

**PSYCHOSOCIAL AND DEMOGRAPHIC CORRELATES OF  
ACADEMIC PERFORMANCE OF HEARING-IMPAIRED  
ADOLESCENTS**

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**ABSTRACT**

*Academic performance has been considered as an interactive function of many psychosocial and demographic variables. The present study attempted to explore the nature and degree of relationship between academic performance and selected psychosocial (such as, stress, self-esteem, social-emotional adjustment) and demographic variables (such as, age, parents' education and occupation, number of siblings, family income, age of onset of disability, preschool training and type of schooling). The sample consisted of 80 hearing-impaired class VIII and X students of both sexes aged 13 to 21 years of age, mostly from the lower and middle socio-economic class. A comparative group of 111 non-impaired students was also included. The Hopkin's Symptom Checklist for stress, Basavanna's Self-Esteem Scale for self-esteem, Meadow/Kendall Social-emotional Scale for social-emotional adjustment and a personal proforma for demographic variables were administered. Results showed that stress had a significant inverse correlation with academic performance of non-impaired students, whereas the relationship was low positive in case of hearing-impaired students. While social-emotional adjustment enhanced academic performance of both groups, self-esteem did not relate significantly in either case. However, many socio-demographic variables like number of siblings, socio-economic status, and age were found to have significant correlation with academic performance of hearing-impaired students. The differences were analysed in relation to the impairment specific academic problems, educational system and the vital role played by the family.*

**INTRODUCTION**

An extensive literature survey on hearing-impaired children showed that very few studies directly addressed the relationship between psychosocial factors and academic performance. Many researchers working with deaf students reported positive correlation of academic

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performance with school adjustment and behavioural problems (1), social-emotional adjustment (2, 3), and self-esteem (4). Academic performance correlated positively with every kind of positive adaptation including health, self-esteem, adjustment, social functioning and morale (5) of students having no impairments. However, the relationships were not explored systematically among the hearing-impaired adolescents. A number of researchers pointed out the facilitative role of higher socio-economic background on psychological well-being and academic achievement of children without impairment (6, 7, 8, 9, 10), as well as on adjustment (11, 12), cognitive functioning (13) and examination success (14) of hearing-impaired students. However, the number of studies addressing the direct correlation between demographic variables and academic performance are scant in the case of hearing-impaired children.

This study examined the differences on selected psychosocial (stress, self-esteem and social-emotional adjustment) and demographic variables and their correlations with academic performance of the hearing-impaired and non-impaired adolescents.

## **METHOD**

### **Sample**

A total of 80 hearing-impaired and 111 non-impaired secondary school (class VIII and X) Indian adolescents from New Delhi, were selected. Their age ranged between 13-21 years and all the students were from low and middle socio-economic family background. 91.3% (n=73) of the hearing-impaired children were congenitally deaf, 2.5% (n=2) had acquired the impairment before the age of two and remaining 6.3% (n=5) had the onset between 2-5 years of age. 98.7% (n=79) were severely impaired while 1.3% (one) had mild impairment. 96.25% (n=77) of hearing-impaired students had parents with normal hearing. Similarly, 99.09% (n=110) of the non-impaired students had parents with no handicap.

Children with additional impairments were not included. In New Delhi, there are only two schools (one residential–special school and one integrated school) providing education to hearing-impaired children till class X, so both were included. One is a fully government aided school, while the other one is partially aided school. One government school for non-impaired students was also included, to decrease the gap in socio-economic status and facilities available in the schools.

### **Variables and Tools**

Stress: Hopkin's Symptom Checklist consisting of 30 items on dimensions like somatisation (8 items), anxiety (5 items), interpersonal sensitivity (3 items), depression (7 items) and obsessive-compulsive thoughts (7 items) was used to measure stress. It is a four point rating scale and a high score indicated high stress on this scale. The Cronbach reliability of this scale was 0.74.

Self-esteem: The modified version of Basavanna's Self-esteem Scale consisting of 28 items was used for studying self-esteem. The original true-false type of response pattern was changed to a three point rating scale, on which a high score indicated low self-esteem. It had a reliability of 0.96.

Social-Emotional Adjustment: The teachers were asked to rate the students on Meadow-Kendall Social-Emotional Adjustment Scale (15), a 5-point response format. It consisted of 41 items and had a reliability of 0.89.

Demographic Variables: A personal proforma was used to get information on background variables like age, parents' education and occupation, number of siblings, family income, onset of disability, preschool training, severity of disability and parental disability status.

Academic performance: Percentage of marks in the final examinations was taken as the indicator of students' academic performance. Class VIII students appeared in the class promotional examination conducted by the school authorities, while the students in class X appeared in the national common examination for class X students.

### **Procedure**

All the scales were translated into the local language by the back translation method. The agreement between two judges was 95%. Questionnaires were administered to the non-impaired in small groups. In case of the hearing-impaired students, questionnaires were administered individually with the help of a teacher who had mild hearing-impairment and was strong in signing, finger spelling and lip reading. Data were analysed using statistics of t' test and correlation analyses.

## **RESULTS**

Before examining the correlation of academic performance with various psychosocial and demographic variables, the analysis of significance of mean difference on these variables for both the groups were done to foster understanding of the variations in relationships. Table 1 shows that significant difference was found between the hearing-impaired and non-impaired adolescents on academic performance, social-emotional adjustment, age, parents' education and occupation, and family income. The hearing-impaired students were found to be better in academics and social-emotional adjustment than the non-impaired adolescents. However, they were also found to be significantly older than the non-impaired group. While the mean age of the hearing-impaired was 16.5 years, it was 14.8 years in the case of the non-impaired adolescents. This was due to the difference between the two groups on preschool training, which revealed that almost all hearing-impaired had attained preschool, but maximum non-impaired did not have any formal preschool training. Both the groups also differed significantly on maximum demographic variables like mother and father's education, mother and father's occupation and family income. This indicated that the hearing-impaired were significantly older, had preschool experience, belonged to families with better socio-economic condition and hence, exhibited better adjustment and academic performance. However, no significant difference was between the two groups on stress, self-esteem, number of siblings and parents' impairment status, suggesting that both groups were equally stressed, had equal level of self-esteem (though the mean values on stress and self-esteem for the hearing-impaired students were slightly higher than the non-impaired group, number of siblings and had parents without any impairment).

**Table 1: Means, SDs and t' values on different Psychosocial and Demographic variables and Academic Performance**

Variables	Hearing-Impaired		Non-Impaired		t' values
	Mean	SD	Mean	SD	
Stress	56.0	11.24	54.2	13.11	0.97, ns
Self-Esteem	23.21	10.27	22.0	7.16	0.94, ns
Social-Emotional Adjustment	97.45	10.23	90.32	10.44	4.6, p<. 01
Age	2.18	.65	1.51	.54	7.44, p<. 01
No. of Siblings	2.15	.66	2.3	.68	1.5, ns
Mother's Education	3.59	1.78	1.9	1.29	7.35, p<. 01
Father's Education	4.4	1.58	3.3	1.48	5.0, p<. 01
Mother's Occupation	1.30	.74	1.09	.29	3.0, p<. 01
Father's Occupation	3.1	1.44	1.9	.95	12.35, p<. 01
Family Income	2.89	1.59	1.56	2.90	7.8, p<. 01
Parents Impairment	4.91	.48	4.87	.63	0.5, ns
Academic Performance	48.03	15.48	34.29	8.99	7.55, p<. 01

ns= non-significant

The result on correlations revealed (Table 2) that stress had significant inverse relationship with academic performance for the non-impaired group, which was quite expected, but both had low positive association in the case of hearing-impaired students. This suggested that higher stress significantly reduced performance of adolescents without any impairment but, had low facilitative effects on academic performance of the hearing-impaired students. Secondly, self-esteem did not correlate with academic performance of students in both the categories. However, good social-emotional adjustment had significant facilitative effects on academic performance of hearing-impaired and non-impaired adolescents. Results also revealed that almost all demographic variables had significant association with academic performance of the hearing-impaired students, while the number was few in the case of the

non-impaired students. Hearing-impaired students older in age and with more siblings showed poor academic performance. Socio-economic variables like, parents' education and occupation, family's income and personal characteristics like, severity of impairment, had significant positive correlation with academic performance of hearing-impaired students. This indicated that hearing-impaired adolescents who belonged to families with better socio-economic condition and those who were totally deaf, had a better academic performance. Age of onset of disability and parental hearing status did not correlate significantly with academic performance of the hearing-impaired adolescents. However, low positive correlation between these variables suggests low positive impact of congenital deafness and deaf parents on academic performance of these students.

**Table 2. Correlations between Academic Performance and different Psychosocial and Demographic variables**

Variables	Academic Performance	
	HI	NI
Stress	0.13	-0.23, p< .05
Self-Esteem	0.003	-0.16
Social-Emotional Adjustment.	0.43, p<. 01	0.43, p< .01
Age	-0.32, p<. 01	-0.06
No. of Siblings	-0.24, p<. 05	-0.17
Mother's Education	0.45, p<. 01	0.13
Father's Education	0.36, p<. 01	0.07
Mother's Occupation	0.24, p<. 05	0.13
Father's Occupation	0.42, p<. 01	0.19, p< .05
Family Income	0.43, p<. 01	0.09
Parents Impairment	0.10	-0.09
Severity of Impairment	0.23, p<. 05	-----
Age of onset of Disability	0.07	-----

## **DISCUSSION**

A large body of research has shown that children with hearing-impairments are at risk of more social-emotional maladjustment than their hearing peers (9, 16, 17). Contrary to these and other studies which found no significant difference between hearing-impaired and their normal hearing counterparts on social-emotional adjustment (18, 2, 19), the present finding noted significantly better social-emotional adjustment in hearing-impaired students which thus lent support to the study by Jyothi and Reddy (20). Such a finding could be due to many factors. Firstly, the social-emotional adjustment of the hearing-impaired could be related to the quality and quantity of social interactions inside the school (21), 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, which could have affected teachers' rating of students' social-emotional adjustment. Furth (22) contended that to a large 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 in the study had preschool training. Pre-schooling facilitated social interactions and social-emotional adjustment. Informal discussions with teachers revealed that the teachers had strong belief that these students and their parents were quite accustomed to the stressors associated with bringing up a hearing impaired child, and did not find social-emotional adjustment difficult when the child reached the adolescent stage, which is substantiated by the finding of Henggeler, Watson, Whelan and Malon (23). To some extent, the higher social-emotional adjustment of the hearing-impaired could be sample specific, as the hearing impaired group were a more heterogeneous group with a wide range of hearing loss. However, the finding was encouraging in a sense, that despite the equal level of stress and self-esteem between the two groups, these hearing-impaired adolescents were able to maintain good adjustment as well as academic performance.

The finding of better academic performance of hearing impaired students could be interpreted by using the individualistic theory (24), which proposed that normal surroundings tend to compound the inferiority feelings in hearing-impaired persons which makes them try hard to develop and strengthen the compensatory mechanisms to achieve superiority (exhibited in better academic performance).

The finding related to children without impairments could be sample specific related to an urban and changing milieu of a metro city like New Delhi. Another possible explanation could be the variations in academic support given by the teachers before the examination. The hearing-impaired group perhaps got more help and support from the teachers, as compared to the non-impaired students, resulting in better academic performance. Help from the schools was also bolstered by the parents, as they belonged to families with a better socio-economic condition. The finding was in contrast to the finding of Loeb and Sarigiani (25), reporting better academic performance by the non-impaired students than the hearing-impaired students which however, could be attributed to the difference in the sample characteristics of these two studies.

Results on correlations revealed that the non-impaired students who were more stressed had low academic performance. This was in line with the drive theory of Spence and Spence (26), and consistent with many research findings (27, 28, 29, 30, 10) which suggested that a higher level of stress affected level of anxiety, problem-solving skills, and thereby affected performance adversely. The relationship was low positive in case of the hearing impaired students, which indicated that the existence of pressure resulted in improved scores for these students. This was also corroborated by Srivastava and Naidu (31) reporting moderate stress to be facilitating and conducive of efficient functioning.

An anticipated finding was that good social-emotional adjustment enhanced academic performance of all students. Similarly, the finding of Rogers, Rogers, and Belanger (32) also substantiated this present finding by reporting that educational outcomes were positively associated with general adjustment to disability in hearing-impaired adolescents.

Among the hearing impaired students the older ones being in higher classes perhaps, were more worried about their future but had lesser academic competence, and hence performed poorly. They realised their inability to meet other's expectations, which affected their academic performance adversely. Another possible explanation is the possibility of some intervening variables, like talk of a sign language teacher or interpreter, to the hearing-impaired students during the final examination. This could have presented a difficulty in comprehending the question-paper and created a wide communication gap between what was asked and what the students answered in the sheets. But in the case of students at a

lower educational level, this problem was not there, as the school authorities conducted an internal evaluation.

Another interesting finding in the case of hearing-impaired students was that those with more siblings had poor academic performance. The development of language competence in hearing-impaired children requires good parent-child interactions, which become less if the number of offspring was more. As the hearing-impaired children mature and face increased linguistic and social demands, they require extra help from their family members, apparently absorbing a great amount of family time, energy, money and emotional resources. The lack of such interactions raises the risk for deaf children not to be able to reach their full potential (33).

Significant positive correlation was found between severity of impairment and academic performance of hearing-impaired adolescents, indicating deaf students to be better performers than the partially hearing-impaired, which was in contrast to the findings of Powers (14), reporting no relationship between degree of hearing loss and examination success. The difference could be attributed to the difference in sample characteristics of age and different degrees of hearing loss.

All socio-economic variables like, parent's education, occupation, and family income had significant positive correlation with academic performance of the hearing-impaired adolescents and was consistent with several studies (34, 35), that showed the role of higher socio-economic background in their psychological well-being and academic performance. For them 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 parents' awareness, insight and updated knowledge and could thus facilitate their academic performance in long run. In case of students without impairments, only father's occupation had significant positive relation with academic performance. As these students belonged to a lower socio-economic background, the father 's occupation played a crucial role in managing the family, in creating educational ambitions among their children and in driving them to achieve better in academics.

## **CONCLUSION**

The implications of these findings for educational programmes and practices indicate that academic competence as well as performance could be protected till hearing impaired students complete the first qualifying examination to enter into the job world. Instead of a fixed curriculum and examination system, the provision of distance/ open examination system having more options in selecting subjects could be more beneficial for them to perform better at least at higher educational levels. Reducing the number of language based subjects and introducing subjects based more on activity and ability, into the existing curriculum could help them not only in securing good marks but also in preparing them for the job world. In developing countries like, India measures should be taken to launch programmes for parents focusing on early identification, preventive measures, pre-schooling, parent-child interaction, and the importance of small family.

Further research is needed on hearing-impaired students from residential and integrated/ fully integrated/partially integrated settings undergoing different systems of examination, and including a control group with equal socio-economic status for better generalisability of the findings of the present study.

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