

## Home Based Intervention Impact on Cognitive Ability of Preschoolers

A. Kalaramna and S. Punia

The word "cognition" refers to the inner process (viz., perception, thinking, attention, language, reasoning, problem etc.) and products of human mind that lead to knowing (Havell, 1985). Cognitive abilities are affected not only by certain innate characteristics but also by certain factors that work outside the child. In other words, it is the atmosphere full of appreciation, love and warmth that is really congenial for the development of the child. Environment may have direct or indirect bearing on the child's cognitive skills (Rohwar et al 1974).

A number of studies have evaluated the impact of early intervention to nursery school experiences on the conceptional development of children. Hendrick (1988) found that if children in a classroom are provided with natural, spontaneous, lively environment, they will gain experiences in both linguistic and mathematical skills through the use of interesting and challenging material. Home intervention was introduced to parents to develop optimism, flexibility, sensitivity, conscious of their behaviour, active listener, honesty (Hoger et al., 1975). Realising the significance of intervention at early stage is, here is an attempt to evaluate the impact of home based intervention on cognitive ability.

### METHODOLOGY

The study was conducted in randomly selected three schools of Hisar city. From 150 children, who were tested for their cognitive abilities using McCarthy Scales of Children's Abilities (1972), 60 children were selected for intervention purpose on the basis of their low or poor performance. Further these 60 children were equally divided in two groups, intervention and control group. For intervention purpose, planned intervention was introduced to the mothers of intervention group in presence of children for 2 months in weekly sessions. Post testing was done at a gap of 15 days to see the impact of interven-

tion using paired 't' -test statistically technique.

### RESULTS AND DISCUSSIONS

It is clear from the table itself that when both control and intervention groups were compared, none of the children showed high perceptual-performance and qualitative aspects. A meagre percentage of the respondents (3.33%) showed high total cognitive abilities. Further, analysis of table 1 reveals that both the groups show poor quantitative skills as both share equal percentage (80.00%) of the respondents. Total cognition was also found to be low for both control and intervention group with 70.00 percent and 73.33 percent respectively.

Data in table 1 portrays that moderate verbal, memory and motor skills were possessed by most of the respondents of both the groups.

Concluding the above results, it was found that though the respondents showed moderate cognitive skills in both control and intervention group, the percentage of the respondents towards high group was very low. The results are in collaboration with the study of Dash (1982) who pointed out that early education emphasize thinking rather than reading and writing as early cognitive development is based on concrete and figurations knowledge.

Table 2 elucidates the MSCA profiles in two study groups. It is clear from the results that when control and intervention groups were compared with MSCA profile, most of the respondents were at the mean level (60.00% and 56.66%) respectively. At pre-testing, in control group there were 40.00 percent respondents who were 1SD below mean and in intervention group 20.00 percent respondents were 1SD below mean and 23.33 percent respondents were 2SD below mean.

The table further depicts that both control and intervention groups show marked improvements in cognitive abilities when compared with MSCA profile. When compared with MSCA

**Table 1: Frequency distribution of respondents on cognitive variables in control & intervention groups at pre-testing stage n = 60 (n1=30, n2=30)**

| Levels              | Verbal     | Perceptual Performance | Quantitative | General cognition | Memory     | Motor      | Total cognition |
|---------------------|------------|------------------------|--------------|-------------------|------------|------------|-----------------|
| <b>Low (%)</b>      |            |                        |              |                   |            |            |                 |
| Control             | 9 (30.00)  | 15 (50.00)             | 24 (80.00)   | 7 (23.33)         | 7 (23.33)  | 11 (36.66) | 21 (70.00)      |
| Intervention        | 10 (33.33) | 13 (43.33)             | 26 (80.00)   | 10 (33.33)        | 6 (20.00)  | 4 (13.33)  | 22 (73.33)      |
| <b>Moderate (%)</b> |            |                        |              |                   |            |            |                 |
| Control             | 13 (43.33) | 15 (50.00)             | 6 (20.00)    | 12 (40.00)        | 12 (40.00) | 11 (36.66) | 8 (26.66)       |
| Intervention        | 12 (40.00) | 17 (56.66)             | 6 (20.00)    | 8 (26.66)         | 16 (53.33) | 10 (33.33) | 7 (23.33)       |
| <b>High (%)</b>     |            |                        |              |                   |            |            |                 |
| Control             | 8 (26.66)  | 0 (0.00)               | 0 (0.00)     | 11 (36.66)        | 11 (36.66) | 8 (26.66)  | 1 (3.33)        |
| Intervention        | 8 (26.66)  | 0 (0.00)               | 0 (0.00)     | 11 (36.66)        | 11 (36.66) | 8 (26.66)  | 1 (3.33)        |

**Table 2: Comparison of respondents on SD (GC1 scores) according to MSCA profile in two study groups at pre and post-testing stage (n=60)**

| MSCA profile | Control group (n1=30) |              | Intervention group (n2=30) |              |
|--------------|-----------------------|--------------|----------------------------|--------------|
|              | Pre-testing           | Post-testing | Pre-testing                | Post-testing |
| +3SD         |                       |              |                            | 1 (3.33)     |
| +2SD         |                       | 2 (6.66)     |                            | 9 (30.00)    |
| +1SD         |                       | 4 (13.33)    |                            | 18 (60.00)   |
| Mean         | 18 (60.00)            | 24 (80.00)   | 17 (56.66)                 | 2 (6.66)     |
| -1SD         | 12 (40.00)            |              | 6 (20.00)                  |              |
| -2SD         |                       |              | 7 (23.33)                  |              |
| -3SD         |                       |              |                            |              |

profile at post testing stage, it was found that 80.00 percent children of control group and were at the mean level with 13.33 percent and 6.66 percent of respondents above 1SD and 2SD respectively. In intervention group, the trend was totally different as there were 6.66 percent respondents who were at the mean level. Whereas the rest of the respondents moved towards 1SD, 2SD and 3SD above mean with (60.00%, 30.00% and 3.33% respondents) respectively.

The change in performance of children in control group might be due to the reason that children when pre-tested and just entered into formal educational system and when they were post-tested, they had completed approximately seven months of formal education. So, this improvement in their performance may be attributed to their school attendance and exposure to formal education. Whereas, the children of intervention group showed much higher gain, which speaks of intervention programme provided to them.

The results are in consistence with findings of Mishra (1992) who found significant improvements in cognitive skills of the children of the

experimental group after giving short-term intervention learning. In another study Mohanty and Mishra (1991) found that children who received cognitive intervention scores better in cognitive as well as other intellectual abilities.

**KEY WORDS** Home based intervention. Cognitive ability. Pre-schoolers.

**ABSTRACT** The study was conducted in randomly selected three schools of Hisar city. Initially, 150 children were tested for their cognitive abilities using MSCA profile. 60 children were selected on the basis of poor performance. These children were equally divided to form control and intervention group. Planned home-based intervention programme on cognition was introduced to mothers for eight weeks in weekly sessions. Post-testing was done by using paired t-test to see the impact of intervention. Marked improvement in cognition was observed as a result of intervention in intervention group.

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*Author's Address:* **A. Kalaramna**, Department of Human Development, College of Home Science, PAU, Ludhiana, Punjab, India  
**S. Punia**, College of Home Science, CCS HAU, Hisar 125 004, Haryana, India