Discussion
This chapter included the discussion of results according to the hypotheses tested.

**HYPOTHESIS V. 1:**
The main and interaction effects of category of students (visually impaired, hearing impaired and non-impaired students), Class (VIII and X) and gender (Male and Female) would be significant on various psychosocial variables of stress, self-esteem, social-emotional adjustment, behavioural problems, study related behaviours, extracurricular activities and observed classroom behaviours and academic performance.

**V. 1A. Effects: By Category**
The visually impaired adolescents differed significantly from hearing-impaired on all except social-emotional adjustment variable, and from the non-impaired on all variables; but, the hearing-impaired adolescents differed from the non-impaired on all variables except stress and self-esteem.

(a) **Stress**
The visually impaired were significantly less stressed than the hearing-impaired and non-impaired adolescents, whereas no significant difference was found between hearing-impaired and the non-impaired.

The finding of low stress among the visually impaired was interesting and unexpected. It could be attributed to their inability to perceive people's body language and their residential living status. Visual inputs had always proved quite powerful in creating stress. As these were absent in case of the visually impaired adolescents, the sources of stress were reduced to a minimum. Inside the school due to their familiarity and knowledge of its
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physical layout and environment, they perceived it as less threatening. Moreover, as 93% of visually impaired students included lived in residential schools, they had little mobility. The socialization outside the school was restricted. They shared feelings, emotions and experiences with a homogeneous peer group that might have helped them to reduce stress and feeling of isolation, which in turn, provided them emotional security and compensated for their need to socialize and interact. This was consistent with the finding of Seybold (1993) who reported that the major causes of stress and anxiety in visually impaired persons were inadequate information about the nature of orientation and mobility combined with a sense of social isolation. A second possible explanation could be that the school regulations helped them to develop necessary orientation and mobility skills to cope with daily life hassles. It was also observed that whenever these children went out they preferred to stay in groups, which helped them to reduce anxiety and insecurity feelings that might have occurred if they were not in a group.

The higher stress of the hearing impaired adolescents could be due to their hindered communication, which struck the very essence of being human. Communication difficulties caused physical and mental stress and strain, becoming an antecedent to social isolation and social rejection (Nordeng, Martinsen, and Von Tetzchner, 1985, Orlans, 1987, Stone, 1987). When their efforts to lip-read, use sign language, and requests to repeat unheard phrases failed, it produced feelings of anger, embarrassment and inadequacy. Torn between wanting to participate and express their thoughts and the inability to communicate verbally resulted in anxiety and stress. The number of such encounters experienced were more by the hearing-impaired adolescents, as they were more mobile than the visually impaired students. Outside the school hours, they spent rest of the day in the company of hearing peers, family members and significant others,
which was threatening and stress producing due to their negative experiences in areas of communication and social interaction.

The disruptions in communication and consequent deprivation of social interaction disrupted the established role patterns for their age groups and promoted higher role conflict (Parsons, 1958) for the hearing-impaired. As the hearing-impairment was an invisible disability, it was also difficult to evoke social sympathy all the time. They perhaps had much more pressure of meeting the social role expectations (the family members, and significant others) than the visually impaired students. The negative life experiences of the hearing-impaired in areas of communication and social interaction, established social-role patterns, could affect their interpersonal relationship within the family or the peer group or outside of it. It seemed that visual inputs were more powerful ways to create stress in the hearing-impaired students. They were able to distinguish between mere physical presence and the quality of interpersonal relationship between them and the hearing others. These non-satisfying experiences might have taken their toll over time in the form of decreased emotional security and social competence becoming cumulatively more severe during adolescence (Crow and Crow, 1965). Often they felt an imbalance between the external demands and their inner resources, which resulted in more stress responses (Stinson, Whitmire, and Kluwin, 1996).

Moreover, the degree and nature of challenges to meet the parental and teacher expectations could vary among impaired and non-impaired groups. The non-impaired students perhaps found themselves less able to meet teachers and parents’ expectations in different social and educational spheres and experienced threats in social environment. Their access to every corner of their real world and the proper functioning of both the important sense organs (eyes and ears) increased the number of sources of stress for the non-impaired adolescents. In addition, three groups perhaps
used different enabling strategies to deal with stress. The hearing-impaired and non-impaired adolescents failed to develop appropriate coping mechanisms to reduce the intensity of their stressful encounters, and thus, remained under stress in the school and outside.

In terms of the cognitive appraisal and other theories of stress (Lazarus, 1978; Coffer and Appley, 1964; Mechanic, 1962) stress occurred when there was some discrepancy between individual's perception of the environmental demands and one's perceived ability to meet or cope with that demand. McGrath (1976) observed that the experienced stress was higher when perceived demand and ability were closely matched, as in such a situation the individual was not sure about his/her capacity to meet environmental demands. The higher uncertainty was followed by failure to respond effectively and resulting in higher stress. The sheltered atmosphere of residential schools made visually impaired students less apprehensive, less threatened, emotionally secure, and less socially rejected. It seemed that the habitational situations, confidence in independent daily living skills in familiar and relatively simple physical social environment gave them adequate opportunity to share their fears and anxiety with peers and thus less stressed. Although the nature of threats varied for the visually impaired, hearing-impaired, and non-impaired, how they appraised these events differently according to their own needs and expectations was particularly salient. Failure of the hearing-impaired in social interactions due to language impairment made them feel more stressful as compared to the inadequate social interactions due to lack of opportunities/mobility problems in visually impaired students.

Agarwal and Kaur (1988), who measured stress between visually and hearing-impaired adolescents reported contrasting results, in that the visually impaired students were more stressed group. This could be due to
the difference in sample characteristics between the two studies. Agarwal and Kaur chose students only from special schools and aged 6-16 years, whereas, in the present study, the visually impaired students were in residential schools and the hearing impaired students were both from special and integrated schools and were between 13 to 22 years.

The finding of the visually impaired students being significantly less stressed than the non-impaired adolescents was also contrary to the common belief and research findings which reported either no significant difference (Agarwal and Powar, 1981), or found the visually impaired more stressed (Yamamato, Soliman, Parsons and Davis, 1987).

The hearing-impaired did not differ significantly from the non-impaired students on stress, although the mean for the hearing-impaired was somewhat higher. A number of studies had indicated that in a good number of people, hearing and associated language difficulties were the source of psychological disturbance even after acquisition of hearing aids, as imbalance remained between their capabilities and the social demands (Thomas and Gilhome-Herbst, 1980; Alberti, Pichora - Fuller, and Riko, 1984; Thomas, 1984, 1988; Swan and Gatehouse, 1990). However, the extent of imbalances could vary between students in special and in integrated schools. The hearing-impaired in this study included adolescents from both integrated and special school setting. Some studies highlighted the positive effects of integration (Dale, 1984; Frustenberg and Doyal, 1994), while some others claimed that the special/residential school setting provided more positive social and educational experiences (Ferrugia and Austin, 1980; Davis, Elfenbein, Schum, and Bentler, 1986; Merten, 1986; Aplin, 1987; Foster, 1988; Mertens, 1989). The non-impaired students faced much less stressful encounters, as they had no difficulties hearing and language and/or social interaction. The inadequate social interaction led to frustration and social isolation in hearing-impaired
adolescents (Foster, 1989). This finding was similar to the findings of Prior, Glazner, Sanson, and Debelle (1988) who reported slightly more prevalence of anxiety in hearing impaired students.

(b) Self-esteem

The hearing-impaired and non-impaired students had significantly less positive self-esteem than their visually impaired counterparts. However, the hearing impaired did not differ significantly from the non-impaired.

Researches have shown, like found here, that when certain life experiences constituted a substantial segment of the etiological process of stress, these resulted in the diminishing of self (Pearlin, Leiberman, Menaghan, and Mullan, 1981) like, diminished self-worth. Thus, a crucial psychological task and challenge for the individuals having hearing loss was to maintain self-esteem (Schein, 1985; Burfield and Casey, 1987) and accommodate changes in self-identity (Morgan-Jones, 1987; Wood, 1987).

The finding fitted into the theoretical frameworks of Mead (1934), Myklebust (1960), Craig (1965), and Meadow (1980), who contended that the development of knowledge concerning self was entirely dependent upon one's experience with others, which provided information about expectations from the self. Language was an essential element in the social interaction process, which organized experiences and facilitated self-development. The interaction theorists emphasized interaction between the individual and significant others in the social environment, but the limited interaction and linguistic feedback from the social environment in case of the hearing-impaired adolescents adversely affected the development of self. This might be directly related to the social isolation and social rejection that the hearing impaired students often experienced outside the school. Epstein (1973) also argued that a person developed self-perceptions out of experience, primarily in interacting with significant others. Through
communication and social interaction, the person organized the predictable sequence of actions and reactions but, the language impairment limited these actions and reactions to the impaired person's own interpretation of what others' considered desirable. The limitation became more severe during adolescence because of multiple roles to be played in family, school, peer group and in the larger community (Peterson and Hamburg, 1986). Batchava, Robbins and Lim (1992) and Cambra (1996) also argued that one's level of communicative and linguistic competence profoundly shaped one's interaction with surroundings, but the linguistic limitations imposed by deafness adversely affected the development of one's positive self-esteem during adolescence. This acted as the most important intrinsic variable influencing self-esteem feelings negatively.

Among the extrinsic variables, negative educational experiences (Rubin and Yust, 1983; Cates, 1991; Cole and Edelman, 1991; Leigh and Stinson, 1991) and hearing status of parents (Sullivan, 1953; Meadow, 1968, 1969; Mindel and McKey, 1971; Furth, 1973; Goffman, 1974; Schlesinger, 1978; Conrad and Weiskrantz, 1981; Schlesinger, 1986; Zweibel, 1987; Moores, 1987; Weisel, 1988; Desselle, 1994) were considered important in the development of self-esteem of the hearing-impaired. The deafness of a large percent of the hearing-impaired had genetic origins and their optimum development was possible through early and continuous exposure to sign language and a more stimulating family climate. If the deaf child was born to deaf parent/parents, the parent-child interaction was natural and spontaneous, and in long run this facilitated self-esteem by compensating feelings of social inadequacy and impaired communication. However, in case of a deaf child born to parents with normal hearing, the parental acceptance was more difficult often resulting in limited parent-child interactions facilitating negative self-perceptions, unless the parents had personal counselling (Moores, 1987).
This seemed to be true about the hearing impaired adolescents in the present study, as 96% of the hearing-impaired had parents with normal hearing. The lower positive self-esteem of this group could thus be attributed to some extent to the hearing status of the parents and their mode of communication with their deaf offspring (Warren, 1983).

The present finding was consistent with the report of Loeb and Sarigiani (1986), which revealed that the hearing-impaired children had lower self-esteem than the visually impaired and non-sensory impaired children.

The sensory impaired indulged into social comparisons (parallel, downward and upward) to maintain their optimal functioning and subjective well-being (Festinger, 1954). However, the presence of comparison itself created tension and the amount of tension was often proportional to the magnitude of difference (Crocker and Brenda, 1989). According to Turner (1988) one's need for stability in self-definition was critically followed by the need for maintaining or enhancing self-evaluations. When one had low self-esteem or if one's evaluations of self were not socially approved, one experienced anxiety, and felt highly agitated to do something about such failures (Gecas, 1986). The person might use selectively downward comparisons, as stigmatized people perceived downward comparisons as less threatening, and could thus enhance their self-esteem. The visually impaired adolescents perhaps their identifying more with in-group members and their parallel comparison compensated for the negative effects of loss of vision. This resulted in more favourable in-group comparisons and in distancing themselves from the out-groups, which were cognitively definable and gratifying (Tajfel, 1982) and helped them to maintain a high level of self-esteem (Tajfel, 1982; Tajfel and Turner, 1979, 1985). They identified more with their in-group members in order to demonstrate their group solidarity, which helped them to combat their perceived insecurities (Brewar, 1979) and fostered positive self-esteem (Gupta, 1989).
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Here 94% of the visually impaired students stayed in hostels, they had less contact with their family and significant others, which positively contributed to their self-esteem. It was also reported by Battle and Blowers (1982) that students in residential schools or in special classes experienced greater gains in self-esteem as their social comparisons were limited to those who had similar type of impairments. They might have had more positive experiences of home also as the number of meetings and duration of interactions with family members were limited. Dote-Kwan and Hughes (1994) contended that the overall home environments of the visually impaired children were more favourable than those observed in other handicapped children.

Thus, despite the concern about self-esteem of the visually impaired children, there was little evidence of their having consistently lower self-esteem than the sighted students. Rather, high self-esteem was found in children with a wide range of degrees of blindness (Williams, 1971; Muller, Larned, Leonetti, and Muller, 1986; Obiakor, 1986; Obiakor and Stile, 1990). The finding of this study was consistent with most of the studies. According to Coopersmith (1967) self-esteem had two main sources: one was a sense of self-worth acquired through being loved and accepted during childhood, and the other was via a sense of competence acquired during adolescence through adulthood. Veroff and Veroff (1980) and Rubel (1983) also noted the positive role of cognitive abilities in subsequent self-esteem evaluations and making social comparisons. In other words, positive academic self-evaluation led to more positive global self-evaluation and negative academic self-evaluation to global self-devaluation, when the academic area is perceived to be important (Alasker, 1989). Perhaps self-esteem of the visually impaired depended more upon the positive reinforcement and feedback from their teachers related to their academic competence than early experiences of affection and acceptance (Dodds,
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Bailey, Pearson and Yates, 1991). Johnson, Vincent and Ross (1997) proposed that self-esteem was built upon many positive experiences of success and positive reinforcement from others. Visually impaired students had positive experiences in interpersonal relationships inside the school and positive reinforcement from the teachers, which strengthened their self-esteem.

In sum, the self-esteem of students having vision impairments had many buffers against the family and the society at large. Many of them hid themselves behind a strong invincible opinion of the self, possibly as a defense against further bruises to the ego. They were more alert to protect, exacerbate and to maintain their self-worth feeling (Goel and Sen, 1985).

The hearing impaired had an invisible disability, more independence in daily living activities, and perhaps identified more with out groups i.e. with the normal hearing people. Meadow (1983) indicated that these children had inaccurate and inflated ideas about their capabilities and opinions of others about them. This might force them to make more upward comparisons, which produced more negative effects on self-esteem. In other words, when the realization of the disparities between oneself and the hearing majority set in hearing-impaired, a lower self-evaluation appeared to be a logical consequence (Ferrugia and Austin, 1980).

In students without any impairment, the negative perceptions of the in-group status (social, cultural and financial backwardness) threatened their self-esteem (Karasawa, 1988). As a result, they distanced themselves from the advanced communities and failed to respond to their own group identity. Due to upward social comparisons and higher emphasis on out group identities, the non-impaired reported significantly less positive self-esteem (Gupta, 1989). In addition, they did not experience
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of positive reinforcements and feedback from teachers relating to their academics, which resulted in more negative perception of the academic self hence, less positive self-esteem (Veroff and Veroff, 1980; Rubel, 1983; Alasker, 1989). Thus, instead of the early positive experiences, the perception of academic incompetence influenced their self-esteem adversely.

Greenberg and Kusche (1993), explained that hearing-impaired children and adolescents perceived more disparities as a result of continual language deprivation, lower independence and responsibility, limited explanations for their feelings and roles and limited understanding of both the causes and meaning of many events. They were thus, expected to have lower self-esteem feeling than their non-hearing impaired counterparts.

The present finding was partly supported by the study of Loeb and Sarigiani (1986), which reported that the visually impaired had higher self-esteem than the hearing-impaired but not the non-impaired. However, the present finding that the hearing-impaired had lower self-esteem than the visually impaired and the non-impaired was supported by Loeb and Sarigiani's study. The different finding of visually impaired having lower self-esteem than the non-impaired could be due to the difference in sample characteristics.

(c) Social-emotional adjustment

Results revealed that there was no significant difference between the visually and hearing-impaired adolescents and the two groups were significantly better adjusted socially and emotionally than the non-impaired.

The finding of significantly higher level of social-emotional adjustment of the visually impaired as compared to the non-impaired supported the
finding of their positive self-esteem and less stressful encounters. Literature showed that life stress in adolescents was significantly related to emotional maladjustment (Gersten, Langner, Eisenberg, and Simcha-Fagan, 1977; Johnson and McCutcheon, 1980; Newcomb, Huba and Bentler, 1981; Sweringen and Cohen, 1985; Thompson and Vaux, 1986; Rutter, 1986; Delongis, Folkman and Lazarus, 1988; Biggs, 1992). Failures in adjustment were the result of continued exposure to deep anxiety and the inability of the individual to develop satisfactory, even normal, coping mechanisms. The non-impaired failed to develop an adequate battery of coping mechanisms due to too much stress, or to too little experience in dealing with conflicts during the critical periods of childhood when they first learnt to cope with stress. Therefore, it was plausible that even this group because of higher stress showed significantly lower social-emotional adjustment. A number of prospective studies noted the vital role of positive self evaluation in coping with problems and stress (Lakey, 1988; Miller, Kreitman, Ingham and Sashidharan, 1989; Brown, Andrews, Bifulco and Veiel, 1990; Roberts and Monroe, 1992). Hence, a lower social-emotional adjustment of the non-impaired students could be a reflection of their lower self-esteem.

Another factor, which could not be discounted, was the different social standards of good adjustment used for children and adults. In case of children, the ability to learn academic and related tasks, learning outcomes, and to act in socially approved ways were the primary yardsticks for normal/good adjustment. If the child was unteachable and unmanageable inside the class, the teachers would consider them as poorly adjusted. This happened perhaps with the non-impaired (as revealed by observational data). The observations and discussions with teachers showed that interactions between students and teachers often were limited to negative feelings towards each other, which governed the teachers' rating of non-impaired students on social-emotional adjustment.
On the other hand, fulfilling of the social standards (lower than normal) for the visually impaired they were perceived as better adjusted socially and emotionally. The finding of better adjustment in visually impaired adolescents was consistent with the findings of Bala (1985) and Haider (1990), but in contrast to many other researches which reported either no significant difference (Agarwal and Power, 1981; Sinha, 1982; Ishtiaq and Kamal, 1981; Sastry, 1985; Beaty, 1994) or reported visually impaired to be more maladjusted than the sighted students (Qadari and Hussain, 1982; Banerjee, 1988).

The finding of higher social-emotional adjustment among hearing-impaired than the non-impaired lent support to the results of Jyothi and Reddy (1996). This could be due to many factors. First, the social-emotional adjustment of the hearing-impaired could be related to the quality and quantity of social interactions inside the school (Meadow, 1980), as the early placement of these children in schools was expected to help them to improve their total communication pattern (i.e. sign language, finger spelling, and gesture) and teacher-student interaction, in particular (Watkins, 1987). In a series of studies Furth (1973) contended that to a good extent schools guaranteed deaf language proficiency, strong peer and student-teacher interactions, which helped them to achieve better psychosocial adjustment. The demographic data revealed that all hearing impaired children included had preschool training. Pre-schooling facilitated social interactions and thereby social-emotional adjustment. The teachers had strong belief that these students and their parents were quite accustomed to the stressors associated with rearing a hearing impaired child, and found good social-emotional adjustment no more taxing when the child reached the adolescent stage. Similar findings were reported by Henggeler, Watson, Whelan and Malon (1990). Moreover, one's emotional acceptance of the hearing loss was often associated with one's
perception of success in functional communication, which facilitated their social-emotional adjustment (Blood and Blood, 1999).

A large body of research contended that children with hearing-impairments were at risk of social-emotional maladjustment more than their normal hearing peers (Meadow and Schlesinger, 1971; Freeman, Malkin and Hastings, 1975; Bolton, 1976; Meadow and Trybus, 1979; Davis, Shepard, Stelemachowikz and Gorga, 1981; Jones, Freeman, and Goswick, 1981; Prior, Glazner, Sanson, and Debelle, 1988). Contrary to these and other studies which found no significant difference between hearing-impaired and their normal hearing on social-emotional adjustment (Arnold and Atkins, 1991; Frustenberg and Doyal, 1994; Erdman and Demorest, 1998), the present finding noted significantly better social-emotional adjustment in hearing-impaired students.

As the characteristics attributed to people having no sensory impairment were different from those attributed to the blind and the deaf (Cambra, 1996), it was logically assumed that the profiles of persons having different types of sensory disabilities would be similar, as a stigma was attached to all people with disabilities. What mattered in describing such students' adjustment was the quantity and quality of social interactions between them and the teachers as raters (Meadow, 1972). The observational data showed that though both the groups had good deal of social-interactions with teachers next to peers, the teachers perceived the visually impaired as more obeying, less aggressive and more stable in their social and emotional behaviour. It could be attributed to the absence of visual stimuli, which limited their activities to studies and daily routines to which they were habituated. Besides, schools had more regulatory practices for the impaired than the non-impaired, which could have reinforced these children's social-emotional adjustment.
Studies which reported significant social and emotional mal-adjustment in hearing-impaired (Vostanis, Heys, DeFeu, 1997; Prior, Glazner, Sanson and Debelle, 1988) compared them in general, with the non-impaired group. To some extent the higher social-emotional adjustment of the hearing-impaired could be sample specific, as hearing impaired were a more heterogeneous group with a wide range of hearing loss. The presence of less severe hearing loss might have also shown better personal adjustment (they have better communication and social interaction) than the profoundly hearing-impaired (Wolk and Schildroth, 1986). Their being from both special-cum-residential and integrated school setting could have also affected the total group adjustment. Some of the hearing-impaired students were still in the process of adjustment.

(d) Behavioural problems

The findings indicated that the visually impaired exhibited significantly fewer behavioural problems than the hearing-impaired and non-impaired, and the hearing-impaired had significantly fewer behavioural problems than the non-impaired.

This finding of significant difference between the visually and hearing-impaired and the later having more behavioural problems was consistent with those of Cambra (1996), who compared the deaf and blind students on different behavioural aspects and noted that deaf students were more reserved, dependent, solitary, significantly quicker, hyperactive, nervous, insecure, imprudent and impulsive than the blind students. Other studies (Meadow and Schlesinger, 1971; Freeman, Malkin and Hastings, 1975; Kolvin, Fundudis, Spuy, Tweddle and George, 1979; Meadow and Trybus, 1979; Chess and Fernandez, 1980; Davis, Elfenbein, Schum, and Bentler, 1986; Prior, Glazner, Sanson, and Debelle, 1988; Hindley, Hill, McGuigan and Kitson, 1994; Vostains, Bickerton, Lummella, and Chung, 1996; Vostanis, Heys and DeFue, 1997) also reported higher
rate of behavioural problems among deaf school population. In most of these studies, behavioural problems were identified by teachers such as, immature behaviour, hyperactivity, aggression, impulsivity, stubbornness, rigidity and suspiciousness. Here also, the teachers mentioned five frequently occurring behavioural problems, namely, immature behaviour, aggression, hyperactivity, impulsivity and suspiciousness in the deaf, while the visually impaired students were found exhibiting only rigidity and suspiciousness.

The finding of more behavioural problems in non-impaired as compared to visually impaired adolescents was in the line with other researches. Okayasu, Shimada, Niwa, Mori and Yotomi (1992) contended that high school students' stressful daily activities comprised of five main factors: school work, club activities, relationships with teachers and peers, school regularity, and financial and social constraints faced in the family, manifested in various behavioural problems, such as, impulsivity, misbehaving, ill mannerism, lying, disinterest in studies, disobedient, high inattentiveness, absenteeism, argumentative behaviour etc. (Rutter, 1986; Compas, Davis, Forsythe and Wagner, 1987). The non-impaired adolescents exhibited these behavioural problems quite frequently. The observational data revealed that these students were highly inattentive and withdrawn inside the class and showed little interest/involvement in study. The behaviours and activities inside the classroom were found uncontrollable and unmanageable by the teachers. Many of the behavioural problems could be attributed to their social background, as majority of them were from jhuggi type environment, with some having small shopkeeper background. Their effort focused little on school activities.

In contrast, the visually impaired adolescents made constant and consistent efforts to meet teachers' expectations academically and socially,
which was rated positively by teachers. This was also true for the hearing-impaired who showed significantly fewer behavioural problems than the non-impaired. Moreover, the school regulatory practices were followed strictly in schools having sensory impaired children, because of the impairment specific problems. Teachers were probably respected more as significant persons in schools having visually impaired and hearing-impaired children as compared to non-impaired. As a result, the sensory impaired students accepted teachers’ authority without questioning, and their conformity and compliance were treated as signs of fewer behavioural problems.

(e) Academic performance
(This included study related behaviour, and classroom behaviours like inattentiveness, study involvement, and withdrawal behaviour)

The results revealed that visually impaired adolescents performed significantly better than the hearing-impaired and non-impaired; and the hearing-impaired did significantly better than the non-impaired.

The visually impaired students showed significantly more positive study-related behaviours, were more attentive and less withdrawn than the hearing-impaired and non-impaired students. The hearing-impaired adolescents experienced more stressful life encounters, evaluated themselves negatively and exhibited more behavioural problems and comparatively poor academic performance. In educational setting, research findings strongly evidenced that deep seated anxiety, mental and physical exhaustion, low self-esteem, depression, overt conduct-disorders and other behavioural problems resulted in maladjustment during examination time which could lead to academic failures.

Language, reading and speech were the main elements of a normal school curriculum, and academic performance was a product of memory and
understanding (Barnum, 1984). Even in mathematics and social studies -
the traditional emphasis was heavy on the verbal medium, both in
Teaching and evaluation. Thus, knowledge of language became a
prerequisite for all school subjects, turning language lessons and into
occasions for showing how little linguistic skill these hearing-impaired
children had, rather than occasions for showing how intelligent (as
reflected in academic performance) they could be. The hearing-impaired
students having the CBSE curriculum had to opt for two languages and
social studies in class X, and an additional language like, Sanskrit in class
VIII. Poor performance in academics could thus be a logical consequence of
the way the system was organized. On the contrary, the visually impaired
students were in an advantaged position for the acquisition of language
and reading proficiencies. Better language proficiency helped them to
understand and memorize concepts in better ways. They could reproduce
and retain material more correctly. When they reached adolescence, their
language proficiency, memory and study strategies (Erin, Corn, and
Wolffe, 1993) were almost at par with the non-impaired students. This
realization also enhanced their self-confidence in their ability. While
comparing their performance with others, they chose sighted students as
referents, which motivated them to enhance their self-esteem and
educational capabilities (Festinger, 1954), and derive satisfaction.
Additionally, due to their lesser mobility and other socially conditioned
feedback, they focused more on studies to compensate for their disabling
feeling.

The finding of better academic performance of hearing impaired, and their
being more attentive, involved in study, positive study-related behaviour
and less withdrawn than the non-impaired students could be interpreted
by using individualistic theory (Adler, 1917). The theory proposed that,
compensatory mechanisms to achieve superiority (exhibited in better academic performance). Becoming more attentive, more involved and less withdrawn inside the class facilitated their study-related behaviors and other academic and behavioural outcomes. Their upward social comparisons and identification with normal (out-groups) resulted in a strong motivation to achieve superiority in academics.

The finding related to the non-impaired sample could be sample specific. In an urban and changing milieu, they perhaps did not find any thing (parents' socio-economic status, home environment, their own abilities in academic and non-academic field, teachers' support and encouragement, and school environment) between them and the cohorts (parallel comparisons) comparable, resulting in feelings of inferiority and frustration. This affected their classroom behaviour (attentiveness, study involvement and withdrawal behaviour), study-related behaviours, behavioural problems, and academic performance.

The significant difference in academic performance of three groups could also reflect on the variations in academic support given by the teachers before the examination. The sensory impaired groups perhaps got more help and support from the teachers as compared to the non-impaired, resulting in better academic performance. The finding was in contrast to the finding of Loeb and Sarigiani (1986) reporting better academic performance by the non-impaired than the visually and hearing-impaired. However, their report of lower score of the hearing-impaired than the visually impaired on certain items was consistent to a good extent with the present finding of lower academic performance.

*(f) Extra-Curricular Activities*

*There were significant differences among the three groups on participation in extracurricular activities.*
Visually impaired students surprisingly, came out as the best group participating in various activities, other than studies. While music and some vocational training skills, like book-binding, making of cane basket, repairing cane chairs etc. were included in the study curriculum for the visually impaired, these were generally considered activities outside the study curriculum even by the teachers and rated them high. Similarly, art and painting were compulsory but considered as extra-curricular participation of the hearing-impaired children. However, there were only few activities for these students and they need to be taught more activities.

The non-impaired adolescents participated less in extra-curricular activities. This happened possibly due to the non-availability of proper vocational training in the schools in general. As teachers’ perceptions encompassed the intellectual functioning and interpersonal relationships (Sinha, 1970), they were rated low on behaviour/activities rated by the teachers.

V.1B: Effects: By Education level

Findings revealed that class VIII students showed no significant difference on stress, social-emotional adjustment, study related behaviors and withdrawal behaviour from those in class X. They differed significantly on self-esteem, academic performance, extra-curricular activities, behavioural problems and on classroom behaviour such as, inattentiveness and study involvement. Thus, the hypothesis was partially confirmed. Class VIII students were found to have significantly lower self-esteem, fewer behavioural problems, fewer extracurricular activities, were more attentive, involved in study, and performed better in academics.
(a) Stress
Although no significant difference was found, class VIII students showed more stress than class X. In terms of Lazarus and Folkman's (1984) theoretical framework, the appraisal of a problem/situation as stressful or not depended more on one's cognitive problem solving skills, which changed with education. Compared to older children, young school-going ones were at a disadvantage when they encountered any stressful situation. They had less knowledge on what to base decisions, fewer defense mechanisms, distorted perceptions of reality, and more fears and fantasies influencing their perceptions (Sharrer and Ryan-Wenger, 1991). These characteristics of students at lower classes made them more vulnerable to stress and maladaptive behaviour. Class VIII students had entered into a new transitional phase of their school life and perhaps anticipated and appraised the situational demands as more threatening and thus, manifesting more stress. On the other hand, class X students despite the pressure of Board Examinations were less stressed as they were in the system for more years and were mentally prepared to face the demands better by devoting more time to study-related activities and tried to overcome the negative effects of stress. They had also developed better coping mechanisms. Coddington (1972) found an increase in the experience of stress from childhood to adolescence. Most stress research on adults also revealed a negative relationship between stress and age (Skinner and Lei, 1980b). It thus appeared true, what Newcomb, Huba and Bentler (1981) had suggested, that middle adolescence (grades 7-9) was the peak period for experiencing changes and for developing coping styles to adjust.

(b) Self-Esteem
The finding of lower self-esteem among class VIII was in line with a number of researchers (Bachman and O'Malley, 1977 and 1983; Piers, 1984; Rosenberg, 1985; Marsh, Parker and Barnes, 1985; McCarthy and
Hoge, 1982; Marsh, 1989), who reported systematic increase in self-esteem during late adolescent years (adolescents in grades 9-11) and decrease during early adolescent and middle adolescent years (adolescents in grades 7-9). It was partly consistent with Shalvelson, Hubner, and Stanton's (1976) hypothesis of 'increased differentiation' positing that self-perceptions became differentiated with age. Marsh (1988) also argued that young children had consistently less differentiated self-concepts in all areas; but as they became older they incorporated more external information into their self-concepts, which could boost their self-perceptions. Their self-perceptions became highly correlated with performance, performance feedback and other external criteria, and thus, a mechanism to maintain positive self-esteem. It would be thus be logical to infer an increase in self-esteem in higher educational grades.

(c) Social-emotional Adjustment
The insignificant difference between two classes on social-emotional adjustment was perhaps due to teachers' inability to notice this behaviour objectively, as their focus had always been on academic assessment, discipline, and students' conformity behaviour. Social-emotional adjustment involved components of social and emotional coping, which were basically very personal and needed objective observation for accurate assessment. As teachers had no fixed clear standard to rate this behaviour, did not able to differentiate among students of two classes.

(c) Behavioural problems
Class VIII students exhibited significantly fewer behavioural problems than class X students. Perhaps the teachers' standards of perceiving behavioural problems for class VIII and X students differed. Class X students were considered as a responsible group and were expected to conform to social norms. Therefore, even small behavioural problems were noticed by teachers. Moreover, students in class VIII participated less in
extra-curricular activities than the class X students, restricting the teachers' 'observational field' to classroom situations only.

(d) Academic Performance
The finding that class VIII students performed in school significantly better than the class X students, in spite of higher stress and lower self-esteem showed the possibility of some intervening variables being active in a positive manner, like the internal evaluation being conducted by school authorities. Class VIII visually impaired students wrote their papers in Braille and wrote exactly what they wanted, while those taking class X for the CBSE examination had to depend on a writer junior to them, often leading to a gap between what they conveyed and what exactly appeared in the written form. The non-permission of a sign language teacher or interpreter to the hearing impaired class X students during the CBSE examination however, presented a difficulty in comprehending the question-paper and created a wide communication gap between what was asked and what students answered in sheets. However, this problem was not there for class VIII who had the school examination for the promotion. Even among the non-impaired class X students about 90% failed in the CBSE examination. The better performance of class VIII students was substantiated by classroom observations, as they were more attentive and involved in study.

V.1C: Effects: By Gender
Results indicated that male and female students differed significantly on self-esteem, study related behaviours, academic performance, and classroom behaviour, but not on stress, social-emotional adjustment, extra-curricular activities and behavioural problems. Hence, this hypothesis was partially confirmed.
(a) Self-Esteem

*Females had significantly lower self-esteem than male.*

It was expected, as categorization by gender was in-built into the early socialization of the children; and self-identity issues were culturally bound. Facets of self-identity included the individual’s sense of personal skills, capacities, needs, preferences, values, beliefs, aspirations and dreams (Woolley, 1987), and these facets were shaped in the social-cultural environments. As all students belonged to low, and lower middle socio-economic background the gender differences pervaded each sphere of life. The facets of self-identity of girls were influenced by the marked gender differences in the society, and did not tend to perceive them in a more favourable way. Some supportive evidence to this could be seen in earlier researches (Pallas and Alexander, 1983; Marsh, Smith and Barnes, 1985; Loeb and Sarigiani, 1986; Marsh, Smith, Marsh, and Owens, 1988). Marsh (1989) found that gender differences in specific areas of self-concept were generally consistent with sex stereotypes, and these remained relatively stable from pre-adolescence to early adulthood.

(b) Academic Performance

*Females performed significantly better in school than males.*

Girls generally conformed more to their sex role behaviours. They were quite, usually less mobile, had fewer behavioural problems, were serious about studies and had fewer distractions (Duff and Seigel, 1960). They achieved significantly better than boys. They perhaps tried to compensate for their negative self-perceptions, by performing better than boys. This finding was consistent with some earlier researches (Marsh, Smith and Barnes, 1985; Skaalvik, 1990), but was in contrast to studies which reported that gender differences among adolescents had decreased markedly over the past generation (Hyde and Linn, 1988; Jacklin, 1989; Feingold, 1988, 1991; Mohanty, 1991; Das, 1994), and that males were
better achievers (Aruna, 1981; Bisht, 1984; and Tripathy, 1990). Teachers' ratings and classroom observations substantiated this finding.

V. 1D. Interaction Effects: Category of Students, Class and Gender

(a) The interaction effects of category of students and class were found significant on all variables, except the behavioural problems, study involvement and withdrawal behaviour.

The class VIII visually and hearing impaired students were significantly more stressed, and had less positive self-esteem than their class X counterparts, while the non-impaired class VIII students were less stressed and had more positive self-esteem than their class X counterparts.

(a) Stress

In terms of Lazarus's (1978) stress theory the aversive and threatening experiences of stressors at the adolescent stage became cumulatively more active and for those having impairment, the effects of stressors got doubled due to the limitations imposed on them. Particularly, the young children were more vulnerable to stressors than the older ones, as they had less social maturity, fewer encounters with stressors and less personal experience in using adequate coping strategies. The visually and hearing-impaired class VIII students perceived the stressors as more threatening to their ego than the students in class X. Thus, failure to cope with different impairment specific stressors resulted in negative perceptions of the self and in less positive self-esteem. Higher educational level was found facilitating self-esteem (Beach, Robinet, and Hakim-Larson, 1995; Lutman, Brown, and Coles, 1987), as younger persons experienced more disabling feeling and less positive self-esteem. The non-impaired class VIII students however, manifested fewer stress symptoms, as they did not think yet about the CBSE examination or they were least bothered about their future. The class X students, who in CBSE examination were more stressed due to the pressure of preparation, fear of failure and
embarrassment and parental pressure. Being unsure of their abilities and competence, they perhaps evaluated themselves in a negative way resulting in less positive self-esteem.

Class VIII visually impaired and non-impaired students were significantly better-adjusted -socially and emotionally than class X, but the hearing-impaired students in class X were better adjusted. Generally, students at lower educational level were also younger than those in higher class. They had a tendency to show more conformity and compliance behaviour to teachers' authority. They had respect as well as fear of the teachers, which made it easier for the teachers to control their behaviour inside the classroom. This factor affected teachers' ratings of their social-emotional adjustment. However, the case was different for the hearing-impaired. Class VIII students were not able to follow the teachers' instructions immediately due to low proficiency in language and the classes were comparatively bigger in size than class X, which could have affected teachers' power to control their behaviour. Social maturity, higher proficiency in language and social interaction facilitated social-emotional adjustment of class X hearing-impaired students.

The visually impaired class X students' showed better academic performance than class VIII students. This was corroborated by teachers' ratings of less positive study orientation among class VIII visually impaired students. Classroom observations indicated that class X visually impaired were less attentive than their class VIII counterparts. The differences between teachers' ratings and the investigator's observations could be due to the duration of interaction. Since teachers observed the students over a longer period, their assessment of study related behaviours had strong base, while investigator's observations were time bound and she was an outsider. There was also the possibility of error in the interpretation of visually impaired student's facial expressions, body movements and other
activities. More attentiveness among class VIII during the presence of the investigator could be age related, as they being the younger group might have perceived her as authoritative rather than friendly.

The academic performance of class VIII hearing impaired adolescents was better, though teachers reported them showing less positive study-related behaviours and more inattentive than their class X counterparts. This was perhaps due to the internal evaluation system and the difference between the teachers’ perceptions of seriousness about studies and ability to control students’ behaviour in two classes.

The non-impaired class X students had poor academic performance, highest negative study orientations, and high inattentiveness. The finding was substantiated by teachers’ ratings and classroom observations. As the non-impaired students’ socio-economic and educational background was not up to the mark, they needed more academic support from their teachers, which perhaps they did not get. Above all, due to the class composition (in terms of size), classroom teaching methods and feedback from teachers did not help them to improve or nourish their existing academic ability. These affected their behaviour in the class and thus, academic performance.

(b) The interaction effects of category of students and gender were significant on self-esteem, inattentiveness and withdrawal behaviour.

(b) Self-esteem

The males in visually impaired and non-impaired category had more positive self-esteem than their female counterparts, while hearing-impaired males had less positive self-esteem.

The findings on visually impaired and non-impaired males indicated that socialization process itself was responsible for the positive self-perception
of males. Males remained the preferred group even in the presence of visual impairment. The burden of being a female had always been highlighted by the family and in the larger society, affecting females’ self-perceptions in different spheres of the social life (Connel, Stoobant, Sinclair, Connel, and Rogers, 1975; O’Malley and Bachman, 1979). These findings were also supported by other researches (Dodds, Forguson, Ng, Flannigan, Hawes and Yates, 1994) on visually-impaired and non-impaired (D’Arcy and Siddiques, 1984; Skaalvik, 1986; Cohen, Burt and Bjorck, 1987; Avison and Mcaulpine, 1992).

The finding of hearing-impaired males having lower self-esteem than their female counterparts was in contrast to the findings of Loeb and Sarigiani (1986), Erdman and Demorest (1998). Loeb and Sarigiani (1986) included sample aged between 8 and 15, while the sample in the present study was between 13 and 22 years of age. Males here probably had more negative experiences in their social and educational life resulting in more negative self-perceptions. To the people in general, the deaf remained in between a comic spectacle and an embarrassment. The more deafness was seen by others, the more they felt embarrassed (Kershaw, 1966) and the more was the reluctance to exhibit deafness, the more they distanced themselves from the deaf community, which affected deaf’s self-esteem. However, this finding was not in accord with the assumptions of socialization process and needed to be further examined carefully.

Inattentiveness and Withdrawal Behaviour:
Visually impaired females were more inattentive and withdrawn than the males, while hearing-impaired and not-impaired males were more inattentive and withdrawn.
Generally, being inattentive and withdrawn were considered as behavioural problems in schools resulting from lack of interest in studies, low aspirations and a lower need for academic achievement. Males having
hearing-impairment and no impairment (especially, lower social class) had low academic aspirations resulting in their lack of interest in studies, inattentiveness and withdrawn behaviour, while the visually impaired males had higher academic aspirations, positive self-assessment and strongly felt the need to become self-reliant, making them serious about studies.

(c) The interaction effect of class and gender showed that male and female students in class VIII and X differed significantly only on classroom behaviour.

Classroom Behaviour:
Class X males were more inattentive and less involved in classroom, while in class VIII females were more inattentive and less involved. The more inattentiveness and less involvement of class X than class VIII males may be due to the time of observation. They had just got over the Test examination and were little far from the CBSE. So, for them it was a time to cool off, and they deliberately avoided any seriousness about studies. Though Veroff and Veroff (1980) and Bisht (1984) reported a higher need of achievement, more attentiveness and involvement of male students in the class, the finding could because of the time of the observation.

(d): The interaction effects of category of students, educational level and gender were found significant on stress, self-esteem, inattentiveness and study involvement.

Stress and Self-esteem:
It was seen that the visually impaired and non-impaired females from class VIII and X, and the hearing-impaired class X females were significantly more stressed and had less positive self-esteem than their male counterparts. However, the hearing-impaired class VIII males were significantly more stressed and had less positive self-esteem than their
female counterparts. Apparently, the differential socialization of females and males, allocation of socially valued resources, gender typing of social roles and normative expectations were linked to gender differences in both mental and physical health outcomes (Waldron, 1976; Harrison, 1978; and Cleary and Mechanic, 1983). At the adolescent stage there were heightened self-consciousness and meeting of sex role expectations, which made females more sensitive to their diverse social roles putting them under pressure. These findings were supported by the role strain theory (Gove, 1972; Gove and Tudor, 1973; Holmes and Masuda, 1974; and Pearlin, 1983), which found many of women's stress and strains associated with traditional roles.

Rosenfield (1989) found that the level of demand and relative power, which were structural elements of network relationships were characterized by gender inequalities, and contributed to gender differences in psychological distress. Women were more vulnerable to network losses than males (Kessler and McLead, 1984). Even the biological arguments of constitutional frailty of females (Weissman and Klerman, 1977) and their ineffective coping (Pearlin and Schooler, 1978; Kessler, 1979) suggested that stress could have more severe impact on females than males. A large body of literature indicated that young female adolescents reported more negative life events than their male peers (Dube, Sundaram, Mohan and Jain, 1980; Singh, Kaur and Kaur, 1981; D'Arcy and Siddique, 1984; Compas, Davis, and Forsythe, 1985; Compas, Davis, Forsythe, and Wagner, 1987, Grannis, 1992; Budheu, 1993; Avison and Mcalpine, 1992; Price and Hoojiber, 1992; Das, 1994). According to Bird and Harris (1990), society's expectations of males and females resulted in gender differences in the life events perceived as stressful.

In case of hearing-impaired males their inability to meet the social roles, the affective and behavioral reactions to communication difficulties, and
failure in handling threatening situations compounded their experiences of stress resulting in lower self-esteem. The higher stress among class VIII hearing-impaired males perhaps marked their entry into a new transitional phase of school life, where they acknowledged the need and significance of making a career for livelihood. Perhaps the females at middle adolescence did not encounter this type of stress. Being an impaired female restricted the expectations of significant others of an independent livelihood from them. Thus, class VIII hearing-impaired females had lower stress and higher self-esteem. This finding was consistent with the results reported by Reddy, Ramamurti, and Reddy (1991), who found hearing impaired boys having significantly more stress than girls in areas of emotion, language, self-concept and financial activities. Karunanidhi, Nandhini, and Priscilla (1996) also noted a high concern for adjustment to school work as more pressurizing among boys.

Correlations among Psychosocial Variables

**HYPOTHESIS V. 2:** All psychosocial variables will be significantly related to each other.

Correlation between stress and self-esteem was significantly negative for all three categories of male and female students in class VIII and X. This finding was expected and consistent with a number of studies reporting negative correlation between these variables (Cohen, McGowan, Fooskas, and Rose, 1984; Cohen Burt, and Bjorck, 1987; Nelson and Cohen, 1983; Williams, Ware and Donald, 1981; Allgood-Mertens, Lewinshon and Hops 1990; Harper and Marshall, 1991; Avison and Mcalpine, 1992; Karunanidhi, Nandhini, and Priscilla, 1996; Fordham and Stevenson, 1999). Some studies (Chan, 1977; Colletta, Hadler and Gregg, 1981; Moos, 1990) highlighting the stress buffering effect of positive self-esteem, noted that adolescents who have higher levels of self-esteem would attempt to
change a situation to benefit them, because they believed in their competence to do so, and higher self-esteem will increase their cognitive problem solving skills. Further, people who could handle stressful life situations had higher self-confidence, enhanced self-esteem and good social, emotional, behavioural adjustment.

Correlations between stress and social-emotional adjustment were significantly negative for all groups. Thus, those who perceived more stress had low social emotional adjustment. This finding was consistent with earlier studies (Newcomb, Huba and Bentler, 1981; Eckenrode, 1984; Rutter, 1986; Johnson, 1986; DeLongis, Folkman and Lazarus, 1988; Felsten and Wilcox, 1992). Positive self-esteem was associated with students' adjustment in case of all students. Thus, it appeared that the correlations could be mutually reinforcing.

Good social emotional adjustment was associated with a decrease in the number of behavioural problems exhibited by all except the non-impaired group. A positive relationship between stress and behavioural problems was evidenced by Compas, Davis, Forsythe, and Wagner (1987) indicating that higher stress lowered down one's positive self-esteem feeling and social emotional adjustment, and hence resulted in more behavioural problems including lack of attentiveness and study involvement. The observational data and teachers' ratings also revealed that students, who were more stressed, had less positive self-esteem and poor social-emotional adjustment, showed low positive study orientation, more behavioural problems, and inattentiveness and withdrawn behaviour.
Correlations between Background Variables and Psychosocial Variables

HYPOTHESIS V. 3: Background variables and psychosocial variables will be related to each other

Age had significant positive correlation with stress for students in class VIII and negative correlation for class X students. Older students in class VIII had higher stress perhaps because of a feeling of shame as the younger students in class X had lower stress. Krishna (1972), Srivastava and Sinha (1974), and Satyarthi (1979) had reported a positive correlation between stress and age indicating older students to be more anxiety prone. This could be because they were less experienced in handling stressful encounters and in utilizing effective coping strategies.

Age was negatively related to self-esteem for the visually impaired and females indicating that older visually impaired and female students had higher self-esteem. A positive association was found between the two however, for class VIII indicating that older students remaining at lower educational level had lower self-esteem, which was in line with the earlier finding on correlation between age and stress. The findings on visually impaired (Beach, Robinet, and Hakim-Larson 1995) and females were consistent with the findings of Marsh (1989), and Marsh, Smith, and Barnes (1985), reporting that self-esteem got more differentiated with age and got associated with positive feedback on academic/cognitive abilities. As the visually impaired and the females were academically superior to the other groups the older ones enhanced their self-esteem more by associating with their academic competence.

Age had significant positive correlation with level of social-emotional adjustment for class X students. This indicated that older students at higher educational level were better adjusted, socially and emotionally as
they had good social maturity. The significant negative association between age and behavioural problem for class X also supported the above finding in that older students in higher class had fewer behavioural problems and were better adjusted socially and emotionally. However, older males exhibited more behavioural problems.

Significant negative correlation was found between number of siblings and study-related behaviour of hearing-impaired and class VIII students, indicating that students having more siblings had less positive study orientation. This was in the line with the previous findings on correlation between academic performance and number of siblings in case of hearing-impaired students (Marschark, 1993).

The relation of age, and age of onset of impairment were found significant in visually impaired students. Those who became visually impaired at a later age were poorly adjusted, had less positive study orientation, more inattentiveness and less involvement in study. Academic and social-emotional adjustment of visually impaired were totally depended upon the proficiency in Braille reading and writing and orientation and mobility skills, children becoming blind at a younger age became master in it till they reached adolescence; but older children took more time to acquire these skills, which could have affected their adjustment and study behaviour.

Mother's education, father's education, father's occupation, and family income had significant negative correlations with stress for the visually impaired and hearing-impaired adolescents. Apparently, good educational and financial background provided more ways to cope with stress. Considerable research has accumulated to show that environmental stressors significantly increase the risk of psychological well-being (Thoits, 1981, 1983). Researchers have emphasized multiple pathways by which
the social environment can influence social status differences in psychological well-being (Brown and Harris, 1978; Kessler, 1979; Dohrenwend and Dohrenwend, 1984). This finding was consistent with the earlier findings (Dohrenwend and Dohrenwend, 1984; Kluwin, 1987) reporting similar findings. Sinha (1966) and Singh (1980a) found students having low socio-economic background as more anxious.

The social stress perspective (Kessler, 1979) hypothesized two basic processes, exposure and vulnerability to account for the greater risks/loss of self-concept and self-esteem among lower socio-economic status. According to the 'exposure hypothesis', people in lower socio-economic status were generally exposed to more difficulties/hardships in their daily lives, which forced them to readjust their behaviour repeatedly. For example, economic problems required daily accommodation as people strove to meet their needs. According to the 'vulnerability hypothesis' these people were emotionally more responsive to such experiences than the upper socio-economic class people. As these problems were structural and little amenable to change, a feeling of helplessness, loss of control and worthlessness could become more alarming. The feelings became stronger during adolescence when processes of social comparisons became operational. The feeling that one cannot change parental education or social status could result in perception of increased distance between one's in-group and out-group. Thus, failures in fulfillment of social and financial needs, and the disparities in status, often demotivated them from perceiving any positive aspect in self. The cumulative effects of contextual stressors could become more severe in the presence of a sensory loss, as it heightened the sense of helplessness and loss of control. The impaired adolescents from low socio-economic status perceived life experiences as more threatening (Kohn, 1972, Dohrenwend and Dohrenwend, 1984; Kluwin, 1987).
The socio-economic status variables also had positive association with self-esteem of the hearing-impaired, class VIII, and female students, indicating that feelings of increased self-worthiness were there in higher socio-economic group. Educated parents especially the mother had more awareness about the nature of disability the child had, and were concerned about the early school placement. The higher education of mother was associated with positive self-esteem of class X students, indicating that educated women's self-awareness and their understanding of things around them had positive bearing on the self-perceptions of their adolescent children. Educated women revealed a sense of initiative and confidence in their abilities and were able to set standards of excellence for their children and encouraged them to achieve these, fostering their self-esteem. Das (1994) also reported the facilitating effect of mother's education on self-concepts of adolescents.

**HYPOTHESIS V.4 (a):** All psychosocial variables would be related to academic performance.

(a) Stress and Academic Performance

Results indicated that stress was significantly and inversely correlated to academic performance for the visually impaired, non-impaired, class X, male and female students. This implied that students who were more stressed had low academic performance. This was in line with the drive theory of Spence and Spence (1966), which suggested that the higher level of stress affected performance adversely. This was also consistent with other research findings (Srivastava, Singh, and Thakur, 1980; Harris, 1982; Chadha, 1982; Fontana and Dovidio, 1984; Ranganathan, 1987; Mecan, Sahani, Dipboye, and Phillips, 1990; Felsten and Wilcox, 1992; Grannis, 1992; Biggs, 1992; Das 1994).

The stress had low positive correlation with academic performance in case of the hearing impaired students. Pressure resulted in improved scores for
students who had a high threshold, as it provided increased motivation. Nijhawan (1968) also showed that a little stress was conducive to academic achievement. This was in support of Glass and Singer's (1972) contention that stress might be coterminous with a wide gamut of situations.

In case of class VIII students, stress had no correlation with academic performance, while for class X the correlation was significantly negative. One plausible explanation could be that, in case of class VIII students there was internal evaluation, so they did not perceive examination as a stressor and their academic performance was not affected. On the other hand, for class X, the CBSE examination was the source of stress, and also was an important transitional phase in their academic career. The pressure of expectations of own and significant others was tremendous. Those who were able to handle these stressors positively did better in examinations, against those perceiving examinations as threatening.

(b) Self-Esteem and Academic Performance

Self-esteem and academic performance were positively related for class X and male students. A number of studies contended that self-esteem was a positive characteristics required to perform better in school (Wylie, 1979; Marsh and Parker, 1984; Marsh, Smith, and barnes, 1985; Renick and Harter, 1989; Eshel and Kurman, 1990). This was in accord with the general tenets of Coopersmith's academic self-esteem theory (1967), which suggested that the students with higher self-esteem were active, exploratory, and persistent, and thus, did well in academics. For class X students their motivations and emotions were vital, as their performance in examinations was the deciding factor in their future line of study and career. Marsh (1989) suggested that as children become older, their self-perceptions correlated highly with performance, and the facilitating effect of self-esteem was more visible in case of male students, perhaps, because of the strong need for achievement.
(c) Social-emotional Adjustment and Academic Performance
Correlations between social-emotional adjustment and academic performance were significant for all categories of students, class, and gender. This indicated that good social-emotional adjustment enhanced students' academic performance. Meadow and Kendall (1983) outlined educational significance of students' total social-emotional adjustment, i.e. effective social and emotional, less compulsive, dominating behaviour, less anxious and obsessive behaviours, in sensory impaired students' academic performance. This finding was supported by several other researches, which reported that high behavioural and emotional adjustment resulted in more adaptive learning strategies in the classroom (Covington, 1989), moderated the stressful life events (DeLongis, Folkman and Lazarus, 1988), and exhibited a positive correlation with academic achievement (Dubois, Bull, Sherman and Roberts, 1998). Rogers, Rogers, and Belanger (1992) reported that educational outcomes were positively associated with general adjustment to disability in hearing-impaired adolescents.

(d) Behavioural Problems and Academic Performance
The findings showed that students' behavioural problems had significant inverse correlation with academic performance for all groups. The finding supported other findings reported by Rao, Moorthy and Parthasarathy (1983). Teare (1985) also observed that cognitive factors, such as motivation, ability, academic achievement, were related to behavioural problems. Those who had more behavioural problems had significantly lower academic performance (Dubois, Bull, Sherman, and Roberts, 1998).

(e) Other Variables and Academic Performance
Positive study related behaviours, study involvement had significant positive correlations with academic performance for male, female, class VIII, class X students, and students with vision and hearing impairments and no impairments. Students, who had positive orientation towards study
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and were involved in classroom study, did better in academics. This was also substantiated by significant negative correlations between inattentiveness and academic performance for all groups. Thus, in general, lower stress, positive self-esteem, good social-emotional adjustment, less behavioural problems and inattentiveness, more positive study orientation, and study involvement enhanced academic performance.

HYPOTHESIS V. 4(b): Background Variables will significantly relate to Academic Performance

Some variations were noticed in the pattern of correlations of background variables with academic performance.

Age and Academic Performance
Age had significant negative correlation with academic performance for hearing-impaired students. Some researchers reported negative relationship between age and academic achievement indicating that the older group tended to perform poorly (Jamuar, 1964; and Gupta, 1967), while some others found no age differences (Raina, 1967; Gupta, 1968; and Bisht, 1984). In hearing impaired students, the older ones perhaps worried about future and had lesser academic competence. They realized their inability to meet other's expectations, which affected their academic performance adversely.

Number of Siblings and Academic Performance
Number of siblings was significantly and negatively related to academic performance in case of hearing-impaired students, indicating that those having more siblings had poor academic performance. Dyer (1945), Myers (1952) and Watson (1965) reported no relationship, whereas, Shukla (1984) reported negative relationship between number of siblings and academic outputs. In general, the large size family placed greater burden on them and affected their all round progress. The development of
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language competence in the hearing-impaired required good parent-child interactions, which were few if the number of offspring was more, manifesting in low academic performance. As the hearing-impaired children matured and faced increased linguistic and social demands, they required extra help from their family members, apparently absorbing a great amount of family’s time, energy, money and emotional resources. In fact, there was abundant evidence that deaf children who were most competent in cognitive and language development were those who participated actively in linguistic interactions with their parents from an early age (Marchark, 1993). These interactions not only helped them to gain facts, but also behavioural and cognitive strategies and knowledge of self-and others. The lack of such interactions raised the risk for deaf children not to be able to reach their full potential (Vaccari and Marchark, 1997).

Severity of Impairment and Academic Performance:
Significant positive correlation was found between severity of impairment and academic performance of hearing-impaired adolescents indicating that the deaf students were better performers than the partially hearing-impaired. This finding was in contrast to the finding reported by Powers (1999), which stated that degree of hearing loss was not a significant predictor of examination success of hearing impaired adolescents. This difference could be attributed to the difference in sample characteristics in terms of age, sample size and parameter of hearing loss. This was in contrast to the findings of Powers (1999), reporting no relationship between degree of hearing loss and examination success. The difference could be attributed to the difference in sample characteristics (N=16; Age=16 year; and different degrees of hearing loss). On the other hand, age of onset of impairment had significant negative correlation with academic performance of the visually impaired adolescents.
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**Other Background Variables and Academic Performance:**

Interestingly, socio-economic variables like, parent's education, occupation, and family income did not have significant correlations with the academic performance of the visually impaired, but had significant positive correlation for the hearing-impaired adolescents. Those from lower socio-economic status performed better in academics. Perhaps, low socio-economic background drove them to strive for a meaningful life and valuing high achievement. They focused more on classroom study activities and performed better in school. This finding on hearing-impaired was consistent with several studies (Jensema, 1975; Allen, 1986; Kluwin and Gaustad, 1992; Kluwin and Stinson, 1993), that advocated the role of higher socio-economic background in their psychological well-being and academic performance. They emphasized that a child from higher socio-economic background got proper and regular encouragement, good nourishment of his mental ability, faced less anxiety and got better facilities in comparison to the child from low socio-economic status, which in turn, positively affected their educational performance. The hearing-impaired males and females in higher socio-economic status perhaps were exposed to more verbal and non-verbal interactions, which facilitated their language competence resulting in better academic performance (Furth, 1973).

Mother's education, father's education, father's occupation and family income were significantly and positively related to academic performance of class VIII, class X, males, and females. As family's social-educational and financial condition fulfilled social, educational and economic needs, and ensured early learning experiences, good health care and nutrition, opportunity for intellectual stimulation, positive experiences of parent-child interactions, these facilitated academic performance. The positive impact of socio-economic status on academic achievement had been the focus of a large number of studies (Bledsoe, 1959; Malleson, 1959;
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Schonell, 1963; Bennur and Abraham, 1966; Chopra, 1966; Sinha, 1966; Girija and Bhadra, 1976; Saini, 1977; Ushashree, 1980; Srivastava, Singh, and Thakur, 1980; Aruna, 1981; Chatterjee and Paul, 1981; Shukla, 1984; Grossman, Wirt, and Davids, 1985; Mishra, 1986; Krishnamacharlu, 1989; Kapoor, 1990; Das, 1994). They also noted these variables as the best predictors of academic performance of students. In case of non-impaired students, only father's occupation had significant positive relation with academic performance. As the non-impaired students belonged to lower and lower-middle socio-economic background, where male dominance was assumed to be more, father's occupation and income played a crucial role in managing the family, and in creating educational ambitions among their children. Perhaps in families with higher socio-economic status there were relatively less gender inequality and gender stereotypes. Equal facilities, encouragement, and positive parental expectations facilitated females' better classroom behaviour and academic performance.

**HYPOTHESIS V.5:** Different background and psychosocial variables would significantly predict academic performance of males and females in three categories and two classes.

Positive study orientation and study involvement had positive impact on academic performance of the visually impaired students. As visual inputs were absent for these students, and they were in residential schools, their main focus was on study related activities, which directly facilitated their academic performance. Many other studies had also shown that the visually impaired children developed successfully various cognitive traits like, study strategies, memory, language development, number of hours spent in studies, etc. similar to that of the non-impaired adolescents (Erin, Corn and Wolfe, 1993). Their self-esteem and social-emotional adjustment also positively affected their academic performance. This was supported by
Discussion

the finding of Covington (1989), who reported positive self-esteem resulting in more adaptive learning strategies in classroom and in better academic performance.

In case of the hearing impaired, along with positive study related behaviours and social-emotional adjustment, inattentiveness, stress, mothers' education and age also helped in predicting academic performance. While inattentiveness adversely affected their academic performance, stress enhanced performance. This finding was in the line with Nijhawan's (1968) study, which had shown the presence of moderate stress conducive to academic achievement of persons, whose stress tolerance threshold was high. Stress could increase the level of motivation and thereby the learning efficiency. Srivastava and Naidu (1982) found moderate stress facilitating and conducive of efficient functioning of the organism. The background variables such as, mothers' education also had facilitating effect on performance, which was supported partly by Kluwin's (1987) study reporting social class as the significant predictor of educational output. Especially, in case of the hearing-impaired, early diagnosis and intervention, and some important decision like, school placement, pre-school experience, educational guidance at home, and interaction with the school authorities for monitoring their educational progress, etc. depended more upon mother's awareness, insight and updated knowledge. Another background variable of age had an adverse effect on students' academic performance. This finding supported the findings of Powers (1999), reporting family socio-economic status as a relatively strong predictor of examination success of the hearing-impaired adolescents.

Inattentiveness was found to be the best predictor, explaining the reduced academic performance of non-impaired students. In case of the non-impaired, class size, teacher's ability to maintain discipline in the class,
teachers’ feedback and method of teaching, etc. could play vital role in making students more attentive. Data from classroom observations also showed that these students were highly inattentive. Positive study related behaviour and social-emotional adjustment enhanced their academic performance.

Thus, study related behaviour and social-emotional adjustment, which contributed positively, were two common predictors of academic performance of three categories of students. Even in case of male and female students in class VIII and X positive study related behaviour was found as the most important predictor facilitating academic performance. In addition, fewer behavioural problems made positive contribution to their performance. This finding was more or less in line of the study done by Vostanis, Hayes, and Dufeu (1997) reporting that school related behavioural and emotional problems were the best predictor of maladaptive school functioning. The finding that higher self-esteem enhanced performance of females but not of males was similar to the finding reported by Karunanidhi, Nandhini and Priscilla (1996). These researchers reported that adjustment to schoolwork, curriculum and teaching procedures were good predictors of self-esteem in females and higher self-esteem itself was a good predictor of academic pursuits. Classroom variables like, study involvement and inattentiveness predicted academic performance of male and female students in class VIII and X, showing the interrelatedness of academic activities and performance of students.

Overall, the variations in psychosocial factors remained important than the background factors, in understanding the dynamics of academic performance. However, the vital role of the psychosocial variables was more prominent in case of the sensory impaired, class VIII and female adolescents. The classroom variables came out as the most important predictor of academic performance of male and female adolescents in three
categories and two classes. Interestingly, background factors operated as significant factors in case of the hearing-impaired students.

The analytical model used, proved quite meaningful in giving directions to research questions and analyses. It proved that male and female students in class VIII and X and having visual impairment, hearing-impairment and non-impairment differed on psychosocial variables and the nature and degree of their correlations with each other and with academic performance also varied. The academic performance was also predicted differently by background and psychosocial variables.