

Incidence of Vision, Hearing and Low Intellectual Abilities among Academically Poor Rural School Children

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ABSTRACT The present study was undertaken to assess the incidence of vision, hearing problems and low intellectual abilities among academically poor rural school children in Ludhiana district. The study was based upon the sample of 100 children. The subjects for the sample were drawn randomly from four rural government schools located on Block I of Ludhiana district. Data were collected through interview schedule. Results indicate that 41 percent of the academically poor children were having weak vision. The number of children with poor or weak vision were found significantly ($p \leq 0.05$) higher than the number of children with normal vision. 80 per cent of the academically poor students were having normal hearing abilities. The number of children with normal hearing was significantly ($p \leq 0.05$) higher than the number of children with mild or moderate hearing problems. Majority of the academically poor children were found to have below average intellectual abilities. Significant ($p \leq 0.05$) difference was found between number of children with average and below average intellectual abilities indicating majority as intellectually below average.

INTRODUCTION

Success is no guarantee and even the best can fail. It is generally noticed that at least 20 per cent of the children in a classroom get poor marks - they are scholastically backward. There could be number of reasons for children to underperform at school. The factors like poor vision, hearing problem, low intellectual ability, etc. play an important role in determining success or failure of a child in school. Poor school performance should be seen as a symptom reflecting a large underlying problem in children. This symptom not only results in the child having a low self-esteem, but also can cause significant stress to the parents. It is essential that this symptom be scientifically analyzed to discover its underlying cause (s) and find a remedy. Vision is the most important distance sense. Experts claim that about 80 per cent of the information about the environment around is received through vision. Vision is directly linked with academic performance as vision deficiencies can impact eye health and a child's performance in the classroom. Reduced vision because of uncorrected refractive error is a major public health problem in children in India

as viewed by Dandona et al. (2002). Hearing problem is another reason for poor academic performance and childhood hearing loss is a very common problem within the schools. Mild sensorineural hearing loss affects about 5 per cent of the school age children. These children experience difficulty in series of educational and functional test measures (Bess et al. 1998). Even a very mild loss can affect child's learning. According to Chadha (2005), a child with hearing loss may show poor academic performance not because he/she does not have a potential to learn but because of hearing problems the child might not be able to concentrate. In simple terms, hearing impairment means the child may have problem in hearing. It also has a negative impact on verbal language, reading, writing and academic performance.

Intelligence is well known important prognostic variable in the academic outcome of children. Intelligence has been defined in many ways. As early as 1905 Binet defined intelligence as "Goal directed behaviour". According to Piaget (1958), "Intelligence is an extension of biological adaptation consisting of process of assimilation and accommodation". Intelligence is an umbrella term that describes the property of the mind's comprehending related abilities, such as the capacities for abstract thought, reasoning, planning and problem solving, the use of language and to learn.

As school success has always been an important factor in the life of an individual, it di-

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rectly determines possibilities in the choice of profession, which in the end strongly influences an individual's life. A very clear relationship between intelligence and the completed degree of education has been established. Fernandes et al. (2007) found a strong and positive relationship between intelligence and academic achievement. Karande and Kulkarni (2005) also were of the opinion that children with borderline intelligence or mental retardation, irrespective of the etiology, experience school failure or poor academic performance. So, there is need to know the incidences of vision, hearing problems and low intellectual abilities of the children so that early interventions can be done accordingly and this can help children to improve their performance in their academics. Therefore, keeping these factors in view the present study was planned with the following objectives:

- (i) To identify the academically poor children.
- (ii) To assess the incidence of vision and hearing problems among academically poor rural school children.
- (iii) To assess the incidence of low intellectual ability among academically poor rural school children.

MATERIAL AND METHODS

The study was conducted in rural areas of Ludhiana District. Random sampling technique was followed. Out of the 11 blocks, block 1 was randomly selected. From this block only those villages were enlisted where Government High/Senior Secondary Schools were available. From these purposively selected villages, the following four Government High/Senior Secondary Schools were randomly selected:

- Government High School, Daad,
- Government Senior Secondary School, Dhandra,
- Government Senior Secondary School, Lalton kalan and
- Government Senior Secondary School, Threke.

The sample size consisted of 100 children. Vision of selected academically poor children was tested by using Snellen's eye chart to assess the incidence of poor vision among children that could have led to poor performance in the achievement tests administered by the researcher. The visual acuity of each student was placed in the category of normal, weak or poor

on the basis of his/ her ability to accurately identify the smallest row of figures in the chart. To rule out any possibility of hearing problem in the selected students, a self-structured checklist was prepared in Punjabi. An ENT specialist was consulted for preparing the checklist that was based on behavioural signs that are generally shown by children with hearing problems. The checklist consisted of a total of ten items. All the items were negatively stated. Every positive response was scored as one whereas, for every negative response a score of zero was given. The total score ranged from 0-10. Higher the total scores, more the hearing problems in the child and vice-versa. Total scores obtained were divided into the following categories by using Mean + $\frac{1}{2}$ SD formula.

S. No.	Range of score	Category
1.	More than 7	Moderate hearing abilities
2.	4-6	Mild hearing abilities
3.	Less than 3	Normal hearing abilities

The Standard Progressive Matrices (Raven 1969) was used to screen children with poor intellectual abilities.

RESULTS AND DISCUSSION

Table 1 depicts the per cent distribution of academically poor children across various degrees of visual acuity. The results revealed that 41 per cent of the academically poor children were having weak vision. These children were not able to identify the figures from last two line of the Snellen chart. Almost similar percentage of children (40%) was found to have poor visual acuity. These children were not able to identify last four or more than four lines of the Snellen chart. Only 19 per cent were having normal vision. Therefore, it could be reported that majority of the academically poor children either had weak or poor vision. Table 1 further depicts that the number of children with poor or weak vision was found significantly ($p \leq 0.05$) higher than the number of children with normal vision. The reason for this could be that majority of children in present study belonged to low socio-economic strata and it has been observed that low socio-economic status is linked with poor health conditions, lack of health-care consultation, missing of meals and low parental education. Due to lack of aware-

ness mild eye problems are usually overlooked in these families. Even excessive television watching could also be considered as an important contributing factor for poor visual acuity among the rural children as now a day even rural children rarely indulge in outdoor play activities and spend lot of time in watching television.

Table 1: Per cent distribution of academically poor children across various degrees of visual acuity (n=100)

S. No.	Degree of visual acuity	Frequency	Percentage
1.	Poor	40	40.00
2.	Weak	41	41.00
3.	Normal	19	19.00

$$Z_{1\text{and}2} = 0.144 \quad Z_{1\text{and}3} = 3.256^* \quad Z_{2\text{and}3} = 3.395^*$$

*Significant ($p \leq 0.05$) * Z_1 : Total frequency of **poor** visual acuity Z_2 : Total frequency of **weak** visual acuity Z_3 : Total frequency of **normal** visual acuity

Table 2 shows the per cent distribution of academically poor children across various degrees of hearing. The Table further depicts that majority (80%) of the academically poor students were having normal hearing abilities and 19 per cent of the children reported mild problem in hearing. Only 1 child was identified with moderate hearing ability. The results of the Table exhibited that number of children with normal hearing was significantly ($p \leq 0.05$) higher than the number of children with mild or moderate hearing problems. Therefore, the overall picture of Table depicted that children were not having any major problem relating to hearing. The results are in contrast to the results of Bess et al. (1998) who reported that, children who suffer from mild sensorineural hearing loss affect about 5 per cent of the school-aged population and these children experience difficulty on a series of educational and functional test measures.

Table 2: Per cent distribution of academically poor children across various degrees of hearing (n=100)

S. No.	Degree of Hearing	Frequency	Percentage
1.	Normal	80	80.00
2.	Mild	19	19.00
3.	Moderate	1	1.00

$$Z_{1\text{and}2} = 0.4243^* \quad Z_{1\text{and}3} = 11.380^* \quad Z_{2\text{and}3} = 8.627^*$$

*Significant ($p \leq 0.05$) * Z_1 : Total frequency of **normal** hearing Z_2 : Total frequency of **mild** hearing Z_3 : Total frequency of **moderate** hearing

Table 3 describes the per cent distribution of academically poor children across various levels of intellectual ability. The results of the Table revealed that 58 per cent of the academically poor children were found to have below average intellectual abilities whereas 42 per cent of the children had average intellectual abilities. None of the child was found to be above average in intelligence. Significant ($p \leq 0.05$) difference was found between the numbers of children with average and below average intellectual abilities indicating majority as intellectually below average. The reason for poor intellectual abilities could be that majority of the students selected as the sample for the present study belonged to low socio-economic status and Eamon (2005) also reported that students who have low socio-economic status earn lower test scores and are more likely to drop out. Similarly Fanai et al. (1996) while investigating the effect of social disadvantage due to social status and poor quality of schooling on the development of intelligence reported that disadvantages due to socio-cultural status of belongingness to schedule caste and inferior quality of schooling were found to have detrimental influence on the IQ.

Table 3: Per cent distribution of academically poor children across various levels of intellectual ability (n=100)

S. No.	IQ category	Frequency	Percentage
1.	Below average	58	58.00
2.	Average	42	42.00
3.	Above average	-	-

$$Z = 2.263^*$$

*Significant ($p \leq 0.05$)

CONCLUSION

41 percent of the academically poor children were having weak vision. The number of children with poor or weak vision were found significantly ($p \leq 0.05$) higher than the number of children with normal vision. 80 per cent of the academically poor students were having normal hearing abilities. Only 1 child was found to have moderate hearing ability. The number of children with normal hearing was significantly ($p \leq 0.05$) higher than the number of children with mild or moderate hearing problems. Majority of the academically poor children were

found to have below average intellectual abilities. None of the child was found to be above average. Significant ($p \leq 0.05$) difference was found between number of children with average and below average intellectual abilities indicating majority as intellectually below average.

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