DETERMINANTS OF MENTAL ILLNESS IN A RURAL ETHIOPIA ADULT POPULATION

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Determinants of Mental Illness in a Rural Ethiopian Adult Population

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I wish to dedicate this thesis to

MY FATHER

for his uncompromising principles of life

and to

MY MOTHER

for leading her children into intellectual pursuits

ACKNOWLEDGEMENTS

The development of the ideas and their presentation in this thesis owe much to my supervisor Dr. Frances Aboud, from whom I have learned and continue to learn a great deal. Again I would like to thank my supervisor for her influential role in making me work hard. I am also grateful to Dr. Charles P. Larson for helping to develop the study as well as reading and commenting on the manuscript. I thank IDRC for the financial support for this thesis. I thank the staff of Ras Imeru for their co-operation. Lastly much credit must be given to members of my family, who have tolerated many dreary evenings and weekends of silence during the writing of this thesis.

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SUMMARY

2000 subjects from two woredas of a rural section of Ethiopia were interviewed to determine how many were suffering from mental disorder and what determinants are related to the disorder. A WHO Self-Reporting Questionnaire was used to assess mental illness. The questionnaire has been used before in Ethiopia and measures neurotic, psychotic, and psychosomatic illness in terms of symptoms. 344 cases were found, indicating an overall frequency of 17.2%. The great majority of cases were suffering from neurotic and psychosomatic illnesses. Psychiatric morbidity was higher in women, in divorced/separated/widowed groups, and in the age group 35-44. However, the level of social stress experienced in the past year was most predictive of mental illness; the higher a person's stress level, the higher the mental symptom score. Family history of mental illness was the second best predictor.

INTRODUCTION

The WHO speaks of health in broad terms as the presence of physical, mental and social well-being. Research attention has been given to physical health; however, mental health problems exist worldwide and are increasing both in developing and developed countries (1).

The term mental well-being includes many components. The mentally healthy adult shows behavior which confirms an awareness of self or personal identity coupled with a life purpose, a sense of personal autonomy and willingness to perceive reality and cope with problems. The healthy adult has a capacity to live with people, to understand their needs, to achieve a mutually satisfactory heterosexual relationship, to be active and productive with evidence of persistence and endurance in pursuing tasks to their accomplishment, to respond flexibly in the face of stress, to receive pleasure from a variety of sources and to accept one's limitations realistically (2). Although this description is somewhat idealistic and reflects a level of maturity not present in many people, mental illness could be said to represent the extreme absence of most of these qualities leading to maladaptive personal reactions to life and its circumstances (3). A mental disorder may be defined as a recognized, medically diagnosable illness that results in the significant impairment of an individual's cognitive, affective, or relational abilities (4). The presence of character limitations, the appearance of symptoms, the loss or impairment

of functions, the recurrence of regressive behavior, and the distortion or impoverishment of affect provide the clinical evidence of illness (2).

In the field of mental health, much emphasis has been placed on the treatment of mental disorders and insufficient attention given to the prevention of these problems. A recent report on this matter estimated that as much as 50% of mental problems can be prevented through appropriate public health action. This might include help to destitute mothers with children and a general reduction of stress in people's lives (5).

Mental health programs are still neglected in most African countries. This can be attributed to several factors:

1. absence of scales appropriate for African countries to measure and identify mental illness,
2. poor training for health workers in the area of mental health,
3. indifference or negative attitude to mental health problems,
4. preference for treatment by traditional healers.

As a result, the infrastructure in the African region, regarding both services and research for mental illness is still very weak (5).

There are, on the other hand, significant resources available for mental health programs in the African region. In many countries of the region, strong social support networks exist. For example during times of family crisis such as death or illness, relatives and neighbors stay with the family and bring food. Many cultures of Africa contain beliefs and ways of

dealing with life events which help cope with stress and adversity. For example, the "idir" is a type of family association that looks after their members when they have problems. Similarly, the Zar cult provides a surrogate family along with security and recognition for those who have either mental or social problems. According to Messing, the Zar doctor gives a type of group therapy to his/her devotees (6). Such family and community supports provide a firm basis for programs devoted to the enhancement of psychological well-being and development. The absence of rigid, highly institutionalized health care systems in itself may prove to be an asset for the development of an appropriate, effective, and affordable service system (5).

The impact of mental illness on the social and economic life of a country can be profound. It results in morbidity such as psychosomatic ailments, lack of energy and interest in life, inability to work, and inadequate socialization of children. This in turn leads to a decrease in the productive forces of the community and the economy of the country (7).

Before programs for prevention and treatment are formulated, one must know the prevalence and social determinants of the most common forms of mental illness. At present very little is known about the prevalence of mental illness in Ethiopia and almost nothing about its determinants. The two mental hospitals in the country, one in Addis Ababa and the other in Asmara are filled to capacity with psychotic patients. Reports from treatment centers

such as these provide information only on the more severe types of mental illness. Other research on prevalence comes from outpatient clinics. However, no large scale epidemiological study has been conducted in Ethiopia to provide more systematic information on the prevalence of neurotic and psychotic illnesses and their determinants.

The aim of this study is to determine the overall prevalence and social determinants of mental illness in a section of rural Ethiopia. Such information would be valuable for the planning of mental health facilities and priorities in a society where often even the concept of mental illness does not exist and where the majority of patients will be seen and treated by dressers and nurses with little psychiatric training.

LITERATURE REVIEW

For years the major obstacle to research on the prevalence of mental illness was its measurement. In the early 1900s a very crude measure was taken of mental illness by the Census Bureau in the United States. In 1917 the American Medicopsychological Association (which in 1921 became the American Psychiatric Association) took an active part in the collection and analysis of statistical data and urged that all mental hospitals adopt a uniform reporting system. This improved the measurement of the prevalence of types of mental disorders within hospitals, but contributed nothing to measurement of disorders among the population outside hospitals. The basic character of psychiatric epidemiology was shaped in the 1920s by social scientists who examined mental illness in relation to sociodemographic factors such as age, sex, race, occupation, education, place of residence, and ethnicity. The relevance of such categories for an understanding of the nature and etiology of mental illness was unclear for two reasons, firstly because no comparison was made with the nonhospitalized community and secondly because correlation can not be equated with causality. Yet such demographic data about the institutionalized mentally ill was useful to policy officials concerned with present and future trends and planning. However, only when epidemiologists began to measure mental illness in terms of symptoms or symptom patterns rather than etiology were they able to conduct studies in the community (8).

Several techniques are used to assess mental health status in industrialized countries, for example the general health questionnaire (GHQ) used originally by Goldberg in England, the present state examination, the Minnesota Multiphasic Personality Inventory (MMPI) constructed by Hathaway and McKinley in 1939, and the DSM III classification (Diagnostic and Statistical Manual of Mental Disorders) prepared by the American Psychiatric Association (3). The problem with these measurements is that they require time, money and a psychiatrist to perform the interview or to interpret the scores. Consequently, these techniques are not appropriate for community surveys in developing countries (9,10). A more appropriate test, but one still too long for a community based study, is the 90-item Symptom Check List (SCL-90) developed by Derogatis. It is a self-report symptom inventory designed to reflect psychological symptom patterns of psychiatric patients (11).

More recently, a Self-Report Questionnaire (SRQ) was developed by a WHO team of specialists from different countries to measure mental illness cross-culturally (12). The original set of items were selected from four instruments used in a variety of cultural settings. A review of the four instruments produced a list of 32 items which were either identical or very similar in meaning. From these, 20 items to measure neuroses were selected on the basis of ease of translation and cultural relevance. The 4 additional items, designed to detect psychotic conditions, were based on the Fould's symptom sign inventory

which has been shown to be effective in detecting psychotic illness.

Published research using the SRQ point to a number of strengths of this measure:

1. applicable for use in PHC settings in communities,
2. validated in 7 developing countries (12),
3. use of simple questions and a dichotomous yes-no response which makes it easy to administer by local health auxiliaries or research assistants with limited education,
4. self-report questionnaires are more clear and acceptable to respondents (11),
5. short, inexpensive and easy to score.

Because of its many advantages, the SRQ has been used in several countries around the world. Reports have come from rural settings in Colombia, India, the Phillipines, Sudan and Brazil (12). The wide variety of cut-off point values used to indicate potential psychiatric cases in different cultures is remarkable; it varies between 3/4 in Sudan and 10/11 in Colombia. This means that a respondent in Sudan who answers "yes" four times becomes a potential psychiatric case, whereas someone from Colombia answering "yes" twice as often is classified as healthy (13). Therefore, one major limitation of this instrument is the issue of how to choose a cut-off point for identifying a person with mental illness. This point must be empirically determined for different cultures, and for different populations. For example, Kortman used two different cut-off points, a lower one for OPD

attenders and a higher one for a community survey in Addis Ababa (13). The selection of cut-off points was based on the score which yielded optimal sensitivity and specificity when scores on the SRQ were compared with the diagnosis made by a psychiatrist in an interview. For the Addis Ababa urban community, a cut-off point of 3/4 produced sensitivity of 100% and specificity of 71%. In another WHO study in seven developing countries (Colombia, India, Sudan, Phillipines, Brazil, Senegal and Egypt), different cut-off points were set for the 20-item "non-psychotic" part of the test, but the same cut-off point for the 4 psychotic items (12,14). The authors stated that the considerable variation in the optimal cut-off point (varying between 5/6 and 10/11 in different areas) "results from substantial variation in response rates" (12). The most likely explanation for this difference is the varying socio-cultural characteristics of the population studied (10). Some groups, for example OPD attenders are very sensitive to their mental and physical complaints, whereas others tend to deny or minimize their symptoms in order to continue their daily activities. Likewise certain cultural groups are freer than others in expressing their pain and suffering. That is some expect an extravagant display of emotionality in response to distress; others value stoicism, restraint and denial of their symptoms (15).

PREVALENCE IN OUTPATIENT CLINICS

Little is known about prevalence rates of mental illness in developing countries. What is known comes mostly from studies in

hospitals and out-patient clinics.

A report from Nigeria stated that of 1460 new patients attending a general clinic over a period of 3 months, 15% of the patients were diagnosed as having a psychiatric disorder (14). Another study from rural Kenya reported that of 140 OPD patients, 20.7% were found to have a psychiatric disorder; the measure they used is not described in the review article (14). In a general medical clinic at a teaching hospital in Nigeria using the GHQ-30, they found that 69% of their patients had psychiatric morbidity (16).

Giel and van Luijk (17) carried out several studies in Ethiopian cities, towns, and rural areas. They used Kessel's four-point classification of psychological disorders:

1. those who explicitly complain of being anxious, irritable, depressed, nervous, etc.
2. those presenting somatic symptoms not explained adequately by physical illness, such as burning sensations in the skin or in the head, tight feelings, blurred vision, moving sensations in the abdomen, etc.
3. those with indisputable physical illness but with a psychological reaction to it that is in some way abnormal,
4. those displaying a personality disorder, without direct relationship to their current illness.

They reported that 18.5% of general outpatients attending a teaching hospital in Addis Ababa were primarily suffering from psychiatric conditions (17). Another study of Giel and van Luijk

was conducted in a health center in Bonga town. Out of 500 attenders, they found a psychiatric morbidity of 19% (18). In their studies, half of the cases were psychoneurotics.

In another study Jacobson found that in 465 patients seen at a general hospital in western Ethiopia, 18% had psychiatric morbidity using Kessel's classification. The great majority of cases had neurotic conditions often with a somatic shading (19). In a study done by Kortman using the SRQ in one of the hospitals in Addis Ababa, a prevalence of 27% was found among OPD attenders (13). Also in Ethiopia Dormar et al. (17) found a psychiatric morbidity of 16.2% in a police hospital and 6.8% in a rural general hospital outpatient clientele.

Thus it would appear that in a relatively unselected population of attenders at general outpatient clinics in Africa, approximately 20% are primarily psychiatrically disordered.

PREVALENCE IN COMMUNITY

Only a few community based studies have determined the prevalence of mental illness in Africa. In western Nigeria, a study was conducted on the urban and rural population around the city of Abeokuta (14). In this study, 21% of the respondents in the villages and 31% of those in the city showed the symptoms of psychiatric morbidity. Here the assessment was in terms of the persistence of specified psychiatric symptoms rather than in terms of diagnostic groups or syndromes.

A study done in rural Uganda interviewed people in two villages using the Present State Examination (PSE) and standard

method of case identification. They found that 25.3% of the population showed evidence of psychiatric distress (14). Using Kessel's method of classification, Giel and van Luijk found an 8.6% prevalence in a household survey in Bonga town (18). The majority of these were psychoneuroses and personality disorders Kortman did an urban community study in Addis Ababa and found a prevalence of 12% using the 24-item WHO Self-Report Questionnaire (13).

In summary, according to rates reported in studies conducted in the community, the estimated frequency of mental illness in African communities is in the range of 8% to 25%.

DETERMINANTS

Practically no systematic study has investigated the determinants of mental illness in Africa. Most of the published research comes from the developed countries.

Epidemiologic studies of prevalence rates of patients in mental hospitals in the United States in 1950 examined the risk factors of marital status and age. They reported that point prevalence for widowed persons was substantially higher than for the other marital status groups (20). Similarly, Jacobson (19) found that in a general western Ethiopia hospital, married people had the lowest frequency of psychiatric morbidity and divorced women the highest. In his study there was a tendency for women to display more psychiatric morbidity than men.

Giel et al. in a small Ethiopian town (Bonga) found significantly more psychiatric illness among those around the age

of 40 (18).

Stress has been hypothesized to be a determinant of many types of both physical and mental illness (11). Researchers have used a variety of comprehensive lists of stressful life events with which to collect a record of the recent stressful life events of their subjects. The pioneers of the Social Readjustment Scale, Holmes and Rahe proposed that major changes in a person's life were stressful because they required a great deal of readjustment. Setting marriage at an arbitrary stress value of 50, they asked respondents to estimate the readjustment required for a number of personal and social life changes. The mean value assigned to each event constituted its stress value. These investigators then attempted to quantify the amount of stress experienced by a person by noting the number of changes in a person's life over a years time and the stress value of each change. After developing this scale, Holmes and Rahe then correlated the individual's life change scores with medical histories. They found that as the number of life changes increased, the probability of the occurrence of diseases increased (11).

There are some genetic studies done to assess the impact of family history of mental illness on the prevalence of mental illness. These genetic studies establish that some people have a specific vulnerability to affective disorder, which is most striking in the case of bipolar (major depression) patients. However, this vulnerability is only a disposition toward illness.

Clearly environmental factors must also play a role. In the study since only about half the identical twins of patients with severe depression develop the same disorder, abnormal genes alone are insufficient to cause the disease. However, the risk of developing psychosis may be even more strongly related to a family history of mental illness in that it is highest among those whose parents are schizophrenics (11). Of course, this does not rule out the effects of environmental stress resulting from having a schizophrenic parent.

According to this review of the literature, stress, gender, marital status, age, and family history of mental illness were found to be determinants of mental illness.

OBJECTIVES

GENERAL OBJECTIVE

To determine the overall prevalence of mental illness among the Awraja adult population 15 to 55 years of age and factors associated with it.

SPECIFIC OBJECTIVES

1. To determine the prevalence of mental illness among the Awraja adult population 15 to 55 as measured by the WHO self-reporting questionnaire (SRQ), and the separate prevalence of the three major sub-categories namely neurotic, psychotic and psychosomatic.

2. To determine the association between mental illness, separated into neuroses, psychoses and psychosomatic, and certain demographic factors such as age, sex, ethnic group, marital status, education, family resources.

3. To examine the predictive value of psychosocal factors such as family history of mental illness, chronic illnesses and life stress on the three subcategories of mental illness.

In addition to the above mentioned objectives of this investigation, the following predictions are made:

1. The prevalence of mental illness is higher in females than in males.

2. The prevalence of mental illness is higher in those who

lost a spouse through separation, divorce or death than in single or married people.

3. The prevalence of mental illness is higher in those under high life stress.

4. The prevalence of mental illness is higher in those with a family history of mental illness.

MATERIALS AND METHODS

STUDY DESIGN

The study is a cross-sectional descriptive study of the prevalence of mental illness and concurrent or historical social, demographic, and health characteristics.

STUDY DOMAIN

Kembata/Hadiya Awraja is found in Shoa Administrative region, in the central part of Ethiopia. According to the Central Statistics Office (CSO), the population of the Awraja was 1,382,428 in 1987 with a sex ratio of 100 males to 101 females. The crowding index of the Awraja is 6 persons per house hold on average (21).

STUDY POPULATION

There are two main ethnic groups, Hadiya and Kembata, comprising 43% and 34% of the population, respectively. The remaining 23% consist of other ethnic groups in the Awraja such as Amhara, Guragei, Azernet, Wolaita. In order to examine the ethnic variation in the prevalence of mental illness, two of the eight woredas, Timbaro and Angacha, which are inhabited mainly by Hadiyas and Kembatas respectively were chosen for the study.

Sample Size Estimation

In determining the sample size for the study, it was calculated on the basis of the prediction that among subjects with mental illness, p1 or .60 will have high stress, and among those without mental illness, p2 or .40 will have high stress. The following values were estimated to calculate the sample size.

p1=.60 alpha=.01 Z alpha=2.57 delta=.2

p2=.40 beta=.10 Z beta=1.64

$$n = \frac{[z_{\alpha}\sqrt{2p(1-p_{\cdot})} + z_{\beta}\sqrt{p_1(1-p_1) + p_2(1-p_2)}]^2}{\Delta^2}$$

n=Sample size

Z alpha= upper percent point of the normal distribution

Z beta= lower percent point of the normal distribution

p1= proportion of mentally ill with high stress

p2= proportion of normal with high stress

The calculation shows that the size of the mentally ill group should be 193. Taking an estimate of 10% as the prevalence of mental illness in Ethiopia, a sample of 1930 was necessary. For the sake of greater precision we took a sample of 2000.

Sampling Frame

From the two woredas, 10 peasant associations (5 from each woreda) were randomly selected. Households were systematically selected using a 1:2 ratio. All residents between 15 and 55 years living in these households were interviewed until 2000 had been included (see figure 1 for sampling frame).

MEASUREMENT

Outcome Measurement

The Self-Reporting Questionnaire (SRQ) developed by WHO was used as the measure of mental illness (11). This questionnaire consists of 20 neurotic items and 4 psychotic items. In

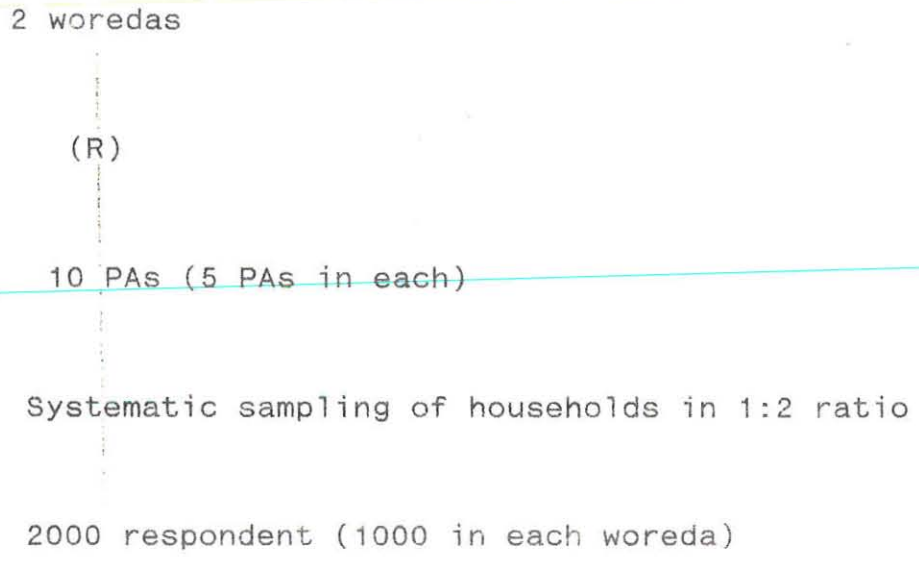


Figure 1. Sampling frame for selection of respondents.

addition to these, 3 other items on anger and hostility and 2 on psychosomatic symptoms were added (see Appendix A). The psychosomatic symptoms were added because psychiatrists indicated that many neurotic patients express their distress in terms of certain somatic symptoms, which were not included in the SRQ. Also, no anger/hostility items were present in the SRQ. Pretesting on these additional items was done in Jimma with both psychiatric and OPD patients. All the symptoms were presented in the form of questions to which the respondent gave a yes-no answer.

Exposure Measurement

A checklist of stressful life events from the Holmes and Rahe Social Readjustment Scale was included after the symptom checklist to measure the level of stress experienced in the past year. Some items from the scale were omitted and others added to make it relevant for the study population. Because the stress value of these events is not known for an Ethiopian population, only the number of events experienced in the past year was recorded (see Appendix A).

Socio-demographic characteristics such as gender, marital status, and age were included in the questionnaire. Also the presence of chronic illness and a family history of mental illness were recorded. Economic status was determined by asking the number of oxen owned by the family. The Amharic version of the questionnaire (19) was used and administered in the native language (see Appendix A).

DATA COLLECTION AND MANAGEMENT

Twelve interviewers with a grade 12 education were recruited. All of the interviewers spoke the local languages Kembata and Hadiya, as well as Amharic. An intensive training of 7 days' duration was given on how to administer the questionnaire. The following issues were dealt with at length: language, culture, and sensitivity to mental health problems. The interviewers worked in two groups of six, each with its own co-ordinator. Instructions provided interviewers during the data collection are found in Appendix B.

The purpose of the study was communicated to the study areas through the Awraja and Woreda mass organizations and administrations. Chairmen of the 10 study peasant associations were contacted in person by the co-ordinators of the research work and the residents were informed about the study during mass organization meetings before data collection. Then the study households were selected and marked.

The questionnaire was pretested and amendments were made to deal with issues of misinterpretation of symptoms. For example, in Kortman's study the question "Do you cry more than usual?" was interpreted by many of the respondents to be asking whether they had recently attended more funerals than normal, rather than inquiring about feelings of depression. These amendments helped to facilitate understanding between the interviewer and the respondents.

Data for the final study was collected during a 4-week

period. Every completed questionnaire was checked that night for errors and missing data. The interviewer returned two times if the questionnaire was not completed properly or if the respondent was absent during the first visit.

METHOD OF ANALYSES

Data were processed by computer using the SPSS-PC + statistical package.

The neurotic score was computed by summing the number of symptoms experienced by the respondent from the first 20 items. The psychotic score was computed by summing up the number of symptoms experienced by the respondents from items 21 - 24. The same procedure was used to derive the anger/hostility and somatic scores. For the somatic score, responses to seven items from the first 20 neurotic ones plus the two additional somatic items were used to compute the score. The stress score was the number of events reported to be experienced in the past year. A cut-off point of 3/4 was used to make it comparable to the score of 150 used in previous studies where the mid-scale value was 50. Those with stress scores over 3 were considered to have experienced high stress.

Descriptive statistics were calculated including prevalence of mental illness as well as the separate prevalence of neuroses, psychoses, and psychosomatic illnesses. To examine factors associated with neurosis, psychosis and psychosomatic illness, bivariate analyses were performed including factors such as stress, family history of mental illness and demographic factors.

Finally, to separate the effects of three factors considered to be important causes of mental illness and determine their relative importance, a multiple regression was run on the three scores of mental illness.

RESULTS

SUBJECT CHARACTERISTICS

A total of 2000 subjects were enrolled in the study, with 60% male and 40% female. 986 (49.3%) were Hadiyas and 1013 (50.7%) were Kembatas. The mean age of the study population was 35.9 years. Concerning marital status, 1618 (80.9%) were married, 268 (13.4%) were single, 24 (1.2%) were divorced and 89 (4.5%) were separated. Compared to the awraja population, single people and illiterates were overepresented in the study population. Otherwise the sample appeared to be representative of the Awraja as a whole (Table 1). The majority of the households (59.4%) had 4-8 family members. Large households were over represented because they had more adults to be interviewed. 1292 (64.6%) of the respondents were illiterate, 123 (6.2%) were literate (literacy campaign) and 584 (29.2%) had attended regular school. The ownership rate for at least one pair of oxen was 28.7%.

The chronic illnesses reported were as follows: 124 (6.2%) had hypertension, 351 (1.8%) had diabetes mellitus, 136 (6.8%) had epilepsy, and 44 (2.2%) had chronic liver disease (CLD).

Table 1.

Comparison of Subject Characteristics of the Study Population with the Awraja Population

Characteristic	Study Sample	Awraja Population
Gender:		
Male	60%	49.8%
Female	40%	50.2%
Age:		
15 - 24	20.8%	28.9%
25 - 34	26.3%	22.4%
35 - 44	27.8%	18.4%
45+	21.2%	29.6%
Marital Status:		
Married	80.9%	68.0%
Single	13.4%	25.4%
Divorce/widow/sep	5.7%	6.6%
Ethnic Group:		
Hadiya	49.3%	55.8%
Kembata	50.7%	44.2%
Education:		
Illiterate	64.6%	40%
Literate	35.4%	60%

PREVALENCE OF MENTAL ILLNESS

A factor analysis was run on responses to the 29-symptom items (24 from the SRQ and 5 additional ones) to see whether there was any internal consistency to the items said to reflect each of the disorders, in other words whether there was any empirical basis to the composite scores of neurosis, psychosis, and psychosomatic disorder. The results of the analysis indicate that items considered to be neurotic loaded highly on two factors (one representing cognitive aspects of neurosis and the second representing anxiety and depression), the psychotic items on another factor except the item "Bigshot" (#22), and the psychosomatic items on a third factor. The items included in these composites not only have conceptual meaning in common, but also tend to cluster together empirically.Thus it makes sense to view the items as falling into 3 classifications of neurotic, psychotic, and psychosomatic.

Problems with some of the items can be seen in Appendix C. For example, the item tapping grandiose delusions about oneself (bigshot) does not load highly on the same factor as the other psychotic items, suggesting that it does not measure psychosis sufficiently in our culture. Because of the inappropriateness of this item for measuring psychosis, it was considered preferable to use a higher cut-off point to identify psychosis. Similarly, items of anger and hostility clustered more with the psychotic than neurotic items in the analysis. Thus, no further analyses were conducted on the anger/hostility items. Generally, it would

seem that the psychotic and anger/hostility items need more extensive research in Ethiopia to determine their underlying meaning.

Two cut-off points were used to identify potential neurotic and psychotic cases. The first was the score selected by Kortman for his Addis Ababa population because it had yielded high sensitivity and specificity; namely 3/4 for the 20 neurotic items and 0/1 for the 4 psychotic items (13). However because his study was done in an urban setting his cut-off point may be inappropriate for a rural setting with mainly uneducated people. Thus, a second set of higher cut-off points were used namely 10/11 for neuroses and 2/3 for psychoses. A cut-off of 3/4 was used to identify psychosomatic disorders. Figures 2 and 3 graphically present the cumulative frequencies for scores on the items tapping neurosis, psychosis and psychosomatic illness.

Taking the lower cut-off points we found 1117 cases of mental illness in the sample which yields a prevalence of 55%. Using the higher cut-off points we found 344 cases of mental illness in the sample which is 17.2%. The prevalence of neuroses was 11.2% and the prevalence of psychoses was 6.0%. That is, 61% of those with mental illness were psychoneurotic and 39% were considered psychotic. (Those who were high on both neurotic and psychotic scales were put into the psychotic category.) Using a cut-off of 3/4 on the 9 somatic items, 927 (46%) were psychosomatic.

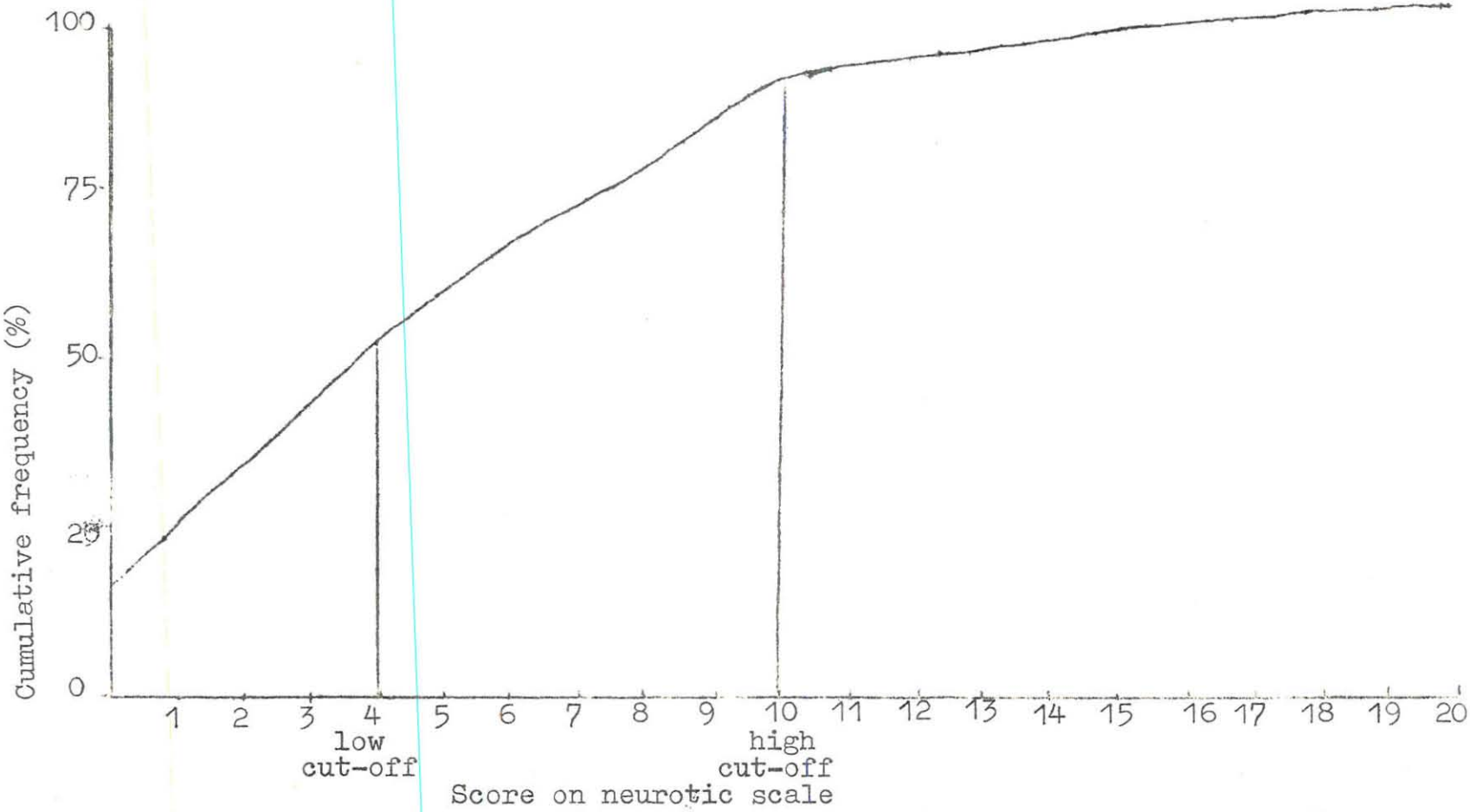


Figure 2: Cumulative frequency for neurotic scores on the SQR.

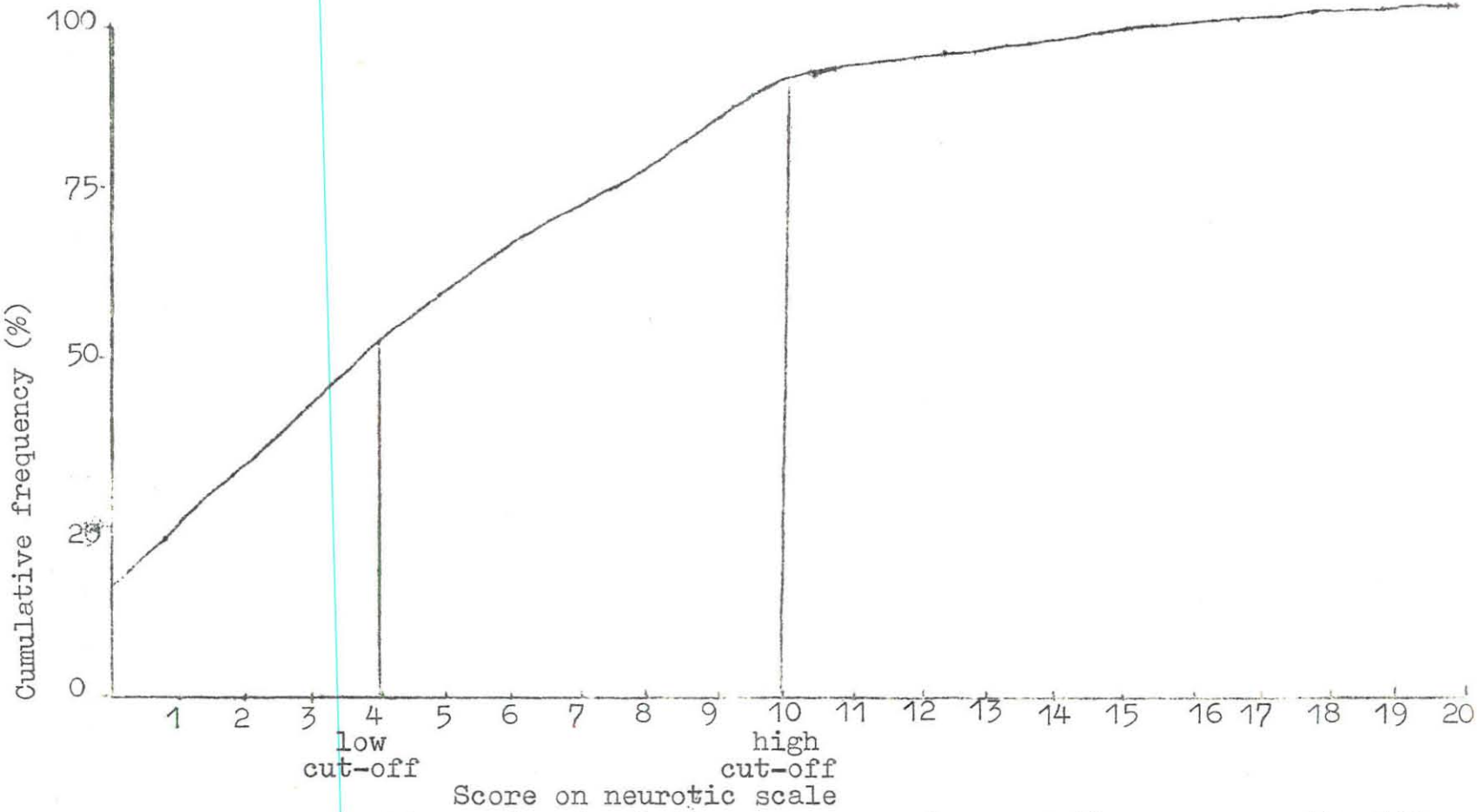
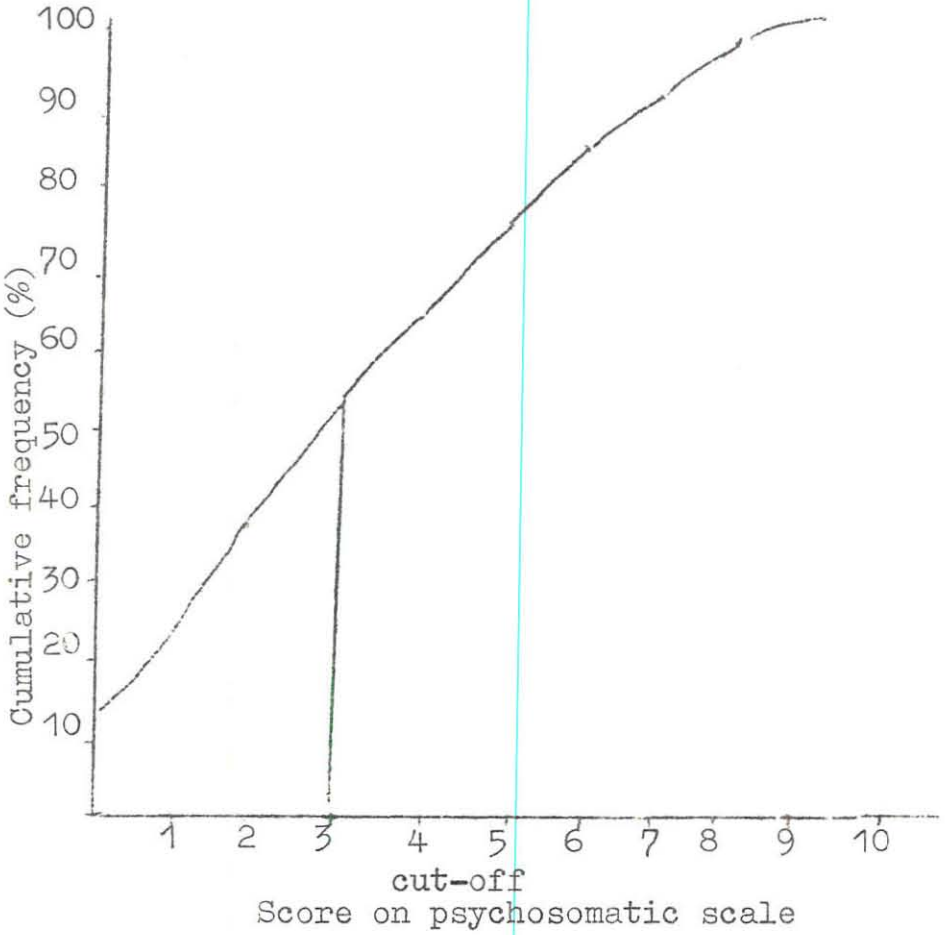


Figure 2: Cumulative frequency for neurotic scores on the SQR.



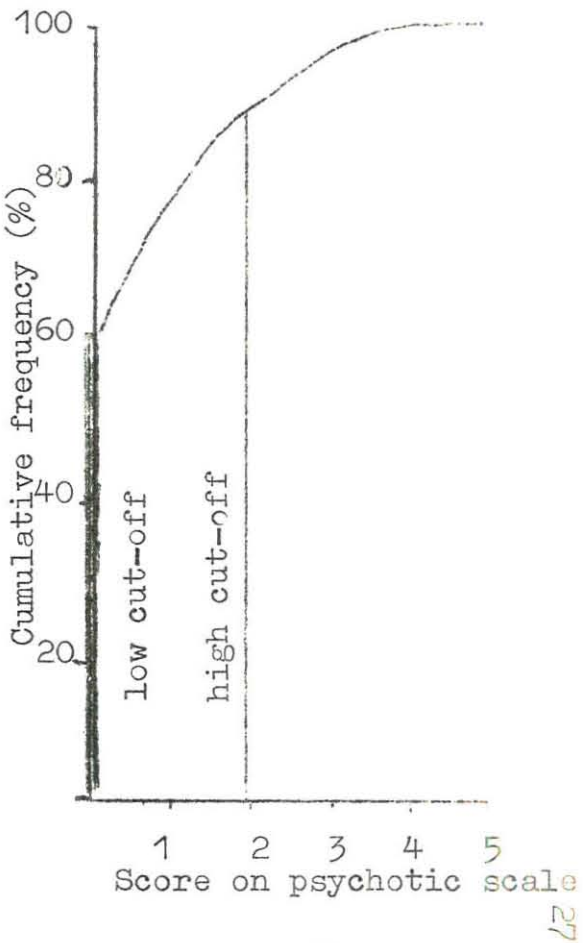


Figure 3: Cumulative frequency of psychosomatic and psychotic scores on the SQR

DETERMINANTS OF MENTAL ILLNESS

Since the prevalence found using the higher cut-off points is more reasonable and is consistent with the different studies done in Africa and Ethiopia, further analyses will be presented only for these higher cut-off points. The analysis of risk factors turned out to be similar for both cut-off points. For comparison of the association of variables with the higher cut-off points and those with lower cut-off points, one can refer to the results of the lower cut off points in Appendices D to F.

The variables of age, sex, ethnicity, marital status, education, family size, oxen ownership, chronic illness, family history of mental illness and stress were crosstabulated with psychoneuroses. The results are shown in table 2. In summary the following results were found. More females were neurotic than males and the age group 35 - 44 had the highest frequency. Concerning marital status, divorced/separated/widowed people showed the highest frequency of neuroses compared to the other marital groups. The illiterates had a higher frequency of neurosis than the literates. Individuals with one of the major chronic illnesses (hypertension, diabetes mellitus, chronic liver disease, epilepsy) were prone to be neurotic. Those with a family history of mental illness were at greater risk than the ones without. Individuals with stressful life events of 4 and above had a higher frequency of psychoneuroses. Family size and ethnic group had no significant association with neuroses.

The same set of risk factors were crosstabulated with

psychoses and psychosomatic illnesses. The results are shown in tables 3 and 4 respectively. In summary only three factors were significantly related to psychosis. The divorced/separated/ widowed had the highest frequency of psychoses. Individuals with a family history of mental illness were more likely to be psychotic than those without a family history of mental illness. Again those with stressful life events of 4 and above had a higher frequency of psychoses than those with less than 4. As to the other variables there was no significant association.

Concerning psychosomatic illnesses, like psychoneuroses, females were more affected than males and the age group 35-44 had the highest frequency of somatic complaints. Here again, divorced/separated/widowed had more somatic complaints than the other marital groups. Individuals with family size of 9 and above and individuals with one of the main chronic diseases (hypertension, diabetes mellitus, chronic liver disease, epilepsy) had more somatic complaints. Those with a family history of mental illness were more affected than those without a family history of mental illness. Again those with stressful life events of 4 and above had a higher frequency psychosomatic illnesses. Ethnic group, education and economic status had no significant association with psychosomatic illnesses.

Table 2.

Frequency of psychoneuroses using cut-off of 10/11 for significant risk factors

Factors	No Neuroses	Neuroses	Chi-square	RR	(95% CI)
GENDER					
Male	1075(89.4%)	127(10.6%)	***	.48	.37,.62
Female	641(80.3%)	157(19.7%)	31.91	2.08	1.62,2.68
AGE					
15 - 24	397(94.9%)	21(5.1%)	***	.27	.17,.42
25 - 34	446(84.6%)	81(15.4%)	37.07	1.14	.86,1.50
35 - 44	457(82.3%)	98(17.7%)		1.50	1.15,1.97
45+	419(83.3%)	84(16.7%)		1.30	.98,1.71
MARITAL STATUS					
Married	1407(87.0%)	211(13.0%)	***	.64	.48,.86
Single	249(92.9%)	19(7.1%)	112.38	.42	.26,.67
Divorce/wid.	60(53.1%)	53(46.9%)		6.40	4.50,9.9
FAMILY SIZE					
1 - 3	346(86.7%)	53(13.3%)	*	.90	.65,1.23
4 - 6	627(88.1%)	85(11.9%)	6.98	.74	.55,1.00
7 - 8	438(83.9%)	84(16.1%)		1.23	.91,1.66
9+	305(83.1%)	62(16.9%)		1.30	.95,1.77
EDUCATION					
Illiterate	1093(84.6%)	199(15.4%)	*	1.35	1.02,1.77
Literate	623(88.1%)	84(11.9%)	4.38	.74	.56, .97
CHRONIC ILLNESS					
HPN,DM, CLD	261(77.0%)	78(23.0%)	***	2.13	1.59,2.85
None	1455(87.8%)	206(12.4%)	25.13	.47	.35, .63
FAMILY HISTORY					
No	1421(87.8%)	198(12.2%)	***	.48	.36, .64
Yes	295(77.4%)	86(22.6%)	26.24	2.08	1.57,2.76
STRESS					
0 - 3	944(91.5%)	88(8.5%)	***	.37	.28, .48
4+	772(79.8%)	196(20.2%)	55.36	2.70	2.06,3.53

* p<.05, ** p<.01, ***p<.001

NOTE. HPN=Hypertension DM=Diabetes mellitus CLD=Chronic Liver Disease

Table 3.

Frequency of psychoses using a cut-off of 2/3
for significant risk factors

Factors	No Psychoses	Psychoses	Chi-square	RR	(95% C.I)
MARITAL STATUS					
Married	1524(94.2%)	94(5.8%)	***	0.53	.36,.78
Single	250(93.3%)	18(6.7%)	31.51	1.0	.60,1.67
Divorce/Wid.	91(80.5%)	22(19.5%)		3.85	2.32,6.37
FAMILY HISTORY					
No	1525(994.2%)	94(5.8%)	**	.53	.36, .78
Yes	341(89.5%)	40(10.5%)	10.13	1.89	1.28,2.79
STRESS					
0 - 3	978(94.8%)	54(5.2%)	**	.63	.44, .90
4+	888(91.7%)	80(8.3%)	6.87	1.69	1.18,2.42

**p<.01, ***p<.001

Table 4.

Frequency of psychosomatic illness using a cut-off of 5/6 for significant risk factors

Factors	No Psychosoma	Psychosoma	Chi-square	RR	(95% C.I)
GENDER					
Male	948(78.9%)	245(21.1%)	***	.7	.56, .86
Female	574(71.9%)	224(28.1%)	12.32	1.43	1.16, 1.76
AGE					
15 - 24	355(85.5%)	60(14.5%)	***	.5	.37, .67
25 - 34	407(77.2%)	120(22.8%)	35.20	.9	.71, 1.14
35 - 44	385(69.4%)	170(30.6%)		1.7	
45+	375(74.6%)	128(25.4%)		1.12	.89, 1.41
MARITAL STATUS					
Married	1229(76.0%)	389(24.0%)	***	1.05	.81, 1.37
Single	232(86.6%)	36(13.4%)	46.60	.45	.31, .65
Divorce/wid.	61(54.0%)	52(46.0%)		11.00	7.48,16.48
FAMILY SIZE					
1 - 3	328(822.2%)	71(17.8%)	**	.63	.48, .82
4 - 6	547(76.8%)	165(23.2%)	14.20	.94	.76, 1.17
7 - 8	384(73.6%)	138(26.4%)		1.20	.95, 1.51
9+	263(71.7%)	104(28.3%)		1.33	1.03, 1.72
CHRONIC ILLNESS					
HPN,DM,CLD	217(64.0%)	122(36.0%	***	2.06	1.57, 2.70
None	1305(78.6%)	356(21.4%)	32.00	.49	.37, .64
FAMILY HISTORY					
No	1283(79.2%)	336(20.8%)	***	.44	.35, .56
Yes	239(62.7%)	142(37.3%)	45.36	2.27	1.8, 2.90
STRESS					
0 - 3	849(82.3%)	183(17.7%)	***	.50	.41, .62
4+	673(69.5%)	275(30.5%)	43.90	2.00	1.62, 2.47

**p<.01, ***p<.0001

In order to determine whether stress can account for the relation between certain demographic variables and mental illness, an analysis was conducted to examine demographic differences in stress score. The results are shown in table 5. In summary, the mean stress is higher for females than for males but only in the separated, divorced and widowed categories; otherwise males have more stress. Thus stress may explain why females have a higher prevalence of mental illness but only for these three categories of marital status. Also stress differences may explain mental illness differences for education and age. The illiterates have more stress than the literates and the age group 35-44 has the highest mean stress. These two groups also had higher rates of mental illness. Also those with chronic illness and oxen ownership have higher stress levels, but the stress explains mental illness differences only for chronic illness.

To determine which of the several risk factors was more predictive of mental illness, a multiple regression was performed. In these analyses, the variation in neurotic, psychotic, and psychosomatic scores (dependent variables) was examined as a function of three significant risk factors (independent variables), namely stress, family history, and chronic illness. We took these three variables because they are considered to be causal while the other demographic factors are simply associated with mental illness and can often be explained by differing stress levels.

Table 5.

Mean Stress Scores associated with Risk Factors

Factor	Stress	t or F score	P
Gender: male	3.64	2.03	p<.05
female	3.45		
Education: illiterate	3.72	4.42	p<.001
literate	3.30		
Oxen: none	3.22	-12.54	p<.001
yes	4.44		
Chronic illness: yes	3.73	1.42	p<.05
none	3.54		
Age: 15 - 24	2.48	55.16	p<.001
25 - 34	3.85		
35 - 44	4.06		
45+	3.36		
Gender by marital status:		3.89	p<.02
male - married	3.86		
- single	2.26		
- Div/sep/wid.	4.16		
female - married	3.60		
- single	1.52		
- Div/Sep/Wid.	4.76		

The analysis of psychoneuroses with stress, family history of mental illness and chronic illness produced a multiple correlation of 0.35 which indicates that 12.5% of the variance in neurotic scores was explained by these three risk factors. This is a significant amount of the variance (F=95.26, p<.0001). Based on the beta value, stress was the best predictor with a beta of 0.30 (t= 14.206, p<.0001). Family history of mental illness was the second best predictor with a beta of 0.14 (t= 6.887, p<.0001). Chronic illness with a beta of -0.05 (t=-2.534, p<.01) was the least predictive. All three variables are positively related to the neurosis score (chronic illness has a negative valence because the presence of an illness was scored as 1 and its absence as 2).

In the multiple regression analysis with psychoses as the dependent variable, a multiple correlation of 0.19 was produced indicating that 3.6% of the variance in psychotic scores was explained by the three risk factors. This is a significant amount of the variance (F=37.62, p<.0001). According to the beta values, stress was again the best predictor with a beta of 0.17 (t= 7.810, p <.0001). Family history of mental illness was the second best predictor with a beta of 0.06 (t= 2.756, p <.01), and chronic illness was not significantly predictive. Thus, as with neurosis, stress and family history were the best predictors of psychosis.

In the multiple regression analysis with psychosomatic illnesses as the dependent variable, a multiple correlation of

0.35 was found indicating that 12% of the variance in the somatic items was explained by the three risk factors. This is a significant amount of the variance (F=93.71, p <.001). According to the beta values, stress was the best predictor with a beta of 0.30 (t= 14.159, p <.0001). Family history of mental illness was the second best with a beta of 0.14 (t= 6.772, p <.0001). Chronic illness was the least important predictor with a beta of 0.05 (t= -2.310, p <.05).

From the multiple regression analyses one can conclude that stress is the strongest predictor of mental illness and family history of mental illness is the second strongest.

To determine whether these two factors affect mental illness separately or interactively, an analysis of variance was conducted on the same three dependent measures -- neurotic, psychotic and somatic scores -- using stress and family history of mental illness as the two independent variables. The interaction effect was not significant indicating that they have independent effects on mental illness.

DISCUSSION

The prevalence rate of mental illness in this study depends on the cut-off points used for the SRQ. The first point used was 4/5 for neuroses and 0/1 for psychoses because it was found to be the most valid for a community survey in Addis Ababa. Using these lower cut-off points the prevalence was 55%. Using the higher cut-off points (10/11 and 2/3) the prevalence was 17.2%. There are reasons to believe that the lower cut-off points are inappropriate for the Kembata/Hadiya rural population and that the higher cut-off points are more valid. Without an assessment of the specificity and sensitivity for the higher cut-off, the following arguments are presently only speculative. No one in the Addis Ababa sample said more than 8 yes's to the 20 items. In contrast, 20% of the Kembata/Hadiya complained of more than 8 symptoms. This is similar to results in other developing countries (12). Cross-cultural differences in complaining style is well documented in the literature; certain cultural groups cope with suffering by overexpressing their pain while other groups cope by denying pain (15). Also populations with little or no education have been found to require a higher cut-off point because they have higher response rates, i.e. higher false positive scores (12). Again, this may be a cultural difference in coping with symptoms by overexpressing them. Less work has been done on cross-cultural validation of psychotic items.

Psychosomatic prevalence was 40%. This was not a separate subscale on the SRQ but is considered an important aspect of

mental illness in Ethiopia given the reportedly high somatization style among Ethiopian patients (19). Validity of this scale is supported by the empirical clustering of responses to these items in the factor analysis. When the items are forced into three factors, these somatic items clustered with the anxiety items, indicating that they are somatic expressions of anxiety.

Using either set of cut-off points for the SRQ we come up with a majority of cases being psychoneurotic which is in close agreement with most of the studies done in Africa as well as in Ethiopia (14, 18, 19).

Further support for the robustness of the results is that both cut-off points produce the same set of predictors/risk factors. The two most important determinants of all categories of mental illness were stress and family history of mental illness. They independently affected scores on the SRQ. The impact of family history of mental illness can be explained either through heredity or poor parenting. Stress was linearly related to mental illness in that the higher the stress score, the more symptoms the person experienced. Stress by itself was not only a predictor of mental illness, but explained demographic variations in the prevalence of mental illness. More demographic factors seem to be significantly associated with neurotic and psychosomatic symptoms than with psychosis. More women display psychoneurotic and psychosomatic complaints than men. There are several possible explanations for this. One is that the incidence of dissolution of marriage in higher for females than

for males -- 9.5% for females and 3.6% for males in the study Awraja (21) -- and women usually carry the blame and the stigma when a marriage is not fertile. Also when divorce or separation takes place and the woman does not remarry, the economic, social and emotional burden of caring for children by herself is great. As shown in the analysis of stress scores, men have higher stress in the married and singles categories whereas women have higher stress than men in the divorced, separated and widowed groups.

There is a tendency for divorced, separated and widowed people to display a higher frequency of psychiatric morbidity than those who are married or single. Once again stress may account for this difference in that the former group had higher mean stress scores. Their psychological problems could be the cause of divorce/separation, or could be the consequence in that these people have extra economic burdens and social isolation. This is consistent with other findings in Ethiopia (19).

Higher levels of stress can also explain age differences in mental illness. The age group 35-44 has a higher prevalence of neurosis and psychosomatic illnesses than other age groups. This age group has the highest mean stress level perhaps because they are the most active and productive with many family responsibilities. Perhaps for the same reasons, those with family size of 8 and above had a higher frequency of neurotic and psychosomatic morbidity than those with smaller families.

Individuals suffering from one of the main chronic illnesses like hypertension, diabetes mellitus, epilepsy, or CLD are prone

to have high psychiatric morbidity especially neurosis and psychosomatic illnesses. One explanation for this is that coping with the disease itself is often stressful and frustrating. A recent report showed that patients with chronic illnesses such as hypertension and diabetes mellitus who had mental treatment along side their regular medical treatment showed greater improvement and spent less money in the longterm than similar patients who had no mental health treatment (22).

Education is a protective factor for neurosis and psychosomatic complaints. Illiterates were more affected than the literates perhaps because illiterates have a higher response rate. This may be due to their higher stress or to more false positives among illiterates (10).

The main limitation of the study is where to place the cut-off points. Although the cut-off points for the Self-Reporting Questionnaire (SRQ) have been validated with an OPD sample and a community sample in Addis Ababa, different cut-off point may be required for different cultural and educational groups. The cut-off points need to be validated using a two-stage procedure which utilizes a psychiatric clinical examination followed in addition to the SRQ questionnaire. Also more work needs to be done on the psychotic items, eliminating ones which assess delusions of grandeur and perhaps adding ones on hostility.

CONCLUSIONS AND RECOMMENDATIONS

The prevalence of mental illness in the community appears to be high enough to warrant some action. Even using the 10/11 cut-off point which is the highest used in any developing country, the prevalence of mental illness was 17.2%.

Stress appears to be the most important determinant of mental illness. The number of major life changes experienced by a person in the past year was highly associated with their number of symptoms. Stress also explained many of the demographic differences in mental illness in that certain groups such as divorced/separated/widowed, the age group 35-44, and women have higher stress.

On the basis of these conclusions, the following recommendations are made:

First of all there must be agreement on a broad positive concept of mental health, one that encourages active involvement in mental health issues, not only by the health and social services networks, but also by the society in general.

Secondly, those at risk because of their marital status, family history of mental illness, and chronic illness can be identified and given extra help coping with their stress. For example, those with chronic illness can be given psychological treatment alongside their regular medical treatment. The Ministries of Social Welfare and of Health could both help with this activity.

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APPENDIX A

Questionnaire

Awraja_____ Woreda_____

1. ID number _____

2. Gender 1. Male 2. Female

3. Age _____

4. Marital status

1. Married 2. Single 3. Divorce/Sep 4. Widow

5. Ethnic group 1. Hadiya 2. Kembata

6. Family size _____

7. Education

1. Illiterate 2. Literate 3. Regular school

8. Pairs of oxen _____

9. Chronic illness in the family

1. Hypertension 2. Diabetes mellitus 3. Epilepsy

4. Chronic liver disease 5. Minor illnesses

SELF-REPORTING QUESTIONNAIRE

1. Do you often have headaches? 1. No 2. Yes

2. Is your appetite poor? 1. No 2. Yes

3. Do you sleep badly? 1. No 2. Yes

4. Are you easily frightened? 1. No 2. Yes

5. Do your hands shake? 1. No 2. Yes

6. Do you feel nervous? 1. No 2. Yes

7. Is your digestion poor? 1. No 2. Yes

8. Do you have trouble thinking clearly? 1. No 2. Yes

9. Do you cry more than usual? 1. No 2. Yes

10. Do you feel unhappy? 1. No 2. Yes

11. Do you find it difficult to enjoy your daily activities?

    1. No 2. Yes

12. Do you find it difficult to make decisions? 1. No 2.Yes

13. Is your daily work suffering? 1. No 2. Yes

14. Are you unable to play a useful part in life? 1. No 2. Yes

15. Have you lost interest in things? 1. No 2. Yes

16. Do you feel you are a worthless person? 1. No 2. Yes

17. Has the thought of ending your life been in your mind?

    1. No 2. Yes

18. Do you feel tired all the time? 1. No 2. Yes

19. Do you have uncomfortable feelings in your stomach?

    1. No 2. Yes

20. Are you easily tired? 1. No 2. Yes

21. Do you feel that somebody has been trying to harm you in some way? 1. No 2. Yes

22. Are you a much more important person than most people think?

    1. No 2. Yes

23. Have you noticed any interference or anything unusual with your thinking? 1. No 2. Yes

24. Do you ever hear voices without knowing where they come from, or which other people can not hear? 1. No 2. Yes

ADDITIONAL ITEMS

25. Do you feel angry at others? 1. No 2. Yes

26. Do you have temper outbursts? 1. No 2. Yes

27. Do you feel critical of others? 1. No 2. Yes

28. Do you have pain in your chest or back? 1. No 2. Yes

29. Do you have burning pain in your stomach? 1. No 2. Yes

ITEMS ASSESSING FAMILY HISTORY AND STRESS

39. Is there mental illness in the family? 1. No 2. Yes

40. Write the number of life events in the past one year from the following scale. _____

SOCIAL READJUSTMENT SCALE

1. Death of spouse.
2. Divorce/separation.
3. Death of close family member.
4. Personal injury or illness.
5. Family member injury or illness.
6. Pregnancy/birth.
7. Sterility.
8. Marital problems.
9. Did you encountered death of mother before the age of 5?
10. Children below the age of 10.
11. Minor violations of law.
12. Marriage.
13. Family arguments.
14. Death of a close friend.
15. Lack of adequate water.
16. Lack of adequate food.
17. Change of residence.
18. Major change in social activities.
19. Unable to fulfill holiday obligations.

አውራጃ_____ ወረዳ_____

1. ፀታ 1. ወንድ 2. ሴት ___
2. ዕድሜ ___
3. የጋብቻ ሁኔታ 1. ያገባ 2. ያላገባ 3. ፈተ 4. የሞ ተበተ ___
4. ዘር 1. ሃዲያ 2. ከምባታ ___
5. የቤተሰብ ብዛት ___
6. የትምህርተ ደረጃ 1. መሠረተ ትምህርት ያልጨረሱ 2. መ/ትምህርት የጨረሱ 3. መደበኛ ትምህርት ክፍል ___
7. ስንት ጥማዱ በረዴ አለያት? ___
8. ቤተሰብ ውስጥ የቀየ በሽታ አለ? 1. ደም ብዛት 2. ስኳር 3. የሚጥል በሽታ 4. ጉበት 5. ሌላ ___
9. ራስ ምታት ብዙ ጊዜ ያጠቃያታል ወይ? 1. አያጠቃንም 2. አያ ___
10. ምግብ የመ ቀበል ፍላጐትያ አነስተኛ ነው ወይ? 1.አይደለም 2. አያ ___
11. በደንብ አይተኙም ወይ? 1. አተኛለሁ 2. አያ ___
12. በቀላሉ ይደነግጣሉ? 1.አልደነግጥም 2. አያ ___
13. እጁያ ይንቀጠቀጣል? 1. አይንቀጠቀጥም 2. አያ ___
14. የመንፈስ መጨነቅ አለቦት? 1. የለብኝም 2. አያ ___
15. ምግብ የመፍጨት ችሎታያ ደካማ ነው ወይ? 1. አይደለም 2. አያ ___
16. በትክክል ማሰብ ያስቸግርያታል? 1.አያስቸግረኝም 2. አያ ___
17. የሰዘን ስሜት ይሰማያታል ወይ? 1. አይሰማኝም 2. አያ ___
18. ዝም ብለው ብዙ ጊዜ ያለቅሳሉ? 1. አላለቅስም 2. አያ ___
19. በየቀኑ በሚሰሯቸው ሥራያቸ መደሰት ያስቸግርያታል? 1. አያስቸግረኝም 2. አያ ___
20. ውሳኔ የመወሰን ችግር አለብያት? 1. የለብኝም 2. አያ ___
21. የዕለት ተግባርያን ለመፈጸም ያስቸግርያታል? 1. አያስቸግረኝም 2. አያ___
22. በአካባቢያ ጠያሚ ሥራ መጨወት ያስቸግርያታል? 1. አያስቸግረኝም 2. አያ ___
23. ለአንዳንዱ ነገር ስሜትያ ቀንሷል? 1. አለቀነሰም 2. አያ ___
24. የጋ ቢስ ሰው ነኝ ብለው ያምናሉ? 1. አላምንም 2. አያ ___
25. ሕይወቶን የማጥፋት ስሜት ተሰምትያት ያውቃል? 1. አያውቀም 2.አያ ___
26. ሁልጊዜ ይደክሞታል? 1. አይደክመኝም 2. አያ ___
27. ሬዲዮ ይረብሸታል? 1. አይረበሽም 2. አያ ___
28. በቀላሉ ይደክማሉ? 1. አይደክመኝም 2. አያ

29. ሰው በሆነ መንገድ ሊጐዳዎ የሞከረ ይመስልዎታል? 1. አይመስለኝም 2. አዎ ___
30. ብዙ ሰዎች ከሚገምቱት ይበልጥ ተለቅ ሰው ሮ:ት? 1. አይደለሁም 2. አዎ ___
31. በሀሳብዎ ውስጥ የተለየ አዲስ አነገር እየገቢ ያስቸግርዎታል? 1. አያስቸግረኝም 2. አዎ ___
32. ለሌሎች ሰዎች የማይሰማና ከየት እንደመጣ ለርስዎ ግልፅ ያልሆነ ድምፅ ተሰምቶት ያውቃል? 1. አያውቅም 2. አዎ ___
33. በሌሎች ሰዎች ይና ደዱሉ? 1. አልና ደደም 2. አዎ ___
34. ሊቁጣጠሩት የማይችሉት ንዴት አለቦት? 1. የለብኝም 2. አዎ ___
35. ሌሎችን ሰዎች በሀሳብዎ ይወቅሷሉ? 1. አልወቅስም 2. አዎ ___
36. በጀርባዎ ወይም በደረትዎ ላይ ሕመም አለዎት? 1. የለኝም 2. አዎ ___
37. የሚያዎዮል ስሜት በጨጓራዎ አለዎት? 1. የለኝም 2. አዎ ___
38. በቤተሰብ ውስጥ የአእምሮ ቸግር ያለበት አለ? 1. የለም 2. አዎ ___
39. የታዬትን ማህበራዊ ቸግሮች መዘገብ ቢለፈው አንዱ አመት ___

የማህበራዊ ችግሮች

1. የቧል ወይም ሚስት ሞት
2. ፍቺ/ መለያየት
3. የቤተሰብ አቧል ሞት/ከቤት ውጭ የሚሮጡም/
4. የግል አደጋ ወይም በሽታ/ የሚያስጨንቅ/
5. ቤተሰብ ውስጥ አደጋ/በሽታ
6. አርግዝና/ወሊድ
7. መጠንነት
8. የትዳር ችግር
9. ከአምስት ዓመትያ በፊት የአጭት ሞት አጋጥሞያታል?
10. ከአሥር አመት በታች ልደቸ አለያት?
11. ፅሠራት
12. የጋብቻ ዝግጁት
13. በቤተሰብ ውስጥ ብጥብጥ ለምሣሌ ከልጆች ጋር
14. የቅርብ ጌደኛ ሞት
15. ቤቷ ውሃ አለመኖር
16. በቂ ምግብ አለመኖር
17. የመኖሪያ አካባቢ ለውጥ
18. የማህበራዊ ተሳትፎ ለውጥ
19. ዓመት በዓልን ማክበር አለመቻል

APPENDIX B

Instructions to Interviewers

In order to ensure consistency and avoid misinterpretation in the process of data collection, interviewers were advised to follow strictly the following instructions:

1. Before starting interviewing make sure the respondent is fully co-operative.
2. If there is an overt psychiatric case do not interview him/her.
3. Do not force a respondent to answer a question.
4. Go for the interviewing with the version of the questionnaire translated into the native language.
5. Use pencil to fill all answers.
6. Interview individuals above 15 years of age and below 55 years.
7. If you find a closed house or no respondent, make 2 more return visits.

APPENDIX C

Factor analysis of the 29 symptoms

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4
HA	.00562	.15893	.07579	.57506
APETITE	.25430	.05123	.01430	.67681
SLEEP	.27720	.21966	.14532	.46190
FRIGHT	.04434	.46263	.19784	.34070
HAND	.01495	.41052	.02992	.18106
NERVOUS	.28861	.36434	.25579	.29063
DIGEST	.28273	.15072	.04227	.52714
THINK	.57045	.17651	.13986	.22236
UNHAPPY	.25779	.63433	.17712	.09606
CRY	.02533	.64552	.02404	.00058
WORK	.63737	.22345	.17164	.08984
DECIDE	.65974	.17312	.22061	.03740
PERF	.65852	.11935	.04820	.01933
WORTH	.54310	.07223	.30324	.06767
INTEREST	.48352	.21510	.11441	.27360
WLESS	.37387	.51718	.20005	.03470
SUICIDE	.24514	.42060	.18418	.03398
TIRED	.25841	.56298	.05222	.30833
STOMACH	.23229	.45548	.30238	.21890
EASYTIRE	.26226	.42865	.07355	.29314
PARANOID	.24396	.03425	.69579	.07242
BIGSHOT	.18678	.01591	.22100	.06394
INTERFER	.36862	.10312	.55492	.02633
HALLUC	.12937	.34094	.41615	.04583
ANGRY	.13004	.23670	.67673	.07067
OUTBURST	.12825	.33170	.50222	.13463
CRITIC	.00912	.03747	.70255	.11334
CHEST	.09427	.13554	.07326	.57825
DYSPEP	.00978	.04569	.10558	.63014

Factor 1 = cognitive aspects of neuroses
Factor 2 = anxiety and depression
Factor 3 = psychpsis
Factor 4 = psychosomatic

APPENDIX D

Frequency of psychoneuroses using a cut-off of 4/5 on the SRQ for the different risk factors

Factors	No Neuroses	Neuroses	Chi-square
GENDER			
Male	698(58.1%)	504(41.9%)	***
Female	398(36.3%)	400(50.1%)	12.67
AGE			
15 - 24	291(70.1%)	124(29.9%)	
25 - 34	296(56.2%)	231(43.8%)	***
35 - 44	255(45.9%)	300(54.1%)	61.05
45+	254(50.5%)	249(49.5%)	
MARITAL STATUS			
Married	879(54. %)	739(45.7%)	***
Single	189(70.5%)	79(29.5%)	68.02
Divorce/wid.	28(24.8%)	85(75.2%)	
FAMILY SIZE			
1 - 3	224(61.2%)	155(38.8%)	
4 - 6	406(57.0%)	306(43.0%)	***
7 - 8	273(52.3%)	249(47.7%)	17.94
9+	173(47.1%)	194(52.9%)	
EDUCATION			
Illiterate	683(52.9%)	609(47.1%)	***
Literate	413(58.4%)	294(41.6%)	5.47
ECONOMY			
No oxen	912(63.9%)	515(36.1%)	***
Oxen	317(55.4%)	255(44.6%)	12.07
CHRONIC ILLNESS			
HPN, DM, CLD	183(54.0%)	156(46.0%)	***
None	1047(63.0%)	614(37.0%)	9.36
FAMILY HX MENTAL ILLNESS			
No	947(58.5%)	672(41.5%)	***
Yes	149(39.1%)	232(600.9%)	46.01
STRESS			
0 - 3	644(62.4%)	388(37.6%)	***
4+	452(46.7%)	516(53.3%)	49.13

**p<.01, ***p<.001

APPENDIX E

Frequency of psychoses using a cut-off of 0/1 on the SRQ for the different risk factors

Factors	No Psychoses	Psychoses	Chi-square
MARITAL STATUS			
Married	1015(62.7%)	603(37.3%)	***
Single	174(64.9%)	94(35.1%)	32.72
Divorced/wid.	41(36.3%)	72(63.7%)	
ECONOMY			
No oxen	912(62.9%)	515(36.1%)	***
Oxen	317(55.4%)	255(44.6%)	12.07
CHRONIC ILLNESS			
HPN, DM, CLD	183(54.0%)	156(46.0%)	**
None	1047(63.0%)	614(37.0%)	9.36
FAMILY HX MENTAL ILLNESS			
No	1016(62.8%)	603(37.2%)	*
Yes	214(56.2%)	167(43.8%)	5.38
STRESS			
0 - 3	687(66.6%)	345(33.4%)	***
4+	543(56.1%)	425(43.9%)	22.70

*p<.05, **p<.01, ***p<.001

APPENDIX F

Frequency of psychosomatic illness using a cut-off of 3/4 for the different risk factors

Factor	No psychosoma	Psychosoma	Chi-square
GENDER			
Male	683(56.8%)	519(43.2%)	**
Female	396(49.6%)	402(50.4%)	9.71
AGE			
15 - 24	279(67.2%)	136(32.8%)	
25 - 34	284(53.9%)	243(46.1%)	***
35 - 44	252(45.4%)	303(54.6%)	46.20
45+	264(52.5%)	239(47.5%)	
MARITAL STATUS			
Married	860(53.2%)	758(46.8%)	***
Single	182(67.9%)	86(32.1%)	41.89
Divorce/wid.	37(32.7%)	76(63.3%)	
FAMILY SIZE			
1 - 3	244(61.2%)	155(38.8%)	***
4 - 6	404(56.7%)	308(43.3%)	22.75
7 - 8	262(50.2%)	260(49.8%)	
9+	169(46.0%)	198(54.0%)	
EDUCATION			
Illiterate	666(51.5%)	626(48.5%)	**
Literate	413(58.4%)	294(41.6%)	8.40
ECONOMY			
No oxen	800(56.1%)	627(43.9%)	**
Oxen	278(48.6%)	294(51.4%)	8.85
CHRONIC ILLNESS			
HPN, DM, CLD	142(41.9%)	197(58.1%)	***
None	937(56.4%)	724(43.6%)	23.32
FAMILY HISTORY			
No	930(57.4%)	689(42.6%)	***
Yes	149(39.1%)	232(60.9%)	40.99
STRESS			
0 - 3	646(62.6%)	386(37.4%)	***
4+	433(44.7%)	535(55.3%)	63.45

**p<.01, ***p<.00124/05/89

DECLARATION

I, the undersigned, declare that this thesis is my work and that all sources of material used for this thesis have been duly acknowledged.

Name Solomon Tafari,M.D.

Signature 

Place Addis Ababa, Ethiopia

Date of Submission April, 1989