

# Adaptation Difficulties of Students with Hearing Impairments

Dr. Pavan Kumar Yadavalli

## Abstract

The present study aims at investigating the adaptation difficulties of hearing-impaired students studying in X class in special schools with regard to their gender differences and level of severity of hearing impairment. To identify the gender differences in the adaptation difficulties of hearing-impaired students and to find out the differences in the level of severity of hearing impairment on the adaptation difficulties of hearing-impaired students. 262 boys and 172 girls with hearing impairments were selected, respectively, from different special schools in Andhra Pradesh. 256 students with profound hearing impairments, 137 students with severe hearing impairments, and 41 students with moderate hearing impairments were selected for the present study. Based on the findings, it can be concluded that in general, the 10<sup>th</sup> class students have less adaptation difficulties. Type of defect showed a significant influence on the overall adaptation difficulties and also different areas of adaptation difficulties. Based on the statistical analysis, the type of defect showed a significant influence on the overall adaptation difficulties and also different areas of adjustment challenges.

**Key words:** Adaptation difficulties, Hearing Impairment, Special Schools.

## 1.1 Hearing Impairment

Hearing impairment is the inability of an individual to hear sounds adequately. This may be due to improper development or damage to any part of the hearing mechanism. Hearing is a prerequisite for the development of normal speech and language. A child learns to speak by hearing the speech of others in their family and surroundings. Deafness is an invisible impairment. Keen observation is necessary in order to identify a deaf child or individual. Deafness at birth or in early childhood has disastrous effects on the child's overall development. These effects vary depending on the age of onset, nature, and degree of hearing impairment.

## 2.2 Types of Hearing Impairment

### 2.2.1 Conductive Hearing Loss

Conductive hearing loss results from defects in the outer or middle ear. The sound is not transmitted efficiently to the inner ear. All sounds heard thus become weak or muffled. Usually, such individuals speak softly, irrespective of the surrounding environmental noise.

### 2.2.2. Conditions that cause conductive hearing loss are

- i. Wax in the ear canal.
- ii. Disease of the Outer and middle ear associated with Symptoms like ear ache and ear discharge.
- iii. Congenital defects in the Outer or middle ear – defect and damage to the Outer or middle ear.
- iv. Upper respiratory tract infections.
- v. Neglect of care of ears and oral Cavity (mouth)

### 2.3. Sensorineural Hearing Loss

Sensorineural hearing loss is caused due to damage or disease of the inner ear or auditory nerve. It could also result as an after effect of infections disease like measles, mumps, meningitis and T.B.

---

**Corresponding Author:** Dr. Pavan Kumar Yadavalli

Lecturer in Educational Psychology, KMM College of Education, Tirupati, Chittoor Dist, Andhra Pradesh, India.

Some Conditions that may cause Congenital Sensorineural hearing loss are:

- i. Hereditary Childhood Deafness
- ii. Rh incompatibility.
- iii. Premature birth – birth before due time.
- iv. Birth Asphyxia (lack of Oxygen supply to the new born due to inability to (breathe) normally resulting in blueness of baby due to various reasons).
- v. Viral infections in Pregnancy.
- vi. Exposure to X-rays in the first trimester or Pregnancy-taking X-ray within first three months.
- vii. Harmful drugs of mycin variety e.g. Streptomycin.
- viii. Acoustic neuroma (Tumor of the auditory nerve)

#### 2.4. Mixed Hearing Loss

Mixed hearing loss is the combination of conductive and sensory hearing loss. One of the main causes of this type of loss is the long-standing ear infection known as chronic supportive otitis media (CSOM). In CSOM, ear discharge in the form of pus, blood, or clear water is seen. This starts with conductive loss, which yields sensory impairment if not treated immediately and regularly.

#### 2.5 Central Hearing Loss

Central hearing loss is due to damage, malformation, or infections of the neural pathways and the hearing centers in the brain. The child may hear but has difficulty understanding what he hears. Some of the children classified as learning disabled or slow learners may have this type of hearing loss.

#### 2.6 Functional Hearing Loss

Functional hearing loss is due to some Psychogenic condition or may be due to deliberate exaggeration of hearing thresholds for personal gains.

### 3. Classification of the Hearing Impaired

Any classification is doubtful to cover the multi-dimensional nature of the variable. Some of the important variables are the degree of hearing loss, age of onset and type of hearing loss.

The following is an extract from the ministry of welfare Notification No.4-2/83-HW.III date 6.8.86 regarding classification of hearing loss.

**Table – 1 Classification of hearing loss**

Category	Type of Impairment	dB level (in better ear)	Speech discrimination (in better ear)	Percentage of impairment
1.	Mild	26-40 dB	30-100%	<40%
2.	Moderate	41-55 dB	50-80%	40-50%
3.	Severe	56-70 dB	40-50%	50-75%
4. a)	Profound	71-90 dB	<40%	75-100%
b)	Near total deafness	91dB & above	No Discrimination	100%
c)	Total deafness	N0 hearing	No Discrimination	100%

Basing on the variable, age of onset, the hearing impaired is classified as follows:

### **3.1. Pre-lingual Deaf**

A 'Pre-lingual Deaf' child is one who is born with little or no hearing. His hearing is marked before speech and language patterns are acquired.

### **3.2. Post-lingual Deaf**

'Post-lingual Deaf' child is one who becomes deaf due to environmental forces. His hearing is marked before speech and language patterns are acquired.

Basing on the variable, the type of hearing loss, the hearing impaired is classified in the following way:

- ✓ Conductive hearing loss is due to defect in the middle or outer ear.
- ✓ Sensory neural hearing loss is due to defect in the inner ear or the auditory nerve.
- ✓ Central deafness is due to defect in the central nervous system.
- ✓ Psychogenic deafness is due to psychological reasons. The Conference of Executives of American Schools (Kirk, 1970) has made the following classification to avoid confusion in terminology.

### **4.1 The Deaf**

Those in whom the sense of hearing is non-functional for the ordinary purposes of life. This general group is made up of two distinct classes.

- (a) Congenitally Deaf: Those who were born deaf.
- (b) An Adventitiously Deaf: Those who were born with normal hearing but in whom the sense of hearing become non-functional later through illness or accident.

### **The Hard of Hearing**

Those in whom the sense of hearing although defective is functional with or without a hearing aid.

## **5. Adaptation difficulties of Students with Hearing Impairment**

Adjustment is a continuous process by which an individual varies his behavior to produce a more harmonious relationship between himself and his environment. It is a condition in which the behavior of an individual conforms to the needs of the individual and the demands of the environment. In adjustment, both personal and environmental factors work side by side. An individual is adjusted if he is adjusted to himself and to his environment.

Hearing impairment is one of the many physical handicaps of several individuals. It adversely affects impaired children's performance in learning as it reduces their knowledge of the surrounding environment and the whole world. It develops language inefficiency and reduces communication ability.

It may also become a source of certain adaptation difficulties as individuals fail to interact effectively with people and the environment. The hearing-impaired children do not have many adaptation difficulties at home but have communication and emotional problems in school. The gender and type of impairment have no effect on adjustment. The children studying in special schools have more adaptation difficulties than the children studying in integrated schools. All in all, the hearing-impaired children are enjoying a supportive life at home and school, though there are a few adaptation difficulties.

Social skills are a necessary component of everyday life, yet when hearing impaired children are mainstreamed, this is one thing they cannot be directly taught. The communication barrier between hearing impaired and their hearing peers can cause hearing impaired children to develop anxiety or low self-esteem. Teachers and parents can also have a huge impact if they have distorted perceptions of deafness. The evidence suggests that decreased social interaction reduced what hearing impaired child can achieve in life.

Hearing impaired children are not well adjusted in the society. They find it very difficult to adjust with the environment. They develop certain personality disorders and slow temperaments, withdrawal or submissiveness etc, communication difficulties are rampant with them. They, very often, fail to understand what other people say. Hearing loss affects many aspects of life, with many psychological ramifications and various effects on how well a person with such a loss functions in society or the world at large.

A major portrayal of how hearing impaired people interact among hearing people can be found in the mainstreamed educational settings, in which, the majority of hearing impaired people participate. It is generally common knowledge

that deaf children face much more adversity than their hearing peers in terms of their educational and social development. As a result of this, their psychopathologies are impacted, sometimes in negative ways. A Critical part of the development of hearing impaired children is their education, and through, that, their social foundations are also built. During the primary-school development period, friendships are formed through common interests, school activities and sports. For these friendships to form, an obvious requirement is communication. For hearing impaired children unable to utilize effective communication methods with the people around them, the difficulty in acquiring new friendships typically leads to a decrease in self-esteem.

Many children, in general, usually lacked the social skills necessary for peer interaction. One major factor that has been identified in hearing impaired children's social interactions is a repeated misunderstanding of how hearing impaired children need to communicate with the people around them. Frequently hearing children mistake a request for information to be repeated as ineptitude or lack of interest as to what they were saying. The frequent need for physical contact as a way to attract attention, or facing the hearing peer when speaking can also go against social boundaries that hearing children have learned, which increases the chance of peer dismissal.

The problems regarding personal and social development are very much pertinent for hearing impaired children. Language becomes a barrier for them for communicating with other children. This affects the socialization process and plays a vital role in the personal and social development of children. The most significant aspect of these children is their increased dependence on others which leads to a sense of inferiority.

## 6. Objectives

1. To find out the gender differences in the adaptation difficulties of the hearing impaired students.
2. To find out the difference in the level of severity of hearing impairment on the adaptation difficulties of the hearing impaired students.

## 7. Hypotheses

1. There would be no significant differences between boys and girls of hearing impaired students on their adaptation difficulties.
2. There would be no significant difference in the level of severity of hearing impairment on adaptation difficulties of hearing impaired students.

## 8. Description of distribution of overall adaptation difficulties

The dependent variable in the present study is adaptation difficulties of hearing impaired students studying 10<sup>th</sup> class. The adaptation difficulties inventory comprises four areas. First area is home adaptation difficulties which consist 20 items in the form of statements, second area is social adaptation difficulties with 15 items, third area is academic adaptation difficulties with 20 items and the fourth area is emotional adaptation difficulties which consist 20 items in the form of statements. Total 75 statements are there in adaptation difficulties Inventory. This is a three point scale ranging from many times, some times and never carries the score of 3, 2 and 1 for positive statements and 1, 2 and 3 for negative statements and therefore in total score for adaptation difficulties Inventory ranges between 75 to 225. The marks secured by all the 434 hearing impaired students in special schools are recorded.

### Frequency distribution of adaptation difficulties inventory scores

#### for the total sample of hearing impaired students

Class Interval	Frequency	Cumulative Frequency	Mid Value
111-120	3	3	144.50
121-130	78	81	124.50
131-140	122	203	134.50
141-150	151	354	144.50
151-160	75	429	154.50
161-170	5	434	164.50

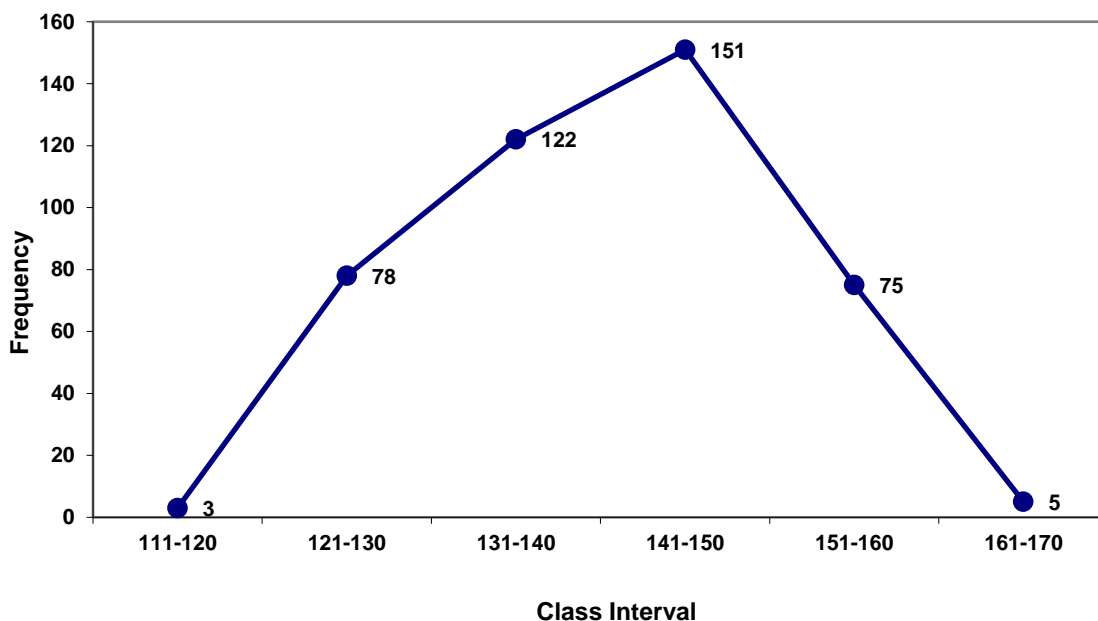
Mean	= 142.50	Q.D	=	8.50
Median	= 148.00	S.D	=	10.94
Mode	= 153.00	Sk	=	- 0.30
Range	= 43.00	Ku	=	- 1.07

The composite index of adjustment problem scores spread from 119 to 162. The range is 43.00. The mean adaptation difficulties score, 142.50, indicates that the majority of the hearing impaired students were being stood below the mid-point 150.00. The median and mode values are 148.00 and 153.00 respectively. As the measures of the central tendency values are in ascending order, it can be said that the distribution of scores has slight negative skewness. The calculated value of skewness, - 0.30, also confirms that the distribution is negatively skewed to the little extent.

The measures of dispersion, both Q.D and S.D values are 8.50 and 10.94 respectively. The empirical relationship between these two measures in the case of normal distribution is  $\frac{2}{3}$  S.D = Q.D or Probable Error. This type of relationship between the two measures of distribution in hand ( $\frac{2}{3}$  S.D = 7.29) again reveals that the distribution is slightly deviation from normality.

The measures of kurtosis, - 1.07, indicates that the distribution is Platy Kurtic. The frequency polygon shown in the figure -1, discloses that the scores of adaptation difficulties inventory are following normality with little divergences. Hence, it may be concluded that all parametric statistical tests can be employed to analyze the data on the

**Fig:1:**  
**Frequency Polygon for the Adjustment Problem Scores of**  
**Hearing Impaired Students**



scores of adaptation difficulties.

Therefore, the level of adaptation difficulties of hearing impaired students is less than the mid-point on the rating scale and hence, it can be concluded that the existing level of adaptation difficulties of hearing impaired students is “below” average. An observation into the frequency distribution reveals that as many as 354 students fall in the lower-class intervals than the middle, where as only 80 students fall in the higher-class intervals than the middle. In other words, there is more concentration of hearing impaired students in the lower half of the distribution than in the higher half.

### 9. Adaptation difficulties of hearing impaired students

The adaptation difficulties inventory was developed to measure the level of adaptation difficulties of hearing impaired students, as a whole. Since the study aims at measuring the level of adaptation difficulties of the hearing impaired students, the mean overall adaptation difficulties scores of the sample of students was computed. The mean overall

adaptation difficulties scores of the hearing impaired students and the mean scores obtained on different areas of adaptation difficulties are shown in table - 3

**Table-3**

**Mean scores and SDs of the whole group of hearing impaired students on different areas of adaptation difficulties and on overall adaptation difficulties and the results of ‘t’ test.**

Category of adjustment	Neutral Point	Mean	SD	‘t’ value (df=432)
Home Adjustment	40	42.33	1.84	26.477***
Social Adjustment	30	29.62	3.81	2.076*
Academic Adjustment	40	37.51	3.61	14.393***
Emotional Adjustment	40	36.39	3.38	22.284***
Overall Adjustment	150	141.85	9.92	17.123***

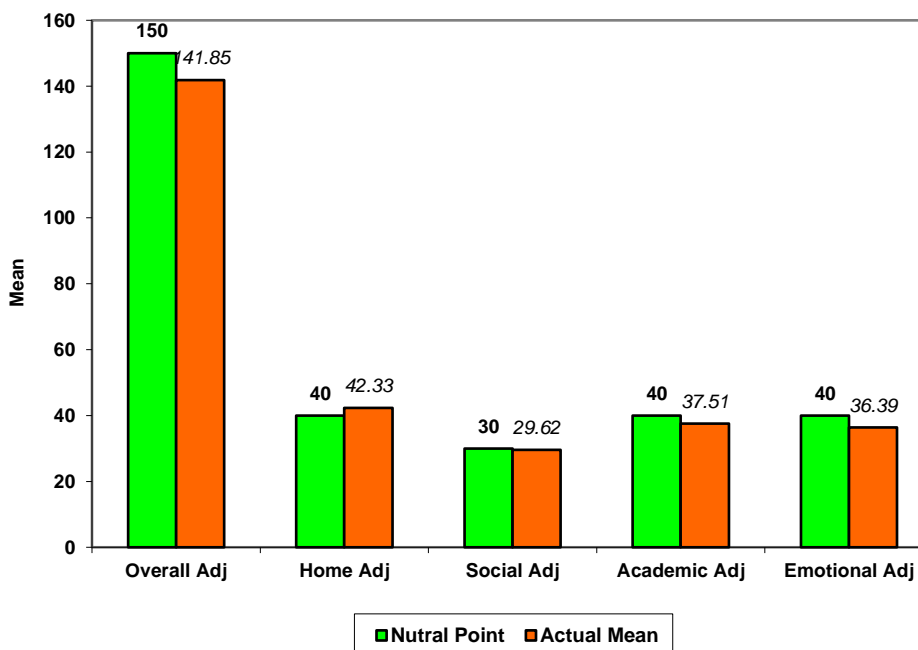
\*\*\* ‘t’ values significant at 0.001 level

\*\* ‘t’ values significant at 0.01 level

\* ‘t’ values significant at 0.05 level

It could be seen from Table-3, that the mean overall adaptation difficulties scores of the students was 141.85. Since the adaptation difficulties inventory contains 75 items with the score of any item ranging between 75 to 225 with a neutral point of 150.( Figure-2)

**Fig:2:**  
**Mean Adjustment Problem Scores of the Hearing Impaired Students compared with the respective neutral points**



A means score above the neutral point indicates less adaptation difficulties, while a mean score below the neutral point shows more adjustment problems.

Considering the different areas of adaptation difficulties, it may be seen that for all the areas i.e. home, social, academic and emotional adaptation difficulties, the mean scores were below the neutral point. The 't' values were presented in the last column of Table-5, shows that all the 't' values were significant at or above 0.05 level. Hence, it may be concluded that the students have more adaptation difficulties in home, social, academic and emotional areas of adaptation difficulties.

Therefore, the hypothesis that in general, the hearing impaired students of class X have less adaptation difficulties.

### 10. Gender vs adaptation difficulties

Does the gender of the hearing impaired students make any difference in the level of adaptation difficulties? It is expected that the girl students has much level of adaptation difficulties as compared to the boys, because they have to face much problems not only in home but in society also. The future life of girls may disturb because of this impairment. Therefore the sample of students was classified into two groups based on gender on viz. boys and girls.

The influence of the gender on the adaptation difficulties of the hearing impaired students is studied on different areas of adaptation difficulties and also the overall adaptation difficulties. 't'-test was employed to find the significant influence of different adaptation difficulties between boys and girls. Mean, SDs and 't' values are presented in the following tables.

**Table-4**

**Mean, SD and 't' values of boys and girls on different areas of adaptation difficulties and results of 't' test**

Adjustment Problems	BOYS (N=262)		GIRLS (N=172)		't' Value (df=432)
	Mean	SD	Mean	SD	
Home adjustment	41.79	1.74	41.52	1.71	1.610@
Social adjustment	27.68	3.96	27.98	4.00	0.762@
Academic adjustment	35.73	3.01	35.47	3.11	0.896@
Emotional adjustment	37.37	3.71	37.41	4.00	0.103@
Overall adjustment	142.58	10.84	142.37	11.13	0.190@

It is clear from the table-4, that gender has no significant influence any of the areas of the adaptation difficulties and also the total adaptation difficulties. Hence, it is concluded that boys and girls do not differ in any of the area on the adaptation difficulties.

Therefore, the hypothesis –“*there would be no significant difference between boys and girls of hearing impaired students on their adaptation difficulties*” is accepted.

### 11. Type of defect vs adaptation difficulties

Hearing loss may not necessarily be due to organic facts but to psychological and psychiatric reasons. Hearing impaired are those in whom the sense of hearing is not functional for ordinary purpose of life, with or without the use of hearing aids. Basing on this audibility of the student may be measured in dB which gives this categorization into three types of defects.

They are:

- i. Profound
- ii. Severe
- iii. Moderate

The influence of type of defect on the adaptation difficulties of the hearing impaired students studying class X in special schools are studied on different areas of adaptation difficulties and also overall adaptation difficulties. The means and SDs of the adaptation difficulties scores of different types of hearing impaired students are presented in the following table.

**Table-5**

Means and SDs of the adaptation difficulties of problems of different types of hearing impaired students.

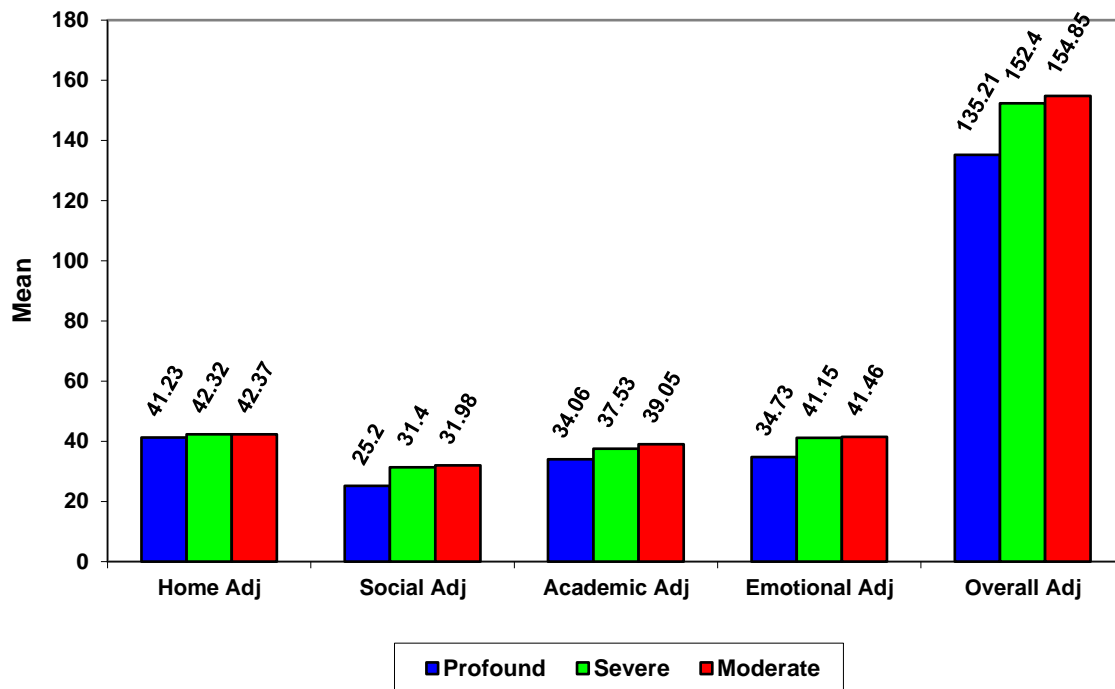
It	Adjustment Problems	Profound N=(256)		Severe N=(137)		Moderate N=(41)	
		Mean	SD	Mean	SD	Mean	SD
	Home Adjustment	41.23	1.61	42.32	1.77	42.37	1.41
	Social Adjustment	25.20	2.99	31.40	1.39	31.98	1.37
	Academic adjustment	34.06	2.66	37.53	1.82	39.05	1.90
	Emotional adjustment	34.73	2.50	41.15	1.29	41.46	1.42
	Overall adjustment	135.21	8.11	152.40	3.38	154.85	2.51

could be seen from the table-5 that the overall mean adaptation difficulties scores of the students with different types of defects are above the neutral point (150) in the case of severe and moderate and below neutral point in the case of profound type of students. It depicts that the severe and moderate hearing impaired students have less adaptation difficulties compared to the profound hearing impaired students.

To test the significant difference between the mean scores of the three groups of students, one – way ANOVA was applied. The result of ANOVA was given in table-6. (Figure-3)



**Fig:3:**  
**Mean Adjustment Problem Scores of Hearing Impaired Students with various degrees of hearing loss**



**Table-6**

Results of ANOVA of adaptation difficulties scores of the different type of hearing impaired students.

Adjustment problems	Sum of Squares		Mean Squares		'F'Value
	Between	Within	Between	Within	
Home adjustment	127.33	1166.78	63.66	2.7	23.51***
Social adjustment	4223.42	2618.73	2111.71	6.07	347.55***
Academic adjustment	1607.40	2406.12	803.70	5.58	143.96***
Emotional adjustment	4429.05	1898.13	2214.52	4.40	502.84***
overall adjustment	33275.26	18573.22	16637.63	43.09	386.08***

Note: 1:  
 \*\*\* Significant at 0.001 level  
 \*\* Significant at 0.01 level

\* Significant at 0.05 level  
 @ Not significant

Note: 2: The same notation is used in all the tables that follow for indicating the level of significance of 't' or 'F' values.

The obtained F ratios for overall adaptation difficulties and different areas of adaptation difficulties of the three groups of hearing-impaired students was significant at 0.05 level for 2 and 432 degrees of freedom. This shows that the difference among the three types of students had a significant effect on their adaptation difficulties.

To find out which of the three categories of the students differed significantly from the other categories of students in their adaptation difficulties, the mean scores of the three categories of students were further analyzed by employing 't' test.

**Table-7**

Mean adaptation difficulties scores of different categories of students

Classified according to their type of defect and the result of 't' test.

Source	profound	severe	moderate	
Home Adj Problems	41.23	42.32	42.37	
Social Adj Problems	25.20	31.40	31.98	
Academic Adj Problems	34.06	37.53	39.05	
Emotional Adj Problems	34.73	41.15	41.46	
Overall Adj Problems	135.21	152.40	154.85	

Note: 1. The means are arranged in ascending order from left to right.

2. Any two means not underscored by the same line are significantly different at or above 0.05 level.

3. Any two means underscored by the same line are not significantly different at or above 0.05 level.

It is evident from table-7, that the type of hearing loss has significant influence at 0.05 level on the adaptation difficulties of the hearing impaired students. It is observed from statistical results that the students with severe, moderate hearing loss performed better than the students with profound hearing loss. In case of home and academic adaptation difficulties there is no significant difference between severe and moderate students.

Therefore, the hypothesis –“*there would be no significant difference in the level of severity of hearing impairment on adaptation difficulties of hearing impaired students*” is rejected in overall and also all the different areas of adaptation difficulties.

## Conclusion

1. Based on the findings, it can be concluded that in general, the 10<sup>th</sup> class students have less adaptation difficulties.
2. Type of defect showed a significant influence on the overall adaptation difficulties and also different areas of adaptation difficulties

It is observed from the result that students with severe, moderate hearing loss performed better than the profound hearing loss in the case of home and academic adaptation difficulties. The similar trend appeared among the three types of hearing impaired students with regard to different areas as well as overall adaptation difficulties.

## References

1. Abiola Ademokoya and Shittu. 2006. The prediction of academic achievement of deaf adolescents from self-concept. *American Annals of the Deaf*, 127, 769 - 779.
2. Anupama, 2003. "A Study on Scholastic achievement of V class Hearing Impaired students in relation to certain personal factors". In M.Sp.Ed.,(H.I) dissertation "A Study of the academic performance of 7<sup>th</sup> class hearing impaired students of Telangana Region in relation to their certain personal factors," by Sreedevi . K 2004. Department of Education, S.P. Mahila University,Tirupati. 38.
3. Achenbach, T.M. and Edelbrock, C.S. 1981. Behavioral problems and competencies reported by parents of normal and disturbed children aged four through sixteen. *Monograph of the society for research in child development*, 46.
4. Agarwal, K.L. 1999. A study of intelligence, family relation, socioeconomic status and adjustment of failed students. *Experiments in education*, 27 (6), 106 - 108.
5. Madhu Bala, J. 2004. adaptation difficulties of Hearing Impaired. 1 – 13.
6. Pathak, B.K. and Malhotra, S.P. 1975. Sex differences among school children in the area of adjustment. *Psychological studies*, 15,120-122.