Ravens Colored Progrssive Matrices- An Initial Try Out for the Development of Norms for the Hearing-Impaired.

Vidyasagar. p
Lecturer in Cli. psy., A.I.I.S.H. Mysore
Jayanthi Ray
Student, A.I.I.S.H, Mysore.

Abstract

The Raven's coloured progressive matrices was administered to a group of 60 normal and 60 hearing impaired children within the age range of 5-11 years as an initial try out for the development of norms for the hearing impaired. A comparison of the performance of the two groups did not yield significant differences.

Introduction

Intellectual functioning of deaf children has received considerable attention from several researchers. Non verbal performance intelligence measures are appropriate for the evaluation of deaf individuals, because of the reduced language functioning, found in this population (Pinter, 1929).

Many researchers opine that deafness imposes no intellectual deficits. Rosenstein (1960) suggested that children were capable of behaviors because there were no linguistic demands. Furth (1964), concludes that there were no important differences between congnitive achievements of hearing and hearing impaired children. However, small differences in favour of the hearing children were found which the author attributes to the difficulties with the verbal aspects of the task and not, fundamental differences in cognitive skills.

Assessment of the cognitive skills of the hearing impaired is gaining momentum. Researchers resort to performance tests to test them due to their language deficits. However, Markshcark &West, (1985) comment that the deaf children were far more creative in language than generally assumed. WISC is the most commonly used performance test to study the intelligence of the hearing handicapped. (Hirshoren 1979; Hirshoren, Hurley &Kavale, 1979; Levine 1974; Sisco SAnderson 1978 ; Vernon &Brown 1964).

The Raven's coloured progressive matrices being a performance test is not so commonly used as the WISC. It would prove fruitful to study the utility of this test on the hearing impaired population in the Indian set up. One of the most pressing drawback faced by the researchers in this area is the lack of adequate norms for the hearing impaired population.

METHODOLOGY

Sample:

The sample comprised of 60 normal hearing children and sixty hearing impaired (severe to profound sensori neural hearing loss), in the age range of 5 to 11 years. The children in both the groups were considered in three age groups namely, 5-7 years, 7-9 years and 9-11 years with 20 children in each age group. Both the groups (hearing impaired and normal children) were matched for age and sex. Care was taken to see that the children did not have any associated handicaps such as cerebral palsy, cleft palate, etc.

Materials:

Raven's Coloured Progressive Matrices (Raven, 1956) was chosen as an intelligence test to tap the intellectual functioning of children. The scale as a

whole can be described as "Test of observation and clear thinking". These matrices make it possible to explore the psychological significance of observed discrepancies between a person's present capacity for productive thinking and his recall of information.

The hearing impaired children were given pantomime instructions. A separate set of 5 cards were used to explain the concept of 'gestalt'. The sets were presented to the children and their responses were recorded.

The answer sheets were scored and subjected to statistical analysis. The mean and standard deviation of responses for each age group was arrived at. The cumulative percentage frequencies were calculated and ogives were drawn for each age group in both the hearing impaired and normal population. From the ogives, percentile points were calculated for P 95, P 90, P 75, P 50 & P 25.

Results & Discussion:

The results indicate that normal hearing children show a developmental increase in RCPM scores across ages. A similar pattern is noticed in the hearing impaired group too. Table 1 gives the mean performance scores and standard deviation for the normal and hearing impaired groups.

Table 1

Mean performance scores and standard deviations of normal & hearing impaired groups.

AGES	NORMAL GROUP		HEARING IMPAIRED GROUP	
	MEAN	SD	MEAN	SD
5-7	23	6.9	21	5.2
7-9	28	3.9	24	6.3
9-11	31	3.3	30	4.1

From the above table it is clear that the performance score of group 9-11 yrs is the highest in both the groups revealing similar trends, in the normal group. The group within the age range of 5-7 yrs shows the greatest variability in the hearing impaired groups. One probable reason for such an outcome of the results is the size of the sample.

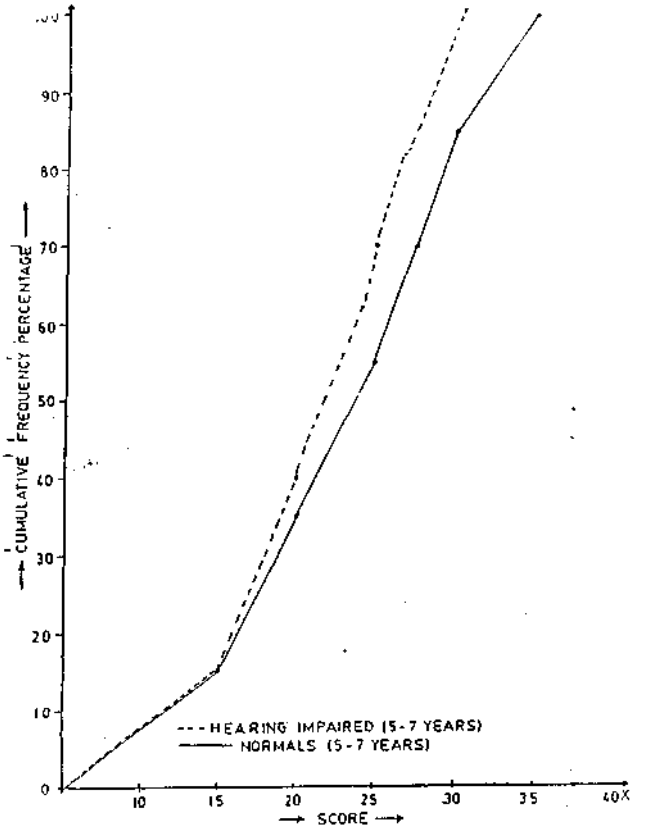
Table 2 shows the significance of difference between the mean performance score obtained by normal hearing and hearing impaired children.

Table 2.

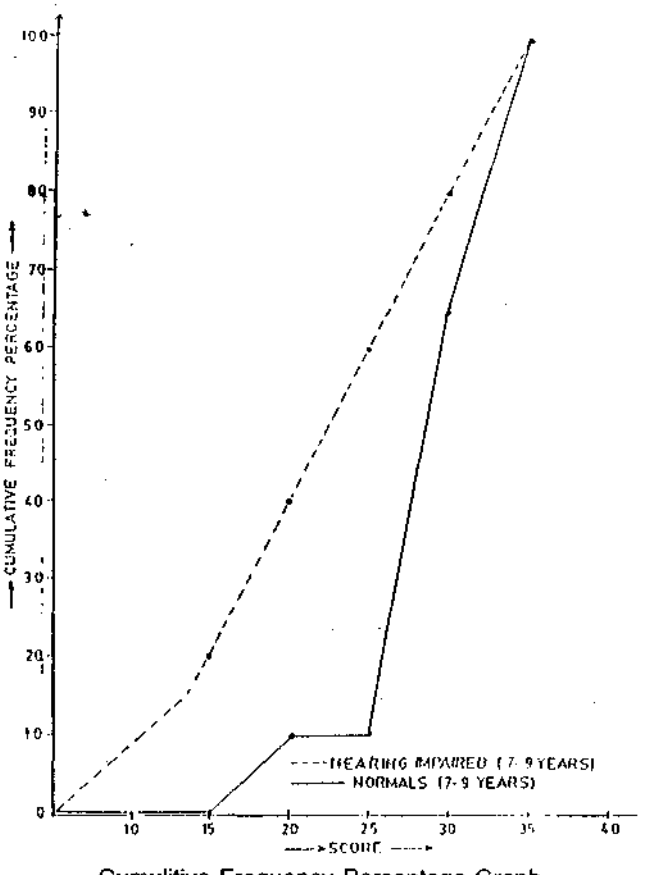
Significance of difference between the mean performance scores of the normal and hearing impaired children.

Groups	Age	t scores	Significance
Normal vs Hearing impaired	5-7 yrs	**0.99**	Not significant
Normal vs Hearing impaired	7-9 yrs	**2.31**	Not significant
Normal vs Hearing impaired	9-11 yrs	**0.82**	Notsignifican

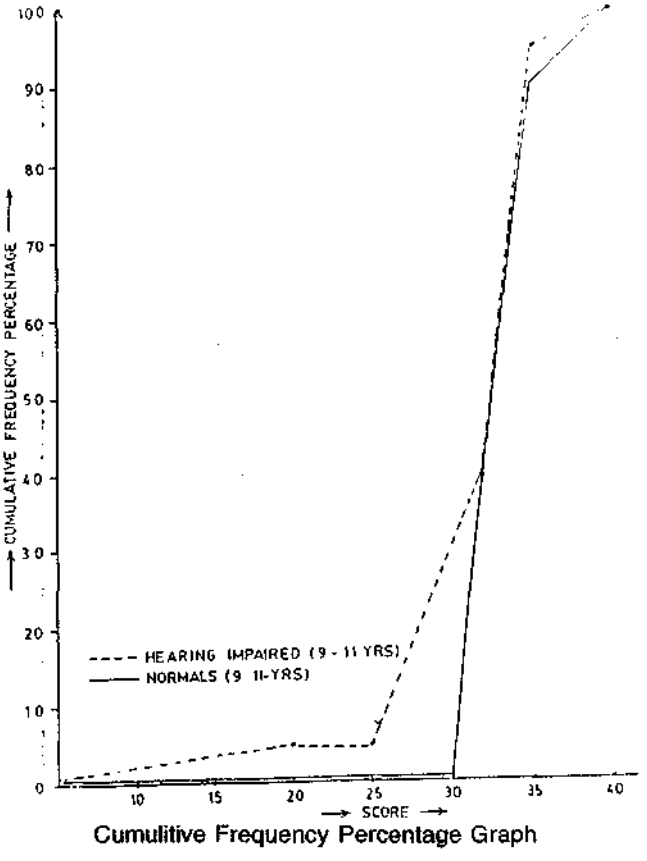
The above table indicates that, the hearing impaired children do not differ significantly from the normal hearing children in their performance on the RCPM. Thus the cognitive skills of the hearing impaired are on par with thier normal counterparts. The results of the present study are in keeping with the findings of various studies wherein no significant difference was found in the cognitive functioning of the hearing impaired and normal children. (Amin, 1946; Bolton, 1976; Burchard and Mylkebust, 1942; Drever and Collins, 1936; Graham and Shapiro, 1953; Karten, 1976; Lane and Schneider, 1941; MacPherson and Lane, 1948; Smith, 1952; Stunkel, 1957; Vidyasagar.P, 1990)



Cumulitive Frequency Percentage Graph



Cumulative Frequency Percentage Graph



Cumulitive Frequency Percentage Graph

The figures 1,2, & 3 depict the cumulative percentage curves for the hearing impaired and normal hearing children. The cumulative frequency curve of the normal and hard of hearing children within the age ranges of 7-9 yrs (fig 2) are placed apart, where as there is some amount of overlapping in the curves obtained in the groups within the age range of 5-7 yrs and 9-11 yrs. (fig. 1 &3)

In conclusion this initial try out proved to be fruitful in paving the way studying a much larger sample, using this tool for the development of norms for the hearing impaired.

References

Amin, D.L. (1946) Differences among the deaf and hearing children. *Indian journal of Psychology.* 2. 91-92.

Bolton, B. (1976). *Psychology of deafness for rehabilitation counselors Baltimore:* University Park Press.

Burchard, E.M., & Mykebust, H.R. (1942). a comparison of cogenital and adventitious deafness with respect to its effects on intelligence, personality and social maturity (Part 1). *American Annals of the Deaf.* 87 140-152.

Drever, J., & Collins, M. (1936). *Performance test of intelligence.* London: Oliver and Boyd.

Furth, H.G. (1964). *Thinking without languages.* New York: Free Press.

Graham, E.E., & Shapiro, E. (1953). Use of the performance scale of the WISC with the deaf child. *Journal of consulting Psychology.* 17, 396-398.

Hirshoren, A., Hurley, O.L., & Kavale, K. (1979). Psychometric characteristics of the WISC-R performance scale with deaf children. *Journal of Speech Hearing Disorders,* 44.

Hirshorn,A., &Schnittjer, C.J. (1979). Dimension of the problem behaviour in deaf children. *Journal of Abnormal Child Psychology.* 7, 221-228.

Karten, S., (1976) An explanatory study of some cognitives behaviours of hearing and deaf children. *Dissertation Abstracts International.* 37, (1-A). 195.

Lane, H.S., Schneider, J. (1941). A performance test for school age deaf children. *American Annals of the Deaf.* 86. 441 -447.

Levine, E.S. (1974). Psychological tests and practices with the deaf; a survey of the state of the art. *The Volta review.* 76, 298-319.

Macpherson, J., and Lane, H.H. (194&). A comparison of deaf and hearing on the Hiskey test and on performance scales. *American Annals of the Deaf.* 93, 178-184.

Marschark, M. and West, S.A. (1985). Creative language abilities of deaf children. *Journal of speech and Hearing Research*. Vol. 28, 73-78.

Pinter, R. (1929) *The Pinter Non language mental Test*. New York; University Bureau of Publications.

Raven, J.C (1956) *Guide to using the coloured Progressive Matrices*. The Crichton Royal Dumfries.

Rosenstein, J. (1960) Cognitive abilities in deaf children. *Journal of Speech and Hearing Research*. 4,108-119.

Sisco, F.H.Anderson, R.J. (178). Current findings regarding the performance of deaf children on the WISC-R. *American Annals of the deaf*. 123,115-121.

Smith, D.I. (1952). A survey of the intelligence and attainments of a group of deaf children. *British Journal of Educational Psychology*. 22, 71-72.

Stunkel, E.R. (1957). The performances of deaf and hearing college students on verbal and non-verbal intelligences tests. *American Annals of deaf*. 102,342-355.

Vernon, M., and Brown, jD. (1964) A guide to psychological tests and testing procedures in the evaluation of deaf and hard-of-hearing children. *Journal of speech and Hearing Disorders*. 29, 414-423.

Vidyasagar. P. (1990) *Cognitive, temperamental and social aspects among sensory neural hearing impaired children*. Unpublished doctoral dissertation. Mysore University, Mysore.