.	I shrink from facing a crisis or difficulty.
8	12	11	9	555.	I sometimes feel that I am about to go to pieces.

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