Summary, Conclusions & Implications
SUMMARY, FINDINGS, CONCLUSIONS, IMPLICATIONS, LIMITATIONS AND SUGGESTIONS

The present study attempted to assess the differences among the visually impaired, hearing-impaired and non-impaired male and female adolescents in class VIII and X, on different psychosocial and output variables (stress, self-esteem, social-emotional adjustment, behavioural problems, study-related behaviour, extracurricular activities, classroom behaviour and academic performance), and to examine the nature of relationships among these variables.

6.1.1. Objectives

The following specific objectives were enumerated.

➢ To find out the differences by category of students (visually impaired, hearing-impaired and non-impaired), educational level (class VIII and X) and gender (male and female) on different psychosocial variables and academic performance.

➢ To explore the relationships among various psychosocial variables.

➢ To examine the relationships between background and psychosocial variables and of psychosocial and background variables with academic performance.

➢ To predict academic performance of different categories of students by using background and psychosocial variables.

6.1.2. Hypotheses

➢ Male and female students in different categories (vision impairment, hearing-impairment and non-impairment) and educational levels (class VIII and X) will vary significantly on psychosocial and performance variables. There will be significant interaction effects of category,
educational levels and gender on psychosocial and performance variables.
➢ The psychosocial variables will relate to each other.
➢ The background variables will relate to psychosocial variables
   a) Background variables will relate to academic performance.
   b) Psychosocial variables will relate to academic performance
➢ Background and psychosocial variables will differentially predict the academic performance of different categories of students.

6.1.3 Sample
The sample consisted of 270 students out of which 79 were visually impaired drawn from two residential senior secondary special schools for visually impaired students, 80 were hearing-impaired from one special and one integrated secondary school for hearing-impaired; and, 111 were non-impaired from two government senior secondary schools.

6.1.4 Research Design
An ex-post facto 3x2x2 factorial design was used. The first three units identified the category of students, the second the educational level and the third two units of males and females.

6.1.5 Theoretical frameworks
Lazarus'(1978) cognitive phenomenological model of stress, social comparison processes of Festinger (1954), Mead’s interaction theory(1934) and Meadow’s model of social-emotional adjustment (1968, 1969, 1983) were used.

6.1.6 Variables
Four types of variables were used- (1) Matching variables (category of students, educational level and gender); (2) Background variables (age, parental education, parental occupation, family income, number of siblings,
type of disability, severity of disability, age of onset of disability, parents status of disability and pre-schooling experience); (3) Measured variables (self reported- stress, self-esteem; teacher reported- social-emotional adjustment, behavioural problem, study related behaviour and extra-curricular activities; and observed variables - classroom behaviour- inattentiveness, study involvement and withdrawal behaviour); and (4) Academic Performance (marks in final examination)

6.1.7 Data Collection and Tools
Data were collected by using questionnaire technique, observational methods and school record sheets. The first part of questionnaire sought background information, like, age, gender, class, parental education and occupation, family income, age of onset of disability, severity of disability, parents' status of disability, and whether one had preschool experience. Students' stress was measured by Hopkin's Symptom Checklist, consisting of 30 items on dimensions like anxiety, somatization, mental weakness, depression, lack of efficiency, obsessive compulsive and psychological fatigue. The second part included a modified version of Basavanna's self-esteem scale consisting of 28 items. The third part measured teacher's rated social-emotional adjustment by using Meadow-Kendall social-emotional adjustment scale consisted of 49 items spread over three dimensions, like, sociable-communicative behaviour, compulsive- dominative behaviour, and anxious behaviour. In the fourth part, teachers were given open-ended questions regarding their observation of frequently occurring behavioural problems in a particular student, his/her study related behaviours and extra-curricular participation. The fifth part included the investigator's structured observation schedule, which contained variables to be observed and the frequency of the observed variable. Lastly, the final examination marks of students in different subjects were noted, which were later averaged to indicate academic performance.
6.1.8 Data Analyses

Analysis of variance was done to find out the main and interaction effects of category of students, educational level and gender on different psychosocial and performance variables. t-tests were done to find out the differences between paired comparison of categories on different psychosocial and output variables. Correlation analyses were done to assess the nature and degree of association among psychosocial variables, between psychosocial and background variables and the relationship of psychosocial and background variables with academic performance. Step-wise multiple regression analyses were done to identify different contributing factors of academic performance.

6.2 Findings

1(a) Visually impaired students were significantly less stressed than the hearing-impaired and non-impaired students, whereas no significant difference was found between hearing-impaired and non-impaired. The results were found fitting into Lazarus's (1966, 1978) stress theory and Parson's role theory. A possible explanation for the low stress of visually impaired students could be their sharing of emotions with a homogeneous group in a residential school setting, restricted mobility (Seybold, 1993), absence of visual inputs, and orientation and their mobility skills. Higher stress of the hearing-impaired was similarly because of many more sources of visual inputs; more negative experiences in areas of communication, social interaction and established role patterns; and imbalance between demands and internal resources. The findings on hearing-impaired adolescents were in line with the previous findings of Nordeng et al. (1985), Orlans (1987), Stone (1987), Foster (1988), Mertens (1989), Reddy et. al (1991) and Stinson, Whitmire & Kluwin (1996). However, the present finding of visually impaired were less stressed than the hearing-impaired was different from the finding of Agarwal and Kaur (1988). The difference was attributed to the specific sample characteristics, such as, the type of school
placement and age. The present finding showed a difference also in that the hearing-impaired and non-impaired were equally stressed.

Category of students had significant on self-esteem. This lent support to the findings reported by Loeb and Sarigiani (1986) and Cambra (1996), and fitted into Mead's (1934) interaction theory and Festinger's (1954) social comparison theory. The visually impaired had higher self-esteem than the other two groups, whereas there was no difference between the hearing-impaired and non-impaired. A greater identification with the in-group members, parallel comparisons and the fewer experience of problems in social interaction were the main reasons for the higher self-esteem among the visually impaired adolescents. The finding was consistent with several research findings (Williams, 1971; Brewer, 1979; Muller et. al, 1986; Obiakor, 1986; Gupta, 1989; and Obiakor and Stile, 1990). Lower self-esteem of the hearing-impaired was seen related to their lower communication and linguistic competence in social interaction, inaccurate and inflated ideas about their capabilities leading to upward comparisons, and the parental hearing status. This finding was consistent with the earlier findings reported by Ferrugia and Austin (1980), Meadow (1983), Rubin and Yust (1983), Weisel(1988), Cates (1991) and Batchava et. al (1992). The finding of lower self-esteem in non-impaired adolescents was sample specific and perhaps linked to their out-group identification and negative experiences of success at the school as also indicated by Tajfel (1978), Tajfel and Turner (1979), Karasawa (1988), Alasker (1989) and Johnson et. al (1997).

Though the visually and hearing-impaired were equally adjusted, socially and emotionally they were better adjusted than the non-impaired students. The finding on visually impaired was consistent with earlier studies done by Bala (1985) and Haider (1990) and contrasted the other findings reporting more maladjustment among them compared to the non-impaired students.
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(Hussain, 1982; Banerjee, 1988). A significantly better social-emotional adjustment among the hearing-impaired was also observed by Watkins (1987), Henggeler et. al (1990) and Blood and Blood (1999). The better adjustment of visually and hearing-impaired was linked to their pre-school experiences and social conformity behaviour in meeting teacher's expectations. The non-significant difference between the two sensory impaired groups was in line with Cambra (1996), who suggested that the profiles of those having different types of sensory impairments would be more similar because of stigma generally attached to it.

Teachers' report also revealed that the visually impaired exhibited fewer behavioural problems than the hearing-impaired and the non-impaired; and the hearing-impaired fewer than the non-impaired. Cambra (1996) found the hearing-impaired more reserved, dependent, solitary, hyperactive, nervous, imprudent, insecure and impulsive than the visually impaired. Many other researchers also reported similar results (Meadow & Trybus, 1979; Chess & Fernandez, 1980; Davis et.al, 1986; Prior et. al, 1988; Hindley et.al, 1994; Vostanis et.al, 1996; and Vostanis et.al, 1997). An interesting finding was that teachers highlighted immature behaviour, aggression, hyperactive, impulsivity and suspiciousness as common behavioural problems among the hearing-impaired students while, more rigidity and suspiciousness were listed among the visually impaired. This was different from the non-impaired students, who were commonly described showing ill mannerism, misbehaving, lying, disinterest in studies and argumentative behaviour. This reflected to some extent teachers' failure to control students inside the class as well as students' socio-educational background. This was supported by findings of Rutter (1986), Compas et.al (1987) and Okayasu et al (1992).

The significantly higher academic performance of visually impaired as compared to hearing-impaired was attributed to their language proficiency,
higher self-esteem, lower stress, and study strategies (Erik, Corn and Wolfe, 1993). The hearing-impaired found CBSE curriculum and examination system stressful (Barnum, 1984). The significantly poor academic performance of non-impaired students was attributed to school environment, teachers' input and feedback and to social-educational environments. Interestingly, teachers' reports and the investigator's observations were also supporting. Findings on extra-curricular activities were disability specific.

(b) The effects of educational level were found significant on students' self-esteem. It showed that class VIII students had lower self-esteem than the students in class X, which was consistent with Shalvelson et al's hypothesis of 'increased differentiation'. This posited that self-perceptions became more differentiated with age. Several studies (McCarthy and Hoge, 1982; Bachman and O'Malley, 1983; Piers, 1984; Rosenberg, 1985; Marsh et al, 1985; Marsh et al, 1988 and Marsh, 1989) supported the hypothesis.

Class VIII students exhibited significantly fewer behavioural problems than their counterparts in class X, because of teacher's differential expectations from students at different educational levels, and limited 'observational field' as class VIII students participated less in extra-curricular activities. The class VIII students academically performed significantly better than the students in class X as they had internal evaluation. This finding was substantiated by teachers' report on study related behaviours and the investigator's observation on attention and study involvement.

(c) Gender difference on self-esteem was significant. The females had less positive self-esteem than males because of gender specific social categorization, sex role socialization and their impact on females' self-identity development (Woolley,1987; Cohen et. al 1987; and Avison and Mcalpine 1992).
The finding that females performed better academically than males perhaps due to their more sex-role conformation, seriousness in studies, less number of distractions in studies and fewer behavioural problems. The finding was in contrast to some studies which suggested decreased gender differences (Hyde & Line, 1988; Jackline, 1989; Feingold, 1988, 1991a; Mohanty, 1991) or found males to be the better achievers than females (Aruna, 1981; Bisht, 1984 and Tripathy, 1990).

2(a) Interaction effects of category of students and educational level were significant on stress and self-esteem. Higher stress and lower self-esteem of visually impaired and hearing-impaired class VIII students were related to failure in coping with different impairment specific stressors at a young age. Similar findings were reported by Lutman et. al (1987) and Beach, Robinet and Hakim-Larson (1995). On the other hand, non-impaired students in class X experienced higher stress and lower self-esteem due to their inadequate preparation fear of failure and embarrassment, academic incompetence, undue parental expectation, etc.

Hearing-impaired class X students were better adjusted - socially and emotionally than their counterparts in class VIII, showing their social maturity and proficiency in language and social interaction. Visually impaired class X students had better academic performance than their class VIII counterparts.

(b) Interaction effects of category of students and gender were found significant on self-esteem. Males in all other categories except the hearing-impaired category showed higher self-esteem than their female counterparts. This was in accordance with the assumption of gender inequality in socialization process. The finding of visually impaired males having higher self-esteem was consistent with Dodds et. al (1994).
Hearing-impaired and non-impaired males were more inattentive and withdrawn than their female counterparts, whereas visually impaired males were more attentive and less withdrawn than their female counterparts. Students' academic interests and aspirations and the amount of visual inputs in case of visually impaired students differed.

(c) Interaction effects of class and gender were found significant on students' attentiveness and study involvement. Males in class VIII were more attentive and involved in studies than males in class X. This was consistent with the finding of Veroff et. al (1960) and Bisht (1984).

(d) The three-way interaction effects of category, class and gender were found significant on stress. Visually impaired and non-impaired females in class VIII and X, and hearing-impaired class X females were more stressed than their male counterparts, because of gender differences in meeting sex-role expectations. Similar findings were reported by Dube et. al (1980), Singh et. al (1981), D'Arcy & Siddique (1984), Compas et. al (1985), Compas et. al (1987), Grannis (1992), Price & Hooijber (1992), Budheu (1993) and Das (1994).

Visually impaired and non-impaired females in class VIII and X had lower self-esteem than their male counterparts. This was true in case of hearing-impaired females in class X whereas, their counterparts in class VIII had higher self-esteem.

3. Correlations between stress and self-esteem were positive (negatively scored) for all three categories of males and females in class VIII and X. This finding was expected and consistent with a number of studies (Williams, Ware & Donald, 1981; Nelson & Cohen, 1983; Cohen et. al, 1984; Cohen et. al, 1987; Allgood-Mertens et. al, 1990; Harper and Marshall, 1991; Avison &

Correlations of stress and self-esteem with social-emotional adjustment were negative for all groups. This implied that those who were unable to handle stressful life situations their self-esteem and social-emotional adjustment were affected adversely. This finding was consistent with earlier studies (Newcomb et.al, 1981; Eckenrode, 1984; Rutter, 1986; Johnson, 1986; DeLongis et.al, 1988; and Felston et. al, 1992).

Less stress and good social-emotional adjustment were associated with fewer behavioural problems. This was supported by Compas et. al (1987) indicating that higher stress lowered down one's positive self-esteem feelings and social-emotional adjustment and hence, resulted in more behavioural problems including lack of attentiveness and study involvement.

4(a) Age had significant positive correlation with stress of students in class VIII indicating that the older students were more anxiety prone (Krishna, 1972; Srivastava & Sinha, 1974; and Satyarthi, 1979), whereas, the two correlated negatively for class X students. Older visually impaired, aged female students and older students remaining at lower educational level had lower self-esteem. Older students at higher educational level were better adjusted. This was explained in terms of social maturity. However, the finding that older students exhibited more behavioural problems was attributed to teachers' differential expectations from older and younger students. Those who became visually impaired at a later age were poorly adjusted.

All socio-economic variables had negative correlation with stress for both the sensory impaired groups as in Kessler's (1979) vulnerability hypothesis.
Higher self-esteem was found in hearing-impaired, class VIII and female students from higher socio-economic background. Class X students having high-educated mothers had more positive self-esteem.

(b) The finding of significant negative correlation between stress and academic performance for the visually impaired, non-impaired, class X, male and female groups supported the drive theory of Spence and Spence (1966) and was consistent with several research findings (Srivastava et al, 1980; Harris, 1982; Fontana & Davidio, 1984; Ranganathan, 1987; Mecan et al, 1990; Felsten & Wincox, 1992; Biggs, 1992 and Das, 1994). Self-esteem and academic performance were positively related for class X and male students. This was in accordance with Coopersmith’s self-esteem theory (1967) and Marsh’ hypothesis (1989). Good social-emotional adjustment enhanced academic performance of students in all categories. This was supported by many research findings, which reported that better behavioural and emotional adjustment resulted in more adaptive learning strategies inside the classroom, and thus, good academic performance (Covington, 1989 and Dubois et al, 1998). The finding that those who had more behavioural problems had significantly low academic performance was supported by the findings of Teare (1985) and Dubois et al (1998).

Thus, in general lower stress, higher self-esteem, good social-emotional adjustment, fewer behavioural problems, attentiveness, more study involvement and more positive study orientation enhanced students’ academic performance.

(c) The poor academic performance of older hearing-impaired students could be due to their lesser academic competence and worry for future. Hearing-impaired students having more number of siblings had low academic performance. It could be due to the impact of large size family.
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Deaf students were better performers than the hard-of-hearing. Visually impaired students having late age of onset of the impairment had low academic performance. Interestingly, all socio-economic variables had significant positive correlations with academic performance of the hearing-impaired, whereas, father's occupation had significant positive association with academic performance of non-impaired students. The positive impact of good socio-economic status on academic achievement had been reported by many studies (Aruna, 1981 and Krishnamacharlu, 1989).

5. 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 one of the most important factors facilitating academic performance. In addition, fewer behavioural problems also had positive contributions to their performance. This finding was more or less in line of the study done by Vostanis, Hayes, Dufeu (1997). 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). Classroom variables like, study involvement and inattentiveness also predicted academic performance of male and female students in different categories and classes, showing the influence of academic activities on performance of students.

6.3 Conclusions

1. Hearing-impaired adolescents were highly stressed and had lowest self-esteem as compared to the visually impaired and the non-impaired.
2. Adolescents having no impairments exhibited poor social-emotional adjustment and highest number of behavioural problems in comparison to the sensory impaired adolescents.
3. Visually impaired adolescents had positive classroom behaviour (attentiveness, study involvement, study orientation and less withdrawn behaviour) and better academic performance.

4. Students in class VIII were more stressed and had lower self-esteem. They were more attentive, more involved in study, thus, performed better in academics than class X students.

5. Females had lower self-esteem than males. However, they showed more attentiveness and study involvement, hence, better academic performance.

6. Visually and hearing-impaired students in class VIII were more stressed and had lower self-esteem than their counterparts in class X, whereas the reverse was true in case of non-impaired students.

7. Visually impaired and non-impaired students in class VIII had better social-emotional adjustment than their counterparts in class X, whereas hearing-impaired students in class VIII had poor adjustment.

8. Visually impaired and non-impaired male students had higher self-esteem than females, whereas hearing-impaired males had lower self-esteem.

9. The intercorrelations among stress, self-esteem and social-emotional adjustment were significant for males and females in three categories and two classes, indicating that higher stress lowered down self-esteem and social-emotional adjustment and higher self-esteem was associated with better social-emotional adjustment.

10. Higher stress raised the number of behavioural problems and good social-emotional adjustment reduced these.

11. Older students in class VIII were more, while such students in class X were less stressed.

12. Older visually impaired, class VIII and females had lower self-esteem.

13. Older students exhibited more behavioural problems.

14. Those became visually impaired at a later age had poor adjustment.
15. Stress had negative correlations with academic performance of visually impaired, non-impaired, class X, male, and female students.

16. Class X and male students having high self-esteem had academic performance.

17. Good social-emotional adjustment was positive correlations with academic performance of all students.

18. Positive study orientation and classroom behaviour were positively related to academic performance of all students.

19. Students exhibiting fewer behavioural problems had better academic performance.

20. Academic performance decreased with age, number of siblings and severity of impairment for the hearing-impaired students, whereas it decreased with late age of onset for the visually impaired.

21. Study related behaviour contributed positively to academic performance of all students. Social-emotional adjustment and other classroom variables also predicted academic performance.

22. Background variables, like, age and mother education were important predictors of academic performance of the hearing-impaired students.

6.4 Implications
The findings related to the sensory impaired and non-impaired secondary school students seemed to have a number of implications for designing intervention programmes, policy and psychological theory, some of which are discussed below:

(A) Implications for appropriate interventions and other services
In addition to the need of early identification, prevention and pre-schooling, it was necessary to keep in mind that the special needs of the sensory impaired continue and change. Therefore, interventions should also address the needs of the older students to prevent the negative experiences and their
impact on academic and all round development. The programmes were to be designed not only for students, but also for parents and teachers.

1. For Students

The hearing-impaired, non-impaired and class VIII adolescents were more stressed had less positive self-esteem. Therefore, the introduction of stress management education as an important intervention programme (Sakano, Sato, Matsumoto and Suzuki, (1998) at the school level should be more systematically pursued. This has been found successful in case of hyperactive children (Parrott, 1990) and for children under high academic stress (Rajendran and Kaliappan, 1990). Educational sessions on stress management including components of nature and variety of stressors, impact of these stressors on body and mind, the intervening factors, relation of these with academic performance, practical ways of coping, and the information about available social support could be organized frequently with the help of professional experts. However, the psycho-educational sessions should start at the beginning of the secondary schooling (i.e. at early adolescent stage as students face new physical, social and academic demands in this transitional phase), which could help them to prepare to solve their problems, promote mental readiness to face new demands of the new life and prevent the cropping up of negative feelings. They should be taught how to attain physical and mental self-control by using relaxation training during stressful experiences. This includes progressive muscle relaxation, autogenic training, and other relaxation techniques, such as Zen and Yoga. Another important way to decrease stress intensity at early adolescent stage could be through counseling. They could be taught strategies of cognitive self-control for modifying the appraisals of the harmfulness of the stimuli, of dysfunctional thoughts, raising self-efficacy for problem solving, and controllability, maintaining self-confidence, and the modification of beliefs of perceived social support during stressful periods. Here, the focus should be on right appraisal of stressors and coping
strategies that could directly reduce their intensity. These programmees for the hearing-impaired students should have a specific *disability component*, and an expert in total deaf communication skills.

Some counselling could be organized periodically for self-confidence building and self-esteem enhancement. For the hearing-impaired adolescents any intervention must have a strong component of effective communication and social interaction. One such intervention programme could be social skill training (personal and social skill) focusing on *total communication skill* including sign language, finger spelling, gesture and lip-reading. The summer camps, out door adventure course and other group activities could supplement the above, and help to accelerate their interaction outside the school and thus realize their capabilities in areas other than language. All programmes could be used as a composite package to help them to widen their social network, promote effective communication and thereby reduce stress and facilitate their self-esteem.

2. For Parents
The finding of high stress in the hearing-impaired were reflected the critical need to educate parents on the psychosocial well being of their children, as they were a powerful force in monitoring the child’s progress. One such programme could be the *total communication training to the parents* having a component of psychosocial development. They should be encouraged to keep regular contact with the teachers to ensure their child’s psychosocial and academic progress. However, some awareness programmes should be initiated for parents of all impaired children. Recently, on 2nd October 2000, the Indira Gandhi National Open University signed a Memorandum of Understanding with Rehabilitation Council of India in order to promote education for the empowerment of persons with special needs, which included an *audio-video based motivational extension programme* for the
parents of disabled children. This was the first programme of its kind, but many more such programmes focusing on early identification, preventive measures and importance of pre-schooling should be launched for the parents of the impaired children.

3. For Teacher
As the children with sensory impairments (particularly, the hearing-impaired) invariably required extra help in accessing and interpreting their social and educational environments, the role of teachers was crucial in their self and educational enhancement. Teachers should be specially trained as teacher counsellor, which could result in right understanding and diagnosis of the problem at right time, appropriate psychosocial assessment and counselling to the needy students.

(B) Implications for educational policy, programmes and teachers’ training
Findings of the present study have many policy implications for teacher training, education for all, value education, curriculum development, vocationalization of education and NGOs.

1. Teacher Training Programme
Though NCTE had recommended the inclusion of a component of special education in all pre-service school preparation course, the actual implementation of it in all teachers training programmes was limited. Especially, the teachers training programmes for teachers in special education (in-service, orientation and re-orientation) provided by NCTE, RIEs and RCI have to be sincerely reviewed and strengthened (EFA, 2000). The efforts made by the Ministry of Social justice and Empowerment in providing teachers training for visually impaired and hearing-impaired were encouraging in this regard but must be carried out more systematically. These programmes should be organized more frequently for special
educators to acquaint them with the recent developments in disability area including the improvement in teaching methods and teaching aids. In addition, these programmmes should emphasize on teachers' responsibilities in proving appropriate academic and emotional classroom learning climate to the students (Pal, 2000). Some steps could be taken to increase the special incentives for the teachers that would help them to maintain the enthusiasm to continue qualitative involvement in students' academic and non-academic improvement.

In addition to in-service orientation and reorientation programmes for the teachers, a crucial job was to fill the gap between supply and demand of trained manpower in the field of disability. There are very few institutions, like the National Institute for the Hearing Handicapped, Bombay, and National Institute for the Visually Handicapped, Dehradun and Delhi, for providing training to people interested in this field. As the number of seats are also limited, there should be some provision to increase such type of institutions through which the number of trained manpower would be increased. Recently, IGNOU and RCI have jointly undertaken steps to promote and implement extension, training and education programmes for the empowerment of people with special needs through multi-media distance mode, which was really encouraging. The programmes included a certificate programme for primary school teachers involved in inclusive and integrated education, a four year professional bachelor's degree programme in special education, and rehabilitation for preparing professionals in the area of mental, visual, hearing, locomotor, physiological and neurological disabilities.

For the non-impaired students it was necessary to plan some attitudinal interventions for teachers that would have some positive motivational strategies to implement new educational programmes. The teacher training programmes should be improved drastically in content and methodology.
The NPE (1986) and its review committee (1992) recognized the need of overhauling the teacher education system as a step towards the educational orientation. The training programmes needed to be more practical and reality oriented. Although the NPE Review Committee (1992) recommended the need for in-service training and educational programmes once in every five years for all teachers, the condition of schools having situated in underdeveloped areas like schools containing maximum children from slums demanded an increase in the frequency of such programmes. In the programmees one component on gender sensitization should be included to reduce gender inequality, and to encourage females to participate in all school activities. Further, teachers/teacher counsellor in special education should be trained specially to make extra efforts to build the sagging self-esteem of the females.

2. Education for All

The finding that parental education helped in combating stress, enhancing self-esteem, fostering good adjustment, reducing behavioural problems and in better academic performance of their children was crucial for the Government's policy on adult education. NPE (1986), CABE (1991) and Programme of Action (1992) emphasized the need of adult education and linking these to the national goals, such as, total literacy, population control, etc. Thus, the programme on adult education should be strengthened to ensure that it covers general population as well as the parents of impaired children. Ironically, *Kerala the only state in India that claimed total literacy did not include impaired persons in its population.* Therefore, _policies on adult education and total literacy mission must include a strong component for the sound psychosocial development and good academic performance of the impaired students._ The efforts of the Government to make use of non-formal education and distance education mode to reach more disabled children were encouraging in this regard. The
coverage of disabled people's education could also be encouraged in other sub-plans e.g. for the SC/ST and other focused groups.

3. Value Education and Vocational Education
The finding that the non-impaired students exhibited more behavioural problems and fewer score on all psychosocial variables and academic performance was a challenge to the teachers and the educational system as such. It was desirable to make the value education compulsory in schools to inculcate some social, moral and spiritual values in students. The Ramamurti Committee in its review of the NPE (1992) stated that democracy, secularism, socialism, scientific temper, gender equality, honesty, integrity, courage and justice, respects for all life forms, different cultures and languages constituted the mosaic of values which were vital to the unity and integrity of the country. The content and process of education should all pervasively be informed by these basic values. The value education should be integral to the entire educational process and school climate, as distinct from teaching values through special classes or lectures in morality or through mechanical textbook based learning methods. Parents should be made active partners in this process. This may require wide campaigning, and organizing of orientation and awareness programmes.

The vocationalization of education could help in reducing the number of behavioural problems by engaging students in productive and result-oriented activities, having a direct bearing on their future job prospects. Subjects like, Hindi & English typing, basic computer skills, secretarial practice, stenography, beauty courses, etc. can be introduced to make the syllabus interesting and job-oriented. This was particularly important for the sensory impaired students. A great deal of importance was laid on vocational education in the NPE (1986), which should be reviewed. According to Persons with Disability Act (1995) vocationalization of
education should be a regular activity in schools for disabled children, which needed in-depth vision for planned implementation. Recently, an awareness campaign was organized by the National Centre for Promotion of Employment for the Disabled People (NCPEDP), and Cyber Media India Limited (CMIL), which was attended by the CEOs of information technology sector, who ensured to start a special institute to educate and train the various types of disabled in the information technology sector after minimal education at a very young age (Hindustan Times, New Delhi, 29.9.2000). Steps should be initiated as early as possible.

4. Curriculum Development and Examination System:
Though NCERT has included Mathematics and Science in the integrated programme for the blind, the work was yet to begin in special schools for the visually impaired. One way to reduce academic stress and to enhance academic performance of the sensory impaired, especially, the hearing-impaired students, was to introduce the open school examination system where the facility of clearing one/two subjects at a time would be of much help to them. The total communication for the hearing-impaired students, their parents and teachers required quick development of Indian Sign Language as many of the intervention programmes for these groups were based on language. Though the National Institute for the Hearing Handicapped and some NGOs in collaboration with Christoffel Blinden Mission have started the work, steps should be taken to fasten the work. The finding of the socio-economic variables being significantly related to psychosocial variables and academic performance implied that the need to discount the socio-economic constraints, not adequately addressed in National Policy on Education (1986).

5. Role of NGO's
The NGO sector has pioneered valuable services for the impaired, even more than the government. The role of NGOs in formulating the policies and
supporting the governmental efforts in initiating action was important in ensuring social integration. However, more concerted efforts of the Government and the NGOs were needed. The vision of the NPE (1986) and POA (1992) for one special school at each district headquarters at least at secondary stage had remained a distinct possibility. The State and Central Government grant-in-aid should be more open and NGO-friendly. Government should open more secondary schools for the sensory impaired students, as in Delhi itself there were only three special schools for the visually impaired (one for girls, one for boys, and one co-ed school (where the number of students at higher classes were very few), and one special and another integrated school for hearing-impaired higher class students. The NGOs could be encouraged to take up the challenge of providing stress management education, counselling, etc. at the secondary school stage for non-impaired and impaired students. In addition, separate fund should be allocated to them for some kind of general community awareness programmes on disability, which could bring a change in the people's attitude, and thus, reduce the amount of stress produced by the social environment on the impaired persons. Chapter IX of RCI Act (1993) emphasized the promotion and sponsorship of research, and giving financial incentives to universities to enable them to undertake research in disability. They have to be strengthened for research in disability area with special emphasis on female disabled and the development of psychosocial tools for assessing the disabled children. NGOs' collaboration could be taken in designing appropriate research projects.

(C) IMPLICATIONS FOR PSYCHOLOGICAL THEORY:

The findings on stress have implications for cognitive appraisal theory of stress developed by Lazarus (1978), which stated that the relationships that occurred between the individual and the environment were mediated by cognitive appraisal processes. However, depending upon one's priority of needs and psychosocial and educational environment, one experienced
various life demands. If the person was able to handle the demands, he/she felt less threatened or stressed. The present finding showed that the visually impaired students stayed in residential schools, as many of their needs (like, food, safety, social life, emotional sharing, etc.) were met within the school and their daily life hassles were less. Additionally, they did not receive many of stress producing visual inputs, hence, felt less stressed in comparison to other two groups. The hearing-impaired students faced lots of hassles in fulfilling their needs, as the communication and interaction with the environment was hindered, which increased their stress. Thus, the need of understanding the process of stress operating in sensory impaired groups being a little dissimilar to the non-sensory impaired group offered some challenge to further theory development.

A second theoretical implication was related to the finding on self-esteem for these three groups of students. Both social comparison (Festinger, 1954) and social-identity theories (Tajfel, 1982; Tajfel and Turner, 1979, 1985) advocated that there will always be the higher cognitive preference for intra-personal similarities and interpersonal differences, as these would enhance the psychological distinctiveness of the selves. Identifying more with in-group members and selective downward comparisons could also be cognitively definable and gratifying especially for the stigmatized persons (Gecas, 1986). It was seen that visually impaired students identified more with in-group members and used parallel comparisons, and thus, were able to maintain a higher level of self-esteem. But the present finding on hearing-impaired group lent only a weak support to these propositions. Rather both the hearing-impaired and non-impaired-students identified more with out-group members and used upward social comparisons to evaluate. Thus, though the theory of social comparison (Festinger, 1954) and self-identity theory (Tajfel, 1982) were operative in all groups, these were more true in case of visually impaired than the hearing-impaired. These could be extended to include the group behaviour of different types of sensory...
impaired living in different environments for a better understanding of their constraints and challenges.

Mead’s interaction theory stated that self-esteem was a product of social interactions, which validated the finding on the hearing-impaired. The finding on the visually impaired students, however, pointed out the need of exploring and validating further. The finding that males in all categories except the hearing-impaired had higher self-esteem than the females had some implications for the theory of socialization, which posited that due to sex stereotypes and differences in childrearing and the process of socialization, males had been the most favoured group, affecting their self-identity positively. These theories could be extended to understand the socialization of hearing-impaired and their self-esteem, as the hearing-impaired males did not higher self-esteem than females.

6.4. Limitations and directions for future research:
Though the present study had some limitations, it did offer some directions for future research to be undertaken in the field of sensory impaired and non-impaired adolescents. These were:

1. The results of this study could be sample specific and may not be applicable to other groups like non-residential or integrated visually impaired students, hearing impaired students staying in fully residential setting or studying in integrated setting or even non-residential special school settings, non-impaired students in central schools, public schools, etc., and non-impaired students integrated with impaired students. The future researchers should try to include students from the above categories to test the generalizability of present findings.

2. The nature, sources and intensity of stress could be studied as well as casual factors along with the coping strategies. This may provide insight
into their future psychosocial well-being. The effects of social support may also be found.

3. Some action research could be taken up to reduce stress, enhance self-esteem and social-emotional adjustment and to see the effects of these on their academic performance.

4. It appeared that the social-emotional adjustment scale measured actually students' conformity and compliance behaviour. Further researchers could use some self-reported tool to measure students' social-emotional adjustment along with this scale to validate the results.

5. The future studies on psychosocial dynamics of academic performance of both sensory impaired and non-impaired groups should incorporate more qualitative data to be able to incorporate the ongoing interactions among the psychosocial variables operative in academic performance and other output variables.

The analytical model proved quite useful, yet the future researchers could further refine it.