INTRODUCTION
Man has developed a very sophisticated system by which he maintains perfect equilibrium. Sensory information from the eyes and the vestibular apparatus, together with proprioceptive information from the neck and the limbs, passes into the central nervous system where at the level of the vestibular nuclei, it is integrated and modulated by activity arising in the cerebellum, the extra pyramidal system and the cortex. Pathology affecting the cardiovascular system, the central nervous system, the blood and the endocrine glands may all alter this fine balance of neural information and result in dysequilibrium. Imbalance is a product of not only deranged sensory input and central malfunction but also extrinsic non-vestibular influences.

There are very many persons in this world who at some moment or the other, are troubled by some sensation of instability, movement or uncertainty. The intensity of this sensation is no indicator for the seriousness of its cause, neither is the exactitude of its description by the patient. The examination of the equilibrium system is certainly possible but it is a very time consuming procedure. It will hardly be feasible to thoroughly and completely examine all those patients who come to their doctor with the story that they are or have been giddy, but the doctor should know that dysfunction of nearly any organ or organ-system in the body can disturb the fine interaction of all the organs and systems which together lead to that intricate equilibrium
which we call ‘health’. If anything goes wrong, the patient may translate this disequilibrium into terms of vertigo, dizziness, giddiness or loss of balance, depending upon what he feels, what he knows, and where he comes from. It is easy to understand why patients may have difficulty in explaining their feelings and why their complaints are often so vague as to be meaningful only to a specialist.

More detailed studies support the view that vertigo is surprisingly common in the population. Apart from the elderly, there seems to be a general agreement that balance disorders are becoming an increasingly common source of consultation in the general practitioner’s (G.P) surgery irrespective of age (Wood, 1988). The findings of Keim (1978) and Daroff (1977) leave us in little doubt that balance disorders, at least in U.S.A and Europe are frequent and increasingly frequent causes for consulting the general practitioner. In a recent study in India, Mann et al (1990) found that out of a total of 20,000 individuals screened in Chandigarh, 116 gave a positive history of vertigo. The incidence of vertigo in general population of Chandigarh was found to be 0.58%. Cardiovascular disease constituted 34.5% of cases and among them 27% were hypertensives. Cervical spondylosis was noted to be the second commonest cause and was present in 32.7% of cases. BPPV accounted for 9.5% cases and 8.6% cases had psychogenic vertigo only 1.72% were reported to be having Meniere’s disease. In the remaining
patients, vertigo was associated with dyspepsia (5.17%), migraine (4.3%), metabolic disorder (2.59%) and idiopathic (2.59%).

Severe vertigo is a vastly distressing symptom and it can have devastating effects on behaviour. When one considers the disruption of the patient’s routine, the severity of attacks, and the fear of the unknown, it is no wonder that the patient may become agitated, anxious, or depressed. At times this disability can be so severe that a patient is no longer able to perform his normal occupation. Even a mild case of Meniere’s disease in an airline pilot would cause him to be totally disabled in his regular occupation. The attorney who has a busy schedule, including court appearances, may find himself incapacitated because of episodes of vertigo. The housewife who has attacks of vertigo lasting several hours may find that she is no longer comfortable doing her shopping. The actual symptoms are not the only destructive effects.

"The overwhelming vertigo, the awful sickness and the turbulent eye movements-all enhanced by the slightest movement of the head-combine to form a picture of helpless misery that has few parallels in the whole field of injury and disease". It is more than 40 years since Cawthorne (1945) gave this graphic and frightening description of a patient suffering from a sudden attack of vertigo, in this case the result of accidental or surgical trauma. His
description makes us aware that vertigo can be an acutely serious prostrating complaint, one that every physician has to take seriously. Matthews (1963) emphasised that physicians, upon learning that their patient's complaint is giddiness or dizziness, experience a "slight decline in spirits" and this happens notwithstanding the diagnostic methods available.

The term "vertigo" is often loosely used both by patients and clinicians. It is important to separate vertigo from mere unsteadiness (Oosterveld, 1991). Though vertigo in the literal sense implies a sense of rotation, it is never certain that a patient uses the word in this sense. The patient almost never complains of vertigo to his doctor. Most commonly, he may complain of dizziness or giddiness to indicate subjective movements, but there are a whole host of other terms that he may use. He may say that he has feeling of light-headedness, faintness, floating, bouncing, swaying, rocking, or swimming, or in less extreme cases, that he is just a little out of touch with reality. Finally, though not rarely, he may feel that the whole world is spinning around him or that he is turning with respect to it. In this context, vertigo is always a symptom and never a disease. The symptom is for a patient sometimes very difficult to describe, and it is very difficult to exactly define the phenomenon of vertigo. However, a systematic approach to elicit the patient's medical history ensures a broad
assessment of each individual.

Many patients with a vestibular disorder, peripheral or central, do not have or describe a spinning feeling. The term dizziness is used, therefore, to embrace all vestibular symptomatology, whether or not it is rotational. When turning is present, we may speak of rotational dizziness or 'vertigo'. More precisely speaking, vertigo is defined as a disturbance in the orientation-detecting system of a subject. Orientation is the person's ability to determine his or her body position within the framework of gravity and acceleration. More precisely speaking, vertigo is defined as a sense of rotation, either of the patient revolving in space, or the world revolving around the patient. The sensation of motion implicit in vertigo may be either internal ("I feel my self turning") or external ("Things seem to spin around me"). In addition, the patient may have a linear sensation of tilting or propulsion rather than spinning. There seems to be little significance to these varying descriptions in terms of diagnosis. Nor is the term "true vertigo" any longer in use; it is redundant, because whatever is not truly vertigo is not vertigo at all, but rather disequilibrium or, very often, dizziness. (Cohen, 1991, p.1252).

Patients with vertigo may feel that they are revolving in their stationary environment (subjective vertigo) or that their environment is spinning around them.
(objective vertigo). Psychogenic vertigo is more likely to involve the subjective sensation, whereas somatogenic vertigo more often involves the objective sensation (Tiwari & Bakris, 1981). It is then essential in practical clinical work to direct interest towards a differentiation between somatic and nervous sources of vertigo. Some clinical features, subjective and objective, seem to help to differentiate between, in the first place, cases with a non-functional source of vertigo and cases with functional vertigo. 'Functional' vertigo is frequently perceived as a turning sensation inside the head and a rocking sensation of the whole body, while patients with vertigo of 'somatic' origin frequently seem to complain of a spinning sensation outside the head (Afzelius, Henriksson, and Wahlgren, 1980). Apart from the absence of functional symptoms, indications of non-functional vertigo may be vertigo perceived as a spinning sensation around the head, frequently of 2-5 hours duration, and vomiting in connection with vertigo.
The differentiating features of psychogenic (functional) and somatogenic vertigo are given below.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Psychogenic</th>
<th>Somatogenic</th>
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<tr>
<td>Sensation of movement</td>
<td>Turning inside head</td>
<td>Spinning around head</td>
</tr>
<tr>
<td>Duration of attacks</td>
<td>Seconds to minutes</td>
<td>2 - 5 hours</td>
</tr>
<tr>
<td>Vomiting and nausea</td>
<td>Absent</td>
<td>Present</td>
</tr>
<tr>
<td>Nystagmus on caloric stimulation</td>
<td>Increased</td>
<td>Inhibited</td>
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<tr>
<td>with eye closure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blurred consciousness, drop attacks,</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>feelings of unreality, memory loss,</td>
<td></td>
<td></td>
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<tr>
<td>general nervousness</td>
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- Vomiting and nausea generally are absent in psychogenic vertigo, and nystagmus on caloric stimulation with eye closure is increased (cf. Tiwari and Bakris, 1981, p74).

++ Vertigo of acute onset and particularly when labyrinth is affected, is characteristically rotatory and often associated with constitutional upset such as nausea, vomiting, or sweating (Towler, 1984).

Various types of malfunctions can give rise to vertigo. The acronym SNOOP has been used to summarize them (Facer and Maragos, 1975). The letters indicate that in their view at least, vertigo may be due to either systemic, neurologic, otolaryngologic, ophthalmologic or psychiatric causes; and each of these need to be investigated before the patients can be said to have been examined. Of the components of SNOOP, otologic malfunction accounts for the...
majority (38%) of vertigo; the pathologic process being usually localized in the vestibular system (Lowell, 1979; Barber, 1978). Psychiatric malfunction is the next most common category.

Vertigo is recognised as a common clinical problem, but the fact that 30% to 50% of cases are psychogenic rather than somatogenic is not as well known. The incidence and most common causes of vertigo adopted from Drachman and Hart (1972) and Lowell (1979) is given below (cf. Tiwari and Bakris, 1981).

<table>
<thead>
<tr>
<th>Type of Malfunction (% of all cases)</th>
<th>Most common cause</th>
<th>Age-groups affected</th>
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<tr>
<td>Systemic (5)</td>
<td>Vertebro-basilar' Insufficiency</td>
<td>Elderly</td>
</tr>
<tr>
<td>Neurologic (26)</td>
<td>Peripheral neuropathy</td>
<td>Persons of all ages.</td>
</tr>
<tr>
<td>Otologic (38)</td>
<td>Vestibular pathology</td>
<td>Elderly, pre-schoolers.</td>
</tr>
<tr>
<td>Ophthalmologic (&lt;1)</td>
<td>None</td>
<td>Persons of all ages</td>
</tr>
<tr>
<td>Psychiatric (31)</td>
<td>Hyperventilation Syndrome</td>
<td>Young adults.</td>
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The disorders that commonly cause vertigo, with or without hearing changes but with no neurologic symptoms or signs, can be organized into recurrent syndromes and single attacks. A first attack of vertigo may later prove to be caused by a recurrent disorder. The majority of patients
who complain of recurrent attacks of rotational vertigo are found to have Meniere’s disease, benign recurrent vertigo, benign positional vertigo, or panic disorders.

Episodes of vertigo may be associated with Meniere’s disease, benign paroxysmal positional vertigo, vertebro-basilar insufficiency, and hypertension. Emotional aspects of Meniere’s disease have been implicated as an etiologic factor. Many physicians have concluded that the symptoms are primarily of psychologic origin and reflect the emotional state of the patient. Despite this conclusion by many clinicians, the role of emotional factors in patients with vertigo has been widely debated.

Firstly, a number of authors have asserted that psychological factors played a significant role in the development of Meniere’s disease (Siirala and Gelhar, 1970; Hinchcliffe, 1967a,b,c; Siirala, Siltala and Lumio, 1965; Jongkees, 1964; Fowler and Zeckel, 1952). The emotional factors were viewed as either necessary or sufficient for the development or onset of the disorder. Since patients afflicted with Meniere’s disease were found to have higher levels of anxiety and other personality difficulties than normal control subjects, it was concluded that these patients were emotionally disturbed and that these factors were probably of etiologic significance. Hinchcliffe (1967a) has concluded that Meniere’s disease is indeed psychosomatic because patients with Meniere’s disease had an
increased prevalence of the so-called psychosomatic type personality profile on the Minnesota Multiphasic Personality Inventory (MMPI), compared with a control population with otosclerosis.

Brightwell and Abramson (1975), in patients with Meniere’s disease, found a strong positive correlation between the severity of vertigo and the Eysenck Personality Inventory (Eysenck and Eysenck, 1963) and Cornell Medical Index (Brodmann, Erdmann and Wolf, 1949) scores. This study does not implicate emotion as an etiological agent. Rather, it suggests that there are some patients in whom emotional factors play an important role in the severity of symptoms. The authors concluded: "It does seem important that we do not dismiss the role of emotional factors in patients with Meniere’s disease as some have suggested. Further study in this area seems warranted and hopefully with result in improved treatment" (p.366). These authors have found that psychologic vulnerability (i.e., the degree to which emotional factors play a role in the severity of symptoms) is a useful prediction of how a patient may describe a symptom such as vertigo. More recently, Groen (1983) concluded: "The elucidation of the psychological etiology of Meniere’s disease should now be a challenge to the unravelling of its physiology" (p.415). The author further stressed that in general the workers have been impressed with the importance of the psychosomatic factors in this disease and the
uniformity of the personalities, conflicts and behaviours of these patients.

Tiwari and Bakris (1981) made a critical review of psychogenic vertigo. The authors concluded: "Many cases of vertigo are psychogenic. The earlier the origin is recognised, the less likely it is that an extensive work up seeking physical causes will be undertaken. In most cases, a careful history and results of simple psychological testing will be sufficient to permit a diagnosis of psychogenic vertigo" (p. 69).

More recently, Slater (1988) states: "Although most diseases that cause vertigo are benign, a patient who complains of this disorder cannot be treated casually. The first attack of vertigo can be a special challenge to diagnose, because serious problems must be ruled out. Subsequently, a single attack may prove to be a recurrent disorder, which is easier to diagnose" (p. 58). The author pointed out that psychiatric intervention is useful for the treatment of panic disorder and disorder in which anxiety or depression produces complaints of vertigo. Coker, Coker, Jenkins and Vincent (1989), on the basis of studying the psychological profile of patients with Meniere's disease concluded: "The high incidence of depression in those individuals with recurrent or chronic dysequilibrium due to vestibular disease appears to be a significant problem in our population of patients. While depression is rarely
fully addressed in the initial evaluation of otologic symptoms, the results support further investigation and management of those individuals with active dysequilibrium not responding to the conventional medical and surgical therapies. Psychological assessment, consultation, and the use of antidepressant medications may prove beneficial to the overall well being of the patient and provide an adjunctive treatment for Meniere's disease."

Secondly, a few studies have concluded that emotional or psychiatric factors are not involved in the etiology of this disease. Pulec (1972) has stated that "emotional or psychiatric factors are not involved in the etiology of this disease." Crary and Wexler (1977) while comparing Meniere's disease with vertiginous control subjects without Meniere's disease in whom the etiologies were known (e.g., viral, luetic, infectious disease) found no psychologic differences. But, when either group of vertiginous patients was compared with these same measures such as anxiety scales, physical symptom check list and the Minnesota Multiphasic Personality Inventory to nonvertiginous otologic patients, many differences appeared. The vertiginous groups seemed more distressed and more disturbed. They were more anxious, experienced a higher mean number of psychophysiologic symptoms, had higher hysteria and hypochondriasis scores, and showed a greater frequency of psychophysiologic personality profiles. Thus, on the
basis of increased psychopathology, when contrasted with the nonvertiginous group, either the Meniere’s or the non-Meniere’s vertiginous group could have been said to show a psychophysiologic or stress basis for the disease.

The above discussion reveals the following aspects:

1. Vertigo is recognised as a common clinical problem. Patients with vertigo challenge the physician’s diagnostic ability and the confusion and uncertainty about them are still common, since its true nature is not fully recognised.

2. Clinicians have a continuing interest in the psychological aspects of those suffering from vertigo. They have frequently observed peculiar personality characteristics in vertigo patients, such as aggressive dependency, emotional lability, and overreactivity. Chronic continuous vertigo may be a sign of depressive illness. Emotional factors may influence symptoms of organic origin—for example, stress may provoke bouts of Meniere’s disease as it does asthma and migraine. Perhaps because of this, several studies have attempted to establish the extent to which emotional factors are present in patients with vertigo. The findings, however, are limited as well as inconclusive. As such, the role of psychological factors in patients with vertigo has been widely debated.

Thus, the main objectives of the present study are:
1. To examine the different dimensions of psychological distress* of different types of vertigo patients as well as normal individuals.

2. To examine different groups of patients suffering from vertigo with respect to:
   (a) age,
   (b) sex,
   (c) marital status,
   (d) educational status,
   (e) occupational status,
   (f) type of family,
   (g) family relations.

3. To analyse the audio-vestibular functions of different groups of vertigo.

The present study included in its purview different groups of vertigo patients, namely Cervical spondylosis, BPPV, Meniere’s disease, Hypertension and Psychogenic, and used various measures of psychological disorders as well as audio-vestibular functions.

* (a) defective integration, (b) ego-weakness, (c) guilt feelings, (d) frustrative tension, (e) paranoid tendency, (f) depressive tendency, (g) introversion, (h) social desirability, and (i) loneliness.