CHAPTER III

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The present investigation was designed to test various hypotheses concerning "Correlates of Depressive Symptomatology in Married Women". The empirical verification of the proposed hypotheses is dependent, firstly, on the reliable measurements of the variables of ultimate interest; and secondly, on the methods and procedures employed for deriving conclusions from such measurements. This required:

(a) selection of an adequate sample;
(b) selection of appropriate tools that could be profitably used for reliable measures; and
(c) selecting suitable statistical techniques for analyzing the data.

Thus, it is pertinent to describe the sample, the specific tools, and the methods and procedures employed in completing the research being reported.

The description of the sample providing data for testing the proposed hypotheses is given in the subsequent pages. This chapter also describes the tools which have been used for collecting data; in addition the information concerning administration and scoring of the tests used is also given in subsequent pages. Moreover, the procedure of analyses has also been discussed in this chapter.
The present study was carried out on two different groups comprising of employed and non-employed married women. The age in the case of employed and non-employed married women ranged from 25 to 59 years and 24 to 63 years, respectively. Incidental sampling was employed.

The reasons for limiting the present study to employed and non-employed married women were:

(1) all aspects of women's roles are currently under scrutiny;
(2) to control the variable of sex, since a frequent observation in epidemiologic studies of depression is that women preponderate. At every age group, rates of depression are higher for women. The available evidence for the preponderance of females among depressives comes from four sources: (a) clinical observations of patients coming for treatment; (b) survey of persons not under treatment; (c) studies of suicide and suicide attempters; (d) studies of grief and bereavement.

(3) There has been a dramatic increase in the proportion of working women during the last few years. The question has arisen as to the effect of this change on women's general well-being. In particular, researchers are attempting to ascertain the effect of employment outside of the home on women's psychological well-being, and the effect of employment status on depression and its correlates, and
(4) to control the effect of marital status, only married women were selected.

The necessary information about sociostructural factors of the two groups is given in Table 3.1.

<table>
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<th>Non-employed</th>
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<td>Educational qualification SD</td>
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</table>

Most research to date has failed to control for additional sociostructural factors which also have been found to affect psychological well-being, among them age (Roberts et al. 1981; Finlay-Jones & Burvill, 1977; Comstock & Helsing, 1976; Dupuy et al. 1970); income (Roberts et al. 1981; Blazer & Williams, 1980; Weissman & Myers, 1978; Pearlin & Johnson, 1977; Comstock & Helsing, 1976; Radloff, 1975; Harvey & Bahr, 1974; Dupuy et al. 1970) and education (Roberts et al. 1981;

These sociocultural factors (age, income, and education) of the two groups have been included in addition to several other variables for understanding the correlates of depression. This has been done since the studies mentioned in the preceding paragraph found them to be important.

With a view to win the confidence of the subjects, they were told that the information was being collected purely for research purpose and would be kept confidential. The assurance seems to have gone a long way in establishing psychological rapport, since a large number of subjects contacted the investigator and enquired about their performance on the tests used.

**TESTS**

The following tests were used:

**(A) Self Report Measures Of Depression**

1. Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961);
2. Minnesota Multiphasic Personality Inventory, D-scale (Hathaway & McKinley, 1967);
3. Zung Self-Rating Depression Scale (Zung, 1965);
**Cognitive Assessment Measures**

1. Automatic Thought Questionnaire (Hollon & Kendall, 1980);
2. Hopelessness Scale (Beck, Weissman, Lester, & Trexler, 1974);
3. Dysfunctional Attitude Scale: Form A (Weissman, 1978; Weissman & Beck, 1978);

**Rotter's Internal-External Scale (Rotter, 1954);**

**Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975);**

**Life Experiences Survey (Sarason, Johnson, & Siegel, 1978);**

**IPAT Anxiety Scale Questionnaire (Cattell & Scheier, 1963); and**

**Sex-Role Inventory (Fand, 1955).**

**Measures of Depression**

The fact that there is a need for assessing depression, whether as an affect, a symptom, or a disorder is obvious by the numerous scales and inventories available and in use today.

Self-report checklists of depression characteristics with some established validity, reliability, and factorial structure include the 21-item Beck Depression Inventory (BDI: Beck, 1961, 1970), the 20-item Zung Self-Rating Depression Scale (ZSRS: Zung, 1965), the Clinical Analysis Questionnaire (Delhees & Cattell, 1975), the Depression Scale (Krug &
Laughlin, 1976), the Eight State Questionnaire (Institute for Personality and Ability Testing, 1976), and of course, the oldest of all standardized multivariate and multidimensional personality measures, the Minnesota Multiphasic Personality Inventory (MMPI-D scale). In the present study, Beck Depression Inventory, Zung Self-Rating Depression Scale, and MMPI-D scale have been used as measures of depression.

This has been done keeping in view their extensive use by researchers working in the area of depression. There are several reasons for the use of multiple depression scales. First, past research has extensively used these measures of depression; Second, researches have reported similarity as well as dissimilarity among these measures of depression; Third, the different construction of these scales, and their individual characteristics of item array, cause serious difficulties in comparing one study using one scale with another using a different scale. Given some contentual differences among the scales; there may be distinctive patterns of correlation of these scales with several other factors.

1. Beck Depression Inventory (BDI: Beck, Ward, Mendelson, Mock, & Erbaugh, 1961)

The Beck Depression Inventory in its various forms (Beck & Beck, 1972; Beck, 1972, 1967; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is one of the most frequently used self-report depression inventories in contemporary clinical research. Originally designed to be "interviewer" assisted,
current practice appears to be to allow respondents to self-administer the inventory by marking their responses on a paper and pencil type form of the BDI. Although the inventory was designed as a clinical instrument, in practice it is frequently employed in studies using college populations, dichotomizing students into "depressed" and "nondepressed" groups based on self-administered BDI responses obtained during large screening sessions.

The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a 21-item self-report test for assessing severity of depressive symptomatology. The scale consists of items containing four alternative statements, and each item scores on a 0 to 3 basis for severity (range: 0-63). The BDI has been demonstrated to correlate satisfactorily with ratings of severity made by independent clinicians (Beck, 1967; Beck et al., 1961) and has a split-half reliability of .93 (Beck et al., 1961).

A series of validity and reliability studies (Beck & Beamesderfer, 1974; Pichot & Lemperiere, 1974; Beck, 1967) generally support the BDI as a measure of depressive severity (e.g., 0-9: normal; 10-18: mild; 19-25: moderate; and 26 and above: moderately severe to severe). The BDI was selected to provide an index of severity of depression.

The inventory has also been factor analyzed by several investigators, and has been used for the detection of depression.
in groups of unselected psychiatric patients and among medical inpatients. In practice, the range of cutoff scores in research is highly variable. A review of recent literature involving the BDI revealed that the criteria for not-depressed groups ranged from \(< 2\) (Carson & Adams, 1980) to \(\leq 13\) (Roth & Rehm, 1980) on the standard length inventory. On the short form of the inventory (Beck & Beck, 1972) cutoffs for the depressed categories ranged from \(7\) (Kilpatrick-Tabak & Roth, 1978) to \(\leq 21\) (Johnson & Crockett, 1982). Clearly a subject designated as depressed in one study may not be similarly designated in another.

Focussing on the use of the BDI with college students, Sacco (1981) challenged the test-retest reliability of the depression inventory. His concerns about the temporal stability of the BDI are based largely on his experience with classifying college students as depressed on one day using their BDI scores only to have their classification change on readministering the BDI on another day (Sacco & Hokanson, 1978). According to Sacco, failure to assess depression level just prior to conducting an experiment thus leads to misleading if not invalid results. Sacco's concern about the test-retest reliability of the BDI, are not without rebuttal.

Using non-depressed college students, Miller & Seligman (1973) reported a test-retest reliability coefficient \((r)\) of .74 after a three month interval, and Pehm (1976) reported \(r\)
of .75 after one month. Oliver & Burkham (1979) reported a test-retest coefficient of .78 for college students over a week's period. Retesting psychiatrically hospitalized adolescents, Strober, Green, & Carlson (1981) reported an r of .69. Gallagher, Nies, & Thompson (1982) reported even more impressive test-retest coefficients with normal (r = .86) and depressed (r = .79) elderly. The time interval between administrations for the latter study ranged from 6 to 21 days. Although the published reliability coefficients are impressive, they do not specifically address Sacco's concern about the ability of the BDI to classify an individual within the same depression category on two occasions.

Hatzenbuehler, Parpal, & Matthews (1983) while classifying college students as depressed or non-depressed found that whereas the overall test-retest reliability coefficients were acceptable, particularly when both administrations of the BDI occurred on the same day, the consistency of classification of subjects into the mild and moderate levels of depression was poor.

More recently, Schaefer et al. (1985) found alpha coefficients for the BDI measures of men to be .94 (psychiatric ward and .88 (chemical dependency ward).

These studies clearly suggest that although the published reliability coefficients are impressive, they specifically address Sacco's (1981) and Hatzenbuehler et al. (1983) concern
about the ability of the BDI to classify an individual within the same depression category on two occasions.

The present study, however, did not attempt to use BDI for the purpose of classifying subjects into different groups on the basis of individual's depression level. The BDI was selected to provide a single measure of severity of depression.

2. Minnesota Multiphasic Personality Inventory: Depression Scale (Hathaway & McKinley, 1967)

The Minnesota Multiphasic Personality Inventory (MMPI) is designed to provide an objective assessment of some of the major personality characteristics that effect personal and social adjustment. The inventory was originally developed "to assay those traits that are commonly characteristic of disabling psychological abnormality" (Hathaway & McKinley, 1967, p. 1).

The nine MMPI originally developed scales described briefly below are often referred to as the 'clinical' scales. The clinical scales are all empirical scales developed by selecting items which differentiated between two groups. The criterion groups for all but two of the scales consisted of individuals with some type of personality disorder. The trait names assigned to those scales are those that correspond to the psychiatric diagnosis of individuals in the criterion groups. The nine clinical scales along with their abbreviations
are as follows: hypochondriasis (Hs); depression (D); hysteria (Hy); psychopathic deviate (Pd); masculinity - femininity (MF); paranoid (Pa); psychasthenia (Pt); schizophrenia (Sc); and hypomania (Ma). Many other scales have subsequently been developed from the same items; social introversion is one that is commonly scored. There are also three validating scales: Lie (L), validity (F), and correction (K).

The inventory consists of 550 affirmative statements covering a wide range of subject matter from the physical condition to moral and social attitude of the individual being tested. The subject is asked to sort all the statements in three categories: 'True', 'False', and 'Cannot say'. The inventory items can be presented to the subject either in a card (box) form for individual use or in a booklet with separate answer sheet suitable for both individual examinations and group testing. Both these forms were designed for adults from about 16 years of age upward, although they have also been employed successfully with somewhat younger adolescents (Hathaway & Monacheri, 1963).

The data which have been reported on the reliability of the MMPI appear to be quite satisfactory. The authors (Hathaway & McKinley, 1942; McKinley & Hathaway, 1942, 1944), using the card form with unselected normals, reported test-retest coefficients, ranging from .57 to .83, for six of the clinical variables.* The time between testings varied from 75

* Hypochondriasis, Depression, Hysteria, Psychopathic Deviate, Psychasthenia and Hypomania.
three days to more than one year. Cottle (1950) reported test-retest coefficients ranging from .46 to .91 for unselected normals who took both the card form and the group form within one week. Holzberg & Alessi (1949) reported test-retest coefficients for unselected psychiatric patients who took both the complete version and shortened version of the card form within three days. Coefficients of correlation ranged from .52 to .95.

As for validity, "A high score on a scale has been found to predict positively the corresponding final clinical diagnosis or estimate in more than sixty per cent of new psychiatric admissions" (Hathaway & McKinley, 1967, p. 8).

This self-report questionnaire designed by Hathaway & McKinley (1942); McKinley & Hathaway (1942, 1944) covers the range of motivational, physical, and affective symptoms. MMPI-D scale consists of 57 items, each item is in a form of a simple statement. The subject is asked to sort all the statements into two categories (1) True or (2) False, depending upon how he feels about each statement. Score of 1 is given to the statement which reveals the depressive attitude of the subject. Scores range from 1-57, higher score indicates greater symptoms of depression in a subject.

3. Zung Self-Rating Depression Scale (Zung, 1965)

The Zung-D is a 20-item scale measuring the frequency of depressive symptomatology. In devising Self-Rating
Depression Scale, the clinical diagnostic criteria used comprised of the most commonly found characteristics of depression. These were divided into: pervasive affect, physiological equivalents or concomitants, and psychological concomitants. Of the 20-items used, ten are worded symptomatically positive, and ten symptomatically negative. Thus, the scale appears well balanced with equal numbers of positive and negative statements. The items include such statements as "I feel down hearted and blue", "I have trouble with constipation", "I get tired for no reason", "My life is pretty full".

The respondent is given a choice between the categories: "none or a little of the time", "some of the time", "part of the time", and "most or all of time" with numerical values ranging from 1 to 4 for positively worded items and 4 to 1 for negative statements. The total sum of scores for twenty statements range from 20 to 80, with a higher score signifying severe depression and a lower score signifying less depression. Zung (1965) reported that the Zung-D index of 50 serves as a criterion score to distinguish clinically depressed persons from normals. The author has extensively documented psychometric properties of the scale. Moreover, Zung (1971) argued that the Zung-D can discriminate the measurements of depression and anxiety in a clinical population. More recently, Gabrys & Peters (1985) found support for the scale's reliability.
by judge or self-report and the predictive and discriminant validities with functionally diverse groups. Another recent study (Tanaka-Matsumi & Kameoka, 1986) reported Cronbach alpha coefficient of 0.81 for a sample of 391 normal college students. The authors also found evidence for convergent validity but the discriminant validity was not clearly demonstrable, as pairs of anxiety and depression scores correlated strongly.

Another recent study (Schaefer et al. 1985) estimated the internal consistencies of Zung Self-Rating Depression Scale by computing alpha coefficients. The Zung alphas were .90 (psychiatric ward) and .86 (chemical dependency ward). The authors found that the results favour the Zung over the MMPI-D Scale and, to a lesser degree, the BDI as a measure of depressive symptomatology in men. In general the Zung produced better validity coefficients than the Beck, which in turn yielded higher correlations with our criteria than did the MMPI Depression scale. The authors further concluded that additional research on the scales' validities in women would be useful.

The Zung SDS, developed by Zung (1965) to "fill the need for assessing depression whether an affect, a symptom or a disorder", was chosen because of its accepted clinical value (Blumenthal, 1975). It covers a broad range of depressive symptomatology dealing with the areas of pervasive affect, physiological equivalent and psychological concomitants (Zung, 1965). It has a well established validity, reliability
and replicability (Blumenthal, 1975; Zung, 1965, 1967; Zung, Richards & Short, 1968). Additionally, it is short, convenient to administer, and being self-completed, it is not subject to the halo effect of rater bias spoken of by Pilowsky, Levine, & Boulton (1969) and Kendall (1968).

(C) COGNITIVE ASSESSMENT MEASURES

1. Automatic Thought Questionnaire (ATQ: Hollon & Kendall, 1980)

Automatic Thought Questionnaire is a 30-item questionnaire designed to measure the frequency of occurrence of negative automatic thoughts found in depression. Items are rated on a 5-point scale: 1 = "not at all", 2 = "sometimes", 3 = "moderately often", 4 = "often", and 5 = "all the time". The items are rated for occurrence during the past week. Examples of typical items are "I am no good", "My life is a mess", "I am a failure", "I am worthless", "I hate myself", and "My future is bleak". The range of possible scores is from 30-150. The questionnaire, developed with a college student population, discriminated between depressed subjects and nondepressed subjects. Hollon & Kendall (1980) reported high internal reliability, strong correlation with severity of depression, and good item-total statistics. In 348 college students, the Automatic Thought Questionnaire correlated significantly with both the Beck Depression Inventory and the Minnesota Multiphasic Personality Inventory - Depression Scale, the coefficients of correlation...
ranged from .45 to .70. Also using a college sample, Dobson & Breiter (1983), and Harrell & Ryan (1983) reported that ATQ possessed adequate internal reliability and strong sensitivity to the severity of depression. The ATQ was the most sensitive measure related to level of depression.

More recently, Dobson & Shaw (1986) found that the ATQ correlated positively and significantly with the two depression indices. Also, the ATQ correlated positively and significantly with every other cognitive assessment measure, and nonsignificantly with those cognitive response test scales not measuring depressive conditions. The authors concluded: "the Automatic Thought Questionnaire demonstrates strong convergent and discriminant validity". Cronbach's alpha coefficients were found to be .94, .95 and .95 for different groups comprising of normal, psychiatric control and depressed respectively.

Thus Automatic Thought Questionnaire is a reliable and valid measure of the frequency of occurrence of negative automatic thoughts found in depression.

2. Hopelessness Scale (HS: Beck, Weissman, Lester, & Trexler, 1974)

Although a number of measures of attitudes toward the future have been developed, they have not been designed to quantify hopelessness specifically (Gunn & Pearman, 1970; Yufit, Benzies, Fonte, & Fawcett, 1970; Crumbaugh & Maholick, 1969; Stein, Sarbin, & Kulik, 1968).
The need for an instrument capable of assessing a respondent's negative expectancies has led to the development of the hopelessness scale. The underlying assumption is that hopelessness can be readily objectified by defining it as a system of cognitive schemas whose common denomination is negative expectations about the future.

The hopelessness scale is a self-report measure of view about the future in the form of a checklist of 20 items to which the subject responds "true" or "false". Out of 20 true-false statements, 9 were keyed false and 11 were keyed true. For every statement each response is assigned a score of 0 or 1, and the total hopelessness score is the sum of the scores on the individual items. Thus, the possible range of scores is from 0 to 20. The hopelessness scale was found to have a high degree of internal consistency and showed a relatively high correlation with the clinical ratings of hopelessness and other self-administered measures of hopelessness. The internal-consistency of the scale on a population of 294 hospitalised patients was analysed by means of coefficient alpha (KR-20), which yielded a reliability coefficient of .92.

The validity data presented for the hopelessness scale are deemed sufficient to justify its use on a continuing basis. The hopelessness scale is an instrument that may be used by both professionals and para-professionals involved in the detection and assessment of hopelessness as an important variable in many psychopathological processes.
This measure has been evaluated in a number of studies and has been found to be reliable, sensitive and easily administered.

3. Dysfunctional Attitude Scale (DAS; Form A, Weissman, 1978; Weissman & Beck, 1978)

The test format used is that of typical self-report attitude or value scale. For each belief or attitude (the items), seven response categories are presented (totally agree; agree very much; agree slightly; neutral; disagree slightly; disagree very much; totally disagree). On a priori basis, determinations were made as to whether a disagreement or an agreement response indicates an adaptive or maladaptive reaction to the belief in a question. Scaling is on a modified Likert (1932) model, with the adaptive end of the scale assigned an arbitrary value of one, the next category is two, etc. and, with zero being used for omits on each item. Each individual, then has a score for every item and, his total DAS score is simply the sum of the scores he/she received on each item. The higher the total score, the more distorted is the individual's way of thinking. As an example, if the statement were: "I cannot be happy unless most people I know admire me" and the respondent decides that this statement is typical of his way of looking at things most of the time, he may reply that he agrees very much with this belief. Because his response is in the maladaptive direction, his score on this item would be +1.
The Dysfunctional Attitude Scale (DAS) was originally a 100 item scale devised to measure the respondents use of typical depressive assumptions (Beck 1976). A sample of 275 undergraduates (100 males and 175 females) at the Pennsylvania state university were administered the 100-item version of the DAS by a member of the Department of Psychology. The major criticism which was voiced related to the length of time required to complete the 100 items. Therefore, in an attempt to balance brevity and reliability, the data obtained from this population were subjected to a factor analysis, and an adaptation of a method described in Gulliksen (1950) was employed to construct two parallel forms of 40-items each (DAS-A and DAS-B). The range of possible scores is 40 to 280.

In the present study, Dysfunctional Attitude Scale, Form A was used. The DAS - Form A is a 40-item measure, designed to assess the respondents' endorsement of typical depressogenic assumptions (Beck, 1975). The scale has been found to possess necessary psychometric properties. Form-A, used in this study, is reported to have high internal reliability, correlation with other cognitive assessment measures and sensitivity to severity of depression (Dobson & Shaw, 1986; Dobson & Breiter, 1983; Weissman & Beck, 1978).

(C) INTERNAL-EXTERNAL SCALE (Rotter, 1954)

The construct locus of control grew out of Rotter's theory of social learning (1954). According to this theory, persons who perceive that the rewards of life are contingent
upon their own behaviour may be differentiated from those who feel that these rewards are controlled by forces outside themselves. Rotter (1954) developed the Internal - External scale to measure the generalized expectancies for internal and external control of reinforcements. Rotter (1966) reported two factor analyses of the I-E scale which yielded a general factor and accounted for "much of the variance".

The internality - externality scale is a two-option, forced-choice scale. Six items are filler items and the remaining 23 items assess the extent to which subjects believe reinforcement is contingent on an individual's actions. A subject's score is the number of items chosen which indicate a belief that reinforcement is noncontingent on individual action. A low score implies an internal locus of control and a high score, an external locus. The scale has been extensively used by researchers interested in measuring the generalized expectancies for internal and external control of reinforcements.

Reported test-retest reliabilities range from .49 to .61 for two months and .60 to .83 for one month intervals (Rotter, 1966). Cronbach alpha reliability for samples of 50 to 250 college females ranged from .70 to .76. A number of test-retest correlations within the above range, for similar time spans, and for widely differing groups have appeared in the literature (Dua, 1970; Harrow & Ferrante, 1969; Hersch & Scheibe, 1967).
Andrisani & Nestel (1976) reported a stability coefficient of 0.55 for a large sample after a lapse of two years on a shortened version of the scale. More recently, Layton (1985) found test-retest correlation of 0.57 for the school group (N : 186) and another of 0.53 for 101 men aged 17 to 62 years (p < .0001).


The scale has been extensively used for measuring internal-external locus of control and it has been used for this purpose in the present study.

(D) Eysenck Personality Questionnaire (EPQ: Eysenck & Eysenck, 1975)

Eysenck's earlier measure of personality, that is, Eysenck Personality Inventory was concerned with three major dimensions: Extraversion (E), Neuroticism (N) and social desirability (L). The EPQ in addition to the E, N, and L-scales provides a measure for a new dimension, psychoticism (P), also called "touch-mindedness". The P-scale of the EPQ is the result of prolonged effort, having undergone numerous item revisions and tunings of item amalgams along the way to better meet the several theoretically given desiderata.
The questionnaire as currently constituted presents a three dimensional analysis of personality, with orthogonal super-factors of extraversion-introversion (E-I), neuroticism (N), and psychoticism (P). In addition, it includes some lie scale (L) items. Thus it provides an additional scale, i.e., P scale. The three other scales in it - extraversion, neuroticism and lie scale have already been used in Eysenck's Personality Inventory, and Junior Personality Inventory.

Regarding the scores on lie scale items, a number of interpretations have been offered by different persons. It is variously described as "desire to conform to social norms" (Edwards & Heathers, 1962; Edwards, 1959), "ideal self" (Michaelis & Eysenck, 1971), "nice personality" (Skinner et al. 1970), "motivational distortion" (Cattell, 1965), etc. It is also called "faking good" response set. The subject has a motivation to give a false picture of self, rather a better picture of self than he really is. This tendency has been viewed as more or less an error to be avoided or response bias to be overcome, counter balanced or suitably corrected. Lately there has been a tendency amongst various investigators to consider it as a separate, independent and powerful personality factor, to be measured in its own right (Verma, 1977; Michaelis & Eysenck, 1971; Edwards, 1964). The present study did not attempt to exclude cases on the basis of lie-scale, instead lie-scale has been used as an important dimension of personality, to be measured in its own right.
Despite its recent origin the questionnaire is backed by a growing body of evidence bearing on such matters as factor stability and reliability (Eysenck & Eysenck, 1968, 1975, 1976), differentiation of drug users from non-drug users (Teasdale, Segraves, & Zacune, 1971), as well as imprisoned criminals and matched controls (Eysenck & Eysenck, 1971). In addition, Farley & Coh (1976) found that most of the reliability estimates are satisfactory for most uses.

More recently, Bishop (1977) and Block (1977) have criticized the concept of "psychoticism", embodied in the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1976a, 1976b). Block (1977) suggested that more work is needed on the P-scale before it is offered for use to the scientific and professional communities. However, in a brief rejoinder to these critiques, Eysenck (1977) concluded that there is much evidence for the viability of the concept of psychoticism and for the validity of the questionnaire measurement of psychoticism.

The test has also been used in India and found suitable (Upmanyu & Singh, 1984; Upmanyu, Gill, & Singh, 1982; Hundel & Upmanyu, 1981; Verma & Wig, 1972). In brief, Eysenck Personality Questionnaire is fairly reliable and valid for deriving measures pertaining to psychoticism, neuroticism, extraversion and dissimulation.
The Life Experiences Survey is a 57-item self-report measure that allows respondents to indicate events that they have experienced during the past year. The scale has 2 portions: Section I, designed for all respondents, containing a list of 47 specific events plus few blank spaces in which subjects can indicate other events that they may have experienced. The events listed in Section I refer to life changes that are common to individuals in a wide variety of situations. The 10 events listed in Section II are designed primarily for use with students, but they can be adapted for other populations. Section II deals specifically with changes experienced in the academic environment. Section I is appropriate for use with subjects drawn from the general population, whereas both sections are relevant to a student population.

Life experiences survey was designed to eliminate certain shortcomings of previous life stress measures and allows for separate assessment of positive and negative life experiences as well as individualized ratings of the impact of life events. The Life Experiences Survey items were chosen to represent life changes frequently experienced by individuals in the general population. Many of the items are based on existing life stress measures, particularly the Schedule of Recent Experiences (SRE; Holmes & Rahe, 1967). Others were included because they were judged to be events that occur frequently and that potentially
might exert a significant impact on the lives of persons experiencing them. Thirty-four of the events listed in the life experiences survey are similar in content to those found in the schedule of recent experiences. In the construction of the present scale, however, certain items were made more specific. For example, the SRS contains the item pregnancy, which may be endorsed by women but perhaps not by a man whose wife or girlfriend has become pregnant. The present scale allows both men and women to endorse the item of pregnancy in the following manner: Female: Pregnancy; Male: Wife's/girlfriend's pregnancy. The SRS includes the item: wife begins or stops work, an item that fails to assess the impact on women whose husbands begin or cease working. The present scale lists two items: Married male: Change in wife's work outside the home (beginning work, ceasing work, changing to a new job, etc.), and Married female: Change in husband's work (loss of job, beginning a new job, etc.). Examples of events not listed in the SRS but included here are male and female items dealing with abortion and more general items such as serious injury or illness of close friend, engagement, breaking up with boyfriend/girlfriend, and so forth. Nine of the 10 school-related items are unique to the LSS. Finally, some of the events from the SRS thought to be of relatively little consequence (e.g., Christmas, vacation, etc.) were not included, and certain other events were reworded to simplify responding.
The format of the life experiences survey calls for subjects to rate separately the desirability and impact of events that they have experienced. Thus, they are asked to indicate those events experienced during the past year (0-6 months or 7 months - 1 year)* as well as (a) whether they viewed the event as being positive or negative and (b) the perceived impact of the particular event on their life at the time of occurrence. Ratings are on a 7-point scale ranging from extremely negative (-3) to extremely positive (+3). Summing the impact ratings of those events designated as positive by the subject provides a positive change score. A negative change score is derived by summing the impact ratings of those events experienced as negative by the subject. By adding these two values, a total change score can be obtained, representing the total amount of rated change (desirable and undesirable) experienced by the subject during the past year. It can be noted that the results of this and a number of other studies with the life experiences survey have shown that the positive and negative life change scores are essentially uncorrelated.

The test-retest reliability studies (Cf. Sarason, Johnson, & Siegal, 1978) of the life experiences survey involved subjects drawn from undergraduate psychology courses.

* Although the LES provides for the assessment of life change occurring during two 6-month intervals, all analyses to date have involved change scores based on the entire preceding 12-month time period.
with a 5- to 6-week time interval between test and retest.

There were 34 subjects in the first study and 58 in the second study. Responses were scored for positive, negative, and total life changes in each case. Pearson product-moment correlations were computed to determine the relationships between scores obtained at the two testings. Test-retest correlations for the positive change score were .19 and .53 (p < .001). The reliability coefficients for the negative change score were .56 (p < .001) and .88 (p < .001). The coefficients for the total change score were .63 (p < .001) and .64 (p < .001).

Although the findings of the two studies reported here vary to some extent, perhaps due to the relatively small sample sizes, they suggest that life experiences survey is a moderately reliable instrument especially when the negative and total change scores are considered. It should be noted that test-retest reliability coefficients found with instruments of this type are likely to underestimate the reliability of the measure. That is, with a time interval of 5-6 weeks, subjects may actually experience a variety of events, both positive and negative, that may be reflected in responses given at the time of retesting. As these changes reflect the actual occurrence of life changes, rather than simply inconsistencies in reporting, it would be inappropriate to consider the total variability in responding as error. As subjects generally seem to report somewhat higher levels of
positive than negative change on the life experiences survey, it seems possible that the lower reliability estimates found with the positive change measure may be due, in part, to the greater likelihood of positive changes occurring within the time interval between test and retest.

It should be noted that in addition to the two reliability studies reported here, reliability data are available on one additional sample of 12 subjects who took the life experiences survey on two different occasions as part of another investigation. The time interval between test and retest was 8 weeks. Here, reliability coefficients of .61 (p < .05), .72 (p < .01), and .82 (p < .001) were obtained for positive, negative, and total change scores, respectively (Cf. Sarason, Johnson, & Siegel, 1978).

The results of the studies reported by Sarason, Johnson, & Siegel (1978) suggest that life experiences survey may be a useful research and, perhaps also, clinical tool. Support for the usefulness of the scale is provided by the findings showing that the negative life change score is significantly related to a number of stress-related dependent measures. In addition, scale responses appear to be relatively free from social desirability biases, and the measure is capable of differentiating subjects who have sought help for adjustment problems from those who have not. Other results also suggest that the life experiences survey possesses certain advantages.
over the schedule of recent experiences as an instrument for assessing life stress.

The life experiences survey, which possesses sufficient reliability and correlates with a variety of relevant dependent measures, could be used in studies aimed at identifying moderator variables and their effects. The format of the life experiences survey allows for the individualized rating of the impact of events plus the availability of separate measures of positive and negative change. This makes it especially appropriate for use in future research concerning how people deal with the stresses and strains of modern life.

In the present study Section I designed for all respondents was used. Moreover, total change score based on the entire preceding twelve month time period was used for the purpose of analysis.

The IPAT anxiety scale questionnaire was developed from extensive research and practice as a means of getting information about second-order anxiety factor in an objective manner. It is based on a second-order anxiety factor defined by five oblique first order factors of 16 FF (Cattell et al. 1957; Cattell, 1956). It is a brief, non-stressful, clinically valid questionnaire for measuring anxiety, appropriate for high school students
and adults. The test is easily administered individually or to a large group of subjects at one time. The questionnaire consists of 40 questions distributed among the five anxiety measuring factors. A brief description of the five factors is given below:

<table>
<thead>
<tr>
<th>Factors</th>
<th>Description</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3 (-)</td>
<td>defective integration, lack of self-sentiment;</td>
<td>8</td>
</tr>
<tr>
<td>C (-)</td>
<td>ego weakness, lack of ego-strength</td>
<td>6</td>
</tr>
<tr>
<td>L</td>
<td>suspiciousness or paranoid-insecurity</td>
<td>4</td>
</tr>
<tr>
<td>O</td>
<td>guilt proneness; and</td>
<td>12</td>
</tr>
<tr>
<td>Q4</td>
<td>frustrative tension or id pressure</td>
<td>10</td>
</tr>
</tbody>
</table>

Each item of the questionnaire has three response alternatives and any single item contributes to only one of the five components. The scale is designed to give a total composite anxiety score and also the scores on five different components. The total anxiety score can also be divided into covert and overt anxiety scores.

A vast amount of research, supporting and developing the rationale and validity of the anxiety scale, has been conducted (Cattell & Schafer, 1951; Cattell, 1956, 1957, 1959). The reliability and validity of the questionnaire
have been found to be satisfactory by the authors. The test has also been used in India and found reliable (Upmanyu & Singh, 1984; Hundal & Upmanyu, 1974, 1981; Hundal, Sudhakar, & Sidhu, 1972).

(C) Sex-Role Inventory (Fand, 1955)

For assessing sex role attitudes, Fand's Inventory consisting of seven factors, four denoting "self-oriented" and three "other-oriented" was used. This is a revised version of Fand's original inventory. The original inventory, consisted of 34 items relating to women's rights, needs, and obligations. This was revised by Gump (1967) who altered eight items because they appeared to measure a personality variable which cut across the self/other dimension or because the manner in which they were stated was undesirable though the content was acceptable.

The results of an earlier administration of the revised inventory were subjected by Gump (1967) to a principal axis factor analysis. The author extracted 8 factors and rotated them using an orthogonal rotation. The eighth factor was dropped because it was inadequately represented by items. Of the seven factors retained, 4 were denoted 'self-oriented' and three 'other-oriented'.

Women who were other-oriented were conceived by Fand (1955) as traditional in outlook, while the self-oriented as achievement oriented and seeking fulfillment through the
maximization of their own potential. Construct validity of this scale on Indian Population has been established by Singh (1976) and Gill (1977).

The inventory consists of 24 items. Out of these, 14 are self-oriented items and 10 are other-oriented ones. There is a 4 point scale ranging from strongly disagree (SD) to strongly agree (SA). The self-oriented items are scored as 4, 3, 2, 1 and other-oriented items as 1, 2, 3, 4. All the items are scored thus, and the sum total score is from 24 to 96. A score below 60 would mean other-oriented (traditional) attitude and a score above 60 would mean self-oriented (non-traditional) attitude.

The scale has been used (Narang, 1988; Bal, 1981) in Indian setting for assessing sex role attitudes and found to possess psychometric properties.

Administration of Tests:

The different tests were administered individually in accordance with the instructions suggested by the authors of different tests. The instructions for respective tests were read aloud as well as the instructions in typed form were provided to the subjects. The doubts of the subjects were removed before permitting them to answer the different questionnaires.
The tests were administered in a uniform sequence involving seven different sessions. In the first session the three measures of depression, namely, Beck Depression Inventory, MMPI - Depression Scale, and Zung Self-Rating Depression Scale were administered. Sufficient rest was given to the subjects in between different depression scales. This was done to maintain the motivation of the subjects. In the second session Eysenck Personality Questionnaire was administered. The third session involved the administration of IPAT Anxiety Scale Questionnaire. The three cognitive assessment measures, namely, Dysfunctional Attitude Scale, Automatic Thought Questionnaire, and Hopelessness Scale were administered in the fourth session. Moreover, Rotter's Internal-External Scale, Life Experiences Survey and Fand's Sex-Role Inventory were administered in the fifth, sixth and seventh sessions respectively.

Sincere efforts were made to establish rapport with the subjects in order to elicit reliable and authentic information. Subjects were told that the information was being collected purely for research purpose. They were also assured that the information to be collected would remain strictly confidential and presented only in a form in which no person could be identified. The promise of privacy appeared to have gone a long way in establishing psychological rapport, since a large number of subjects expressed desire to know about their performance in the tests used.
SCORING

The tests were scored strictly in accordance with the procedure suggested by the authors of different tests.

As a result of scoring different tests several measures mentioned below were obtained:

I. Three measures of Depression
   1. Depression scores obtained by scoring Beck Depression Inventory;
   2. Depression scores obtained by scoring MMPI-Depression Scale;
   3. Depression scores obtained by scoring Zung Self-Rating Scale;

II. Five measures concerning second-order factor of anxiety were obtained by scoring anxiety scale questionnaire
   1. $Q_3$: defective integration, lack of self-sentiment;
   2. $C$: ego weakness, lack of ego-strength;
   3. $L$: suspiciousness or paranoid - insecurity;
   4. $O$: guilt proneness;
   5. $Q_4$: frustrative tension or id pressure.

III. Four measures concerning psychoticism, neuroticism, extraversion, and social desirability were obtained by scoring Eysenck Personality Questionnaire.

IV. Three cognitive assessment measures
   1. Automatic Thought ,
   2. Dysfunctional Attitude, and
   3. Hopelessness.
V. A single measure of the locus of control was obtained by scoring Rotter's Internal-External Scale;

VI. A single measure of the impact of the life experiences was obtained by scoring the Life Experiences Survey;

VII. A single measure of sex role attitude was obtained by scoring Fand's sex-role inventory.

Thus as a result of scoring different tests, 18 types of score were available. In addition, three measures concerning age, education and income were also obtained for the purpose of analysis. In all 21 types of scores were obtained for the purpose of analysis.

ANALYSES

The data were analysed to obtain the following information:

1. Frequency distribution, mean, standard deviation, skewness, kurtosis, and reliability coefficients for different measures.
2. t-test for comparing employed married women and non-employed married women on different variables.
3. Intercorrelations among different variables.
4. Factor analysis for the measures of dysfunctional attitudes, automatic thoughts, sex-role orientation, stressful life events, locus of control, hopelessness, psychoticism, neuroticism, social desirability, extraversion, anxiety, age, education and income.
The analyses were done separately for (a) employed married women, and (b) non-employed married women. The reasons for separate analyses have been discussed earlier.