CHAPTER IV
METHOD AND PROCEDURE

The present investigation is an attempt to study the academic achievement of the orphanage-reared, home-reared deprived, and the non-deprived groups in relation to intelligence, locus of control, and achievement motivation.

On the basis of the review of literature, the following hypotheses were formulated.

HYPOTHESES

(1) Academic achievement* of orphans and home-reared deprived subjects will be lower to that of the non-deprived subjects.

(2) The orphans and the home-reared deprived subjects will be higher on external LOC or conversely, lower on internal LOC as compared to the non-deprived subjects.

(3) The orphans and the home-reared deprived group will have lower achievement motivation as compared to the non-deprived group.

(4) Verbal IQ - Performance IQ discrepancy scores will be higher in orphans and home-reared deprived group as compared to the non-deprived group.

*Academic achievement means the total achievement as well as achievement in the various school subjects.
(5) There will be no differences among the three groups on performance IQ whereas the non-deprived group will be higher on verbal IQ as compared to the other two groups, viz., orphans and the home-reared deprived group.

(6) There will be a positive correlation of academic achievement with
(a) internal LOC,
(b) achievement motivation,
(c) verbal IQ and performance IQ.

(7) The correlation of academic achievement will be higher with verbal IQ than with performance IQ.

(8) The role of intellectual factors will be higher in the non-deprived group than in the orphanage-reared and the home-reared deprived groups.

(9) Boys compared to girls will score higher in mathematics and science while girls will score higher in English and Hindi/regional language.

(10) Boys will be more internal as compared to girls.

(11) Boys will be higher on achievement motivation as compared to girls and conversely, lower on achievement anxiety.

(12) Sex differences will be higher in the home-reared deprived group as compared to those in the orphanage-reared and the non-deprived groups.

(13) There will be no sex differences on intelligence.
DESIGN

It is a correlational study. Intercorrelations between total academic achievement, achievement in mathematics, English, Hindi/regional language, science, and social studies, achievement motivation scores (AR, TR, UR, AVAI), intelligence scores (VIQ, PIQ, FIQ, VIQ-PIQ), and locus of control scores (total I, I+, I-) were computed separately for orphans, home-reared deprived, non-deprived groups and the total sample of boys and girls. Regression analysis was also done separately with academic achievement as the dependent variable and intelligence, locus of control and achievement motivation scores as the independent variables.

SAMPLE

A sample of 308 subjects (152 boys and 156 girls) aged 8-15 years comprised the sample of the present study. Out of these, 100 were orphanage-reared children (50 boys and 50 girls), 100 were home-reared (50 boys and 50 girls) and 108 subjects (52 boys and 56 girls) were in the non-deprived group.

The orphans were selected from the following institutions:

i. Suhrid, Yamuna Nagar, Haryana.

ii. Shri Shradananda Balvanitashram, Dehra Dun, Uttar Pradesh.
iii. Ram Colony Camp, Hoshiarpur, Punjab.

These institutions are mostly run by a charitable trust and house those children who are abandoned by their biological parents on the grounds of illegitimacy, poverty, death or desertion. The boys and girls live in separate dormitories and are looked after by the male and female staff respectively. Officially, these institutions are headed by a supervisor who looks after the internal matters of the 'institution'. The children are provided with a bed, cupboard and a study table and chair. The meals are jointly cooked by the staff assisted by the children to ensure their involvement and commitment as an integral part of the 'family', and are taken in the dining room. The children are taught household chores like washing, ironing, cooking, gardening and keeping their area neat and tidy. While the girls are taught stitching and embroidery, the boys are apprenticed to other sundry jobs. They have a television for entertainment which they view on regulated hours and participate in various outdoor activities. The children are imparted religious and cultural awareness by participation in various festivals which are celebrated on the premises. Medical care is provided and infact, most of these institutions have a dispensary on the same premises. Their diet is based on a pre-planned menu.
The children study in Government run Hindi/regional medium schools. Even adoption of children is arranged after verifying the suitability and bonafides of the prospective parents. The aim of these institutions is to settle the boys independently in life and to settle the girls in suitable marriages.

For selecting the home-reared deprived and the non-deprived sample, the Prolonged Deprivation Scale (PDS) (Misra & Tripathi, 1977b) was administered to a large sample of students from the same/similar schools as were attended by the orphans. On the basis of the scores on PDS, 50 boys and 50 girls (whose scores fell above the cut-off point, i.e., 238.15) and 52 boys and 56 girls (whose scores fell below the cut-off point) were placed in the non-deprived sample.

**TOOLS USED**

The following tools were administered to the sample:

1. Malin's Intelligence Scale for Indian Children (MISIC) (Malin, 1969).
3. Achievement Values and Anxiety Inventory (Mehta, 1976).
4. Prolonged Deprivation Scale (Misra & Tripathi, 1977b).
(1) Malin's Intelligence Scale for Indian Children (MISIC)

MISIC is a comprehensive individually administered battery for use with children covering ten years from 6 years to 15 years, 11 months. Constructed after the general model of the Wechsler Intelligence Scale for Children (WISC) (Wechsler, 1949), it embraces all the advantages of the original scale and appears in 14 or more principal regional vernaculars.

The Indian adaptation comprises 11 subtests divided into the Verbal Scale and the Performance Scale as follows:

<table>
<thead>
<tr>
<th>Verbal Scale</th>
<th>Performance Scale</th>
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<tbody>
<tr>
<td>1. Information</td>
<td>7. Picture Completion</td>
</tr>
<tr>
<td>2. Comprehension</td>
<td>8. Block Design</td>
</tr>
<tr>
<td>3. Arithmetic</td>
<td>9. Object Assembly</td>
</tr>
<tr>
<td>4. Similarities</td>
<td>10. Coding</td>
</tr>
<tr>
<td>5. Vocabulary</td>
<td>11. Mazes</td>
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<td>6. Digit Span</td>
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</tbody>
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The Indian adaptation omits the Picture Arrangement subtest of the Performance Scale as it proved to be culturally biased both as to content and form.

The test-retest reliability of .91 has been established for the Full Scale IQ. It has a concurrent validity of $r = .63$ from school ranking and a congruent validity of $r = .63$ from an adapted version of the California Short Form Test of Mental Maturity for upper
age levels and from the Goodenough Draw-A-Man-Test for the lower age levels.

(2) Hindi Version of Crandall et al.'s (1965) Intellectual Achievement Responsibility (IAR) Scale (Kapur, 1990)

The IAR scale was intended as a measure of children's locus of control (LOC) attitudes in intellectual-academic achievement situations. Like other LOC scales, it attempts to measure beliefs in internal versus external reinforcement responsibility (Crandall et al., 1965). However, it differs from the other measures in several respects. First, the IARS was developed within the context of a larger research program dealing with children's achievement development. Thus, it aims at assessing children's beliefs in reinforcement responsibility exclusively in intellectual - academic achievement situations. This is unlike the other LOC scales which contain items describing reinforcements in a number of motivational and behavioural areas. Second, the IARS also differs from other assessment methods in the external environmental forces. While previous scales included a variety of sources and agents such as luck, fate, impersonal social forces, more personal "significant others" etc., the IARS limits the source of external control to those persons who most often come in face-to-face contact with a child, his parents, teachers and peers.
The children's IAR scale is composed of 34 forced-choice items. Each item stem describes either a positive or a negative achievement experience which routinely occurs in children's daily lives. This stem is followed by one alternative stating that the event was caused by the child and another stating that the event occurred because of the behaviour of someone else in the child's immediate environment. Internal alternatives are designated by an (I). Positive event items are indicated by a plus (+) sign and negative events by a minus (-) sign following the (I). A child's I+ score is obtained by summing all positive events for which he assumes credit, and his I- score is the total of all negative events for which he assumes blame. His total I score is the sum of his I+ and his I- subscores. Thus, the IARS was so constructed that in addition to a total I (internal or self) responsibility score, separate subscores could be obtained for beliefs in internal responsibility for successes (I+ score) and for failures (I- score).

For the Hindi translation of the Crandall et al.'s IAR scale (1965), the test-retest correlations were found to be .44 for total I, .46 for I+ and .47 for I-, all significant at the 99% confidence level. The split-half correlations were found to be .50 for I+ and .52 for I- subscores (Kapur, 1990).
(3) Achievement Values and Anxiety Inventory

The inventory contains 22 items. These items are descriptive statements of situations depicted in pictures which were tried out for the development of a thematic apperception measure of need achievement. Each item is followed by six responses and the respondents are required to check one response to each item. These responses also are based on the stories written to TAT type pictures. Two each of the six responses are achievement related (AR); task related (TR); and unrelated to motivation (UR).

The inventory yields four scores: (i) AR, the number of achievement-related responses; (ii) TR, the number of task-related responses; (iii) UR, the number of responses unrelated to achievement, and (iv) AVAI-total score, which is obtained by subtracting the number of UR from the number of AR.

The KR-20 reliability was .67.

(4) Prolonged Deprivation Scale (PDS)

Misra & Tripathi (1977b) developed and standardized the PDS in the region of Uttar Pradesh. The PDS aims at quantitative measurement of the global experiential inputs experienced by an individual in the Indian setting and includes all possible measurable dimensions of deprivation. It attempts at measuring experiences derived from environment with respect to the different aspects of life.
In this scale, 15 aspects of natural setting are included with special reference to life experiences in this country and are given as under (Misra and Tripathi, 1980). These areas have been split into 96 items along with which the investigator is required to rate on a five-point-scale the information received from the respondent on the basis of an interview and questionnaire.

i. Housing Condition (Items 1-6)
ii. Home Environment (Items 7-14)
iii. Economic Sufficiency (Items 15-21)
iv. Food (Items 22-25)
v. Clothing (Items 26-29)
vi. Formal Educational Experiences (Items 30-36)
vii. Childhood Experiences (Items 37-41)
viii. Rearing Experiences (Items 42-48)
ix. Characteristics of Parents (Items 49-55)
x. Interaction with Parents (Items 56-61)
xi-xii. Motivational and Emotional Experiences (Items 62-80)
xiii. Travel and Recreation (Items 81-84)
xiv. Religious Experiences (Items 85-87)
xv. Quasi-Cultural Experiences (Items 88-96)

The authors have reported two factors in the structure of prolonged deprivation - Factor A and Factor B. Factor A is predominantly physico-economic and deals with environmental characteristics. It has significantly high loadings in areas of housing condition, home
environment, economic sufficiency, parental characteristics, and clothing. The contribution of religious experiences, formal educational experiences, miscellaneous socio-cultural experiences, travel and recreation is also considerably large.

Factor B deals with the interactional variables and is termed as 'experiential factor'. Factor B has high loadings in childhood experiences, rearing experiences, interaction with parents, motivational, and emotional experiences. Other areas of deprivation such as formal educational experiences, parental characteristics, religious experiences and socio-cultural experiences also contributed to this factor.

Factor A, contributing 91.8% of variance, accounts for the major proportion of variance and Factor B accounts for 8.2% of variance. The loadings of factor B in physico-economic areas is very low.

The Spearman-Brown reliability of r=.91 was obtained. Internal consistency of the scale as determined by KR-20 was found to be r=.92. The inter-rater reliability is also quite high. The average of correlations based on Fisher's Z scores was r=.91 and the index of reliability was r=.95 (Misra & Tripathi, 1980).

PROCEDURE

The present investigation was aimed at studying the academic achievement of the orphanage-reared, home-
reared deprived, and the non-deprived groups in relation to intelligence, locus of control, and achievement motivation. 100 orphans (50 boys and 50 girls) were selected from various orphanages in Haryana, Punjab and Uttar Pradesh. Frequent visits and familiarity with the children helped in establishing rapport with them. In one session, Malin’s Intelligence Scale for Indian Children (MISIC) (Malin, 1969) was administered individually to each orphan boy and orphan girl in a secluded room. In subsequent sessions, the Hindi versions of the Intellectual Achievement Responsibility (IAR) Scale and the Achievement Values and Anxiety Inventory were administered.

After selecting the deprived and the non-deprived groups, on the basis of the Prolonged Deprivation Scale (PDS) (Misra & Tripathi, 1977b), the similar procedure was followed.

Academic Achievement of each child in all the three groups was taken from the school records. For this purpose, the marks of each child in the subjects of mathematics, English, Hindi/regional language, science, social studies, and the total marks of the last three examinations were taken.

SCORING

The scoring of the various tests was done as per the instructions given in the respective manuals and
scores on intelligence (verbal IQ, performance IQ, full scale IQ, Verbal IQ - Performance IQ discrepancy), locus of control (total internality, internal responsibility for success, internal responsibility for failure) and achievement motivation (achievement-related motivation, task-related motivation, unrelated to motivation, AVAI total score) were obtained. The total academic achievement score and the achievement scores in mathematics, English, Hindi/regional language, science and social studies were measured by taking the average of the marks obtained in the last three examinations for each child in every group.