

SOME PERSONALITY CHARACTERISTICS OF
FREQUENT AND INFREQUENT VISITORS
TO A UNIVERSITY INFIRMARY

By
MARY CHARLOTTE WHARTON

A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF
THE UNIVERSITY OF FLORIDA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

June, 1962

UNIVERSITY OF FLORIDA
LIBRARY

UNIVERSITY OF FLORIDA



3 1262 08552 2216

Copyright by
Mary Charlotte Wharton
1962

ACKNOWLEDGMENTS

The writer wishes to express her appreciation for the guidance and advice given her by the members of her supervisory committee: Dr. Sidney M. Jourard, chairman, Dr. Albert K. Kurtz, Dr. James C. Dixon, Dr. Richard J. Anderson, and Dr. George R. Bartlett. She would also like to thank Drs. Ben Barger, Henry C. Schumacher, and Samuel Wright for their permission to use the Student Infirmary records, their help in contacting subjects, and their most kind assistance in giving her the opportunity to plan and execute this study. She would also like to express her appreciation to the students who cooperated as subjects in this study.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	111
LIST OF TABLES	v
LIST OF FIGURESviii
 Chapter	
I. BACKGROUND AND PROBLEM	1
The Psychosomatic Concept	
Formulations of the Psychosomatic Process	
Holism and Field Theory	
Pertinent Research	
The Problem to be Investigated	
II. METHOD	32
Subjects	
Materials	
Procedure	
Hypotheses	
III. RESULTS	45
IV. DISCUSSION	83
The Data and the Hypotheses	
Psychological Immaturity	
The Conflict Situation and the Stress	
It Produced	
The Mechanism or Process of Psychosomatic	
Illness	
Sex Differences	
Implications of the Findings for Theory	
Unanswered Questions	
V. SUMMARY	97
REFERENCES	101
APPENDIX A	110
APPENDIX B	116
APPENDIX C	125

LIST OF TABLES

Table		Page
1.	Religious Preference of High, Mean and Low Users	37
2.	Findings Pertaining to Hypothesis 1	45
3.	Findings Pertaining to Hypothesis 2	46
4.	Findings Pertaining to Hypothesis 3	49
5.	Findings Pertaining to Hypothesis 4	50
6.	Findings Pertaining to Hypothesis 5	51
7.	Analysis of Variance of MMPI Scale 9 (Ma)	54
8.	Kind of Discrepancy between Level I (MMPI) and Level II (ICL) Self-description	59
9.	Level I and Level V Self-descriptions of Female High, Mean and Low Users	60
10.	High, Mean and Low Subjects' Choice of Name or Student Number.	62
11.	Product-Moment Correlation Coefficients between Morale-Loss and Self-Disclosure	64
12.	MMPI Profile Defined Levels of Self-development for High, Mean and Low Users	67
13.	Analysis of Variance of Familial Discord Scale	69
14.	ICL Description of Mother as Loving or Hostile	70
15.	Infirmary Visits of High and Mean Users During the First 30 Days of the Freshman Year	72
16.	Analysis of Variance of Complaint/Visit Ratio Scores of High and Mean Users	73
17.	Rank Order of Types of Complaints for High and Mean Infirmary Users	74

Table	Page
18. Number of Visits Made to Infirmary During the Second School Year for all Subjects Continuously Enrolled	76
19. Self-Ratings of General Health	76
20. Analysis of Variance of Total ACE Scores. .	78
21. Analysis of Variance of Grade Point Average at the End of the Freshman Year	78
22. Sorority and Fraternity Membership at the End of the Sophomore Year	81
23. Analysis of Variance of the Number of Extra-Curricular Activities, Other than Sororities and Fraternities.	81
24. Weekends at Home Corrected for Distance from University to Hometown.	82
25. Contacts with Prospective Subjects and Their Responses	117
26. Analysis of Variance of MMPI Morale Loss Scale	117
27. Analysis of Variance of MMPI Scale 1 (HS) .	118
28. Analysis of Variance of MMPI Scale 3 (HY) .	118
29. Analysis of Variance of MMPI Scale 4 (PD)..	119
30. <u>t</u> -Ratios between Experimental Groups and same Sex Freshmen for 11 MMPI Scales.	120
31. Analysis of Variance of Welsh's Internalization Ratio	121
32. Analysis of Variance of ICL Intensity Scores, Level II Self	122
33. Amount of Discrepancy between Level I (MMPI) and Level II (ICL) Self-description	123

Table	Page
34. Analysis of Variance of Self-disclosure Scores for Four Targets: Mother, Father, Same Sex Friend, and Opposite Sex Friend. . .	124
35. MMPI Standard Scores.	126
36. Morale Loss, Familial Discord, Internalization Ratio, and Self-development Scores . . .	129
37. ICL Intensity Scores, Level II-Self	132
38. ICL Octant and Level I-Self (MMPI) Scores . .	135
39. Self-disclosure Scores.	138
40. Total Medical Visits Freshman Year, First 30 Days of Freshman Year, and Sophomore Year . .	141
41. Type of Complaints, Complaint/Visit Ratio, and Self-ratings of General Health.	144
42. ACE Total Scores and Freshman Grade Point Averages.	148
43. Religious Preference, Name or Student Number, and Sorority/Fraternity Membership. .	151
44. Weekends at Home Corrected for Distance, and Number of Extracurricular Activities. . .	155

LIST OF FIGURES

Figure		Page
1.	Visits to infirmary by 477 freshmen	34
2.	Visits to infirmary by 315 freshman men and 162 freshman women.	36

CHAPTER I

BACKGROUND AND PROBLEM

The Psychosomatic Concept

"Psychosomatic" is a new word in many vocabularies but one which is becoming increasingly fashionable. Perhaps because it refers to a concept which cuts across lines of discipline and profession, one finds a bewildering confusion of meanings and connotations connected with it in the literature. As Hartman (1955, pp. 591-592) points out, this term has been variously conceived to apply to a particular medical philosophy, to a conjoint research approach, or to the application of psychological principles and methods in certain forms of somatic sickness. Few have addressed themselves to the questions regarding basic views of human behavior which are raised by the proliferation of data on "psychosomatics." At least they have not gone beyond a consideration of the narrow range of behavior called sickness (Mead, 1953).

The relation between the mind and the body is

a question which has intrigued man for centuries. In medicine and biology, great thinkers from Galen to Bernard have discussed this relationship (Green, 1951; Foster, 1899). Looking backward, one may see that they seemed to have amazing insights. However, the facts are that their insights were not accepted by their colleagues nor by those of many generations to follow (Galdston, 1954; Hartman, 1955; Kaplan, & Kaplan, 1957). As outlined by Kruse (1954), theories of the etiology of disease developed along three lines, each independent of the others and each considered to be a necessary and sufficient cause of specific diseases. Only recently has it become evident that noxious agents (germs), stress, and deprivation are inextricably interwoven in their relationships to each other and to the development of disease symptoms. Kruse discusses the history of the study of beriberi to show that workers will hold to treasured theories of single causes of disease even in the face of facts to the contrary. Today there is little doubt that some kind of relationship exists between the soma and the psyche in the etiology of sickness. There are dramatic demonstrations of this relationship such as that of Spitz (1954) who studied 91 infants in a

foundling home. Details of this study will be presented later. However, a quotation from the summary of this paper illustrates the point being made here.

We feel justified in claiming that the deprivation of emotional supplies, at least in the period of early infancy, is a destructive stressor agent. It provokes the general adaptation syndrome as surely as does nutritional deprivation and it leads to the same consequences (p. 131).

The general adaptation syndrome referred to is from Seyle's work (Seyle, 1950).

A perusal of the literature reveals that many of those who write about psychosomatics have not accepted the unity of the organism, somatic and psychic, which is indicated by their data. Rather, they work from the premise that there is a definable subclass of illness which can be termed "psychosomatic" and that this is different from other illnesses. Thus, one finds lists of psychosomatic diseases such as that of Halliday (1953) which are outdated almost as soon as they appear. This is because other investigators are continuously discovering psychological factors in the etiology of illnesses previously thought to be purely somatic. Or one sees studies such as that of Waxenberg (1955) demonstrating that patients with a "psychosomatic" ailment are no different psychologically

from those with a "somatic" one. At the same time other investigators had placed his so-called "somatic" ailment among the "psychosomatic" ones. In general, what one finds is that the great majority of studies are done from the single cause point of view with emotions, attitudes, and other psychological variables added as ancillary and minor factors. The present study is based upon holistic, field theory principles. Therefore, those studies which investigate illness in general, or the behavior of the total organism under conditions of stress, deprivation or invasion by noxious agents, are the most germane and will be most carefully reviewed. However, a short summary of the main theories about the process or mechanism of psychosomatic illness together with some representative studies will be presented.

Formulations of the Psychosomatic Process

A number of writers have proposed formulations of how the psychosomatic process takes place. These may be divided into three main types, each to be discussed in turn. This division of theories into three types follows the divisions made by Kaplan and Kaplan (1957) and Mendelson, Husch, and Webber (1956).

Specificity

The first type of formulation includes those theories which posit that specific emotional conflicts (Alexander, 1950), specific personality patterns (Dunbar, 1938), or specific psychological traumata (Greenacre, 1952) are followed by specific physiological dysfunction. In general, the evidence does not support such specificity. As Hartman (1955) points out, piecemeal correlation of specific psychodynamics with symptoms of disease has produced data that are contradictory and do not differentiate consistently or reliably among patients with different diseases. As both Hartman and Mendelson et al. point out, specificity of relationships has too often been a conclusion based upon failure to look for relationships other than those being hypothesized. Studies such as those of Waxenberg (1955) and Buck and Hobbs (1959) offer experimental evidence for the nonspecificity of the psychosomatic process. This is not to say, of course, that sickness and symptoms may not have particular meanings to particular patients as expressions of feeling and attempts to communicate. A number of single case analyses such as those of Hartz (1956), Galdston (1956), and Kaplan and Gottschalk

(1958) offer evidence that this is true. There is a mounting body of evidence which supports the notion that certain individuals have idiosyncratic "body language" (Ruesch, 1957) which they use as an avenue of emotional expression and communication. Malmo and Shagass (1949) found, for example, that patients who had a history of cardiovascular symptoms or head and neck pains tended to react to stress through the cardiovascular or musculoskeletal systems even though they were suffering no symptoms at the time. Fisher and Cleveland (1955; 1956), in several carefully designed studies, showed that the locus of the symptoms developed in several different diseases was related to the image which the person had of his body as something which was surrounded by an impenetrable barrier (exterior symptoms) or something easily penetrated (interior symptoms). These classifications were made on the basis of certain responses to the Rorschach plates. Studies such as that of Richmond and Lustman (1955) suggest that such individual differences in tendencies toward body language may be present very early in life. What seems unlikely, at the present time, is Alexander's statement that a particular somatic symptom is always the physiological

consequence of specific sequences of specific unconscious conflicts (Alexander, 1950). The "ulcer type" seems to be an oversimplification of the facts.

Symptoms as Regression

The second type of theory is that which states that psychosomatic symptoms are regressive phenomena signifying a return to an earlier mode of behavior (Ruesch, 1948; Alexander, 1950; Margolin, 1954; Szasz, 1952). Kaplan and Kaplan criticize this point of view on the basis that the phenomena being studied are the product of complex learning and, therefore, a regression hypothesis is not necessary. Experimentally, there is very little evidence one way or the other. Szasz's hypothesis that parasympathetic activity is paramount in psychosomatic illness is questionable, according to Mendelson et al. (1956). Generally, the only evidence offered for this point of view is similar to that presented by Ruesch (1948) who showed that people suffering from certain diseases tended to behave in a manner which he judged to be immature. However, he stressed immaturity, a slightly different concept from regression.

Psychoanalytic Views

The third type of theory represents an extension

of Freudian psychology into the psychosomatic field. In this view a somatic symptom is a discharge through the autonomic nervous system of psychic energy which is "blocked" from discharge through motor channels. In other words, a somatic symptom is like a psychological one in that both are expressions of repressed impulses (Freud, 1938; Alexander, 1950; Ruesch, 1947; Grinker, & Spiegel, 1945). Grinker and Spiegel express this point of view as follows:

. . . when we speak of psychosomatic disturbances, it is usually with reference to conditions in which persistent or recurring emotion is only recognized [*sic.*] through those physical activities that normally accompany that emotion, consciousness of the emotion in the form of subjective feeling being absent. It is a state of affairs in which nervous energy is in part or wholly expressed through the vegetative nervous system because some psychological barrier prevents the person from expressing the feeling at the conscious or behavioral level. The emotion is repressed and only the lower-level visceral concomitants are expressed (Grinker, & Spiegel, 1945, p. 253).

The evidence for this theory is considerable, perhaps because experimenters have frequently formulated hypotheses derived from this theory. For example, Ruesch and Bowman (1953) found that the rate of recovery from chronic disease was related to the presence or absence of certain repressed emotional conflicts. Mirsky, Thaler, Weiner, and Reiser (1956)

found the development of peptic ulcers in 107 army inductees to be associated with, among other things, "persistent oral dependency wishes in conflict with environmental sources of gratification and oral hostility which is unexpressed" (p. 514). In their review of the literature on cancer and personality, LeShan and Worthington (1956) list inability to express hostility as a factor consistently found in patients who develop malignancies. Thaler, Weiner, and Reiser (1957) found that patients ill with ulcers or hypertension tended to project certain attitudes and emotions into unstructured test stimuli in a way which distinguished them from each other and from control groups. Miller and Baruch (1956) compared 100 children suffering from asthma to 60 nonallergic children. They found that the asthmatic children were unable to express hostility to their parents. This was not true of the control subjects. Calden, Dupertius, Hokanson, and Lewis (1960) found that the rate of recovery from tuberculosis for 316 male patients was related to their ability to openly express feelings, especially aggression and hostility, and that the "good, cooperative" patients tended to be slower in recovering. Studying the rate of re-

covery from thyroidectomy, Ruesch (1947) found patients slow to recover were significantly more rigid, conscientious, and duty-oriented than were those who recovered more rapidly. In a study of 22 women who had undergone surgery for cancer of the cervix, Shrifte (1960) hypothesized that recurrence of the tumor would be related to underlying unpleasant feeling tone. Her hypothesis was not supported. All subjects made dysphoric responses on the Rorschach. However, the tendency to live inwardly, as indicated by the Rorschach, did distinguish between the two groups. Lieberman, Stock, and Whittman (1959), Leary (1957), Raifman (1957), and Thaler et al. (1957) have all demonstrated differences between the conscious self-perception of ulcer patients and the kinds of feelings and attitudes which they project into unstructured material. Feelings of dependency and a need for intimacy were not expressed in overt behavior but were expressed in fantasy behavior.

Two studies deserve special mention because they represent a more direct test of the psychoanalytic theory (Learmonth, Ackerly, & Kaplan, 1959; Frankle, 1952). Moreover, since the subjects of

both studies were healthy, the results were not contaminated by the effects being sick may have upon psychological variables. Both found a relationship between being what Learmonth et al. call an "inner expresser" and what Frankle calls "emotional introversion" and the tendency to use body language. In the first study, 20 nursing students were given the MMPI and the Rorschach. They then submitted to three different types of stress situations. GSR readings were made during the stress situations. Results showed a significant positive relationship between fluctuation of the GSR during stress and high scores on indices of "restraint and curtailment of unpleasant or prohibitive feelings and actions" (p. 153). Using 75 normal graduate students, Frankle found a significant relationship between a tendency toward emotional introversion, as measured by the Emotional Introversion-Extroversion Scale of the Minnesota T-S-E Inventory, and incidence of somatic complaints checked on the Cornell Medical Index.

Many studies showed, however, that inhibition of unacceptable affect per se is but one of the many variables involved. For example, Mirsky et al. (1956) demonstrated the quite complex interrelationship

existing between serum pepsinogen, unexpressed "oral hostility," and environmental stress in the development of duodenal ulcers. Since these variables were measured before the subjects developed ulcers, one may place relatively high credence in their conclusions. They say: "Neither high rate of gastric secretion or psychological findings alone are responsible for ulcer development. Together, however, these parameters constitute the essential determinants in the precipitation of peptic ulcer on exposure to social situations noxious to the specific individual" (p. 514). The complexity of variables and their interrelationships will be discussed more fully below.

Holism and Field Theory

The underlying finding which is repeated over and over in the studies reviewed above is that the human organism is a unity, a whole. It is not a body which is invaded by other organisms noxious to its functioning, but a person who becomes ill. An individual's attitudes toward himself and other people, his relative rigidity or flexibility of self-control and self-expression, the degree of maturity of total development he has reached, idiosyncratic

patterns of functioning of body organs and systems, learned patterns of communication and expression through his body, and the degree and suddenness of stress impinging upon him have all been shown to be related to his state of health. That is, whether he functions in a relatively well organized manner and approaches a steady-state, or whether he is relatively more poorly organized and closer to entropy and death. A field theory of man as a total system seems to be the best model to encompass all the data now available. Other data, not included in that discussed above as pertinent to the three main theories of the psychosomatic process, would seem to be outside the scope of the various theories discussed and explainable most coherently on the basis of a field theory. These include the growing literature on the relationship between illness and stress (Seyle, 1950; Janis, 1958; Hinkle, 1959; Holmes, 1956; Weisz, 1957; Reznikoff, 1957; Brady, 1958; Rothstein, & Cohen, 1958; Luby, Ware, Senf, & Frohman, 1959; Spitz, 1954). Also included are the studies which demonstrate a significant temporal relationship between subsequent development of illness and preceding loss of morale (Canter, 1960), feelings of

hopelessness and helplessness (Schmale, 1958), object loss (LeShan, & Worthington, 1956; Greene, 1958), loss or threatened loss of parental love (Miller, & Baruch, 1956), feelings that life is a painful duty rather than a challenge (Hinkle, 1958), and depression (Lewin, 1959). A number of studies suggest that whether a person is able to openly express his feelings is not so important as is the kind of dyadic or triadic interpersonal system he is involved in with significant other persons. For example, Greene and Miller (1958) found leukemia developing in children who had had a certain kind of relationship with their mothers, while, preceding the child's illness, the mothers developed symptoms of anxiety or depression. Thaler et al. (1957) demonstrated that ulcer and hypertensive patients were constricted and rigid in their expression of affect in interpersonal situations, particularly the doctor-patient dyad. Miller and Baruch (1956), Jessner, Lamont, Rollins, Whipple, and Prentice (1955), and Long, Lamont, Whipple, Bandler, Blom, Burgin, and Jessner (1958) all demonstrated to a significant degree the presence of a particular kind of relationship between the asthmatic child and his

mother. This was a relationship in which the mother rejects the child because she feels rejected by her own parents, the child reacts with rage conflicted with fear, and represses his rage. LeShan (1957) found a particular life-long pattern of interpersonal relationships which characterized 20 patients with Hodgkin's disease as compared to normal controls.

The present study is an investigation of the relationships between illness and certain variables of self-description, interpersonal relationships, and emotional expressivity, as predicted by field theory. A brief description of the theoretical model upon which it is based will be presented, together with a discussion of how this model accounts for the body of evidence discussed above. Much of this discussion follows writings of Grinker (1953), Bertalanffy (1950), Koffka (1935), Galdston (1954), and Miller (1955). The human organism is seen as an open system, behavior being the final outcome of a field of forces, both "psychological" and "somatic." Therefore, both kinds of forces are always effective although in varying proportions. According to this view, the invasion of the body by bacteria might be the necessary but not the sufficient cause of symptoms

of disease, there being other factors, e.g., "psychological" ones, which must also be present in the field. The words "somatic" and "psychological" merely designate two points of view which the observer may take in viewing the total system, or they may refer to two "foci of organization" (Grinker, 1953) among many such foci or subcenters of organization.

In field theory what we call 'parts' are not to be conceived as separate, independent, randomly self-acting entities. The 'parts' are what we have selected for observation within a dynamic organized complex . . . (Frank, 1951, p. 507).

Therefore the accepted difference between matter and the mind, between body and psyche may be considered not as essential but as a product of our particular capacity to know (Seguin, 1950, p. 30).

The relationship between these subsystems, e.g., psychological and somatic, is not one of cause and effect chains. Such a concept of causation is meaningless since any "cause" produces its "effect" by acting through the whole.¹ Such cause and

¹This is, of course, especially pertinent in understanding and predicting behavior in molar terms. Cause and effect chains may have limited value as in analyzing molecular samples of behavior out of context of the total field in which they take place.

effect analysis must be replaced by an understanding of transaction processes within the system and between the system and other, larger systems of which it is a part (Ruesch, & Bateson, 1949). A question such as, Is the production of "somatic" disease by mental "cause" possible?, becomes meaningless since it implies a one-to-one cause and effect relationship. Rather, one must ask what is the nature of the relationship expressed in the total organization of the system. It is rarely possible to study an entire living system at once, although this task is being approached by Miller and his co-workers (Miller, 1955). Therefore, certain foci of organization may be chosen for study keeping in mind that any conclusions about their ultimate effect upon the total behavior of the system must be tentative.

Somatic illness may be seen as molar behavior which is one outcome of field forces. It represents a tendency away from good organization or Pragnanz toward entropy or disorganization. There are many forces which interact to produce the dynamic condition called a steady-state, or homeostasis. This steady-state encompasses not only physiological

processes, such as those described by Cannon (1932) and others, but also processes of balance within the psychological subsystems of the organism and between the organism and other systems of which it is a part. Stress is any variation in external conditions which is too sudden or excessive for the system to handle (Galdston, 1954, p. 12). Or defined from the point of view of the organism, it is a stimulus which brings about the general adaptation syndrome (Seyle, 1950). The ability of a living system to regain its equilibrium or steady state is partially a function of the ease of communication among its subsystems (e.g., amount of repression), its ability to handle the load of information coming from outside, the amount of supplies coming from outside (deprivation or excessiveness), and its ability to call into play forces which restore equilibrium by counteracting disrupting stress (defense mechanisms). One way a system can handle stress is to regress to a simpler, less differentiated level of organization. This mode of adjustment is similar to the regression theory discussed above. Failure to restore equilibrium leads to what Seyle has termed the third stage of exhaustion and breakdown of the general adaptation syndrome.

Spitz's study of infants in a foundling home is a good illustration of system functioning under conditions of psychological stress (Spitz, 1954). He studied 91 infants who were separated from their mothers at three months of age and placed in the home where one nurse attended ten infants. Their development over one year was compared to that of 123 infants cared for by their own mothers. Although the physical needs of these infants were attended to, they received little affection or attention from the nurses. Spitz describes them as severely deprived of "emotional supplies." At first the infants countered by being demanding and "weepy." By the end of the second month of separation from their mothers, they had begun to lose weight and to become arrested in their psychomotor development. Development in social ability was not arrested but showed an absolute increase in these early stages, an example of the system's direct attempt to compensate for deprivation. By the end of the third month of separation, the infants refused contact with others, had insomnia, presented rigid facial expressions, and were liable to infections and intercurrent ailments. By the fifth month of separation, development began

to regress precipitously and irreversibly. By the end of the first year of separation, 26 per cent of the children were dead and the majority of the total sample had not learned to walk or talk.

Four variables which affect the ability of a system to regain a steady state were listed above. Each of these is represented in the literature already discussed indicating that field theory principles can account for the experimental evidence on psychosomatic illness. For example, repression of certain attitudes and emotions corresponds to the amount of communication among subsystems. Demands and obligations placed upon the individual from the environment corresponds to information coming from the outside which the system must handle. Deprivation of emotional supplies corresponds to the amount of supplies coming into the system. Feelings of low morale, hopelessness, and helplessness correspond to failure of the system to regain equilibrium.

Pertinent Research

As mentioned above, the majority of studies labeled "psychosomatic" have studied patients with a certain disease considered to be "psychosomatic" with the intention of adding another variable to the

symptom syndrome. Thus, ulcer patients not only have gastrointestinal pain but also repress tender feelings. Since this study is concerned with illness behavior in general (Parsons, 1953) or general susceptibility to illness (Hinkle, 1958), pertinent studies are those concerned with illness in general rather than with a specific disease.

Hinkle and his associates have done a number of investigations of large groups of subjects analyzing their health records over long periods of their lifetimes. Their study of 1700 American working women (Hinkle, 1959) is representative. All of these women were employed in the same factory; 1297 of them had completed one or more years of service and had complete records. Most were second generation Irish and Italians of lower middle class status living in a narrowly circumscribed neighborhood of New York City and subjected to very similar conditions of climate, diet and living conditions. All had been examined and declared healthy when first employed. Three hundred and thirty-six of these women had a greater than twenty year record of unbroken employment. Ninety-six of these were selected for intensive study. Twenty-five per cent of these subjects had

52 per cent of all the episodes of disabling illness. When they were ranked according to the number of episodes of illness and also the number of different kinds of illness, a correlation of .83 ($p < .01$) was obtained. A similar correlation was obtained when the number of episodes of illness was compared to the number of organ systems involved and to the number of etiologies of disease. There was also a tendency for the subjects who had the greatest number of episodes of illness to report the greatest number of periods of mood-thought disturbance. Hinkle draws the conclusion that these women differed in their susceptibility to illness in general. He also states that this finding, of a general susceptibility to illness, has occurred in every group he has studied (Hinkle, & Wolff, 1957). A more intensive study of individuals at either extreme of the distribution of illness revealed no significant differences in social class, health in childhood, health of parents and siblings, or in exposure to infection or trauma in childhood. Familial or inherited diseases were more frequent in the frequently ill group than in the healthy group, however. In all their various investigations (Hinkle, Christenson, Kane, Ostfeld, Thetford,

& Wolff, 1958; Hinkle, 1959) these workers have found a consistent picture of the style of life of those who were frequently ill as compared to healthy subjects. Although they did not objectively have any more difficult lives than did the control subjects, frequently ill subjects perceived their lives as demanding and frustrating and themselves as burdened down with duties. They also tended to have conflicted and unsatisfying interpersonal relationships and to perceive their childhood relations with parents and siblings as unsatisfactory. In general, the more frequently ill subject tended to be more inner-directed, more intensely involved in his or his intimates' problems, more duty-oriented, and more resentful and worried. In contrast, relatively healthy subjects tended to be less intensely involved with goals, responsibilities and duties, and more apt to see life as exciting, interesting, and challenging. They also tended to feel more satisfied and less conflicted about their interpersonal relationships.

Schmale (1958) interviewed 42 patients hospitalized on a semiprivate ward who were suffering from a variety of ailments. Twenty-nine patients

or relatives of patients reported that loss of a loved person or valued goal followed by feelings of hopelessness and helplessness immediately preceded the onset of symptoms. Five patients reported feelings of hopelessness and helplessness but no loss of a loved person or goal.

Spitz's study of infants in a foundling home, already discussed, demonstrated the broad effects of emotional deprivation on perception, learning, psychomotor development, social development, and central nervous system functioning (Spitz, 1954).

In a review of studies of recovery from chronic disease and accidents, Ruesch and Bowman (1953) found certain "character conflicts" which characterized patients prone to invalidism regardless of the specific ailment which they suffered. Male patients were conflicted between needs for dependency and independency. Female patients were conflicted between desires for self-love and love of others. Among all groups of patients who were slow in recovering the overwhelming majority were law-abiding, intelligent, from broken homes, and neurotic appearing on the MMPI. From 100 per cent to 33-1/3 per cent in a particular group were found to be persons who had

one parent who had fulfilled roles of both authority and affection while the other parent was weak and ineffectual.

Three of the studies reviewed thus far in this section suffer from a methodological fault. They fail to establish the fact that certain psychological states either preceded or accompanied the development of illness. In each case subjects who were already sick were questioned about their memories of the past or the past was inferred from their present psychological status. Since Spitz followed his subjects from the time they entered the experimental condition, and compared them to matched control subjects, his findings deserve more credence. The present study attempts to clarify time relationships more carefully.

Several studies have experimentally investigated the nature of the relationship between attitudes and affects and bodily expressivity in healthy subjects. They are interesting because they elucidate the basic phenomena without the contamination of possible effects of sickness upon the dependent variables. Graham, Stern, and Winokur (1958) hypothesized that there is a specific relationship between the attitude a patient

develops toward the life situation disturbing him and the symptoms he develops in response to it. They were able to produce changes in skin temperature characteristic of hives or Raynaud's disease by suggesting to hypnotized subjects they adopt attitudes typical of patients suffering from these diseases. In a more recent study (Stern, Winokur, & Graham, 1961) these experimenters have replicated their findings adding to the evidence that the way a subject perceives a situation confronting him and his total reactions to it are lawfully related.

Following up on his earlier studies of the relation between body image and the site of disease (1955; 1956), Fisher discovered a relationship between differential GSR response on right and left sides of the body and two psychological variables, viz., matureness of body image and the stage reached in defining sex roles (Fisher, 1959). In other words, his work suggests that the whole person, including his autonomic nervous system, takes part in the process of learning male from female, weak from strong, etc.

Three studies already discussed should be mentioned here as further evidence for a relationship

between attitudes and affects and bodily expressivity in healthy subjects. These are the investigations of Malmo and Shagass (1949), Learmonth et al. (1959), and Frankle (1952).

Since each individual is part of the larger social system, his relationship to that system should affect his general functioning and his health. Brief mention will be made of several studies which substantiate this hypothesis. Rennie and Scrole (1956) sent questionnaires to 172,000 adult subjects asking them about the incidence of eleven psychosomatic complaints in their lifetimes. They found a relationship between certain types of complaints and social status. Investigating an entire community, Koos (1954) reported a relationship between incidence of disabling illness and social class. Seeking medical help when ill was also related to social class. Abrahamson (1961) found that adolescent girls in South Africa checked more somatic symptoms on the Cornell Medical Index when they also indicated that there was a discrepancy in either direction between the traditionalism of the daughter and her mother. In other words, conflict between mother and daughter in their perception of social roles was associated with

more somatic complaints on the part of the daughter. In a study of college students' use of the infirmary for upper respiratory complaints, Summerskill and Darlington (1957) analyzed certain sociological characteristics of high and low users. High users were characterized as female, minority group members, younger than other subjects, and from large cities rather than small towns.

In summary, these studies substantiate the feasibility of studying illness behavior or general susceptibility to illness in relation to other molar level variables of personality and interpersonal relations.

The Problem to be Investigated

This study investigates the relationship between some of the characteristics of system functioning discussed above and the number of episodes of illness of three groups of college students. The system characteristics studied are communication among subsystems, stage of maturation (or regression), and amount of communication between the system and its interpersonal environment. Translated into operational terms, it is predicted that subjects who

have frequent episodes of illness will be "inner expressers" (Learmonth et al., 1959). They will have restricted and constricted self-descriptions. They will indicate that they have remained relatively close to their parents rather than having developed close relationships to their peers. And, they will disclose little of themselves to other people in their lives.

To avoid the problems inherent in asking a subject to recall how many times he has been sick, the number of visits made to a university infirmary was used as an index to the number of episodes of illness suffered by the subjects. Such an index has been termed "illness behavior" by Parsons (1953) to differentiate between the state of physiological malfunction and the response of the individual to this malfunction. Working from the same point of view, Mechanic and Volkart (1961) define illness behavior as "the way in which symptoms are perceived, evaluated, and acted upon by a person who recognizes some pain, discomfort, or other signs of organic malfunction" (p. 52). Clearly, visiting the university infirmary is an indication that subjects have adopted the sick role. The possibility that some

subjects may have experienced organic malfunction without adopting the sick role is, of course, quite likely. By using visits to the infirmary as an index to the number of episodes of illness, this investigation is confined to reported illnesses implying adoption of the sick role. Another problem arises from the fact that the infirmary may be used for other purposes than to seek medical treatment. For this reason, care was taken not to include visits for permits and excuses when deciding whether a subject was a high or low user of the infirmary. It is also likely that some subjects simply did not use the infirmary but preferred private medical care. As will be discussed later, no subjects were included in the study who reported frequent visits to private physicians although they infrequently visited the infirmary.

Stress and invasion by noxious agents (Kruse, 1954) have been shown to be extremely important forces associated with the etiology of illness. They will not be handled directly in this study. However, it can probably be assumed that students on a university campus were exposed to about the same number of infectious agents and no subjects with a known history

of chronic disease were included. Certain stressful and demanding situations occur throughout the year and affect all students. These include the pressure to make good grades, examinations, and deadlines. Two studies of student use of a university infirmary suggest that the ordinary stresses of college life are not especially important in determining use of the infirmary (Mechanic, & Volkart, 1961; Summerskill, & Darlington, 1957).

CHAPTER II

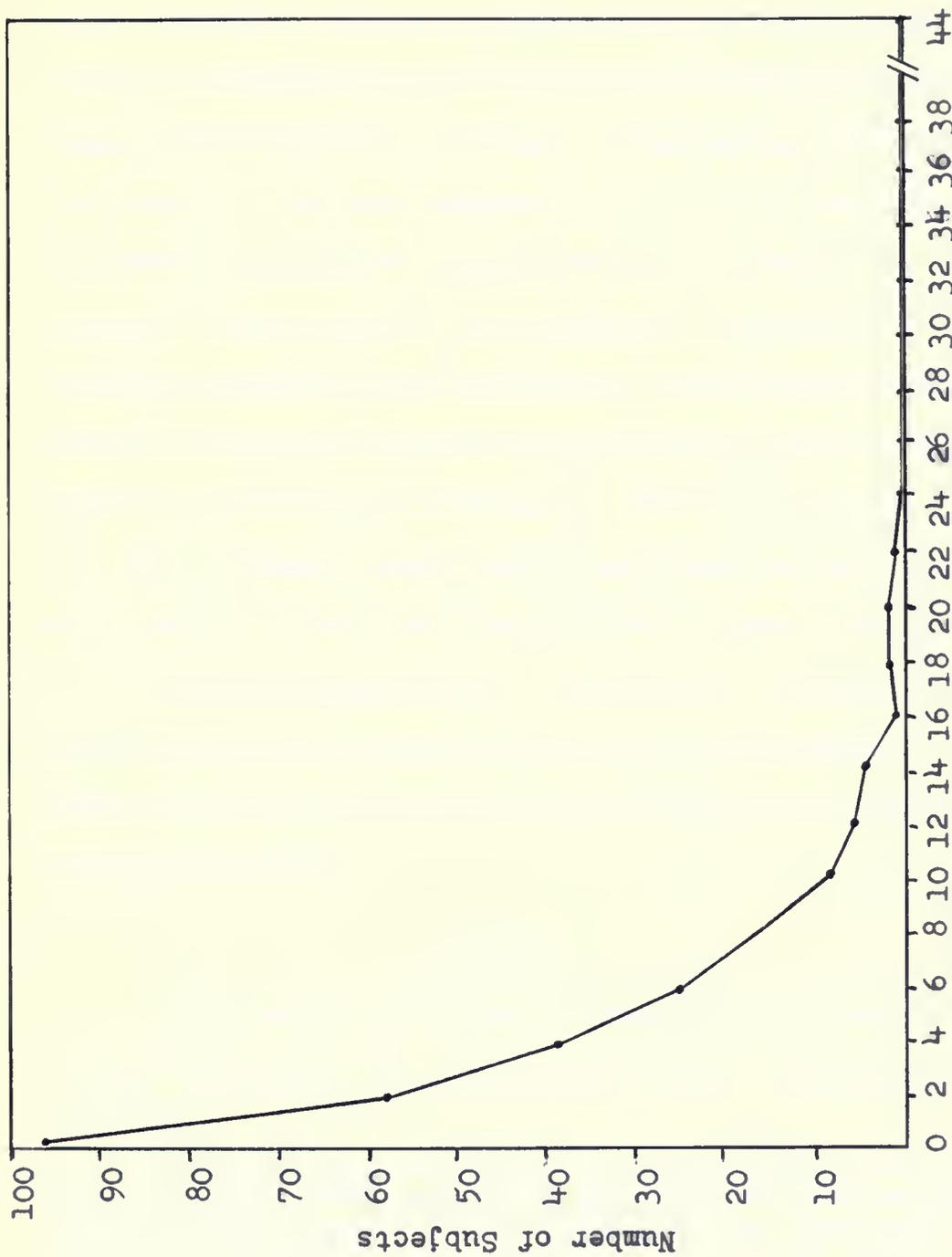
METHOD

Subjects

Three groups of subjects, twenty males and twenty females in each group, were selected from among those who entered the University of Florida as freshmen in September, 1959, and completed the first two years. These groups were designated: "High," made up of male students who made ten or more visits and female students who made eight or more visits to the student infirmary during the academic year September, 1959, to June, 1960; "Mean," made up of students who made three to four visits during the same period; and "Low," made up of students who made no visits or one visit during that period. Specific individuals were selected randomly from among those eligible for inclusion in the study. The criterion for group designation was based on a tabulation of the number of visits made, over the same period of time, by a randomly chosen sample of 477 students. These students were members of the same class from which subjects

for this study were selected. Figure 1 shows the shape of this distribution. The groups were equated on certain variables to insure control of extraneous factors. All subjects were 17, 18, or 19 years old at the time of entering the university and were unmarried then as well as when they were tested for this study, at the end of their sophomore year. All subjects had a general physical examination prior to entering the university. None were found to have significant physical defects or handicaps. Subjects were questioned as to the number of visits to physicians they had made during the academic year September, 1959, to June, 1960, at some place other than the student infirmary. It was found that in no case had a student made more such visits than he did to the infirmary. Since the number of visits to the student infirmary was considered to be an index to the number of episodes of illness, visits for nonmedical purposes were not counted in assigning a subject to a group. Nonmedical visits were defined as those in which the student did not present a complaint or ask for treatment as in visits for routine physical examinations, excuses and permits, and prophylactic inoculations.

Separate analyses were made by sex since previous



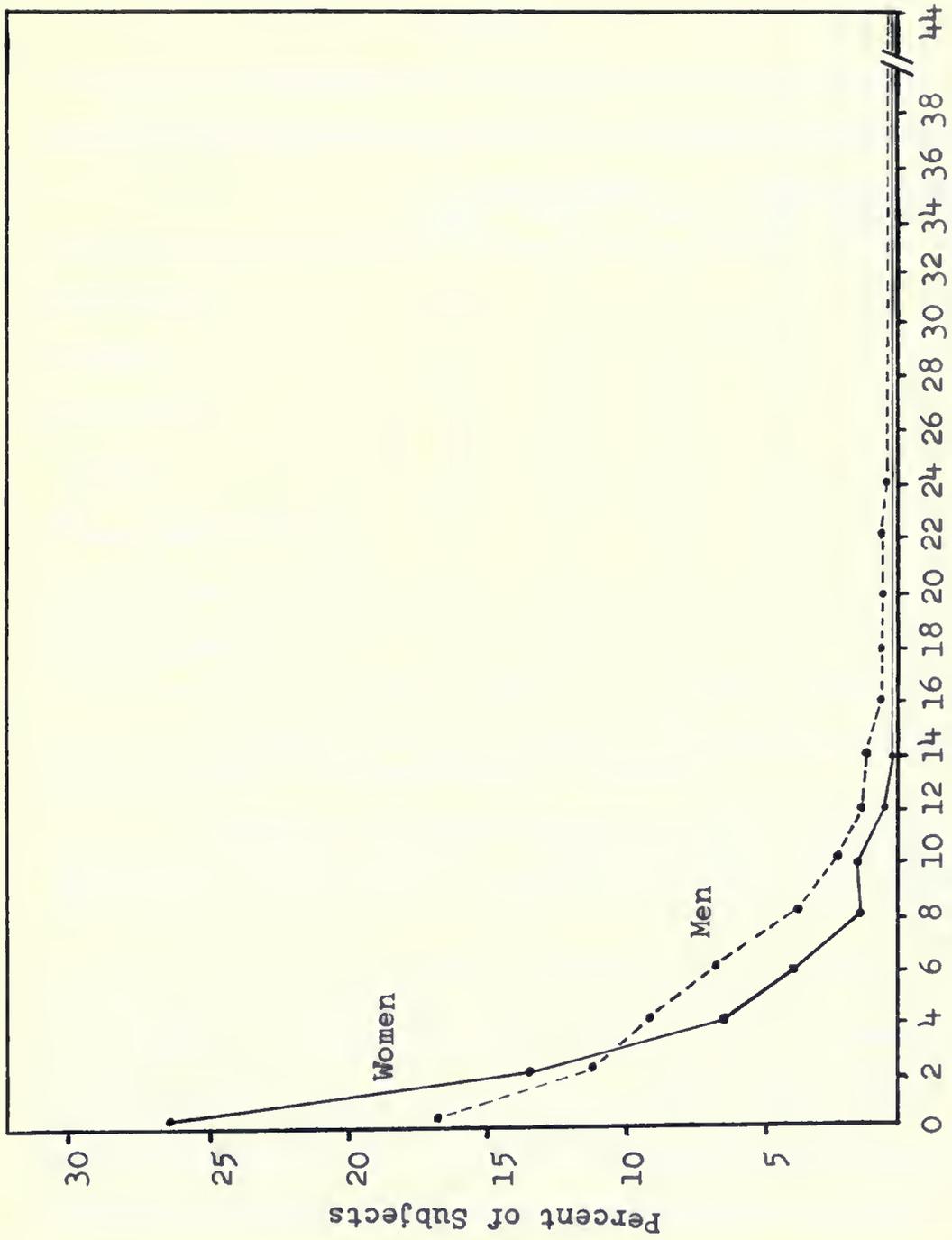
Number of Visits to Infirmary -- 9/59 to 6/60
Fig. 1. Visits to infirmary by 477 freshmen

work with this population indicated that there were wide sex differences on many of the variables to be investigated (Wharton, Barger, & Schumacher, 1961). For example, the mean number of visits for males in the randomly selected sample of 477 was about one and one-half times that of the females. See Figure 2. Previous research also indicated a significant difference in religious preference among high, mean, and low users of the student infirmary. For this reason, in all three groups, major religious denominations were represented in the same proportions as were present in the total student body. See Table 1. This was done in order to control any extraneous variables, other than illness, which might influence use of the student infirmary.

Materials

Minnesota Multiphasic Personality Inventory (MMPI)² protocols were available on all subjects as a

²Test-retest reliability coefficients for the various scales were mostly in the sixties and seventies when college students were retested after intervals of from one week to three months. They were in the forties and fifties when intervals of from two to four years were involved (Dahlstrom, & Welsh, 1960, pp. 472-473). Evidence for the validity of the particular combinations of subscales used in this study will be presented as they are discussed in the text.



Number of Visits to Infirmary -- 9/59 to 6/60
Fig. 2. Visits to infirmary by 315 freshman men and 162 freshman women

TABLE 1

RELIGIOUS PREFERENCE OF HIGH, MEAN AND LOW USERS

	Males N=60			Females N=60		
	High	Mean	Low	High	Mean	Low
Methodist	4	4	4	4	4	4
Baptist	4	4	4	3	3	3
Catholic	3	3	3	3	3	3
Hebrew	2	2	2	3	3	3
Other Major Prot.*	4	4	4	5	5	5
Other Minor Prot.**	1	1	1	1	1	1
No Preference	2	2	2	1	1	1

*Includes Congregational, Episcopal, Lutheran, Presbyterian, and Disciples of Christ.

**Includes Seventh Day Adventist, Christian Science, Church of Christ, Quakers, Latter Day Saints, Unitarian, Universalist, Advent Christian, and Others.

result of university-wide administration of this instrument in connection with the initial processing of freshmen. Also available for each subject were such information as home town, religious preference, number and type of complaints, scholastic aptitude test scores, and grade point average. These data were current as of the end of the freshman year.

Each subject was administered the Leary Inter-

personal Checklist (ICL), the Jourard Self-Disclosure Questionnaire, and an information sheet requesting certain identifying information. (See Appendix A.) These tests were administered near the end of the sophomore year, or, in the case of about four subjects in each group, during the first semester of the junior year. Subjects were tested individually for the most part, but occasionally in small groups.

The ICL³ is a 128 item checklist; in filling

³Test-retest reliability coefficients for 77 obese women retested after an interval of two weeks averaged .78 for octant reliability (Leary, 1957, p. 461). The validity of the circular grid model of personality is demonstrated in the regular decrease in octant correlations as one progresses around the circle (Leary, 1957, p. 462). Foa (1961) has discussed the general validity of this circular grid model of interpersonal behavior. He found a "strong convergence of thinking and results" (p. 341) in the work done independently by several investigators in studies done from different research traditions and with different types of groups. They all arrived at the same main axes used by Leary, although different synonyms were used which corresponded to Leary's names, "Dom" and "Lov." Leary (1957, pp. 388-389) reports multi-level personality measures of 42 ulcer patients in which Level I scores stressed responsibility and strength. Level II scores stressed aggression and independence. Level III scores stressed passivity and dependency. This analysis attests to the validity of the scale for psychosomatic subjects.

it out the subject is asked to indicate whether each trait of interpersonal behavior is true or false of himself and other target-persons. The 128 traits represent eight types or classes of behavior which are arranged consecutively around a circle or grid in Leary's system so that those octants opposite each other are less alike than those near each other (Leary, 1957). Protocols are scored in terms of the two main axes of the grid, love-hostility and dominance-submission. A subject's final score is a single number representing that position on the grid which reflects the relative weight of his score in each of the eight octants. The intensity, on a four-point scale, of the items selected may also be measured. See Leary (1957) for a description of the empirical development and validation of ICL intensity scores. Scores are in standard form so that octant scores may be used in comparing different target-persons. Discrepancy tables which indicate the amount of discrepancy between any two scores have been prepared by Leary. He has also indicated a method of translating MMPI scores into his system and for computing the discrepancy between these and self-descriptions on the ICL. This is an example of his multi-level model of personality in

which MMPI scores measure Level I or the Public Communication Level, while the Checklist self-description measures Level II or the Level of Private Communication. Discrepancy between these levels is an operational definition of self-deception or failure to see oneself as others see one.

The Self-disclosure Questionnaire⁴ (Jourard, & Lasakow, 1958) is comprised of forty statements about several different aspects of the self. The subject is asked to indicate, on a three-point scale, the degree to which he has directly confided information about these aspects of himself to four "target-persons": mother, father, same sex friend, and opposite sex friend. The subject writes his responses on an answer sheet. For each subject, the sum of scores for each target-person as well as the sum of all scores are

⁴Forty-four male medical students and 43 female nursing students were retested after one year. Reliability coefficients for total disclosure scores were .62 and .61 respectively (Jourard, S.M. Personal communication. May, 1962). Validity of the scale as an indicator of closeness to another person is shown by the report that married subjects disclosed less to parents and same sex friend than did unmarried subjects. Moreover, there was more disclosure to spouse for these subjects than to any other target-person. Total disclosure for married and unmarried subjects was the same, however. Correlations at the .01 level of significance between liking a parent (Parent-Cathexis) and self-disclosure to parents were also reported by the same authors (Jourard, & Lasakow, 1958).

counted yielding a target score as well as an over-all score. Statistical properties of these instruments as well as more details of validity and reliability may be found in (Leary, 1957; LaForge, & Suczek, 1955) and (Jourard, & Lasakow, 1958).

Procedure

Subjects were selected at random from the university census according to the criteria already mentioned. In addition, only those subjects whose MMPI profiles were valid according to Hathaway and McKinley's criteria (Hathaway, & McKinley, 1951, p. 23) were used. All potential subjects were contacted by letter and those not responding were telephoned until enough had agreed to participate. Table 25, in Appendix B, gives details of the number of students contacted and methods used.

Subjects were asked to take part in a research project investigating interpersonal relations of college students. Although the research was identified with the student health service, subjects were not made aware of the relationship between their selection and their frequency of infirmary usage. This was done to avoid giving them the set that use or nonuse of the infirmary made them suitable subjects for psychological

research, a procedure thought to be wise both from the point of view of public relations of the student health department and also because it was felt variables should be studied without the contamination of the subjects' notions of how they might be related. As mentioned above, all but about four subjects in each group were tested during their sophomore year. The remainder were tested at the beginning of their junior year. Instructions were those which are standard with the two main instruments used. If either parent was deceased, or parents were divorced or separated prior to the subject's adolescence, he was asked to describe a parent-substitute. In two such cases, one male and one female, subjects were permitted to omit descriptions of their fathers because of inability to determine a suitable parent-substitute.

Confidentiality was assured the subjects and they were permitted to use either their names or just their student numbers, a number similar to a serial number assigned to each student when he enters the university.

Any spontaneous comments made by a subject were recorded by the examiner after the subject had left. These were used in a qualitative analysis of what

Leary calls Level I behavior, or how a subject appeared to an observer.

Hypotheses

The hypotheses of this study may be stated as follows:

1. At a time immediately preceding the period during which visits to the infirmary are counted, frequently ill subjects will have lower morale, as indicated by the morale loss scale, than will infrequently ill subjects.
2. Subjects who are frequently ill are people who will not express their feelings directly and openly but who will tend to express them somatically, as compared to infrequently ill subjects.
3. Frequently ill subjects will not attribute to themselves certain modes of interpersonal behavior, in particular negative ones, but will rather make a self-description which is restricted, when compared to infrequently ill subjects.
4. Frequently ill subjects will have significantly fewer intimate interpersonal relationships, as indicated by their disclosure of themselves to others, when compared to infrequently ill subjects.

5. The main target for self-disclosure of frequently ill subjects will be parents rather than peers, especially the opposite sex peer. The opposite will be true for infrequently ill subjects. This is considered to be a measure of dependency upon parents or emancipation from them.

CHAPTER III

RESULTS

Tables 2 through 6 summarize the main findings in relationship to the five hypotheses. Tables 26 through 34, in Appendix B, show results of statistical tests underlying these findings.

TABLE 2
FINDINGS PERTAINING TO HYPOTHESIS 1

Hyp. 1. Low morale will precede period of infirmary use for high users but not for mean and low users.

Test: Morale loss scale

<u>Group</u>	<u>Predicted</u>	<u>Found</u> (Means)	<u>Significance</u>
High	+	6.93	N.S.
Mean	-	6.75	
Low	-	6.90	

TABLE 3

FINDINGS PERTAINING TO HYPOTHESIS 2

Hyp. 2. High users will be "inner expressers" while mean and low users will not.

Test: MMPI Scale 1 (Hs)

<u>Group</u>	<u>Predicted</u>	<u>Found</u> (Means)	<u>Significance</u>
High	+	53.55	N.S.
Mean	0	51.85	
Low	-	50.93	

Test: MMPI Scale 3 (hy)

High	+	57.50	N.S.
Mean	0	56.38	
Low	-	55.23	

Test: MMPI Scale 4 (Pd)

High	+	60.28	$p < .025$
Mean	0	55.05	
Low	-	54.88	

Test: Comparison to same sex freshmen on MMPI Scale 1 (Hs)

Males

High	+	13.40 vs 12.17	$p < .10$
Mean	0	12.05 vs 12.17	N.S.
Low	-	12.00 vs 12.17	N.S.

TABLE 3--Continued

<u>Group</u>	<u>Predicted</u>	<u>Found</u> (Means)	<u>Significance</u>
<u>Females</u>			
High	+	13.90 vs 13.24	N.S.
Mean	0	13.95 vs 13.24	N.S.
Low	-	13.05 vs 13.24	N.S.
<u>Test: Comparison to same sex freshmen on MMPI Scale 3</u> (Hy)			
<u>Males</u>			
High	+	20.80 vs 20.04	N.S.
Mean	0	19.40 vs 20.04	N.S.
Low	-	19.75 vs 20.04	N.S.
<u>Females</u>			
High	+	22.85 vs 22.20	N.S.
Mean	0	23.10 vs 22.20	N.S.
Low	-	21.40 vs 22.20	N.S.
<u>Test: Comparison to same sex freshmen on MMPI Scale 4</u> (Pd)			
<u>Males</u>			
High	+	22.65 vs 22.59	N.S.
Mean	0	19.80 vs 22.59	p < .01
Low	-	21.50 vs 22.59	N.S.

TABLE 3--Continued

<u>Group</u>	<u>Predicted</u>	<u>Found</u> (Means)	<u>Significance</u>
<u>Females</u>			
High	+	23.85 vs 22.15	$p < .10$
Mean	0	22.35 vs 22.15	N.S.
Low	-	20.30 vs 22.15	$p < .05$
<u>Test: Welsh's Internalization Ratio (MMPI)</u>			
High	+	.92	N.S.
Mean	0	.98	
Low	-	.97	

TABLE 4

FINDINGS PERTAINING TO HYPOTHESIS 3

Hyp. 3. High users will not attribute to themselves certain categories of interpersonal behavior to a greater extent than will mean and low users. They will especially repress negative feelings.

Test: ICL Intensity Scores

<u>Group</u>	<u>Predicted</u>	<u>Found</u> (Means)	<u>Significance</u>
High	-	96.68	N.S.
Mean	0	97.60	
Low	+	88.28	

Test: Level I vs Level II Discrepancy Scores (ICL)

<u>Group</u>	<u>Predicted</u>	<u>Found</u> (% above Mdn)	<u>Significance</u>
<u>Males</u>			
High	+	30	N.S.
Mean	0	23	
Low	-	23	
<u>Females</u>			
High	+	45	N.S.
Mean	0	30	
Low	-	30	

TABLE 5
FINDINGS PERTAINING TO HYPOTHESIS 4

Hyp. 4. High users will have lower self-disclosure scores than will mean and low users.

Test: Jourard Self-disclosure Questionnaire

<u>Group</u>	<u>Predicted</u>	<u>Found</u> (Means)	<u>Significance</u>
High	-	166.78	N.S.
Mean	0	166.60	
Low	+	166.53	

TABLE 6

FINDINGS PERTAINING TO HYPOTHESIS 5

Hyp. 5. Self-disclosure will be higher to parents than to peers for high users. It will be higher to peers than to parents for mean and low users.

Test: Jourard Self-disclosure Questionnaire

<u>Group</u>	<u>Predicted</u>	<u>Found</u> (Means)	<u>Significance</u>
High	Mo. +	40.10	N.S.
Mean	Mo. 0	41.48	
Low	Mo. -	41.73	
High	Fa. +	31.28	N.S.
Mean	Fa. 0	33.78	
Low	Fa. -	35.80	
High	SSF -	49.50	N.S.
Mean	SSF 0	47.73	
Low	SSF +	45.55	
High	OSF -	45.90	N.S.
Mean	OSF 0	43.63	
Low	OSF +	43.45	

Note--SSF = Same sex friend
OSF = Opposite sex friend

Morale

Schmale's (1958) report that patients he interviewed felt "helpless and hopeless" preceding their illness raises the question of whether low morale may predispose one to frequent illnesses. The first hypothesis of this study is concerned with that question. Canter (1960) developed a "morale loss" scale from MMPI scores which distinguished among subjects who had made recent suicide attempts, non-suicidal patients, and normals.⁵ More pertinent to this study, Imboden, Canter, Cluff and Trevor (1959) showed that the morale loss scale successfully predicted speed of recovery from brucellosis in two groups of adult patients. In the present study, Canter's morale loss scale was scored from the MMPI protocols obtained from subjects when they entered the university as freshmen. Since the criterion for selection as a subject was the number of visits made to the infirmary during the academic year following the administration of the MMPI, morale loss scores should be higher for those students who subsequently became high users of the infirmary than for the other two

⁵Canter offers no information on the reliability of the scale.

groups. Table 2 shows that this hypothesis was not supported. Table 26 in Appendix B shows the results of the analysis of variance performed on these scores. It will be noted that, although the scale is named "morale loss," it is considered throughout this work to be a measure of low morale only since it does not measure change in morale level.

Outward vs Inward Expression of Feelings

The second hypothesis of this study predicted that high infirmity users would indicate through their test behavior that they tended to express their feelings inwardly rather than outward to their physical and interpersonal environments. Two tests were made of this hypothesis, both using MMPI data. If high use subjects were "inner expressers" (Learmonth et al., 1959), they should have scored significantly higher on the three MMPI scales found by these investigators to discriminate among such subjects. Table 3 shows that this was not the case and the hypothesis was not supported. Tables 27, 28, and 29 show the results of the analyses of variance performed with these scores.

Scores on all the other MMPI scales, except F, L, and Q, were also subjected to analysis of variance. F, L, and Q were omitted since protocols

of high scorers on these scales were considered to be invalid (Hathaway, & McKinley, 1951) and were not included in the study. Only scale 9 (Ma) distinguished among levels of infirmity use. Table 7 shows the analysis of scale 9 (Ma).

TABLE 7
ANALYSIS OF VARIANCE OF MMPI SCALE 9 (MA)

Source of Variance	df	MS	F
Sex	1	93.63	.96
Levels of Use	2	533.85	5.45*
Interaction	2	103.89	1.06
Within Cells	114	97.91	
Total	119		

*p < .01

An alternative test of this hypothesis involved comparing each of the six experimental groups to the appropriate sex group of the entire freshman class of which these subjects were members. Freshman men or women were used as a finite population to which the experimental groups were compared.⁶ Table 3 shows

⁶Although the experimental subjects were also part of the freshman class, it was felt that the N's

that none of the "inner expresser" scales, except scale 4 (Pd) distinguished these subjects from their classmates. Table 30 shows the results of t tests performed on this data. It also shows that scale 9 (Ma), as well as scale 4 (Pd), distinguished subjects from freshmen in general. In both cases, high users were higher than freshmen as a whole on these scales and mean and low users lower. Table 30 also indicates that male high users were higher than freshmen men on scale 1 (Hs) at the .05 level of confidence using a one-tailed test. Since the direction of the difference was predicted by the hypothesis, a one-tailed test is appropriate. However, considering the finding that there was no significant difference among the various levels of use nor any significant interaction effect, as shown in Table 27, this finding should be evaluated with caution.

Welsh (1952) has developed a more direct measure of internalization-externalization from the MMPI and offers convincing validation evidence for it.⁷ If high

were so large that the results were not materially affected by this. Freshman men numbered 2171 and women 1027.

⁷The index discriminated among several diagnostic groups in the predicted direction. For example, de-

users of the infirmity internalize affect, overcontrolling any outward expression, an analysis of internalization ratio scores should distinguish among levels of use. Table 3 shows that this was not the case. The analysis of variance of these scores is reported in Table 31.

The evidence clearly indicates, then, that high use subjects did not internalize their feelings but rather that they tended to show poor control over impulse expression. Parenthetically, it may be noted that scale 4 (Pd) does not seem to be related to internalization of affect, as stated by Learmonth et al.

Self-Description

Hypothesis 3 states that high use subjects will not attribute to themselves certain categories of interpersonal behavior to the extent that mean and low users will, indicating poor self-knowledge and repression of certain interpersonal behavior tendencies. Table 4 shows that this was not the case. This hypothesis was tested using intensity scores on the ICL.

pressed patients had higher scores than did manic patients. The scale also successfully predicted response to psychotherapy. Welsh reports no reliability data, however the reliability of the index would be closely related to that of the scales composing it. These are Hs, D, Pt, Hy, Pd, and Ma.

Table 32 shows the analysis of variance performed on these scores. Comparison of data in Table 32 with those of Table 4 shows that all trends were in a direction opposite to that hypothesized.

Another way of approaching hypothesis 3 is to ascertain whether high users tended to have inaccurate self-concepts, reflecting suppression or repression of interpersonal behavior perceived in them by others. An operational definition of this is the discrepancy between Level I (self as seen by others) and Level II (self as seen by oneself) on the ICL. Level I is obtained from MMPI scores with the rationale that these scores represent symptoms which the subject is communicating to a hypothetical interviewer.⁸ Level II is measured by the Interpersonal Checklist self-description. Table 4 shows the results of this test of the hypothesis indicating that there were no differences among the levels of use in amount of discrepancy. Table 33 shows the Chi Square analysis of these data. Discrepancy can be expressed in terms of direction as well as amount. Table 8 shows that

⁸Leary states these scores satisfactorily predict actual ratings of a patient's behavior by an interviewer (Leary, 1957, p. 108).

high female users described themselves as more hostile than they appeared at Level I more frequently than did the other females. This is certainly no indication of repression of negative feeling and behavior toward others. They can be said, however, to have had self-concepts which were inaccurate when compared to their Level I descriptions. Mean females tended to suppress or repress hostile feelings and behavior in their self-descriptions. No differences were found for males. Discrepancies in the dominant-passive direction were not significant for either sex. Median tests were also performed for each sex comparing Level I self, Level II self, and Level V self (ideal self) as to whether they fell on the dominant-passive or loving-hostile side of the circle. None of these Chi Squares reached the .05 level of significance. However, high females were more frequently dominant at Level I and mean users were more frequently passive at Level V than were the other females, the latter Chi Square reaching the .10 level of significance. Level I data could not be tested with Chi Square because the expected frequencies were too small. Table 9 shows these data. In general, then, there was a tendency for high females to describe themselves and to appear to others

TABLE 8

KIND OF DISCREPANCY BETWEEN LEVEL I (MMPI)
AND LEVEL II (ICL) SELF-DESCRIPTION

Direction of Discrepancy	High N=20	Mean N=20	Low N=20
<u>Males</u>			
Level II More Loving	4	4	3
Level II Less Loving	12	14	13
No Discrepancy	4	2	4
	Chi Square not appropriate		
Level II More Dominant	6	8	6
Level II Less Dominant	10	11	10
No Discrepancy	4	1	4
	Chi Square not appropriate		
<u>Females</u>			
Level II More Loving	5	13	8
Level II Less Loving	15	7	12
	Chi Square = 6.62, df=2, p <.05		
Level II More Dominant	6	4	6
Level II Less Dominant	14	16	14
	Chi Square = 2.25, df=2, p <.50		

TABLE 9
 LEVEL I AND LEVEL V SELF-DESCRIPTIONS OF FEMALE
 HIGH, MEAN AND LOW USERS

ICL Level		Dom	Pass	Low	Host
Level I Public Communication	<u>H</u>	20	0	18	2
	<u>M</u>	16	4	16	4
	<u>L</u>	18	1	16	3
		Chi Square not appropriate		Chi Square not appropriate	
Level V Ideal Self	<u>H</u>	13	7	9	11
	<u>M</u>	7	13	14	6
	<u>L</u>	13	7	15	5
		Chi Square = 4.83, df=2, p < .10		Chi Square = 4.46, df=2, p < .20	

Note--N=20 in each group except Low Female where N=19
 for Level I.

as dominant and hostile and for mean females to aspire to the usual feminine role of passivity.

Self-Disclosure

Hypothesis 4 predicted that high users would be lower in self-disclosure than would mean and low users. Self-disclosure was considered to be an indication of the subjects' closeness to important figures in their lives. Table 5 shows that this hypothesis was not confirmed. Table 34 shows the analysis of variance of these scores. As check on this finding, it was considered that the opportunity to write one's name on the questionnaire or to omit it and use only the student number was a measure of self-disclosure to the experimenter. Table 10 shows that there were no significant differences among the groups on this measure. Intensity scores on the ICL Level II self-description may likewise be interpreted as communication about oneself to another (the experimenter). As discussed above, no significant differences were obtained here either (Table 4).

Self-Disclosure to Parents and Peers

Hypothesis 5 predicted that high users would be closer to parents than to peers while mean and low

TABLE 10

HIGH, MEAN AND LOW SUBJECTS' CHOICE OF
NAME OR STUDENT NUMBER

	<u>Males</u>			<u>Females</u>		
	H	M	L	H	M	L
Name	14	10	13	11	10	9
Student Number	6	10	7	9	10	11
	Chi Square = 1.83, df=2, p <.50			Chi Square = .40, df=2, p <.70		

Note--N=20 in each sex-use group.

users would be more emancipated from parents and more closely related to peers. Differences in self-disclosure among targets for the three levels would then be predicted. As can be seen from Table 6, no such differences were found. Table 34 shows the analysis of variance of these scores.

It was felt, however, that differences among groups might be obscured by the large standard deviations obtained in the self-disclosure data so that a correlational measure might reveal some pattern of self-disclosure not discernible in the analysis of variance. Therefore, morale loss scores were correlated with self-disclosure scores to the various targets. The

rationale for selecting the morale loss scale rather than some other intrapsychic measure such as the ICL was that the correlations between intrapsychic mood state and self-disclosure would reveal something about the qualitative nature of interpersonal relationships. In other words, close relationships to others when one is high in morale are psychologically different from close relationships when morale is low. Table 11 shows these correlations. For all mean and low use groups, except the female mean users, correlations were consistently negative. Since a high score on the morale loss scale means low morale, negative correlation coefficients indicate that students who were low in morale at the beginning of their freshman year were, on the whole, not close to target-persons at the end of their sophomore year. This relationship was significant for mean and low males when closeness to parents was considered. With the exception of one negative correlation coefficient, high users had a consistent pattern of positive correlation indicating that low morale predicted closeness to target-persons a year later. Since none of these correlation coefficients reached statistical significance, conclusions must be tentative. However, the pattern of positive

TABLE 11

PRODUCT-MOMENT CORRELATION COEFFICIENTS BETWEEN
MORALE-LOSS AND SELF-DISCLOSURE

Target	Males			Females		
	H	M	L	H	M	L
Mother	.15	-.43*	-.50*	-.12	.14	-.34
Father	.25	-.51*	-.46*	.27	-.08	-.06
Same Sex Friend	.16	-.38	-.21	.31	-.04	-.22
Opp. Sex Friend	.19	-.17	-.44*	.33	-.23	-.14

*p < .05

Note--N=20 in each sex-use group.

correlation does suggest that these subjects were from a different population than the mean and low users. Schacter (1959) has termed the phenomenon of turning to close interpersonal relations when anxious or low in morale as "anxiety affiliation." This term characterizes high users but not mean and low users suggesting that their relations to their parents may have been of a different quality from those of the mean and low users. The significant negative correlation between morale loss and self-disclosure to girlfriend, seen for low males, suggests that these subjects may have made more progress in interpersonal maturity, as discussed by Sullivan (1953), than did other subjects.

It may be seen that their closeness to girlfriend had a significant relationship to earlier morale.

These findings together with high users' elevation on scales 9 (Ma) and 4 (Pd) of the MMPI are congruent with a notion of immature acting-out of feelings.

Sarbin (1952) has considered such poor control over impulse expression to be characteristic of what he calls the "Primitive-Construed Self" said to be a stage in the development of the self which takes place about half way through the process of psychological maturation. At this stage of development, the child has learned to distinguish between patterns of stimuli received from humans and stimuli received from objects in the environment but he has not yet learned to delay response to these stimuli. In later stages of development, the stage of the "Introjecting-Extrojecting Self" and the stage of the "Social Self," the child progressively learns to use language to differentiate and strengthen cognitions, to communicate them to others, and to discriminate not only discrete acts of others but organized acts or roles. He also introjects these perceived roles, identifying with others in his interpersonal environment. As a test of this "epistemogenic" theory of self-development, Mathews,

Hardwyck, and Sarbin (1953) predicted the behavior of groups of college students selected by means of MMPI profiles to represent the three stages of personality development outlined above. Responses to several cognitive tasks generally supported the hypotheses and the validity of the MMPI as a method for classifying subjects. MMPI profiles of the subjects of this study were examined and classified into the same three levels of self-development. These were: S₃ The Primitive-Construed Self, defined by a profile in which either scale 4 (Pd) or Scale 9 (Ma) was highest and at least one standard deviation above the mean with the other being elevated also; S₄ The Introjecting-Extrojecting Self, defined by a profile in which the highest score is for either scale 3 (Hy), scale 7 (Pt), scale 1 (Hs), or scale 2 (D) with at least two scores in the profile one standard deviation above the mean; S₅ The Social Self, defined by a profile in which all scores are within one standard deviation of the mean, one score being permitted to deviate but not so far as two standard deviations from the mean. Following Sarbin, scale 5 (Mf) was omitted from the analysis. Table 12 shows the results of assigning these designations to subjects of this study.

TABLE 12

MMPI PROFILE DEFINED LEVELS OF SELF-DEVELOPMENT
FOR HIGH, MEAN AND LOW USERS

Use Level N=40	Primitive- Construed Self-S ₃	Introjecting- Extrojecting Self-S ₄	Social Self S ₅	No Classi- fication
High	13	4	12	11
Mean	8	8	15	9
Low	2	5	26	7
Chi Square = 17.06, df=6, p < .01				

It can be seen that there was a clear progression from most immature to most mature self-development as one progresses from high to mean to low infirmity use. Clearly, infirmity use is related to levels of maturity in self- or personality development, as defined by Sarbin.

Other evidence about the families of these subjects and their perceptions of parents corroborates the findings discussed above of anxiety affiliation and emotional immaturity of high use subjects, as compared to the other groups. Sarbin and his coworkers state that self development on an immature level is the result of trauma or conflict which retards or

inhibits the development of later substructures or foci of self-organization (Mathews et al., 1953). Table 13 shows the results of an analysis of variance performed on "Familial Discord" scores derived from the MMPI (Harris, & Lingo, 1960). Strong differences between levels were found in the predicted direction, i.e., high users reported more familial discord. Further evidence of trauma and conflict is seen in the Chi Square analysis performed on descriptions of mother on the ICL. Differences among the females were not significant, but male high users' descriptions of mother fell more frequently on the hostile side of the circle than did those of low and mean males. Table 14 shows these data. This finding should be compared to the anxiety affiliation evidence in Table 11. Another finding may be mentioned. While the numbers are too small to analyze statistically, the direction of differences agrees with the picture being developed here. "Lov" and "Dom" scores for mother, the standard scores from which the final summary score is plotted, were examined for combinations of high dominance and low love, a combination previous researchers have emphasized as especially significant in the development of personality (Ruesch, 1948). All

TABLE 13
ANALYSIS OF VARIANCE OF FAMILIAL DISCORD SCALE

Source of Variance	df	MS	F
Sex	1	8.53	2.14
Levels of Use	2	16.36	4.10*
Interaction	2	.41	.10
Within Cells	114	3.99	
Total	119		

*p < .025

TABLE 14
ICL DESCRIPTION OF MOTHER AS LOVING OR HOSTILE

Level of Use	Loving	Hostile
<u>Males*</u>		
High	11	9
Mean	18	2
Low	15	4
	Chi Square = 6.71, df=2, p < .05	
<u>Females</u>		
High	14	6
Mean	14	6
Low	12	8
	Chi Square = .80, df=2, p < .70	

*One male omitted Mother

Note--N=20 in each sex-use group except Male High
where N=19.

subjects whose Dom and Lov scores for mother were both at least one standard deviation above the mean for all subjects of their sex were counted. Six high users fell into this category, no mean users did, and two low users did. Neither ICL descriptions nor Dom and Lov score combinations distinguished among levels of use when descriptions of father considered.

Patterns of Infirmary Use

High users of the student infirmary can be distinguished from low and mean users in qualitative characteristics as well as quantitative ones. For example, they began their visits almost immediately upon arriving at the university, making an average of more than two visits the first thirty days of school, while mean users made an average of less than one. Table 15 shows the analysis of these data. Since visits during the first thirty days are included in the total, one would expect the relationship between being a high user of the infirmary and a high user during the first thirty days to be positive. However, one would not necessarily predict such large differences among the groups in infirmary usage during the first thirty days of school.

TABLE 15

INFIRMARY VISITS OF HIGH AND MEAN USERS
DURING THE FIRST 30 DAYS OF THE FRESHMAN YEAR

Level of Use	Above Mdn	Mdn & Below
High	29	11
Mean	16	24
Low	3	37

Chi Square = 35.21, df=2
p < .001

Note--N=40 in each group.

Table 16 shows the analysis of variance of ratio scores arrived at from dividing each subject's total number of kinds of complaints by his total number of visits. Low users were omitted from this analysis since they either made no visits and had no complaints or made one visit for one complaint. Obviously, the variance of their scores was not homogeneous with that of high and mean users' scores. It may be seen that high users had fewer kinds of complaints in relation to their number of visits. High users did not, however, have an overall different ranking of types of complaints. See Table 17.

TABLE 16
ANALYSIS OF VARIANCE OF COMPLAINT/VISIT RATIO
SCORES OF HIGH AND MEAN USERS

Source of Variance	df	MS	F
Sex	1	.11	3.67
Levels of Use	1	1.81	60.33*
Interaction	1	0.00	0
Within Cells	76	.03	
Total	79		

*p < .001. Mean higher than High.

TABLE 17
 RANK ORDER OF TYPES OF COMPLAINTS FOR
 HIGH AND MEAN INFIRMARY USERS

Type of Complaint	Level of Use	
	High	Mean
Accidents and Injuries	2	2
Infections	5	5
URI* and Sorethroat	1	1
Gastrointestinal Symptoms	7.5	10
Skin Rash, Warts, etc.	3.5	3
Innoculations	3.5	7
Excuses and Permits	12	6
Tension Symptoms	6	10
Obesity and Glandular	10.5	10
Feminine Complaints	10.5	8
Chronic Ailments (Present before University)	13	12.5
Allergy and Asthma	9	12.5
Unclassified	7.5	4

Rho** = .55, $p < .05$

*URI = Upper respiratory infection.
 **Corrected for ties.

One important question is whether visits to the student infirmary during the freshman year represent a stable characteristic of these subjects' behavior or an ephemeral effect. Two answers to this question are offered. First, no subject indicated that he visited a private physician any number of times which was not commensurate with his frequency of visits to the student infirmary. That is, no low user visited a private physician more than once, no mean user visited one more than three times, and all subjects who made four or more visits to private physicians were also high infirmary users. Secondly, records of visits made to the infirmary during the second year of school were analyzed. The results of this analysis are seen in Table 18. It is obvious that high users maintained their status while mean and low users were relatively indistinguishable. Moreover, high users considered themselves to be sick as analysis of the subjects' ratings of their own general health shows. See Table 19. High users were like other students in the kinds of complaints they brought to the infirmary then, but they came early and continued to come at least through two years.

TABLE 18

NUMBER OF VISITS MADE TO INFIRMARY DURING THE SECOND
SCHOOL YEAR FOR ALL SUBJECTS CONTINUOUSLY ENROLLED

Level of Use	Above Mdn	Mdn & Below	10 + Visits
High	32	7	28%
Mean	19	21	0%
Low	9	30	0%

Chi Square = 28.68, df=2, $p < .001$

Note--High N=39
Mean N=40
Low N=39

TABLE 19

SELF-RATINGS OF GENERAL HEALTH

Level of Use	Excellent	Good + Fair
High	12	28
Mean	24	16
Low	26	14

Chi Square = 11.48, df=2, $p < .01$

Note--N=40 in each group.

The Subjects as Students

Findings discussed above have indicated that high users of the student infirmary were immature, poorly controlled individuals who were unsuccessful in emancipating themselves from their parents and in forming strong relationships with their peers. These individuals were also characterized by greater familial discord and conflicted hostile-dependent feelings about parents. How well they did in academic achievement, in social participation, and in being active in university extracurricular life would be interesting to know. If they were, in fact, ill prepared psychologically for the demands of university life, this should be manifest in their record at the end of the freshman year. This is, in fact, what was found. Tables 20 and 21 show analyses of variance of ACE total scores and grade point averages at the end of the freshman year. Because approximately four subjects in each group were not tested until the beginning of their junior year, t ratios between these subjects and the others in their group tested in their sophomore year were computed. This was done because of the possibility that students still enrolled by the junior year could have been those who earned unusually

TABLE 20
ANALYSIS OF VARIANCE OF TOTAL ACE SCORES

Source of Variance	df	MS	F
Sex	1	1710.75	6.41*
Levels of Use	2	424.11	1.59
Interaction	2	39.47	.15
Within Cells	114	266.90	
Total	119		

*p < .05. Males higher than females.

TABLE 21
ANALYSIS OF VARIANCE OF GRADE POINT AVERAGE AT THE
END OF THE FRESHMAN YEAR

Source of Variance	df	MS	F
Sex	1	.01	.02
Levels of Use	2	2.28	4.75*
Interaction	2	.02	.04
Within Cells	108	.48	
Total	113		

*p < .05

high grade point averages as freshmen. The only group for which any differences reached the .05 level of significance were the male mean users. Only the seventeen individuals tested during the sophomore year were included in the analysis of variance. Grade point averages were not available for two high females and one low female. Therefore, the total N of Table 21 was 114. High, mean and low users did not differ in their aptitude for university work, as measured by the ACE, although the mean for males (186.40) was significantly higher than that for females (175.08). They did differ in their execution of this work, as measured by grade point averages at the end of the freshman year. Mean users did the best, low users were next, and high users had the lowest grade point averages. (They were 2.49, 2.46, and 2.05, respectively). Social participation was indexed by sorority and fraternity membership at the end of the sophomore year when subjects were tested. This is a better index than would be sorority and fraternity membership at the end of the freshman year since few students join these organizations during their first year at school. In Table 22 these data show clearly that high users were less frequently members of sororities and fraternities

than were mean and low users. Subjects' answers to the question about extracurricular activities they were engaged in were analyzed in terms of the number of activities they named in addition to sorority or fraternity membership. Table 23 shows these data indicating there were no significant differences among the groups in number of extracurricular activities. Of particular interest, however, are two kinds of extracurricular activities which were found to particularly characterize the high male users. They are barbell club and pre-medical club, both of which involve an interest and emphasis on the body. Seven high male users named these activities while only one low male user named the barbell club and one mean female user named the pre-medical club. One final facet of university life investigated is the number of times a subject went home for the weekend. Subjects' answers to this item on the questionnaire were corrected for the distance between the university and the students' home. Thus, if he lived more than one hundred miles away, but not as far as three hundred miles, his number of weekends at home was multiplied by two. Table 24 shows these data indicating that there were no significant differences among the groups in going home for the weekend.

TABLE 22

SORORITY AND FRATERNITY MEMBERSHIP
AT THE END OF THE SOPHOMORE YEAR

Level of Use	Member	Nonmember
High	9	31
Mean	17	23
Low	20	20

Chi Square = 7.40, df=2, $p < .05$

Note--N=40 in each group.

TABLE 23

ANALYSIS OF VARIANCE OF THE NUMBER OF EXTRA-CURRICULAR
ACTIVITIES, OTHER THAN SORORITIES AND FRATERNITIES

Source of Variance	df	MS	F
Sex	1	4.41	3.87
Levels of Use	2	1.36	1.19
Interaction	2	1.01	.89
Within Cells	114	1.14	
Total	119		

TABLE 24
 WEEKENDS AT HOME CORRECTED FOR DISTANCE
 FROM UNIVERSITY TO HOMETOWN

Source of Variance	df	MS	F
Sex	1	20.51	1.32
Levels of Use	2	.77	.05
Interaction	2	1.26	.08
Within Cells	106	14.84	
Total	111		

Note--Only those students living away from home were included.

CHAPTER IV

DISCUSSION

The Data and the Hypotheses

The high infirmary user was predicted to be a student low in morale at a time just preceding his first year at the university and the period during which his visits to the infirmary were counted, a person who would internalize his feelings rather than express them outwardly, a person who would have an inaccurate, restricted self-concept, a person who would reveal little of himself to others, and a person who would show evidence of psychological immaturity in that he would not be as emancipated from his parents and not as far along in development of interpersonal ties with his opposite sex peers as others. The findings did not support any but the last mentioned prediction. In fact, the picture which emerged was quite different from that which was hypothesized. Morale state was seen to have no relationship to later use of the infirmary. High use subjects did not tend to internalize their feelings, but rather were seen

to have poor control over direct and immediate acting out. Neither Welsh's Internalization-Ratio nor the MMPI scales selected by Learmonth and his coworkers showed these subjects to be "internalizers." In fact, the only MMPI scales which distinguished among the level of infirmity use groups and distinguished these groups from same sex freshmen in general were scale 9 (Ma) and scale 4 (Pd), chosen by Sarbin to define the immature stage of self-development characterized by acting-out and termed by him the "Primitive-Construed Self." Self-descriptions of high users were not lower in intensity of ICL items selected; rather, any trends discovered were in the opposite direction. There was evidence that female high users did not see themselves as they appeared to others but, rather than omitting negative features from their self-descriptions, they accented them. There were no significant differences at all, neither for level of use nor for sex, in self-disclosure scores. In general then, findings were that all high users were psychologically immature and poor in their ability to control impulse expression. High female users also had a rather negative self-concept.

Psychological Immaturity

A clue to the etiology of this state of affairs

may be found in the general notion of psychological immaturity. Most personality theorists agree that failure to progress in the process of psychological maturity can often be attributed to conflict, trauma, or frustration at some earlier stage. Both Sarbin (1952) and Sullivan (1953) emphasize the importance of interpersonal relations as the raw material from which the self is developed and both would consider conflict or trauma in a child's relations with his parents to be the sine qua non for failure of his personality to develop and mature as expected. The combination of dependency upon parents together with negative feelings toward them would constitute such a conflict. The positive correlations between "morale loss" and self-disclosure to parents and the fact that high users went home for the weekend equally as often as did other subjects, in spite of the discord they felt to be present there, attest to the dependency side of the conflict for these subjects. Their descriptions of mother as hostile or hostile-dominant and their high scores on the familial discord scale show the negative feelings associated with home and parents. The significant negative correlation between the morale loss scale and self-disclosure to

girlfriend for the male low users further suggests that there is some difference in maturity of interpersonal relationships across the levels of use. These boys were more concerned with what Sullivan (1953) terms the main task of the late adolescent period, the establishment of relationships with peers of the opposite sex and emancipation from parents. This is part of the overall problem which also includes finding a satisfactory solution to the problem of a choice of vocation, the successful execution of steps in that direction and, finally, the establishment of one's own family of procreation. Evidence presented here indicates that, in comparison to the other groups, high users were not only unsuccessful in the interpersonal tasks facing them, but that they did poorly in the academic and social tasks undertaken by university students, viz., low grade point averages and failure to be included in sororities and fraternities.

The Conflict Situation and the Stress It Produced

The fact that these subjects were university students, and students who managed to remain for at least two years, is of paramount importance for this establishes the other facet of the stressful, conflicted situation in which they found themselves.

Although they were ill-prepared for emancipation from home and parents, they undertook the role of university student, a role which calls for a certain degree of self-control, maturity and ability to meet demands for satisfactory academic performance. Stress has been emphasized by many investigators as a factor in the etiology of illness. The stress imposed upon a relatively poorly controlled, immature system when demands for attainment and autonomy are put upon it, as seems to be true of these high users, definitely follows the definition offered earlier of variation in external conditions which is too sudden or too excessive for the system to handle (Galdston, 1954, p. 12).

The Mechanism or Process of Psychosomatic Illness

The mechanism or process by which somatic illness was related to this state of affairs is not known. The findings do show that high users were not just students who happened to develop some serious, chronic disease which necessitated an inordinate number of visits to the infirmary. They did not enter the university with poor health, either; in fact all were declared healthy by examining physicians prior to matriculation at the university. The high rate of

infirmary use during the first thirty days at the university may be interpreted in a number of ways. It may have been that a pattern of "illness behavior" (as defined by Parsons and discussed above) was already established by these subjects before they became students or it may have been that the stress of university life was felt, in anticipation, even before they actually were enrolled. One possible explanation lies in the uses to which the infirmary may have been put in satisfying the needs of these students. The infirmary is free to all students and thus is readily available as a target for impulsive, acting-out when anxiety becomes high. Coming to the infirmary is, in itself, a form of acting-out behavior. In addition, the infirmary offers a socially acceptable gratification of dependency needs, needs which these students may have generalized from their dependency upon their parents. Finally, the choice of somatic complaints and infirmary visits rather than some other form of acting-out such as extracurricular activities, in which high users did not differ, may be related to the stress under which these students found themselves. Self-ratings of general health clearly showed that high users considered themselves to be sick. There seems to be no reason for

assuming that their purpose in visiting the infirmary was any other than to secure medical care, and the infirmary records clearly indicate that they were treated and considered to be ill by the attending physicians.

Sex Differences

Sex differences found in various parts of this study warrant some comment. First, the typical boy in the sample of 477 freshmen made nearly twice as many visits to the infirmary as did the typical girl. This finding is in contradiction to those reported for older subjects in which women are said to greatly outnumber men in their visits to physicians' offices (Standish, Bennett, White, & Powers, 1955, p. 5). Our data suggest that this relationship may shift by the sophomore year when approximately twice as many female high users than male high users made ten or more visits (37% vs 20%), and about the same difference was found between the sexes when eight or more visits was used as the cut-off point (58% vs 25%). None of the the mean and low users of either sex made as many as eight visits in the second year. The reason for this shift in proportion of the sexes who remained high users of the infirmary is not known. However,

it is interesting to note that while high users of both sexes showed anxiety affiliation, the high females presented a self-description on the ICL which was negative while the high males described their mothers negatively. No significant sex differences were found in familial discord scores although the level of use effect was significant. A tentative explanation may be that the females had internalized more of the conflict and discord while the males tended to attribute hostility more to other significant persons in their lives. It may be that negative feelings about oneself were more stable across two years than were patterns of interpersonal relationships. The fact that correlations between morale loss and self disclosure reached significance only for the males also suggests that interpersonal relations were more closely related to intrapsychic state (i.e., morale) for them than for females. The notes made by the experimenter of subjects' spontaneous comments support this interpretation in that female high users frequently appeared to be anxious, hostile and suspicious while male high users were more cooperative, but dependent and ready to either stress the perfection of their parents or to reveal problems

in their relationships with them.

Implications of the Findings for Theory

The implications of the findings of this study for the various theories of the psychosomatic process will be discussed in turn.

The specificity theory

Findings presented here have no direct bearing on the specificity theory, although the fact that high users had no specific types of illness which distinguished them while they did seem to have certain common personality traits and emotional conflicts not shared by the other subjects, suggests that these data do not support such a theory.

The regression theory

The regression theory calls for evidence of a return, under stress, to an earlier mode of behavior. Our findings do indicate that high users behaved in an immature manner, but the question of whether this represents regression, as such, is not answered. The correlations between low morale as freshmen and self-disclosure as sophomores seems to show a failure to progress in the maturation process rather than a regression. Ruesch's description of the "infantile personality," which he calls the "core problem of

psychosomatic medicine" (Ruesch, 1948) comes closest to agreeing with the findings presented here. According to him, the infantile person finds his self-expression in the action language or body language level but is quite unable to symbolically express and handle his tensions. This description is similar to that given by Sarbin (1952) in defining the stage of the Primitive-Construed Self, and the high users fell predominantly into that category. It would seem then, that these findings support a theory of psychological immaturity but not necessarily regression.

The psychoanalytic theory

The psychoanalytic theory that a blocking of motor expression of affect leads to increased autonomic nervous system activity, and eventually to somatic symptoms, is not supported by these data, although most of the hypotheses were pertinent to this theory.

The holistic, field theory

The best explanation for the findings lies in the theory of an organism responding as an open system in relation to its physical and social environment. Thus we found not just psychologically immature adolescents, but immature university students who were

living in a socio-cultural setting where independence, self-control, and efficient application of intellectual talents and abilities were demanded. The total functioning of a system may be indexed by the quality of its output. Two indices, grades and participation in campus social life, indicated that high users were not functioning optimally. Moreover, their behavior reflected not only dependency upon parents but dependency conflicted with feelings of hostility and perception of familial discord. It is this type of stress or disequilibrium which seems to be of primary importance.

Many studies concerned with repression of certain emotions can be seen to be, rather, studies of systems in disequilibrium, because the social environment or that part of it represented within the system itself (super-ego) is in conflict with other parts of the system. For example, Leary's ulcer patients not only repressed passive and dependent feelings but they played a social role which demanded strong, autocratic behavior (Leary, 1957). Miller and Baruch's asthmatic children were unable to express hostility to their parents because the parents had made it clear they couldn't love children who did such

a thing (Miller, & Baruch, 1956). Hinkle's frequently ill factory women felt life was an onerous duty (Hinkle, 1959). The study by Mirsky et al., (1956) clearly illustrates the point. Neither a high rate of gastric secretion nor certain psychological traits alone were responsible for the development of ulcers in their subjects. The essential ingredient which had to be added was "exposure to social situations noxious to the specific individual" (p. 514). In other words, repression, immaturity, and trauma do not lead to the development of illness except in a setting in which demands made on the organism lead to conflict and disequilibrium. Emphasizing repression of feelings and needs unacceptable to the individual as a state of affairs leading to development of illness is not necessarily an incorrect formulation then, but rather an incomplete one.

The sociological theory

The phenomenon of frequent visits to the university infirmary may also be seen as an example of illness as deviant behavior as defined by Parsons. Such behavior, he states, stems from "failing in some way to fulfill the institutionally defined expectations of one or more roles in which the individual is impli-

cated in the society" (Parsons, 1953, p. 610). Such behavior reduces the conflict and temporarily restores equilibrium because the role of the sick person implies exemption from certain normal social obligations, exemption from certain types of responsibility for one's own state. It is legitimized by society which defines it as undesirable but temporary, and it places the person in the role of someone who needs help. The fact that the infirmary is free and available to all students has been discussed. Frequent visits would be a socially acceptable way to lessen the conflict between inability to successfully perform the role of student and the demands made to succeed in this role, as was indicated by Parsons.

Unanswered Questions

There are a number of questions left unanswered by this study which future research should undertake. For example, more detailed knowledge of the interpersonal situation between subjects and their parents together with past illness behavior would further test the conclusions made here about their role in the etiology of illness as a university student. The question of repression in the etiology of illness should be investigated in various situations in which

the total organism-environment field is more carefully specified. The failure of the findings to support the hypotheses concerned with inability to openly express certain feelings was attributed to characteristics of such a total field. This explanation, however, needs further investigation. The reasons for the shift from the freshman to the sophomore year in the proportion of the sexes remaining high users needs further investigation. Finally, the efficacy of illness behavior in reducing tension, as suggested by Parsons, could be investigated by determining what part high use of the infirmary plays in permitting a student to maintain the role of university student, even if minimally.

CHAPTER V

SUMMARY

The present study was undertaken to test hypotheses concerned with certain interpersonal and personality factors in illness. The design of the investigation called for the comparison of subjects who varied in frequency of visits to the University of Florida Infirmary on measures of pertinent variables.

Three levels of infirmary usage were defined, viz., High: 8-10 or more visits during the academic year; Mean: 3-4 visits; and Low: 0-1 visit. Twenty male and twenty female subjects equated on pertinent variables, were selected for each group.

The following data were obtained from each subject:

1. MMPI scores.
 2. Information concerning home town, religious preference, number of types of complaints, scholastic aptitude test scores (ACE), and grade point average.
- The aforementioned data were available from records and tests completed by the subjects prior to their being contacted for participation in the study.

At the end of the sophomore year, or in the case of about four subjects in each group, at the beginning of the junior year, subjects were contacted and tested either singly or in small groups. The following tests were administered to them:

3. The Leary Interpersonal Checklist (ICL).
4. The Jourard Self-disclosure Questionnaire.
5. A personal data questionnaire.

The following hypotheses were proposed:

1. At a time immediately preceding the period during which visits to the infirmary were counted, frequently ill subjects would have lower morale than would infrequently ill subjects.
2. Subjects who were frequently ill were people who would not express their feelings directly and openly but who would tend to express them somatically, when compared to infrequently ill subjects.
3. Frequently ill subjects would not attribute to themselves certain modes of interpersonal behavior, in particular negative ones, but rather would make a self-description which was restricted, when compared to infrequently ill subjects.
4. Compared to infrequently ill subjects, frequently ill subjects would have significantly fewer intimate

interpersonal relationships, as indicated by their disclosure of themselves to others.

5. The main target for self-disclosure of frequently ill subjects would be the parents rather than peers, especially the opposite sex peer. The opposite would be true for infrequently ill subjects. This was considered to be a measure of dependency upon parents or emancipation from them.

None of the hypotheses was borne out by the data, with the exception of partial support for the fifth. High users were found to be individuals who had poor control over acting-out of feelings, a characteristic of emotionally immature people according to Sarbin (1952). They were also immature in their interpersonal relationships. High users were found to manifest hostile-dependent conflicts in relation to their parents, and they showed evidence of perceiving their homes as places of discord and strife. It was suggested that trauma and conflict present in their relationships with parents probably led to the psychological immaturity now observable.

Other findings suggested that high users were unsuccessful students. They had lower grade point averages than did mean and low users, although there

were no significant differences among the groups in total ACE scores. They were also less frequently members of sororities and fraternities than were the other groups.

The findings were interpreted as evidence to support a holistic theory of illness. The failure of the data to support the hypotheses having to do with repression and internalization of affect was seen as evidence that these theories are incomplete in that they fail to take into account the total field which encompasses the social environment as well as the structure of the personality. It was concluded that illness is one consequence of the stress imposed upon an individual attempting to carry out a social role for which he is not psychologically prepared. It was also concluded that an adequate theory of the psychosomatic process should be concerned with the total life situation of the individual rather than just with more molecular mechanisms such as repression, regression, and specific traumata.

REFERENCES

- Abrahamson, J. H. Observations on the health of adolescent girls in relation to cultural change. Psychosom. Med., 1961, 33, 56-65.
- Alexander, F. Psychosomatic medicine. New York: Norton, 1950.
- Alexander, R., & Summerskill, J. Factors affecting the incidence of upper respiratory complaints among college students. Student Med., 1957, 19, 315-319.
- Bertalanffy, L. The theory of open systems in physics and biology. Science, 1950, 111, 23-28.
- Brady, J. V. Ulcers in "executive" monkeys. Scientific Amer., 1958, 199, 95-104.
- Buck, Carol, & Hobbs, G. E. The problem of specificity in psychosomatic illnesses. J. Psychosom. Res., 1959, 2, 227-233.
- Calden, G., Dupertius, C. W., Hokanson, J. E., & Lewis, W. C. Psychosomatic factors in rate of recovery from tuberculosis. Psychosom. Med., 1960, 22, 345-355.
- Cannon, W. B. The wisdom of the body. New York: Norton, 1932.
- Canter, A. The efficacy of a short form of the MMPI to evaluate depression and morale loss. J. consult. Psychol., 1960, 24, 14-17.
- Dahlstrom, W. G., & Welsh, G. S. An MMPI handbook. A guide to use in clinical practice and research. Minneapolis: Univer. of Minnesota Press, 1960.
- Dunbar, F. Emotions and bodily changes. New York: Cambridge Univer. Press, 1938.
- Fisher, S. Extension of theory concerning body image and body reactivity. Psychosom. Med., 1959, 21, 142-149.
- _____, & Cleveland, S. The role of body image in psychosomatic symptom choice. Psychol. Monogr., 1955, 69 (Whole No. 402).
- _____. Relationship of body image to the site of cancer. Psychosom. Med., 1956, 18, 304-309.

- Foa, U. G. Convergences in the analysis of the structure of interpersonal behavior. Psychol. Rev., 1961, 68, 341-353.
- Foster, M. Claude Bernard. New York: Longmans, Green, 1899.
- Frank, L. K. Genetic psychology and its prospects. Amer. J. Orthopsychiat., 1951, 21, 506.
- Frankle, A. H. Psychometric investigation of the relation between emotional repression and the occurrence of psychosomatic symptoms. Psychosom. Med., 1952, 14, 252-255.
- Freud, S. The basic writings of New York: Random House, 1938.
- Galdston, I. Beyond the germ theory; the roles of deprivation and stress in health and disease. In I. Galdston (Ed.), Beyond the germ theory. New York: Health Education Council, 1954. Pp. 3-16.
- _____. Some historic, holistic and psychosomatic implications in tuberculosis. In J. Sparer (Ed.), Personality, stress, and tuberculosis. New York: International Universities Press, 1956. Pp. 175-189.
- Graham, D. T., Stern, J. A., & Winokur, G. Experimental investigation of the specificity of attitude hypothesis in psychosomatic disease. Psychosom. Med., 1958, 20, 446-457.
- Green, R. M. (Trans.). Galen's Hygiene. Springfield, Ill.: C. C. Thomas, 1951.
- Greenacre, Phyllis. Trauma, growth and personality. New York: Norton, 1952.
- Greene, W. A., & Miller, G. Psychological factors and reticuloendothelial disease. IV. Observations on a group of children and adolescents with leukemia: An interpretation of disease development in terms of the mother-child unit. Psychosom. Med., 1958, 20, 124-143.

Grinker, R. R. Psychosomatic research. New York: Norton, 1953.

_____, & Spiegel, J. P. Men under stress. Philadelphia: Blakiston, 1945.

Halliday, J. L. Concept of a psychosomatic affection. In A. Weider (Ed.), Contributions toward medical psychology. Vol. 1. New York: Ronald Press, 1953. Pp. 173-186.

Harris, R. E., & Lingoos, J. C. Subscales for the MMPI: An aid to profile interpretation. In W. G. Dahlstrom, & G. S. Welsh (Eds.), An MMPI handbook. A guide to use in clinical practice and research. Minneapolis: Univer. of Minnesota Press, 1960. P. 462.

Hartman, J. W. Midcentury psychosomatics. In A. A. Roback (Ed.), Present-day psychology. New York: Philosophical Library, 1955. Pp. 591-626.

Hartz, J. Personality and stress in tuberculosis. In J. Sparer (Ed.), Personality, stress and tuberculosis. New York: International Universities Press, 1956. Pp. 190-207.

Hathaway, S. R., & McKinley, J. C. Minnesota Multiphasic Personality Inventory Manual. New York: The Psychological Corp., 1951.

Hinkle, L. D. Physical health, mental health, and the social environment: Some characteristics of healthy and unhealthy people. In R. E. Ojemann (Ed.), Recent contributions of biological and psychosocial investigations to preventive psychiatry. Iowa City: State Univer. of Iowa Press, 1959. Pp. 79-103.

_____, Christenson, W. M., Kane, F. D., Ostfeld, A., Thetford, W. M., & Wolff, H. G. An investigation of the relation between life experience, personality characteristics, and general susceptibility to illness. Psychosom. Med., 1958, 20, 278-295.

_____, & Wolff, H. G. Health and the social environment: Experimental investigations. In A. H. Leighton, J. A. Clausen, & R. W. Wilson (Eds.), Explorations in social psychiatry. New York:

- Basic Books, 1957. Pp. 105-132.
- Holmes, T. H. Multidiscipline studies of tuberculosis. In J. Sparer (Ed.), Personality, stress and tuberculosis. New York: International Universities Press, 1956. Pp. 65-152.
- Imboden, J. B., Canter, A., Cluff, L. E., & Trever, R. W. Brucellosis, III: Psychologic aspects of delayed convalescence. A.M.A. Arch. Intern. Med., 1959, 103, 406-414.
- Janis, J. L. Psychological stress; Psychoanalytic and behavioral studies of surgical patients. New York: Wiley, 1958.
- Jessner, Lucie, Lamont, J., Long, R., Rollins, Nancy, Whipple, Babette, & Prentice, N. Emotional impact of nearness and separation for the asthmatic child and his mother. Psychoanal. Stud. Child, 1955, 10, 353-357.
- Jourard, S.M., & Lasakow, P. Some factors in self-disclosure. J. abnorm. soc. Psychol., 1958, 56, 91-98.
- Kaplan, H. I., & Kaplan, Helen S. A psychosomatic concept. Amer. J. Psychother., 1957, 11, 16-38.
- Kaplan, S. M., & Gottschalk, L. A. Modifications of the orthopharyngeal bacteria with changes in the psychodynamic state: II. A validation study. Psychosom. Med., 1958, 20, 314-320.
- Koffka, K. Principles of Gestalt psychology. New York: Harcourt, Brace, 1935.
- Koos, E. The health of Regionville: What the people thought and did about it. New York: Universities Press, 1954.
- Kruse, H. D. The interplay of noxious agents, stress and deprivation in the etiology of disease. In I. Galdston (Ed.), Beyond the germ theory. New York: Health Education Council, 1954. Pp. 17-38.
- LaForge, R., & Suczek, R. Supplementary information

on the research use of the Interpersonal Checklist.
Mimeographed. Urbana: Psychology Dept., Univer.
of Illinois, 1955.

- Learmonth, G. J., Ackerly, W., & Kaplan, M. Relationships between palmar skin potential during stress and personality variables. Psychosom. Med., 1959, 21, 150-157.
- Leary, T. Interpersonal diagnosis of personality.
New York: Ronald Press, 1957.
- LeShan, L. L. A psychosomatic hypothesis concerning the etiology of Hodgkin's Disease. Psychol. Rep., 1957, 3, 565-575.
- _____, & Worthington, R. E. Personality as a factor in the pathogenesis of cancer: a review of the literature. Brit. J. med. Psychol., 1956, 29, 49-55.
- Lewin, K. K. Role of depression in the production of illness in pernicious anemia. Psychosom. Med., 1959, 21, 23-27.
- Lieberman, M. A., Stock, Dorothy, & Whittman, R. M. Self-perceptual patterns among ulcer patients. A.M.A. Arch. gen. Psychiat., 1959, 1, 167-177.
- Long, R. T., Lamont, J. H., Whipple, Babette, Bandler, Louise, Blom, G. E., Burgin, L., & Jessner, Lucie. A psychosomatic study of allergic and emotional factors in children with asthma. Amer. J. Psychiat., 1958, 114, 890-899.
- Luby, E. D., Ware, J. G., Senf, Rita, & Frohman, C. E. Stress and the precipitation of acute intermittent porphyria. Psychosom. Med., 1959, 21, 34-39.
- Macleod, A. W., Wittkower, E. D., & Margolin, S. Basic concepts of psychosomatic medicine. In E. Wittkower, & R. Cleghorn (Eds.), Recent developments in psychosomatic medicine. Philadelphia: Lipponcott, 1954. Pp. 3-28.
- Malmo, R. B., & Shagass, C. Physiologic study of symptom mechanism in psychiatric patients under

- stress. Psychosom. Med., 1949, 11, 25-29.
- Mathews, Ravenna, Hardwyck, C., & Sarbin, T. R. Self-organization as a factor in the performance of selected cognitive tasks. J. abnorm. soc. Psychol., 1953, 48, 500-502.
- Mead, Margaret. The concept of culture and the psychosomatic approach. In A. Weider (Ed.), Contributions toward medical psychology. Vol. 1. New York: Ronald Press, 1953. Pp. 368-397.
- Mechanic, D., & Volkart, E. A. Stress, illness and the sick role. Amer. Sociol. Rev., 1961, 26, 51-58.
- Mendelson, M., Husch, S., & Webber, C. S. A critical examination of some recent theoretical models in psychosomatic medicine. Psychosom. Med., 1956, 18, 363-373.
- Miller, H., & Baruch, Dorothy. The practice of psychosomatic medicine as illustrated in allergy. New York: McGraw Hill, 1956.
- Miller, J. G. Toward a general theory for the behavioral sciences. Amer. Psychologist, 1955, 10, 513-531.
- Mirsky, I. A., Thaler, Margaret, Weiner, H., & Reiser, M. Studies on the physiological, psychological, and social determinants in the etiology of duodenal ulcer. Psychosom. Med., 1956, 18, 514. (Abstract)
- Parsons, T. Illness and the role of the physician: A sociological perspective. In C. Kluckhohn, & H. Murray (Eds.), Personality in nature, society and culture. New York: Knopf, 1953. Pp. 609-617
- Raifman, I. Level of aspiration in a group of peptic ulcer patients. J. consult. Psychol., 1957, 21, 229-231.
- Rennie, T. A. C., & Scrole, L. Social class prevalence and distribution of psychosomatic conditions in an urban population. Psychosom. Med., 1956, 18, 450-456.

- Reznikoff, M., & Martin, D. E. The influence of stress on mammary cancer in mice. J. psychosom. Res., 1957, 2, 56-60
- Richmond, J. B., & Lustman, S. L. Autonomic function in the neonate: I. Implications for psychosomatic theory. Psychosom. Med., 1955, 17, 269-275.
- Rothstein, C., & Cohen, J. S. Hostility and dependency conflicts in peptic ulcer patients. Psychol. Rep., 1958, 4, 555-558.
- Ruesch, J. Psychological invalidism in thyroidectomized patients. Psychosom. Med., 1947, 9, 77-91.
- _____. The infantile personality; the core problem of psychosomatic medicine. Psychosom. Med., 1948, 10, 134-144.
- _____. Social technique, social status, and social change in illness. In C. Kluckhohn, & H. Murray (Eds.), Personality in nature, society and culture. New York: Knopf, 1953. Pp. 123-135.
- _____. Disturbed communication. New York: Norton, 1957.
- _____, & Bateson, G. Structure and process in social relations. Psychiatry, 1949, 12, 105-124.
- _____, & Bowman, K. M. Personality and chronic illness. In A. Weider (Ed.), Contributions toward medical psychology. Vol. 1. New York: Ronald Press, 1953. Pp. 398-409.
- Sarbin, T. R. A preface to psychological analysis of the self. Psychol. Rev., 1952, 59, 11-22.
- Schacter, S. The psychology of affiliation. Stanford: Stanford Univ. Press, 1959.
- Schmale, A. J. Relation of separation and depression to disease: 1. A report of a hospitalized medical population. Psychosom. Med., 1958, 20, 259-277.
- Schneider, D. M. Social dynamics of physical disability

- in army basic training. In C. Kluckhohn, H. Murray, & D. Schneider (Eds.), Personality in nature, society and culture. (2nd ed.) New York: Knopf, 1956. Pp. 386-397.
- Seguin, C. A. Introduction to psychosomatic medicine. New York: International Universities Press, 1950.
- Seyle, H. The physiology and pathology of exposure to stress. Montreal: Acta, 1950.
- Shrifte, Miriam Harriet Lubell. An investigation of the relationship between underlying unpleasant feeling tension and cancer growth: A comparative study of two groups of cancer patients differentiated on the basis of cancer course. Dissert. Abstr., 1960, 20, 4179. (Abstract)
- Spitz, R. Unhappy and fatal outcomes of emotional deprivation and stress in infancy. In I. Galdston (Ed.), Beyond the germ theory. New York: Health Education Council, 1954. Pp. 120-131.
- Standish, S., Bennett, B., White, Kathleen, & Powers, L. Why patients see doctors. Seattle: Univer. Washington Press, 1955.
- Stern, J. A., Winokur, G., Graham, D. T., & Graham, F. K. Alterations in physiological measures during experimentally induced attitudes. J. psychosom. Res., 1961, 5, 73-82.
- Sullivan, H. S. The interpersonal theory of psychiatry. New York: Norton, 1953.
- Summerskill, J., & Darlington, C. D. Group differences in the incidence of upper respiratory complaints among college students. Psychosom. Med., 1957, 19, 315-319.
- Szasz, T. S. Psychoanalysis and the autonomic nervous system. Psychoanalyt. Rev., 1952, 39, 115-151.
- Thaler, Margaret, Weiner, H., & Reiser, M. P. Exploration of the doctor-patient relationship through projective techniques: Their use in psychosomatic illness. Psychosom. Med., 1957, 19, 228-239.

- Waxenberg, S. E. Psychosomatic patients and other physically ill persons: A comparative study. J. consult. Psychol., 1955, 19, 163-169.
- Weisz, J. D. The etiology of experimental gastric ulceration. Psychosom. Med., 1957, 19, 61-73.
- Welsh, G. S. An anxiety index and an internalization ratio for the MMPI. J. consult. Psychol., 1952, 16, 65-72.
- Wharton, Charlotte, Barger, B. & Schumacher, H. Unpublished Manuscript. Gainesville: Univer. of Florida Student Health Dept., 1961.

APPENDIX A

Name _____, Student Number _____

Marital Status: S, M, D, W, Engaged (circle one)

Do you belong to a fraternity or sorority? _____

If so, when did you join? (indicate semester and year) _____

What extracurricular activities are you presently engaged in? _____

Family Background:

Is your mother living? _____

Is your father living? _____

If your mother is deceased, how old were you when she died? _____

Do you have a mother-substitute? _____

What is her relationship to you? _____

If your father is deceased, how old were you when he died? _____

Do you have a father-substitute? _____

What is his relationship to you? _____

Please list any brothers and sisters by sex and age below.

How often do you go home for the weekend?

Every weekend _____, Twice a month _____, Once a month _____, Once every 2-3 months _____, Never _____.

Health Record:

How many times did you visit the Infirmary last year?
(1959-60)

0____, 1-3____, 4-6____, 7-9____, 10 or more____.

How many times did you visit a physician at some
place other than the Infirmary?

0____, 1-3____, 4-6____, 7-9____, 10 or more____.

How would you rate your general health?

Excellent____, Good____, Fair____, Poor____.

A STUDY OF CONFIDING

INSTRUCTIONS

Here is a list of information about yourself which other people could know only if you have told them.

On the answer-sheet you'll see some ruled columns with the headings "Mother," "Father," "Male Friend," "Female Friend." You are requested to indicate how much information about each topic you have told each of these people.

The male friend and female friend refer to one particular man and one particular woman whom you regard as closest to you at present. If you have no really close friend at present, then choose the two particular people who are the closest to you, even if they don't know you very well.

Write in a 0 if you have never talked about a given topic to the other person.

Write in a 1 if you have talked in general terms about a topic, but not in full detail. The other person has been given only a general idea about that particular side of you.

Write in a 2 only if you know that you have talked fully to the other person about that particular topic. You will use a 2 only for those topics where you know that the other person has full and accurate information about you because you have taken the trouble to confide fully.

For example: If you have never told your mother how you feel about your overall appearance, you would write in a 0. If you have told her that you are more or less satisfied or dissatisfied with your looks, you would write in a 1. You would only write in a 2 if you have talked about your appearance to her in full detail, something like this: "I like my face, but I'm not satisfied with the way my teeth look. I think I'm about 10 pounds overweight. My feet are too big."

1. What you dislike about your overall appearance. 1 0 2 3
2. The things about your appearance that you like most, or are proudest of. 1 0 2 3
3. Your chief health-concern, worry, or problem, at the present time.
4. Your favorite spare-time hobbies or interests.
5. Your food dislikes at present.
6. Your religious activity at present -- whether or not you go to church; which one; how often.
7. Your personal religious views.
8. Your favorite reading materials -- kinds of magazines, books, or papers you usually read.
9. What particularly annoys you most about your closest friend of the opposite sex or, (if married) your spouse.
10. Whether or not you have sex problems, and the nature of these problems, if any.
11. An accurate knowledge of your sex life up to the present -- e.g. the names of your sex-partners in the past and present, if any; your ways of getting sexual gratification. 0 0 2
12. Things about your own personality that worry you or annoy you. 1 0 2 3
13. The chief pressures and strains in your daily work.
14. Things about the future that you worry about at present.
15. What you are most sensitive about.
16. What you feel the guiltiest about, or most ashamed of in your past.
17. Your views about what is acceptable sex morality for people to follow.
18. The kinds of music you enjoy listening to the most.
19. The subjects you did not, or do not like at school.
20. Whether or not you do anything special to maintain or improve your appearance, e.g., diet, exercise, etc.
21. The kind of behavior in others that most annoys you, or makes you furious.
22. The characteristics of your father that you do not like, or did not like.
23. Characteristics of your mother that you do not like, or did not like.
24. Your most frequent day-dream--what you day-dream about most.

25. The feelings you have the most trouble controlling, e.g., worry, depression, anger, jealousy, etc.
26. The biggest disappointment that you have had in your life.
27. How you feel about your choice of life-work.
28. What you regard as your chief handicaps to doing a better job in your work or studies.
29. Your views on the segregation of whites and Negroes.
30. Your thoughts and feelings about other religious groups than your own.
31. Your strongest ambition at the present time.
32. Whether or not you have planned some major decision in the near future; e.g., a new job, break engagement, get married, divorce, buy something big.
33. Your favorite jokes--the kind of jokes you like to hear.
34. Whether or not you have savings; if so, the amount.
35. The possessions you are proudest of, and take greatest care of, e.g., your car, or musical instrument, or furniture, etc.
36. How you usually sleep, e.g., well, or poorly, or with the help of drugs.
37. Your favorite television programs.
38. Your favorite comics.
39. The groups or clubs or organizations you belong to, e.g., fraternity, lodge, bridge-club, YMCA, professional organizations, etc.
40. The beverages you do not like to drink, e.g., coffee, tea, coke, beer, liquor, etc. and your preferred beverages.

APPENDIX B

TABLE 25

CONTACTS WITH PROSPECTIVE SUBJECTS AND THEIR RESPONSES

Contacts and Responses	Groups					
	Males			Females		
	H	M	L	H	M	L
<u>Contacted by letter</u>	56	52	75	47	49	76
Responded to letter	10	9	10	7	12	7
<u>Telephoned</u>	33	39	45	44	34	57
Could not be reached	20	26	34	23	22	28
Appointments made	12	13	11	18	12	23
Appointments broken	2	2	1	5	4	10
Refused to participate	1	0	0	3	0	6

TABLE 26

ANALYSIS OF VARIANCE OF MMPI MORALE LOSS SCALE

Source of Variance	df	MS	F
Sex	1	9.08	.37
Levels of Use	2	.36	.01
Interaction	2	1.67	.07
Within Cells	114	24.35	
Total	119		

TABLE 27

ANALYSIS OF VARIANCE OF MMPI SCALE 1 (HS)

Source of Variance	df	MS	F
Sex	1	91.88	1.89
Levels of Use	2	70.91	1.46
Interaction	2	32.47	.67
Within Cells	114	48.69	
Total	119		

TABLE 28

ANALYSIS OF VARIANCE OF MMPI SCALE 3 (HY)

Source of Variance	df	MS	F
Sex	1	.53	.01
Levels of Use	2	51.76	1.25
Interaction	2	37.61	.91
Within Cells	114	41.43	
Total	119		

TABLE 29
ANALYSIS OF VARIANCE OF MMPI SCALE 4 (PD)

Source of Variance	df	MS	F
Sex	1	124.03	1.55
Levels of Use	2	376.61	4.71*
Interaction	2	174.01	2.18
Within Cells	114	79.90	
Total	119		

* $p < .025$

TABLE 30

t-RATIOS BETWEEN EXPERIMENTAL GROUPS AND SAME SEX
FRESHMEN FOR 11 MMPI SCALES

Scale	Males			Females		
	High	Mean	Low	High	Mean	Low
1 (Hs)	1.84*	.18	.25	.85	.91	.24
2 (D)	.91	.19	.16	.70	.61	.75
3 (Hy)	.82	.69	.31	.69	.96	.85
4 (Pd)	.06	2.97***	1.16	1.87*	.22	2.03**
5 (Mf)	1.06	1.16	.40	.22	.16	.92
6 (Pa)	.13	.19	.51	.57	.57	1.28
7 (Pt)	.33	.24	.38	.43	.81	1.42
8 (Sc)	.18	.10	.22	.81	.07	.55
9 (Ma)	.66	.23	2.09**	1.62	1.36	1.89*
10 (Si)	.08	.88	.18	.63	.00	1.29
0 (K)	.34	.04	.01	.34	1.20	.46

* $p < .10$

** $p < .05$

*** $p < .01$

Note--All significant differences are in the direction
of high users being higher than the class and
mean and low users lower than the class.

N=20 in each experimental group

N=2171 freshman males

N=1027 freshman females

TABLE 31
ANALYSIS OF VARIANCE OF WELSH'S INTERNALIZATION RATIO

Source of Variance	df	MS	F
Sex	1	.07	3.50
Levels of Use	2	.04	2.00
Interaction	2	.01	.50
Within Cells	114	.02	
Total	119		

TABLE 32

ANALYSIS OF VARIANCE OF ICL INTENSITY SCORES,
LEVEL II SELF

Source of Variance	df	MS	F
Between Subjects	119		
Sexes	1	1020.94	16.75**
Levels of Use	2	131.98	2.17
Sex X Level	2	142.04	2.33*
Error (between)	114	60.96	
Within Subjects	840		
Octants	7	177.78	4.50**
Octant X Sex	7	176.25	4.46**
Octant X Level	14	28.68	.73
Octant X Sex X Level	14	42.48	1.07
Error (within)	798	39.54	
Total	959		

*p = .10

**p < .001

TABLE 33
 AMOUNT OF DISCREPANCY BETWEEN LEVEL I (MMPI)
 AND LEVEL II (ICL) SELF-DESCRIPTION

Level of Use	Above Mdn	Mdn & Below
<u>Males</u>		
High	6	14
Mean	7	13
Low	8	12
Chi Square = .44, df=2, p < .90		
<u>Females</u>		
High	10	10
Mean	6	14
Low	7	13
Chi Square = 1.15, df=2, p < .90		

Note--N=20 in each sex-use group.

TABLE 34

ANALYSIS OF VARIANCE OF SELF-DISCLOSURE SCORES FOR
FOUR TARGETS: MOTHER, FATHER, SAME SEX FRIEND, AND
OPPOSITE SEX FRIEND

Source of Variance	df	MS	F
Between Subjects	119		
Sexes	1	1147.01	1.85
Levels of Use	2	.17	.00
Sex X Level	2	526.67	.85
Error (between)	114	618.71	
Within Subjects	360		
Targets	3	4291.83	31.51*
Target x Sex	3	259.63	1.91
Target x Level	6	155.75	1.14
Target x Sex X Level	6	29.89	.22
Error (within)	342	136.22	
Total	479		

*p < .001

APPENDIX C

TABLE 35

MMPI STANDARD SCORES

Group No.	Scales											
	1	2	3	4	5	6	7	8	9	10	K	
<u>High</u>	12	52	53	55	43	49	53	54	51	60	49	61
<u>Males</u>	16	39	56	44	41	65	53	50	42	53	60	44
	26	52	44	55	55	71	53	58	59	58	44	59
	28	62	58	65	55	65	62	60	61	58	64	62
	36	62	53	55	67	57	41	58	63	68	42	66
	37	52	56	60	69	61	53	50	53	75	35	55
	38	49	58	45	60	55	38	50	53	60	50	55
	49	54	48	56	57	63	53	69	59	60	47	61
	52	57	77	73	81	75	76	79	82	55	69	48
	56	52	65	60	64	53	62	73	61	70	45	53
	57	54	63	55	57	57	59	56	59	55	53	62
	71	62	65	60	62	75	53	58	71	53	57	59
	94	49	65	58	55	59	50	50	48	65	53	48
	95	59	41	56	53	46	56	56	61	80	42	51
	96	57	48	55	60	65	56	69	65	60	55	36
	102	52	58	56	62	55	62	66	57	48	52	63
	104	65	53	69	69	59	56	56	55	53	37	66
	107	59	60	55	74	46	53	52	57	60	41	68
	109	54	53	58	48	46	38	46	46	58	47	62
	114	65	46	67	46	81	44	60	59	60	41	62
<u>Mean</u>	1	39	39	37	53	39	54	57	59	63	44	40
<u>Males</u>	14	52	46	65	60	38	50	42	44	60	37	61
	18	54	53	56	71	71	62	66	63	73	50	61
	23	44	41	51	55	59	44	54	42	53	50	54
	29	47	56	56	50	61	59	62	53	63	46	56
	30	39	41	47	36	67	53	46	50	70	49	48
	32	41	44	47	53	61	59	54	46	50	50	53
	51	54	44	62	50	63	53	48	50	53	36	64
	60	67	94	58	43	61	59	79	67	38	84	46
	62	49	39	53	60	42	47	46	53	75	34	57
	65	52	77	49	36	51	53	60	73	53	67	55
	67	57	70	60	64	67	62	54	53	53	48	66
	68	57	56	60	53	59	56	79	71	63	50	53
	74	47	56	56	39	83	38	60	53	48	60	49
	79	62	58	60	43	75	62	64	69	58	58	66
	82	59	39	60	71	67	59	56	63	68	41	64
	84	44	48	49	36	59	59	38	46	53	51	51
	97	54	53	55	48	55	56	58	65	53	49	61
	110	54	46	56	60	61	44	58	59	73	46	61
	113	65	70	67	62	69	56	85	80	73	65	42

TABLE 35 -- Continued

Group No.	Scales											
	1	2	3	4	5	6	7	8	9	10	K	
Low	10	52	48	60	62	49	50	50	53	48	42	68
<u>Males</u>	19	49	46	58	55	65	50	46	53	48	36	62
	20	47	48	58	60	59	67	54	53	48	50	55
	27	62	75	65	71	63	73	66	78	58	73	43
	43	54	63	60	69	67	70	75	74	80	60	44
	47	54	56	62	64	51	47	54	57	70	43	66
	55	47	53	53	57	73	62	73	53	50	45	61
	72	57	37	60	48	38	50	50	59	68	39	70
	81	67	84	67	71	61	67	77	69	38	70	57
	83	41	51	44	46	46	38	50	55	53	36	53
	85	47	51	53	50	49	50	50	44	43	42	47
	100	49	63	45	57	61	47	60	69	75	52	36
	105	52	63	56	55	59	44	54	55	28	55	66
	108	47	56	53	48	53	62	60	53	55	48	57
	111	59	53	53	57	59	47	60	61	53	68	49
	116	47	51	49	55	57	59	52	53	65	45	53
	207	52	51	56	48	48	53	48	53	55	41	62
	208	52	53	56	46	65	47	56	50	45	60	51
	209	59	44	56	50	51	50	60	53	63	42	59
	210	41	41	53	53	65	59	42	44	60	41	46
High	2	54	40	57	50	39	47	51	54	63	43	61
Fe-	6	56	55	63	74	39	59	61	57	58	42	66
<u>males</u>	17	39	49	54	67	45	50	48	51	50	48	55
	24	70	55	72	60	53	62	73	71	78	50	53
	33	50	46	50	62	37	56	63	58	63	44	61
	40	54	46	57	50	59	53	50	58	65	37	55
	44	58	49	56	60	45	47	56	51	58	51	51
	50	50	55	66	88	47	91	78	77	80	43	62
	63	42	57	43	57	41	44	58	55	48	67	38
	64	46	46	52	62	53	64	66	63	65	59	49
	73	52	57	54	60	55	47	51	46	35	50	57
	77	46	38	54	55	55	59	46	55	60	44	57
	86	46	57	45	71	45	38	61	54	48	63	64
	89	58	49	63	55	53	62	55	55	63	42	66
	91	44	57	59	62	41	64	46	51	63	56	47
	101	44	48	56	69	49	50	53	61	58	64	57
	114	50	38	56	57	55	56	50	55	63	35	72
	201	70	61	66	62	37	73	69	66	73	55	59
	206	62	51	66	57	53	59	48	52	73	40	55
	300	44	40	54	55	39	50	55	63	65	50	57

TABLE 35 -- Continued

Group No.	Scales											
	1	2	3	4	5	6	7	8	9	10	K	
Mean	3	48	61	57	53	49	64	74	74	63	66	57
Fe-	8	52	49	57	60	49	53	53	51	45	48	61
<u>males</u>	11	64	55	64	57	53	62	58	52	50	45	61
	22	56	49	64	60	51	56	56	58	73	44	66
	34	52	42	56	55	55	56	50	54	58	37	70
	39	54	51	54	48	49	50	65	51	53	61	50
	41	48	53	56	67	37	56	51	58	40	45	68
	42	50	48	56	53	59	53	55	46	55	46	51
	48	68	63	66	48	37	56	86	74	53	67	55
	58	52	77	68	67	47	70	65	52	58	52	57
	59	48	48	56	64	45	67	65	52	55	56	55
	61	46	36	49	46	47	47	43	51	50	46	57
	69	46	73	47	62	45	62	68	71	45	82	43
	87	50	42	64	60	49	59	53	55	55	36	66
	99	50	51	52	53	45	50	56	52	50	46	61
	107	48	38	54	57	45	44	51	55	65	37	57
	109	52	44	57	64	41	59	43	58	65	35	61
	202	56	63	68	69	57	62	56	55	48	54	53
	203	39	63	45	50	49	56	50	49	48	63	49
	204	58	48	61	66	32	50	56	57	58	42	69
Low	5	54	59	52	53	45	53	53	54	53	53	59
Fe-	7	46	46	52	60	39	62	58	54	58	47	62
<u>males</u>	9	50	36	54	50	63	56	50	54	58	34	62
	15	50	55	52	46	49	53	61	60	78	49	48
	21	44	48	45	43	55	38	41	54	45	60	57
	31	50	50	55	54	49	53	53	55	53	53	55
	45	54	48	57	67	53	50	60	63	55	52	61
	54	54	49	63	53	26	50	53	52	50	57	49
	66	56	57	61	64	47	53	53	54	55	55	62
	76	42	46	52	43	41	59	48	52	55	51	57
	80	42	57	50	60	55	56	50	60	45	83	36
	88	44	42	54	41	49	50	51	54	48	50	59
	90	48	36	52	48	51	50	46	49	58	41	66
	93	50	38	57	53	47	47	55	63	58	42	62
	98	62	53	64	55	41	59	60	61	58	55	48
	106	50	63	52	62	53	59	74	61	70	59	51
	111	56	53	54	62	63	59	46	51	43	55	49
	112	50	46	56	42	74	59	51	53	48	51	49
	113	50	49	54	60	37	44	46	51	40	52	62
	205	50	63	56	57	47	53	56	49	35	64	55

TABLE 36

MORALE LOSS, FAMILIAL DISCORD, INTERNALIZATION RATIO,
SELF-DEVELOPMENT SCORES

Group	No.	ML	FD	IR	S-d
<u>High Males</u>	12	3	1	1.006	5
	16	8	1	1.050	5
	26	4	3	.916	5
	28	10	3	1.011	4
	36	3	1	.910	3
	37	5	5	.770	3
	38	4	3	.951	3
	49	10	1	.988	5
	52	15	9	1.019	-
	56	7	4	.979	-
	57	5	0	1.035	5
	71	4	8	1.057	-
	94	13	4	.921	-
	95	4	8	.825	-
	96	16	5	.994	4
	102	6	1	1.060	-
	104	1	4	.910	-
	107	1	3	.904	3
	109	1	1	.932	5
	114	7	3	.988	4
<u>Mean Males</u>	1	15	4	.882	5
	14	1	2	.756	3
	18	5	3	.865	3
	23	6	4	.874	5
	29	6	1	.976	-
	30	6	1	.823	5
	32	4	2	.926	5
	51	1	3	.884	5
	60	18	1	1.726	4
	62	5	1	.712	3
	65	5	1	1.369	4
	67	2	2	1.022	4
	68	10	4	1.090	-
	74	8	1	1.139	4
	79	4	0	1.142	-
	82	3	2	.773	3
	84	4	0	.942	5
	97	4	2	1.057	5
	110	3	1	.835	3
	113	16	6	1.089	-

TABLE 36 -- Continued

Group	No.	ML	FD	IR	S-d
<u>Low Males</u>	10	0	1	.882	5
	19	2	1	.875	5
	20	6	3	.897	5
	27	19	7	1.046	5
	43	16	5	.918	3
	47	2	2	.931	1
	55	13	1	1.081	4
	72	0	1	.818	5
	81	10	2	1.295	5
	83	3	3	.993	5
	85	6	0	1.013	5
	100	13	4	.971	3
	105	2	2	1.215	5
	108	9	0	1.044	5
	111	8	1	1.055	4
	116	6	2	.887	5
	207	2	0	.949	5
	208	7	2	1.095	5
	209	6	2	.964	5
	210	7	1	.746	5
<u>High Female</u>	2	6	2	.852	5
	6	5	2	.882	3
	17	4	4	.795	5
	24	15	6	.942	3
	33	13	4	.908	3
	40	3	1	.872	5
	44	7	6	.936	3
	50	13	8	.782	5
	63	15	4	1.060	5
	64	10	3	.882	1
	73	7	2	1.073	5
	77	2	4	.769	4
	86	5	2	1.000	4
	89	2	1	.895	1
	91	10	8	.798	3
	101	5	6	.792	3
	114	0	1	.784	3
	201	11	4	.995	3
	206	7	2	.821	3
	300	7	2	.798	1

TABLE 36 -- Continued

Group	No.	ML	FD	IR	S-d
<u>Mean Female</u>	3	12	4	1.057	-
	8	4	1	.950	5
	11	6	1	1.035	4
	22	5	1	.817	3
	34	2	1	.852	5
	39	14	2	1.096	4
	41	1	3	.932	5
	42	9	2	.932	5
	48	19	1	1.299	4
	58	15	1	1.005	-
	59	8	4	.920	-
	61	3	1	.862	5
	69	18	5	1.214	-
	87	1	2	.810	5
	99	6	2	1.012	5
	107	4	2	.778	5
	109	0	3	.747	3
	202	7	7	.945	-
	203	9	1	1.062	4
	204	1	4	.875	3
<u>Low Female</u>	5	4	1	1.050	5
	7	5	1	.882	5
	9	2	1	.839	5
	15	14	4	.943	-
	21	2	3	1.000	5
	31	6	2	.949	4
	45	6	5	.905	5
	54	8	2	.939	5
	66	3	3	.922	-
	76	3	2	.906	5
	80	13	7	.961	-
	88	5	0	.958	5
	90	1	0	.823	5
	93	4	1	.851	5
	98	12	4	.988	4
	106	14	9	1.016	-
	111	8	2	.974	5
	112	8	0	1.006	5
	113	2	3	.942	5
	205	9	3	1.141	4

TABLE 37

ICL INTENSITY SCORES, LEVEL II-SELF

Group	No.	Octants							
		1	2	3	4	5	6	7	8
<u>High Males</u>	12	5	12	8	13	12	13	14	12
	16	4	10	6	11	4	10	8	2
	26	18	21	13	2	4	10	15	8
	28	20	16	14	6	7	15	13	32
	36	4	3	0	7	8	8	3	6
	37	14	14	8	2	4	6	12	14
	38	12	26	18	15	2	5	8	4
	49	8	8	10	9	15	4	21	16
	52	3	4	10	5	26	12	18	10
	56	8	13	24	12	6	14	13	6
	57	8	12	10	6	7	7	6	4
	71	17	17	14	10	16	20	21	29
	94	16	15	18	17	9	13	10	16
	95	22	24	25	28	4	16	20	6
	96	12	14	12	2	8	12	12	12
	102	12	10	4	3	4	9	9	8
	104	17	8	14	6	5	6	12	12
	107	14	8	6	1	6	10	12	12
	109	6	10	8	4	4	7	12	14
	114	12	14	12	9	4	7	10	6
<u>Mean Males</u>	1	17	13	18	2	3	8	18	10
	14	10	18	8	8	4	6	6	8
	18	17	17	6	3	2	8	3	4
	23	15	12	15	6	2	12	11	8
	29	8	8	8	8	16	8	11	13
	30	17	17	21	12	5	6	6	8
	32	11	23	16	14	7	10	9	3
	51	14	12	15	2	6	10	10	10
	60	5	4	9	9	18	16	14	9
	62	27	18	24	23	3	2	5	2
	65	10	13	8	4	20	16	15	16
	67	19	8	6	13	9	20	14	21
	68	13	8	14	13	17	13	11	13
	74	6	13	15	8	10	9	2	3
	79	7	18	6	19	13	3	2	3
	82	10	8	18	11	2	11	4	8
	84	23	19	8	5	2	4	4	11
	97	6	12	13	6	14	14	20	6
	110	8	12	15	11	5	5	4	4
	113	5	12	19	17	22	24	13	9

TABLE 37 -- Continued

Group	No.	Octants							
		1	2	3	4	5	6	7	8
<u>Low Males</u>	10	10	13	14	10	9	9	12	8
	19	10	14	12	6	6	10	8	1
	20	17	17	17	14	9	17	10	4
	27	10	11	13	4	2	8	20	15
	43	5	13	20	20	11	2	5	10
	47	5	4	3	4	29	16	12	4
	55	5	13	8	5	6	13	6	4
	72	13	14	7	4	5	9	8	6
	81	9	13	13	13	11	2	13	8
	83	15	8	10	2	6	8	21	14
	85	14	18	33	30	19	8	4	7
	100	12	10	15	6	2	8	18	7
	105	5	14	17	10	4	10	15	13
	108	13	17	16	8	4	8	14	12
	111	7	18	11	10	14	13	14	10
	116	8	20	18	17	4	7	8	4
	207	17	20	18	23	2	2	11	5
	208	10	9	6	4	16	12	12	16
	209	15	10	17	11	8	8	13	11
210	15	10	20	8	9	6	8	10	
<u>High Females</u>	2	6	2	10	13	35	31	26	27
	6	13	13	18	7	4	10	18	3
	17	13	17	12	7	2	11	23	20
	24	15	11	13	7	6	13	14	6
	33	18	14	14	7	12	18	12	20
	40	10	9	20	13	4	6	13	8
	44	18	8	23	12	10	18	21	12
	50	11	4	12	16	16	14	31	17
	63	15	6	22	18	19	23	15	28
	64	15	2	14	18	17	16	15	34
	73	12	6	19	10	10	12	34	24
	77	22	31	27	18	4	19	2	3
	86	13	9	23	21	9	9	5	4
	89	20	16	15	13	11	6	8	12
	91	10	13	15	16	7	11	10	32
	101	1	8	23	20	16	15	8	5
	114	18	10	4	5	4	8	14	12
	201	8	9	15	14	15	11	11	11
	206	8	12	10	6	4	17	20	18
300	8	12	9	9	10	3	8	13	

TABLE 37 -- Continued

Group	No.	Octants							
		1	2	3	4	5	6	7	8
<u>Mean Females</u>	3	5	15	12	9	14	14	13	6
	8	15	17	26	11	7	6	4	12
	11	12	10	6	4	21	26	30	28
	22	7	13	20	23	2	2	4	8
	34	10	12	10	7	8	17	12	16
	39	6	7	10	9	11	27	16	11
	41	13	2	14	14	15	14	21	40
	42	18	16	17	10	6	16	18	24
	48	8	3	2	8	18	18	27	24
	58	15	9	13	23	17	15	13	8
	59	8	3	5	13	10	12	15	14
	61	22	13	12	18	12	17	30	14
	69	1	4	13	7	13	18	10	6
	87	10	8	4	10	18	25	22	30
	99	10	4	5	11	14	17	17	12
	107	15	13	7	15	19	31	61	19
	109	16	17	26	9	4	4	13	7
	202	12	9	9	9	18	19	21	31
	203	37	29	30	24	5	4	3	8
	204	10	13	6	5	8	11	17	8
<u>Low Females</u>	5	21	20	23	20	7	14	12	8
	7	16	6	13	11	16	15	15	14
	9	11	14	13	4	4	14	26	14
	15	12	10	13	7	4	6	14	10
	21	3	7	11	7	15	19	3	8
	31	11	12	16	9	2	3	8	4
	45	15	14	21	19	9	4	1	2
	54	5	11	4	6	8	6	10	8
	66	12	17	15	10	15	13	15	16
	76	9	10	3	4	2	6	14	10
	80	8	6	19	24	12	13	0	2
	88	6	4	8	2	15	20	15	12
	90	6	2	9	10	6	11	18	8
	93	17	13	18	4	4	14	17	14
	98	19	13	14	15	18	19	29	24
	106	7	4	5	18	27	20	20	21
	111	23	12	19	22	12	8	5	25
	112	10	11	11	4	5	12	4	4
	113	12	18	12	6	2	6	4	8
	205	3	3	14	18	18	20	11	8

TABLE 38

ICL OCTANT AND LEVEL I-SELF (MMPI) SCORES

Group No.	Targets				Level I-Self	
	Self	Mother	Father	Ideal Self		
High	12	5	3	2	6	1
<u>Males</u>	16	3	10	1	3	1
	26	1	1	1	1	1
	28	1	0	1	1	1
	36	5	2	1	5	1
	37	1	2	1	2	1
	38	0	2	2	2	1
	49	0	2	1	2	1
	52	0	1	1	1	1
	56	1	1	1	1	1
	57	1	0	1	1	1
	71	1	2	1	2	2
	94	2	2	1	2	1
	95	1	2	1	2	1
	96	1	1	1	1	2
	102	1	2	1	2	2
	104	1	1	1	1	1
	107	1	1	0	1	1
	109	1	1	1	1	1
	114	2	2	3	2	1
Mean	1	1	1	1	1	2
<u>Males</u>	14	1	1	1	1	1
	18	1	1	1	1	1
	23	1	1	1	1	1
	29	1	1	1	1	1
	30	1	1	1	1	1
	32	1	1	1	1	1
	51	1	1	1	1	1
	60	1	1	1	1	1
	62	1	1	1	1	1
	65	1	1	1	1	1
	67	1	1	1	1	1
	68	1	1	1	1	1
	74	1	1	1	1	1
	79	1	1	1	1	1
	82	1	1	1	1	1
	84	2	1	1	1	1
	97	1	1	1	1	1
	110	1	1	1	1	1
	113	1	1	1	1	1

TABLE 38 -- Continued

Group No.	Targets				Level I- Self	
	Self	Mother	Father	Ideal Self		
Low	10	3	7	2	5	8
<u>Males</u>	19	1	8	1	5	1
	20	3	3	2	4	1
	27	6	3	2	4	3
	43	2	1	2	5	2
	47	1	1	2	4	2
	55	2	1	1	3	7
	72	1	1	1	7	1
	81	4	8	3	4	5
	83	3	1	3	4	2
	85	1	1	1	3	8
	100	1	1	1	3	2
	105	7	-	-	-	7
	108	2	2	2	1	8
	111	3	7	2	1	2
	116	3	7	2	1	1
	207	3	8	2	1	8
	208	8	8	1	3	8
	209	2	2	2	4	1
	210	2	8	2	1	1
High	2	1	1	2	2	1
<u>Females</u>	6	1	1	2	2	8
	17	2	2	3	2	8
	24	1	1	1	1	1
	33	7	1	1	3	1
	40	1	2	1	8	1
	44	6	1	1	5	1
	50	7	3	7	8	1
	63	8	3	6	7	3
	64	3	2	2	6	2
	73	1	2	1	2	8
	77	3	2	2	3	1
	86	6	1	1	1	8
	89	2	1	2	6	8
	91	1	7	1	1	1
	101	4	8	2	2	1
	114	1	1	1	2	1
	201	5	3	2	5	1
	206	8	8	2	6	1
	300	2	8	2	3	1

TABLE 38 -- Continued

Group No.	Targets				Level I-Self
	Self	Mother	Father	Ideal Self	
Mean	3	4	2	5	3
<u>Females</u>	8	2	1	2	0
11	2	1	1	1	1
22	3	2	2	2	1
34	1	1	1	1	1
39	8	1	1	1	0
41	7	1	1	1	0
42	1	1	1	2	0
48	2	1	1	1	4
58	5	1	1	1	7
59	7	2	1	1	0
61	8	1	1	1	1
69	5	1	1	2	4
87	2	1	1	1	0
99	2	1	1	3	1
107	2	2	2	2	1
109	2	1	2	2	1
202	2	2	2	2	0
203	1	2	1	1	5
204	1	1	1	1	0
Low	5	2	0	2	1
<u>Females</u>	7	0	1	1	0
9	0	1	1	1	0
15	1	1	1	2	2
21	4	2	2	1	1
31	2	2	1	2	2
45	3	1	1	3	1
54	1	1	1	1	1
66	1	1	0	1	1
76	1	1	1	1	1
80	5	1	1	1	1
88	2	1	1	1	1
90	7	1	1	1	1
93	1	1	0	1	1
98	1	1	1	1	1
106	1	1	1	1	1
111	1	1	1	1	1
112	1	1	1	1	1
113	2	1	1	1	1
205	5	1	1	1	0

Note--Extreme scores are underlined. One Low Male omitted part of the ICL.

TABLE 39

SELF-DISCLOSURE SCORES

Group	No.	Targets				Total
		Mo	Fa	SSF	OSF	
High	12	29	29	55	59	172
<u>Males</u>	16	31	27	25	26	109
	26	72	69	67	61	269
	28	49	47	46	62	204
	36	22	22	46	48	138
	37	25	20	53	53	151
	38	52	52	62	44	210
	49	51	39	44	39	173
	52	15	5	45	36	101
	56	28	27	41	23	119
	57	42	35	39	38	154
	71	28	24	26	30	108
	94	63	6	66	41	176
	95	45	42	64	59	210
	96	44	42	50	66	202
	102	46	37	39	39	161
	104	31	31	42	52	156
	107	34	34	43	39	150
	109	37	37	43	18	135
	114	47	19	50	54	170
Mean	1	14	19	8	17	58
<u>Males</u>	14	72	72	71	76	291
	18	21	23	25	29	98
	23	42	42	54	65	203
	29	62	62	62	28	214
	30	40	21	58	80	199
	32	23	19	30	24	96
	51	55	53	46	49	203
	60	30	11	34	54	129
	62	46	46	44	67	203
	65	27	27	22	20	96
	67	47	46	52	44	189
	68	26	17	55	51	149
	74	52	46	37	27	162
	79	11	11	26	23	71
	82	50	40	59	51	200
	84	56	34	42	35	167
	97	70	74	76	62	282
	110	27	39	66	33	165
	113	30	28	48	36	142

TABLE 39 -- Continued

Group	No.	Targets				Total
		Mo	Fa	SSF	OSF	
Low	10	43	36	62	52	193
<u>Males</u>	19	16	9	20	29	74
	20	43	56	23	0	152
	27	15	16	38	29	98
	43	17	17	34	15	83
	47	31	31	23	36	121
	55	26	29	34	42	131
	72	43	42	41	42	168
	81	38	31	27	34	130
	83	48	45	50	43	186
	85	47	35	43	39	164
	100	13	11	18	0	42
	105	46	46	60	60	212
	108	28	22	57	47	154
	111	45	44	68	52	209
	116	40	50	35	45	170
	207	34	33	41	50	158
	208	43	28	55	44	170
	209	55	58	77	68	258
	210	43	42	33	51	169
High	2	33	16	23	27	99
<u>Females</u>	6	52	52	55	54	213
	17	40	5	72	42	159
	24	22	51	64	66	203
	33	39	35	55	31	160
	40	39	25	52	56	172
	44	41	15	51	54	161
	50	36	43	79	67	225
	63	62	66	63	35	226
	64	15	77	49	50	121
	73	68	56	48	42	214
	77	34	26	56	35	151
	86	36	24	44	38	147
	89	31	22	16	33	102
	91	23	12	42	71	148
	101	43	17	53	12	125
	114	53	52	56	52	213
	201	58	35	46	67	206
	206	51	32	56	65	204
	300	37	11	37	69	154

TABLE 39 -- Continued

Group	No.	Targets				Total
		Mo	Fa	SSF	OSF	
Mean	3	52	15	44	33	144
<u>Females</u>	8	16	15	23	22	76
	11	67	62	68	42	239
	22	23	33	33	53	142
	34	52	52	75	37	216
	39	67	67	79	74	287
	41	50	47	62	51	210
	42	43	32	34	45	154
	48	43	34	33	19	129
	58	38	14	65	29	146
	59	53	27	46	31	157
	61	44	0	71	58	173
	69	43	28	39	50	160
	87	31	28	71	67	197
	90	47	47	46	39	179
	107	41	29	38	71	179
	109	63	44	34	42	183
	202	15	18	29	25	87
	203	45	0	71	47	163
	204	25	29	33	39	126
Low	5	25	25	25	52	127
<u>Females</u>	7	69	45	63	54	231
	9	42	27	50	23	142
	15	34	22	36	33	125
	21	46	43	53	60	202
	31	36	33	65	70	204
	45	39	21	32	24	116
	54	46	39	49	55	189
	66	59	44	55	50	208
	76	65	56	58	58	237
	80	25	22	13	48	108
	88	56	47	58	52	213
	90	25	0	39	46	110
	93	64	55	76	80	275
	98	29	41	76	76	222
	106	53	51	43	37	184
	111	61	56	66	45	228
	112	34	28	28	31	121
	113	60	55	42	41	198
	205	57	41	56	25	179

Note--SSF = Same sex friend
 OSF = Opposite sex friend

TABLE 40

TOTAL MEDICAL VISITS FRESHMAN YEAR, FIRST 30 DAYS
OF FRESHMAN YEAR, AND SOPHOMORE YEAR

Group	No.	Freshman Year	1st 30 Days	Sophomore Year
High	12	10	2	6
<u>Males</u>	16	17	0	6
	26	16	3	11
	28	11	3	25
	36	12	0	1
	37	10	4	4
	38	13	2	5
	49	10	1	5
	52	10	2	3
	56	10	2	5
	57	13	3	9
	71	10	0	7
	94	10	0	2
	95	10	3	4
	96	12	0	4
	102	13	2	3
	104	16	4	13
	107	11	0	6
	109	10	0	4
	114	26	10	21
Mean				
<u>Males</u>	1	3	0	2
	14	3	0	2
	18	4	2	3
	23	3	0	5
	29	3	0	3
	30	4	0	1
	32	4	3	6
	51	4	0	4
	60	3	1	1
	62	3	1	0
	65	4	0	0
	67	3	1	3
	68	4	0	0
	74	3	3	0
	79	3	0	2
	82	4	1	8
	84	3	0	6
	97	3	0	2
	110	3	0	4
	113	3	0	2

TABLE 40 -- Continued

Group	No.	Freshman Year	1st 30 Days	Sophomore Year
Low	10	0	0	2
<u>Males</u>	19	0	0	2
	20	0	0	0
	27	0	0	0
	43	0	0	1
	47	0	0	2
	55	0	0	0
	72	1	0	4
	81	0	0	0
	83	0	0	0
	85	1	0	0
	100	0	0	2
	105	0	0	3
	108	0	0	1
	111	0	1	4
	116	1	0	0
	207	0	0	0
	208	1	0	0
	209	1	0	1
	210	0	0	1
High	2	12	2	9
<u>Females</u>	6	8	5	6
	17	12	0	21
	24	12	3	11
	33	8	2	0
	40	8	2	10
	44	16	5	9
	50	10	2	3
	63	14	2	2
	64	12	0	8
	73	8	1	1
	77	8	1	8
	86	8	0	16
	89	9	2	7
	91	8	4	1
	101	8	0	19
	114	9	0	0
	201	20	5	10
	206	32	13	12
	300	9	1	5

TABLE 40 -- Continued

Group No.	Freshman Year	1st 30 Days	Sophomore Year
Mean	3	4	2
<u>Females</u>	8	4	4
	11	4	0
	22	4	4
	34	3	9
	39	3	5
	41	3	1
	42	3	1
	48	3	6
	58	3	4
	59	3	0
	61	3	1
	69	3	1
	87	3	2
	99	3	4
	107	4	1
	109	3	0
	202	3	4
	203	3	3
	204	3	4
Low	5	0	1
<u>Females</u>	7	0	2
	99	0	2
	15	0	2
	21	0	4
	31	1	4
	45	1	3
	54	0	0
	66	0	1
	76	1	0
	80	0	8
	88	1	1
	90	0	0
	93	0	1
	98	0	0
	106	0	2
	111	1	3
	112	1	1
	113	0	0
	205	0	3

TABLE 41

TYPE OF COMPLAINTS, COMPLAINT/VISIT RATIO, AND
SELF-RATINGS OF GENERAL HEALTH

Group	No.	Complaints	Complaint/ Visit Ratio	Self-rating of Health
High	12	8,6,3,0	.40	Good
<u>Males</u>	16	4,5,3,1	.24	Excellent
	26	3,12,7,1,13,5,8	.44	Good
	28	7,0,1,3,8	.45	Good
	36	3,5,2,1,0	.42	Excellent
	37	5,3,1,6	.40	Excellent
	38	3,8,1,4,2	.38	Excellent
	49	1,8,2	.30	Excellent
	52	5,3	.20	Good
	56	1,3,5,8	.40	Excellent
	57	3,1,0,4	.31	Fair
	71	1,3,5	.30	Excellent
	94	2,2	.20	Excellent
	95	7,3,4,0,1	.50	Good
	96	1,5,2	.25	Excellent
	102	7,0,1,2	.30	Good
	104	7,3,1	.25	Good
	107	2,3,0,1,7	.45	Good
	109	3	.10	Good
	114	3,2,4,8,6	.19	Good
Mean	1	12,3	.67	Excellent
<u>Males</u>	14	1	.33	Excellent
	18	5,3	.50	Good
	23	1	.33	Excellent
	29	1,3	.67	Good
	30	4,3,0	.75	Excellent
	32	1,5,3	.75	Excellent
	51	1,3,0	.75	Good
	60	2,0	.67	Excellent
	62	3,1	.67	Excellent
	65	0,7,1	.75	Excellent
	67	1,6	.67	Good
	68	3,8,5	.75	Excellent
	74	5	.33	Excellent
	79	1,6	.67	Fair
	82	3,7	.50	Excellent
	84	3,0	.67	Good

TABLE 41 -- Continued

Group	No.	Complaints	Complaint/ Visit Ratio	Self-rating of Health
	97	7,4	.67	Excellent
	110	3,1	.67	Good
	113	3,1	.67	Excellent
<u>Low</u>	10	-	-	Excellent
<u>Males</u>	19	-	-	Excellent
	20	-	-	Excellent
	27	-	-	Good
	43	-	-	Good
	47	-	-	Excellent
	55	-	-	Good
	72	3	1.00	Excellent
	81	-	-	Good
	83	-	-	Excellent
	85	1	1.00	Excellent
	100	-	-	Excellent
	105	-	-	Excellent
	108	-	-	Excellent
	111	-	-	Excellent
	116	5	1.00	Good
	207	-	-	Good
	208	3	1.00	Good
	209	3	1.00	Excellent
	210	-	-	Good
<u>High</u>	2	2,11,5,3	.33	Good
<u>Females</u>	6	3,5,6,0	.50	Good
	17	0,4,11,3,10	.42	Good
	24	11,3,0	.25	Good
	33	4,3,8,11	.50	Good
	40	2,4,5,1,10,0	.75	Fair
	44	3,12,13,5,8	.31	Fair
	50	4,3,0,1,8	.50	Good
	63	8,5,2,11,0,3	.43	Good
	64	4,3,5,2,11,8	.50	Good
	73	3,8,1,3	.50	Excellent
	77	3	.13	Good
	86	10	.13	Good
	89	3,4,0	.33	Good
	91	1,5,13,12,2,3	.75	Good
	101	5,2,1,0,13	.63	Good

TABLE 41 -- Continued

Group	No.	Complaints	Complaint/ Visit Ratio	Self-rating of Health
	114	6,1,10	.33	Excellent
	201	13,0,6,2,3,7	.30	Good
	206	6,8,2,3	.12	Fair
	300	4,2	.22	Excellent
Mean	3	3,8,10	.75	Excellent
<u>Females</u>	8	3,0	.50	Excellent
	11	2,0,5	.75	Excellent
	22	7,11	.50	Excellent
	34	4,5,3	1.00	Excellent
	39	13,3,6	1.00	Good
	41	6,0,2	1.00	Excellent
	42	11	.33	Excellent
	48	1,3	.67	Good
	58	13	.33	Good
	59	3,0	.67	Good
	61	3	.33	Excellent
	69	6,1,5	1.00	Good
	87	1,5	.67	Excellent
	99	2,7,3	1.00	Excellent
	107	3,7	.50	Excellent
	109	3,10	.67	Good
	202	1,5,3	1.00	Fair
	203	2	.33	Fair
	204	0,2,8	1.00	Good
Low	5	-	-	Excellent
<u>Females</u>	7	-	-	Excellent
	9	-	-	Excellent
	15	-	-	Good
	21	-	-	Excellent
	31	1	1.00	Excellent
	45	3	1.00	Good
	54	-	-	Excellent
	66	-	-	Excellent
	76	3	1.00	Excellent
	80	-	-	Excellent
	88	1	1.00	Excellent
	90	-	-	Excellent
	93	-	-	Excellent
	98	-	-	Good

TABLE 41 -- Continued

Group	No.	Complaints	Complaint/ Visit Ratio	Self-rating of Health
	106	-	-	Fair
	111	13	1.00	Good
	112	5	1.00	Excellent
	113	-	-	Good
	205	-	-	Excellent

Note--1 = Accidents and injuries
 2 = Infections
 3 = Upper respiratory infection
 4 = Gastrointestinal symptoms
 5 = Skin rash
 6 = Innoculations
 7 = Excuses and permits
 8 = Tension symptoms
 10 = Obesity and glandular
 11 = Feminine complaints
 12 = Chronic ailments
 13 = Allergy and asthma
 0 = Unclassified

TABLE 42
ACE TOTAL SCORES AND FRESHMAN GRADE POINT AVERAGES

Group	No.	ACE	GPA
<u>High Males</u>	12	110	1.200
	16	141	1.388
	26	120	1.600
	28	143	3.350
	36	119	2.000
	37	111	1.750
	38	129	2.705
	49	142	2.529
	52	126	1.750
	56	112	2.222
	57	133	1.937
	71	138	3.307
	94	153	1.000
	95	122	1.800
	96	115	2.533
	102	121	1.750
	104	117	3.500
	107	99	1.000
	109	97	2.125
	114	132	2.187
<u>Mean Males</u>	1	101	1.578
	14	123	3.470
	18	106	1.647
	23	132	2.684
	29	110	1.894
	30	153	2.937
	32	112	2.066
	51	133	3.470
	60	147	3.350
	62	139	2.529
	65	116	2.352
	67	135	1.125
	68	142	3.157
	74	123	1.750
	79	137	2.764
	82	138	3.000
	84	117	1.529
	97	144	2.250
	110	113	1.777
	113	136	2.800

TABLE 42 -- Continued

Group	No.	ACE	GPA
<u>Low Males</u>	10	108	2.294
	19	108	2.562
	20	117	3.000
	27	120	2.000
	43	143	3.250
	47	122	2.600
	55	141	2.705
	72	100	1.533
	81	99	2.200
	83	128	1.466
	85	124	2.470
	100	108	1.333
	105	103	2.235
	108	149	2.350
	111	120	2.500
	116	134	3.000
	207	124	3.235
	208	129	3.611
	209	120	2.000
	210	122	3.066
<u>High Females</u>	2	127	3.000
	6	146	2.285
	17	142	3.117
	24	94	1.411
	33	114	-
	40	132	2.117
	44	117	2.750
	50	107	2.000
	63	101	1.375
	64	104	-
	73	128	1.352
	77	115	1.647
	86	131	2.058
	89	115	1.928
	91	86	2.071
	101	90	0.785
	114	105	1.647
	201	110	2.142
	206	97	2.200
	300	126	2.466

TABLE 42 -- Continued

Group	No.	AGE	GPA
<u>Mean Females</u>	3	122	2.058
	8	147	2.944
	11	119	1.764
	22	149	3.647
	34	109	1.764
	39	109	1.571
	41	164	3.411
	42	130	1.666
	48	87	1.117
	58	121	2.571
	59	107	1.812
	61	91	2.285
	69	116	3.000
	87	101	3.000
	99	108	3.588
	107	92	1.428
	109	123	2.733
	202	131	2.466
	203	131	4.000
	204	154	2.833
<u>Low Females</u>	5	105	2.500
	7	123	3.764
	9	111	1.500
	15	108	2.357
	21	107	2.733
	31	115	-
	45	102	1.571
	54	144	2.722
	66	87	2.176
	76	109	1.266
	80	104	2.941
	88	128	2.764
	90	103	2.058
	93	117	2.500
	98	108	2.571
	106	111	2.071
	111	129	2.421
	112	150	2.647
	113	125	3.625
	205	119	2.333

TABLE 43

RELIGIOUS PREFERENCE, NAME OR STUDENT NUMBER,
AND SORORITY/FRATERNITY MEMBERSHIP

Group	No.	R.P.	Name or S.N.	Sor./Frat. Member
<u>High Males</u>	12	7	SN	No
	16	1	Name	No
	26	2	SN	No
	28	5	Name	No
	36	5	Name	No
	37	5	Name	No
	38	4	Name	Yes
	49	2	Name	No
	52	2	Name	No
	56	4	SN	No
	57	5	SN	No
	71	1	Name	Yes
	94	1	Name	No
	95	3	SN	Yes
	96	7	Name	Yes
	102	1	Name	Yes
	104	3	Name	No
107	2	SN	No	
109	3	Name	No	
114	6	Name	Yes	
<u>Mean Males</u>	1	1	SN	No
	14	4	Name	Yes
	18	5	Name	No
	23	2	SN	Yes
	29	5	Name	No
	30	1	Name	Yes
	32	3	Name	Yes
	51	2	Name	No
	60	7	Name	Yes
	62	4	SN	No
	65	5	SN	No
	67	5	SN	No
	68	7	Name	Yes
74	6	SN	No	
79	1	Name	No	
82	3	SN	Yes	

TABLE 43 -- Continued

Group	No.	R.P.	Name or S.N.	Sor./Frat. Member
	84	1	SN	Yes
	97	2	SN	No
	110	2	SN	No
	113	3	Name	Yes
<u>Low Males</u>	10	1	Name	Yes
	19	7	Name	No
	20	3	Name	Yes
	27	1	SN	Yes
	43	2	SN	No
	47	3	Name	No
	55	1	Name	Yes
	72	2	Name	No
	81	5	SN	No
	83	5	Name	Yes
	85	5	Name	Yes
	100	3	SN	Yes
	105	4	Name	Yes
	108	6	Name	Yes
	111	7	Name	No
	116	4	SN	No
	207	5	SN	Yes
	208	2	Name	No
	209	1	Name	Yes
	210	2	SN	No
<u>High Females</u>	2	3	Name	Yes
	6	4	SN	Yes
	17	5	Name	No
	24	5	SN	No
	33	1	SN	No
	40	2	Name	Yes
	44	5	Name	No
	50	4	SN	No
	63	1	Name	No
	64	3	SN	No
	73	1	SN	No
	77	2	Name	No
	86	3	Name	No
	89	7	Name	No
	91	4	Name	No

TABLE 43 -- Continued

Group	No.	R.P.	Name or S.N.	Sor./Frat. Member
	101	2	SN	No
	114	5	Name	No
	201	5	SN	Yes
	206	1	SN	No
	300	6	Name	No
<u>Mean Females</u>	3	7	Name	No
	8	5	SN	Yes
	11	4	Name	No
	22	5	SN	No
	34	3	Name	Yes
	39	4	Name	No
	41	4	SN	Yes
	42	2	SN	Yes
	48	5	SN	No
	58	3	SN	No
	59	1	Name	No
	61	5	Name	Yes
	69	1	SN	No
	87	3	SN	No
	99	1	Name	Yes
	107	2	Name	No
	109	2	Name	Yes
	202	6	Name	No
	203	1	SN	Yes
	204	5	SN	No
<u>Low Females</u>	5	4	SN	Yes
	7	5	Name	Yes
	9	5	Name	Yes
	15	2	Name	No
	21	3	Name	No
	31	1	SN	Yes
	45	5	Name	No
	54	6	Name	No
	66	3	SN	Yes
	76	5	Name	No
	80	1	SN	No
	88	7	SN	No
	90	1	SN	Yes

TABLE 43 -- Continued

Group	No.	R.P.	Name or S.N.	Sor./Frat. Member
	93	5	Name	Yes
	98	1	SN	Yes
	106	3	SN	No
	111	2	Name	Yes
	112	2	SN	No
	1133	4	Name	No
	205	4	SN	No

Note--R.P. 1 = Methodist
 R.P. 2 = Baptist
 R.P. 3 = Catholic
 R.P. 4 = Hebrew
 R.P. 5 = Other major Protestant
 R.P. 6 = Other minor Protestant
 R.P. 7 = No preference

TABLE 44

WEEKENDS AT HOME CORRECTED FOR DISTANCE, AND
NUMBER OF EXTRACURRICULAR ACTIVITIES

Group	No.	Weekends at Home	Number of Extra- curricular Activities
<u>High Males</u>	12	6	0
	16	3	2
	26	3	0
	28	6	4
	36	1*	1
	37	5	1
	38	6	0
	49	3	3
	52	3	0
	56	6	0
	57	3	0
	71	2	1
	94	6	1
	95	6	1
	96	9	1
	102	3	1
	104	6	2
	107	18	1
	109	6	1
	114	1*	2
<u>Mean Males</u>	1	4	1
	14	9	0
	18	6	0
	23	12	1
	29	4	0
	30	2	1
	32	6	0
	51	6	1
	60	18	0
	62	6	3
	65	4	2
	67	6	2
	68	6	2
	74	12	0
	79	3	1
	82	6	1
	84	2	0
	97	2	0
	110	4	0
	113	6	0

TABLE 44 -- Continued

Group	No.	Weekends at Home	Number of Extra- curricular Activities
Low Males	10	6	0
	19	6	1
	20	8	0
	27	3	2
	43	10	1
	47	2	0
	55	3	1
	72	4	0
	81	3	2
	83	6	0
	85	4	1
	100	7	1
	105	6	0
	108	18	0
	111	4	0
	116	3	3
	207	9	1
208	3	0	
209	6	1	
210	9	1	
<u>High Females</u>	2	6	4
	6	3	1
	17	6	0
	24	6	3
	33	6	1
	40	6	2
	44	1	0
	50	3	3
	63	3	0
	64	6	0
	73	8	0
	77	6	2
	86	3	0
	89	1*	1
	91	3	1
	101	2	1
	114	15	1
201	3	3	
206	6	2	
300	6	1	

TABLE 44 -- Continued

Group	No.	Weekends at Home	Number of Extra- curricular Activities
<u>Mean Females</u>	3	6	1
	8	8	3
	11	10	1
	22	- *	2
	34	6	4
	39	3	1
	41	6	0
	42	12	2
	48	4	2
	58	4	0
	59	16	3
	61	4	3
	69	4	1
	87	6	3
	99	2	1
	107	4	0
	109	3	0
	202	3	2
	203	3	0
	204	3	1
<u>Low Females</u>	5	6	3
	7	3	3
	9	3	0
	15	6	2
	21	6	0
	31	- *	1
	45	6	1
	54	- *	0
	66	4	0
	76	3	0
	80	- *	1
	88	4	0
	90	4	0
	93	2	1
	98	5	0
	106	4	2
	111	6	2
	112	- *	1
	113	18	0
	205	3	2

*Lives at home

BIOGRAPHICAL SKETCH

Mary Charlotte Wharton was born March 26, 1931, at Youngstown, Ohio. She graduated from Rayen High School in June, 1949. In June, 1953, she received the degree of Bachelor of Arts from Oberlin College. From June, 1953, until December, 1954, she was assistant to the psychologist at the Fox Hollow School near Rhinebeck, New York. In 1955 she enrolled in the Graduate School of the University of Florida and was a graduate fellow from 1956 until 1960. She received the degree of Master of Arts in 1958. From 1959 until 1960 she interned as a clinical psychologist at the University of Florida Teaching Hospital. From 1960 until 1961 she worked as a research assistant in the Mental Health Division of the University of Florida Student Infirmary. From September, 1961, until the present time she has worked as research associate in the Psychiatry Department at the University of Florida College of Medicine.

Mary Charlotte Wharton is married to William H. Wharton. She is a member of Phi Beta Kappa, the Florida Psychological Association, and the American Psychological Association.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for ensuring the integrity and transparency of the financial system. This section also outlines the various methods used to collect and analyze data, highlighting the role of technology in streamlining these processes.

In the second part, we explore the challenges faced by organizations in implementing effective risk management strategies. This includes identifying potential risks, assessing their impact, and developing mitigation plans. The text provides practical examples and case studies to illustrate successful risk management practices across different industries.

The third section focuses on the role of leadership in driving organizational success. It discusses the qualities and skills required for effective leaders, such as communication, decision-making, and the ability to inspire and motivate teams. The text also offers insights into how leaders can foster a culture of innovation and continuous improvement within their organizations.

Finally, the document concludes with a summary of the key findings and recommendations. It reiterates the importance of a holistic approach to organizational management, one that integrates financial, operational, and human resources. The text encourages readers to apply these principles in their own organizations to achieve long-term success and growth.

This dissertation was prepared under the direction of the chairman of the candidate's supervisory committee and has been approved by all members of that committee. It was submitted to the Dean of the College of Arts and Sciences and to the Graduate Council, and was approved as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

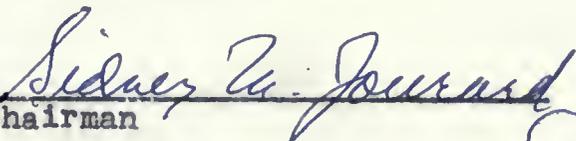
June 11, 1962



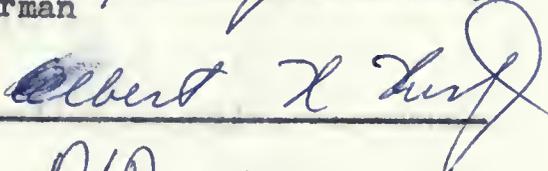
Dean, College of Arts and Sciences

Dean, Graduate School

Supervisory Committee:



Chairman









THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
5780 SOUTH CAMPUS DRIVE
CHICAGO, ILLINOIS 60637
TEL: 773-936-3700
FAX: 773-936-3701
WWW: WWW.CHEM.UCHICAGO.EDU

DATE: 11/11/09

NAME: [Signature]

ADDRESS: [Signature]

APPROVED BY: [Signature]

[Signature]

[Signature]

[Signature]

[Signature]

[Signature]