



**RC455.4**  
**S 42 Ad 9**  
**blthr C.1**  
**G3182:5**



SEX STATUS, COGNITIVE STYLE AND REPORT  
OF PSYCHIATRIC SYMPTOMS

BY

JULIANA GYANWAA ADU-GYAMFI  
(BSc. (Hons.) Legon, Ghana)



A THESIS SUBMITTED IN PART-FULFILMENT FOR THE  
MASTER OF PHILOSOPHY DEGREE IN PSYCHOLOGY,  
UNIVERSITY OF GHANA

JUNE, 1989

---

DEDICATION

This dissertation is dedicated to:

1. My husband, Ernest, and my sons Bernard and Francis for their tolerance, and support even when this work came between us.
2. My Parents, Brothers, and Sisters.



ACKNOWLEDGEMENTS

In a study of this nature and duration, it is obvious that a great many people have contributed to making it what it is. It is not possible to cite all these contributors by name.

First and foremost, I am grateful to my supervisors, Professor C. Fiscian of the Department of Psychology, Legon, who gave me the professional guidance when I most needed it, and to Dr. A. Afrifa, Lecturer, Department of Psychology for his willingness to offer help at all times.

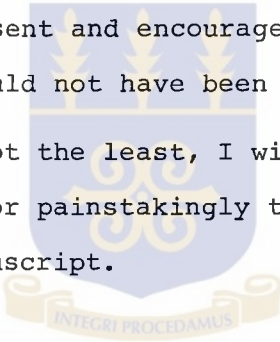
I am also grateful to Professor P. Twumasi, Dean of Social Studies, Legon, who encouraged me and gave me an insight into this work when "returning was not possible and going forward was a great difficulty", and also to Dr. J.Y. Opoku, Head of Psychology Department.

I wish to extend my sincere thanks to all Heads of Schools who openly received me and encouraged their staff to participate in this study and to all those who took time off their busy schedule to answer the questionnaires.

It is a pleasure to record my thanks to Dr. Yaw Osei, Head of Behavioural Sciences Department, U.S.T., Kumasi for his assistance and to all my friends and colleagues who supported me physically and emotionally.

I cannot forget the untiring efforts of Dr. Agnes B. Amoa, Department of Community Health, University of Ghana Medical School, whose help, advice and attention to detail enabled me complete this dissertation, and also to Mr. Ernest Adu-Gyamfi, without whose consent and encouragement, embarking on such a project would not have been possible.

Last but not the least, I wish to thank Miss Grace Nkyi for painstakingly typing the draft and the final manuscript.



Juliana G. Adu-Gyamfi  
Legon, Accra - June 1989

C O N T E N T S

				Page
	TITLE	...	...	...
	APPROVAL SHEET	...	...	...
	DEDICATION	...	...	...
	ACKNOWLEDGEMENTS	...	...	...
	CONTENTS	...	...	...
	LIST OF TABLES	...	...	...
	LIST OF FIGURES	...	...	...
	LIST OF APPENDICES	...	...	...
	ABSTRACT	...	...	...
CHAPTER 1	INTRODUCTION	...	...	...
1.1	AIM AND OBJECTIVES	...	...	...
1.2	STUDY RATIONALE	...	...	...
CHAPTER 2	LITERATURE REVIEW	...	...	...
CHAPTER 3	METHODOLOGY	...	...	...
3.1	FORMULATION HYPOTHESIS	...	...	...
3.2	SUBJECTS	...	...	...
3.3	STUDY DESIGN	...	...	...
3.4	DATA COLLECTION INSTRUMENTS	...	...	...
3.4.1	MENTAL HEALTH INVENTORY (MHI)	...	...	...
3.4.2	INTERNAL-EXTERNAL LOCUS OF CONTROL	...	...	...
3.5	PRETESTING QUESTIONNAIRE	...	...	...
3.6	METHOD OF SCORING	...	...	...
3.6.1	MEASURES OF PSYCHIATRIC SYMPTOM	...	...	...
3.6.2	MEASURES OF LOCUS OF CONTROL	...	...	...
3.7	OPERATIONAL DEFINITION OF STUDY VARIABLES	...	...	...

				Page
CHAPTER 4	RESULTS	...	...	46
4.1	RESPONSE RATE	...	...	46
4.2	DEMOGRAPHIC CHARACTERISTIC OF SAMPLE	...	...	46
4.3	HYPOTHESIS	...	...	47
4.4	FURTHER ANALYSIS	...	...	52
CHAPTER 5	DISCUSSION	...	...	68
CHAPTER 6	SUMMARY AND CONCLUSION	...	...	85
	RECOMMENDATION	...	...	89
	GLOSSARY	...	...	91
	REFERENCES	...	...	92
	APPENDICES	...	...	105

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
1	Demographic Characteristic of Sample	47
2	Table of Frequencies Relating Sex to Psychiatric Symptoms	48
3	Percentage of Respondents Scoring High on Each of the Five Symptom Indices -	49
4	Table of Frequencies Relating Psychiatric Symptoms to Types of Locus of Control	50
5	Percentage of Respondents Scoring High on Each of the 5 Symptom Indices - By Locus of Control	50
6	Table of Frequencies Relating Sex to Locus of Control	53
7	The Relationship Between Sex, Locus of Control and Psychiatric Symptoms	54
8	Summary Table of the Two-Way Analysis of Variance	55
9	Table of Means	57
10	Comparison of Sample Mean Differences	57
11	Relationship Between Marital Status, Sex and Report of Psychiatric Symptoms	58
12	Relationship Between Age, Sex and Report of Psychiatric Symptoms	59
13	Relationship Between Education, Sex, and Report of Psychiatric Symptoms	61

<u>Table</u>	<u>Title</u>	<u>Page</u>
14	Relationship Between Marital Status, Sex and Locus of Control	... 62
15	Relationship Between Education, Sex, and Locus of Control	... 63
16	Relationship Between Age, Sex and Locus of Control	... 65

LIST OF FIGURES

<u>Figure</u>	<u>Title</u>	<u>Page</u>
1	Graph Showing Percentage of Respondents Scoring High on Each of the Five Symptom Indices - By Locus of Control	... 52
2	Mean Symptom Scores of Males and Females as a function of Locus of Control	... 56

LIST OF APPENDICES

<u>Appendix</u>	<u>Title</u>		<u>Page</u>
I	Mental Health Inventory	...	105
II	Internal-External Locus of Control Scale	...	107
III	Raw Score Data	...	110
IV	Formulae for Statistical Analysis	...	120
V	Table Showing Z Values for the Differences Between the Types of Locus of Control	...	123
VI	(a) Demographic Variables in Relation to Psychiatric Symptoms	...	124
	(b) Demographic Variables in Relation to Locus of Control	...	124

A B S T R A C T

The aim of this study was three-fold to study

- (a) sex differences in the report of psychiatric symptoms.
- (b) sex differences in locus of control and
- (c) the relationship between locus of control and report of psychiatric symptoms.

The study also looked at the relationship that exists between Marital Status, Age and Education and locus of control and the report of psychiatric symptoms. Two self-administered questionnaire were given to 320 Ghanaian working Adults aged between 21-56 years.

Results indicated that generally females report more psychiatric symptoms than males, especially single women. A significant interaction was found between sex and locus of control on the report of psychiatric symptoms. It was also found that females tended to be more internally oriented than males. A significant relationship was found between marital status and report of psychiatric symptoms and also between Education and locus of control.

On the whole findings suggest that single females are apt to express specifically psychological difficulties than any other group and that changing cultural factors have made females more internally oriented.

**CHAPTER ONE**

**INTRODUCTION**

## INTRODUCTION

Psychopathology - which deals with the causes and nature of mental disease among human beings has been studied by various workers. Many researchers have previously studied the relationship between gender and the essential nature of mental disease, placing greater emphasis on major psychiatric illnesses like schizophrenia and other types of psychoses (Ziggler & Phillips, 1960; Chesler, 1972). The outcomes of some of these studies confirm the postulate that males and females differ in the type of pathology exhibited, and in the rate at which they fall sick.

It has been suggested that if males and females differ in the rate of falling sick, then probably they also differ in expression of symptomatology. Females have been found to fall sick more often than males and are greater consumers of medical services and prescriptions (Verbrugge, 1976). To a large extent, the underlying explanations have been given by various theories, more especially, the theory of sex roles and sex stereotypes.

The theories which have tried to explain the existing sex differences in psychiatric morbidity have been broadly categorized into three by Jenkins (1985).

The first theory explains these sex differences in psychiatric morbidity as due to women having a greater constitutional vulnerability probably at the chromosomal, hormonal or neuronal level. The second theory tries to explain this excess morbidity in women by the fact that women have a greater environmental vulnerability derived from their experiences of life events, chronic social stress and social support. The third is the theory of sex roles and sex stereotypes, which may interact with constitutional and environmental factors and may affect the recognition, reporting and diagnosis of symptoms. Whatever explanations are given, a critical look at these theories show that the theories are not mutually exclusive.

Of fundamental importance to the present investigation is the explanation based on sex roles and sex stereotypes. Sex roles and sex stereotypes with all their implications are products of most cultures, of which Ghana is no exception. Right from childhood, certain behaviours are looked upon as appropriate for men but not for women. A girl who is interested in tree climbing is soon reminded of the fact that tree climbing is for boys, (and not for girls) and a girl who persists in such activities is nicknamed "Tom boy" - a rough and boisterous young girl.

Similarly a boy who likes the company of girls is also reminded of his masculinity and is admonished not to behave as a girl.

Masculinity in Ghanaian society is a virtue which is greatly prized. Males are taught very early in life to bear pain and not to entertain sickness. More often than not, a male who complains of body weakness too often is looked down upon by other males, and the remarks often made by parents and relatives include "stop behaving like a woman and be the man that you are!" Even as early as the time for circumcision (8 days old) a male child who refrains from crying is said to be a "man", because he can bear the pain of circumcision. The assumption being that if he can bear the first pain of life then he would be better able to face the cares, worries and disappointments later in life, without being emotional.

Perhaps the existing sex differences in morbidity is due to the fact that males are generally not expressive of their feelings since "among men, sickness is to be shunned (Phillips and Segal, 1969).

Furthermore the applications of the theory of sex roles and sex stereotypes have been extended to other areas of human lives, more especially in education and choice of occupation (Hurlock, 1985).

In some communities women have been brought up with a feeling of inadequacy and strong dependence on men all the time, and a deviation from this norm, as stated earlier on, is met with strong opposition from home and the society at large. Although gradually, old cultural values have given way to new ones, there is still some limitation as to what a woman is expected to do at home, school or work. These limitations place the woman in more stressful situations, as she strives for self-expression and fulfilment in life.

On the other hand, present day emancipation of women has placed women in a position such that they have come face to face with chronic social stress and problems of social support, and those who cannot cope have become vulnerable to sickness. Thus sex roles and sex stereotypes may interact with both constitutional and environmental factors which in turn affect the recognition and expression of symptoms.

Related to the recognition and expression of these symptoms is the area of information processing. If males and females differ in the way they express themselves, even in sickness, then could this difference be attributed to sex differences in information processing? Or taking the community as a whole, are there individual differences in the way stimuli from the environment are received and processed?

Since the cultural norms for males and females are different, the way they react to certain environmental stimuli may also be different. It is often believed that females are quick and emotional in their reactions whereas males are normally slow to act and idealistic. If this is in fact true, is it because males and females exhibit a characteristic way of receiving and processing information? Or put differently, do males and females exhibit different types of cognitive styles?

Cognitive style fundamentally refers to the stable and consistent individual variation in reasoning or in receiving and processing information. It has been extensively investigated and described in varied situations:-

- (1) Perceptual, (Witkin et al 1965)
- (2) Cognitive, (Getzel and Jackson, 1962  
Kagan, 1965) and
- (3) Personality (Maslow, 1956, Rotter, 1966)

In perception, Witkin et al (1962) used the terms Field Dependent and Field Independent (FD-FI) to differentiate between two types of cognitive styles. This differentiation resulted from an experiment in which Witkin used the Rod and Frame Test (RFT), and the subjects were asked to place the rod vertically irrespective of the position of the frame.

Witkin et al discovered that certain individuals were strongly influenced by the position of the frame, in their attempt to place the rod vertically. In this experiment, if subjects were to place the rod vertically, they had to disregard the tilt of the field (frame) and use cues from their body position.

Witkin et al found that people who characteristically performed poorly on this task also had other consistent cognitive and personality traits and therefore concluded that this "field dependent" behaviour was part of an entire pattern and style of life.

Witkin further devised two more tests, the Tilting Room, Tilting Chair (TRTC) and the Embedded Figure Test (EFT). The TRTC Test requires a subject to bring a tilted chair to an upright position in a tilted room, and the EFT is a paper and pencil test that requires the subjects to find a simple figure or shape within a larger complex figure. The subjects were found to be consistent in their perception across the three tests i.e. RFT, TRTC and EFT, and this led to an extension of the original construct of FI-FD to global and analytical cognitive types.

If an individual found it hard to place the rod vertical or made large deviations from the vertical position, he also found it difficult to figure out the simple figure within the complex figure. Thus a field dependent person tends to view things more globally. This led Witkin to conclude that individual differences exist in perception.

Further research began to focus on the experimental study of personality through perception. If a personality trait exists in the field of perception, it should become evident in terms of consistency over situations in relation to other aspects of personality functioning. When subjects were tested on personality characteristics (Pervin, 1971) from performance on the Rorschach test, a figure drawing test, a miniature toy play situation, it was found that generally field dependent and field independent persons differed strikingly in their way of relating to their environment and to themselves. Field dependent or global type individuals are characterised by a passive acceptance of the environment whereas the field independent or analytical type expressed an active coping in dealing with the environment. Globals are dependent on the external environment for self differentiation and for attitudes and feelings than analytical individuals.

They are less able to make independent judgement or to hold judgements in the face of contradicting expressions from others (Pervin, 1971). This distinction is clear and extends to several other situations.

Cognitive style has also been assessed using yet another instrument, the Matching Familiar Figure Test (MFFT) in the area of cognitive development. The MFFT is a test in which the child is asked to match a standard figure, say a picture of a doll sitting on a chair with identical stimulus by array of pictures, dolls on chairs which may only differ in tiny detail from the standard. The test taps two individual different components, anxiety over errors and tempo of information processing.

On a variety of cognitive tasks, Kagan (1965) found that there are relatively stable differences in the degree to which the child will wait and evaluate his responses before answering. When children are asked to respond in situations where there is response uncertainty, for example, in the Matching Familiar Figure Test, some children respond slowly but with accuracy and others respond rapidly and with many errors. The former Kagan calls reflective children and the latter he calls impulsive.

Although all children become more reflective with increasing age, others remain more impulsive relative to other children in their age group.

Differences in social behaviour and personality are also found between reflectives and impulsives. Impulsive children run around a room picking up toys, playing with them for only a few minutes and then darting off to the next play-thing. Hetherington and Park (1979) further report that in their play, impulsives are curious, explanatory and distractible. However in social relations, they are more socially responsive than reflectives. In contrast, reflectives decide on what toy they would prefer to play with and stick to them for a long time and are less dependent on the teacher.

Similar to Witkin's field independent - field dependent pattern of life is a third type of cognitive style, Internal and External locus of control. It is similar because both involve perception, but differs on what is perceived. Field independence looks more at experimental characteristics but locus of control applies to people's perception of how real life events are controlled.

Internal-External locus of control theory was formulated by Rotter (1972) out of his Social Learning Theory (SLT). Rotter's theory places heavy emphasis upon the empirical law of effect that

"any stimulus complex has reinforcing properties to the extent that it influences movements toward or away from a goal" (Rotter et al 1972, p.9).

The theory also entertains four basic assumptions about the nature of personality. First, personality is learned on the basis of the individual interactions with his meaningful environment. The second assumption stresses that a person's experiences influence each other that "new experiences are a partial function of acquired meanings and old acquired meanings or learnings are changed by new experience". Implicit in this assumption is the fact that personality stabilizes with age, since the experiences which a person encounters become increasingly dictated by the ever-growing fund of previous experiences. The third assumption about the nature of personality is that behaviour is goal directed. The final assumption of SLT, according to Rotter is that

"the occurrence of a behaviour of a person is determined not only by the nature of importance of goals or reinforcement but also by the person's anticipation or expectancy that these goals will occur.....In short, one needs a concept other than simple value of reinforcement to account for human behaviour" (1972 p. 11).

Rotter places a strong emphasis on the importance of expectancies in the development, maintenance and alteration of behaviour. He defines Expectancy as "the probability held by the individual that a particular reinforcement will occur as a function of a specific behaviour on his part in a specific situation or situations." (p. 107).

Based on these assumptions, Rotter developed Internal-External locus of control scale (also known as I-E scale or loc scale). In simplest terms, it measures the degree to which individuals generally expect things that happen to them to be determined by their own efforts (Internal Control) or by factors beyond their control (External Control).

The first attempt to assess the I-E control dimension as a personality variable was by Phares (1955). It has since been found to correlate with other personality scales like James-Phares-Likert type and incomplete sentence, blank personal adjustment score (James 1957), and the California F scale (Simmons, 1979). This reflects the successful measurement of these scales of the degree to which individuals see the world as containing powerful forces they cannot influence.

Internal and External controlled individuals have been found to show characteristic behaviour that generalize across many situations.

Just as sex differences have been studied in relation to psychopathology, there are studies that relate cognitive styles to pathology. Kagan and Kagan (1970) reported that children who show over inhibited internalised symptoms such as feelings of guilt and self criticism, fears and phobias tend to score more reflective on the MFFT. Impulsive boys on the contrary tend to be hyperactive, learning disabled or epileptic (Campbell, 1974).

Furthermore, Global and Analytical individuals differ in their modes of dealing with impulses and anxiety and in the symptoms they develop in psychopathology. Global individuals tend to develop identity problems and to develop symptoms associated with dependency problems (alcoholism, obesity, ulcers and asthma) whereas analytical individuals tend to become overly controlled, over ideational and overly isolated (obsessive compulsive symptoms). Although globals and analyticals become psychotic, psychotics who are global in cognitive style develop hallucinations, and those who are analytical develop delusions (Taylor, 1956). In addition, Cromwell et al (1961) found locus of control in Schizophrenics to be significantly high in externality than normals.

Taken together, these studies suggest a possible relationship among the three variables, namely sex, cognitive style and psychopathology. However, previous studies as stated above in these areas of enquiry have been concerned mainly with bivariate relationships among the variables such as sex versus cognitive style, sex versus psychopathology or cognitive style versus psychopathology. There is therefore the need to examine how the three variables interact.

## STUDY AIM AND OBJECTIVES

1.1 The aim and objectives of the study were as follows:-

### 1.1.1 Aim

The study aimed at testing the theory of sex roles and stereotypes in the recognition and expression of psychiatric symptoms.

### 1.1.2 Objectives

1. To determine the factors responsible for expression of psychiatric symptoms in employed male and female adults in Accra.
2. To examine the simultaneous relationships among sex and cognitive style in the recognition and expression of psychiatric symptoms.
3. To discover new culturally determined behaviour patterns.

## 1.2 Study Rationale

The three major reasons for conducting this study were as follows:-

- First and foremost nearly all the extensive data supporting the existing sex differences in psychopathology and cognitive style have mainly come from Western countries; with very few studies conducted in developing African countries.

- Secondly reported sex differences have been found in relation to psychiatric morbidity with very few studies conducted on expression of minor psychiatric symptoms.
- Finally it was important to test the universality of the locus of control scale as stated by Mischel and Mischel (1977) that it distinguishes between the two types of cognitive style across all cultures.

The primary focus of the study was on sex differences in relation to cognitive styles and expression of psychiatric symptoms. Relevant demographic variables including age, education and marital status have been analytically studied.

With the knowledge that the Primary Health Care Programme in Ghana depends to a large extent on the individual's perception of health as incumbent on his own efforts, an expected spin-off from the study was to offer suggestions or recommendations based on empirical evidence to medical practitioners and counsellors involved in health care delivery.

CHAPTER TWO  
LITERATURE REVIEW

## 2. LITERATURE REVIEW

Research work relating cognitive styles to other aspects of human behaviour have been broad and varied, covering areas like achievement motivation, social behaviour, personality, pathology and psychopathology.

The relationship between Cognitive Style and Achievement Motivation and its variables viz, academic performance, academic interests and learning skill have been extensively investigated. For instance Weitheim and Mednick (1958) reported that a relationship exists between field independence and achievement motivation. Field-independent children are more achievement oriented and independent in the classroom than field dependent children. The mothers of field-independent children also encourage them to be independent and to strive for achievement than do those of field-dependent children. Siegelman and Nelson (1969) studying - Reflectivity-Impulsivity - in relation to academic performance, also found that reflectives not only spend more time evaluating their hypotheses but also gather more information upon which to base their decisions and this they do systematically. Similarly Internal-External Control has been related to learning skills and achievement, since the control dimension is usually measured by scales stressing academic interests.

Crandall, Katkovsky and Crandall (1965) found girls to be prone to assignment responsibility to themselves for results eventuating from intellectual achievement efforts. Responsibility attribution was significant for most males than females. This observation has been further supported by Butterfield (1964).

Cognitive style as a personality variable has been confirmed by several workers including Phares (1955), Baron et al (1974) and Simons (1979). It has also been observed that differences in cognitive style is consistent across situations. For example Witkin (1965) found globals less able to make independent judgements or hold judgements in the face of contradicting expressions from others. They also change their views more often on social issues in the direction of attitudes of authority than analyticals. Odell (1959) using the locus of control scale, found that subjects high in externality show greater tendencies to conform. These studies therefore show that a relationship exists between cognitive style and conformity.

But conformity in adulthood springs from childhood experiences, and the types of cognitive style exhibited has been found to be greatly affected by the child's social milieu.

Witkin's theory of cognitive style proposes that a stimulating environment - secure affection rationalized by moderate punishment and self reliance - is likely to produce children who are field independent. A child who is taught early to dress himself, play without parental supervision, undertake assignments will definitely grow to be responsible and independent and therefore will not conform unnecessarily in adulthood.

The effect of such parent-child interaction and supervision which is a reflection of culture was assessed by Dawson (1967) with Koh's test of copying geometric designs using patterned coloured blocks. Mothers who were said to have been very strict were found to have sons who scored lower on Koh's blocks in adulthood. With other test of three dimensional picture perception and of finding embedded figures, however, there was no such direct relationship. These best scores occurred among those who said their mothers had been fairly strict. Dawson's work is very significant in the area of child development. An over-inhibited child often grows up, never sure of himself and always afraid to take chances. This view is further supported by Berry (1967) who also related field independence not only to child-raising styles but to forms of economy (e.g. hunting and farming) and even to forms of landscape.

Berry studied conformity among the Temnes and Mendes by using a set of lines, each of slightly different length and a comparison line equal in length to one of the other. Temnes tended to choose what others had chosen. Berry's conclusion was that perceptual field independence and social independence were relatively weak among Temne; and correlations among ethnic groups were insignificant. Although this work does not support Witkin's argument that independence spans perceptual and psycho-social activities, it cannot be fully accepted as the final thing, since it is just but one research. There is therefore the need for further investigation into the parallels between Witkins's concept of dependence and psycho-analytic concepts of dependence.

Okonji (1969) compared rural and urban subjects in the methods of bringing up children. However, Okonji's work does not pinpoint exactly which aspects of parental practice affect cognitive development. Munroe & Munroe (1975) tried to study mothering effects on cognitive development. The Munroes focussed on only a few measures of mothering behaviour and dealt with three ability tests. Within the small scope, they found that there were lower scores on a learning test; and where mothers had seemed to be the cause of infant crying, there were poorer scores on both learning and the EFT.

On the whole it was found that maternal behaviour does affect cognitive development. Perhaps a larger number of tests would add to the generalizability of this concept.

Not only is cognitive style affected by child-rearing practices or maternal behaviour but by socio-economic background as well. The effect of socio-economic background on the second types of cognitive style, reflectivity - impulsivity has been studied by Schwebel (1966). Schwebel tested one feature of the view that lower class children are hampered by current measurement technique. His procedure was such that both middle and lower class subjects were to respond to various tasks, sometimes spontaneously and sometimes with the instruction, "stop and think" to counteract the hypothesised "impulsivity" of lower class children. Middle class children showed little difference in performance between the two conditions. Lower class subjects did better under the forced "stop and think" than under the free latency condition, but on the whole they responded faster under the spontaneous conditions than those of the middle class.

Since the effects of child-rearing practices on the development of cognitive style is very crucial, the third type of cognitive style, Internal-External locus of control has also been studied in relation to it.

Norwicki and Segal (1974) studied a group of high school seniors and found that cross-sex nurturance as perceived by the subjects was associated with internality, and that parents are perceived as being similar to the subjects in locus of control.

Most of these studies cited have been carried within Euro-American cultures, but the question of interest here is, will the situation be different across cultures? Cross-cultural studies on the concept of field-independence - field dependence have been undertaken, with child-rearing determinants as its basis (Berry, 1967). The work of Minturn and Lambet (1961) suggests that variation in cognitive style lie as much within cultures as across cultures.

The interest in the construct Internal-External locus of control has led to cross-cultural replications. One such finding involves the prediction of externality in known ethnic groups. With the assumption that Negroes in the United States can easily perceive impediments in the way of goal striving, several studies have successfully predicted greater externality among Negroes than among whites. Battle and Rotter (1963) found an interaction between race and social class on the control variable as measured by a projective device called the children's picture test of I-E control.

Lower class negroes were significantly more External than lower-class white or middle class Negroes and whites. For comparative purposes, Bialer locus of control scale was compared with the Picture test for 40 subjects and the correlation was significant ( $r = 0.42, p < 0.01$ ).

Similar studies were done by Lefcourt and Ladwig (1966) where they studied ethnic differences in an isolated tri-ethnic community. Whites were found to be least external followed by Spanish Americans. Indians were the most external in attitude. Parson and Schneider (1974) found students in United States to be more external than those of other countries with females showing the greater externality.

Careful observation of these cross-cultural researches show some inconsistencies in the data. Lefcourt and Ladwig found whites to be more at the internal pole of the continuum, whilst Parson and Schneider found them at the opposite pole. These differences could be due to the type of white sample used in the studies. There is therefore the need to embark on more such studies and if possible to replicate them.

Witkin (1962) also studied age trends in cognitive style and showed that age curves do exist in perceptual style. He indicated that children tend to be Field-dependent early in their perceptual development and become more Field Independent as they grow older, with a slight reversal in the late teens.

Cross sectional as well as longitudinal studies on reflection - impulsivity have confirmed that children typically become more reflective with age. They increase response time and decrease errors on the MFFT (Ault, 1976; Campbell and Douglas, 1972). In one such study, a negative correlation between response time and errors was absent at four years three months but present at five years, eleven months in boys. Nevertheless it appeared earlier in girls (4 years 11 months) and in children from a higher socio-economic status background. Work done on age, as it relates to cognitive style is not adequate and as such the present study seeks to research further into it.

Apart from the developmental trend observed for cognitive styles, significant sex differences have also been reported (Berry, 1966) but data have remained inconsistent. Witkin (1962) found significant sex difference in perceptual orientation which suggests a process basic to the psychological organization of the person.

At older ages, women were found to be more field dependent than men, to show more passive acceptance of the field than men and to show less passive acceptance to bodily experiences. Baran (1971) studied rural people and school teachers from a village of Mtunzini in Zululand and Soweto (South Western Township of Johannesburg respectively). She explored two theoretical perspectives; Witkin's concept of field dependence and the ideas of Erikson on autonomy and independent self. He used Grant's measure of acculturation, a questionnaire with emphasis on independence in child-rearing practices and measures on Achievement Motivation (Ach) and "orientation to work." Some of the results were as expected. Baran found that same-sex groups yield more similar pattern of factors, than two urban or two rural groups of each sex. This suggests that basic personality structure differ between men and women more than between urban and rural groups. On the contrary McArthur (1971) found few significant sex differences on the same tests among samples of Canadian and Greenland Eskimo children and school going adolescents.

Since sex status is an important factor, other researchers have studied it in relation to reflectivity-impulsivity. Ward (1968) found no consistent sex difference in MFFT response time for children tested at four, five and six years of age, though girls displayed fewer errors at all the ages.

Consequently Harrison and Nadelman (1972) found four and half year old girls to be more reflective than boys, although no such difference was found by Lewis et al (1968) among 13 $\frac{1}{2}$  year old middle class whites and Zucker and Stricker (1968) among 5 year old lower class blacks and middle class whites.

However, small but consistent sex difference was reported by Kagan (1965) in the direction of fewer errors in samples of 6-, 7-, and 8 year olds. On Locus of control, Parson and Schneider (1974) found females to be more external than men. On the whole, the conclusion drawn is that, there is lack of consistency in the data at hand as far as sex differences are concerned, but the general trend has been that girls are more reflective than boys. Since the studies on sex difference are not convincing enough the present study seeks to investigate this further, using the locus of control scale.

Another area that has been extensively investigated is pathology. Since cognitive styles have been found to have personality characteristics, one wonders if people with different cognitive styles have different reaction patterns towards psychiatric morbidity. Witkin (1966) showed that field independent people have different patterns in which they fall prey to mental illness, under stress than field dependent people have.

In 1965, Witkin found that globals and analytical individuals differ in their modes of dealing with impulses and anxiety and in the symptoms they develop in psychopathology. Whereas analytical subjects may "split off" thought and perception from feeling, global subjects fuse these areas with one another and thought and feeling are either expressed together overtly or they are totally submerged into the unconscious. Globals tend to develop identity problems and symptoms associated with dependency problems (e.g. alcoholism, obesity, ulcers and asthma) whereas analytical individuals tend to become overtly controlled, over ideational and overtly isolated (obsessive compulsive symptoms). Both globals and analytical subjects have been found to become psychotic, but globals develop hallucination whilst analyticals develop delusion (attempt to aggrandize the self and maintain a separate identity (Taylor 1956).

Similarly, reflectivity-impulsivity has also been related to types of pathology. A group of 8-14 year old boys with severe clinical problems diagnosed as hyperactive in a out-patient psychiatric clinic were found to be more impulsive than normals, but their impulsivity decreased after the administration of the drug methyl-phenidate (Campbell, Douglas and Morgenstern, 1971).

Consequently Campbell (1973) and Juliano (1974) found hyperactive children to be more impulsive as compared to normal children, as well as Brain damaged children, epileptic and mentally retarded children (Ollendrick and Finch, 1973).

Kenny (1967) found reflectives to be diagnosed more as schizophrenics with paranoid features, and impulsives to be diagnosed more as hysterics. Employing a symptom checklist, subsamples of 11-13 year old male clinical cases were classified either as externalizers, whose symptoms were action oriented (e.g. fire setting), or as internalizers, whose symptoms were thought or somatically oriented (e.g. worrying apathy). Weintraub (1973) found externalizers to have shorter MFFT latencies and may more errors than did internalizers or normal control. Montgomery and Finch (1975) reported that among emotionally disturbed children impulsives were typically rated by their teachers as externalizers and reflectives as internalizers, according to criteria comparable to those employed by Weintraub. These studies obviously suggest a link between psychopathology and conceptual tempo.

Two other studies have concerned group difference in perceived control with reference to pathological populations. Bialer (1961) administered Loc scale orally to retarded and normal children.

Instead of comparing them, Bialer combined them into one large sample and sought inter-correlations among mental age using the Peabody Picture vocabulary test, locus of control preference for return to completed versus interrupted tasks and gratification patterns. Bialer predicted that all of these variables would be inter-related reflecting "conceptual maturity." Mental age was found to account for most of the variables. Mental age and locus of control were found to be related ( $r = 0.47$ ). Cromwell, Rosenthal, Shakow and Kohn (1961) studied schizophrenics and normals, using the James-Phares scale, the Bialer-Cromwell locus of control scale, and an early form of the I-E control scale. On all three measures, they found schizophrenics to be significantly higher in externality than normals.

In another study, Seaman and Evans (1962) matched groups on socio-economic and hospital experience variables, and found that hospitalized tuberculosis patients characterized as external controls had less objective knowledge about their own conditions.

Previous studies in pathology have dealt mainly with major psychiatric morbidity, using subjects already diagnosed as schizophrenics, emotionally and mentally retarded children, and even hospitalized patients.

However very few studies have been done on minor psychiatric morbidity, and one area that has drawn so much attention and still remains an arena for further scientific enquiry is that of sex difference. Between 1965 and 1966 a survey on sex status and psychiatric symptoms was carried out by Phillips and Segal (1969). The survey was concerned with the hypothesis that women will report more psychiatric symptoms than men with an equal number of illness. The study was carried out in New Hampshire, a small new England Town. Respondents were randomly selected from City Directory, which included only married people between the ages of 21 and 50 years. The sample of 278 (141 women and 137 men) was given the Langner's Mental Health Inventory for the first time in 1965 and again in 1966. It was found that women reported more symptoms on the over all Mental Health Inventory (4 or more symptoms). It was also found that women scored higher on psychological and psychophysiological indices, whilst men scored higher on physiological and ambiguous indices. Phillips and Segal found that among both men and women, and for each of the four indices of the MHI, there is a consistent relationship between illness and index scores. The greater the number of illness, the greater the percentage with high scores on each index.

Lloyd and Gartrell (1981) further studied 148 first year medical students to assess sex differences in psychological functioning.

No vital sex differences in adjustment were found but by mid-year, women students had developed more psychiatric symptoms than men. Aneshensel et al (1981) reported that researches on clinical depression and on symptoms depression in the general population, consistently found married women to have high levels of depression than unmarried men.

Marital status is differentially linked with illness among men and women, and studies in most western countries have reported better health among married men, with most psychiatric problems being found among married women (Briscoe, 1982). Ross and Mirowsky (1983) interviewed 680 wives and husbands using the Depression Scale (CES-D) to measure symptoms of depression in community populations. The average age of the men was 40.4 years and 37.5 for the women. On the average, women had more symptoms of depressed affect, enervation and lack of positive affect than men. However women scored lower than men on the interpersonal subscale, indicating that women had fewer symptoms of interpersonal problems.

In addition, Jenkins (1985) used epidemiological methods of psychiatric assessment to examine whether there is a sex difference in the constitutional vulnerability of the male and female phenotype to minor psychiatric morbidity. In order to minimize the effect of environment and of sex roles and stereotypes, a sample of relatively homogenous employed men and women were studied.

No sex difference in prevalence of minor psychiatric morbidity or its outcome was found in this population of men and women of similar age, education, occupation and social environment. However, women did report significantly more somatic symptoms of psychogenic origin. Using data from Scandinavian survey to study inequalities in health between men and women, Haavio-Mannila (1986) reports that women in Denmark, Sweden and Norway are more chronically ill than men, and the women have more symptoms of anxiety than men except in Finland. That married women suffer more from depression than men have been further supported by Meddin (1986), Rosenfield (1980) and Vegas (1986) and Anson (1988).

Similar studies which have controlled for the effects of certain socio-demographic variables on health confirm that the existing sex difference in health is real. Neale et al (1986) studied 910 married and 351 widowed women who were treated at M.D. Anderson Hospital to determine if there were differences in the survival from breast cancer between married and widowed women. Results showed that married women lived longer than widowed women after controlling for the effects of age, socio-economic status stage of disease and length of delay in seeking treatment for symptoms. Hourani et al (1966) further found that type of symptoms reported varied somewhat with age, sex and socio-economic status.

The highest numbers of symptoms was reported by adults aged 34 years. However, studies on sex differences and age open avenues for further research. This is because other studies have not supported previous findings. For example, Vegas (1986) found no relationship between age and depressive symptoms although a subtle trend does exist.

Parker (1979) reported a study of 242 students undertaking one year postgraduate Diploma of Education at Sydney Teacher's College. The sexes were equally represented and the response rate was high. No sex difference was found on the measures of trait depression, self-esteem, duration of episodes, and frequency of depressive episodes. This study is supported by the findings of two other comparable groups. Golin and Hartz (1985) gave the Beck Depression Inventory to 446 college students, found 25% of the female and 25% of the males scored as depressed. Hammen and Padesky (1977) also gave the Beck Depression Inventory to 2272 male and female college students enrolled at introductory psychology courses. No sex differences were found in the degree of depression experienced by students.

Education have been found to correlate negatively with depression scores. Vegas et al (1986) conducted a survey among Mexican women in San diego County using Depression Check list (CES-D).

A statistically significant negative linear association was found. Similar findings have been reported by other researchers like Craig (1979) and Schwab et al (1979).

In the light of these interesting but inconsistent observations, the present study sought to further examine the relationships between and the interaction among some of the important variables reviewed in the literature, viz: sex, locus of control, marital status, age and education.

**CHAPTER THREE**

**METHODOLOGY**

## 1. METHODOLOGY

### 3.1 Formulation of Hypothesis

Based on the aims and objectives of study the following hypotheses were formulated and tested.

1. If illness is a culturally acceptable form of expression for women, then women for whom it is more acceptable should report more psychiatric symptoms than males.
2. Externals will report more psychiatric symptoms than internals.
3. A significant sex difference in locus of control exists; females being more external than males.

#### 3.1.1 Literature Support for Hypotheses

Hypothesis I : Women report more symptoms than men.

Among the numerous theories that have tried to explain sex differences in psychiatric morbidity is the theory of sex roles and sex stereotypes. The theory assesses that sex provides a culturally defined behaviour that must be learned by every member of the society.

Phillips and Segal (1969) commenting on this state :

"Sex typing of behaviour and privilege is seen more rigid and lasting in our society than is age-typing. Indeed sex and colour-caste status are the only life-long forms of rank. In our society one can escape from them in approved fashion only by death."

Furthermore, the same norms do not apply with equality to these groups in any society (Bierstedt, 1963). An example is that, it is considered inappropriate for men to exhibit behaviour of warm emotionality; likewise aggressive and open exploitative sexual behaviour is inappropriate for women.

The conventionally accepted notion is that women are more frequently disturbed than men (Verbrugge, 1976; Rosenthal 1980; Jenkins 1985) and are more likely to report acts, behaviour and feeling that lead to being categorised as mentally ill (Phillips and Segal, 1966). This is because it is more acceptable for women to be more expressive about their difficulties and "among men illness is looked upon as a feminine characteristic to be shunned." (p. 59).

Hypothesis 2 : Externals will report more symptoms than Internals.

Cognitive styles have been related to pathology, and Witkin (1965) found pathology to occur in both analyticals and globals. However the kind of problems and symptoms found in those who tend toward different cognitive styles are different. Global individuals tend to develop identity problems and symptoms associated with dependency problems (e.g. alcoholism, obesity, ulcers and asthma) whereas analytical individuals tend to become overly controlled, over ideational and overly isolated. Reflectives were diagnosed as schizoids and impulsives as hysterics or with character disorder (Kenny, 1967).

Similarly, Weintraub (1976) and Campbell (1974) also found that reflectives exhibited different types of pathology from impulsives e.g. impulsives boys were found to be hyper-active, learning disabled or epileptic. Since internals believe in one's own dominance on situational factors, they might not express their feelings for help more as the externals.

Hypothesis 3 : A significant sex difference exists in locus of control.

Sex differences in cognitive style has also been extensively investigated. Kagan (1965) reported small but consistent sex differences in the direction of fewer errors in samples of 6-, 7-, and 8 year olds.

Mechenbaum and Goodman (1969) also found girls to have faster response time (impulsive). However Harrison and Nadelman (1970) found 4<sup>1</sup>/<sub>2</sub> year old girls to be more reflective than boys on both response time and errors. On the contrary Boateng (1987) and Oddoye (1987) using Ghanaian children found no sex differences in cognitive style.

On locus of control scale, Parson and Schneider (1974) found females to be generally more external than males.

It is due to these inconsistencies that the present study was undertaken.

### 3.2 Study Population/Subjects

Subjects were mainly taken from Accra and its suburbs, due to financial and logistical constraints. Accra is a very heterogeneous town due to the rural-urban migration that occurs. Being the capital, it is representative of a large number of ethnic groups and tribes in addition to the indigenous Ga-Adangbe people. The inhabitants are therefore to a large extent, strangers to each other (Little, 1973). A large proportion of its inhabitants are dependent upon sale of goods, services and labour for livelihood. Most heads of families have wage incomes and therefore housing, food and clothing are paid for.

Changes occur very fast in Accra and economic and class considerations normally supersede those of tribal origin. Because of this ethnicity was not controlled for in the study.

Various studies have used psychiatric patients or institutionalised people in their efforts to study sex differences in psychiatric morbidity. Others have used 'normal' or non-psychiatric patients, including students (Lloyd and Gartrell, 1981) working adults (Jenkins, 1985; Neale et al 1986) and married people (Gove, 1979; Vegas, 1984; Meddin 1986). Since the emphasis of this study is not on psychiatric morbidity, the study sample was not taken from psychiatric patients but from apparently normal working adults.

The basis for choosing working adults was on Jenkins' (1985) observations. Parker (1979) pointed out the methodological significance of choosing a homogenous sample of men and women to examine sex differences in psychiatric morbidity. Because of this, various studies have used groups of university students as a relatively homogenous sample. However Jenkins (1985) after assessing the importance of university students as a homogenous group, thinks that homogeneity is probably not achieved in certain specialities, e.g. medicine or architecture where until recently very few women were accepted into the field.

Secondly that the age group found amongst university students is predominantly 18-21 years, which is not the age-group where sex differences are usually reported. This has been confirmed by Hourani et al (1986) who found that the highest number of symptoms was reported by adults aged 34 years.

The present investigator agrees with both Parker (1979) and Jenkins (1985) on the importance of choosing a homogenous group. But due to lack of time and financial support, homogeneity could not be ensured. However a sample group older than university students was used in the study.

### 3.3 Study Design

#### Sampling

Sampling in this study was non-probabilistic; purposive to be precise for equal number of male and female teachers and civil servants. In the case of teachers, the investigator just gave questionnaires to the heads of the school to be given to the number of subjects required. In very few cases, the investigator approached them personally.

For the civil servants, a computer listing of workers was obtained and a sample was selected using the table of random numbers.

The individuals were personally approached where possible and the general purpose of the study was indicated i.e. ("an investigation into the health of men and women") emphasising the confidential nature of the investigation, and asking for voluntary participation. Refusers were replaced by other volunteers. 500 questionnaires were given out to allow for refusals, incompleteness and unobtainables with the hope that about 60% would finally be used for analysis; the only basis of rejection of questionnaires being incompleteness.

### 3.4 Data Collecting Materials

Two materials were used in this study namely; Mental Health Inventory (Appendix I) and Locus of Control Scale (Appendix II) to assess psychiatric symptoms and locus of control respectively.

#### 3.4.1 Mental Health Inventory (MHI)

MHI, refined and used by Phillips and Segal (1969) is a 22 item scale. This questionnaire indicated the likely presence or absence of minor psychiatric morbidity, and included a range of symptoms covering mood, feelings and perceptions as well as their relative duration during the past week.

The items were grouped into symptom indices as follows:-

(a) Psychological Symptom Index

This was composed of 10 items that were viewed as associated with psychological disorders. Questions 1-10 were used to obtain that information.

(b) Psychophysiological Symptom Index

This comprised 5 symptoms seen as occurring quite rarely in organic illness. This was assessed by questions 11-15.

(c) Physiological Symptom Index

Composed of 3 items judged as frequently occurring in organic illness. Questions 16-18 were used for this purpose.

(d) Ambiguous Index

Consisted of 4 symptoms on frequency of occurrence in organic illness, the clinicians who put the whole MHI into indices could not agree. Questions 19-22 were used for this. For full questionnaire see Appendix A.

The investigator chose Langner's MHI based on two different validity studies of the instrument which report that it is adequate for screening and case finding (Langner 1962, Manis et al 1963; Coefficient of reliability 0.65, Kendall's tau 0.30).

### 3.4.2 Internal-External Locus of Control Scale (LOC)

Locus of control was assessed by the Internal-External locus of control scale (I-E) adapted from Collin (1974). This is a 23 item forced choice scale on which the subjects chose which member of a pair of statements reflects a belief in internal control of reinforcement, e.g. "What happens to me is my own doing" and the other reflects a belief in external control, "There is not much in trying too hard to please people, if they like you, they like you." For the rest of the scale see Appendix B.

This scale was chosen based on Collin's observation that "the scale differentiates between the two types across all cultures" and also the most widely used and validated measure of locus of control (Lefcourt, 1972).

### 3.5 Pretesting Questionnaire

An initial assessment of the questionnaire's reliability and validity was done using 30 subjects (15 females, 15 males). On the whole questionnaires were easily understood and therefore no changes were made in the final version.

### 3.6 Method of Scoring MHI and LOC

#### 3.6.1 Measures of Psychiatric Symptoms

A cut off point of 4 was used to categorise individuals as disturbed based on Langner's report (1962) that the mental health scores becomes 'serious' or predictive of psychiatric impairment at this point.

For comparative purposes, subjects were classified as high or low on the different symptom indices.

##### (a) Psychological Index

Individuals with 2 or more symptoms were classified as high.

##### (b) On the Other Three Indices

A score by 1 or more places a person in the high category (Adapted from Phillips and Segal, 1966).

#### 3.6.2 Measures of Cognitive Style

For the I-E scale, a person's score was simply the number of times he responded in an external direction, high scores reflected a generalized expectancy for control of reinforcement by fate, luck and other factors beyond one's control. Several researchers have used different scoring methods.

In 1968, Julian and Katz Sampled internals from those who scored two points below the mean of the I-E distribution and Externals from those who scored 2 points above the mean. Thus Internal scores were 0-5 and External scores were 10-19. However this method put very few people in the lower category. Since it considered only extreme cases, most people who were internals with scores between 6-10 were left out as it might not be able to differentiate between Internals from Externals in a small sample.

In 1970, MacDonald classified subjects who scored 0-9 as Internals and 14-23 as Externals. Similarly Baron et al (1974) used a medium score of 9 to classify the subjects. Low Externals - 0-9; Medium - 10-14; High Externals - 15-23. Cherulnik and Citrin (1974) also classified subjects who obtain 9 or below as Internals and those with scores of 13 and above as Externals. These three methods seem to follow the same scoring procedure using 9 as the upper limit for Internals and 13 or 14 as the lower limit for Externals. These methods also provide a long range for categorising subjects ensuring that most Internals or Externals are not left out as in the case of Julian and Katz (1968). Even in a small sample, the method would differentiate between Internals and Externals.

The present study therefore based on the above explanations, adopted the same method using scores 0-9 to classify Internals, 10-13 for Medium and 14-23 for Externals.

### 3.7 Operational Definition of Study Variables

#### Demographic Characteristics

The social attributes included in the study were age, education and marital status.

##### (1) Age

Measured respondents age in completed years as at their last birthday. Whatever the respondents said was their age, was what was recorded. It was not cross-checked.

Three age groups were obtained

- (a) 20-29
- (b) 30-39
- (c) 40 and above

##### (2) Education (Formal)

Measured the number of years the respondents attended school, categorised into levels.

- (a) Elementary level - 10 years of schooling with school leaving certificate
- (b) Secondary and Post-Secondary Level - 13-15 years of schooling with G.C.E. 'O' and 'A' levels certificate.
- (c) University and others - 18-21 years of schooling with a first or second degrees.

CHAPTER FOUR  
RESULTS

#### 4. RESULTS

##### 4.1 Response Rate

Of the 500 questionnaire relating to Internal-External locus of control and Psychiatric symptoms which were given out, 337 were returned out of which 172 were male respondents and 165 female respondents. However a total of 320 questionnaire were used for analysis. This is because some of them were badly answered. This represented a response rate of 64% slightly higher than the expected response rate of 60%.

##### 4.2 Demographic Characteristics of Sample

###### 4.2.1 Age

The respondents ranged from 21-56 years of age. There were 46 (28.8%) males and 76 (47.5%) females in age group 20-29; 71 (44.2%) males and 51 (31.9%) females in age group 30-39; and 43 (26.9%) males and 33 (20.6%) females above 40 years of age.

###### 4.2.2 Marital Status

Among the married, 69.4% were males whilst 55.6% were females.

###### 4.2.3 Educational Level

The Educational level of respondents ranged from the Elementary to University. Males and females were about equally represented at each level.

Detailed demographic characteristics of sample are presented in Table 1.

Table 1  
Demographic Characteristic of Sample

Variables	Males		Females	
	n=160	%	n=160	%
<u>1. Age</u>				
20 - 29	46	28.8	76	47.5
30 - 39	71	44.2	51	31.9
40 and above	43	26.9	33	20.6
<u>2. Marital Status</u>				
Married	111	69.4	89	55.6
Single	49	30.6	71	44.4
<u>3. Educational Level</u>				
Elementary (Low)	27	16.9	39	24.4
Secondary/Post- Secondary (Medium)	94	58.8	84	52.5
University (High)	39	24	37	23.1

#### 4.3

4.3.1 Hypothesis I : stated that females will report significantly more psychiatric symptoms than males. Data relating sex to psychiatric symptoms are presented in Table 2.

Table 2Table of Frequencies Relating Sex to Psychiatric Symptoms

Sex	Number of Symptoms		N
	0-3 (Low)	4+ (High)	
Males	120 (75%)	40 (25%)	160
Females	98 (61.3%)	62 (38.7%)	160
N	218	102	320

$$\underline{\chi^2} = 6.97 \quad \underline{df} = 1 \quad p < 0.01 \quad \phi = 0.14.$$

As shown in Table 2, a considerable proportion of females (38.7%) generally reported more psychiatric symptoms than males (25%). Chi-square analysis of the difference yielded significant results ( $\underline{\chi^2} = 6.97 \quad \underline{df} = 1 \quad p < 0.01$ ), confirming the first hypothesis. A measure of the strength of relationship using phi coefficient test of correlation indicates a weak relationship between sex and expression of psychiatric symptoms ( $\phi = 0.14$ ).

Males and females were further compared on the different symptom indices.

Apparently more females than males scored high on the separate symptom indices viz; Psychological index, Psycho-physiological index, Physiological and Ambiguous indices. (Table 3).

Table 3Percentage of Respondents Scoring High  
on Each of Five Symptom Indices

Symptom Indices	Male	Female	Z' test
22 Item MHI (4+)	25%	38.5%	1.48
Psychological (1+)	56.3%	58.7%	0.33
Psychophysiological (1+)	31.3%	40.0%	0.97
Physiological (1+)	11.9%	18.1%	0.60
Ambiguous Index (1+)	5.6	15.0%	0.89

1. Z Scores not significant : Minimum value of 1.64 is required for significance (one-tail)

However Z test analysis showed that males and females are not significantly different on the separate symptom indices.

4.3.2 Hypothesis II : stated that subjects of External locus of control will report more psychiatric symptoms than subjects of Internal locus of control. Table 4 shows the data relating locus of control to psychiatric symptoms. About 42% of External subjects reported more than 4 symptoms whilst only 19% of Internals did so. Moreover subjects in the Medium category scored more (34.6%) than Internals but less than External subjects, suggesting that the further one moves from Internality, the more symptoms he expresses. This observation between differences in locus of control and expression of psychiatric symptoms was statistically significant (  $\chi^2 = 12.85$   $df = 2$   $p < 0.01$  ).

Table 4Table of Frequencies Relating Locus of Control to Psychiatric Symptoms

Number of Symptoms	Internal	Medium	External	N
0-3 (Low)	96 (80.7%)	83 (65.4%)	43 (58.1%)	222
4+ (High)	23 (19.3%)	44 (34.6%)	31 (41.9%)	98
$\chi^2 = 12.85$ $df = 2$ $p < 0.01$ $C = 0.20$				320

A measure of the strength of the relationship between locus of control and expression of psychiatric symptoms using contingency coefficient test of correlation indicated a rather weak association ( $C = 0.20$ ).

A comparison of the types of locus of control on the five symptom indices revealed an interesting trend presented in Table 5. (Figure 1).

Table 5Percentage of Respondents Scoring High on Each of 5 Symptom Indices - By Locus of Control

Symptom Indices	Internal	Medium	External
22 Item MHI (4+)	19.3%	34.6%	41.9%
Psychological Index (1+)	39.5%	64.6%	74.3%
Psychophysiological (1+)	26.9%	46.2%	47.3%
Physiological (1+)	9.2%	18.9%	22.2%
Ambiguous (1+)	4.2%	13.4%	14.9%

As shown in Table 5, a higher proportion of External subjects (74.3%) tended to express more psychological symptoms as compared to 64.6% Medium subjects and 39.5% Internal subjects.

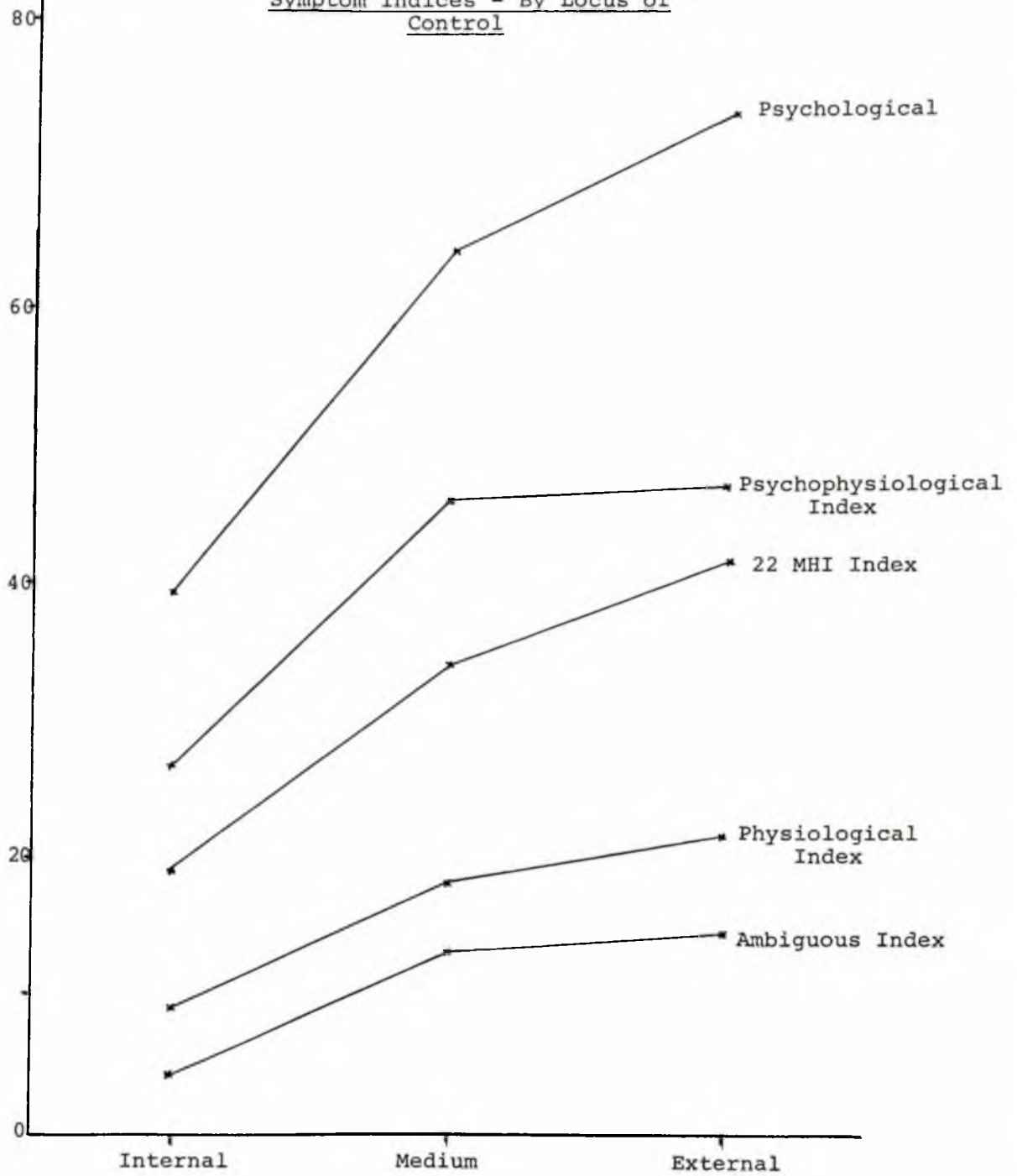
On the other symptom indices, the trend was the same; more external subjects tended to express more symptoms irrespective of the type of symptoms. However the proportion decreased for all types of locus of control subjects as one moves from psychological index to ambiguous index, suggesting that all subjects seem to express psychological problems more than any other. (Figure 1).

Z test analyses of the differences between the three types of locus of control on the different symptoms indices yielded significant results for Internal subjects versus Medium and Internal subjects versus Externals but not for Medium versus External subjects. (Appendix V).

4.3.3 The third hypothesis proposed that sex differences exist in locus of control, and that females were more likely to be externally controlled than males. Table 6 depicts the data relating sex to locus of control.

Figure I :

Graph Showing Percentage of Respondents Scoring High on Each of the Five Symptom Indices - By Locus of Control



Types of Locus of Control

Table 6Table of Frequencies Relating  
Sex to Locus of Control

Sex	Internal	Medium	External	N
Males	54 (33.8%)	64 (40.0%)	42 (26.2%)	160
Females	65 (40.6%)	63 (39.4%)	32 (20.0%)	160
N	119	127	74	320

$$\underline{\chi^2} = 6.65 \quad \underline{df} = 2 \quad p < 0.05 \quad \emptyset = 0.14$$

As is evident in Table 6, 33.8% of males tended to be internally oriented whilst 40.6% of females did so. A chi square test of sex differences in locus of control yielded significant results ( $p < 0.05$ ). However contrary to prediction, females rather tended to be more internally controlled than males ( $\underline{\chi^2} = 18.75 \quad \underline{df} = 1 \quad p < 0.001$ ). Phi coefficient test of the relationship between sex and locus of control indicated a weak one ( $\emptyset = 0.14$ ).

#### 4.4 Further Analyses

The above analyses examined the relationship between two variables. This section looks further at the simultaneous associations among the following variables; sex, age, marital status, education, locus of control and psychiatric symptoms.

In Table 7 is presented the data showing the relationship between sex, locus of control and expression of psychiatric symptoms.

Table 7

The Relationship Between Sex, Locus of Control and Psychiatric Symptoms

Number of Symptoms Reported	Types of Locus of Control					
	Internal		Medium		External	
	Males	Females	Males	Females	Males	Females
0-3 (Low)	79.6%	81.5%	79.7%	50.8%	69.0%	43.7%
4+ (High)	20.4%	18.5%	20.3%	49.2%	31.0%	56.3%
(N)	(54)	(65)	(64)	(63)	(42)	(32)

As shown in Table 7, among both males and females, externals reported more psychiatric symptoms than mediums and Internals, 31% for men and 56.3% for women. Among Medium and External subjects, females tended to express more symptoms, however the difference was not very obvious among Internal subjects (20.4% for men and 18.5% for women).

Similarly, Male Internals did not differ from Male Mediums. The percentage point difference between Male Mediums and Male Externals is 10.7 and for female 7.1. Among the Medium subjects, the percentage point difference between males and females is 29 whilst for External subjects the difference is 25. Thus sex seems to have a stronger effect on expression of psychiatric symptoms than locus of control. However their effect seems to be additive.

This observation was further confirmed by computing a two-way analysis of variance (sex and locus of control) on the data. The main effects for the sex factor ( $F = 11.51$   $df = 1$   $p < 0.001$ ) and locus of control ( $F = 8.12$   $df = 2$   $p < 0.001$ ) were significant. The interaction effect was also significant ( $F = 5.49$   $df = 2$   $p < 0.001$ ).

The summary of the results is shown in Table 8. The relationship can be seen graphically in Figure II.

Table 8

Summary Table of the Two-Way Anova Showing the Interaction Between Sex and Locus of Control in their Effects on Expression of Symptoms

Source of Variation	Sum of Squares	DF	Mean of Squares	F	P
Sex	2.246	1	2.246	11.51	0.001
Locus of Control	3.170	2	1.585	8.12	0.001
Interaction (sex vrs. loc)	2.146	2	1.073	5.49	0.001
Within	61.272	314	0.193		
Total	68.373	319	0.214		

A further test of the differences between the means of the various groups using Tukey's test confirmed that significant differences exist among all the groups except for Male Internal versus Female Internal and Male Internal versus Male Medium. Tables 9 & 10 show the table of means and comparison of sample mean differences respectively.

- 56 -

Figure II : Mean Symptom Scores of Males and Females  
as a Function of Locus of Control

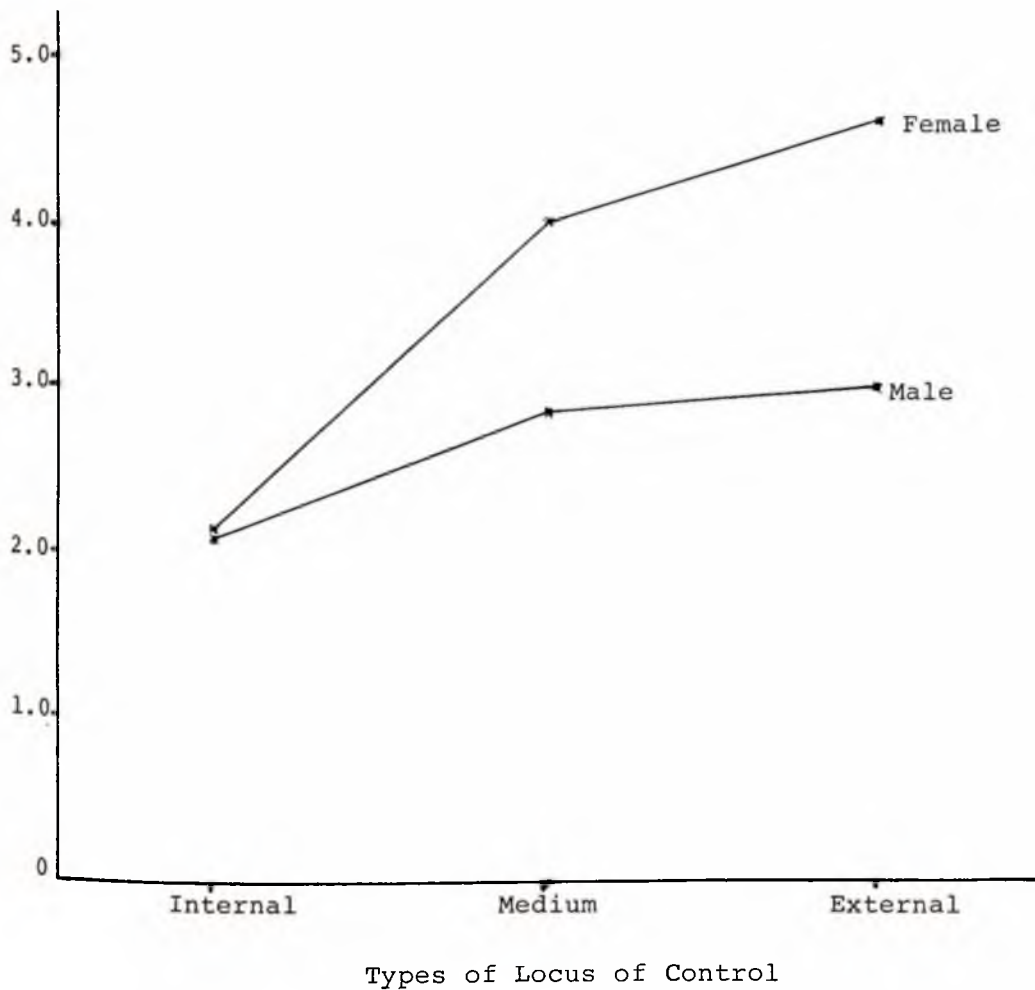


Table 9Table of Means

Sex	Internal	Medium	External	Row Mean
Males	2.13	2.82	2.97	2.64
Females	2.14	3.98	4.60	3.57
Column Mean	2.135	3.40	3.79	

Table 10Comparison of Sample Mean Differences

	Male Internal	Male Medium	Male External	Female Internal	Female Medium	Female External
Male Internal	*	0.69 <sup>xx</sup>	0.84 <sup>xx</sup>	0.01	1.85 <sup>xx</sup>	2.47 <sup>xx</sup>
Male Medium		*	0.15	0.68 <sup>xx</sup>	1.16 <sup>xx</sup>	1.78 <sup>xx</sup>
Male External			*	0.83 <sup>xx</sup>	1.07 <sup>xx</sup>	1.63 <sup>xx</sup>
Female Internal				*	1.84 <sup>xx</sup>	1.63 <sup>xx</sup>
Female Medium					*	0.62 <sup>xx</sup>
Female External						*

xx Significant at 0.01 level

Significant differences exist among almost all the groups and all the differences are in the predicted direction i.e. Female Externals show more psychiatric symptoms than Female Internals and Male Externals.

Data showing the relationship between marital status, sex and report of psychiatric symptoms is presented in Table 11.

Table 11

Relationship Between Marital Status, Sex  
and Report of Psychiatric Symptoms

Number of Symptoms Reported	Married		Single	
	Males	Females	Males	Females
0-3 (Low)	79.3%	70.8%	65.3%	49.3%
4+ (High)	20.7%	29.2%	34.7%	50.7%
(N)	(111)	(89)	(49)	(71)

Among both men and women, single persons reported more psychiatric symptoms than married people. 34.7% of the single men reported four or more symptoms as compared to 20.7% of married men. Similarly in women, 50.7% of those who were single reported more psychiatric symptoms whilst 29.2% of married women did so. Within each marital status, women reported more psychiatric symptoms than men, 29.2% married women as compared to 20.7% married men and 50.7% single women as compared to 34.7% single men.

The effect of marital status on the expression of psychiatric symptoms can be summarized as 14 and 21.5 percentage point difference for both men and women respectively. Sex status however seems not to have a strong effect. The percentage point difference is 8.5 for married persons and 16 for single persons. Thus both sex and marital status have independent effects on report of psychiatric symptoms and their effects tend to be additive i.e. single females are the most disturbed whilst married males are the least disturbed. Chi square analysis of the effect of marital status yielded significant results ( $\chi^2 = 12.54$   $df = 1$   $p < 0.001$ ), with single persons reporting or expressing more psychiatric symptoms than married persons. However the strength of association was weak ( $\phi = 0.18$ ).

Table 12 shows the relationship between age and sex on the report of psychiatric symptoms.

Table 12

Relationship Between Age, Sex and  
Report of Psychiatric Symptoms

Number of Symptoms Reported	20-29		30-39		Above 40	
	Male	Female	Male	Female	Male	Female
0-3 (Low)	67.5%	56.6%	78.9%	68.6%	74.4%	60.6%
4+ (High)	32.6%	43.4%	21.1%	31.4%	25.6%	39.4%
(N)	(46)	(76)	(71)	(51)	(43)	(33)

Among both males and females, younger people (20-29) tended to express more symptoms than older people; 32.6% for men and 43.4% for women. Within each age group more women reported more psychiatric symptoms than men. Among respondents in the 20-29 age group, 43.4% of women reported more symptoms as compared to 32.6% men. Similarly, in the 30-39 and above 40 age groups, 31.4% and 39.4% of women reported more psychiatric symptoms as compared to 21.1% and 25.6% men. The effect of age between 20-29 and 30-39 age groups is 11.5 and 12 percentage point difference for men and women respectively. The effect of age however decreases as one gets older, especially for men (4.5). Chi square analysis of the association between age and expression of psychiatric symptoms was not significant. Nevertheless younger subjects were found to be significantly different from subjects above 40 years of age in terms of symptom reporting ( $\chi^2 = 5.38$   $df = 1$   $p < 0.05$ ).

The relationship between education, sex and psychiatric symptoms is depicted in Table 13.

Table 13

Relationship Between Education, Sex and  
Report of Psychiatric Symptoms

Number of Symptoms Reported	High Education		Average Education		Low Education	
	Males	Females	Males	Females	Males	Females
0-3 (Low)	76.3%	60.5%	66.0%	69.0%	76.3%	60.7%
4+ (High)	23.7%	39.5%	34.0%	31.0%	23.7%	39.3%
(N)	(38)	(38)	(94)	(84)	(38)	(28)

As can be seen in Table 13, subjects who have received high education do not differ from those who have received low education in terms of reporting of psychiatric symptoms. The percentage point difference is zero in males and 0.2 in females. Among those who have received average education, the difference between males and females who expressed four or more psychiatric symptoms was 3 percentage points, which is relatively small. Thus it appears that education has very little or no effect on expression of psychiatric symptoms. Analysis of the effect of education on expression of psychiatric symptoms by chi square test, irrespective of sex was not significant. The results confirm that education has no relationship with expression of psychiatric symptoms.

Table 14 shows the data relating marital status, sex and locus of control.

Table 14  
Relationship Between Marital Status,  
Sex and Locus of Control

Types of Locus of Control	Married		Single	
	Males	Females	Males	Females
Internal	39.6%	17.2%	16.3%	40.8%
Medium	35.1%	43.1%	44.9%	32.4%
External	25.3%	39.1%	38.8%	26.8%
(N)	(111)	(89)	(49)	(71)

From Table 14, it is evident that single females were more internal than married females, 40.8% as compared to 17.2%. On the other hand 39.6% of married males tended to be more internal whilst 16.3% of single males did so. Comparing married males and single females, the data shows that the proportions that exhibited the different types of locus of control were about equal. The percentage point difference between Internals, Mediums and Externals were 1.2, 2.7 and 1.5 respectively. For married females and single males, the percentage point difference between the proportions that exhibited the different types of locus of control was 0.9 for Internals, 1.8 for Medium category and 0.3 for Externals.

A measure of the relationship between Marital Status and locus of control by chi square test was not significant. Thus marital status has no effect on types of locus of control exhibited.

Presented in Table 15 is the data relating simultaneously education and sex to locus of control.

Table 15  
Relationship Between Education, Sex  
and Locus of Control

Types of Locus of Control	High Education		Average Education		Low Education	
	Males	Females	Males	Females	Males	Females
Internal	47.4%	52.6%	35.7%	40.4%	15.8%	25.0%
Medium	31.6%	29.0%	34.5%	41.5%	60.5%	46.4%
External	21.0%	18.4%	29.8%	18.1%	23.7%	28.6%
(N)	(38)	(38)	(84)	(94)	(38)	(28)

As shown in the table, among both males and females, those who have received a higher level of education tended to be more internally oriented, followed by those who have received average education and then those who have received elementary education.

Among females, 52.6% of the highly educated showed more internality as compared to 40.4% of those who have received average education and 25% of those who have received low education. Among males, 47.4% of the highly educated tended to be more internal as compared to 35.7% and 15.8% of those who have received average education and low education respectively.

Within each educational level, females tended to be more internally oriented than males. Among the highly educated, 52.6% of females were more internal compared to 47.4% of males.

Similarly, among those with average education, 40.4% of females were internal as compared to 35.7% of males. The trend is the same for those who have received low education, 25% females and 15.8% males. It appears therefore that education has a stronger effect on locus of control than sex. The percentage point difference between the three educational levels for both males and females ranged between 11.7 to 19.9 whilst within each educational level, the effect of sex were 5.2, 4.7 and 9.2 percentage points. The observation that education affects locus of control was further supported using chi square analysis ( $\chi^2 = 12.48$   $df = 4$   $p < 0.05$ ).

Table 16 shows the data relating age, sex and locus of control.

Table 16

Relationship Between Age, Sex and  
Locus of Control

Types of Locus of Control	20-29		30-39		40 and above	
	Males	Females	Males	Females	Males	Females
Internal	33.9%	42.1%	36.6%	41.2%	36.4%	39.6%
Medium	40.0%	35.5%	39.4%	43.1%	33.4%	30.4%
External	26.1%	22.4%	23.9%	15.7%	30.2%	21.0%
(N)	(46)	(76)	(71)	(51)	(43)	(33)

As can be seen in Table 16, in all age groups, a higher percentage of females exhibited internality more than males. In the 20-29 age group, 42.1% of females were internal as compared to 33.9% males. Of those between 30-39 years, 41.2% of females showed internality compared to 36.6% males, and similarly among older subjects 39.6% females were internal whilst 36.4% males did so. Among females, the proportions that showed internality was slightly higher among younger females than the rest. However the effect of age for females in the three age groups was 0.9 and 1.2 percentage points. For males the difference in proportion between the three age groups was 2.7 and 0.2 percentage points, indicating rather a weak effect.

A measure of the relationship between age and locus of control using chi square test was not significant, confirming that age has no relationship with the type of locus of control exhibited.

The major findings of the present study can thus be summarized as follows:-

1. Females generally report more psychiatric symptoms of psychological origin than males.
2. There is significant relationship between locus of control and expression of psychiatric symptom with External subjects reporting more psychiatric symptoms than Internal subjects.
3. Females are more internally oriented than males.
4. There is significant interaction between sex and locus of control on the report of psychiatric symptoms, and that all groups differ significantly from each other except Female Internal - Male Internal and Male External - Male Medium.
5. There is significant relationship between Education and Locus of Control.
6. Marital Status has no relationship with Locus of Control.

7. There is no relationship between age and locus of control.
8. There is significant relationship between marital status and expression of psychiatric symptoms, with single subjects expressing more symptoms than married people.
9. There is no relationship between Education and report of psychiatric symptoms.
10. Age has no relationship with expression of psychiatric symptoms.

**CHAPTER FIVE**

**DISCUSSION**

## 5. DISCUSSION

The purpose of this study was to explore further the relationship between sex, locus of control and the expression of psychiatric symptoms. Three hypotheses were formulated;

- (1) Women will report more psychiatric symptoms than men.
- (2) External subjects will report significantly more psychiatric symptoms than Internal subjects.
- (3) A significant sex difference exists for locus of control

In addition, the study examined the effects of age, marital status and education on expression of psychiatric symptoms and/or locus control.

The findings indicate that women generally expressed more symptoms than men. A higher percentage of females (38.7%) as compared to males (25%) expressed four or more psychiatric symptoms which according to Langner (1962) is predictive of psychiatric impairment. This finding confirms previous conclusions that women express more psychiatric symptoms or are more depressed than men (Phillip and Segal, 1969; Verbrugge, 1976; Vegas, 1984 and Haavio-Manilla 1986).

The female sample included married women who lived with or without their husbands and single women who lived alone or with parents and other relatives. It was further found that single women expressed more symptoms than their married counterparts.

However the causes for which women tend to express more psychiatric symptoms than men are applicable in some instances to both the married and single. Since socialization processes differ for both males and females, with child training being more toward the male than female role in adulthood, it can be said that many of the adjusted problems of women may be partly traced to conflicts growing out of inadequate childhood preparation for adult role. Thus the overall effect of women expressing more psychiatric symptoms is a possible combination of both marital implications and living alone. Anson (1988) found women whose living arrangements offer steady adult support with slight nurturant responsibilities to be healthier than vice versa.

Stressful Events are known to precipitate physical and mental problems through factors including insufficient income, considering the fact that the women are all working. Although married, some women live as though they were single without the regular presence and support of their spouses.

Some single women also have nurturant responsibilities without steady support making them less healthy according to Anson (1988). Many of these women may be heads of families and have to cater for their children, younger siblings and relatives. In the present harsh economic situation of Ghana, for most of these women who are civil servants, their salaries and added incomes are never enough to meet the financial demands, resulting in anxiety.

Linked to the effects of financial insufficiency is the problem of food, housing and transportation. As a typical metropolis, all social services in Accra must be paid for and participation in the cash economy is known to be anxiety producing for the salaried worker, who has other responsibilities.

Societal pressure to get married is a possible explanation to single women expressing more psychiatric symptoms than men. Most of these women at the marrying stage are still single due to various reasons. The constant pressure from friends and family makes them anxious about the future and to avoid this pressure, many of them are driven into living alone. It is true that "nurturant obligations may be 'costly' in themselves and their absence enables easy access to illness behaviour, to performing poorly at least in the household, and to brooding over problems." (Anson, 1988).

Most of these women express more psychiatric symptoms as a result of the large number of obligations and conflicting demands originating in the home and work place, since these are likely to cause strain and fatigue and lead to higher levels of morbidity (Wood and Hulka, 1979). Indeed this point is akin to "nurturant role" hypothesis which proposes that too many role obligations especially for the married women working, interfere with self care and tend to have negative effects on their health (Lewin-Epstein, 1986).

Polygamy with its attendant female rivalry is a great source of anxiety for women in this system in Ghana, who may be worried about security in the marriage which eventually leads to psychiatric impairment.

An additional explanation for women expressing more psychiatric symptoms is Emotional isolation which can be real even when people appear to be surrounded by many others. It is common for people to seek consolation and advice about problems from family and friends; talking to them with the hope of getting some relief from the burden and symptoms. It is even more difficult for the single women who live alone with fewer opportunities to express themselves in the same way.

Verbrugge (1985) has observed that women can share with others when they are in good moods, but when moods are bad, events actually reduce conversation for most age groups.

Waltz (1986) has also confirmed that emotional isolation or lack of close relationships of single women affect their health.

Sex discrimination also affects most women at work places. Whilst they usually maintain responsibility in the domestic sphere, they are expected to perform just as well at work. This role overload creates potential stress in women. For these women, competition at work and at home tends to increase the likelihood of getting ill. In addition to nurturant responsibilities, they must keep up with expectations from colleagues at work, and society as a whole. Thus most women are over-worked and this increases the possibility of stress.

In certain situations, the expectant mother has to work close to her date of confinement because institutional heads are against the idea of maternity leave. Thus the uncertainty of maintaining a job adds to this stressful condition.

Haynes and Feinleib (1980) have suggested that jobs characterized by underutilization of the individual skills, lack of autonomy and control over working environments may contribute to the genesis of disease. To a large extent, this is true for most women, but in the case of the women in this study, it was observed that instead of under-utilization, they are being over-utilized in the present educational scheme where teachers are forced to teach subjects in which they themselves have received no training.

The relationship between occupation and morbidity have further been confirmed by Kickbush (1986).

When the sexes were further compared on the different symptom indices; psychological index, psychophysiological index, physiological index and ambiguous index, a higher percentage of women were classified as high on all indices, however the difference was not statistically significant. This is contradictory to what Phillips and Segal (1969) found where a higher percentage of males were high on both physiological and ambiguous indices. They argued that perhaps females choose psychological symptoms (nervousness, restlessness, feeling weak all over) to express distress whilst males choose more physiological symptoms (clogging in nose, sour stomach, shortness of breath). But this could hardly be said of the Ghanaian sample.

Since the males were not high on any particular index, a question of interest is; Do the items on the Mental Health Inventory index measure psychological disturbance among men as well as they do among women? A critical look at the items of the Mental Health Inventory show that the items emphasize introspective and relatively passive types of discomfort and tension. There is not a single item that has to do with expressing of aggression, losing one's temper, being irritable etc.

In other words, the MHI does not appear to be an equally representative sample of the number of possible items of disturbance for both men and women.

A possible explanation to why females were high on all the symptom indices could be due to the scoring of the MHI. The format for several items were "often, sometimes, and never," and a symptom was counted as occurring when the first was chosen by the respondent ("often"). Perhaps the difference is attributable to what was defined as 'often' by both men and women. Since it is possible that men were more likely than women to decide that the intensity or frequency of certain symptoms was not sufficient to make them worth reporting especially if it was possible to assume that the presence of these symptoms could be interpreted as a sign of weakness.

Another possibility could be that men suppress the sort of psychological discomfort emphasised in the 22-item MHI or that they note them less frequently when they occur. Since sex-linked differences are reflections of cultural processes, and illness is to be shunned by men, then men being low on all the symptom indices may be due to great reluctance on their part to admit to certain unpleasurable feelings and sensations as they are aware of cultural expectations regarding expressive control.

A comparison of the present result with that of Phillips and Segal's (1969) reveals an interesting trend, shown in Table 9.

Table 9

Comparison of Women Scoring High on the  
5 Symptom Indices - Present Series  
Versus Phillips and Segal (1969)

Symptom Indices	Present Series (%)	Phillips & Segal (1969) (%)
22 Item MHI (4+)	38.7	35.5
Psychological (2+)	58.7	46.9
Psychophysiological (1+)	40.0	47.5
Physiological (1+)	18.1	17.1
Ambiguous (1+)	15.0	14.9

Considering the differences in cultural milieu i.e. the present series having been done in Ghana, and the Phillips and Segal series in Lebanon and New Hampshire, the results are remarkably comparable, proving the validity of the MHI in its adequacy for screening and case finding.

Not only were sex differences found in expression of psychiatric symptoms but also in type of locus of control exhibited. Similar findings were obtained by other investigators like Witkin et al (1965) and Parson and Schneider (1974). However the expectation that females would be more externally oriented was not confirmed. The unexpected finding was that Ghanaian women in the study sample were more internally oriented ( $p < 0.001$ ) i.e. that they believe that they have control over things that happen to them or that their success to a large extent is incumbent upon their own efforts.

That females are more internally oriented could be attributed to changing cultural values. The observed differences in socialization of boys and girls in most cultures are consistent with certain universal tendencies in differentiation of adult sex role. Not too long ago, men were allotted tasks that involved leaving home and engaging in activities where a high level of skill and strength yielded important returns, hunting being a prime example. Emphasis on training in self-reliance and achievement for boys, was preparation for their economic role.

On the other hand women were to stay at home and take care of the needs of others. Thus training in nurturance responsibility and obedience made them more dependent on the men.

Since the men could fulfil their role as breadwinners there was no need for the women to seek self-expression and self-fulfilment outside the home.

At the turn of the present century, there has been a gradual shift away from the stereotypes of approved sex roles, stereotypes that have persisted through the centuries, to a new kind of stereotype in which there is emphasis on similarity rather than differences between members of the two sexes. Presently to a large extent, our mechanized economy is less dependent than previous economy upon the superior average strength of the male.

When a transition in a culture occurs from rural to urban, strength is less important than skill. As far as skill is concerned, there is little difference between males and females. The greater difference lies in their strength. The shifting from the old stereotype to the new has gained momentum over the years with government pressure and laws to prohibit discrimination against women in schooling, employment and inheritance.

Gradually, women have been forced to move outside the home to strive with men for recognition and independence. Factors affecting the change in female perception of events can be grouped into three, namely; economic, social and political.

Many women have been in the trading business for many years, some starting on a small scale and gradually moving from petty trading to export and import. As a result, many women have gained economic independence realizing their own potential in changing all circumstances in their lives instead of resigning to fate or luck.

The results indicated that the highly educated exhibited more of an internal control than those who have received average or low education. This could be attributed to the fact that socially, women have reached heights which previously, they could hardly believe attainable. The old cultural attitude that a woman could only travel or go out in the company of her husband has changed quite drastically. At the time women were looked down upon and treated as children and unimportant personalities, but down the years, through formal education, women have gained a new insight and awareness into their own capabilities. Since similar education from nursery to graduate school have replaced "boys education" and "girls education," it has become apparent that when given equal educational opportunities, girls can do the same academic work as boys and equally as successful. Though this was primarily a western idea, in this jet-set age, many women are travelling all over the world and are gradually becoming western in their attitudes and behaviour and will no longer be suppressed in the old way.

Thus the observation that education affects the type of locus of control (Cognitive Style) developed is explainable. ( $p < 0.05$ ). Much reading has opened new awareness of such people including women and made them more enlightened, more creative and more progressive. They have also encountered experiences that have helped them see that success in life can be achieved through hard-work and determination.

The other factor that has made women more internal could be political. The changes in the local government in this country have reached the stage where active participation by women is very much encouraged. The government seems to make little distinction between men and women and recruits all willing hands for the militia and other political and civil assignments.

Not too long ago, even in religious circles, women were not allowed to preach in front of men but with the new trend of reformation, women have been found to be equally capable of doing so. Women are becoming more daring and powerful in the things they do, because they realize that they cannot sit down and leave events to fate since much depends on them.

In 1966, Jung claimed that everyone had both a masculine assertive aspect called the Animus and a feminine passive aspect called the Anima.

In males, the Animus dominates and the Anima is the shadow (unconscious) while it is vice versa in females. Perhaps the new cultural values and their demands are causing the Animus to become dominant in females as well.

In addition to sex differences that might exist in locus of control, the present study sought to find out the possible relationship that exists between age, marital status and locus of control. The data do not confirm the findings of other investigators that age trend exists in cognitive style (Witkin, 1962, Ault, 1973). The only possible explanation for the present finding is that personality stabilizes with age and since all the subjects have passed adolescence, it is assumed that they have acquired stable personalities.

It was also of interest to find out how locus of control affects symptom expression. As predicted, it was confirmed that subjects of External control report more psychiatric symptoms than subjects of Internal Control ( $p < 0.001$ ). The External individual believes that things happen to him by fate or luck and there is nothing he can do about it. Thus the External person lacks self-esteem, initiative and is concerned with protecting his own security. He is also self-centered, pre-occupied with his own feelings and strivings and can only seek affection without being able to reciprocate.

The Internal person on the other hand has a quality of spontaneity in work and social relations, and is recognised as creative, as using his potentialities and powers. Since he believes that events that occur in his life depend on his abilities, he is able to use his endowments whether meagre or ample in productive activity.

Thus it is obvious that Externals and Internals differ in the way they cope with stress, fatigue and conflicts. Although all people are occasionally placed under stressful conditions where they experience strong feelings of anxiety some, however, by virtue of their genetic constitution, and the coping strategies developed to handle conflicts, and the amount of support provided by the Ghanaian environment, are better able to withstand stress than others. Though there is no such thing as the ideally adjusted person, the well adjusted person attacks his problem in a realistic manner, he understands and accepts his own shortcomings and the shortcomings of those with whom he must deal (Internal subjects). But for the External subjects, this is not satisfactory, so he relieves his anxiety by adopting a superstitious or fatalistic solution.

Although females differ significantly from males in the way they express symptoms, the results presented in Table 10 indicate that female Internals do not differ significantly from male Internals.

It was further observed that Male Internals differed significantly from Male Externals in the same way as Female Internals differed from Female Externals. Thus it can be concluded that all Internals (both male and females) possess better coping strategies than their External counterparts.

Differences were observed in the interaction effects of sex and locus of control at all three levels. Among Medium subjects and External subjects, males differed significantly from females, but no difference was observed between Medium males and Internal males. However differences were observed between their female counterparts, with Medium females expressing more psychiatric symptoms. Within the Externals, females expressed more symptoms than males. Thus female Externals expressed more symptoms than male Externals, female Internals and male Internals.

One of the frequent symptom of poor mental health is a readiness to fatigue and a desire to avoid putting in effort-general lethargy. This seems to be a characteristic of female Externals. The female External subject is likely to feel threatened in situations which place demands on her that she perceives as important but beyond her power to meet.

Furthermore she deeply doubts her adequacy and worth and constantly experiences threat, which is much more stressful to her and in turn arouses anxiety which has implications for adjustive behaviour. For a woman who has undergone a rigid socialization process, it becomes even worse for her when she develops an External locus of control. She has a greater vulnerability to stress especially in emergency situations, disappointments and other life problems, and what an Internal person may take in stride, may prove incapacitating for her. Although Externals on the whole find it hard to handle conflicts as compared to Internals, female Externals find it even harder to handle conflicts centering around dependence and self-direction.

The Ghanaian traditional concept of the supernatural includes both good and evil spirits. Failure is attributed to evil forces and this thought increases anxiety and brooding over problems which seem to complicate matters more for females than males. If a person can attribute his faults and failures to his own doing, there is hope of righting the wrong at the earliest opportunity, but if a person does not see his successes and failures as within his control and keeps attributing them to the influence of evil spirits, then the chances of psychiatric impairment is enhanced.

Since the cause of things are attributed to external factors, there is the tendency to seek redress from external sources. It is for this reason that the external who falls sick seeks the help of a traditional healer who is more likely to trace the cause of the disease, to external spiritual forces. One finds that even the highly educated individual is not exempt from this. The issue is further complicated by the sick individual delaying seeking medical attention which makes his condition worse and finally resigns himself to the condition with the attitude of "whatever will be, will be."

CHAPTER SIX

SUMMARY AND CONCLUSION

## 6. SUMMARY AND CONCLUSION

The primary purpose of this study was to investigate the way in which sex and cognitive style affect symptom expression. Specific predictions were formulated in an attempt to combine the hypotheses and insights of sex roles and sex stereotype theory. 320 working Ghanaian adults aged between 21-56 responded to a two self-administered questionnaire i.e. the Internal and External Locus of Control Scale and Langner's MHI.

The main results of the study may be summarized as follows:-

- (1) Females express more symptoms than males which shows that an association exists between sex and symptom expression though the association is fairly weak.
- (2) Externals also express more symptoms than Internal, whether they are males or females.
- (3) There is significant interaction between sex and cognitive style, that is, although male internals and female internals do not differ in the way they express symptoms, differences exist between males and females who are either medium or External in locus of control.

The findings that females scored higher on MHI supported earlier studies of sex differences in illness behaviour and the use of health services (Verbrugge, 1976) and thus provided a validation of the instruments used.

Many reasons can be postulated for the findings. It is possible that females actually experience more distress than males due to their constitutional make-up; that they experience the same amount of distress but are more sensitive to changes in emotional and physiological states.

Most studies have found (as in the present study) that women are more likely to report problems in the emotional and social domains, suggesting that there is no general tendency for women to experience problems more readily, but that sex differences may lie in differences in ability to admit and to report certain kinds of problems. Among women, it was found that the externally oriented expressed more symptoms than Internals due to poor coping strategies and inability to resolve conflicts.

Women were also found to be more internally oriented than was expected and this could be due to changing cultural values, more especially in this country where there is opportunity for active participation in the economic, social and political spheres of life.

SUGGESTIONS FOR FUTURE RESEARCH

There is no doubt that a number of findings have come out of this study, some of which require further research. For example;

1. Do illiterate women differ from literate women in the way they express psychiatric symptoms?
2. What factors affect expression of psychiatric symptoms?
3. Why do single people report more psychiatric symptoms than married people?
4. Is there a simultaneous relationship between Marital Status and Education on Expression of Psychiatric Symptoms and locus of control?
5. In what way do Education and Age simultaneously relate to expression of symptoms and locus of control?
6. In what way do Age and Marital Status simultaneously relate to expression of psychiatric symptoms and locus of control?
7. Is there a difference between the coping strategies of Males and Females?
8. Why do Externals report more symptoms than Internals?
9. Are illiterate females more External than literates?

There is nevertheless the need for much caution and tact for, a study on report of psychiatric symptoms in Ghana cannot be carried out without encountering numerous problems, because of the stigma attached to anything mental or psychiatric. Thus the more sensitive and detail the questions are the greater the tendency for people to refuse to respond with the assumption that they will be classified as abnormal. Such opposition becomes even greater among the educated people. To ensure compliance, subjects must be fully assured of the confidentiality of information supplied. Even then, one cannot determine the sincerity of their responses. Thus it might be advisable to incorporate lie detectors in the questionnaire where possible.

RECOMMENDATION

The MHI in this study has been found to be adequate for screening and case finding. Females especially single, tended to express more symptoms than males. Thus some stressful events in their lives have been known to precipitate physical and mental problems. The list is by no means exhaustive but the following are suggested precipitants:-

- . nurturant responsibilities without steady adult support
- . financial insufficiency/inability to meet the rising cost of living.
- . societal pressure on the single females to get married.
- . role overload and role conflicts at home and work place.
- . polygamy and female rivalry
- . emotional isolation
- . discrimination at work place
- . over-utilization of individual skills

Based on these findings, it is recommended that females be given the due recognition at the work place; promotion should be granted when they are due, female workers should be allowed to take maternity leave at the right time.

In the upbringing of children, there is the need to be aware of the changing cultural values, so as not to inhibit young females but to help them achieve maximum self-expression. It is also important that children are trained to believe in themselves and what they can do rather than leave events to fate or luck. Though age and educational level had no association with symptom expression, for future research a cross-tabulation of age by marital status would be useful.

To general practitioners and guidance and counselling teams, it is recommended that they spend time with female patients or clients, trying to delve into their problems since attendance at their clinics or counselling sessions may be a desire to satisfy a need to talk to somebody about problems at home or work place. Secondly it is important to create an awareness in them that much of their problems could be alleviated if they take a positive outlook to life's events rather than succumb to fate or luck.

In future, a scale representing both psychological as well as aggressive characteristics should be used to find out whether females will still differ from males.

GLOSSARY

1. Cognitive Style - Stable, consistent individual variations in receiving and processing information.
2. Global Style - A cognitive style characterized by the inability to perceive events as separate from their context; the inability to detect the parts within the whole also known as field-dependent style.
3. Analytic Style - A cognitive style characterized by the tendency to perceive events as separate from the environment; to see the parts as well as the whole. Also known as field-independent style.
4. Reflective Style - A cognitive style characterized by the tendency to carefully evaluate situation (reflect on it) before proposing a solution.
5. Impulsive Style - A cognitive style characterized by the tendency to respond quickly to, and without sufficient evaluation of new situations.
6. Internal Locus of Control - Characterized by a belief in one's success as incumbent on one's own capabilities and potentials and not on fate or luck.
7. External Locus of Control - Characterized by a belief in one's success as beyond one's control but due to luck or fate.

REFERENCES

- Aneshensel, C.S., Freirich, R.K., and Clark, V.A.  
Family Roles and Sex differences in depression  
Journal of Health and Social Behaviour, 1981,  
22 : 379-393.
- Anson, O. : Living arrangements and Women's Health  
Social Science and Medicine, 1988, 26(2) : 201-208.
- Ault, R.L. : Problem-solving strategies of reflective  
impulsive, fast accurate and slow inaccurate children.  
Child Development, 1976, 47 : 227-231
- Baran, S. : Development and Validation of a TAT Type  
Projection test for use among Bantu speaking people.  
Johannesburg. N.I.P.R., 1971
- Baron, R.M., Cowen, G., Ganz, R.L., and McDonald M.  
Interaction of Locus of Control and type of  
performance feedback : Considerations of External  
Validity. Journal of Personality and Social  
Psychology, 1974, 30 : 285-292.
- Battle, E., and Rotter, J.B. : Children's feelings  
of personal control as related to social class  
and ethnic groups. Journal of Personality, 1963,  
31 : 482-490.
- Berry, J.W. : Ecology and Socialization factors in  
figural assimilation and the resolution of binocular  
rivalry. International Journal of Psychology, 1986,  
1 : 207-229.

- Berry, J.W. : Independence and Conformity in subsistence level societies. Journal of Personality & Social Psychology, 1967, 7: 415-418.
- Berry, J.W. : Human Ecology and Cognitive Style  
New York : Sage Publications, 1976.
- Bialer, I. : Conceptualization of success and failure in mentally retarded and normal children. Journal of Personality, 1961, 29, 303-320.
- Bierstedt, R. : The Social Order, New York : MacGraw Hill 1963.
- Boateng, J. : The Relationship between Reflection-Impulsivity. Academic Performace and other related factors in children. Unpublished Dissertation. University of Ghana, 1987.
- Briscoe, M.E. : Sex differences in psychological well-being, Psychology Medical Monograph Supplement. 1982.
- Butterfield, E. : Locus of Control, Test Anxiety, reaction to frustration and achievement attitudes. Journal of Personality, 1964, 32, 355-370.
- Campbell, S.B., Douglas V.I. and Morgenstern, G. Cognitive Styles in hyperactive children and the effect of methyl-phenidate. Journal of Child Psychology and Psychiatry, 1971, 12, 55-67.

- Campbell, S.B. and Douglas, V.I. : Cognitive Styles and Responses to the threat of frustration. Canadian Journal Behavioural Sciences, 1972.
- Campbell, S.B. : Cognitive Styles and Behaviour Problems of Clinic Boys. Journal of Abnormal Child Psychology, 1974, 2, 397-312.
- Campbell, S.B. : Mother-Child Interaction in Reflective Impulsive and Hyperative children. Developmental Psychology, 1973, 4, 341-349.
- Cherulnik, P.D. and Citrin, M.M. : Individual differences in Psychological reactance : the interactions between locus of control and elimination of freedom. Journal of Personality and Social Psychology, 1974, 29, 398-404.
- Chesler, P. : Women and Madness, New York, 1972.
- Craig, T.J. and Van Natta, P.A. : Influences of demographic characteristics on two measures of depressive symptoms. Auchs General Psychiatric, 1979, 36, 149-154.
- Crandall, V.C., Katkovsky, W., and Crandall, V.J. Children's beliefs in their own control of reinforcement in intellectual academic achievement situation. Child Development, 1965, 36, 91-109.

- Collin, B.E. : Four components of the Rotter I-E Scale : Belief in the different world, a predictable a just world and a political responsive world. Journal of Personality and Social Psychology, 1974, 29, 381-391.
- Dawson, J.L.M. : Cultural and Psychological Influences upon spatial-perceptual processes in West Africa Parts I & II. International Journal of Psychology 1967b, 2, 115-125 and 171-185.
- Getzels, J.W. and Jackson, P.W. : Creativity and Intelligence. New York Wiley 1962.
- Golin, S. and Hatz, M.A. : A Factor analysis of the Beck Depression Inventory in a Mildly depressed population. Unpublished typescript from the University of Pittsburg.
- Gove, W. : Sex differences in the epidemiology of mental disorder : evidence and explanations. In Gender and Disordered Behaviour : Sex Differences in Psychopathology. (Edited by Bumberg E. and Franks V), pp 23-68. Bronner/Mazel, New York, 1979.
- Haavio-Mannila, E. : Inequalities in health and gender, Social Science and Medicine, 1986, 22 (2), 141-149.
- Haynes, S.G. and Fein Leib, M. : Women, Work and Coronary Heart Disease : Prospective Findings from the Framingham heart study. American Journal of Public Health, 1980, 70, 133-141.

- Hammen, C.L. and Padesky, C.A. : Sex differences in the expression of depressive responses on the Beck Depression Inventory. Journal of Abnormal Psychology 1977, 86, 601-614.
- Harrison, D. and Nadelman, L. : Conceptual tempo and Inhibition of Movement in black preschool children. Child Development, 1972, 43, 657-668.
- Hetherington, M.E. and Park, R. : Child Psychology A Contemporary View-Point. London, McGraw-Hill Int. Book Company 1979, pp 364-371.
- Hourani, L.L., Armerian, H., Zuray, K.H. and Afifi, L. A Population-Based Survey of Loss and Psychological Distress During War. Social Science and Medicine, 1986, 23 (3), 269-275.
- Hurlock, E. : Child Development, Singapore, McGraw Hill Book Co. 1985, pp. 455-460.
- James, W. : Internal versus External Control of reinforcement as a basic variable in learning theory. Unpublished doctoral dissertation, Ohio State University, 1957.
- Jenkins, R. : Sex differences in minor psychiatric morbidity. A survey of a homogenous population Social Science and Medicine, 1985, 20(a), 887-899.

- Juliano, D.B. : Conceptual tempo, activity, and concept learning in hyperative and normal children. Journal of Abnormal Psychology, 1974, 83, 629-634.
- Jung, C.T. : Psychological types, In Semeonoff, B. (ed) 1966. Readings in Personality Assessment. Harmandsworth, Peguin, 15.
- Kagan, J. : Individual differences in the resolution of response uncertainty. Journal of Personality and Social Psychology, 1965, 2, 154-160.
- Kenny, C.T. : In Reflectivity and Impulsivity - A Review by Messer L. Psychological Bulletin, 1966, 65, 709-713.
- Kickbush, H. : Life styles and health. Social Science and Medicine, 1986, 22 (2) : 117-124.
- Langner, T.S. : A 22-item screening score of Psychiatric symptoms indicating impairments. Journal of Health and Human Behaviour. 1962, 3, 269-276.
- Lefcourt, H.M. and Ladwig, G.W. : The effects of reference group upon Negroe's task persistence in a biracial competitive game. Journal of Personality and Social Psychology. 1965, 1, 668-671.
- Lefcourt, H.M. : Recent Developments in the study of Locus of Control. In Recent Progress in Experimental Personality Research. New York, Academic Press 1972.
- Lewin-Epstein : Employment and ill-health among Women in Israel. Social Science and Medicine, 1986, 22 (11) 1171-1179.

- Lewis, M., Rausch, M., Goldberg, S. and Dodd, C.  
Error, Response, Time and I.Q. : Sex differences  
in Cognitive Style of Preschool Children. Perceptual  
Motor Skill, 1968, 26, 563-568.
- Little, K. : African Woman in Towns. Cambridge  
University Press, New York, 1973.
- Lloyd, G. and Gartrell, N.K. : Sex differences in  
Medical Student Mental Health. American Journal of  
Psychiatry, 1981, 138, 1346-1351.
- Maslow, A.H. : Defense and Growth, Merrill Palmer  
Quarterly, 1956, 3, 37-38.
- Mannis, J.G, Milton, J., Brawner, C., Littont and  
Leonard, K. : Validating A Mental Health Scale  
American Sociological Review, 1963, 28, 108-116.
- McArthur, R. : Sex differences in field dependence  
for Eskimo. A replication of Berry's finding.  
International, Journal of Psychology, 1967, 2,  
139-140.
- MacDonald, A.P. : Internal-External Locus of Control  
and the Practice of Birth Control. Psychological  
Reports, 1970, 27, 206.
- Meichenbaum, D. and Goodman, J. : Reflectivity Impul-  
sivity and verbal control of motor behaviour.  
Child Development, 1969, 40, 785-798.

- Meddin, J.R. : Sex differences in depression and satisfaction with self : Findings from a United States National Survey. Social Science and Medicine, 1986, 22(8), 807-812.
- Minturn, L. and Lambert, W.W. : Mothers of six cultures Antecedants of Child rearing, New York Wiley, 1961.
- Mischel, W. : Personality Assessment, New York, Wiley, 1968, pp. 47.
- Mischel, W. and Mischel, H. : Essentials of Psychology, New York; Random House, 1977, pp. 298-299.
- Montgomery, L.E. and Finch, A.J. Jnr. : Reflection-Impulsivity and Locus of Conflict in Emotionally Disturbed Children. Journal of Genetic Psychology 1975, 126, 89-92.
- Munroe, R.L. and Munroe, R.H. : Effects of Environmental Experience on Spatial Ability in an East African Society. Journal of Social Psychology, 1971b, 83, 15-22.
- Neale, A.V., Barbara, C. Tilley and Vernon, S.W. Marital Status, Delay in Seeking Treatment and Survival from Breast Cancer. Social Science and Medicine, 1986, 23 (3), 305-312.

- Nelson, T.F. : The effects of training in attention deployment on observing behaviour in Reflective and Impulsive Children. Unpublished doctoral dissertation, Univ. of Minnesota, 1969.
- Norwicki, S. Jr. and Segal W. : Perceived Parental Characteristic, Locus of Control Orientation and Behavioural correlates of Locus of Control. Developmental Psychology, 1974, 10, 33-37.
- Odell, M. : Personality Correlates of independence and Conformity, Unpublished Masters Thesis, Ohio State, University, 1959.
- Oddoye, B. : Cognitive Styles (Global versus Analytical) The effects of race, sex and age. Unpublished Dissertation. University of Ghana. 1987.
- Okonyi, N.O. : The Differential Effects of Rural and Urban upbringing on the development of Cognitive Style. International Journal of Psychology, 1969, 4, 293.
- Ollendick, T.H. and Finch, A.J. Jr. : Reflection-Impulsivity in brain damaged and normal children. Perceptual and Motor Skills, 1973, 36, 654.
- Parker, G. : Sex Differences in Non-Clinical Depression. Review and Assessment of Previous Studies. Australian and New Zealand Journal of Psychiatry, 1979, 13, 127-132.
- Parsons, O.A. and Schneider, J.M. : Locus of Control in University Students from eastern and Western Societies. Journal of Consultation and Clinical Psychiatry, 1974, 42, 456-461.

- 101 -

- Pervin, L.A. : Personality - Theory Assessment and Research, U.S.A. : John Wiley & Sons, Inc., 1970 pp. 181-194.
- Phares, E.J. : Changes in expectancy in skill and chance situation; Unpublished doctoral dissertation. Ohio State University, 1955.
- Phillips, D. and Segal, B.F. : Sexual Status and Psychiatric Symptoms. American Sociological Review 1969, 34, 58-74.
- Rotter, F.B. : Generalized Expectancies for Internal versus External Control of Reinforcement. Psychological Monogram. 1966, 80, (609)
- Rosenfield, S. : Sex differences in depression : Do Women always have high rates? Journal of Health and Social Behaviour, 1980, 21, 33-42.
- Ross, C. and Mirowsky, J. : Components of depressed mood in married men and women. American Journal of Epidemiology, 1984, 119 (6), 997-1004.
- Seaman, M. and Evans, J. : Alienation and Learning in a hospital setting. American Sociological Review, 1962, 27, 772-782.
- Schwab, J., Bell, R., Warheit, G. and Schwab, R. Social Order and Mental Health. Bruner-Mazel, New York, 1979.

- Schwebel, A. : Effects of Impulsivity on Performances of verbal tasks in middle and lower class children. American Journal Orthopsychiatry, 1966, 36, 12-21.
- Sieglman, E. : Reflective and Impulsive observing behaviour. Child Development, 1969, 40, 1213-1222.
- Simmons, W. : Personality Correlates of the James Scale. Unpublished Master's Thesis, Ohio State University, 1959.
- Taylor, J.A. : Drive theory and manifest anxiety Psychological Bulletin, 1956, 53, 303-320.
- Vega, E., Warheit, G. and Meinhardt, K. : Marital disruption and the prevalence of depressive symptomatology among Angles and Mexican Women in the United States. Social Science and Medicine, 1984, 817-824.
- Vega, W., Bohdan, Kolody, Valle, R. and Hough, R. Depressive Symptoms and their correlates among immigrant Mexican women in the United States. Social Science and Medicine, 1986, 22 (6), 645-652
- Van Leeuwen, M.S. : A Cross-Cultural Examination of Psychological differentiation in males and females. International Journal of Cross Cultural Psychology, 1978, 13, 87-122.
- Verbrugge, L.M. : Triggers of Symptoms and Health Care. Social Science and Medicine, 1985, 20(9), 855-876.



- Verbrugge, L.M. : Sex differences in morbidity and mortality in the United States. Social Biology, 1976, 23, 275-296.
- Waltz, M. : Marital Context and Post-infarction quality of life : Is it social support or something more? Social Science and Medicine, 1986, 22(8) 791-807.
- Ward, W.C. : Reflective-Impulsivity in Kindergarten Children. Child Development, 1968, 39, 867-874.
- Weintraub, S.A. : Self-Control as a Correlate of an Internalizing-Externalizing Symptom Dimension Journal of Abnormal Psychology, 1973, 1, 292-307.
- Weitheim, J. and Medrick, S.A. : The Achievement Motive and Field Independence. Journal of Consulting Psychology, 1958, 22, 38.
- Witkin, H.A., Lewis, H.B., Hertzman, M., Manchover, K., Meissner, P.D., and Warpner, S. : Personality through Perception, New York, Harper, 1954.
- Witkin, H.A. : Psychological differentiation and forms of pathology. Journal of Abnormal Psychology, 1965, 70, 317-336.
- Witkin, H.A. and Berry, J.W. : Psychological differentiation in cross-cultural perspective. Journal of Cross-Cultural Psychology, 1975, 6, 4-87.

- Witkin, H.A. : Psychological Differentiation.  
N.Y., Wiley, 1962.
- Wood, N.F. and Hulka, B.S. : Symptom Reports and  
Illness Behaviour Among Employed Women and Home  
Makers. Journal of Community Health, 1979, 5, 36.
- Zucker, J. and Stricker, G. : Impulsivity-Reflec-  
tivity in Preschool head-start and middle class  
children. Journal of Learning Disabilities, 1968,  
1, 24 : 30.

A P P E N D I X

APPENDIX IMENTAL HEALTH INVENTORY

The purpose of this questionnaire is to find out how men and women differ in their expressions of these symptoms. You are not required to write your name on the questionnaire. Please be very frank and honest in answering each question. Thank you. -----

Age:.....Sex:.....

Marital Status:.....

Educational Background: Elementary, Teacher Training [ ]  
Secondary & Post Secondary, [ ]  
University [ ]

Religion:.....

Do you go to Church? (Often [ ], Sometimes [ ], Never [ ])

INSTRUCTIONS

I would like to ask you some questions about how you have been feeling in yourself lately. I do not want any details, just 'yes' or 'no' will be enough. Give a tick [ ] where appropriate.

1. Do you feel somewhat apart even among friends (apart, isolated, alone? (Yes, No )
2. Have you had period of days, weeks or months when you could not take care of things because you could not get going? (Yes, No)
3. Would you say that nothing ever turns out for you the way you want it to? (Yes, No)
4. Do you find that you sometimes cannot help wondering if anything is worthwhile? (Yes, No)
5. Are you ever bothered by nervousness? (Often, Sometimes, Never)
6. Are you the worrying type? (Yes, No)
7. Do you have periods of such great restlessness that you cannot sit still very long? (Yes, No).
8. Do you have any trouble getting to sleep or staying asleep? (Often, Sometimes, Never)
9. In general, would you say that most of the time you are in good spirits or low spirits. (Good, Low)
10. Is your memory alright (good)? (Yes, No)

- 106 -

11. Do you have personal worries that get you down physically?  
(make you physically ill) (Yes, No)
12. Do you feel weak all over much of the time? (Yes, No)
13. Have you ever been bothered by cold sweats. (Often, Sometimes, Never).
14. Do you suddenly feel hot all over every so often? (Yes,NO)
15. Are you ever troubled with headaches or pains in the head? (Often, Sometimes, Never).
16. Have you ever had any fainting spells (lost, consciousness)?  
(Never, A few times, More than a few).
17. Does there seem to be a fullness in your head or nose  
much of the time? (Yes, No).
18. Would you say your appetite is poor, fair or good?  
(Poor, Fair, Good).
19. Are you bothered by stomach trouble several times a  
week? (Yes, No).
20. Have you ever been bothered by shortness of breath when  
you were not exercising or working hard? (Often, Sometimes,  
Never).
21. Have you ever been bothered by your heart beating hard?  
(Often, Sometimes, Never).
22. Do your hands ever trouble enough to bother you?  
(Often, Sometimes, Never).

APPENDIX IIINTERNAL-EXTERNAL LOCUS OF CONTROL SCALE

Below is a 23 Item Scale about people's beliefs in the events that happen to them. Please tick the one that applies.

-----

1. (a) People's misfortunes result from the mistakes they make.  
(b) Many of the unhappy things in people's lives are partly due to bad luck.
2. (a) One of the major reasons why we have wars is because people don't take enough interest in politics.  
(b) There will always be wars no matter how hard people try to prevent them.
3. (a) In the long run people get the respect they deserve in this world.  
(b) Unfortunately, an individual's worth often passes unrecognised no matter how hard he tries.
4. (a) The idea that teachers are unfair to students is nonsense.  
(b) Most students do not realize the extent to which their grades are influenced by accidental happenings.
5. (a) Capable people who fail to become leaders have not taken advantage of their opportunities.  
(b) Without the right breaks one cannot be an effective leader.
6. (a) People who can't get others to like them don't understand how to get along with others.  
(b) No matter how hard you try some people just don't like you.
7. (a) Trusting in fate has never turned out as well for me as making decision to take to definite course of action.  
(b) I have often found that what is going to happen will happen.
8. (a) In the case of the well prepared student, there is rarely if ever such a thing as an unfair test.  
(b) Many times examination questions tend to be so unrelated to course work that studying is really useless.

- 108 -

9. (a) Becoming a success is a matter of hard work, luck has little or nothing to do with it.  
(b) Getting a good job depends mainly on being in the right place at the right time.
10. (a) The average citizen can have an influence in government decision.  
(b) This world is owned by the few people in power and there is not much the little guy can do about it.
11. (a) When I make plans, I am almost certain that I can make work.  
(b) It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune any how.
12. (a) In my case getting what I want has little or nothing to do with luck.  
(b) Many times we might as well decide what to do by flipping a coin.
13. (a) Getting people to do the right thing depends upon ability luck has little or nothing to with it.  
(b) Who gets to be the boss often depends on who was lucky enough to be in the right place first.
14. (a) By taking on active part in political and social affairs, the people can control world events.  
(b) As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
15. (a) There really is no such thing as 'luck'.  
(b) Most people don't realize the extent to which their lives are controlled by accidental happenings.
16. (a) How many friends you have, depends upon how nice a person you are.  
(b) It is hard to know whether or not a person really likes you.
17. (a) Most misfortunes are the result of lack of ability, ignorance, laziness or all three.  
(b) In the long run the bad things that happen to us are balanced by the good ones.
18. (a) With enough effort, we can wipe out political corruption.  
(b) It is difficult for people to have much control over the things politicians do in office.

- 109 -

19. (a) There is a direct connection between how hard I study and the grade I get.  
(b) Sometimes I can't understand how teachers arrive at the grades they give.
20. (a) It is impossible for me to believe that chance or luck plays an important role in my life.  
(b) Many times I feel that I have little influence over the things that happen to me.
21. (a) People are lonely because they don't try to be friendly.  
(b) There's not much use in trying too hard to please people if they like you, they like you.
22. (a) What happens to me is my own doing.  
(b) Sometimes I feel that I don't have enough control over the direction my life is taking.
23. (a) In the long run the people are responsible for bad government on a national as well as on a local level.  
(b) Most of the time I can't understand why politicians behave the way they do.

Appendix III : RAW SCORE DATA  
F E M A L E S

No.	Overall Symptom	Psycho-logical Index	H or L	Psychophy-siological Index	H or L	Psycho-logical Index	H or L	Ambiguous	H or L	COGNITIVE STYLE			Marital Status	Educa-tional back-ground	Church atten-dance	A G E		
										Internal	Medium	External				20-29	30-39	40 and above
1	1	0	L	1	H	0	L	0	L	5	-	-	M	1	1	-	-	1
2	1	0	H	3	H	0	L	0	L	5	-	-	M	1	1	-	-	1
3	1	1	L	0	L	0	L	0	L	7	11	-	M	1	1	-	-	1
4	1	2	L	1	L	0	L	0	L	7	11	4	M	2	1	-	-	1
5	2	1	L	0	L	0	L	0	L	8	-	-	M	1	1	-	-	1
6	2	1	L	0	L	0	L	0	L	8	13	-	M	1	1	-	-	1
7	4	1	L	2	L	0	L	0	L	8	13	-	M	1	1	-	-	1
8	4	0	L	2	L	0	L	0	L	8	12	-	M	1	1	-	-	1
9	0	0	L	0	L	0	L	0	L	5	-	-	M	1	1	-	-	1
10	0	0	L	0	L	0	L	0	L	5	-	-	M	1	1	-	-	1
11	0	0	L	0	L	0	L	0	L	5	-	-	M	1	1	-	-	1
12	0	0	L	0	L	0	L	0	L	3	-	-	M	1	1	-	-	1
13	10	4	L	3	L	1	L	2	L	3	-	-	M	1	1	-	-	1
14	3	2	L	2	L	0	L	0	L	3	-	-	M	1	1	-	-	1
15	3	3	L	0	L	0	L	0	L	3	-	-	M	1	1	-	-	1
16	5	4	L	1	L	0	L	0	L	14	12	-	M	2	2	-	-	2
17	5	4	L	1	L	0	L	0	L	14	12	-	M	2	2	-	-	2
18	5	4	L	1	L	0	L	0	L	14	12	-	M	2	2	-	-	2
19	4	3	L	0	L	0	L	0	L	14	12	-	M	2	2	-	-	2
20	3	3	L	0	L	0	L	0	L	14	12	-	M	2	2	-	-	2
21	3	4	L	0	L	0	L	0	L	9	11	-	M	2	2	-	-	2
22	5	4	L	1	L	0	L	0	L	9	11	-	M	2	2	-	-	2
23	1	0	L	0	L	0	L	0	L	9	11	-	M	2	2	-	-	2
24	0	0	L	0	L	0	L	0	L	6	-	-	M	2	2	-	-	2
25	0	0	L	0	L	0	L	0	L	6	-	-	M	2	2	-	-	2
26	6	4	L	2	L	0	L	0	L	3	-	-	M	2	2	-	-	2
27	1	1	L	0	L	0	L	0	L	3	-	-	M	2	2	-	-	2
28	3	1	L	0	L	0	L	0	L	3	-	-	M	2	2	-	-	2
29	1	1	L	0	L	0	L	0	L	3	-	-	M	2	2	-	-	2
30	1	1	L	0	L	0	L	0	L	3	-	-	M	2	2	-	-	2
31	4	1	L	0	L	0	L	0	L	15	13	-	M	1	1	-	-	1
32	0	0	L	0	L	0	L	0	L	15	13	-	M	1	1	-	-	1
33	4	2	L	0	L	0	L	0	L	11	11	-	M	1	1	-	-	1

F E M A L E S (Cont'd)

No.	Overall Symptom	Psychological Index	H or L	Psychophysiological Index	H or L	Psychological Index	H or L	Ambiguous	H or L	COGNITIVE STYLE			Marital Status	Educational background	Church attendance	A G E		
										Internal	Medium	External				20-29	30-39	40 and above
34	1	1	L	0	L	0	L	0	L	8	-	-	M	3	1	-	1X	-
35	2	2	L	0	L	0	L	0	L	6	-	-	M	3	1	-	2I	0E
36	0	0	L	0	L	0	L	0	L	-	-	-	M	2	1	-	-	-
37	1	1	L	0	L	0	L	0	L	-	-	-	M	2	1	-	-	-
38	1	1	L	0	L	0	L	0	L	0	-	-	M	3	1	-	-	-
39	2	2	L	0	L	0	L	0	L	4	-	-	M	3	2	-	2I	-
40	1	1	L	0	L	0	L	0	L	-	-	-	M	2	1	-	-	-
41	1	1	L	0	L	0	L	0	L	2	-	-	M	2	2	-	-	-
42	0	0	L	0	L	0	L	0	L	2	-	-	M	2	2	-	-	-
43	6	4	L	0	L	0	L	0	L	9	-	-	M	1	2	-	0I	6M
44	0	0	L	0	L	0	L	0	L	2	-	-	M	3	2	-	-	-
45	1	1	L	0	L	0	L	0	L	4	-	-	M	3	2	-	-	IE
46	0	0	L	0	L	0	L	0	L	2	-	-	M	3	2	-	0I	-
47	0	0	L	0	L	0	L	0	L	7	-	-	M	3	2	-	0I	-
48	1	0	L	0	L	0	L	0	L	2	-	-	M	3	2	-	-	-
49	0	0	L	0	L	0	L	0	L	0	-	-	M	2	1	-	-	-
50	0	0	L	0	L	0	L	0	L	7	-	-	M	3	2	-	-	-
51	3	0	L	0	L	0	L	0	L	5	-	-	M	2	2	-	0I	2M
52	0	0	L	0	L	0	L	0	L	7	-	-	M	2	2	-	-	1M
53	1	0	L	0	L	0	L	0	L	9	-	-	M	2	1	-	-	0I
54	0	0	L	0	L	0	L	0	L	9	-	-	M	2	1	-	-	0I
55	2	2	L	0	L	0	L	0	L	-	-	-	M	2	1	-	-	0I
56	2	2	L	0	L	0	L	0	L	-	-	-	M	2	1	-	-	2E
57	3	3	L	0	L	0	L	0	L	-	-	-	M	2	1	-	-	2E
58	7	3	L	0	L	0	L	0	L	-	-	-	M	2	1	-	-	7E
59	9	3	L	0	L	0	L	0	L	-	-	-	M	3	2	-	-	7E
60	10	4	L	0	L	0	L	0	L	-	-	-	M	2	2	-	-	10A
61	4	1	L	0	L	0	L	0	L	5	-	-	M	1	1	-	-	-
62	1	5	L	0	L	0	L	0	L	-	-	-	M	1	2	-	-	-
63	5	1	L	0	L	0	L	0	L	-	-	-	M	1	1	-	-	-
64	1	3	L	0	L	0	L	0	L	-	-	-	M	1	1	-	-	-
65	8	1	L	0	L	0	L	0	L	-	-	-	M	3	2	-	-	-
66	2	4	L	0	L	0	L	0	L	-	-	-	M	2	2	-	-	-
67	2	2	L	0	L	0	L	0	L	-	-	-	M	1	3	-	-	-

**RESULTS (Cont'd)**

No.	Overall Symptom	Psychological Index	H or L	Psychophysiological Index	H or L	Psychological Index	H or L	Ambiguous	H or L	Cognitive Style		Marital Status	Educational background	Church attendance	AGE		
										Internal	External				20-29	30-39	40 and above
68	5	3	H	2	H	0	L	0	L	1	15	S	3	2	58	9	1
69	3	3	H	2	H	0	L	0	L	1	12	M	2	1	58	9	1
70	3	3	H	0	L	0	L	0	L	1	13	M	2	1	58	3	1
71	1	1	L	0	L	0	L	0	L	1	13	M	2	1	58	3	1
72	2	1	L	0	L	0	L	0	L	1	13	M	2	1	58	3	1
73	5	3	H	1	H	1	L	1	H	1	15	M	1	2	58	1	1
74	2	0	L	1	L	0	L	0	L	1	15	M	2	2	58	1	1
75	0	0	L	1	L	0	L	0	L	1	15	M	2	2	58	1	1
76	1	1	L	0	L	0	L	0	L	1	15	M	2	2	58	1	1
77	1	1	L	0	L	0	L	0	L	1	15	M	2	2	58	1	1
78	1	1	L	0	L	0	L	0	L	1	17	M	2	2	58	1	1
79	1	0	L	0	L	0	L	0	L	1	13	S	3	2	58	1	1
80	2	1	L	0	L	0	L	0	L	1	13	S	3	2	58	1	1
81	0	1	L	0	L	0	L	0	L	1	13	S	3	3	58	1	1
82	1	0	L	0	L	0	L	0	L	1	13	S	3	3	58	1	1
83	1	1	L	0	L	0	L	0	L	1	12	S	2	2	58	1	1
84	1	1	L	0	L	0	L	0	L	1	12	S	2	2	58	1	1
85	5	3	H	2	H	1	L	1	H	1	15	S	1	1	58	1	1
86	5	3	H	2	H	1	L	1	H	1	15	S	1	1	58	1	1
87	7	4	H	2	H	2	L	2	H	1	15	S	1	1	58	1	1
88	5	3	H	2	H	1	L	1	H	1	15	S	1	1	58	1	1
89	5	4	H	2	H	2	L	2	H	1	15	S	2	2	58	1	1
90	5	4	H	2	H	2	L	2	H	1	15	S	2	2	58	1	1
91	12	3	H	1	H	0	L	0	L	1	12	M	2	1	58	1	1
92	5	3	H	2	H	1	L	1	H	1	12	M	2	1	58	1	1
93	5	3	H	2	H	1	L	1	H	1	12	M	2	1	58	1	1
94	10	3	H	2	H	1	L	1	H	1	12	M	2	1	58	1	1
95	3	2	H	3	H	1	L	1	H	1	13	M	2	1	58	1	1
96	2	2	H	3	H	1	L	1	H	1	13	M	2	1	58	1	1
97	4	2	H	3	H	1	L	1	H	1	13	M	2	1	58	1	1
98	3	2	H	3	H	1	L	1	H	1	13	M	2	1	58	1	1
99	4	2	H	3	H	1	L	1	H	1	13	M	2	1	58	1	1
100	3	2	H	3	H	1	L	1	H	1	13	M	2	1	58	1	1
101	6	4	H	1	H	0	L	0	L	1	17	S	2	1	58	1	1

F E M A L E S (Cont'd)

No.	Overall Symptom	Psycho-logical Index	H or L	Psychopath-ological Index	H or L	Psycho-logical Index	H or L	Ambiguous	H or L	COGNITIVE STYLE			Marital Status	Educa-tional back-ground	Church atten-dance	A G E		
										Internal	Medium	External				20-29	30-39	40 and above
102	B	0	H	2	L	0	L	2	H	-	12	-	S	2	1	8	0	-
103	Q	3	L	0	L	0	L	0	L	-	10	-	M	2	1	10	M	-
104	A	3	H	0	L	0	L	0	L	-	11	-	M	2	1	11	M	-
105	3	3	L	0	L	0	L	0	L	-	11	-	M	2	1	11	M	-
106	1	3	L	0	L	0	L	0	L	5	11	-	M	2	2	3	M	-
107	A	2	H	0	L	0	L	0	L	-	12	-	S	3	2	4	M	-
108	2	2	H	0	L	0	L	0	L	4	12	-	M	2	2	11	I	-
109	1	2	L	0	L	0	L	0	L	-	-	-	S	2	1	11	I	-
110	1	6	H	0	L	0	L	0	L	8	-	-	S	2	2	11	I	-
111	7	4	H	3	L	1	H	2	H	-	-	-	S	2	2	11	I	-
112	1	4	H	1	L	0	L	0	L	-	-	-	M	2	2	10	I	-
113	3	1	H	1	L	0	L	0	L	8	12	-	M	2	1	11	I	-
114	8	6	L	1	L	0	L	0	L	-	11	-	M	2	1	11	I	-
115	1	1	H	1	L	0	L	0	L	-	11	-	M	2	1	11	I	-
116	10	6	H	3	L	1	H	1	H	-	11	-	M	2	1	11	I	-
117	3	6	L	1	L	0	L	0	L	2	11	-	M	2	1	11	I	-
118	3	6	L	1	L	0	L	0	L	-	14	-	M	2	1	11	I	-
119	7	0	H	1	L	0	L	0	L	-	10	-	M	2	1	11	I	-
120	2	2	H	0	L	0	L	0	L	-	11	-	M	2	1	11	I	-
121	4	3	H	0	L	0	L	0	L	-	11	-	M	2	1	11	I	-
122	3	2	H	0	L	0	L	0	L	-	15	-	M	2	1	11	I	-
123	2	1	L	2	L	1	H	1	L	-	15	-	M	2	1	11	I	-
124	6	3	H	1	L	0	L	0	L	-	11	-	M	2	1	11	I	-
125	4	3	H	2	L	1	H	1	L	9	11	-	M	2	1	11	I	-
126	3	3	H	0	L	0	L	0	L	7	11	-	M	2	1	11	I	-
127	4	3	H	0	L	0	L	0	L	8	11	-	M	2	1	11	I	-
128	2	2	H	0	L	0	L	0	L	4	11	-	M	2	1	11	I	-
129	3	3	H	0	L	0	L	0	L	7	11	-	M	2	1	11	I	-
130	6	3	H	0	L	0	L	0	L	4	11	-	M	2	1	11	I	-
131	3	3	H	0	L	0	L	0	L	9	11	-	M	2	1	11	I	-
132	0	2	L	0	L	0	L	0	L	4	11	-	M	2	1	11	I	-
133	3	2	H	0	L	0	L	0	L	4	11	-	M	2	1	11	I	-
134	0	2	H	0	L	0	L	0	L	4	11	-	M	2	1	11	I	-
135	4	2	H	1	L	0	L	0	L	13	13	-	M	2	1	11	I	-

FEMALEES (Cont'd)

No.	Overall Symptom	Psychological Index	H or L	Psychophysiological Index	H or L	Physiological Index	H or L	Ambiguous	H or L	COGNITIVE STYLE			Marital Status	Educational background	Church attendance	AGE		
										Internal	Medium	External				20-29	30-39	40 and above
136	1	1	L	0	L	0	L	0	L	1	12	-	M	2	1	20-29	1	-
137	2	1	L	0	L	0	L	0	L	1	8	-	S	2	1	20-29	1	-
138	1	1	L	0	L	0	L	0	L	1	8	-	S	3	1	20-29	1	-
139	1	0	L	1	L	0	L	0	L	1	11	-	S	3	1	20-29	1	-
140	6	5	H	0	L	1	L	0	L	1	9	-	S	2	1	20-29	1	-
141	8	5	L	2	L	1	L	0	L	1	10	-	S	2	1	20-29	1	-
142	2	1	L	4	L	0	L	0	L	1	5	-	S	3	1	20-29	1	-
143	8	1	L	3	L	0	L	0	L	1	7	-	S	3	1	20-29	1	-
144	5	5	L	1	L	0	L	0	L	1	11	-	S	2	1	20-29	1	-
145	5	4	L	1	L	0	L	0	L	1	11	-	S	3	1	20-29	1	-
146	9	4	L	1	L	0	L	0	L	1	8	-	S	3	1	20-29	1	-
147	5	6	L	2	L	0	L	0	L	1	13	-	S	3	1	20-29	1	-
148	9	3	L	2	L	0	L	0	L	1	13	-	S	3	1	20-29	1	-
149	5	6	L	1	L	0	L	0	L	1	15	-	M	3	1	20-29	1	-
150	3	1	L	1	L	0	L	0	L	1	12	-	S	3	1	20-29	1	-
151	1	1	L	0	L	0	L	0	L	1	7	-	S	3	1	20-29	1	-
152	2	2	L	2	L	0	L	0	L	1	9	-	S	3	1	20-29	1	-
153	8	1	L	0	L	0	L	0	L	1	12	-	S	3	1	20-29	1	-
154	9	6	L	3	L	0	L	0	L	1	17	-	S	3	1	20-29	1	-
155	2	0	L	0	L	0	L	0	L	1	6	-	S	3	1	20-29	1	-
156	2	0	L	0	L	0	L	0	L	1	5	-	S	3	1	20-29	1	-
157	2	1	L	0	L	0	L	0	L	1	6	-	S	3	1	20-29	1	-
158	1	2	L	0	L	0	L	0	L	1	14	-	S	3	1	20-29	1	-
159	3	1	L	0	L	0	L	0	L	1	10	-	S	3	1	20-29	1	-
160	2	2	L	0	L	0	L	0	L	1	10	-	S	3	1	20-29	1	-
161	1	1	L	0	L	0	L	0	L	1	9	-	S	3	1	20-29	1	-
162	1	1	L	0	L	0	L	0	L	1	10	-	S	3	1	20-29	1	-
163	1	1	L	0	L	0	L	0	L	1	9	-	S	3	1	20-29	1	-
164	5	3	L	1	L	0	L	0	L	1	14	-	M	2	1	20-29	1	-

M A I E S

No.	Overall Symptom	Psychological Index	H or L	Psychophysical Index	H or L	Physiological Index	H or L	Ambiguous	H or L	COGNITIVE STYLE		Marital Status	Educational background	Church attendance	A O E		
										Internal	External				20-29	30-39	40 and above
1	1	1	L	0	L	0	L	0	L	5	1	S	2	1	11	-	-
2	2	2	H	0	L	0	L	0	L	5	1	M	3	2	21	21	-
3	2	2	H	0	L	0	L	0	L	5	1	M	3	2	2	-	-
4	3	3	H	0	L	0	L	0	L	5	1	M	3	2	-	-	-
5	3	3	H	0	L	0	L	0	L	5	1	M	3	2	-	-	-
6	2	2	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
7	2	2	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
8	0	0	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
9	3	3	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
10	3	3	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
11	3	3	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
12	3	3	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
13	2	2	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
14	2	2	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
15	2	2	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
16	2	2	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
17	0	0	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
18	2	2	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
19	2	2	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
20	1	1	L	0	L	0	L	0	L	5	1	M	3	2	-	-	-
21	1	1	L	0	L	0	L	0	L	5	1	M	3	2	-	-	-
22	1	1	L	0	L	0	L	0	L	5	1	M	3	2	-	-	-
23	9	3	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
24	10	3	L	1	H	1	L	0	L	5	1	M	3	2	-	-	-
25	6	2	L	2	H	2	L	0	L	5	1	M	3	2	-	-	-
26	3	2	L	0	L	0	L	0	L	5	1	M	3	2	-	-	-
27	2	2	L	0	L	0	L	0	L	5	1	M	3	2	-	-	-
28	0	0	L	0	L	0	L	0	L	5	1	M	3	2	-	-	-
29	2	2	L	0	L	0	L	0	L	5	1	M	3	2	-	-	-
30	8	3	L	0	L	0	L	0	L	5	1	M	3	2	-	-	-
31	7	3	L	0	L	0	L	0	L	5	1	M	3	2	-	-	-
32	1	1	L	0	L	0	L	0	L	5	1	M	3	2	-	-	-
33	5	1	L	0	L	0	L	0	L	5	1	M	3	2	-	-	-

M A T E R I A L S (Cont'd)

No.	Overall Symptom	Psychological Index	H or L	Psychophysiological Index	H or L	Psychological Index	H or L	Ambiguous	H or L	COGNITIVE STYLE			Marital Status	Educational background	Church attendance	A G E		MO and above
										Internal	Medium	External				20-29	30-39	
34	5	3	H	2	H	0	L	0	L	8	-	-	M	2	2	5 I	-	-
35	2	2	H	0	L	0	L	0	L	-	-	-	S	2	2	2 E	-	-
36	3	0	H	1	L	3	H	0	L	-	-	-	M	2	1	3 E	-	-
37	3	0	L	0	L	0	L	0	L	-	-	-	M	2	1	4 W	-	-
38	4	2	H	1	L	0	L	0	L	-	-	-	S	2	2	-	-	-
39	4	0	L	0	L	0	L	0	L	-	-	-	M	2	2	-	-	-
40	4	3	H	0	L	0	L	0	L	-	-	-	M	2	2	-	-	-
41	4	4	H	0	L	0	L	0	L	-	-	-	M	2	2	4 E	-	-
42	6	5	H	1	L	1	L	0	L	7	-	-	S	3	2	4 I	-	-
43	6	5	H	1	L	1	L	0	L	9	-	-	S	2	2	-	-	-
44	1	0	L	0	L	0	L	0	L	-	-	-	M	2	2	-	-	-
45	3	0	L	0	L	0	L	0	L	7	-	-	M	2	2	-	-	-
46	0	2	L	0	L	0	L	0	L	6	-	-	M	2	2	-	-	-
47	0	0	L	0	L	0	L	0	L	7	-	-	M	2	2	-	-	-
48	2	1	L	0	L	0	L	0	L	9	-	-	M	2	2	-	-	-
49	5	2	L	3	L	1	L	0	L	9	-	-	M	3	1	-	-	-
50	5	1	L	3	L	0	L	0	L	9	-	-	M	1	1	-	-	-
51	10	6	L	3	L	0	L	0	L	9	-	-	M	2	2	-	-	-
52	1	1	L	0	L	0	L	0	L	9	-	-	M	2	2	-	-	-
53	1	1	L	0	L	0	L	0	L	7	-	-	M	2	2	-	-	-
54	1	0	L	0	L	0	L	0	L	9	-	-	M	2	2	-	-	-
55	1	0	L	0	L	0	L	0	L	9	-	-	M	2	2	-	-	-
56	0	4	L	0	L	0	L	0	L	3	-	-	M	3	1	0 M	-	-
57	5	4	L	1	L	0	L	0	L	13	-	-	M	1	2	0 M	-	-
58	1	0	L	0	L	0	L	0	L	13	-	-	M	1	1	5 M	-	-
59	2	2	L	0	L	0	L	0	L	13	-	-	M	1	1	1 I	-	-
60	2	0	L	0	L	0	L	0	L	12	-	-	M	1	1	2 K	-	-
61	3	0	L	0	L	0	L	0	L	1	-	-	M	2	2	0 E	-	-
62	8	4	L	2	L	0	L	0	L	1	-	-	M	1	2	5 M	-	-
63	5	2	L	0	L	0	L	0	L	13	-	-	M	1	2	0 E	-	-
64	8	0	L	0	L	0	L	0	L	13	-	-	M	1	1	5 M	-	-
65	5	3	L	0	L	0	L	0	L	13	-	-	M	1	2	3 M	-	-
66	3	6	L	0	L	0	L	0	L	10	-	-	M	2	2	1 E	-	-

MALERS (Cont'd)

No.	Overall Symptom	Psychological Index	H or L	Psychophysiological Index	H or L	Physiological Index	H or L	Ambiguous	H or L	COGNITIVE STYLE			Marital Status	Educational background	Church attendance	AGE		
										Internal	Medium	External				20-29	30-39	40 and above
67	2	2	H	0	L	0	L	0	L	1	12	-	M	3	2	2	2	2
68	1	1	L	0	L	0	L	0	L	-	13	-	M	3	1	1	1	1
69	0	0	L	0	L	0	L	0	L	-	13	-	M	1	2	2	1	1
70	7	5	H	2	H	0	L	0	L	-	10	-	M	1	2	2	2	2
71	3	3	H	0	L	0	L	0	L	-	10	-	M	1	1	1	1	1
72	3	3	H	0	L	0	L	0	L	-	8	-	S	1	1	1	1	1
73	0	2	H	0	L	0	L	0	L	-	4	-	S	1	2	1	2	1
74	3	0	L	0	L	0	L	0	L	-	11	-	M	1	2	1	2	1
75	3	3	L	0	L	0	L	0	L	-	11	-	M	1	2	1	2	1
76	1	1	L	0	L	0	L	0	L	-	11	-	M	1	2	1	2	1
77	5	4	H	0	L	0	L	0	L	-	12	-	M	1	2	1	2	1
78	4	4	L	0	L	0	L	0	L	-	11	-	M	1	2	1	2	1
79	0	3	L	0	L	0	L	0	L	-	12	-	M	1	2	1	2	1
80	5	3	L	0	L	0	L	0	L	-	11	-	M	1	2	1	2	1
81	3	3	H	0	L	0	L	0	L	-	13	-	M	1	2	1	2	1
82	3	3	H	0	L	0	L	0	L	-	11	-	M	1	2	1	2	1
83	2	2	H	0	L	0	L	0	L	-	6	-	M	2	2	2	2	2
84	2	2	H	0	L	0	L	0	L	-	9	-	M	2	2	2	2	2
85	6	4	H	0	L	0	L	0	L	-	17	-	M	2	2	2	2	2
86	0	0	L	0	L	0	L	0	L	-	5	-	M	1	3	1	3	1
87	1	1	L	0	L	0	L	0	L	-	18	-	M	3	3	3	3	3
88	3	3	L	0	L	0	L	0	L	-	14	-	M	3	3	3	3	3
89	1	1	L	0	L	0	L	0	L	-	10	-	M	1	3	1	3	1
90	8	5	H	0	L	0	L	0	L	-	10	-	S	1	3	1	3	1
91	2	2	H	0	L	0	L	0	L	-	15	-	M	1	2	1	2	1
92	4	3	H	0	L	0	L	0	L	-	14	-	M	2	2	2	2	2
93	0	0	L	0	L	0	L	0	L	-	12	-	M	2	2	2	2	2
94	3	3	L	0	L	0	L	0	L	-	12	-	M	3	3	3	3	3
95	1	1	L	0	L	0	L	0	L	-	10	-	M	3	3	3	3	3
96	3	3	L	0	L	0	L	0	L	-	12	-	M	3	3	3	3	3
97	1	1	L	0	L	0	L	0	L	-	10	-	M	2	2	2	2	2
98	4	2	L	0	L	0	L	0	L	-	12	-	M	3	3	3	3	3
99	1	2	L	0	L	0	L	0	L	-	12	-	M	2	2	2	2	2
100	3	2	L	0	L	0	L	0	L	-	12	-	M	3	3	3	3	3

M.A.I.R.S. (Cont'd)

No.	Overall Symptom	Psycho-logical Index	H or L	Psychopath-logical Index	H or L	Psycho-logical Index	H or L	Ambiguous	H or L	COGNITIVE STYLE			Marital Status	Educa-tional background	Church atten-dance	A G E		
										Internal	Medium	External				20-29	30-39	40 and above
101	2	2	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
102	4	3	H	0	L	0	L	0	L	-	-	-	M	1	2	-	2E	4E
103	2	2	H	0	L	0	L	0	L	-	-	-	M	1	2	-	2E	4E
104	16	8	H	0	L	0	L	2	H	-	-	-	M	1	2	-	2E	4E
105	3	3	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
106	6	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
107	2	5	H	0	L	0	L	0	L	-	-	-	M	1	2	-	2E	4E
108	2	2	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
109	2	2	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
110	0	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
111	0	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
112	3	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
113	0	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
114	1	0	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
115	7	5	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
116	2	2	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
117	2	0	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
118	0	2	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
119	0	0	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
120	0	0	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
121	0	0	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
122	0	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
123	2	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
124	0	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
125	1	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
126	0	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
127	5	2	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
128	3	3	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
129	3	5	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
130	3	3	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
131	3	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
132	4	2	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E
133	1	1	H	0	L	0	L	0	L	-	-	-	M	1	1	-	2E	4E

NALRS (Cont'd)

No.	Overall Symptom	Psychological Index	H or L	Psychophysiological Index	H or L	Psychological Index	H or L	Ambiguous	H or L	COGNITIVE STYLE			Marital Status	Educational background	Church attendance	A G E		40 and above
										Internal	Medium	External				20-29	30-39	
134	2	1	L	1	L	0	L	0	L	8	-	-	S	2	1	21	1	-
135	3	3	H	0	L	0	L	0	L	-	-	-	S	1	2	3E	1	-
136	4	2	H	3	L	1	L	1	L	-	-	-	S	2	3	4E	6E	-
137	6	3	H	1	L	0	L	0	L	-	-	-	S	3	2	4E	6E	-
138	4	4	H	2	L	0	L	0	L	-	-	-	S	2	1	2E	-	-
139	2	0	H	0	L	0	L	0	L	-	-	-	S	2	1	2E	-	-
140	0	0	L	0	L	0	L	0	L	7	-	-	M	2	1	-	-	OE
141	0	0	L	0	L	0	L	0	L	7	-	-	M	2	1	-	-	OE
142	6	6	H	0	L	0	L	0	L	-	-	-	M	3	2	6E	0I	-
143	0	1	L	0	L	0	L	0	L	-	-	-	M	3	1	-	0I	-
144	1	4	L	0	L	0	L	0	L	-	-	-	M	2	1	-	0I	-
145	5	1	H	0	L	0	L	0	L	2	-	-	M	2	1	-	1M	5I
146	1	4	L	0	L	0	L	0	L	9	-	-	S	3	1	1M	-	-
147	1	1	L	0	L	0	L	0	L	-	-	-	S	3	1	2E	-	1I
148	2	5	H	0	L	0	L	0	L	-	-	-	S	3	1	7E	-	-
149	7	0	H	2	L	0	L	0	L	-	-	-	S	1	1	-	-	0M
150	2	1	L	0	L	0	L	0	L	-	-	-	M	1	3	-	-	-
151	2	1	L	0	L	0	L	0	L	-	-	-	M	1	1	-	-	-
152	1	2	L	0	L	0	L	0	L	-	-	-	M	1	3	-	-	-
153	4	1	H	0	L	0	L	0	L	4	-	-	S	2	3	-	-	-
154	4	1	L	0	L	0	L	0	L	-	-	-	S	1	2	-	-	-
155	4	4	L	0	L	0	L	0	L	9	-	-	S	3	1	4M	1M	4I
156	4	1	L	2	L	0	L	0	L	9	-	-	S	1	2	1M	3M	-
157	4	1	L	2	L	0	L	0	L	9	-	-	S	2	1	1M	3M	-
158	1	1	L	0	L	0	L	0	L	9	-	-	S	1	2	1M	3M	-
159	3	0	L	1	L	0	L	0	L	9	-	-	S	3	1	1M	3M	-
160	2	2	H	0	L	0	L	0	L	-	-	-	S	2	2	-	-	-
161	5	3	H	0	L	0	L	0	L	-	-	-	S	2	2	-	-	-
162	7	4	H	0	L	0	L	0	L	-	-	-	S	2	2	-	-	-
163	4	3	H	3	L	0	L	0	L	-	-	-	S	2	1	7M	4M	-
164	0	3	L	0	L	0	L	0	L	-	-	-	S	2	1	1E	3E	0I
165	3	5	H	0	L	0	L	0	L	-	-	-	S	2	1	3E	7E	-
166	7	0	L	1	L	0	L	0	L	-	-	-	S	2	1	2E	2E	-
167	0	2	L	0	L	0	L	0	L	-	-	-	S	1	2	-	-	-
168	2	2	L	0	L	0	L	0	L	-	-	-	S	1	2	-	-	-
169	2	2	L	0	L	0	L	0	L	-	-	-	S	1	2	-	-	-
170	2	2	L	0	L	0	L	0	L	-	-	-	S	1	2	-	-	-
171	1	1	L	0	L	0	L	0	L	-	-	-	S	3	3	-	-	-
172	0	1	L	0	L	0	L	0	L	-	-	-	M	3	1	-	-	-

APPENDIX IVFORMULAE FOR STATISTICAL ANALYSIS1. Chi Square

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

where

O = the observed frequency in each category

E = the expected frequency in each category

df = k - 1 where K = the number of categories  
or cells.

2. Comparison of Paired Proportions

$$Z = \frac{P_1 - P_2}{\sqrt{\frac{P_1 Q_1}{n_1} + \frac{P_2 Q_2}{n_2}}}$$

$P_1$  = First Proportion

$P_2$  = Second Proportion

$P_1 - P_2$  = Difference Between Proportions

$Q_1$  = Complement of  $P_1$

$Q_2$  = Complement of  $P_2$

$n_1$  = Number for First Proportion

$n_2$  = Number for Second Proportion

3. Two-Way ANOVA

Grand Total

$$GT = \frac{(\sum X)^2}{N_T}$$

where  $N_T$  = Total Number of Scores $X$  = Any Score

Total Sum of Squares

$$SS_T = \sum X^2 - GT$$

$$SS_B = \left\{ \frac{(\sum X_1)^2}{N_1} + \frac{(\sum X_2)^2}{N_2} + \dots + \frac{(\sum X_x)^2}{N_x} \right\} - GT$$

$$SS_{\text{Factor A}} = \frac{(X_{A1})^2}{n_1} + \frac{(X_{A2})^2}{n_2} + \dots + \frac{(X_{Ax})^2}{n_x} - GT$$

$$SS_{\text{Factor B}} = \frac{(X_{B1})^2}{n_1} + \frac{(X_{B2})^2}{n_2} + \dots + \frac{(X_{Bx})^2}{n_x} - GT$$

$$SS_{\text{Int}} = SS_{\text{Between}} - SS_{\text{FA}} - SS_{\text{FB}}$$

$$SS_{\text{Within}} = SS_T - SS_{\text{Between}}$$

df for Total =  $N-1$  where  $N$  = number of scoresdf for  $SS_{\text{Between}}$  =  $G-1$  where  $G$  = number of groupsdf for  $SS_{\text{FB}}$  =  $C-1$  where  $C$  = number of columnsdf for  $SS_{\text{FA}}$  =  $r-1$  where  $r$  = number of rowsdf for  $SS_{\text{Interaction}}$  =  $(r-1)(C-1)$ df for  $SS_{\text{within}}$  =  $(N - rC)$

$$\begin{aligned} \text{Variances} &= \frac{\text{Number of Squares}}{\text{df}} \\ \text{Mean of Squares}_{FA} &= \frac{SS_{FA}}{df_{FA}} \\ \text{Mean of Squares}_{FB} &= \frac{SS_{FB}}{df_{FB}} \\ \text{Mean of Squares}_{Int.} &= \frac{SS_{Int}}{df_{Int}} \\ \text{Mean of Squares}_{Within} &= \frac{SS_{Within}}{df_{Within}} \end{aligned}$$

$$F_{FA} = \frac{MSS_{FA}}{MSS_{Within}}$$

$$F_{FB} = \frac{MSS_{FB}}{MSS_{Within}}$$

$$F_{Int.} = \frac{MSS_{Int}}{MSS_{Within}}$$

#### 4. Tukey Test

M = Mean of each group

$M = \frac{\sum X}{n}$  where x = scores n = number of scores

$$T = q \sqrt{\frac{MSS_{Within}}{N}}$$

where N = number in each group or the number of scores from which mean is calculated.

q value is obtained from the Studentized Table

Using the df of the  $SS_{Within}$  read as v in the Tukey or Studentized Table.

- 123 -

APPENDIX Vz Values for Difference Between the Three  
Types of Locus of Control on the 5  
Symptom Indices

Symptom Indices	Internal Versus Medium	Internal Versus External	Medium Versus External
22 MHI	2.75*	2.93*	0.1
Psychological Index	5.58*	5.10*	1.47
Psychophysiological	3.22*	2.87*	0.60
Physiological	2.22*	2.36*	0.55
Ambiguous	2.59*	2.36*	0.33

\*Significant at 0.01 Level

- 124 -

APPENDIX VI(a) Demographic Variables in Relation to Psychiatric Symptoms

Variables	$\chi^2$	df	$\phi(C)$	P
1. Age	5.44	2	-	n.s
2. Education	0.64	4	-	n.s
3. Marital Status	12.52	1	0.18	0.001

(b) Demographic Variables in Relation to Locus of Control

Variables	$\chi^2$	df	$\phi(C)$	P
1. Age	0.49	4	-	n.s
2. Education	12.48	4	0.20	0.05
3. Marital Status	2.73	2	-	n.s