Cognitive Development of Anganwadi Children Under ICDS

By

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Introduction

I. INTRODUCTION

"If we look at the child as an individual, he is delightful in his spontaneity, his trustfulness, his sense of wonder and fun; If we regard him as an economic entity, he is vital to the development of human resources and to safeguard the country's future; Even marginal investment in child welfare brings manifold returns; Child-care must be the corner - stone of all our constructive activities" (Indira Gandhi, 1980).

The worth and value of children have to be assessed not only in terms of the present or in economic units but as citizens of the future on whom, the all round progress of mankind will depend for a just and stable society (Barnabas, 1980). The total child population in the age group of 0-14 is 263 million as per 1981 census. Of the total child population, 205 millions are in rural areas and 58 millions are in urban areas (National Institute of Public Cooperation and Child Development, 1984).

The majority of children in India are under privileged. They live under social, economic and environmental conditions which hamper their growth and development. Many families live at the subsistence level and are plagued with illiteracy and unemployment.

As putforth by UNICEF (1983), the problems relating to child care and development are therefore complex.

The children are human capital of the nation, and if we neglect them even economic advancement might be difficult. Therefore in any planning in social welfare, one has to take into account the most basic section of population that is the "child" (Chowdhry, 1970). Child welfare as viewed by Tajdar (1982) is "the total well-being of the child" comprising of totality of measures - administrative, technical, educational or social, intended to give each individual an equality of opportunity of growth and development.

There are certain aspects which indicate the need to pay greater attention to the well-being of the child. India has one of the highest infant mortality rates - about 130 per thousand during the last few years. About 50 per cent of the children are living in conditions of deprivation - more than half of them below six years of age which is the most critical period for growth and development and about 40 per cent of the deaths occur among children below five years. About half to two-thirds of the children from the economically disadvantaged sections of society are malnourished (Barnabas, 1980). In Tamil Nadu, children below six years constitute 21 per

cent of the population, and they are the most neglected segment of the population from the nutritional stand point (Devadas, 1983).

It is in the first six years of life that the child is most vulnerable. Medical evidence has also shown that if health and nutrition are neglected in the first few years of life, the learning capacity of the child is likely to be impaired. It is therefore essential to provide adequate services for the pre-school child, if the national potential is to be fully utilized and developed (Study group on the Development of the Pre-School Child, 1972).

Human resource is a key factor in development. The foundations of man's physical, mental and social development are laid in early childhood. Provision of a package of services to meet the biological, emotional and intellectual needs of young children can make a positive contribution to the socio-economic development of the country by preventing or minimising the wastage arising from infant mortality, physical handicaps, malnutrition, stagnation in schools and inadequate development of mental capacities (Dayal, 1980).

From the status and significance of children it may be said that there is a need for coordination and

integration of various services in the field of health and nutrition, education and training, and recreation and welfare, in order to provide comprehensive services to the children (Abrol, 1979). Integrated Child Development Services is a boon in this context.

The Integrated Child Development Service Scheme (ICDS) is the first country-wide programme involving coordinated efforts for providing an integrated package of services for the young child i.e. - supplementary feeding, health check-up, immunization, pre-school education for the children, health and nutrition education to the parents, care of "at-risk" children and mothers, and pre-natal and post-natal care to mothers through auxilliary nurse midwives (ANM) and Primary Health Centre doctors (NIPCCD, 1979).

The Ministry of Welfare, Government of India (1985) has given statistical profile for the ICDS project in Tamil Nadu. The number of projects sanctioned for Tamil Nadu are 39, consisting of 3,435 anganwadis, with the strength of 3,900 anganwadi workers of whom 2,499 workers are trained. While 2,987 anganwadis are provided with supplementary nutrition, 2,854 anganwadis are provided with pre-school education. Presently, about one-fourth of the country's children are being

covered under this scheme (NIPCCD 1987). Thus, ICDS being a programme of comprehensive attention is definitely an investment for the future.

It is now widely accepted that 80 per cent of mental development takes place by the age of 8. The pre-school years are therefore vitally important from the educational point of view. The disadvantaged child whose cognitive abilities are not fully developed is usually unable to meet the challenge of school and to take full advantage of the educational facilities offered at a later stage. On the other hand early environmental stimulation helps the child to achieve his full mental potential and helps to reduce the problem of wastage and stagnation in the first two years of primary school (Ministry of Social Welfare, 1972).

Cognitive refers to the process by which information is received, stored, organised, maintained and utilized. Cognition includes perceiving, remembering, imagining, planning, judging, deciding and problem solving - most of the processes of thinking and knowing. Thus, cognitive development refers to the development of knowledge, mental growth, and/or intellectual development. Mussen (1969) and Gopal (1979) refer cognition as the "higher mental processes".

According to Kuppuswamy (1981), cognition refers to the interpretation of sensory events, their registration and efficient recovery from memory, the ability to manipulate images, symbols and concepts in thinking, reasoning and problem solving. It also refers to the acquisition of knowledge and beliefs about the environment, persons and society. Cognitive growth requires proper experiences and impoverished environments might lead to slower development (Dominowski and Loftus, 1979).

Cognitive development of a hungry, sick or anxious child is bound to be affected adversely. Disadvantaged children need an integrated programme of health, nutrition, family support and education if cognitive development is to be optimized (Heneveld, 1982). Since the ICDS programme provides for the various needs of the child like health, nutrition, and nonformal pre-school education, this forms a good environmental stimuli for the cognitive development of the child.

This research study has been undertaken in order to ascertain the role played by different variables such as the physical set up of the anganwadis, the health status of the children and the knowledge of the teachers in low and high ranking anganwadis in developing the cognition of the children in the age groups of 3-4 and 4-5 years.

Review of Literature

II. REVIEW OF LITERATURE

It is an universal fact that a thorough review of literature is an important step in any successful research to get acquainted with the past work. An attempt has, therefore, been made to review the literature which are meaningful and relevant to the present study. The reviewed literature are presented under the following main heads:

1. Significance of childhood
2. Definitions on cognition
3. Significance of cognitive development
4. Factors influencing cognitive development
   a) Teacher's knowledge
   b) Physical set up of the anganwadi
   c) Health status of the children
5. Influence of anganwadis on children's cognitive development

1. Significance of childhood

A society realises its developmental potential according to the level of physical and mental activity of it's adult members. Early childhood constitutes the foundation of adult productivity (UNICEF, 1983). It is childhood that holds the potentials and sets the limits of future development of a society (NIPCCD, 1984).

The recent advances in social and behavioural sciences have placed the child in a perspective of unprecedented significance. The care of the child is no longer subject to the wilful choices of parents; it has rather attained the status of a categorical imperative. Every nation, developed or developing, links its future with the present status of the child (Chowdhry, 1984).

Morley et al, (1984) stated that, those in education and health now accept that, the pre-school child, is the element most critical in human development.

It is, in the first six years of life that the child is most vulnerable. Medical evidence has shown that if health and nutrition are neglected in the first few years of life, the learning capacity of the child is likely to be impaired even when its conventional intelligence is within normal range. Such neglect can have an effect which lasts throughout life and cannot always be removed by subsequent remedial measures. It is therefore essential to provide adequate services for the pre-school child if the national potential of talent is to be fully utilised and developed (Ministry of Education and Social Welfare, 1972).

Adequate food is the most important throughout childhood, it is more crucial during the first 5 years of life when rapid growth is occuring. Insufficient food

will not only result in under nutrition in terms of inadequate weight gain, but will also hinder growth (Ghosh, 1976).

Ambron (1981) opined that the quality of children's nutrition and health care strongly influences their development. Kogan (1984) reported that the competencies that are dependent upon growth of the nervous system can be affected, often seriously during childhood, if children are deprived of stimulation by any reasonably varied environment and the minimal nutritional needs.

Children are highly susceptible to infection and diseases and, therefore, require more protective and preventive care than adults (NIPCCD, 1979). Fulfilment of the health and nutritional needs of children are crucial to the well being of the nation, since they are the biggest resource for development (Devadas, 1983). Most child specialists and developmental psychologists agree that by the age of six the child has already laid down the foundations of his personality as a human being (UNESCO, 1983).

In the first years of life, the development of intelligence, affectivity and social relations is so rapid that we may consider that its success largely determined the whole future. Any irregularity may,

unless detected in time, and treated appropriately, markedly reduce future capacities. It is during the first four or five years of life that many personal behaviours - in language, attitude, values, even ways of learning - begin to take on the form they will retain for a lifetime (Prakasha, 1983).

It is now widely accepted that 80 per cent of mental development takes place by the age of 8. The pre-school years are therefore vitally important from the educational point of view. Childhood is a crucial stage for the emotional development. The provision of an atmosphere of warmth, love and security is essential to foster this emotional growth and to direct it appropriately (Ministry of Education and Social Welfare, 1972).

Santrock (1983) was of the opinion that childhood is no longer seen as an inconvenient "waiting" period during which adults must suffer the incompetencies of the young. It has to be valued as a special time for growth and change, to invest great resources in caring for and educating children.

2. Definitions on Cognition

Cognition refers to the "higher mental processes" that is, to the functions involved in understanding and dealing with the world about us - perception, language,

concept formation, abstraction, problem solving, intelligence and thinking (Mussen, 1969). Kogan and Haremann (1976) stated that cognitive development refers to the age - related series of changes that occur in mental activity - thought, memory, perception, attention and language.

Craig (1979) viewed cognition as the process by which one comes to perceive, know or understand something. Learning of new word, solving an equation, and memorizing the conjugation of a verb are all examples of cognitive activity. Cognitive development refers to the growth, refinement, and, in some aspects, decline of this intellectual capacity. He further added that cognition is composed of many different kinds of processes - perception, memory, problem solving, and the relationship of one piece of information to another.

Cognition refers to the processes involved in (1) perception, (2) memory, (3) reasoning, (4) reflection, and (5) insight: Perception is the detection, organization, and interpretation of information from both the outside world and the internal environment; memory is the storage and retrienal of the perceived information; reasoning is the use of knowledge to make inferences and draw conclusions; reflection is the evaluation of the quality of ideas and solutions, and insight is the

recognition of new relationships between two or more segments of knowledge (Mussen et al.,1980).

According to Kuppuswamy (1981) the term cognition refers to the processess of knowing, thinking and conceiving. It also refers to the interpretation of sensory events, their registration and efficient recovery from memory, the ability to manipulate images, symbols and concepts in thinking, reasoning and problem solving. It again refers to the acquisition of knowledge and beliefs about the environment, persons and society.

Kaplan - Sanoff and Yablans - Magid (1981) claimed that basically, cognitive development is composed of ideas or concepts. These may be both quantitative (many, more, few, numerical, etc.) and qualitative (warm, cold, rough, smooth, etc.). As children build concepts about their world, they build on past experiences and understandings.

Schiamberg and Smith (1981) were of the opinion that the quantitative and qualitative changes throughout the life span in thinking, organising perceptions and problem solving can be defined as cognitive development. Ambron (1981) defined cognition as recognition of objects and distinguishing between self and others.

3. Significance of Cognitive Development

Cognitive development proceeds in five different ways - through addition, substitution, modification, inclusion and mediation. In the first, the child merely adds a new idea to his structure of facts. In the second, a new idea replaces an older one. In the third, an old idea is modified or transformed. In the fourth, an idea is related to a larger set of integrated beliefs. In addition it is part and parcel of "being human" to develop certain kinds of cognitive processes (Flavell, 1970, 1976).

Cognitive growth requires proper experiences, but experiences will lead to growth only if they can be assimilated. Impoverished environment might lead to slower development, but enriched environments might not result in faster development. Because a child is only slightly altered by each interactions (Dominowski and Loftus, 1979).

Maynard (1970) pointed out that special factors outside intelligence like, illness, poverty of background, emotional upsets, a bad relationship with the teacher or with other pupils, might affect the child's performance.

Since cognition involves memory, perception, attention and language, the department of psychology,

(NCERT, 1970) National Council for Education, Research and Training conducted a study to get the national norms of development of immediate memory in children of 2.5 to 5 years of age, and they found that all urban and a majority of industrial and rural children can repeat 2 digits by 2.5 years. The majority of urban children can repeat 3 digits at 2.5 years, industrial children between 2.5 and 3 and rural children by 4 to 5 years. The majority of urban and industrial children can repeat a number of four digits by 4 years, and rural children could not do so even at 5 years.

Craig (1979) emphasised that as a child grows, much of his development of intelligence or cognition comes first from the organization of the perceptual professes. The child receives millions of stimuli through his sense organs, and he needs to categorise these stimuli in order to give significance to the information they bring him. In addition he added that memory is a fundamental cognitive process that affects many other mental abilities.

Mussen et al., (1980) were of the opinion that the study of cognitive functioning during the pre-school years is of special importance. The child now possess a capacity for symbolism and language, capabilities that were just begining to emerge during the

second year. He is in what Piaget calls the pre-operational stage and can manipulate images and symbols as well as overt actions. They also stated that the development of any cognitive skill is gradual. While a child may show a certain capability early, it may be months or years before he fully uses the skill in every situation in which it might be applied.

Bee and Mitchell (1984) observed that physical capacities set limits on what children can do. Children who are rapid in physical growth are more rapid in mental growth too. When conditions are ripe for growth of language and intelligence growth is dependent on opportunities to manipulate and interact with the environment and upon the active quality of children's listening and speaking (Lorten and Walley, 1979).

McNeil and Rubin (1977) expressed that a great many studies on social - class differences lead to the general conclusion that the average intelligence - test performance of children from upper - class and middle - class families is better than that of children from lower - class families. Such differences exist in almost all the studies regardless of the tests and groups used.

Kagan (1984) claimed that the most important biological influences on psychological development are

contained in the maturation of central nervous system structures that permit motor and cognitive abilities - such as walking, speech, symbolism and self-awareness to appear at regular times.

Piaget regarded the development of intelligence as an interaction between an individual's maturation and his or her social and physical environment. He emphasised that the developmental aspects of cognition as a continuous interaction between the active and developing intelligence of children and their ever-changing environments (Ambron, 1981). Mussen et al., (1984) have opined that numerous factors such as genetic make up, parental and teacher stimulation of intellectual achievement, cultural opportunities, and motivation to do well in school, influence cognitive development. In addition they added that, since intelligence tests are heavily weighted with language, children who have achieved high levels of language skills tend to do well on these tests; others do not. A culturally deprived or disadvantaged pre-school child is likely to be deficient in language skills.

4. Factors Influencing Cognitive Development

Special factors like the teacher stimulation of intellectual achievement, type of relationship with the teacher, the health status of the child, the environmental

condition and the physical set up of a pre-school, play a very important role in determining the cognitive development of the child.

a) Teacher's knowledge

Basic information, understanding, knowledge, skill and appreciations can only be secured through training and experience. Periodic refresher courses or workshops are required so that teachers can help themselves abreast of current trends and research and their application to the understanding of children and curriculum development (Hammond, 1963). He added further that training programmes need to be developed throughout the nation to assist unqualified teachers in some centres to provide programme for young children that are educationally sound. The Committee on Teacher Education Association for Childhood Education International recommended the following standards for teachers in early childhood education:

(1) Requirements - the qualified teacher should be a graduate of an accredited four year college with a major in early childhood education.

(2) The teacher must have professional preparation in the specialized field of early childhood education.

Lorten and Walley (1979) opined that for children to have profitable pre-school experiences, they must be psychologically comfortable and safe in the class room and with teachers as well. Human relations in the class room are, to a large degree determined by the personality of teachers. To be effective in working with pre-schoolers, teachers need to be flexible, know the children's particular interests and developmental levels of the children and have a well organised programme.

Stone and Church (1984) emphasised that the good teacher will ensure that learning takes place through sound planning, astute choice of materials and activities and alertness to the child's reactions. A teacher should have atleast the same knowledge, understanding and skills as they expect their students to acquire, as well as the necessary pedagogical skills; their training must equip them accordingly by means of practical experience as well as technical content (Morley et al., 1984).

Thomas (1981) reported four causes of personnel inefficiency as, staff member's lack of technical knowledge and skills, excessive responsibilities to carry, lack of equipment, and cultural attitudes and habits that are incompatible with the requirements of job efficiency.

b) Physical set up of the Pre-school

Lorten and Walley (1979) stated that the pre-school class room must provide a social and emotional climate that supports comfortable living and encourages learning. Jenkins et al., (1963) pointed out that the physical facilities and equipment provided in a pre-school should be functional for the development of children and should be selected to allow for a wide range of abilities and growth patterns. He further pointed out that "children cannot be made to grow, but their growth can be influenced and encouraged by an environment which provides good physical and emotional care.

Hammond (1963) stated that simple and safe facilities, equipment and furnishings permit freedom of activity and provide for creativity on the part of the child. The selection of the site, the arrangement of the class room, and the plantings in the out door area stimulate learning and encourage the child to contact his physical world. Physical set up efficiently organised in terms of space, orderliness, comfort and convenience gives the children better opportunity for working effectively and creativity (Hochman, 1958).

Landreth (1955) was of the opinion that building and equipment for a group of young children

in a nursery school mean more than play things and shelter; they are an integral part of the educational program of the school; determining to a large extent not only what we can be done in the way of providing educational opportunities for the children but also the number of staff members required for carrying out the programme. He also stated that no degree of teaching ability can compensate adequately for a dearth of raw material and an awkwardly planned building which limits the range of the teacher's supervision.

Bourne et al., (1979) highlight that a child growing up in an impoverished environment takes longer to develop sensory-motor schemes than one blessed with a stimulating environment.

Lorten and Walley (1979) opined that the physical environment of the class room is not the determining factor in children's learning, but it can enhance or limit learning. The very nature of young children requires that they have space in which to move and that they have material and equipment with which to interact.

Singh (1980) stated that under good supervision, children respond beneficially to space and freedom, and in a nursery school provision should be made for space, equipment, and guidance that actually promote strenuous bodily activity.

A healthy strong child needs space to run jump, and play with other children of his own age. The children in the class room need indoor and outdoor equipment. This equipment should be made easily accessible for the children to play freely (Charles, 1981).

Devan (1981) in an article on the ICDS in Haryana, stated that most of the Anganwadi's are functioning in village chaupals which provide adequate space for children. Other places for Anganwadis are premises of sub-centres, schools, panchayat ghars and a few rented places. Thus there is some contribution by the community in terms of physical facilities. The Anganwadis and sub-centres are well equipped with materials and supplies such as furniture, educational material, functional literacy materials, medicines, first aid kits.

Devadas and Jaya (1984) stated that the surroundings of a pre-school building greatly influence a child's health, attitudes and development of personality. Therefore, if the aim of the pre-school is to bring about mental, moral and physical development of children, the school building must be located amidst desirable surroundings.

c) Health Status of Children

Good health is the birth right of every individual and health care is one of his basic needs. A child is inarticulate and therefore vulnerable. He is totally dependent on others for his physical, psychological, nutritional and health needs. All children need special care as they are the future citizens (NIPCCD, 1984).

According to National Nutrition Monitoring Bureau (NNMB) reports, 1981, nearly 85 per cent of children have weights below the normal standards. Out of these, 48 per cent are mildly malnourished, 32 per cent moderately malnourished and 5 per cent severely malnourished.

The constitutional obligations of the State towards the child has made him a national concern. The status of the child was "elevated" and he came to be viewed as the "supreme asset of the nation". His proper development became a national commitment and his neglect a national default (NIPCCD, 1984). Our late Prime Minister, Jawaharlal Nehru has once observed, "if we neglect our children today, if we do not look after them well, we will be creating many more difficult problems for ourselves in future".

A big part of health problems of children is due to nutritional deficiencies. Poor nutrition causes a substantial decrease in resistance to infection and infection on the other hand causes less intake or absorption of food, because of loss of appetite or frequent diarrhoea, resulting in even worse nutritional status (NIPCCD, 1979). According to Hurlock (1978) the sense organs are the channels through which sensory experiences pass in their path to the brain. Therefore, the condition and efficiency of the sense organs effect concept development.

Nutrition of the pre-school child is paramount importance since the foundation for life time health, strength and intellectual vitality is laid during this period (Swaminathan, 1977).

Malnutrition in early childhood can lead to irreversible physical impairment and permanent brain damage (Udani, 1976). Ambron (1981) stated that chronic malnutrition, produce permanent physical deformities and mental incapacity. Poorly fed children, even when their growth is not stunted, are more susceptible to infections of the eyes, ears and respiratory system and are less able to combat their illness. They are less alert mentally and less active physically.

Malnutrition makes children an economic weight upon society. It impairs their learning ability and school performance (Devadas, 1983). A carefully - researched experiment by Mckay et al, in Columbia concluded that "combined nutritional, health and educational treatments between 3½ and 7 years of age can prevent large losses in potential cognitive ability (UNESCO, 1983).

If malnutrition occurs in the young child, it leads to a slow-down in cerebral development, which is reflected in a lag in the acquisition of various mental functions. This can have serious consequences on the child's future (failure at school, social maladjustment, etc.) (Prakasha, 1983). Immediate and frequent pregnancies of the mother with inadequate spacing creates malnutrition in children, thereby deteriorating their mental capacities (UNICEF, 1983).

Bee and Mitchell (1984) contended that malnutrition in the early years seems to have a permanent effect on some parts of the brain and nervous system.

5. Influence of Anganwadis on Children's Cognitive Development

Devadas et al., (1986) from their indepth study of pre-school education under ICDS have concluded that

both boys and girls of the high ranked anganwadis scored significantly higher mean scores for their conceptual skills than the boys and girls belonging to low ranked anganwadis. The same trend was observed agewise too. They also reported that children of the high ranked anganwadis were remarkably good in their verbal ability.

From the study conducted by Nalini (1984) on the functioning of Anganwadis in Coimbatore and Wynad, it was found that nonformal education was given regularly in the centres. Programmes were planned with particular theme but were modified according to children's preferences. Aids and materials were used for story telling, indoor play and readiness. The Anganwadi programmes fulfilled the needs of children in the area of nutrition and health. Improvements in language, social adjustments, mental ability, regularity and physical growth were the important changes observed in children.

Methodology

III. METHODOLOGY

The methodological details of the research on Cognitive Development of Anganwadi Children under ICDS are dealt under the following heads:

A. Selection of the study area
B. Selection of samples
C. Selection of tools
D. Methods of data collection and
E. Analysis of data

A. SELECTION OF THE STUDY AREA

The anganwadis (AWS) of the ICDS project No.II of Coimbatore district were selected. The selected project No.II area comprise Saibaba Colony, Nallampalayam, Kamarajapuram, Gandhi Park, Sundapalayam, Lawley Road and Dhobikana.

B. SELECTION OF SAMPLE

The list of AWS of the ICDS project No.II was obtained from the concerned Child Development Project Officer. From this list obtained, 25 AWS were selected by simple random sampling method. From each of these selected AWS four children were selected again by

simple random sampling method. Of the four children selected, two were in the age group of 3-4 years, of which one was male and the other female and the other two children, a male and a female in the age group of 4-5 years. Also the teachers of the selected AWS constituted samples for the study. Thus the total sample size selected is enunciated below:

Number of anganwadis (AWS) selected	: 20
Number of teachers	: 20
Number of children -	
3-4 years - Male	: 20
3-4 years - Female	: 20
4-5 years - Male	: 20
4-5 years - Female	: 20

C. SELECTION OF TOOL

Four types of tools were evolved and used for the study. They are as follows:

1. Investigator's Observation Proforma,
2. Questionnaire for testing the AW teacher's knowledge,
3. Test on mental abilities for the pre-school child, and
4. Schedule to assess the health status of children in AWS.

1. Investigator's Observation Proforma

The Investigator's observation proforma (Appendix.C) aimed at measuring the total programme and quality of the services delivered at the AWS. The AWS selected were ranked on the basis of the observations made through this schedule. The different aspects evaluated were:

1. Pre-school attendance
2. Physical set up of AW - Availability of space at AW, availability of drinking water, location of the AW
3. Children's participation in AW activities
4. Teaching and learning materials available in the AW
5. Record maintenance
6. Feeding services
7. AW worker's skills/abilities - planning and implementation of pre-school and other activities and
8. AW worker's relationship with local people.

Cumulative scores were provided to each AW. The total scores allotted to this proforma was 129. The grand total scores accorded to AWS were ranked on a continuum. The AWS that were assigned high scores (95-110) were judged as High Ranked Anganwadis (HRAWS) and the AWS that scored less (60-82) were judged as Low Ranked Anganwadis (LRAWS). Ten AWS at each of the two extreme polarities were selected for the study.

So, among the 25 AWS selected, 20 AWS 10 each from the extreme polarities were selected for the study. Among these twenty anganwadis, ten of them which had been ranked high were from Nallampalayam (rural area), Saibaba Colony, Lawley Road and Gandhi Park (urban areas) and the other ten which had been ranked low were from Dhobikana, Sundapalayam (rural areas), and Kamarajapuram (urban area).

2. Questionnaire for testing the Anganwadi teacher's knowledge

This schedule was formulated by Jaya (1987). It is in the form of a questionnaire and for the convenience and easy understanding of the AW teachers, this schedule was prepared in tamil (Appendix.D).

The schedule aimed at testing the extent of knowledge of the teachers regarding the AW programme, and the services they render to the children. The different aspects included in the schedule were:

1. General information about the programme - The agency incharge of the AW programme - age range of the children, objectives of the programme
2. Physical set up of the AWS
3. Equipment required - teaching, learning and recreation

4. Details regarding a day's programme in the AWS
5. Meal programme
6. Records and Registers
7. Duties and responsibilities of AW workers
8. Ratio of AW workers and children
9. Qualities of a good AW worker
10. Knowledge about needs and significant of childhood
11. Knowledge about health status of children
12. Knowledge about parent's involvement in the programme

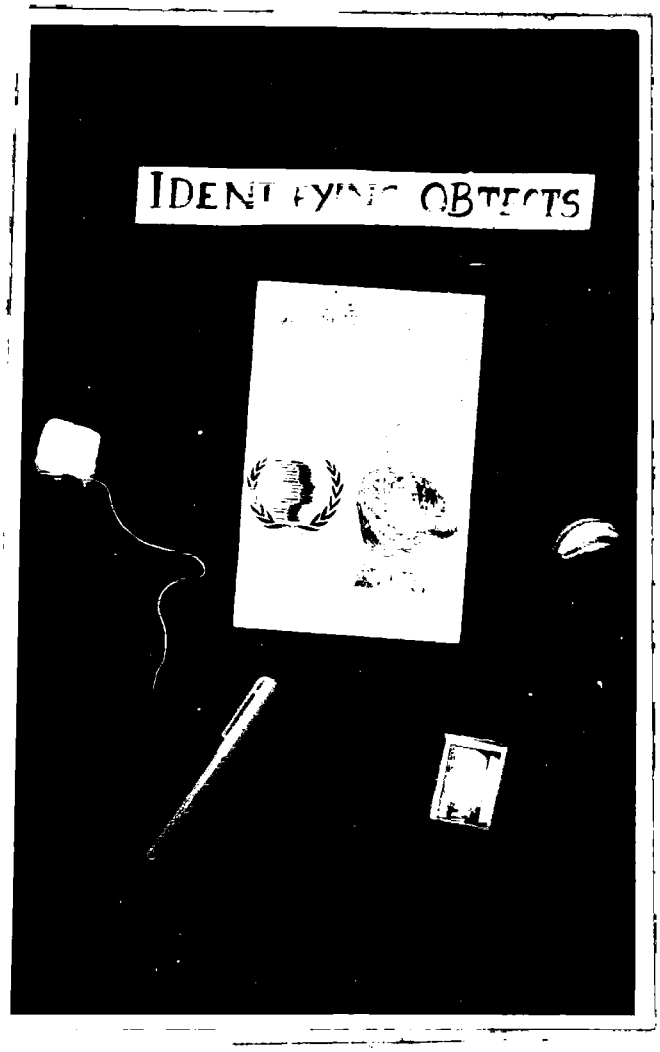
The total scores alloted to this questionnaire was 100. The questionnaire was administered to the teachers belonging to the 20 selected AWS (10 of the high ranked and 10 low ranked Anganwadis).

3. Test on Mental Abilities for the Pre-school Child

The test on mental abilities for the pre-school child is a research tool used by the NIPCCD (National Institute of Public Cooperation and Child Development 1980). This tool aimed at measuring the mental abilities of pre-school children (Appendix.A). The different aspects tested by the tool were:

1. Verbal abilities
2. Information

PLATE I. VERBAL ABILITY



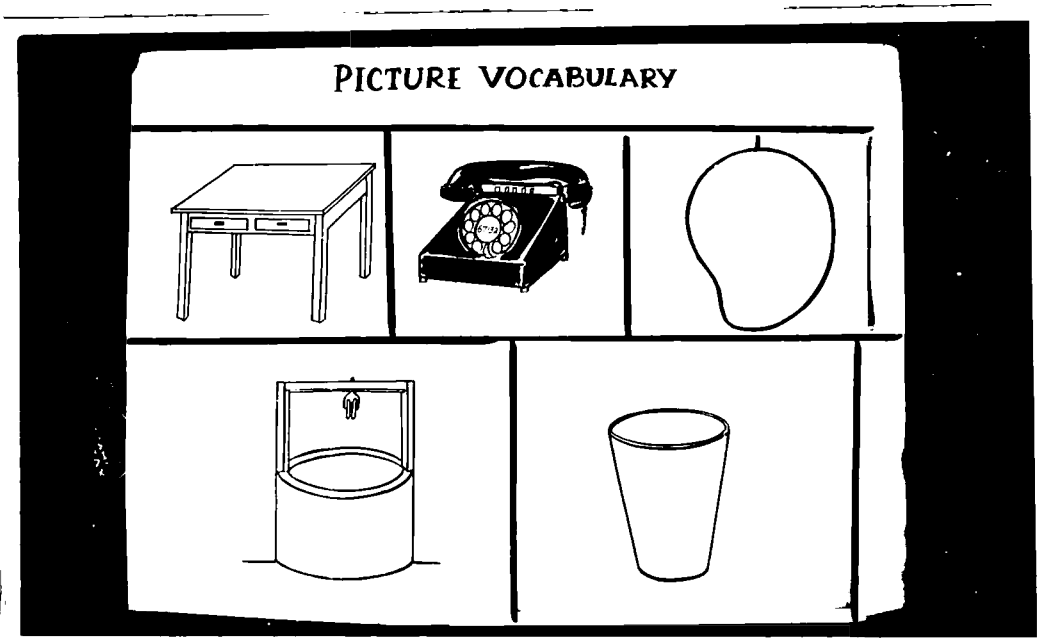


PLATE II.

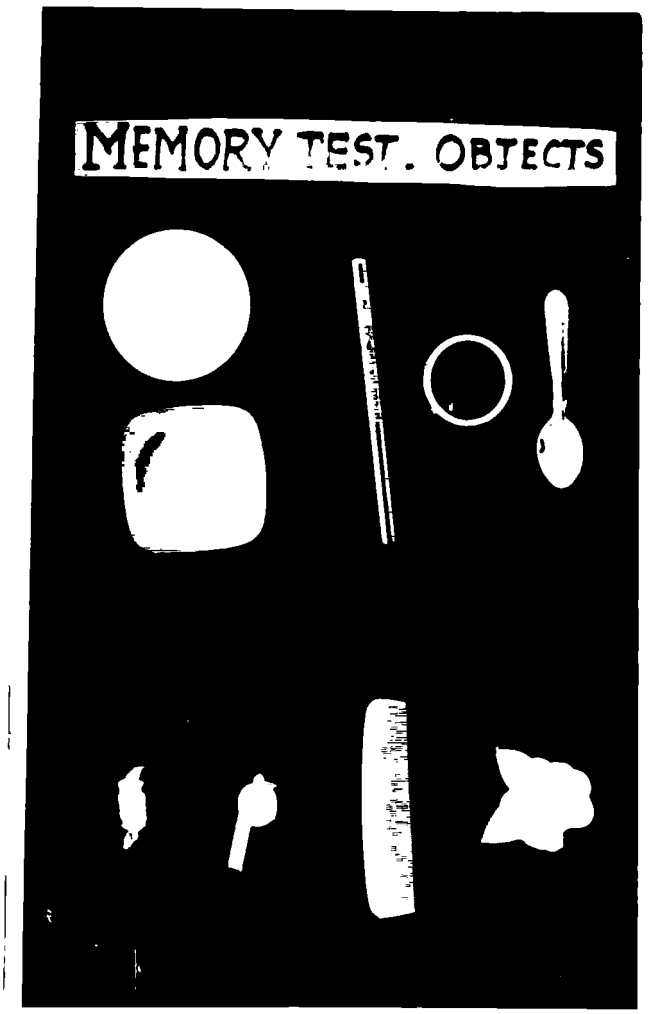
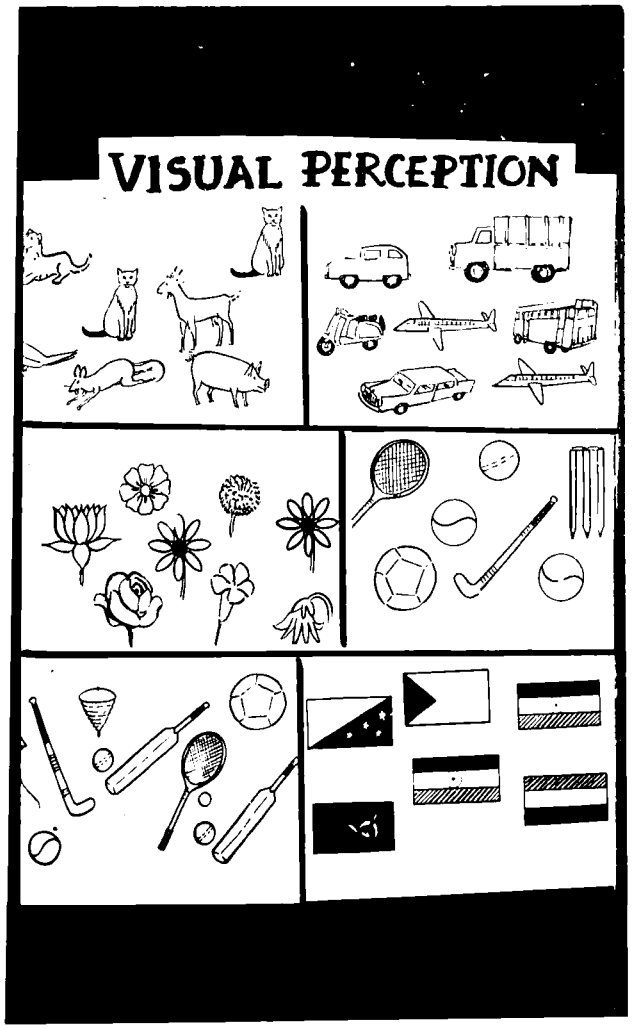


PLATE III. SPATIAL RELATIONS



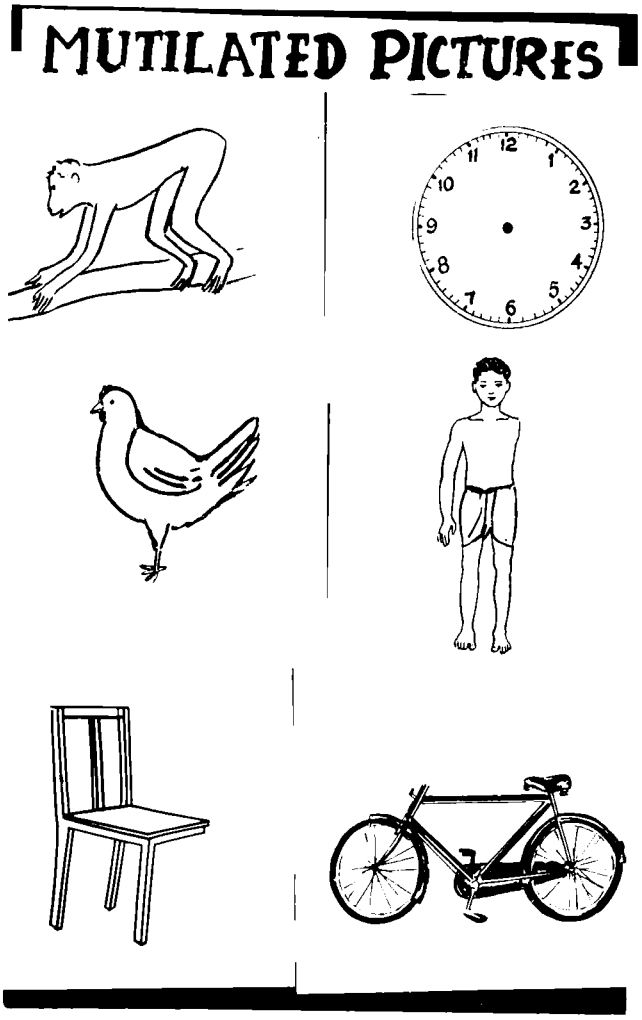
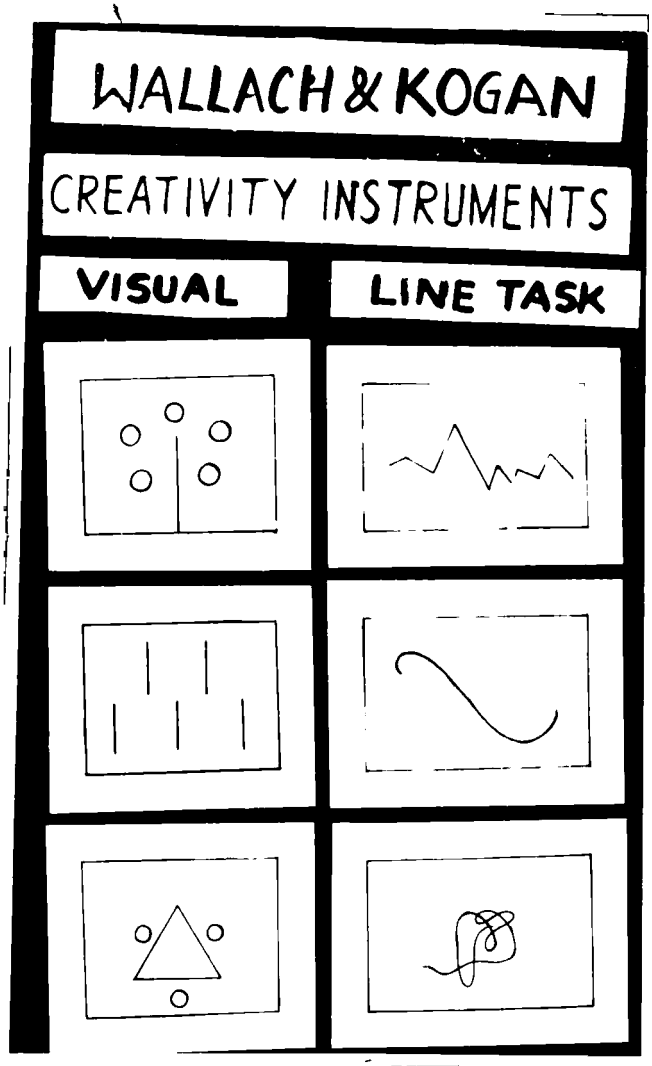


PLATE IV.



3. Comprehension
4. Memory
5. Spatial relations
6. Reasoning

The total scores alloted to the tool - test on mental abilities was 57. The test items used are illustrated in plates 1-4.

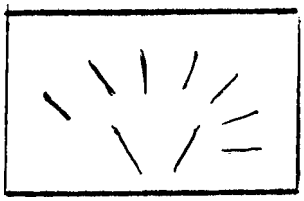
In addition to the above test on mental abilities to measure the divergent aspects of mental abilities of children, this study included testing fluency aspect of creativity. The instrument used to investigate the creative ability was the Wallach and Kogan (1965) battery of creativity instrument as adopted by Paramesh (1969) for Indian conditions.

The Wallach and Kogan (1965) battery of creativity instruments consists of 3 verbal and 2 visual instruments. In this study, 3 verbal instruments were omitted. The first three patterns in the first visual instrument; the first two patterns in the second visual instrument alone were chosen in order to facilitate the performance of children.

Creativity instruments used in the study

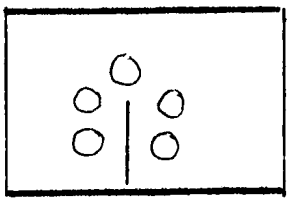
The following are examples of the instructions given for each of the instruments.

Visual instruments: Pattern meaning



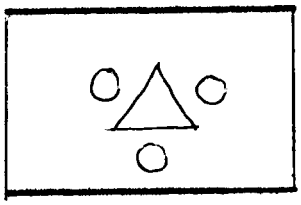
Example

Now, you see the pattern on this card. Don't you think it resembles the rising sun, eye lashes, a brush etc. Likewise you have to tell me all the things you think of the drawings could be given below are three designs. Look at them carefully. For each design you will have to think of all the things they represent. Try to think of as many associations as possible. There is no time limit. Please look at the example. What does the design remind you of? Think a little. I am sure you can think of many things' - sun's rays, eye lashes, you are correct, now proceed.



Pattern I

Pattern II



Pattern III

Line task

This task is similar to the previous one. You are going to see some lines and after you have looked at each one, I would like you to tell me all of the things it makes you think of. Take time, and be sure that when you look at the line you tell me what the whole line makes you think of, and not just a part of it. For each of these lines, please let me know all the things it makes you think of. Please proceed.

Line I

Line II

Scoring procedure

In the original Wallach and Kogan study, both the number of associates and uniqueness of associates were scored for each of the creativity tasks. Since the scoring of uniqueness was found very difficult and time consuming with the selected population, only number scoring was retained in the study. Number score refers to the total number of responses given by the subject for each item in the creative instrument.

Scoring was done by summing up of the total number of responses to each item in each instrument. Responses which were irrelevant to the test context were not scored. Repetitions and other ambiguous answeres were left unscored.

4. Assessment of Health Status of Children in Anganwadis

Assessment of the health status of children in Anganwadis was done using a clinical schedule shown in Appendix B. The different aspects evaluated were:

1. Nutritional status in terms of Height (cm), Weight (kg). Since anthropometric measurements are used as a standard procedure in a pediatric practice to measure the variations of the physical dimensions of the human body at different age

levels and degrees of malnutrition (Jelliffee, 1966). So the nutritional status was measured by the investigator through anthropometric measurements.

2. Chronic sickness (if existed during the past three months when the study was conducted). The score allotted for the absence of any chronic sickness was 1.

3. Personal hygiene - The maximum scores allotted for personal hygiene was 24.

4. Environmental cleanliness the scores allotted for environmental cleanliness was 12.

5. Clinical assessment and the maximum score allotted for clinical assessment was 66.

D. METHOD OF DATA COLLECTION

Available literature was explored and in consultation with experts in the field of Child Development and other related fields and taking into consideration the objectives of the study four well structured schedules and standardised tools were selected and used.

A pilot study was undertaken to probe the relevancy of the schedules to suit the areas under investigation.

The approaches for data collection were as follows:

1. Investigator's Observation Proforma

Since the study first required identification of Anganwadis at the two extreme polarities, high and low in terms of its standards, using the proforma, Appendix C. Observation was made by the investigator in each of the anganwadis for two days and the AWS were ranked.

2. Questionnaire for testing the anganwadi teacher's knowledge

Teacher's knowledge was scored, out of 100 by administering the questionnaire directly to the respondents individually.

3. Test on mental abilities for the pre-school child

The mental ability tests (Appendix A) were administered to each child individually following the same instructions and their responses were noted and scores were given. The testing procedure consumed 30-45 minutes for each child.

4. Wallach and Kogan's visual creativity testing instrument

The tests were administered to each child

individually. The patterns and designs Plate 4 from the booklet were shown and the responses recorded. No time limit was prescribed for these instruments.

5. Clinical schedule to assess the health status of children an anganwadis

Salter Weighing Scale was used to measure the weights of children and heights were recording using a tape.

In the bangle test, (Ghosh, 1976) if the bangle goes over the child's upper arm, the child is severely malnourished. The mid-arm circumference was measured for each child individually with the help of a bangle with an internal diameter of 4.0 cm.

The clinical schedule yielded scores for chronic sickness, personal hygiene, environmental cleanliness and clinical assessment.

The collected data were tabulated in tally sheet, categorised and fitted into tables to facilitate meaningful interpretation of findings. The master table formed the basis for subsequent analysis. After subjecting the data to statistical analysis, relevant

references and conclusions were drawn and results were interpreted objectively.

E. ANALYSIS OF DATA

The following statistical measures were used in this study:

1. Percentage: Simple comparisons were made on the basis of analysis.

2. Mean and standard deviation

3. Correlation and regression: To find out the association/dependence between two sets of variables, correlations/regressions were worked out, and

4. 't' test of significance.

Results and Discussion

IV. RESULTS AND DISCUSSION

The results of the study on the cognitive development of Anganwadi children under ICDS are presented under the following dimensions:

1. Assessment of Anganwadis and their teachers
2. Assessment of children's cognitive development

1. Assessment of Anganwadis and their teachers

This part included evaluation of twenty Anganwadis and their teachers, grouping of anganwadis as high ranking (HRAWS) and low ranking (LRAWS), teacher's ratings of HRAWS and LRAWS and comparison between anganwadi scores and teachers' scores in both HRAWS and LRAWS.

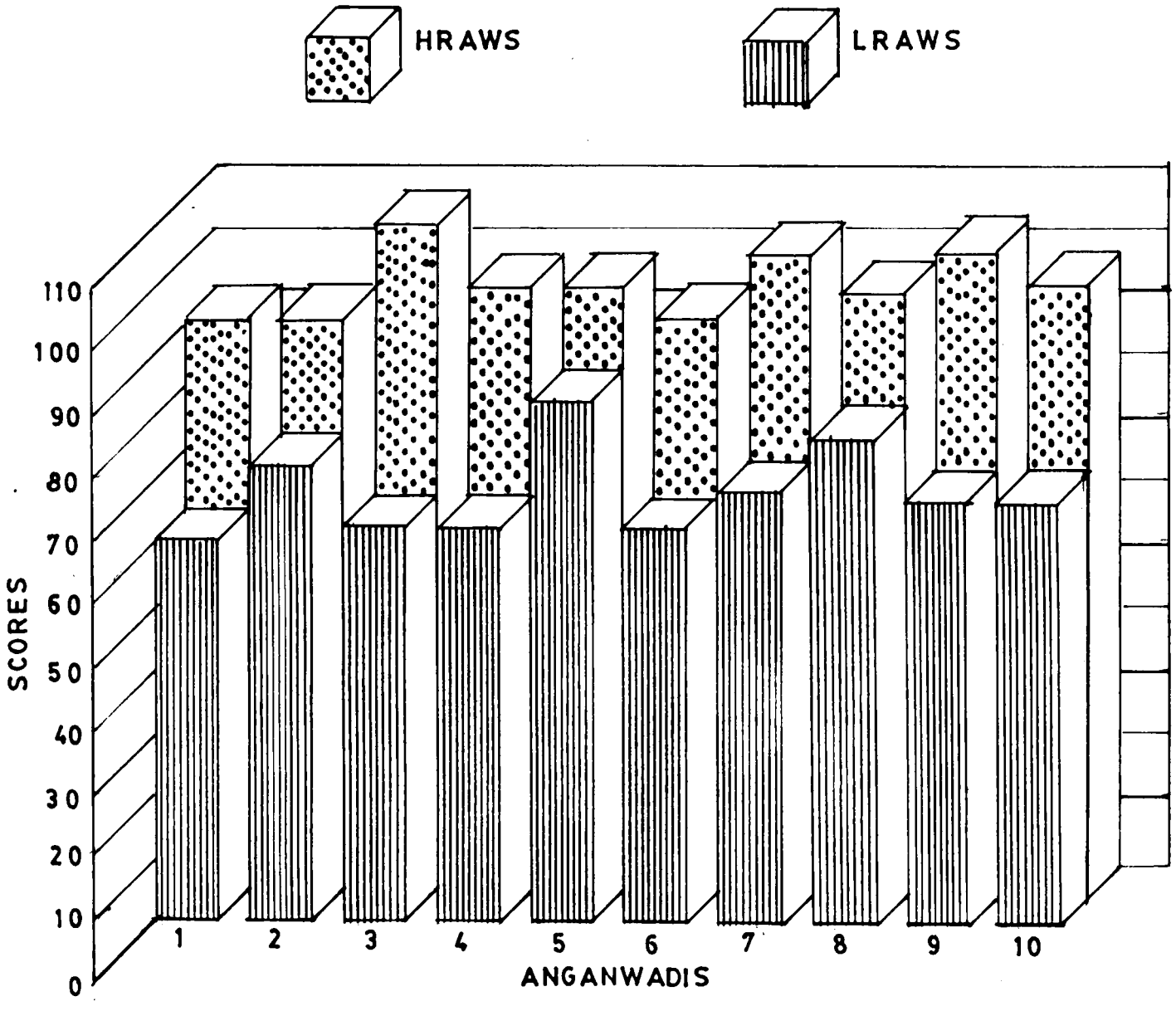
a) Scores of high and low ranking anganwadis

Scores accorded to HRAWS and LRAWS are shown in Table I.

TABLE I: COMPARISON OF SCORES ACCORDED TO HIGH AND LOW RANKING ANGANWADIS

	HRAW	LRAW	SED	't' value
N	10	10		
Mean	101.3	67.7	2.7	12.3**
SD	4.877	7.165		

** Significant at P = 0.01 level



SCORE OF ANGANWADI

FIG.1

PLATE V. POOR ATTENDANCE - LRAW

GOOD ATTENDANCE - HRAW

PLATE VI. UNHYGIENIC FEEDING - LRAW

HYGIENIC FEEDING - HRAW

PLATE VII. CHILDREN NOT ENGAGED CREATIVELY - LRAW

CHILDREN ENGAGED CREATIVELY - HRAW

Comparison of anganwadi scores revealed that HRAWS recorded a mean value of 101.3 out of the maximum 129, while the LRAWS registered only a mean score of 67.7 (Fig.I, Plates 5-7, and Appendix E). The highly significant 't' value expresses that HRAWS scored higher scores than the LRAWS with a mean different of 33.6.

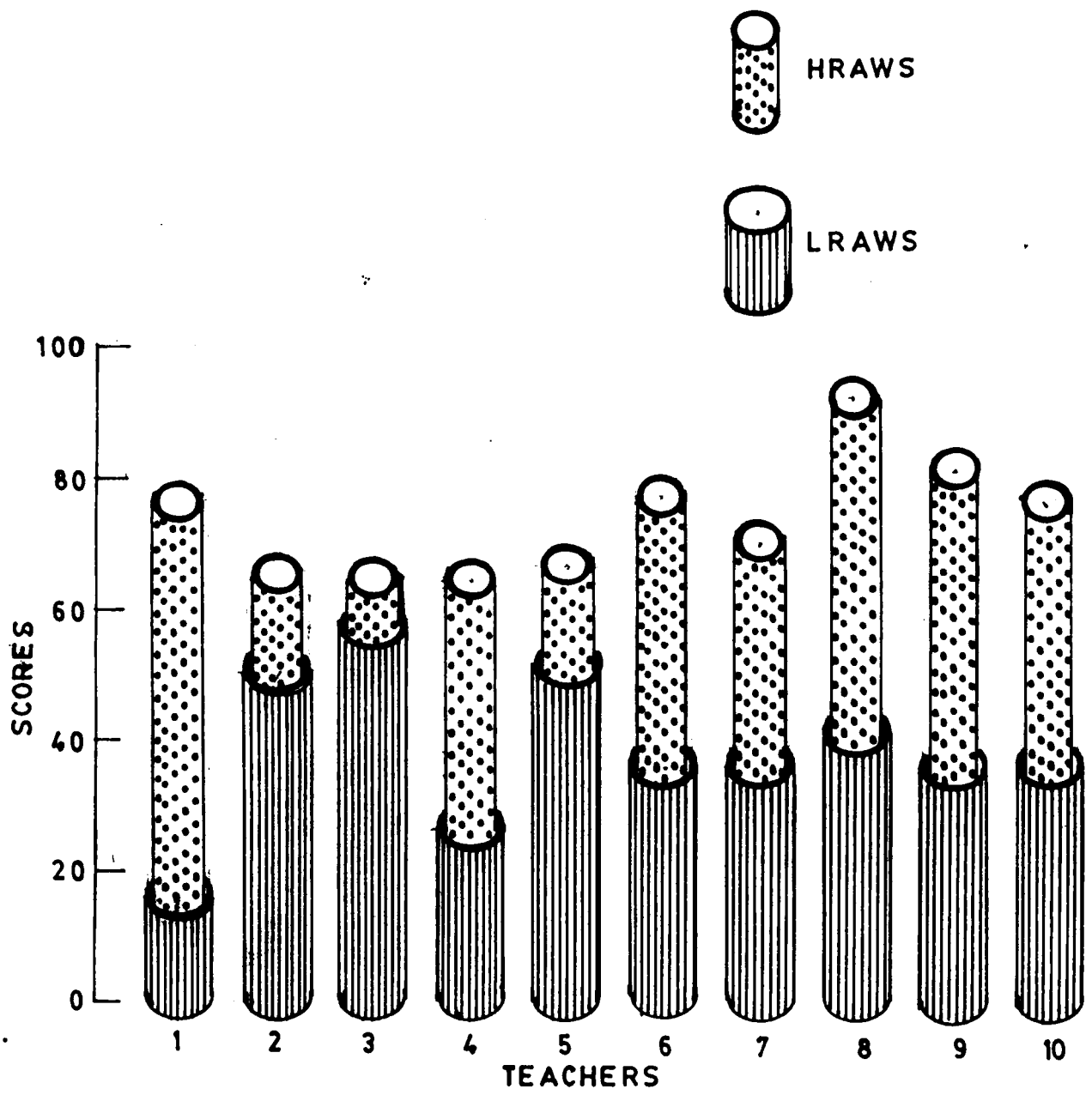
b) Teacher's scores of HRAWS & LRAWS

The mean, standard deviation and the 't' value for the teacher's ratings of HRAWS and LRAWS are given in Table II and the individual teacher's scores of HRAWS and LRAWS are given in Appendix E, Plate 8, and Fig.2.

TABLE II: SCORES OF TEACHERS IN HIGH AND LOW RANKING ANGANWADIS

	Teacher's score		SED	't' value
	HRAW	LRAW		
N	10	10		
Mean	76.4	42.6	4.99	6.8**
SD	9.300	12.747		

** Significant at P = 0.01 level



SCORE OF TEACHERS

FIG. 2

PLATE VIII. TEACHING WITHOUT AIDS - LRAW

TEACHING WITH AIDS - HRAW

The comparison of teachers' score in HRAWS and LRAWS showed that the teacher's scores of HRAW exhibited a mean of 76.4 out of 100, while the teacher's scores of LRAWS registered only a mean of 42.6. The mean teacher's scores of HRAWS is significantly higher than the mean teacher's scores of LRAWS. The mean difference between the two anganwadis was impressive with a value of 33.8. As Thomas (1981) has reported staff members lack of technical knowledge and skills, lack of equipment, and cultural attitudes and habits that are incompatible with the requirements of job efficiency could be the reasons for the lower efficiency of teachers in LRAWS.

c) Anganwadi scores and teacher's scores in HRAWS and LRAWS

The anganwadi scores and teachers scores are compared in HRAWS and in LRAWS separately in Table III and Appendix E.

TABLE III: ANGANWADI SCORES AND TEACHER SCORES IN HRAWS AND LRAWS

	HRAWS			LRAWS		
	Anganwadi score	Teachers score	SED	Anganwadi score	Teachers score	SED
N	10	10		10	10	
Mean	101.3	76.4	3.32	67.7	42.6	4.62
SD	4.877	9.300		7.166	12.747	
t value		7.5**			5.4**	

** significant at P = 0.01 level

The anganwadi scores are significantly higher than the teacher scores in both HRAW and LRAW and the mean difference were 24.9 and 25.1 respectively.

2. Assessment of Children's Cognitive Development

The children's cognitive development of HRAWS and LRAWS were assessed with the following parameters:

a) Assessment of mental ability of children - Age and sex-wise

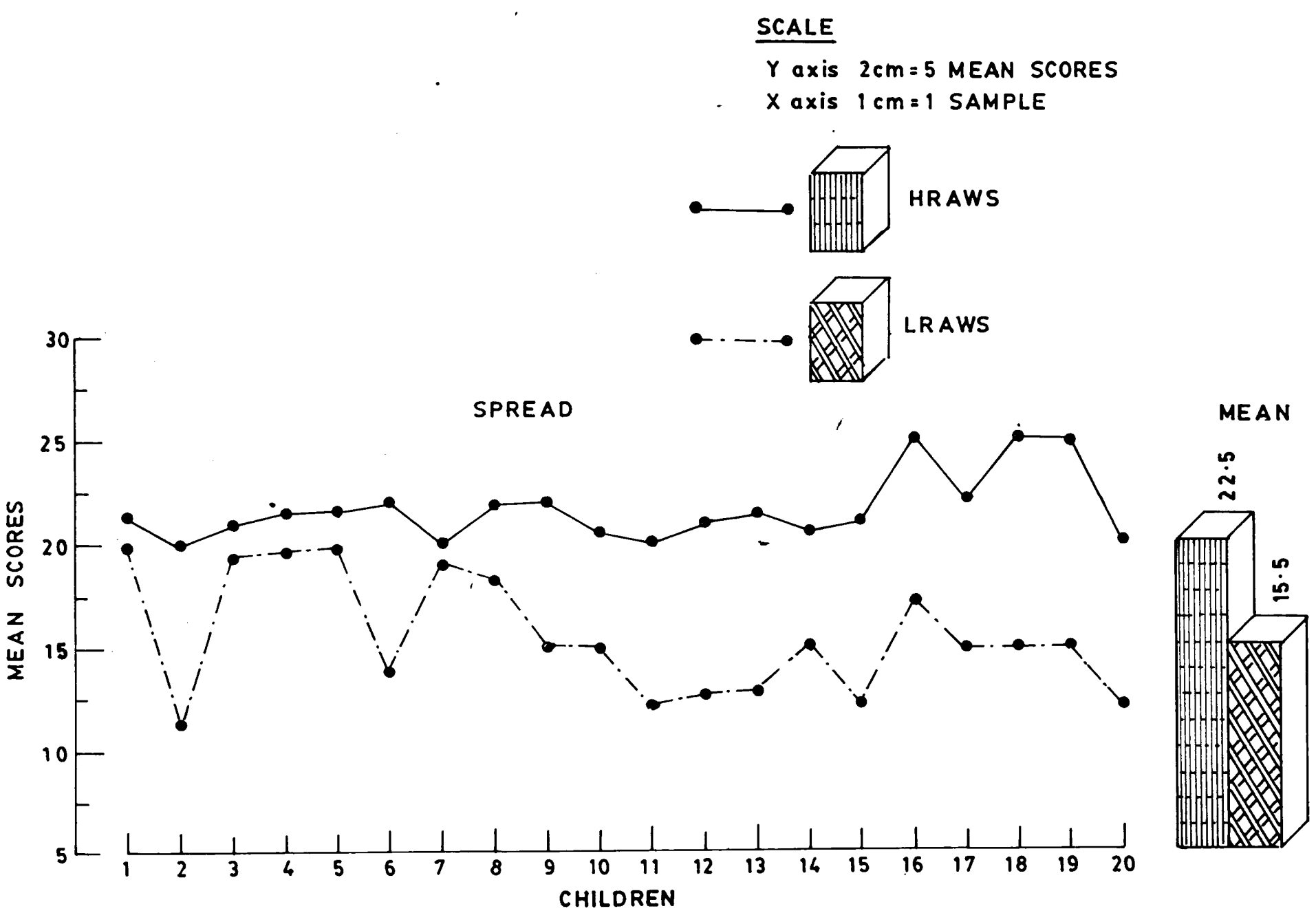
b) Assessment of mental ability of children with teacher's score

c) Evaluation of health status of children - age and sex-wise of both HRAWS & LRAWS

d) Statistical interpretation of results with correlations/multiple regression analysis on the cognitive development of children of HRAWS and LRAWS (age-wise).

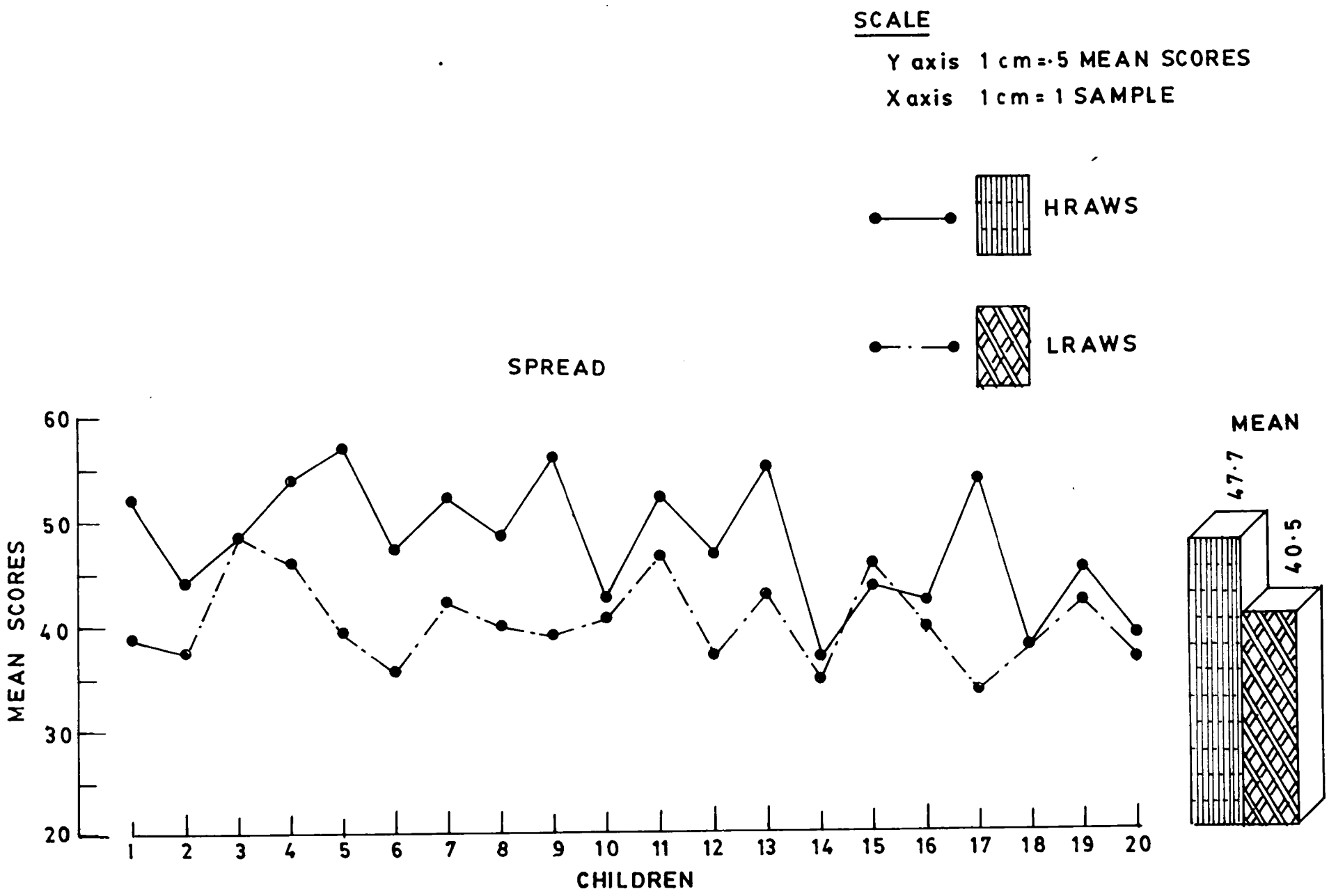
a) Assessment of mental abilities of children - Age and Sex-wise

The children of two age groups, namely 3-4 years old and 4-5 years old were selected from the 20 anganwadis and their mental ability scores are presented in this section. The results of comparative study of mental ability scores are presented in Table IV and the individual scores of children of both the age groups belonging to HRAWS and LRAWS are given in Figs. 3 and 4 and Appendices F and G.



MENTAL ABILITY SCORE-CHILDREN 3-4 YEARS

FIG.3



MENTAL ABILITY SCORE-CHILDREN 4-5 YEARS

FIG. 4

TABLE IV: MENTAL ABILITY SCORES OF CHILDREN OF HRAWS AND LRAWS AGE-WISE

	Age 3-4 years			Age 4-5 years		
	HRAWS	LRAWS	SED	HRAWS	LRAWS	SED
N	20	20		20	20	
Mean	22.5	15.45	0.743	47.70	40.55	1.724
SD	1.821	2.781		6.457	4.211	
't' value	9.5**			4.2**		

** significant at P = 0.01 level

The results revealed that the children in the age group of 3 to 4 years of HRAWS recorded a mean score of 22.5, while those of the LRAWS had registered only a mean score of 15.45.

Children in the age group of 4 to 5 years of HRAWS had exhibited a mean score of 47.70 and those of LRAWS obtained only a mean score of 40.55.

The mean differences between the mental ability scores of children between HRAWS and LRAWS of both the age groups (3 to 4 = 7.05 and 4 to 5 = 7.15) are almost similar.

The highly significant 't' values indicate that in both the age groups, HRAWS children obtained higher

mental ability scores than the children of LRAWS. Similar observations were reported by Bourne et al., (1979) and they highlighted that a child growing in an impoverished environment takes longer time to develop sensory - motor schemes than one blessed with a stimulating environment.

As opined by Lorten and Walley (1979) physical environment of the young children can enhance or limit learning.

Mental ability scores - Sexwise

The comparison of the mental ability scores of boys and girls of both the age groups (3 to 4 and 4 to 5) of HRAWS and LRAWS are presented in Table V, Appendices J and K and Fig.5.

TABLE V: MENTAL ABILITY SCORES OF BOYS AND GIRLS IN BOTH AGE GROUPS - HRAWS AND LRAWS

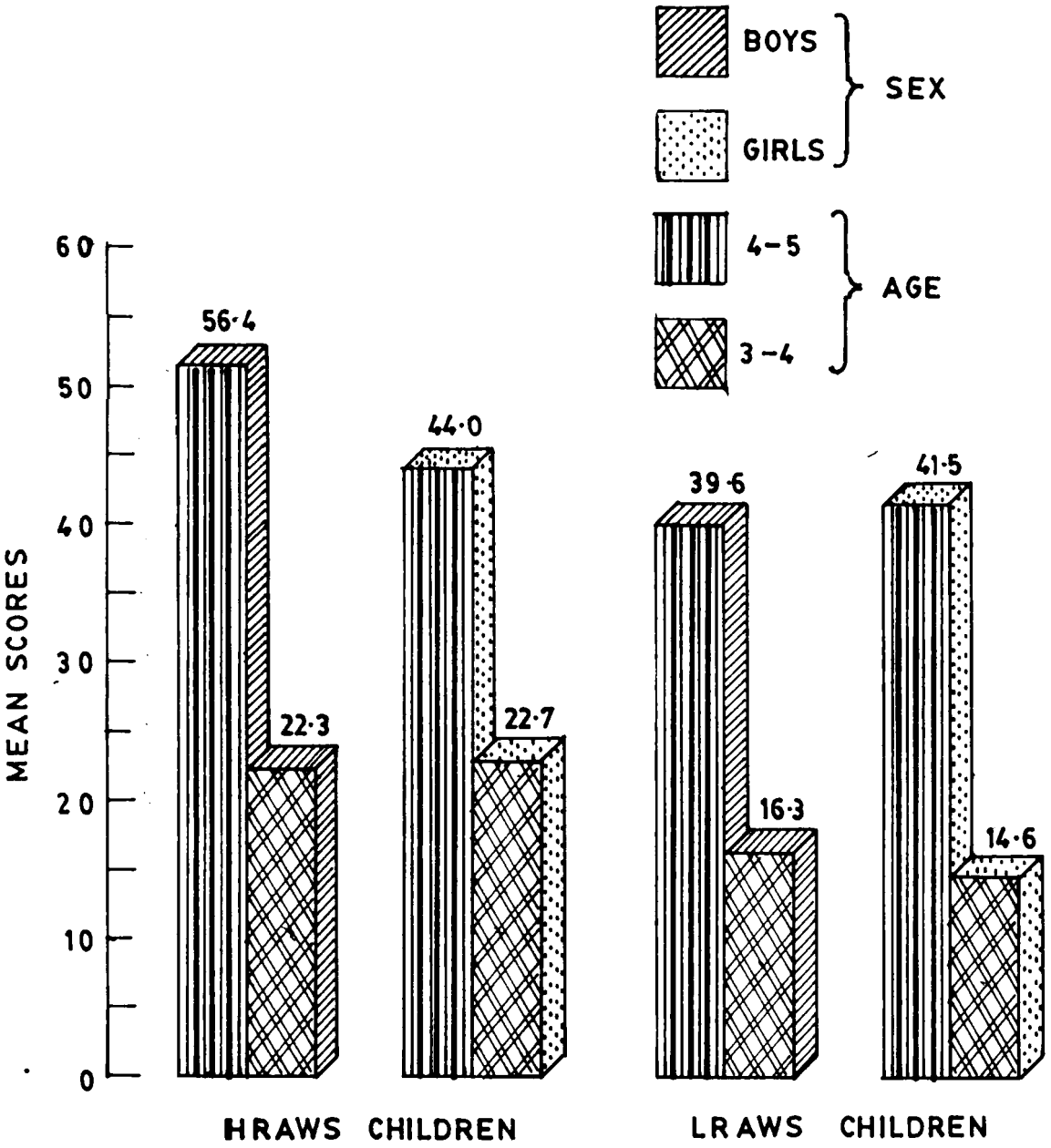
		Age 3-4 years		Age 4-5 years	
		Boys	Girls	Boys	Girls
HRAWS	N	10	10	10	10
	Mean	22.3	22.7	51.4	44.0
	SD	2.312	1.252	4.835	5.850
LRAWS	N	10	10	10	10
	Mean	16.3	14.6	39.6	41.5
	SD	2.983	2.413	3.340	4.927

Comparisons	Mean difference	SED	't'
i) HRAWS Vs LRAWS			
Among girls of 3-4 years	8.1	0.860	9.5**
Among girls of 4-5 years	2.5	2.419	1.0 NS
Among boys of 3-4 years	6.0	1.194	5.0**
Among boys of 4-5 years	11.8	1.858	6.4**
ii) Boys Vs Girls			
Among 3-4 years of HRAWS	0.4	0.831	0.5 NS
Among 4-5 years of HRAWS	7.4	2.400	3.1**
Among 3-4 years of LRAWS	1.7	1.213	1.4 NS
Among 4-5 years of LRAWS	1.9	1.882	1.0 NS

** Significant at P = 0.01 level
NS - Not significant

Among the children of 3 to 4 years old, the girls of HRAWS had significantly higher mean mental ability score of 22.7 than the girls of LRAWS whose mean mental ability score was only 14.6. As regards the boys of 3 to 4 age groups, it was also observed that boys of HRAWS scored a mean mental score of 22.3, while those of LRAWS had recorded only a mean score of 16.3.

Similar trend was observed with children of 4 to 5 years of age, and the girls of HRAWS scored a higher mean score of 44.0 than the girls of LRAWS who



SCORES ON MENTAL ABILITY TESTS OF BOYS AND GIRLS - HRAWS AND LRAWS

FIG. 5

recorded a low mean score of 41.5. Similarly boys of this age group belonging to HRAWS registered a mean score of 51.4, while boys of LRAWS recorded a mean score of only 39.6.

Thus, it can be stressed that among girls of 3-4 years old, HRAWS children are having significantly higher mental power than LRAWS children. Regarding boys of both the age groups, HRAWS children perfomed better in their mental ability than LRAWS children. However, there was no significant difference between HRAWS and LRAWS regarding the mental ability in case of 4-5 years aged girls.

When the comparison of the performance of boys and girls of both age groups belonging to HRAWS and LRAWS were done, the following can be noted from the Table V. Among HRAWS children in the age groups of 3-4 years it was observed that boys recorded a mean score of 22.3 while girls secured a mean score of 22.7. And among 4-5 years old children of HRAWS it was seen that boys secured a mean score of 51.4 and girls got a mean score of 44.0 only.

Comparison among LRAWS children revealed that in the age group of 3-4 years boys and girls registered

a mean score of 16.30 and 14.6 respectively, while a similar trend has been observed in the age group of 4-5 years that boys secured only a low mean score of 39.6 and the girls obtained a high mean score of 41.5.

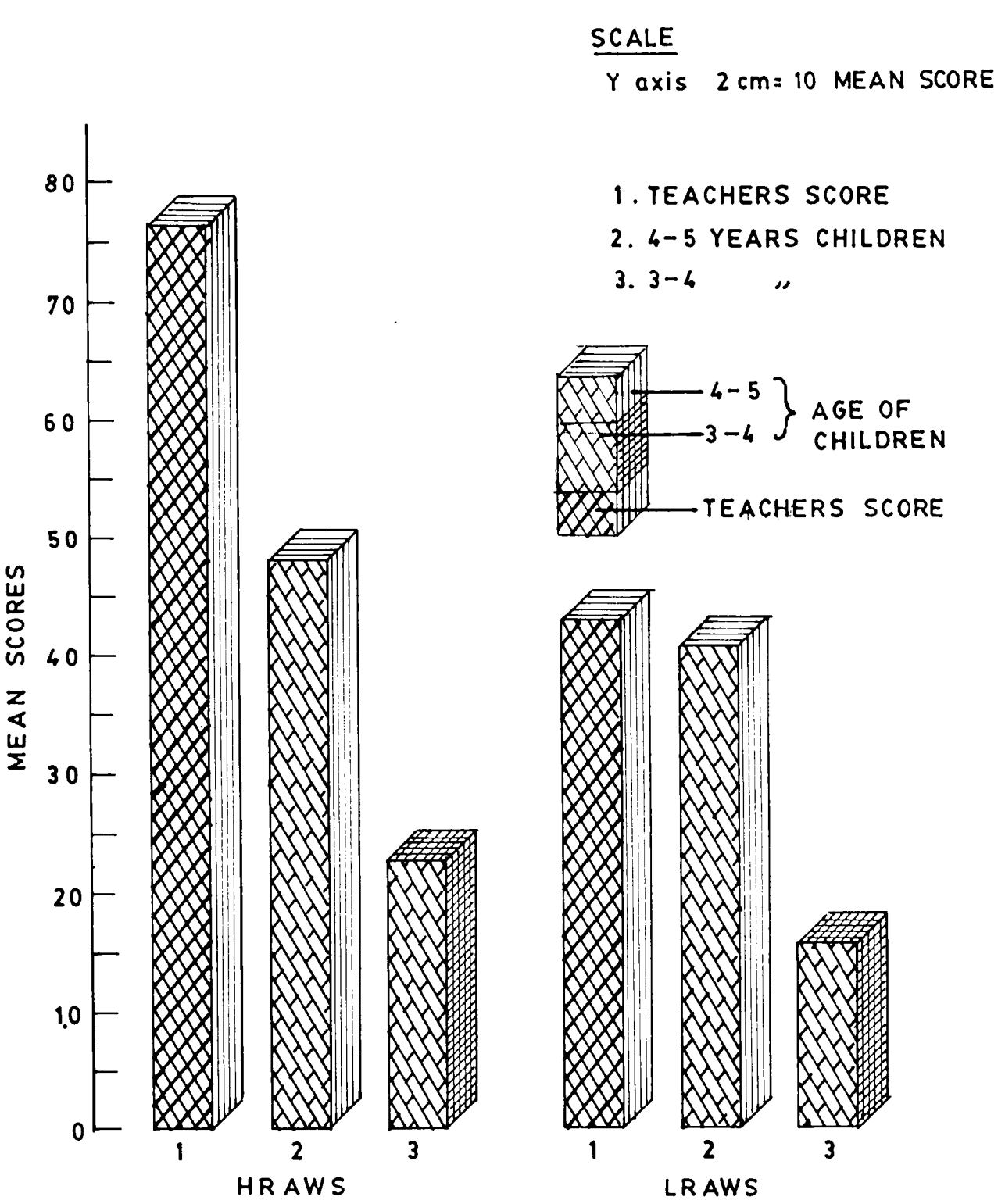
Thus, the conclusion drawn from this comparison is that among HRAWS children of 4-5 years of age, boys have established their superiority over girls, regarding their mental ability.

b) Mental ability score of children in relation to teacher's scores

The mental ability score of children in the age group of 3-4 years of age was compared with teacher's score of LRAWS and HRAWS. The per cent increase in mental ability score and teacher's score over the LRAWS is in Table VI and Fig.6.

TABLE VI: MENTAL ABILITY SCORE OF CHILDREN (3-4 YEARS) IN RELATION TO TEACHER'S SCORE

	Mental ability score		Teacher's score	
	HRAWS	LRAWS	HRAWS	LRAWS
N	20	20	10	10
Mean	22.5	15.5	76.4	42.6
% increase over LRAWS	45.16		79.34	



TEACHERS SCORES WITH MENTAL ABILITY SCORES OF CHILDREN

FIG.6

The mean value of 20 children falling in the age group of 3-4 years between HRAWS and LRAWS indicated that a marked increase of 45.16 per cent was observed over the LRAWS as regards the mental ability scores of children. The increase in teacher's score in HRAWS over LRAWS was recorded as 79.34 per cent. The higher percentage of HRAWS score over LRAWS clearly shows the superiority of teachers handling the HRAWS, and in turn it has also reflected in the higher percentage of mental ability of children in the HRAWS.

The mental ability score of children in the age group of 4 to 5 years of HRAWS and LRAWS was compared with teacher's score of LRAWS and HRAWS. The per cent increase in mental ability score and teacher's score over the LRAW is given below:

TABLE VII: MENTAL ABILITY SCORES OF CHILDREN (4-5 YEARS) IN RELATION TO TEACHER'S SCORE

	Mental ability score		Teacher's score	
	HRAWS	LRAWS	HRAWS	LRAWS
N	20	20	10	10
Mean	47.7	40.5	76.4	42.6
% increase over LRAWS	17.65		79.34	

From the Table VII the mean values of the mental ability scores of children in the age group of 4-5 years showed an increase of 17.65 per cent of HRAWS over the LRAWS. Also an increase of 79.34 per cent was observed in the HRAWS teacher's score over the LRAWS teacher's score. It can be said that the higher percentage of teacher's scores of HRAWS, in turn has resulted in the higher percentage of mental ability scores of children of HRAWS in the age group of 4-5 years also. As claimed by Mussen et al., (1984) teacher's stimulation of intellectual achievement appear to have influenced mental abilities of children. As asserted by Stone and Church (1984) good teachers ensure that learning takes place through sound planning, astute choice of materials and activities and alertness to the child's reactions.

c) Health status of children of both age groups (3-4 and 4-5 years) in HRAWS and LRAWS

The parameters used for assessing the health status of children are as follows:

i) Personal hygiene
ii) Environmental cleanliness
iii) Clinical assessment
iv) Height
v) Weight

1) Personal hygiene

The results of the comparative study of the personal hygiene of children of both the age groups of HRAWS and LRAWS are given in the Table VIII and Appendices H and I.

TABLE VIII: PERSONAL HYGIENE SCORES OF CHILDREN OF HRAWS AND LRAWS UNDER DIFFERENT AGE GROUPS

	Age 3-4 years			Age 4-5 years		
	HRAWS	LRAWS	SED	HRAWS	LRAWS	SED
N	20	20		20	20	
Mean	13.65	11.65	1.306	18.70	16.15	1.045
SD	4.428	3.801		3.213	3.392	
't' value	1.5 NS			2.4*		

NS - Not significant

* - Significant at P = 0.01 level

From Table VIII it was disclosed from the mean personal hygiene scores of children of 3-4 years of age that HRAWS children scored a mean of 13.65 while that of LRAWS children's mean was only 11.65.

Similar influence was exhibited with the children of 4-5 years of age in HRAWS with a higher mean score of 18.70 and with LRAWS children the mean score was only 16.15.

The mean values of personal hygiene of children aged 3-4 years of HRAWS was slightly higher than that of the children of LRAWS. However the difference was not statistically exposed. Among children of 4-5 years, HRAWS' children were definitely better in personal hygiene than the LRAWS' children.

ii) Environmental cleanliness

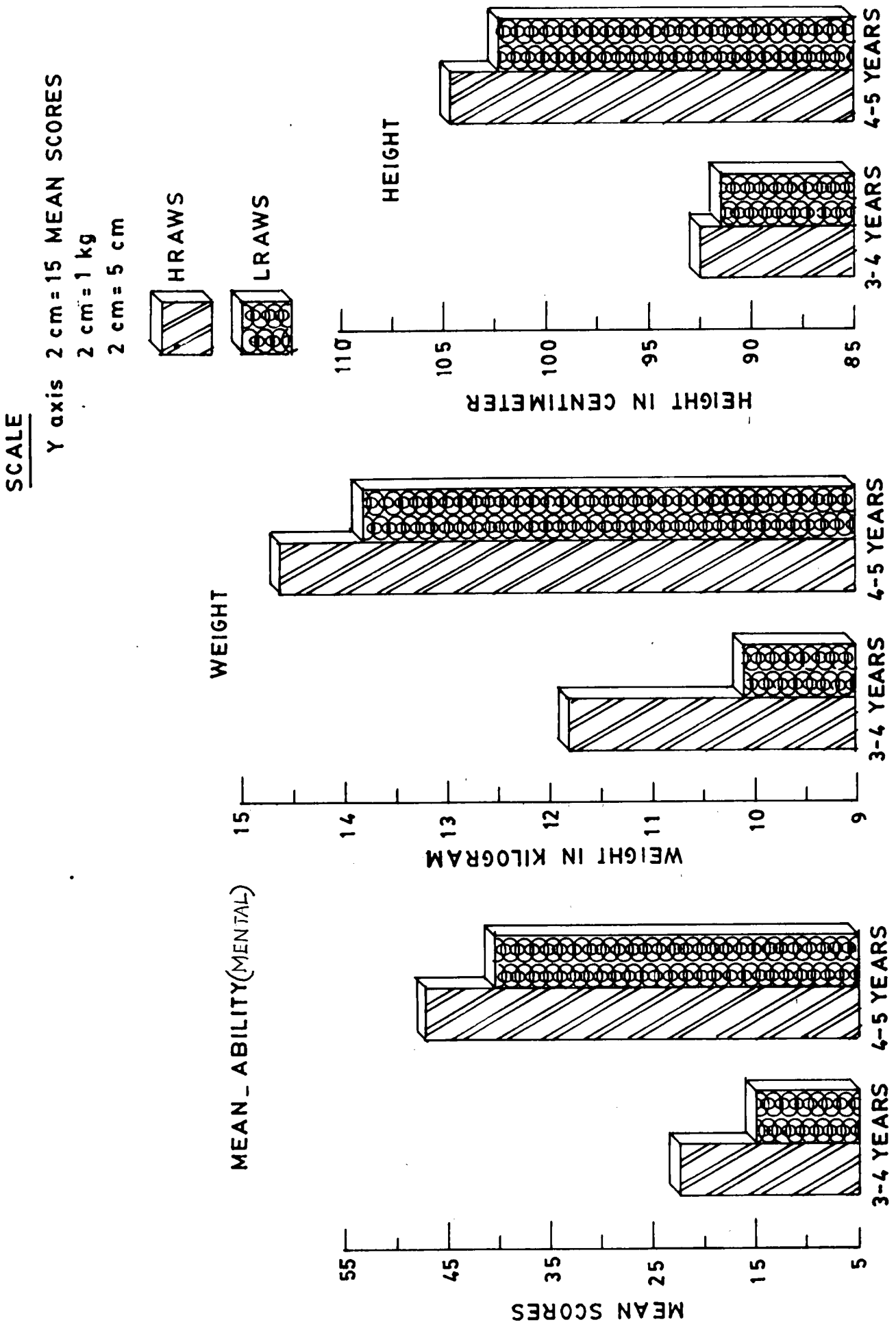
The environmental cleanliness scores are common for both the age groups and hence both age groups were not evaluated separately for environmental cleanliness. The environmental cleanliness influencing the HRAWS and LRAWS children as evaluated as score is given in Table IX and Appendices H and I.

TABLE IX: ENVIRONMENT SCORES OF CHILDREN OF HRAWS AND LRAWS UNDER DIFFERENT AGE GROUPS

	(For both age groups) HRAWS	LRAWS	SED	't'
N	40	40		
Mean	9.5	8.5	0.332	3.0**
SD	0.827	1.235		

**- Significant at P = 0.01 level

The impact of environment on children in Table IX exposed that the mean environmental cleanliness scores



HEALTH STATUS OF CHILDREN
FIG.7

Thus, it may be construed that among the children aged 3-4 years, HRAWS children have got higher clinical assessment scores than the LRAW children.

iv) Height

The height of children under different age groups related to HRAWS and LRAWS are compared and the results are presented in Table XI and Appendices H and I and Fig.7.

TABLE XI: HEIGHTS OF CHILDREN OF HRAWS AND LRAWS UNDER DIFFERENT AGE GROUPS

(Mean values in cm)

	Age 3-4 years				Age 4-5 years			
	HRAWS	LRAWS	SED	't'	HRAWS	LRAWS	SED	't'
N	20	20			20	20		
Mean	92.0	91.75	0.580	0.4 NS	103.55	101.60	1.165	1.7 NS
SD	1.864	1.803			3.137	4.160		

NS - Not significant

From the mean values of scores pertaining to height in Table XI it was observed that among children of 3-4 years the mean height of children of HRAW was 92.0 cm and the mean height of children of LRAW was slightly lower (91.75 cm) and among the children of 4-5 years of age the mean height for children was well

exhibited (HRAWS: 103.55 cm; LRAWS: 101.60 cm).

However, the differences in mean score could not be explained statistically. The trend is seen in both age groups, indicating that the children in HRAWS are slightly taller in height than the children in LRAWS.

Heights of AW children - Sexwise

The relationship between the height of children from the HRAWS and LRAWS, between boys and girls, between 3-4 and 4-5 age groups of children were compared and the results are presented in Table XII and Appendices - J and K.

TABLE XII: HEIGHTS OF CHILDREN - SEX WISE (cms)

		Age 3-4 years		Age 4-5 years	
		Boys	Girls	Boys	Girls
HRAWS	N	10	10	10	10
	Mean	92.4	91.6	104.8	102.3
	SD	1.955	1.776	2.974	2.908
LRAWS	N	10	10	10	10
	Mean	91.3	91.9	100.8	102.4
	SD	1.567	2.079	3.553	4.742

Comparisons	Mean difference	SED	't'
i) HRAW Vs LRAW			
Among girls of 3-4 years	0.3	0.865	0.4 NS
Among girls of 4-5 years	0.1	1.759	0.1 NS
Among boys of 3-4 years	1.1	0.792	1.4 NS
Among boys of 4-5 years	4.0	1.465	2.7**
ii) Boys Vs Girls			
Among 3-4 years of HRAW	0.8	0.835	1.0 NS
Among 4-5 years of HRAW	2.5	1.315	1.9 NS
Among 3-4 years of LRAW	0.6	0.823	0.7 NS
Among 4-5 years of LRAW	1.6	1.874	0.9 NS

** - Significant at P = 0.01 level

NS - Not significant

The observations from the Table XII that among the children of 3-4 years of age belonging to HRAWS, the mean height of boys was 92.4 cm and that of girls was 91.6 cm only, while for LRAWS, the mean heights of boys and girls were 91.3 and 91.9 cms respectively.

In the children of age group 4-5 years it was observed that in HRAWS, the mean heights of boys and girls were 104.8 and 102.3 cms, while for LRAWS, the score values were 100.8 and 102.4 cms respectively for

boys and girls.

In general, it can be stated that there is no significant variation in height difference among the children of different age groups. However, among boys of 4-5 years, HRAWS children have registered impressing height than the LRAWS children.

v) Weight (kg)

The mean weight of children of HRAW and LRAW under different age groups are presented in Table XIII and Appendices H and I and Fig.7.

TABLE XIII: WEIGHTS OF CHILDREN OF HRAWS AND LRAWS UNDER DIFFERENT AGE GROUPS

(Mean values in kg)

	Age 3-4 years				Age 4-5 years			
	HRAW	LRAW	SED	't'	HRAW	LRAW	SED	't'
N	20	20			20	20		
Mean	11.79	10.12	0.358	4.7**	14.60	13.825	0.366	2.1*
SD	0.732	1.425			1.001	1.292		

** - Significant at P = 0.01 level

* - Significant at P = 0.05 level

From the mean values of weight exhibited in Table XIII it can be said that among 3-4 years of age, children of HRAWS recorded a mean weight of 11.79 kg and

those of LRAWS registered a mean weight of 10.12 kg only. Similar impact is seen among the children of 4-5 years of age (HRAW: 14.600 kg; LRAW: 13.825 kg).

The highly significant 't' value of 3-4 years aged children illustrates that HRAWS children are heavier than their counter parts of LRAW children. The same trend is seen in 4-5 years aged children also. The children of HRAW register more weight than the children of LRAW.

Weights of AW children - Sexwise

The mean weight of boys and girls of different age groups, HRAWS and LRAWS were compared and the results are presented in Table XIV and Appendix I.

TABLE XIV: WEIGHTS OF CHILDREN - SEXWISE
(Mean values - kg)

		Age 3-4 years		Age 4-5 years	
		Boys	Girls	Boys	Girls
HRAWS	N	10	10	10	10
	Mean	11.795	11.865	15.160	14.040
	SD	0.979	0.412	0.952	0.718
LRAWS	N	10	10	10	10
	Mean	10.450	9.790	13.585	14.065
	SD	1.234	1.588	1.319	1.287

Comparisons	Mean difference	SED	't'
1) HRAWS Vs LRAWS			
Among girls of 3-4 years	2.075	0.519	4.000**
Among girls of 4-5 years	0.025	0.466	0.054 NS
Among boys of 3-4 years	1.345	0.498	2.701*
Among boys of 4-5 years	1.575	0.514	3.062**
ii) Boys Vs Girls			
Among 3-4 years of HRAWS	0.07	0.336	0.208 NS
Among 4-5 years of HRAWS	1.12	0.377	2.972**
Among 3-4 years of LRAWS	0.66	0 .636	1.038 NS
Among 4-5 years of LRAWS	0.475	0.583	0.814 NS

** - Significant at P = 0.01 level

* - Significant at P = 0.05 level

NS - Not significant

The results from Table XIV informed that among the children of 3-4 years of age belonging to HRAWS, the mean weight recorded by boys was 11.795 kg and for girls it was 11.865 kg. For children of LRAWS, the mean weight of boys was 10.450 kg and that of girls was 9.790 kg.

Among the children of 4-5 years of age it was observed that the mean weight of boys was 15.160 kg and that of girls was 14.040 kg in HRAWS, while in LRAWS,

the weights of boys and girls were 13.585 and 14.065 kgs respectively.

Thus, from the results it can be interpreted that among the girls of 3-4 years old, HRAWS children have recorded significantly more weight than LRAWS children. Likewise among boys of both age groups HRAWS children weighed more than LRAWS children. The sex difference was prominent in case of children of HRAWS aged 4-5 years, where the boys weighed more than the girls.

d) Correlations and Multiple Regression Analysis on the Mental Abilities of Children of HRAWS and LRAWS under different age groups

The factors associated with the mental abilities of children under different age groups were assessed by applying the principle of simple correlations and multiple regression analysis. The factors studied in this section are listed below:

i) Assessment of mental ability of HRAW children with health parameters

ii) Assessment of mental ability of LRAW children with health parameters

(i) Assessment of mental ability of HRAW children with health parameters

TABLE XV(a): MENTAL ABILITY OF CHILDREN OF HRAWS WITH HEALTH STATUS

(r values) (N=20)

Age		X_1	X_2	X_3	X_4	X_5	X_6
3-4 years	Mental ability (Y)	-0.1403	-0.2817	0.2446	-0.0048	0.0620	0.3492 Ns
	Personal hygiene (X_1)		-0.0405	0.2658	0.5938**	0.1977	0.2382
	Chronic sickness (X_2)			0	0.1532	-0.3441 NS	0.1068
	Environmental cleanliness (X_3)				0.200	-0.1707	-0.1390
	Clinical assessment (X_4)					0.1312	0.7387**
	Height(X_5)						0.2757
	Weight(X_6)						-

** Significant at P = 0.01 level

The relationship between clinical assessment and weight of children of 3-4 years are closely associated with highly significant correlations. In addition the clinical assessment is also positively associated with

personal hygiene (r=0.5938**). The negative correlation coefficient between chronic sickness and height (-0.3441) indicated clearly that height of children is affected by their sickness. This findings is in tune with that of Maynard (1970) who stated that special factors outside intelligence like illness effect the child's mental ability. However, the other parameters used in the present study had no influence on the mental ability.

TABLE XV(b): MENTAL ABILITY OF CHILDREN OF HRAW WITH HEALTH STATUS

(N=20)

Age		X_1	X_2	X_3	X_4	X_5	X_6
4-5 years	Mental ability (Y)	0.4190	0.2078	-0.0985	0.5234*	0.1567	0.6064**
	Personal hygiene (X_1)		0.1978	-0.0594	0.5322*	0.3879	0.5078*
	Chronic sickness (X_2)			-0.1423	0.1382	0.1163	0.2350
	Environmental cleanliness (X_3)				0.0079	-0.3955	0.1144
	Clinical assessment (X_4)					0.1683	0.5789**
	Height(X_5)						0.4716*
	Weight(X_6)						-

** - Significant at P = 0.01 level
* - Significant at P = 0.05 level

The correlation coefficients from Table XV(b) revealed that mental ability score of 4-5 years aged children from HRAWS is significantly correlated with the clinical assessment score (r=0.5234*) and their weight (r=0.6064**). Other health parameters such as personal hygiene, chronic sickness and height are positively associated with mental ability and environmental cleanliness is negatively associated.

Among independent variables personal hygiene is significantly correlated with clinical assessment (r=0.5322*) and weight of the children (r=0.5078*).

Weight of the children is significantly correlated with clinical assessment (r=0.5789**) and height of the children (0.4716*).

The multiple regression analysis was carried out to find out all cumulative effect of health status scores on the mental ability of children and the results are presented in Table XVI(a).

TABLE XVI(a): CUMULATIVE EFFECT OF HEALTH SCORE ON MENTAL ABILITY OF CHILDREN OF HRAWS

(N=20)

Age	Variable	Partial regression analysis	SE	't'*	R^2
3-4 years	Personal hygiene X_1	-0.0040	0.0955	-0.0422	NS
	Chronic sickness X_2	-1.4268	0.8122	-1.7567	NS
	Environmental cleanliness X_3	1.2572	0.4183	3.0056*	0.6420**
	Clinical assessment X_4	-0.5577	0.2130	-2.6180	
	Height X_5	-0.1526	0.1905	-0.8010	NS
	Weight X_6	2.9588	0.7511	3.9394**	

* - Significant at P = 0.05 level

** - Significant at P = 0.01 level

NS - Not significant

The scores obtained by the children regarding the environmental cleanliness is significantly contributing to their mental ability. For an unit increase of scores in environmental cleanliness there will be an increase of 1.26 units in their mental ability. Weight of children significantly influenced the mental ability of children. The increase in mental ability scores will be 2.96 units for each unit of increase in the weight of

children. Put together all these six variables namely, personal hygiene, chronic sickness, environmental cleanliness, clinical assessment, height and weight influenced the mental ability of the children (3-4 years) to a tune of 64.2 per cent.

Ambron (1981) stressed that chronic malnutrition produces mental incapacity and further he added that poorly fed children, even when their growth is not stunted, are more susceptible to infections, and they become less alert mentally and less active physically.

Bee and Mitchell (1984) also claimed that children who are rapid in physical growth are more rapid in mental growth too.

TABLE XVI(b): CUMULATIVE EFFECT OF HEALTH SCORE ON MENTAL ABILITY OF HRAW CHILDREN

(N=20)

Age	Variables	Partial regression analysis	SE	't'	R^2
4-5 years	Personal hygiene X_1	0.2646	0.5072	0.5216 NS	
	Chronic sickness X_2	0.1582	5.9859	0.0264 NS	
	Environmental cleanliness X_3	-2.3727	1.8725	-1.2671 NS	0.5002*
	Clinical assessment X_4	0.1983	0.4330	0.4579 NS	
	Height X_5	-0.7217	0.5687	-1.2691 NS	
	Weight X_6	4.3017	1. 9852	2.1669*	

NS - Not significant
* - Significant at P = 0.05 level

The cumulative effect from Table XVI(b) indicated that all the six independent factors influenced up to 50.02 per cent on the mental ability of the children. Among these variables, the weight of children (4-5 years) prominently influenced the mental ability. For an unit increase of one unit of weight the mental ability gets increased by 4.30 units as seen by the partial regression analysis. The effects of environmental cleanliness and height are negatively influencing the mental ability while other variables - personal hygiene, chronic sickness and clinical assessment have exerted mild positive influence on the mental ability of children (4-5 years).

These observations fall in line with the findings of Bee and Mitchell (1984). They stated that physical capacities set limits on what children can do and children who are rapid in physical growth are more rapid in mental growth too.

ii) Assessment of mental ability of LRAW children with health parameters

TABLE XVII(a): MENTAL ABILITY OF CHILDREN OF LRAW WITH HEALTH STATUS

(N=20)

Age		X_1	X_2	X_3	X_4	X_5	X_7
	Mental ability(Y)	0.1949	0.0553	0.1608	-0.1507	-0.1758	0.1955
	Personal hygiene(X_1)		0.3284	0.1625	0.5992**	0.4627*	0.5719**
3-4 years	Chronic sickness(X_2)			0.0	-0.1120	-0.0474	0.1008
	Environment cleanliness (X_3)				0.1395	0.2009	0.3618
	Clinical assessment(X_4)					0.3505	0.5945**
	Height (X_5)						0.4498**
	Weight (X_6)						-

** - Significant at P=0.01 level
* - Significant at P=0.05 level

Among the independent variables personal hygiene is highly correlated with clinical assessment (r=0.5992**), height (r=0.4627*) and weight (r=0.5719**) of the children. Weight is again significantly correlated with clinical assessment (r=0.5945**) and height of the children (r=0.4498*). The mental ability is positively associated with personal hygiene, chronic sickness, environmental cleanliness and weight.

TABLE XVII(b): MENTAL ABILITY OF CHILDREN LRAWS WITH HEALTH STATUS

(N=20)

Age		X_1	X_2	X_3	X_4	X_5	X_6
4-5 years	Mental ability(Y)	0.0897	0.3102	0.1467	0.2025	-0.2812	0.1294
	Personal hygiene(X_1)		0.0104	0.0314	0.3802	0.2954	0.3072
	Chronic sickness(X_2)			0.0953	-0.0945	0.1471	0.3871
	Environmental cleanliness(X_3)				0.0114	-0.0922	0.0313
	Clinical assessment (X_4)					0.3489	0.7171**
	Height (X_5)						0.5489*
	Weight (X_6)						-

** - Significant at P = 0.01 level

* - Significant at P = 0.05 level

The mental ability is not correlated with any of the health status scores of the children of 4 to 5 years aged under LRAWs.

Among the independent variables, only the weight is significantly correlated with clinical assessment scores (r=0.7171**) and height of the children (r=0.5489**).

TABLE XVIII(a): CUMULATIVE EFFECT OF HEALTH SCORE ON ABILITY OF CHILDREN OF LRAWS (N=20)

Age	Variable	Partial regression analysis	SE	't'	R^2
3-4 years	Personal hygiene (X_1)	0.4628	0.2500	1.9312 Ns	0.3974 Ns
	Chronic sickness (X_2)	-2.7548	2.3269	-1.1839 Ns	
	Environmental cleanliness (X_3)	0.1918	0.5244	0.3658 Ns	
	Clinical assessment (X_4)	-0.5225	0.2430	-2.1502 Ns	
	Height (X_5)	-0.7228	0.3992	-1.8109 Ns	
	Weight (X_6)	0.8554	0.6059	1.4117 Ns	

The cumulative effect of all the variables is only 39.7 per cent on mental ability as seen by the R^2 value. However the parameters such as personal hygiene,

environmental cleanliness and weight have positively influenced the mental ability.

TABLE XVIII(b): CUMULATIVE EFFECT OF HEALTH SCORE ON MENTAL ABILITY OF LRAW CHILDREN

(N=20)

Age	Variable	Partial regression analysis	SE	't'	R^2
4-5 years	Personal hygiene (X_1)	0.0844	0.2950	0.2862	
	Chronic sickness (X_2)	10.7602	5.5555	1.9369 NS	
	Environmental cleanliness (X_3)	0.5654	0.7533	0.7505 NS	0.3994 NS
	Clinical assessment (X_4)	0.6861	0.4491	1.5278 NS	
	Height (X_5)	-0.0403	0.2733	-1.4747 NS	
	Weight (X_6)	-1.0943	1.5181	-0.7208 NS	

The mental ability is explained by the six independent variables only up to 39.94 per cent. The cumulative effect of all these variables as well as the individual effects of them are not significant.

When conditions are ripe for growth of language and intelligence, growth is dependent on opportunities to manipulate and interact with the environment and upon

the active quality of children's listening and speaking (Lorten and Walley, 1979). Since mental ability tests are heavily weighted with language and older children (4-5 years) may have achieved high levels of language skills, their performance in the mental ability test depends on their extent of language development and is not greatly affected by other factors such as illness or the condition of health (Mussen et al., 1984).

d. Correlations and Multiple Regression Analysis on the mental abilities of boys and girls of HRAW and LRAW under different age groups

By applying the principle of simple correlations and multiple regression analysis, the factors associated with the mental abilities of boys and girls of both HRAWS and LRAWS under different age groups were assessed under the following heads:

i) Assessment of mental ability of girls and boys of HRAWS aged 3 to 4 years

ii) Assessment of mental ability of girls and boys of LRAWS aged 3 to 4 years

iii) Assessment of mental ability of girls and boys of HRAWS aged 4 to 5 years

iv) Assessment of mental ability of girls and boys of LRAWS aged 4 to 5 years

1) Assessment of mental ability of girls and boys of HRAWS (3 to 4 years)

TABLE XIX(a): MENTAL ABILITY OF CHILDREN (GIRLS) OF HRAWS WITH OTHER INFORMATIONS

Age		X_1	X_2	X_3	X_4
3-4 years	Mental ability(Y)	0	0.0735	0.2399	-0.2059
	Order of birth (X_1)		0.9763**	-0.2896	-0.2014
	No.of siblings(X_2)			-0.3320	-0.3185
	Height (X_3)				0.3054
	Weight (X_4)				-

Order of birth and number of siblings are correlated with each other significantly. Mental ability is however mildly associated with number of siblings and height.

Since cognitive development is mainly influenced by factors such as maturation of central nervous system (Kogan, 1984), genetic make up, teacher stimulation of intellectual achievement, cultural opportunities and motivation to do well in school (Mussen et al., 1984), the very minor factors like order of birth and number of siblings had practically no effect on the mental abilities from the above findings.

TABLE XIX(b): MENTAL ABILITY OF CHILDREN (BOYS) OF HRAWS WITH OTHER INFORMATION

(N=10)

Age		X_1	X_2	X_3	X_4
3-4 years	Mental ability(Y)	-0.3765	-0.3869	0.0197	0.5726
	Order of birth(X_1)		0.8861**	0.0954	-0.0778
	No.of siblings(X_2)			-0.0381	-0.3121
	Height (X_3)				0.4075
	Weight (X_4)				-

The above table reveals that the order of birth and number of siblings are correlated significantly with each other (r=0.8861**), while other informations - height and weight even though positively associated with the mental ability of boys (3-4 years), their contributions are not expressed prominently.

TABLE XX(a): CUMULATIVE EFFECT OF OTHER INFORMATIONS ABOUT CHILDREN ON MENTAL ABILITY OF HRAWS (GIRLS)

(N=10)

Age	Variable	Partial regression coefficient	SE	't'	R^2
3-4 years	Order of birth(X_1)	-1.0157	1.3805	-0.7357 NS	
	No.of siblings(X_2)	1.1060	1.4401	0.7680 NS	0.2351NS
	Height (X_3)	0.2647	0.2999	0.8825 NS	
	Weight (X_4)	-0.2872	1.5055	-0.1908 NS	

The cumulative effect of all the four independent variables is only 23.5 per cent. The individual contribution towards the mental ability is also not significantly exhibited, however number of siblings and height had positive influences on the mental ability.

TABLE XX(b): CUMULATIVE EFFECT OF CHILDREN'S INFORMATION ON MENTAL ABILITY OF HRAWS (BOYS)

(N=10)

Age	Variable		Partial regression coefficient	SE	't'	R^2
3-4 years	Order of birth	(X_1)	-1.1816	1.2306	-0.9602 NS	0.5112 NS
	No. of siblings	(X_2)	0.7547	1.2331	0.6121 NS	
	Height	(X_3)	-0.2327	0.4096	-0.5683 NS	
	Weight	(X_4)	1.7660	0.9259	1.9073 NS	

The cumulative contribution of the four factors studied is 51.1 per cent and among the four factors number of sibling and weight contributed positively towards the mental health of boys (3-4 years), however their influence was not well exhibited.

ii) Assessment of mental ability of girls and boys of LRAWS (3-4 years)

TABLE XXI(a): MENTAL ABILITY OF CHILDREN (GIRLS) OF LRAWS WITH OTHER INFORMATIONS

(N=10)

Age		X_1	X_2	X_3	X_4
	Mental ability (Y)	0.1559	0.1575	-0.3632	0.0322
3-4 years	Order of birth (X_1)		0.9317**	-0.4635	-0.8034**
	No. of siblings (X_2)			-0.4943	0.7799**
	Height (X_3)				0.6981*
	Weight (X_4)				-

The correlation between order of birth and number of siblings is highly significant (r = 0.9314**). It is interesting to note that weight of the children is negatively associated with the order of birth (r = -0.8034**) and number of siblings (r = 0.7799**). The weight is positively correlated with height (r = 0.6981*). Similar reports were also recorded by UNICEF (1983) and expressed that immediate and frequent pregnencies of the mother with inadequate

spacing, creates malnutrition in children, thereby deteriorating their mental capacities.

TABLE XXI(b): MENTAL ABILITY OF CHILDREN (BOYS) OF LRAWS WITH OTHER INFORMATIONS

(N=10)

Age		X_1	X_2	X_3	X_4
	Mental ability (Y)	0.1985	-0.1079	-0.1402	0.2415
3-4 years	Order of birth (X_1)		0.7633*	0.0927	-0.0815
	No. of siblings(X_2)			0.1615	-0.2984
	Height (X_3)				-0.1581
	Weight (X_4)				-

From the coefficients (Table XXI(b)) it is noticed that order of birth and number of siblings is closely related (r = 0.7633*). The other informations such as order of birth and weight of boys (3-4 years) are also mildly associated with their mental ability in LRAWS, however their association is not significantly exhibited.

TABLE XXII: CUMULATIVE EFFECT OF OTHER INFORMATIONS ON MENTAL ABILITY OF LRAWS (GIRLS)

(N=10)

Variable	Partial regression coefficient	SE	't'	R^2
Order of birth (X_1)	1.3354	1.6448	0.8119 NS	
No.of siblings (X_2)	-0.0565	1.6900	-0.0334 NS	0.4847 NS
Height (X_3)	-1.0427	0.5393	-1.9334 NS	
Weight (X_4)	1.9246	1.0419	1.8471 NS	

The cumulative effect of four factors on mental ability is only 48.47 per cent. The weight and order of birth positively contributed towards mental ability of girls (3-4 years). However, their effect on mental ability is not well pronounced.

(iii) Assessment of mental ability of girls and boys of HRAWS (4-5 years)

TABLE XXIII(a): MENTAL ABILITY OF CHILDREN (GIRLS) OF HRAWS WITH OTHER INFORMATIONS

Age		X_1	X_2	X_3	X_4
4-5 years	Mental ability (Y)	-0.5139	-0.7384*	0.0326	0.5651
	Order of birth (X_1)		0.8341**	-0.1080	-0.1732
	No.of siblings (X_2)			-0.0029	-0.1887
	Height (X_3)				0.2625
	Weight (X_4)				-

The associations revealed that mental ability is negatively correlated with number of siblings ($r = -0.7384^{*}$). The correlation between order of birth and number of siblings is highly significant ($r = 0.8341^{**}$) and other correlations are not however significant.

TABLE XXIII(b): MENTAL ABILITY OF CHILDREN (BOYS) OF HRAWS WITH OTHER INFORMATION

(N=10)

Age			X_1	X_2	X_3	X_4
4-5 years	Mental ability	(Y)	0.2268	0.3564	-0.2875	0.2828
	Order of birth	(X_1)		0.8215**	-0.7855**	-0.5035
	No.of siblings	(X_2)			-0.6898*	-0.4053
	Height	(X_3)				0.3620
	Weight	(X_4)				-

Order of birth is positively associated with number of siblings and negatively correlated with height of the children and in turn, number of siblings is negatively correlated with the height of boys 4-5 years old of HRAWS. Mental ability of boys (4-5 years) in HRAWS is enhanced mildly by the order of birth and number of siblings.

TABLE XXIV: CUMULATIVE EFFECT OF OTHER INFORMATIONS ON MENTAL ABILITY OF HRAWS GIRLS

(N=10)

Age	Variable		Partial regression coefficient	SE	't'	R^2
4-5 years	Order of birth	(X_1)	1.1971	1.3782	0.8686 NS	0.7750 NS
	No. of siblings	(X_2)	-4.0910	1.7173	-2.3822 NS	
	Height	(X_3)	-0.1097	0.4511	-0.2431 NS	
	Weight	(X_4)	3.7654	1.8277	2.0602 NS	

All the four variables put together influenced the mental ability of 4-5 years girls of HRAWS to a tune of 77.5 per cent. The individual effects of number of siblings and weight of children are not significant even though their contributions are considerably more.

iv) Assessment of mental ability of girls and boys of LRAWS (Age 4 to 5 years)

TABLE XXV(a): MENTAL ABILITY OF CHILDREN (GIRLS) AGED LRAWS WITH OTHER INFORMATIONS

(N=10)

Age		X_1	X_2	X_3	X_4
4-5 years	Mental ability (Y)	-0.7261*	-0.6715*	-0.4185	-0.2677
	Order of birth (X_1)		0.9140**	0.1415	0.0985
	No.of siblings (X_2)			0.1997	0.0686
	Height (X_3)				0.7108*
	Weight (X_4)				-

The correlation coefficient between mental ability and order of birth, number of sibling revealed that these two variables are negatively and significantly correlated with the mental ability. However the order of birth is positively correlated with the number of siblings (r = 0.9140**). The correlations between height and weight is positive and significant.

The cumulative effect on other informations with mental ability contributed 63.3 per cent (R^2 = 0.6330 NS). However their difference could not be traced statistically.

TABLE XXV(b): MENTAL ABILITY OF CHILDREN OF LRAWS WITH OTHER INFORMATIONS (BOYS)

(N=10)

Age		X_1	X_2	X_3	X_4
4-5 years	Mental ability (Y)	-0.5385	-0.4534	-0.1948	0.6075
	Order of birth (X_1)		0.9116**	0.4306	-0.1638
	No.of siblings (X_2)			0.3511	-0.2566
	Height (X_3)				0.3122
	Weight (X_4)				-

The weight of boys (4-5 years) in LRAWS is positively associated with mental ability and the other parameters used for assessing mental ability of these boys were not impressive.

The cumulative effect of all the four independent variables on the mental ability scores of boys (4-5 years) of LRAWS showed a similar trend (R^2 = 0.6665 NS).

Summary and Conclusions

V. SUMMARY AND CONCLUSION

The purpose of this study was to assess the cognitive development of Anganwadi children under ICDS. The selected Anganwadis under ICDS were assessed as High Ranking and Low Ranking and from these anganwadis totally 80 children in the age group of 3-4 and 4-5 years with equal sex distribution from HRAWS and LRAWS and teachers of the children of these Anganwadis constituted the sample. Four types of tools were used to collect data from children and teachers. Sample selection and data collection of this study consumed five months. The findings are summarised below under different headings.

A. Assessment of Anganwadis and Their Teachers

The teacher's scores of the HRAWS was significantly higher than the teacher's scores of LRAWS.

B. Assessment of Children's Cognitive Development

1. Children in the age group of 4 to 5 years had recorded remarkably higher scores on mental ability than the children in the age group of 3 to 4 years in both HRAWS and LRAWS.

2. In both the age groups (3 to 4 and 4 to 5) HRAWS children obtained higher mental ability scores than the children of LRAWS.

3. The higher percentage of HRAW teacher's score over LRAW teacher's clearly showed the superiority of teachers handling the HRAWS, and in turn it had also reflected in the higher percentage of mental ability of children in the HRAWS of both age groups.

4. Among girls of 3-4 years old, HRAW children had significantly higher cognitive scores than the LRAW children.

5. Regarding boys belonging to both age groups HRAW children performed better in their mental ability tests than LRAW children. In turn boys established superiority over girls.

6. Among boys of 4-5 years, HRAW children registered impressive heights than LRAW children.

7. Among the girls of 3-4 years old, HRAWS children recorded significantly more weight than LRAWS children. Likewise among boys of both age groups HRAWS children weighed more than LRAWS children. In the case

of children of HRAW aged 4-5 years, boys were weighing more than the girls.

8. HRAW children were found to be significantly better in personal hygiene than LRAW children.

9. Among the children aged 3-4 years, HRAW children received higher clinical assessment scores than the LRAW children. However, the children of HRAWS and LRAWS were alike in their clinical assessment scores when children of 4-5 years were considered.

10. HRAW children of both age groups registered more weights than the children of LRAW.

11. The results of correlation coefficient analysis revealed that the mental ability scores of children significantly correlated with the clinical assessment scores and weights of the children.

RECOMMENDATIONS

The recommendations arising out of this study are as follows:

1. Concrete steps must be taken to improve the physical set up of the AWS specially with reference to

LRAWS in terms of hygiene, outdoor space, surroundings, toilet facilities and built in shelves.

2. Periodic refresher courses for the AW teachers should be given to revise their current trend and to develop their knowledge about children's cognition up to date.

3. Evaluation of the AW teachers should be done once in a year by the supervisory staff for improving the standards of the AWS, specially the LRAWS.

4. Teaching aids and playing materials need to be adequately provided to enhance the mental ability of the children.

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Appendices

APPENDIX A

Tool - Test on Mental Abilities

I. Verbal Abilities

Sub test 1. Identifying objects by names:
Materials: 1. Book
2. Pen
3. Ball
4. Thread
5. Match Box

Procedure: The experimenter arranges the objects in the above order & picks out one at a time and shows it to the subject asking, "What is this" or "what do you call this"? or "What is the name of this"?

Scoring: For each correct answer one mark is given. The maximum score possible is 5.

Sub test 2. Picture Vocabulary
Materials

It consists of a booklet with the following pictures:

1. Mango
2. Table
3. Tumbler
4. Well
5. Telephone

Procedure: The experimenter shows one picture at a time asking "What is this?" or "What do you call this?" or "What is the name of this?"

Scoring: For each correct one mark is given. The maximum score possible is 5.

Sub Test 3: Identifying objects by use

Items: 1. Fan
2. Clock
3. Book
4. Petrol
5. Train

Procedure: The experimenter tells the name of the item one by one and asks, "What is the use of - " or "why should we have a ___".

Scoring: For each correct answer one mark is given. The maximum score possible is 5.

II. Information

Sub Test 4. Information

The experimenter puts the following questions to the subjects.

Questions: 1. Where is monkey's tail?
2. Where does a lion live?
3. What is the colour of a crow?
4. How many fingers are there in a hand?
5. What do we get from a coconut tree?

Scoring: For each correct answer one mark is given. The maximum score possible is 5.

III. Comprehension

Sub test 5. Verbal comprehension

a) Procedure: The experimenter puts the following questions to the subject.

Questions: 1. Point out your right ear/left hand.
2. How can you avoid thorns, while going out?
3. What should you buy to go by train?
4. What will happen to a house built out of glass?

Following Directions

b) Procedure: The experimenter says, "Do what I tell you to do" and gives the following order.

"Keep this book on the table, close the door and give me the book placed over there" (pointing to it)

Score: For each correct answer in (a) one mark is given, in (b) if the order is carried out correctly, it is scored one. The maximum score possible is 5.

IV. Memory

Sub test 6: Memory for digits

Procedure: The experimenter says, "Repeat what I say" and tells the following digits, at the rate of 1 digit per second.

Items:
Sample: 4-6-2 (not scored)
1. 2-4-9-1; 7-1-5-3
2. 3-7-5-8-4; 8-6-9-2-7

Score: If the subject repeats the number correctly in the same order, one point is given. Maximum score possible is 2.

Sub test 7: Memory for words

Procedure: The experimenter says, "Listen carefully to what I say, you must repeat it in the same words".

1. Mother
2. I won't fight with anybody
3. We have a beautiful garden at home
4. Rama climbed the coconut tree and plucked coconuts

Score: If the subject repeats the words in an item correctly, one mark is given, Max. score possible is 4.

Sub test 8. Memory for story

Procedure: The experimenter tells the story, "Fox and the grapes" as follows:

"Once upon a time, there was a fox in the forest. The fox was very hungry. It was a grape garden. It was full of grapes, which could not be easily reached. The fox jumped up to eat the grapes. But it could never reach it. The fox said, "These grapes are sour" and ran away.

Then the experimenter puts the following questions to the subject:

1. What was there in the forest?
2. How did the fox feel?
3. What did the fox see?
4. Did the fox eat the fruit?
5. What did the fox say in the end?

Score: For each correct answer one mark is given. The maximum score possible is 5.

Sub test 9. Memory for object removed

Materials
1. Flower, chocolate, comb, whistle
2. Cup, plate, spoon, bangle, pencil

Procedure: The experimenter places the objects under item 1, before the subject and asks "What is this?" If the subject is not aware of the object, the experimenter

names it. Then the experimenter says, "Now look at these objects carefully". After a few seconds, the experimenter covers the objects with a screen and removed any one (key). Then removes the screen and asked "what is missing?"

The same procedure is followed for item-2, where the button is removed.

Score: For each correct answer, one mark is given. The maximum score possible is 2.

V. Spatial Relations

Sub test 10. Visual perception

Material

A booklet with 6 picture

Procedure: The experimenter shows the first picture to the subject and says, "Here you see a picture in the centre. There are 4 more around it. Show me the one which is just like the one in the centre".

If the subject has difficulty in following the experimenter demonstrates the first one which is the sample item.

Score: For each correct response, one mark is given. The maximum score possible is 5 (sample not scored).

Sub Test 11. Mutilated pictures

Material - A booklet with 6 mutilated pictures (Finding the missing item)

Score: Max.5

VI. Reasoning

Sub test 12. Verbal Reasoning

Procedure: The experimenter reads the following incomplete sentences to the subject and asks the subject to fill them up correctly.

Items:

1. Chilli is hot, sugar is _____
2. Dog is on the ground, fish is _____
3. Ice is cold, fire is _____
4. Car runs on the road, ship _____

5. Rabbit moves fast, tortoise _____
6. Milk is white, crow is _____
7. Brother is a boy, sister is _____
8. Sun rises in the morning, moon rises _____
9. Cotton is light, iron is _____

Score: Max. 9

Raw Score: The total score obtained by the subject in the entire test constitutes his/her raw score.

Standard scores: The raw scores are converted into standard scores by referring to the norms with the C.A. of the subject.

DATA SHEET FOR THE TEST ON MENTAL ABILITIES

Name	:	Date of Testing	:
Date of birth	:	C.A.	:
Wt. (in kg)	:	Sex	:
Ht. (in cm)	:	Rural	:
No. of sibling	:	Urban	:
Order of birth	:	Joint	:
Type of family	:	Nuclear	:

Name	Education	Occupation	Income per month
Father			
Mother			

Sub-Tests	1	2	3	4	5	6	7	8	9	10	11	12
Items												
Total												

Raw Score Standard score: 57

Remarks:

APPENDIX B

SRI AVINASHILINGAM HOME SCIENCE COLLEGE FOR WOMEN

FACULTY OF CHILD DEVELOPMENT

Interview schedule to assess the Health Stature of Children in Anganwadis (Health Aspect)

I. Details regarding health

1. Immunisation

	I Dose	II Dose	III Dose	Booster I	Booster II
A. Polio					
B. D.P.T.					
C. D.T.					
D. Small pox					
E. E.C.G.					

2. Height (cm)
3. a) Weight (kg)
   b) Grade of children

Normal	Grade I	Grade II	Grade III	Grade IV

4. Chronic sickness during the past three months.
5. Personal hygiene

	Good	Fair	Poor
Dress			
Hair			
Face			
Nose			
Eye			
Skin (Scobiase)			
Hands & Nails			
Legs			

6. Environmental cleanliness
7. Disposal waste
8. Proper water supply
9. Light and ventilation
10. Clinical assessment

I. Infection

Head
a) Head ache
b) Trauma

II. Eyes
a) Strabismus
b) Pain
c) Inflamation
d) Other disturbances

III. Ear
   a) Pain
   b) Discharge
   c) Tinnitus

IV. Nose
   a) Discharge
   b) Spistaxiz
   c) Abstruction
   d) Disturbances in olfactory sense

V. Teeth
   a) Extractions
   b) Disorders of dentition
   c) Abscesses
   d) General condition

VI. Mouth
   a) Mouth breathing
   b) Sore mouth
   c) Sore tongue
   d) Caries bleeding gums

VII. Throat
   a) Pain
   b) Infection
   c) Tonsils
   d) Difficulty in swallowing

VIII. Respiratory
   a) Cold
   b) Cough
   c) Sputum
   d) Stridor
   e) Bronchite
   f) Asthma

IX. Gastrointestinal
   a) Food indigestion
   b) Vomiting
   c) Abdominal discomfort pain
   d) Constipation
   e) Diarrhoea
   f) Jaundice
   g) Pain in the abdomen

X. Cardiovascular
   a) Dysorea
   b) Palpitation
   c) Syncope

XI. Genito-urinary
   a) Difficulty in passing urine

XII. Musculo skeletal
- a) Weakness
- b) Swelling or pain of joint
- c) Deformities
- d) Fracture

XIII. Nervous
- a) Sleep disturbances
- b) Tics
- c) Tramours
- d) Paralysis

XIV. Skin
- a) Eruption
- b) Congenital anamalice
- c) Itching
- d) Pigmentation
- e) Erythema
- f) Bruising
- g) Peteclual

XV. Allergic reaction
- a) Asthma

XVI. Accidents
- a) Burns
- b) Fracture

XVII. Heiminthiasis
- a) Irregular Bowel movement
- b) Passing blood and mucus
- c) Passing worms through rectum
- d) Vomiting worms

XVIII. Deficiency
- a) Vitamin A
- b) Night blindness
- c) Xerapthalmia
- d) Bitot's spots
- e) Kerato malacia

XIX. Vitamin B
- a) Angular stomatitis
- b) Glocsits

XX. Iron
- a) Anaemia
- b) Pale conjunction
- c) Atropic lingual papilla

XXI. Malnutrition

a) Loss of weight
b) Fatigue
c) Lassitude
d) Restlessness
e) Anorexia
f) Anaemia

XXII. Protein energy

a) Kwashiorkar
b) Marasmus

APPENDIX C

INVESTIGATOR'S OBSERVATION PROFORMA

*Observe the programmes at Anganwadi (AW) for 2 days at least and complete this schedule on the final day.

____ ____ a) State
____ ____ b) District
____ ____ c) ICDS Project
d) Name of Anganwadi
____ ____ ____ e) AW Code/Sl.No.
____ f) Name of Investigator
____ ____ g) Name of the Technical Institution conducting the study
____ ____ ____ h) Date of filling : Time :

PRE-SCHOOL ATTENDANCE

____ 1) During your investigation of the AW Centre/Village for few days, what is the average attendance at the AW pre-school.

(1 - Below 50% of children enrolled attended
2 - 50% - 75% of children enrolled attended
3 - Above 75% of children enrolled attended)

____ 2) How much time do children thus attending stay in the pre-school at AW?

(1 - Leaves much earlier
2 - Stays upto feeding programme
3 - Stays for the whole duration)

____ 3) What is the average attendance on the two days of your observation of AW pre-school?

(1 - Below 50% of children enrolled attended
2 - 50% to 75% of children enrolled attended
3 - Above 75% of children enrolled attended)

PHYSICAL SET-UP OF PRE-SCHOOL/AW

4) Availability of space at AW

____ i) Indoor space
____ ii) Outdoor space
____ iii) Cooking place/Kitchen area
____ iv) Washing place / area

(0 - No
1 - Yes)

____ 5) Availability of drinking water at AW

(0 - Not available
1 - Storage available
2 - Drinking - water source available)

6) Location of the AW

____ i) Away from dumping ground
____ ii) Away from ponds/stagnant waters
____ iii) Away from dirty drains
____ iv) Away from bushy/thorny area
____ v) Away from uneven ground
____ vi) Away from railway lines
____ vii) Away from traffic roads
(0 - No
1 - Yes)

7) Child participation in AW activities

____ i) Total number of children participating
____ ii) Children looking relaxed & happy
____ iii) Children freely moving around
____ iv) Children freely using toys/learning - aids
(1 - Very few children
2 - 50% of children
3 - Majority of children)

8) Education means

____ i) Variety of activities
____ ii) Appropriate materials/aids
____ iii) Adequate No. of materials/aids
____ iv) Proper storage of materials/aids
____ v) Proper material/aids maintenance
(0 - does not exist
1 - exists)

9) Variety of teaching / learning materials / aids

____ i) Toys
____ ii) Counting frames
____ iii) Crayons (Colours)
____ iv) Dholak
____ v) Hand-made aids / materials
____ vi) Locally made aids / materials
____ vii) Primers, books, charts etc.
____ viii) Photographs of National leaders
____ ix) Others (specify)
(0 - Does not exist
1 - exists)

10) Pre-school records - Maintenance (check with records)

____ i) Monthly progress reports
____ ii) Immunization cards
____ iii) Attendance registers
____ iv) Equipment / stock registers
____ v) Home visits diary
____ vi) Activities Register
(1 - Not upto date
2 - Upto date
3 - Upto date & well maintained)

Other AW Services

11) Feeding service at AW

_____ i) For pregnant women
_____ ii) For lactating mothers
_____ iii) For children (0 - 3)
_____ iv) For children (3 - 6)
_____ v) For others (specify)
(1 - Unsatisfactory
2 - Satisfactory; 3 - Good)

12) How is the feeding services organised and conducted.

_____ (1 - Separately for each category
2 - In groups
3 - Jointly for all categories)

13) Referal service of children (0 - 6) lactating mothers and pregnant women.

_____ (1 - Unsatisfactory
2 - Satisfactory; 3 - Good)

14) Maintenance of Records

_____ i) Feeding service records
_____ ii) Referal service records
(1 - Not upto date
2 - Upto date
3 - Upto date and well maintained)

ANGANWADI WORKER'S SKILLS/ABILITIES

15) Organization/planning of various activities by the AW worker.

_____ i) Pre-school programme
_____ ii) Feeding programmes
_____ iii) Health & Nutrition education programmes
_____ iv) Referal service programme
_____ v) Others (specify)
(1 - Unsatisfactory; 2 - Satisfactory; 3 - Good)

16) Implementation of various activities by AW worker

_____ i) Pre-school programmes
_____ ii) Feeding programmes
_____ iii) Health & Nutrition education programmes
_____ iv) Referal service programmes
_____ v) Others (specify)
(1 - Unsatisfactory; 2 - Satisfactory; 3 - Good)

17) Mobilization of local support and involvement of community in AW activities.

_____ (1 - Unsatisfactory; 2 - Satisfactory; 3 - Good)

18) AW worker's relations with local people & beneficiaries.

_____ (1 - Unsatisfactory; 2 - Satisfactory; 3 - Good)

_____ _____ _____ GRAND TOTAL SCORE (Q.1 - Q.18)

திரு அவினாசிலிங்கம் மனையியல் கல்லூரி, கோயம்புத்தூர் - 43

சிறார் நலக்காப்பக ஆசிரியர்களின் கல்வித்திறனை மதிப்பிட உதவும் வினாத்தாள்

மாவட்ட எண் :

சிறார் நலக்காப்பக வகை எண் :

1. சிறார் நலக்காப்பகம் எந்த நிலைத்தால் நடத்தப்படுகிறது?

2. சிறார் நலக்காப்பகம் எந்த வயது குழந்தைகளுக்காக நடத்தப்படுகிறது?

3. சிறார் நலக்காப்பகம் எதற்காக நடத்தப்படுகிறது?

4. சிறார் நலக்காப்பகத்தின் நோக்கங்கள் யாவை?

5. சிறார் நலக்காப்பகத்தின் வெவ்வேறு நிகழ்ச்சிகளுக்கான பண ஒதுக்கீட்டை குறிப்பிடுக.

6. தமிழ்நாட்டில் 6 வயதுக்குட்பட்ட குழந்தைகளின் எண்ணிக்கை எவ்வளவு?

சிறார் நலக்காப்பகத்தின் அமைப்பு:

7. சிறார் நலக்காப்பகத்தின் சுற்றுப்புற சூழ்நிலை எவ்வாறு அமைந்திருக்க வேண்டும்?

8. சிறார் நலக்காப்பகத்தின் கட்டிடம் எப்படி இருக்க வேண்டும்?

9. சிறார் நலக்காப்பகத்தின் உட்புற, வெளிப்புற அமைப்பு:

	இருக்க வேண்டிய இடம் (ச.மி)	அறைகளின் எண்ணிக்கை	தேவையான வசதிகள்

கருவிகள்

10. சிறார் நலக்காப்பகத்திலுள்ள குழந்தைகளுக்குத் தேவையான விளையாட்டு மற்றும் கருவிகளின் பெயர்களை எழுதுக.

இரண்டு வயதுக்குட்பட்ட குழந்தை களுக்கான கருவிகள்	இரண்டு வயதுக்கு மேற்பட்ட குழந்தை களுக்கான கருவிகள்

11. சிறார் நலக்காப்பகத்தில் கல்வி கற்பிக்க தேவையான கருவிகள் யாவை?

12. சிறார் நலக்காப்பகத்திற்குத் தேவையான கருவிகள், அதன் முக்கியத்துவங்கள்?

	முக்கியத்துவம்	பெயர்கள்	25 குழந்தைகளுக்கு தேவையான கருவிகளின் எண்ணிக்கை
உட்புற விளையாட்டுக்கருவி			
வெளிப்புற விளையாட்டுக்கருவி			
இசைக்கருவிகள்			
ஆக்க வேலைப் பொருட்கள்			
விஞ்ஞான அனுபவங்களுக்கான பொருட்கள்			
குழு விளையாட்டுகள்			
எடை எருக்கும் கருவி			
முதலுதவிப் பெட்டி பொன்றவை			

13. சிறார் நலக்காப்பகத்திலுள்ள குழந்தைகளுக்கு விளையாட்டுக்கருவிகளைத் தேர்ந்தெருக்கும் போது கவனிக்க வேண்டிய விதிமுறைகள் யாவை?

14. குறைந்த விலையில் தயாரிக்கப்படும் விளையாட்டுக்கருவிகளின் பெயர்களையும் அதற்குத் தேவையான பொருட்களையும், முக்கியத்துவத்தையும் எழுதுக.

பெயர்கள்	தேவையான பொருட்கள்	விளையாட்டுக்கருவியின் முக்கியத்துவம்

நிகழ்ச்சி நிரல்

15. சிறார் நலக்காப்பகத்தில் ஒரு நாளைய கால அட்டவணையை எழுதுக.

நேரம்	நிகழ்ச்சிகள்

16. சிறார் நலக்காப்பகத்திற்கான ஒரு நாளைய நிகழ்ச்சிநிரலில் அடங்கியிருக்கும் நிகழ்ச்சிகளையும், அதன் முக்கியத்துவத்தையும் அதனைக் கற்பிக்கும் முறைகளையும் எழுதுக.

நிகழ்ச்சிகள்	முக்கியத்துவம்	கற்பிக்கும் முறைகள்	உங்களுக்கு தெரிந்த சில தலைப்புகள்

17. சிறார் நலக்காப்பக நிகழ்ச்சி நிலைத் தயாரிக்கும்போது கவனிக்க வேண்டியவை யாவை?

இரண்டு வயதுக்குட்பட்ட குழந்தைகளுக்கு	இரண்டு வயதுக்கு மேற்பட்ட குழந்தைகளுக்கு

18. குழந்தைகளுக்கான கதை புத்தகங்களின் பெயர்களையும், அதன் ஆசிரியர் பெயர்களையும் குறிப்பிடுக.

கதை புத்தகங்களின் பெயர்கள்	அதன் ஆசிரியரின் பெயர்

மதிய உணவுத் திட்டம்

19. மதிய உணவுத் திட்டத்தின் குறிக்கோள்கள் யாவை?

20. குழந்தை நலக்காப்பகத்திற்கு தந்த ஒருவார காலத்தின் மதிய உணவுப் பட்டியலை எழுதுக.

நாட்கள்	2 வயதுக்குட்பட்ட குழந்தைகளுக்கு	2 வயதுக்கு மேற்பட்ட குழந்தைகளுக்கு

21. ஒரு முழந்தையின் ஒருநாளைய உணவுத் தேவைகளை எழுதுக.

22. உணவு தயாரிக்கும்போது, உணவு பரிமாறும் போது கவனிக்க வேண்டிய விதிமுறைகள் யாவை?

உணவு தயாரிக்கும்போது	உணவு பரிமாறும்போது

பதிவேடுகள்

23. சிறார் நலக்காப்பகத்திற்கான பதிவேடுகளையும், அவற்றின் நோக்கங்களையும் குறிப்பிடுக.

வ.என்.	பதிவேடுகள்	வைத்திருப்பதன் நோக்கங்கள்

ஆசிரியர்கள்

24. சிறார் நலக்காப்பகத்தில் உங்களுடைய பணிகள் யாவை?

மருத்துவ பரிசோதனை –

ஊட்டச்சத்து –

வரவு–செலவு கணக்கு –

நிர்வகிப்பு –

25. சிறார் நலக்காப்பகத்தில் ஆசிரியர்–குழந்தைகள் விகிதமும் ஆயா–குழந்தைகளின் விகிதத்தையும் குறிப்பிடுக.

	இரண்டுவயதிற்குட்பட்ட குழந்தைகளுக்கு	இரண்டுவயதிற்கு மேற்பட்ட குழந்தைகளுக்கு
ஆசிரியர் –குழந்தைகள் விகிதம்		
ஆயா –குழந்தைகள் விகிதம்		

26. சிறார் நலக்காப்பாளரின் கடமைகளும், பொறுப்புகளும் யாவை?

27. சிறார் நலக்காப்பாளருக்கான குணநலன்கள் யாவை?

28. சமுதாய நல வளர்ச்சியில் சிறார் நலக்காப்பாளரின் பங்கு என்னென்ன?

29. சிறார் நலக்காப்பகத்தில் 2 வயதுக்குட்பட்ட குழந்தைகளுக்குத் தேவையான கவனம் யாவை?

30. குழந்தைகளின் தேவைகள், தன்மைகள் என்னென்ன?

	தேவைகள்	தன்மைகள்
2 வயதிற்குட்பட்ட குழந்தைகளின்		
2 வயதுக்கும் மேற்பட்ட குழந்தைகளின்		

31. குழந்தைகளின் கீழ்க்கண்ட வளர்ச்சிகளுக்கேற்ற செயல்களை எழுதுக.

வளர்ச்சி	அதற்கான செயல்கள்
உடல் வளர்ச்சி	
தசை வளர்ச்சி	
மொழி வளர்ச்சி	
அறிவு வளர்ச்சி	
சமூக வளர்ச்சி	

32. குழந்தைகளுக்கு ஏற்படும் பிரச்சனைகளும், அதற்கான தடுப்பு முறைகளையும் குறிப்பிடுக

பிரச்சனைகள்	அதனை தடுக்கும் முறைகள்

உடல் ஆரோக்கியம்

33. சத்துணவு என்பது என்ன?

34. சத்துணவில் அவசியம் யாது?

35. குழந்தைகளின் ஆரோக்கியத்தை எம்முறைகளில் பாரிசோதிக்கலாம்?

36. குழந்தைகளுக்கு ஆரோக்கியம் பற்றி என்னென்ன கருத்துக்களை கற்றுத்தரலாம்? அதன் குறிக்கோள்கள் யாவை?

கருத்துக்கள்	காரணங்கள்	கல்வி புகட்ட உதவும் உபகரணங்கள்/முறைகள்

37. சத்துணவுக்குறையினால்/உணவுப்பற்றாக்குறையினால் குழந்தைகளுக்கு ஏற்படும் நோய்களும், அதன் அறிகுறிகளும் அதற்கான காரணங்களும் அதனைத் தடுக்கும் வழிகளும் எழுதுக.

நோய்கள்	அறிகுறிகள்	காரணங்கள்	அதனைத் தடுக்கும் வழிகள்

38. குழந்தைகளுக்கு ஏற்படும் தொற்று நோய்களும், அதற்கான காரணங்களும் எழுதுக. தடுப்பூசியின் அவசியம் யாது? தடுப்பூசிக்கான அட்டவணையை எழுதுக.

தொற்று நோய்கள்	காரணங்கள்	அதனை தவிர்க்கும் வழிகள்

தடுப்பூசியின் அவசியம்

தடுப்பூசிக்கான அட்டவணை

வயது	தடுப்பூசியின் பெயர்

39. குழந்தைகளுக்கு ஏற்படும் சாதாரண நோய்களையும், இதற்கான காரணங்களையும் அதனைத் தவிர்க்கும் வழிகளையும் எழுதுக.

சாதாரண நோய்கள்	காரணங்கள்	தவிர்க்கும் வழிகள்

பெற்றோர்களின் பங்கு

40. சிறார் நலக் காப்பகம் நடத்துவதில் பெற்றோரின் பங்கு என்ன?

41. பெற்றோரிகளின் உதவியை எந்தெந்த விதங்களில் சிறார் நலக்காப்பக ஆசிரியை பெறலாம்?

42. சிறார் நலக் காப்பகத்து குழந்தைகளின் பெற்றோர்களை ஆசிரியை எந்தெந்த முறைகளில் சந்திக்கலாம்? அதன் பயன்கள் யாவை?

முறைகள்	பயன்கள்

43. சிறார் நலக்காப்பகத்தில் பெற்றோர் கல்வி அவசியமா? ஆம் எனில், அதற்கான காரணங்களையும், எம் முறைகளில் கற்றுத் தரலாம் என்பதையும் என்னென்ன விஷயங்கள் கற்றுத்தரலாம் என்பதையும் எழுதுக.

அவசியம்	கற்றுத்தரும் முறை	கற்றுத்தரவேண்டிய விஷயங்கள்

44. குழந்தை நலத்திற்காக பணிபுரியும் நிறுவனங்களின் பெயர்களை எழுதுக.

வ.எண்.	தேசிய நிறுவனங்கள்	அகில இந்திய நிறுவனங்கள்	மாநில நிறுவனங்கள்

45. ஒரு சிறார் நலக்காப்பகம் வெற்றிகரமாக நடக்கிறது என்பதை எவ்வாறு கண்டுபிடிக்கலாம்?

46. பயிற்சிக் காலத்தின் போது நீங்கள் பெற்ற பயிற்சி போதுமானதாக இருந்ததா?

ஆம் / இல்லை

47. இல்லையெனில் நீங்கள் கூறும் ஆலோசனைகள் என்ன?

48. நீங்கள் பணிபுரியும் சிறார் நலக்காப்பகத்தில் காணப்படும் பிரச்சனைகள் யாவை? அதனை தவிர்க்க நீங்கள் கூறும் ஆலோசனைகள் யாவை?

விவரங்கள்	பிரச்சனைகள்	அதனைத்தீர்க்கும் முறைகள்
காப்பகக் கட்டிடம்		
விளையாட்டுப் பொருட்கள்		
நிகழ்ச்சி நிரல்		

நீங்கள் பணிபுரியும் சிறார் நலக்காப்பகத்தில் காணப்படும் பிரச்சனைகள் யாவை? அதனை தவிர்க்க நீங்கள் கூறும் ஆலோசனைகள் யாவை?

விவரங்கள்	பிரச்சனைகள்	அதனைத்தீர்க்கும் முறைகள்
காப்பகக் கட்டிடம்		
விளையாட்டுப் பொருட்கள்		
நிகழ்ச்சி நிரல்		
மதிய உணவுத் திட்டம்		
பதிவேடுகள்		
சி.ந.காப்பகத்தில் பணியாளர்களின் பொறுப்புகள்		
காப்பகத்தை சிறப்பாக நடத்துவதற்கான ஆலோசனைகள்		
பெற்றோர் –காப்பக பணியாளர்கள் தொடர்பு		
சி.கா.நிர்வாகம்		
காப்பகத்தை செயல்படுத்தும் நிறுவனம்		

APPENDIX E

SCORE OF - ANGANWADI VS TEACHER

S.No.	Angi No.	Score	
		Anganwadi	Teacher
1) HIGH RANKING ANGANWADI			
1.	140	96	78
2.	184	95	67
3.	151	110	67
4.	177	101	67
5.	175	102	70
6.	162	97	80
7.	163	105	74
8.	152	99	95
9.	171	107	86
10.	179	101	80
11) LOW RANKING ANGANWADI			
11.	153	60	18
12.	164	71	52
13.	154	62	62
14.	190	62	29
15.	182	82	56
16.	161	62	40
17.	186	68	40
18.	178	77	46
19.	149	67	41
20.	181	66	42

APPENDIX F

MENTAL ABILITY SCORES OF CHILDREN (3 TO 4 YEARS) HIGH & LOW RANKING ANGANWADIS

S. No.	Mental ability score		Anganwadi score		Teacher score	
	HRAW	LRAW	HRAW	LRAW	HRAW	LRAW
1.	23	20	96	60	78	18
2.	20	13	96	60	78	18
3.	22	19	95	71	67	52
4.	23	20	95	71	67	52
5.	23	20	110	62	67	62
6.	24	13	110	62	67	62
7.	20	18	101	62	67	29
8.	24	17	101	62	67	29
9.	24	15	102	82	70	56
10.	21	15	102	82	70	56
11.	20	12	97	62	80	40
12.	22	13	97	62	80	40
13.	23	13	105	68	74	40
14.	21	15	105	68	74	40
15.	22	12	99	77	95	46
16.	25	17	99	77	95	46
17.	22	15	107	67	86	41
18.	26	15	107	67	86	41
19.	25	15	101	66	80	42
20.	20	12	101	66	80	42
Mean	22.5	15.45	101.3	67.7	76.4	42.6

APPENDIX G

MENTAL ABILITY SCORE OF CHILDREN (4 TO 5 YEARS) HIGH & LOW RANKING ANGANWADI

S. No.	Mental ability score		Anganwadi score		Teacher score	
	HRAW	LRAW	HRAW	LRAW	HRAW	LRAW
1.	52	39	96	60	78	18
2.	44	38	96	60	78	18
3.	49	49	95	71	67	52
4.	54	47	95	71	67	52
5.	57	40	110	62	67	62
6.	47	36	110	62	67	62
7.	52	42	101	62	67	29
8.	49	40	101	62	67	29
9.	57	39	102	82	70	56
10.	42	41	102	82	70	56
11.	52	47	97	62	80	40
12.	47	37	97	62	80	40
13.	55	43	105	68	74	40
14.	36	35	105	68	74	40
15.	44	46	99	77	95	46
16.	42	40	99	77	95	46
17.	54	34	107	67	86	41
18.	37	38	107	67	86	41
19.	45	43	101	66	80	42
20.	39	37	101	66	80	42
Mean	47.70	40.55	101.3	67.7	76.4	42.6

APPENDIX H

HEALTH STATUS OF CHILDREN 3-4 YEARS

High Ranking Anganwadi								Low Ranking Anganwadi							
						Physical								Physical	
Anganwadi No.	Mental ability score	Personal hygiene	Chronic sickness	Environmental cleanliness	Clinical assessment	Height (cm)	Weight (kg)	Anganwadi No.	Mental ability score	Personal hygiene	Chronic sickness	Environmental cleanliness	Clinical assessment	Height (cm)	Weight (kg)
140	23	24	0	10	64	92	11.800	153	20	10	1	8	50	93	8.550
140	20	16	1	10	55	90	9.850	153	13	10	1	8	54	90	9.100
184	22	16	1	10	63	95	12.000	164	19	16	1	10	63	93	12.100
184	23	16	1	10	60	90	11.400	164	20	8	1	10	51	90	9.800
151	23	8	1	10	60	90	11.800	154	20	16	1	9	57	90	11.350
151	24	12	1	10	58	91	11.500	154	13	16	1	9	59	95	11.850
177	20	8	1	10	59	91	10.700	190	18	16	1	7	58	92	10.250
177	24	16	1	10	64	92	12.450	190	17	8	1	7	57	90	9.100
175	24	8	0	8	58	92	11.500	182	15	8	1	7	58	90	10.700
175	21	9	1	8	61	93	12.400	182	15	16	1	7	63	93	11.050
162	20	20	1	8	64	94	12.750	161	12	8	1	8	57	94	10.000
162	22	8	1	8	56	90	11.400	161	13	16	1	8	61	93	11.050
163	23	14	1	9	60	94	12.400	186	13	15	1	9	58	94	8.400
163	21	14	1	9	59	93	11.000	186	15	8	1	9	57	90	9.100
152	22	16	0	10	60	95	11.850	178	12	8	1	10	56	90	8.150
152	25	16	1	10	63	94	12.350	178	17	16	1	10	63	91	11.400
171	22	15	1	10	65	90	12.150	149	15	14	1	10	62	93	11.850
171	26	13	1	10	62	90	12.900	149	15	8	0	10	59	94	11.900
179	25	8	0	10	57	94	11.400	181	15	8	0	7	59	90	7.500
179	20	16	1	10	65	90	12.200	181	12	8	1	7	54	90	9.200

APPENDIX I

HEALTH STATUS OF CHILDREN 4-5 YEARS

High Ranking Anganwadi								Low Ranking Anganwadi							
						Physical								Physical	
Anganwadi No.	Mental ability score	Personal hygiene	Chronic sickness	Environmental cleanliness	Clinical assessment	Height (cm)	Weight (kg)	Anganwadi No.	Mental ability score	Personal hygiene	Chronic sickness	Environmental cleanliness	Clinical assessment	Height (cm)	Weight (kg)
140	52	16	1	10	60	104	15.850	153	39	11	1	8	54	103	13.500
140	44	16	1	10	59	97	13.850	153	38	17	1	8	52	98	11.750
184	49	21	1	10	63	104	15.750	164	49	16	1	10	62	94	13.550
184	54	24	1	10	64	104	14.550	164	47	14	1	10	64	98	14.750
151	57	24	1	10	66	104	15.750	154	40	24	1	9	63	109	15.300
151	47	21	1	10	60	99	13.800	154	36	16	1	9	60	101	13.500
177	52	16	1	10	62	101	14.450	190	42	20	1	7	63	97	15.550
177	49	23	1	10	65	105	15.900	190	40	16	1	7	61	99	13.900
175	57	21	1	8	66	109	16.000	182	39	22	1	7	65	109	14.800
175	42	20	1	8	53	104	13.400	182	41	10	1	7	59	99	12.750
162	52	22	1	8	66	107	14.400	161	47	16	1	8	59	102	12.750
162	47	16	1	8	63	103	13.950	161	37	15	1	8	58	98	12.150
163	55	16	1	9	62	104	14.750	186	43	14	1	9	61	104	14.700
163	36	16	1	9	56	105	13.950	186	35	16	0	9	62	99	11.700
152	44	15	1	10	52	107	13.600	178	46	21	1	10	64	102	14.400
152	42	16	0	10	59	102	13.600	178	40	16	1	10	55	101	12.800
171	54	16	1	10	61	99	14.850	149	34	14	1	10	65	108	16.400
171	37	16	1	10	63	102	14.000	149	38	15	1	10	57	101	13.150
179	45	22	1	10	64	109	16.400	181	43	15	1	7	64	107	14.900
179	39	17	1	10	63	102	13.200	181	37	15	1	7	62	103	14.200

APPENDIX J

INFORMATION ABOUT CHILDREN 3-4 YEARS

	High Ranking Anganwadi						Low Ranking Anganwadi					
	Anganwadi No.	Mental ability score	Order of birth	No. of siblings	Height in cm	Weight in kg	Anganwadi No.	Mental ability score	Order of birth	No. of siblings	Height in cm	Weight in kg
Girls												
1.	140	23	6	5	92	11.800	153	13	2	2	90	9.100
2.	184	23	3	3	90	11.400	164	20	4	3	90	9.800
3.	151	24	6	5	91	11.500	154	13	2	2	95	11.850
4.	177	24	2	1	92	12.450	190	17	2	2	90	9.100
5.	175	24	2	2	92	11.500	182	15	2	2	93	11.050
6.	162	22	2	1	90	11.400	161	13	1	0	93	11.050
7.	163	23	2	1	94	12.400	186	13	4	3	94	8.400
8.	152	22	1	0	95	11.850	178	12	4	3	90	8.150
9.	171	22	1	0	90	12.150	149	15	1	0	94	11.900
10.	179	20	5	4	90	12.200	181	15	5	4	90	7.500
Boys												
1.	140	20	2	2	90	9.850	153	20	5	5	93	8.550
2.	184	22	2	1	95	12.000	164	19	5	4	90	12.100
3.	151	23	5	4	90	11.800	154	20	2	2	90	11.350
4.	177	20	5	5	91	10.700	190	18	4	3	92	10.250
5.	175	21	3	2	93	12.400	182	15	3	3	90	10.700
6.	162	20	5	4	94	12.750	161	12	3	3	94	10.000
7.	163	21	4	5	93	11.000	186	15	4	3	90	9.100
8.	152	25	4	3	94	12.350	178	17	5	4	91	11.400
9.	171	26	1	1	90	12.900	149	15	4	4	93	11.850
10.	179	25	3	3	94	12.200	181	12	4	5	90	9.200

APPENDIX K

INFORMATIONS ABOUT CHILDREN 4 - 5 YEARS

	High Ranking Anganwadi						Low Ranking Anganwadi					
	Anganwadi No.	Mental ability score	Order of birth	No. of siblings	Height in cm	Weight in kg	Anganwadi No.	Mental ability score	Order of birth	No.of siblings	Height in cm	Weight in kg
Girls												
1.	140	44	2	3	97	13.850	153	38	3	3	98	11.750
2.	184	49	3	3	104	15.750	164	49	1	1	94	13.550
3.	151	47	3	2	99	13.800	154	36	4	3	101	13.500
4.	177	52	1	0	101	14.450	190	40	1	0	99	13.900
5.	175	42	1	2	104	13.400	182	39	1	2	109	14.800
6.	162	52	2	2	107	14.400	161	47	2	2	102	12.750
7.	163	36	2	3	105	13.950	186	43	1	0	104	14.700
8.	152	42	4	3	102	13.600	178	46	1	0	102	14.400
9.	171	37	6	5	102	14.000	149	34	5	5	108	16.400
10.	179	39	5	4	102	13.200	181	43	1	0	107	14.900
Boys												
1.	140	52	2	1	104	15.850	153	39	3	2	103	13.500
2.	184	54	2	2	104	14.550	164	47	2	2	98	14.750
3.	151	57	3	4	104	15.750	154	40	3	3	109	15.300
4.	177	49	2	3	105	15.900	190	42	1	0	97	15.550
5.	175	57	2	2	109	16.000	182	41	2	2	99	12.750
6.	162	47	5	4	103	13.950	161	37	2	2	98	12.150
7.	163	55	4	3	104	14.750	186	35	4	4	99	11.700
8.	152	44	2	2	107	13.600	178	40	1	0	101	12.800
9.	171	54	5	4	99	14.850	149	38	2	2	101	13.150
10.	179	45	1	0	109	16.400	181	37	4	3	103	14.200