REVIEW OF LITERATURE

A review of the literature helps us to understand the problem clearly. It also makes the predictions possible regarding the outcome of manipulations of different variable possible, thus facilitating formulation of hypotheses.

Therefore, literature from various sources was extensively reviewed and studied in light of the present investigation. The main variables under study were migraine as related to depression, anxiety, orderliness, rigidity, ambition, and defense mechanisms. The review of literature on available literature is presented under the following subheads:

1. Relationship of Migraine with Rigidity, Orderliness, and Ambition
2. Relationship of Migraine with Defense Mechanism.
3. Relationship of Migraine with Anxiety and Depression
4. Relationship of Migraine with Anxiety
5. Relationship of Migraine with Depression
6. Relationship of Migraine with aura and Migraine without aura with Personality Variables
7. Relationship of Intensity, Frequency, and Chronicity of Migraine Headache with Personality Variables.
Migraine headache has been described throughout the medical and psychological literature for many years. It is assumed that migrainous people share certain traits in common, and these traits differentiate migrainous from non-migrainous people. Personality traits like rigidity, orderliness, and ambition are often described as atypical of a migraine sufferer. Over the years, number of studies have been conducted in this area which support specific migraine personality type.

Knopf (1935) stated that sensitivity, shyness, anxiety, timidity, ambition, jealousy, and strong temper were often found in migraine patients.

The concept of the migraine personality goes back to Wolff (1937), who observed that a large proportion of migraine patients were ambitious, extremely orderly or perfectionistic, inflexible and full of resentments or aggression. While describing orderliness and rigidity in migraine patients he wrote that, “These subjects became out of patience with persons who presented qualities of character opposite to their own. Life situations demanding contact with disorderly or hurried deportment distressed them. Thus, although tireless and possessed of endless patience in pursuance of their own tasks, they were often impatient with such painstaking, time consuming effort and seeming lack of prompt response in others. Also, although themselves the creators and elaborators of schemes, systems, plans and arrangements, they frequently had great difficulty in complying with, or adapting themselves to, systems imposed on them by others. This quality was accompanied with degrees of resistance to change variously expressed as inflexibility, inelasticity, “nonpushability”, strong headedness, and stubbornness”. He further wrote, “The love of order, lists, headings, letters, subtitles, and
card index systems was prevalent among these persons. Several treasured stamp collections were elaborately classified. In addition to his stamp collection, which was meticulously arranged, one migraines medical student, six nights in the week, typed the lecture notes of each day. This he had done for seven school years. At the end of each course these edited notes were bound and placed on a shelf with other similar volumes to be turned to with pride and satisfaction.” However, Wolff pointed out clearly that many migraineurs do not show this personality type. This extensive work of Harold Wolff gave considerable momentum to the study of the psychological aspects of migraine headaches.

Ross and Mc Naughton (1945) described migraine sufferers as high on measures of perfectionism, conventionality, intolerance, inflexibility, and string towards success.

According to Marcussen and Wolff (1949), persons suffering from migraine have been often described as highly intelligent, very ambitious, and perfectionistic – in the sense of being meticulous, obsessional, scrupulous, and rigid and also having strongly developed set of ethical values.

Furmanski (1952) is of the view that migraine patients are anxious, perfectionists, punctual, thorough, orderly, and always busy.

Sperling (1952) described person suffering from migraine as depressed, impulse-ridden, maternally dependent, rigid, tense, and hyper sensitive.

Krupp and Friedman (1953) noted superior intelligence, sensitivity, thoroughness, high need for approval, seriousness, orderliness, reliability, feelings of inadequacy, excessive guilt, strong superego, and psychogenic symptoms in migraine sufferers.
Vahlquist (1955) reported that children with migraine were characterized by neuro-vegetative instability, overdue ambition, and perfectionism.

According to Friedman (1967), personality structure of migraine sufferer is characterized by perfectionism, neatness, ambition, rigidity, and efficiency.

Researchers view migraine sufferers as meticulous, scrupulous, perfectionist, and ambitious. Failure to attain ambitions results in self punishment (Ruesch, 1946; Alexander, 1950; Margolin, 1953; Alexander et al., 1968).

Bihldorff et al. (1971) reported that migraine patients described themselves as more rigid and less impulsive than tension headache patients and controls on an adjective checklist.

Mitchell and Mitchell (1971) described their migraine subjects as defensive, anxious, achievement oriented, perfectionists, controlled, routine regimented, and inflexible.

Ryan and Ryan (1978) opine that migraine sufferers have a superiority complex. They are most ambitious, meticulous, hardworking class to whom no task is insurmountable; they pay strict attention to every minute detail of their assigned tasks. These people, even when experiencing the severe pain of their attacks, will try to carry out their usual daily work with the same detail and perfection that they exhibit when free from headache.

Saper (1978) stated that so called migraine personality, characterized by compulsive, perfectionistic, rigid, and achievement oriented elements, occurs in many migraine patients, but is clearly not present in all migraine sufferers.
Geissler (1980) tested the hypothesis that whether migraine patients fail to live up to their own-set of values. On scrutinizing the material produced by 27 test cases and 25 control cases, significant difference regarding both aggressivity in frustrating situations and compulsive orderliness were established. Regarding compulsive orderliness migraine patients have proved to be very demanding; being frustrated in their demands, they act out their aggression to significantly lesser degree than the control cases.

Anderson and Franks (1981) studied difference between migraine patients, tension headache patients, and controls with the Edward Personality Inventory. Migraine patients were more motivated to succeed and planned more efficiently than the other groups.

Saper (1983) opines that individuals with compulsive personality traits and the often accompanying ambitious, perfectionistic, and orderly features may possess a stressful bias to their personality which in the appropriate biological setting gives way to migraine events.

Passchier et al. (1984) tested several clinical hypotheses about personality traits of migraine and tension headache patients in a controlled design. Achievement motivation was found to be elevated in both headache groups. The tension headache patients also exhibited greater rigidity in comparison to the migraine group and the controls. When the two patients groups were combined, the headache patients had in addition to raised achievement motivation and rigidity, more fear of failure and less impulsiveness than the controls.

Atkinson and Appenzeller (1984) described migraine sufferer as compulsive, rigid, and perfectionistic. Passchier and Orlebeke (1985) studied a stratified sample of school children in Holland. About 57000 children were chosen and headache was measured using Water's Headache Questionnaire. Compared to children without headache,
children with migraine and tension headache were characterized by high motivation to achieve and by fear of failure.

Passchier et al. (1990) studied whether migraine and achievement motivation were related. They studied achievement motivation and its physiological correlates in 37 young migrainous headache sufferers (30 females and 7 males) and in 37 matched controls. Higher sympathetic activity in subjects with high achievement motivation was interpreted as an indicator of greater mental effort and is a possible contributory factor to an attack in those with migraine.

Passchier et al. (1991) studied the link between personality traits, life events, and frequent headaches in a sample of adult subjects from the general population. Subjects with at least weekly headaches had more life events and higher inadequacy, social inadequacy, rigidity, and injurdness than subjects with less frequent headaches.

Hovanitz et al. (1999) suggested that unusually ambitious, effortful task engagement may contribute to the onset of mild ordinary headache.

Lanzi et al. (2001) evaluated personality traits, anxiety, and depression in a population of pediatric and adolescent patients, correlating personality characteristics with headache and socio-demographic variables. They found that patients affected by idiopathic headache share some personality traits, mainly emotional rigidity and tendency to repress anger and aggression. These traits did not seem to be correlated with socio-demographic data.

Mehta et al. (2002) in an Indian sample evaluated achievement motivation in adolescents having headache. The study group was comprised of 40 adolescents (25 males, 15 females) in the age range of 11-16 years with primary diagnosis of headache. To assess
achievement motivation semi-structured schedule, Family Environment Scale, and Thematic Apperception Test were used. Presence of high ambition, perfectionist’s traits and need to succeed were observed in the adolescents with migraine (70%) and tension type headache (47%). Parents also had high expectations in academic achievement.

Obsessive-Compulsive behavior has also been reported to be more prevalent in migraine patients (Selby and Lance, 1960; Friedman and Frazier, 1972; Harrison, 1975; Zeiltin and Oddy, 1984; Breslau et al., 1991; Breslau and Davis, 1993).

Researchers have also noted descriptive similarities between Type A characteristics and characteristics associated with the “migraine personality”. Several studies have indicated a relation between the Type A behavior pattern and headache occurrence.

Hicks and Campbell (1983) published a brief report that surveyed college students to collect self-estimates of their headache frequency. Results demonstrated a relation between Type A, as measured by the Jenkins Activity Survey (JAS) and headache frequency.

Woods et al. (1984), in addition to replicating Hicks and Campbell’s survey with female undergraduates, provided further evidence by using data collected archivally from clinical population; 75% of headache patients scored above the mean for the norm group on JAS.

Rappaport et al. (1988) explored Type A behavior pattern in chronic headache sufferers. Sixty participants provided full headache histories, completed the JAS, and were diagnosed according to Ad Hoc Committee on Classification of Headache criteria. Approximately 53% of migraine participants were classified as Type A compared with only 23% of tension headache participants, and the difference was statistically significant.
In contrast to the above mentioned findings, over the years, several studies have been conducted which do not support the assumption that migraine subjects are on average more ambitious, orderly, or rigid than comparable non-migraineurs.

Andrasik et al. (1982) examined the psychological test responses of 99 headache sufferers and 30 matched non headache controls. They did not find support to “traditional” notion that headache sufferers overall display more significant levels of depression, passivity, unassertiveness, need for achievement, and hostility than do individuals without headache.

Schmidt et al. (1986) empirically tested migraine personality type administering the Jackson Personality Inventory (JPI). The routine oriented, conscientious and orderly migraine personality characteristics were not supported by significant differences on the Organization Scale of JPI.

Kohler et al. (1987) in the study, with 64 non-clinical samples of migraineurs and 64 headache free controls, observed no difference in terms of ambition and orderliness but found significantly higher scores for rigidity in the migraine group.

Kohler et al. (1991) carried out two studies comparing migraine patients and headache free controls in terms of degree of ambition, idea of tidiness, and rigidity. The combination of increased ambition, idea of tidiness, and rigidity, often considered as typical of persons with migraine, was actually more common among controls.

Kohler and Kosanic (1992) studied whether persons with migraine were characterized by a high degree of ambition, orderliness, and rigidity. Participating in the study were 69 persons with migraine and 69 controls, matched for age and sex, and all being patients of a
neurologist. They filled out a questionnaire purporting to measure personality traits regarded as characteristic for the migraine personality type. No significant differences between groups in any of the scales were revealed.

Merikangas et al. (1993b) investigated the association between personality, symptoms, and headache subtypes in a prospective longitudinal epidemiologic study of a cohort of 19 and 20 years old in Zurich. Although not measured specifically, the traits originally described by Wolff including obsessionality and rigidity, were not confirmed in the community sample of migraineurs.

Stronks et al. (1999) studied the personality traits and psychological reactions to mental stress of female migraine patients. Migraine patients were not found to have a higher predisposition for anxiety, depression, or rigidity than tension headache patients or controls.

Few studies have suggested that migraine subjects showed no excessive obsessional traits as compared to normal controls (Crisp et al. 1977; Kudrow and Sutkus, 1978; Blaszczyński, 1984; Arena et al. 1986).

From the above account of empirical evidence, the following trends emerge:-

1. Ambition, Rigidity, Orderliness are the neglected aspect of typical migraine personality, as the studies focusing on these aspects are comparatively less.

2. Results of the several investigations are contradictory and confusing.

3. Number of subjects included in some studies is very small.
4. Most of the earlier studies depicting rigidity, orderliness, and ambition as traits of a migraine sufferer did not include control groups.

5. There is lack of studies in this area in India.

**RELATIONSHIP OF MIGRAINE WITH DEFENSE MECHANISMS**

The defense mechanisms protect the individual’s psyche against unacceptable feelings. The individual is often unconscious of his defense mechanisms and its effects. The association between migraine and defense mechanisms is explored by number of researches.

According to Wolff’s (1937) widely cited description of the personality of migraine sufferers, the inhibition of emotions particularly anger, is highly prevalent in the patient group. The psychoanalytic theory states that inhibition of emotions is accomplished through the action of defense mechanisms (Freud, 1966).

Bihldorff et al. (1971) studied the psychological factors in headache. Migraine subjects were more inclined to repress anger whereas tension headache patients showed hostile feelings more openly.

Harrison (1975) opines that entrenched, often interpersonally successful surface qualities of migraine patients may be understood as reaction formations against a considerable quantity of unexpressed anger.

Howard et al. (1982) presented a case history of 30-year female migraine headache sufferer. The patients relied on somatic displacement
as an ineffective defense against psychological distress and the prime defense mechanism used was repression.

Williams et al. (1986) discussed the personality profile of 36-year-old female headache sufferer. The profile suggested a good deal of naivety, denial, repression, emotional immaturity, emotional lability, confusion, alienation, and depression.

Guidetti et al. (1986) administered Rorschach test to 58 children of normal intelligence and to a group of controls matched for age, sex, and IQ. The migraine group was characterized by marked intellectual inhibition with poor school performance and low response rates; inhibition of psychomotor activity and aggressiveness, shown by content analysis and by the presence of kinesthetic shock; inhibition of affect; ineffective use of mechanisms of defense against anxiety; prevalence of phobic features and massive use of repression, indicated by a high rejection rate and shock at red color.

Passchier et al. (1988) studied two psychological defense mechanisms, repression and self aggression in 23 female migraine patients who had not been receiving treatment for their complaints and in 23 relatively headache free matched controls. Each subject was classified as high or low on repression or self aggression using the Defense Mechanism Inventory. The migraine patients showed a trend towards more repression of their emotions and significantly more self aggression than the controls.

Dicango et al. (1989) studied clinical and psychopathological aspects of chronic essential migraine in development age. They reported the psychopathological features of chronic migraine and defense mechanism used by chronic migraine sufferers are negation, projection, splitting, omnipotence, and idealization.
Lanzi et al. (1994) reported the personality characteristics in juvenile tension headache and migraine. The study was based on a detailed clinical assessment and evaluation by tests. They found that migraine subjects are distributed along a continuum that ranges from one end characterized by more evolved and adaptive mental organization and defense mechanisms and the opposite end, where mental organization is less evolved and adaptive and at great risk of somatization.

Stronks et al. (1999) compared a range of stress-related personality traits, including defense and coping mechanisms, of migraine patients with those of tension headache patients and dermatologically afflicted but otherwise healthy controls. Between the headache groups, no differences in the use of defense and coping mechanisms were found. However, as compared to control group, both migraine patients and tension headache patients were more inclined to use internally focused defense mechanisms (more reversal, repression and less projection) and less inclined to seek social support when confronted with problem.

A lone study by Passchier et al. (1984) did not support that migraine sufferers have an abnormal pattern of defense mechanisms. They tested several clinical hypotheses about personality traits of migraine and tension headache patients in a controlled design. The results suggested that neither migraine nor tension headache patients revealed an abnormal pattern of defense mechanisms.

Scores of studies cited above manifest the following trends and gaps:-

1. Defense mechanisms are the most neglected aspect of a typical migraine personality, as the studies focusing on this area are scarce.
2. All the studies conducted so far have focused on a small number of defense mechanisms.

3. Almost all the systematic studies carried out so far have used the same inventory (Defense Mechanism Inventory), which focuses only on few defense mechanisms.

4. There is complete lack of studies in this area in India.

**RELATIONSHIP OF MIGRAINE WITH ANXIETY AND DEPRESSION**

Clinical and epidemiologic evidence suggests that migraine often co-occurs with psychopathology. Strong evidence has been found to support an association between migraine and depression and anxiety disorders.

Moersch (1924) described the “psychic” disturbances in 150 cases of migraine. A sense of apathy, dullness, drowsiness, fatigue, lack of energy, anxiety, general distress, and fear of impending trouble were among the most common complaints of migraine sufferers. They also reported mild mental and physical depression, characterized by a sense of apathy, lack of energy, and fatigue among migraine sufferers.

Wolff (1937), a pioneer in migraine research, noted extreme physical fatigue and apathy as a trait characteristic of subjects with migraine. Since that time, clinical descriptions of persons suffering from migraine have consistently depicted depression as a characteristic feature both during prodrome and during interim periods as well. He found that emotional states of anticipation, anxiety, resentment, and tension were common in migraine patients.
Selby and Lance (1960) analyzed observation on 500 cases of migraine and allied vascular headaches. They found that 13% of the migraine patients had overt symptoms of an anxiety state including digital tremors, nervous dyspepsia, insomnia, and a tendency to overbreath, in addition to headache. Feeling of depression was not uncommon after a headache, and 19 out of 500 patients reported episodic depression.

Maxwell (1965) reported significant differences between migraineurs and controls on general emotional liability, anxiety, phobia, depression, and moodiness.

Crown and Crisp (1966), using the Middle Sex Hospital Questionnaire found that women with migraine reported significantly more anxiety, somatic symptoms, depression, and hysteria than their peers who did not suffer from migraine.

Harrison (1975) wrote that migraine patients “think poorly of themselves”. They describe themselves as being neurotic, that is more anxious, over weight, tense, vulnerable, and depressed more frequently than did the controls.

Crisp et al. (1977) investigated clinical, social, and psychological characteristics of migraine subjects in the general population. They found that migraine subjects were significantly more anxious and depressed than normal subjects.

Zeigler et al. (1978) sampled a large, non-clinical population to assess the relationship between headache and depression and anxiety. They found levels of depression and anxiety was clearly and significantly greater among subjects reporting a history of severe or disabling headache as compared to those denying such a headache history. The results cut across all ages and both sexes.
Saper (1983) is of the view that number of factors including stress, anxiety, and anger as well as “let down” after intense emotional events can all provoke headache attacks.

Guidetti et al. (1987) are of the view that although the migraine subjects did not emerge as globally different from the controls, they presented significantly higher scores on the somatic concern, depression, and anxiety scales irrespective of sex.

According to Brandt et al. (1990), “migraine sufferer’s modal personality could be described as unguarded, anxiety prone, depressive, lacking in interpersonal warmth and some what alienated from peers.”

Merikangas et al. (1990) studied the association of psychiatric syndromes and migraine headache from a prospective epidemiologic cohort study of 27- and 28 years olds in Zurich, Switzerland. They found strong association between migraine and depression. Depression among migraineurs was characterized by episodicity, depressive personality and dysthymia were less frequent among migraine sufferers. They also found that among anxiety disorders, general anxiety disorder and social phobia exhibited the greatest association with migraine. The association between migraine and the anxiety disorders was even stronger than that for the affective disorders.

Puca et al. (1992) examined the role of anxiety, depression, and stress factor in 117 males and 294 female migraineurs and tension-type headache sufferers. A high frequency of stress, depression, and anxiety was found not only in tension type headaches sufferers as expected but also in migraineurs.

Breslau and Davis (1992) examined prospectively the risk for major depression (MDD) and panic disorders in person with prior history
of migraine. A random sample of 995 young adults was interviewed in 1989 and re-interviewed in 1990. Persons with history of migraine were twelve times more likely to become cases of panic disorder than those with no history of migraine. A history of migraine at baseline increased fourfold the risk for MDD during the follow-up interval. The history of any anxiety disorder exacerbated the risk for MDD in persons with migraine.

Breslau and Davis (1993) in prospective study of a random sample of 1,007 young adults examined the association between migraine and psychiatric disorders and physical health. They found that history of migraine was associated with increased life time rates of major depression, anxiety disorders, illicit drug abuse disorders, nicotine dependence, and suicide attempts. Follow-up data gathered 14 months after the baseline had significantly increased rates of first incidence major depression and panic disorder during the interval period.

Elwan et al. (1993) examined 73 subjects with headache to evaluate different types of headaches and to examine the possible role of hormonal profiles in underlying psychological factors. Thirty-five subjects without headache served as controls. Subjects with headache were more neurotic, anxious, and depressed than control subjects. Men with migraine were more neurotic, anxious, and depressed than control subjects.

Devlen (1994) examined the prevalence and severity of anxiety and depression among people with migraine. To obtain a spectrum of migraine experience two potentially different samples were identified: over 600 patients attending migraine clinics and 87 migraine sufferers in the general population. Anxiety and depression were measured using the Hospital Anxiety and Depression scale and studies using this scale in the other patient groups were identified for comparison. Approximately 50%
of subjects experienced anxiety and 20% experienced depression, rates which were consistent across the two study groups.

Mitsikostas and Thomas (1999) investigated the clinical profile of patients with primary headache syndromes who also suffer from mood disorders. Four hundred and seventy headache patients and one hundred and fifty age and sex matched healthy subjects were screened using a specific questionnaire that included Hamilton Rating Scale for anxiety and depression. The average score of the Hamilton Rating scale for anxiety and depression were significantly higher in headache sufferers (17.4 and 14.2 respectively) than in healthy people (6.8 and 5.7 respectively).

Guillem et al. (1999) conducted an epidemiological study in the general population. Persons with migraine are at increased risk for affective and anxiety disorders, personality traits disorders (neuroticism), suicide attempts, but not for alcohol or illicit drug abuse. Compared to no migraine, the life time prevalence of anxiety disorders in migraine sufferers is significantly increased in: panic disorder (10.9% vs. 1.9%); generalized anxiety disorder (10.27% vs. 1.9%); obsessive compulsive disorder (8.6% vs. 1.8%); phobic disorder (39.8% vs. 20.6%). Life time prevalence of major depression is 34.4% in persons with migraine and 10.4% in persons without migraine.

Oelkers-Ax and Resch (2002) stated that chronic headache show relevant comorbidity with anxiety and depression and is associated with somatization and school disorders.

Mittal et al. (2002) studied the psychiatric profile of Indian migraine patients. Thirty patients of migraine were referred from neurology OPD for psychiatric assessment. Socio demographic profile, clinical history, past history, family history, Mental State Examination and clinical diagnosis according to ICD-10 were recorded on a semi-structured performa. The General Health Questionnaire, Brief Psychiatric
Rating Scale, Hamilton Depression Rating Scale, Hamilton Anxiety Rating Scale were administered. Out of 30 patients, 70% were having psychiatric problems, 6.66% severe, 30% moderate and 10% had mild depression, 6.66% patients were diagnosed as dysthymic disorder, 3.3% patients were suffering from recurrent depressive disorder, 10% patients reported family history of depressive disorder, 6.66% had generalized anxiety disorder, and 3.33% had panic disorder.

Zwart et al. (2003) examined in a large cross-sectional population-based study, the association between migraine, non-migrainous headache and headache frequency with depression, and anxiety disorders. Depression and anxiety disorders as measured by HADS were significantly associated with migraine and non-migrainous headache with compared with headache-free individuals. The association was stronger for anxiety disorder than for depression.

Low and Merikangas (2003) reviewed the methodological issues relevant to the study of comorbidity and provide a broad overview of the medical and psychiatric conditions associated with migraine. Among the psychiatric illnesses, mood and anxiety disorders have been shown to be most strongly associated with migraine in the general population.

Just et al. (2003) studied emotional and behavioral problems in children and adolescents with primary headache. Children and adolescents with primary headache suffer more often from internalizing problems (depression, anxiety, and somatization) than healthy controls.

Wacogne et al. (2003) investigated the intensity of stress, anxiety, and depression in a sample of 141 migraineurs compared with a control group of 109 non-migraine workers matched for age and sex. Stress was measured using the Perceived Stress Questionnaire, and anxiety and depression using Hospital Anxiety and Depression Scale. Results indicated that stress and anxiety were higher in the migraine group than in the control group and above the clinical level.
Karakurum et al. (2004) evaluated risk factors such as personality, depression, and anxiety in relation to migraine transformation in Turkish patients. Seventy-four percent of the chronic-migraine group and 26% of the episodic-migraine group had depression. Eighty percent of the chronic-migraine group and 36% of the episodic-migraine group had anxiety. The results suggest that depression, anxiety, and personality characteristics such as hysteria, hypochondriasis, psychasthenia, depression, and social introversion may be associated with chronic migraine in Turkish patients.

Torelli and D'Amico (2004) found that the relationship between migraine and depression is “bi-directional” (i.e., migraineurs have a more than three-fold risk of developing depression compared with non-migraine patients, while depression patients that have never suffered from migraine before have a more than three-fold risk of developing migraine compared with non-depressed patients) and specific (i.e., the presence of migraine or severe non-migraine headache increases a patient’s risk of developing depression or panic attack disorder, whereas the presence of depression or panic attack disorder is associated with a greater risk of developing migraine, but not severe non-migraine headache).

Pareja-Angel and Campo-Arias (2004) studied the prevalence of anxiety and depressive symptoms in a clinical population of women who suffered from migraine. They included women with migraine over 18 years old, who were not pregnant and without psychiatric history. They quantified anxiety and depressive symptom with Zung’s self-reporting scales. The prevalence of anxiety and depression is high among women with migraine. It was independent of age, scholarity, marital status, occupation and sort of migraine.
Bag et al. (2005) evaluated anxiety, depression, hostility and psychological symptoms in patients with migraine and tension-type headache (TTH) and to compare the results with healthy controls. Seventy-five subjects with migraine and 55 subjects with TTH (according to the criteria of the International Headache Society classification) and a control group including 73 healthy subjects were studied. The Buss-Durkee Hostility Inventory, Brief Symptom Inventory, State-trait Anxiety Inventory, Trait form were administered to the subjects. Compared with healthy controls, the patients with headache had significantly higher scores on measures of anxiety, depression and hostility and lower scores on psychological symptoms. The present results indicate the need to distinguish the unique dimensions of anxiety, depression and hostility that should be assessed in the population with headaches.

All these studies strongly support an association of migraine with depression and anxiety. Over the years number of investigators have studied anxiety or depression independently in migraine sufferers.

**RELATIONSHIP OF MIGRAINE WITH ANXIETY**

Anxiety is a normal inborn response to threat to one's self, attitudes or self-esteem. Headaches particularly migraine are often associated with emotional and anxiety disorders. The high co-prevalence of migraine and anxiety has spared considerable attention in the literature.

Tourraine and Draper (1934) noted anxiety and the anticipation of catastrophe in their migraine subjects.
Knopf (1935) noted that two thirds of her subjects could be characterized in childhood as “goody-goody” or self-righteous. Sensitivity, shyness, anxiety, timidity, ambition, jealousy and strong temper were often found in migraine patients.

Bille (1962) compared 73 children with migraine with matched controls on Swedish version of the Manifest Anxiety Scale adapted for children. Children with migraine showed significantly more manifest anxiety, tension, and nervousness, both in general and with reference to achievement and examinations in school. The same tendencies appeared in “behavior ratings” of the children by their parents, indicating the migraine children to be significantly more anxious, apprehensive, and sensitive than the control children.

Henryk-Gutt and Rees (1973) studied psychological aspects of migraine. Migraineurs compared to non-migraine headache patients and non-headache controls, had significantly increased N-scores on the EPQ, increased anxiety, and somatization scores on the MMPI (women only), and increased hostility scores on the Buss Scale. Women migraine clinic patients had even higher N scores, anxiety, and hostility scores.

Price and Blackwell (1980) compared migraine headache sufferers and matched normal controls. Migraineurs scored significantly higher than the controls on Taylor Manifest Anxiety scale, State-Trait Anxiety Inventory and Eysenck Personality Inventory lie scale and rated the subincision film as significantly less pleasant than the controls.

Andrasik et al. (1982) examined the psychological test responses of 99 headache sufferers and 30 matched non headache controls. Measures consisted of Minnesota Multiphase Personality Inventory, a modified Hostility Scale derived from MMPI, Beck Depression Inventory, State-Trait Anxiety Inventory, Autonomic Perception Questionnaire, Rathus Assertiveness Schedule, Social

115
Readjustment Rating Scale, Psychosomatic Symptom Checklist, Schalling Syneos Scale, Need for Achievement, and Hostility Press. Significant differences were found on five clinical scales of the MMPI 1,2,3,6 and 7, Psychosomatic symptom checklist, and Trait Anxiety Inventory.

Hundleby and Loucks (1985) compared 91 young adult migraineurs with 126 non-migraine controls selected from student population who completed a headache questionnaire. Measurements included the Personal Data Form, the 16 PF, the Jackson Personality Research Form (Form A), Stimulation–seeking scales and other selected objective tests of personality. Anxiety and Cortertia (a measure of alertness and arousal) scores were significantly higher in the migraineurs.

Andrasik et al. (1988) compared children experiencing recurrent migraine to non-headache peer controls, matched for age, sex, and social class. Each child completed an extensive battery of psychological tests which included State-Trait Anxiety Inventory. Adolescent headache sufferers revealed increased levels of Trait Anxiety.

Stewart et al. (1989) carried out a population based survey in which the association between migraine headache and panic disorder or panic syndrome. Subjects with panic disorder or panic syndrome reported more frequent occurrence of headache during the preceding week, as well as headaches with migraine symptoms than individuals without a history of panic attacks.

Sillanpaa and Koivusilta (1989) studied severe headache during vacation. Compared with people without headache, headache sufferers were characterized by less interest in paid or unpaid vacation, more passive ways of spending vacation, more fear and anxiety for their health and human relations, uncertainty of the world situation, fear of
global catastrophes and disturbances of work routine and increased family discord during vacation.

Leijdekkers and Passchier (1990) studied whether migraine patients exhibit a stereotypic reaction to stressful stimulus which is different from the reaction of non-headache controls. They found that migraine patients reported higher level of trait anxiety, greater fear of failure, lower stress tolerance, and higher levels of state anxiety than non-headache controls.

Stewart et al. (1994a) examined the association between migraine and panic disorders. To examine this association, survey data from a population-based study of more than 10,000 respondents were used to determine if individuals with a history of panic attacks were at greater risk of having specific headache in a week preceding an interview. Four types of headaches were defined. Most consistent evidence for an association between headache and panic attack was found for migraine, the most severe headache type.

Mongini et al. (1994) examined whether in patients with different type of headaches and craniofacial pain, MMPI and STAI score were significantly different before and after treatment. In the group after treatment, there was a significant reduction of certain MMPI scores and STAI 1 and 2 scores.

Robbins (1995) found that some degree of chronic anxiety was demonstrated by 59% of women and 55% of men with migraine.

Rezaei (1997) conducted a study on Indian sample. She studied the psychosocial correlates of stress among patients with migraine in relation to Eysenckian personality dimensions, anxiety, dysfunction analysis, and presumptive stressful life events. Migraine patients were found to have higher means on neuroticism, state anxiety,
trait anxiety, and presumptive stressful life events scale than the healthy control group.

Persson (1997) conducted a study to compare adult migraine discordant full sibling in term of personality and psychosocial environment during childhood. Migraine sufferers scored higher on neuroticism, also called emotional stress or trait anxiety, are more sensitive and display signs of high anxiety.

Martin and Seneviratne (1997) investigated the negative effect of anxiety in tension and migraine headache patients. Their findings indicated that negative effects of anxiety were there in individuals who suffer from both migraine and tension headache.

Ossipova et al. (1999) are of view that migraine headache and panic disorder are two conditions that have a number of underlying physiological and psychological abnormalities in common. The temporal relationship between the occurrence of migraine headache and panic attacks could be different. Some migraine subjects develop panic attacks with the typical symptoms (palpitation, dyspnea, anxiety/fear, shivering, sweating, polyuria) on the “peak” of their attacks.

Martin-Herz et al. (1999) found that non clinical sample reporting frequent headaches showed more symptoms of anxiety and somitization than a matched sample of students with infrequent or no headache.

Fasmer and Oedegaard (2001) undertook a study to examine the clinical characteristics of patients with major affective disorders and comorbid migraine. They found that migraine patients had a greater number of anxiety disorders (3.0 vs 1.9) and a higher frequency of panic disorder and agoraphobia.
Waldie and Poulton (2002) studied physical and psychological correlates of primary headache in young adulthood. Results revealed that migraine was related to maternal headache, anxiety symptoms in childhood, anxiety disorders during adolescence and young adulthood, and the stress reactivity personality trait at the age of 18.

Harter et al. (2003) studied the association between anxiety disorders and physical illness. After controlling for the effects of gender, comorbid substance abuse/dependence and/or depression, significant associations were found between anxiety disorder and cardiac disorders, hypertension, gastrointestinal problems, genitourinary disorders, and migraine.

There are a few studies conducted over the years which do not support a relationship between migraine headache and anxiety disorders.

Garvey (1985) investigated occurrence of headaches in anxiety disordered patients. Anxiety disordered patients showed a non-significant increase in the number of headaches during an anxiety disorders episode when compared to an illness free period and when compared to control group.

Schmidt et al. (1986) recruited subjects from a large metropolitan city in Western Canada using a press release. From the initial screening, 125 subjects with migraine between the ages of 20 and 55 years were selected; all received the Jackson Personality Inventory. No differences were found between migraine sufferers and historical norms for anxiety and tension.

Cooper et al. (1987) studied anxiety and life events in childhood migraine. All participants and their parents were administered standard anxiety, personality and life events scales. No statistically
significant differences were found between children who suffered from headaches and their headache free best friends. They concluded that children with migraine were not more anxious or stressed than their friends.

Stronks et al. (1999) carried out a study to compare a range of stress-related personality traits of migraine patients with those of tension headache patients and dermatologically affected but otherwise healthy controls. Migraine patients were not found to have a higher predisposition for anxiety, or other personality traits than tension headache patients or controls.

From the above account of empirical evidence the following trends emerge:-

1. Barring few studies, results of the several investigations support a strong association between migraine and anxiety.

2. Few studies supporting a relationship between migraine and anxiety did not include control group.

3. Earlier studies relied on norms of the instrument used which may not be derived from comparable demographic sample.

4. Most of the studies have failed to provide operational criteria for the diagnosis of migraine, its severity or duration since the age of onset.

5. Comparatively very few studies have been conducted in India so far.
RELATIONSHIP OF MIGRAINE WITH DEPRESSION

Migraine headache and depression are both common disorders. Depression is very often mentioned as an affective correlate of headache. The high co-prevalence of migraine and depression has attracted considerable attention in the literature.

The psychic manifestations of migraine, including confusion, depression, ill humor, impaired memory, terror, and drowsiness were reported as early as in 1873 (Liveing, 1873).

Cassidy et al. (1957) found headache to be the most common somatic symptom in a group of 100 patients with manic depressive illness, but did not specify the type of headache.

Serry and Serry (1965) noted that migraine was one of the common symptoms of masked depression. Mayer et al. (1966) too found that headache patients were more depressed than non headache psychiatric outpatients.

Friedman (1967) suggested an association of depressive illness and migraine attacks. “Migrainous equivalents” resembling brief manic-depressive episodes have also been reported subsequently in patients who initially manifested migraine (Sacks, 1970; Dalessio, 1972; Lishman 1983).

Friedman and Frazier (1972) saw migraine as preferentially related to obsessive-compulsive personality type although other personality profiles including depression and schizoid were also present in their migraine group.

Couch et al. (1975) evaluated the relationship of migraine headache and depression in a group of 236 patients. A weak but significant relationship between migraine and depression was found.
Lishman (1983) reported that 10% of the patients, who consult a doctor because of migraine, complain of mood changes which they relate to the migraine attacks.

Garvey et al. (1984) examined the life time histories of patients presented to a psychiatric hospital with major depressive disorder, a high prevalence of migraine (compared with that found in community survey) was found only in depressed men.

Herman (1987) reported that emotional disturbances ranging from neuroses to manic depressive episodes and schizoid features were present in all vascular headache sufferers.

Merikangas et al. (1988) studied the association between migraine and major depression, a group of 82 normal community controls and 400 interviewed first-degree relatives of the probands and controls. There was a significant association between depression and migraine among the probands and the relatives.

Cook et al. (1989) studied the correlates of headache in a population-based cohort of elderly. They found that prevalence of any headache was strongly associated with joint pains, depression, bereavement, waking during the night, use of eyeglasses, symptoms of temporomandibular joint dysfunction, and self-assessment of health.

Jarman et al. (1989) used the Schedule of Affective Disorder and Schizophrenia-Life time version to assess 40 patients, and found a high prevalence of affective syndrome in a migraine clinic group (37% of patients had a diagnosis of current or past depression).

Morrison and Price (1989) studied the prevalence of psychiatric disorders among female new referrals to a migraine clinic. In a series of 46 female new referrals to a migraine clinic, 17 patients (37%)
complained of increased irritability and/or depression in association with more than 50% of their attacks.

Jarman et al. (1990) opine that a substantial subgroup of patients with migraine may possess inherent predisposition to endogenous depression.

In the view of Passchier et al. (1991), persons with history of migraine were 2.5 times more likely to suffer from depression.

Moldin et al. (1993) investigated the association between major depressive disorder (MDD) and self-reported histories of specific physical illnesses in 320 controls and 1968 first-degree relatives and 254 spouses of probands in the NIMH Collaborative Depression study. Strong association were observed between MDD (either treated or untreated) and both frequent/severe headaches and migraine headaches.

Kirkcadly et al. (1994) studied the MMPI profiles of male and female migraine sufferers. The study suggested that female migraine sufferers were characterized by elevated scores on depression symptomatology.

Essink-Bot et al. (1995) conducted a study to compare the health status of 436 adult migraine patients with 575 controls. They found that self reported comorbidity especially depression was more prevalent in migraine subjects.

Ho et al. (1997) investigated relationship between headache and depressive illness with the Zung Self Assessed Depression Scale. The groups with migraine with aura and with frequent, intense, and long-lasting headaches had mean Zung scores beyond the normal range.

Egger et al. (1998) found that girls with depression had a significantly greater prevalence of headaches than girls without an internalizing disorder.
Wang et al. (1999) in their study provided evidence that headache is independently associated with depression in the elderly population. A high comorbidity of depression was found in the elderly with IHS migraine or chronic tension type headaches.

Kolotylo and Broome (2000) carried out a pilot study to explore migraine pain, disability, depressive symptomatology, and coping. A convenience sample of 34 women was recruited from university and workplace populations. Participants completed eight instruments measuring migraine pain, disability, depressive symptomatology, and coping. The two groups of women were not significantly different on demographic variables. Migraineurs scored significantly higher for pain characteristics, disability, depressive symptomatology, and total coping scores.

Swartz et al. (2000) investigated mental disorders and incidence of migraine headaches in a community sample. They found strong cross-sectional relation between affective disorders and migraine headaches. However, they found no association between antecedent affective disorders and incident migraine headaches in population based prospective study.

Schafer et al. (2000) carried out an investigation on the melancholic type personality structure in migraine patients. They found that migraine sufferers display with higher random frequency a personality profile very similar to the premorbid personality structure in unipolar depressives.

Kececi et al. (2003) carried out a study to estimate the comorbidity of migraine and major depression in the Turkish population. The households were selected randomly from all district areas. The lifetime prevalence of major depression was approximately three times higher in persons with migraine in the Turkish population.
Boz et al. (2004) studied the temperament and character profiles of patients with tension-type headache (TTH) and migraine. The study population consisted of 81 patients with TTH and 56 patients with migraine aged 18-50 years, with age and gender-matched healthy control subjects. All participants were instructed to complete a self-administered 240-item temperament and character inventory (TCI) questionnaire and Beck Depression Inventory (BDI). They found that mean BDI scores were significantly higher in patients with TTH and migraine than in those of the controls.

Hung et al. (2005) studied risk factors associated with migraine or chronic daily headache in out-patients with major depressive disorder. They concluded that for major depressive disorder patients with a higher depressive severity and longer duration of major depressive episodes, especially female gender, surveillance of migraine and chronic daily headache might be indicated.

There are few studies with contradictory trends not supporting a relationship between migraine headaches and depression.

Kashiwagi et al. (1972) did not find a significant association between depression and migraine.

Andrasik et al. (1982) did not find support to “traditional” notion that headache sufferers over all display more significant levels of depression, passivity, and unassertiveness, drive and achievement strivings, and hostility than do individuals without headache.

Lanzi et al. (1992) evaluated the entity and frequency of depressive disorders in 19 children with migraine or tension headache. Children and their families were interviewed and Children Depression Rating Scale (Revised version) was administered to children results did not show any clear connection between headache and depression.
Review of the empirical evidence reveals following trends and gaps.

1. Systematic studies of migraine and depression yielded strong association between migraine and depression.

2. Earlier studies depicting relationship between migraine and depression did not include control group.

3. Few studies are uncontrolled relying on norms of the instrument used which may not be derived from comparable demographic samples.

4. Most of the studies have failed to provide operational criteria for the diagnoses of migraine its severity or chronicity since the age of onset.

5. There is lack of systematic studies of depression and migraine in India.

MIGRAINE WITH AURA AND MIGRAINE WITHOUT AURA WITH PERSONALITY VARIABLES

Although there are large number of studies revealing association of migraine with anxiety and depression, there are comparatively fewer studies that have distinguished between migraine with aura and migraine without aura, with respect to their association with anxiety and depression.

Breslau et al. (1991) conducted a study to determine the prevalence of migraine and the risks for psychiatric disorders and suicide attempts associated with it. Persons with migraine were at increased risk for affective and anxiety disorders, nicotine dependence, and alcohol or illicit drug abuse or dependence. There was a consistent trend towards higher psychiatric comorbidity in migraine with aura than in migraine without aura.
Merikangas et al. (1993a) examined association between psychiatric disorders and headache syndromes from the general population of Zurich, Switzerland. In the cross-sectional data, migraine with aura was associated with hypomania, recurrent brief depression, and all of the anxiety disorders, whereas only the phobic disorders and panic were elevated among subjects with migraine without aura. Similar findings emerged for the longitudinal data, with exception that major depression was associated with both subtypes of migraine.

According to Keck et al. (1994), “epidemiology, comorbidity, family history, outcome studies and treatment response data all support an association among migraine, mood disorders, panic, and generalized anxiety disorder as well as medical and psychiatric disorder related to mood disorders and anxiety. This association appeared to be strongest for migraine with aura, which is associated with increased risk for suicide.”

Merikangas (1994) investigated the association between psychopathology and headache in a prospective longitudinal epidemiologic study. Subjects with migraine had more affective and anxiety disorder and exhibited elevated rates of neuroticism and somatization compared to non migraine subjects. Migraine with aura had stronger association with the psychiatric disorders, particularly the affective and anxiety disorders and the combination thereof. Migraine without aura was associated only with anxiety disorders and phobic disorders in particular.

Breslau et al. (1994) conducted two epidemiologic studies to find association between migraine and major affective disorders. Data obtained strongly supports clinical observation of migraine-major depression comorbidity. The findings supporting a link between migraine and bipolar disorder were less consistent. The prevalence of
each of the affective disorders in persons with migraine with aura was considerably higher than in persons with migraine without aura.

Marazziti et al. (1995) in a study carried out in neurology headache clinic, showed that major association of migraine was with current anxiety disorders especially panic or related conditions. These findings were particularly true of the subgroup of migraine with aura.

Mitsikostas and Thomas (1999) investigated the clinical profiles of patients with primary headache syndromes who also suffer from mood disorders. The average scores of the Hamilton Rating Scale for anxiety and depression were significantly higher in headache sufferers than in healthy people. Anxiety and depression symptoms were associated with gender (women twice as often as men), the long history, and higher frequency of headaches. Among all headache sufferers, drug abuse headache and migraine with aura had the highest risk factor for major depression or dysthymia.

Breslau (2000) examined the relation between migraine and major depression. Life time prevalence of major depression was approximately three times higher in persons with migraine and in persons with severe headaches as compared with controls. The life time prevalence of major depression in persons with migraine with aura was significantly higher than in persons with migraine without aura.

Lampl et al. (2003) investigated the potential differences in various aspects of personality in women with migraine with aura, without aura, and in healthy volunteers. Their results suggested that migraineurs with aura differ from migraineurs without aura and healthy control subjects in terms of anxiety and depression.

According to Radat and Swendsen (2005), “Investigations of migraine comorbidity have confirmed its association with diverse
psychiatric conditions. This association appears to be strongest for major depression and anxiety disorders (particularly panic and phobia), but increased comorbidity has also been reported with substance abuse and certain mood disorders. This literature also indicates that greater psychiatric comorbidity exists for migraine sufferers with aura than without aura.”

From the above account of empirical evidence, the following trends emerge:

1. Comparatively fewer studies have been attempted investigating the depression and anxiety in migraine subtype (with aura and without aura).

2. There has been no study so far, that has distinguished between migraine with aura and migraine without aura, with respect to their personality traits like rigidity, orderliness and ambition.

3. There has been no study so far that has distinguished between migraine with aura and migraine without aura, with respect to their use of defense mechanisms.

4. Not a single study has been carried out in India comparing migraine with and without aura on any of the personality variables.

RELATIONSHIP OF MIGRAINE INTENSITY, FREQUENCY, AND CHRONICITY WITH PERSONALITY VARIABLES

Migraine is a heterogeneous disorder characterized by attacks that vary in frequency, chronicity, severity, and symptomatology. Over the years, various researchers have tried to see as to if various headache parameters like frequency, duration, intensity, chronicity etc. correlate
with the personality of the headache sufferers. Some authors maintain that the patient's personality profile can be correlated with various other characteristics of headache.

Couch et al. (1975) found that those having more severe migraine headaches have higher Zung Scores on depression.

Zeigler et al. (1978) found that higher frequency of headaches was strongly associated with a higher self-rating of depression among both men and women with severe headaches in a community sample.

Woods et al. (1984) tried to find a relationship between Type A behavior and headaches. Increasing frequencies of both migraine and muscle contraction headaches were associated with higher score on the Type A scale from the Jenkins Activity Survey.

Merskey et al. (1985) studied psychological normality and abnormality in persistent headache patients. They found negative correlations between the duration of illness and different measures of anxiety.

Arena et al. (1986) in a study assessed the relationship between obsessions and compulsions in three kinds of headache sufferers and non-headache controls, using well-designed and validated scales. They found little support for the construct of a “pain density” function in headache. Whereas simple arithmetical examination of group means indicates that the more frequently one experiences head pain, the greater the psychological disturbance. The statistical analysis supports this notion for only two of the six measures.

Cooper et al. (1987) concluded that normal amount of stress and anxiety appear to lead to the expression of migraine, however more
anxious children with migraine have more frequent and severe headaches.

Passchier et al. (1988) further explored the association between defense mechanisms and migraine. They tried to see whether repression and the turning of aggression against oneself are positively related to the frequency, duration, and intensity of the headache. They found that turning against self scores appeared to be positively associated with headache frequency.

Osterhaus et al. (1994) in a study measured the functional status and well being of patients with migraine headaches. They found that subjects reporting moderate to very severe migraines scored significantly lower on five of the eight SF-36 Health Survey Scale than the subjects with no chronic condition.

Fan et al. (1995) suggest that migraineurs with frequent headache attacks have multiphasic personality abnormalities and partial cerebral function disturbance.

Ho et al. (1997) studied headache and self-assessed depression scores in Singapore University undergraduates. Significantly higher mean Zung Scores were found in subjects who had more intense and frequent headaches than in those without headaches and less severe symptoms, although the clinical relevance of these findings is uncertain.

Mitsikostas and Thomas (1999) in a study investigated the clinical profile of patients with primary headache syndromes who also suffer from mood disorders. The frequency of headaches attacks, the history of headaches, and gender were correlated with scores of Hamilton Rating Scales for both anxiety and depression. These results suggest that those headache patients with long history and high frequency of headaches, or
patients suffering from migraine with aura and drug-overuse might benefit from psychiatric evaluation.

Wang et al. (1999) studied comorbidity of headaches and depression in the elderly. The results suggested that headache was independently associated with depression in the elderly population. The patients with more severe or more frequent headaches were more likely to be depressed.

Martin-Herz et al. (1999) evaluated the relationship between headache frequency and psychosocial factors including anxiety and somatization in junior high school students. They found that non clinical sample of students reporting frequent headaches showed more symptoms of anxiety and somatization than a matched sample of students with infrequent or no headache.

Breslau et al. (2000) studied the association of headache with major depression. They found that severe headache signaled an increased risk for major depression.

Lipton et al. (2000) in a study investigated the influence of migraine and comorbid depression on health-related quality of life (HRQOL) in a population-based sample of subjects with migraine and non migraine controls. HRQOL was significantly associated with attack frequency and disability.

Terwindt et al. (2000) studied the impact of migraine on quality of life in the general population. As a measure of disease severity, they used frequency of migraine attacks and found a clear inverse relationship indicating that HRQOL was lower as attack frequency increased.

Zwart et al. (2003) studied the association of depression and anxiety disorders with headache frequency. They found that depression
and anxiety disorders amongst both migraine and non-migraine sufferers increased with increasing headache frequency.

There are few investigations revealing that various headache parameters (intensity, frequency, chronicity etc.) are not correlated with the personality profile of the migraine sufferer.

Passchier et al. (1984) in a study correlated personality measures with headache parameters (frequency, duration, and intensity of the headaches). In migraine group, both achievement motivation and rigidity were positively correlated with duration of headache attacks. No other significant correlations between headache parameters and personality measures were found in the headache group.

Philips and Jahanshahi (1985) studied the effects of persistent pain in chronic headache sufferers. There was no evidence of depression levels being higher in the population who had a longer history of headache problems.

Arena et al. (1985) studied the role of personality in the etiology of chronic headache. They studied whether a neurotic personality is a precursor to or a consequence of the experience of living with chronic pain. This has been a topic of much heated debate in the psychosomatic research literature. One fifty-one chronic headache sufferers from three headache types (migraine, tension, combined) matched on age and gender, were divided into three equal groups on the basis of their percentage of life with headache. Each headache sufferer was administered a comprehensive battery of psychological tests. Results indicated no significant differences greater than that expected by chance among the % life groups, indicating that the percentage of life one spends with head pain has no differential effect on a number of psychological test measures.
Guidetti et al. (1986) were unable to illicit any significant correlation between the duration and frequency of migraine attacks and personality profiles that emerge from Rorschach test.

Andrasik et al. (1988) studied the psychological functioning of children who had recurrent migraine. Each child completed an extensive battery of psychological tests, which consisted of children’s depression inventory on the Beck Depression Inventory, the State-Trait Anxiety Inventory for children or State-Trait Anxiety Inventory form X. In this study, level of psychological distress was seemingly unrelated to headache severity or chronicity.

Puca et al. (1989) studied psychological factors in chronic headache. Headache patients were divided into four classes in accordance with illness duration. Results indicated that male and female patients do not show any meaningful differences in symptom profile in a comparison of classes of illness duration.

Morrison and Price (1989) found that in a consecutive series of 46 female new referrals to a migraine clinic, 17 patients complained of increased irritability and/or depression in association with more than 50% of their migraine attacks. This was not related to the attack frequency or duration. This suggests that they are not simply response to the severity of the illness.

Invernizzi et al. (1989) tested the hypothesis that if duration of illness is correlated with neurotic personality traits. They found no correlation between any of the MMPI scale scores and the duration of illness.

Brandt et al. (1990) studied the personality and emotional disorder in a community sample of migraine headache sufferers. They found
absence of a significant relationship between headache frequency and severity of psychological distress or personality abnormalities.

Results of the study by Kowal and Pritchard (1990) indicated that the children with headache showed significantly higher shyness-sensitivity, psychosomatic problems and behavioral disturbances and significantly lower parental expectations than the control group children. While none of the variables were predictive of the frequency or severity of head pain, measures of anxiety, perfectionism, and life stress events contributed significantly to the prediction of the severity of head pain.

Devlen (1994) studied anxiety and depression in migraine. They found no evidence that psychological morbidity (anxiety and depression) correlated with frequency of migraine attacks.

Choi et al. (1995) studied the clinical characteristics and depressive trends in migraine and tension-type headaches. They found that level of depression does not correlate with patient's age, duration, character, severity, and frequency of headache.

Monzon and Lainez (1998) are of view that headache severity does not correlate with anxiety and depression.

Lanzi et al. (2001) evaluated personality traits, anxiety and depression in a population of pediatric and adolescent patients, correlating personality characteristics with headache and socio-demographic variables. The scores obtained by every patient in each test were correlated with the characteristics of headache and with socio-demographic data. They found that patients affected by idiopathic headache share some personality traits, mainly emotional rigidity and tendency to repress anger and aggression. These traits do not seem to be correlated with socio-demographic data and the duration of headache.
In a study by Magnusson and Becker (2003), intensity appeared to be a major determinant of headache-related disability as compared to frequency. They determined the influence of headache intensity and frequency on headache-related disability. For a headache referral population, headache intensity appears to be a major determinant of headache-related disability and it also correlates, to some extent, with the degree of depression and emotional distress present. Headache frequency was not clearly related to disability and psychological factors.

Two studies carried out by Marcus (2000) and Cassidy et al. (2003) found that frequency of headache correlates with psychological variables and the severity of headache is less likely to correlate. Marcus (2000) tested the hypothesis that anxiety and depression are associated with headache frequency, severity, and disability. He found that frequent headache and frequent disability are associated with depression, anxiety, and impaired quality of life. Reports of typical headache severity are less likely to correlate with psychological distress. Cassidy et al. (2003) studied factors associated with burden of primary headache in a speciality clinic. They found that patients with frequent (chronic) headache scored higher on the Migraine Disability Assessment questionnaire and had higher Beck Depression Inventory and General Health Questionnaire depression scores than those with less frequent (episodic) headache. Frequency of headache, but not pain severity, duration, or diagnosis, predicted Migraine Disability Assessment, total disability and General Health Questionnaire/Beck Depression Inventory depression. So the frequency of headache is associated with significantly higher psychopathology scores and general social impairment, but the direction of this relation is not clear.
Review of the literature reveals following trends:

- Although several investigations have been carried out over the years in an attempt to document the relationship between the headache parameters and personality variables, the results are still contradictory and confusing.

- It is still unclear that which clinical feature has greater impact on a migraineur’s life.

- There is paucity or even almost total absence of data studying the headache parameters separately in migraine with aura and migraine without aura sufferers.

- In Indian setting, in particular, virtually no significant work has been undertaken in this area.