

Impact of Socio-Personal Characteristics of the Families on the Developmental Outcomes of Rural Female Infants

S. Jaswal and Vandana Kanwar

INTRODUCTION

The first two years in a child's life are crucial in achieving the goal of child rearing. In this respect, family plays an important role, since during these formative years the child's interactions are intensively and intimately confined to the members of his family. These interactions express parent's attitude, interest and belief in child rearing. Sometimes parental care is available but due to lack of stimulation the child's development suffers and he does not achieve his full potential (Physically as well as mentally). Opportunities have to be provided to the child for the realization of his physical and intellectual potentials. Development tests in infancy are done to predict development outcomes and to diagnose deviant or delayed development so that early intervention could be provided. These tests also provide an acute measure of the child's current level of functioning and thus provide an effective way of communicating with parents about their child's strength and weaknesses. Researchers (Zeskind and Ramey, 1979) have proved that early stimulation is less in low-income families and in such families, environmental stimulation was found to be very effective. Brar and Brar (1989) conducted a study to assess the quality of home environment of families belonging to different social groups and found that middle class parents provided enriched environment to their children, which stimulated their intellectual abilities, while lower class or poor parents were unable to provide rich and stimulated environment to their children. Another study conducted by Dymphna (1995) showed that intervention during the early years produces a significant improvement in maternal stimulation and responsiveness in child's sociability and cognitive sophistication during exploration and in the quality of attachment. Thus, it may be inferred that environment devoid of stimulation is likely to cripple the personality of potential child in terms of his abilities.

The present study was aimed at the improve-

ment of the physical, psychomotor aspects of infants by providing necessary inputs needed as per the age of the infants (13 to 18 months) and to optimize their developmental outputs.

For this study following objectives were set forth :

1. To assess existing level of developmental outcomes (motor and mental) of rural female infants.
2. To assess and compare changes in the development outcomes of experimental and control group of female infants after intervention.
3. To study socio-personal characteristics of families of both intervention and control group in relation to development outcomes.

MATERIAL AND METHODS

Sample (n=60) was drawn from two clusters of villages (intervention and control groups) of Ludhiana-I block of Ludhiana Distt. of Punjab. List of Enrolled sample of rural female infants aged 11 to 12 months was prepared through door-to-door visits. Equal number of female infants from each village of "control" and "Intervention" cluster was drawn so that each group comprised of 30 rural female infants. A few visits to each household were made to develop rapport before the focused child turned 13 months in age. The socio-economic status of the families of selected sample was assessed through Kulshreshtha's SES-Scale (Rural) and thereby listing all female infants belonging to low SES families. Bayley Scale of Infant Development (BSID) was applied monthly for assessing infant's motor/mental development at 13, 14, 15, 16, 17 and at 18 months age. In addition to this, age-appropriate information was given to parents fortnightly. After six months of intervention again social personal characteristics (parents education and occupation) were studied to analyze its importance in child development.

Kulshreshtha's Socio-economic Status (1981)

was used to ascertain inclusion of only low-SES families/households comprising intervention and control groups. This scale contains 20 statements and rates SES of families on the basis of various variables like education, occupation, land holding, income, caste and social participation.

Bayley Scales of Infant Development (BSID, 1969) was used to assess Motor and Mental development. This is a standardized test to assess sensory motor, mental, language and social development of infants below 30 months of age. This scale is divided into two components viz. motor scale and mental scale. Both the scales were used in the present study.

T-test was used to compute the statistical significance of difference in the means of motor/mental scores, before and after administration of intervention.

*Standard Scores** were computed to calculate the deviation from the mean scores in the beginning and at the end of the intervention.

RESULTS AND DISCUSSION

Socio-Personal Characteristics of Families:

It is evident from table I that the families of the intervention and control group children were comparable to each other for distribution of various socio-economic variables.

Majority of the mothers (43.33%) in the intervention group were educated upto Matric and/or above. Whereas, 23.33 percent were illiterate. Equal number (16.67%) of mothers were educated upto primary and middle level. Among control group 36.67 percent of mothers were educated upto Matric and above, 20 percent were illiterate, 16.67 percent were primary and 26.67 percent were educated upto middle.

Majority of the fathers (36.67%) in the intervention group were educated upto Matric and above, in comparison to 33.33% in the control group. Only 10 percent of fathers in the intervention group were illiterate as against 20.00 percent in the control group. Twenty percent fathers in the intervention group reported to have

studied till primary level in comparison to 23.33% of the control group. Equal number (33.33%) of fathers in the control and intervention group were educated till middle level.

33.33 percent of fathers in the intervention group were in service, 26.67 percent were laborers, 33.33 percent were in business and 6.66 percent were doing other jobs like Granthi, Panthi. In control group 30.00 percent of fathers were laborers, 43.33 percent of them were business man and 26.67 percent of fathers' occupation was

Table 1: Socio-personal characteristics of families belonging to intervention and control groups*

Characteristics	Intervention Sample (n=30)	Control Sample (n=30)
1. <i>Mother's Education</i>		
Illiterate	7(23.33)	6(20.00)
Primary	5(16.67)	5(16.67)
Middle	5(16.67)	8(26.67)
Matric & above	13(43.43)	11(36.67)
2. <i>Father's Education</i>		
Illiterate	3 (10.00)	6 (20.00)
Primary	6 (20.00)	4 (23.33)
Middle	10 (33.33)	10 (33.33)
3. <i>Father's Occupation</i>		
Labour	8 (26.67)	9 (30.00)
Service	10 (33.33)	8 (26.67)
Business	10 (33.33)	13 (43.33)
Others*	2 (6.66)	0 (0.00)
4. <i>Type of House</i>		
Pucca	5 (16.67)	6 (20.00)
Kaccha Pucca	24 (80.00)	24 (80.00)
Kaccha	1 (3.33)	- (00.00)
Thatched hut	0 (0.00)	- (00.00)
5. <i>Family Type</i>		
Nuclear	6 (20.00)	4 (13.33)
Joint	24 (80.00)	26 (86.67)
6. <i>Family Size</i>		
Small (<4)	4 (13.33)	6 (20.00)
Middle (5-7)	11 (36.67)	11 (36.67)
Large (8 and above)	15 (50.00)	13 (43.42)

Figure in parentheses indicate percent frequency

The families comprising control and intervention group scored less than 60 scores on Kulshrestha Socio economic scale (Rural) and thus were classified as belonging to low Socio economic status. The table highlights only a few parameter of Kulshrestha's SES scale.

*1. Sweepers, Peons, Gardeners, Typists, Hosiery workers etc.

2. Vegetable sellers, Agriculturists, Dairy farmers or Shopkeepers etc.

3. Granthis/Panthis Vaidis etc.

$$*Standard\ Scores: SS = \frac{X_s - X_p}{S.D.}$$

Where

X_s = mean score of the subject

X_p = mean score of the population

S.D. = Standard deviation of the population

Table 2 (a): Comparison between intervention and control groups in motor and mental development outcomes of female infants (13-18 months) by age

Age months	Group	Mean motor scores	Standard deviation	Coefficient of variability	t-value	Mean mental scores	Standard deviation of variability	Coefficient of variability	t-value
13	Intervention	46.23	1.72	3.71	1.60	100.87	4.91	4.87	1.09
	Control	45.57	1.50	3.29		102.54	6.81	6.64	
14	Intervention	48.80	1.65	3.38	1.78	107.37	4.5	4.19	0.88
	Control	48.00	1.62	3.79		106.00	7.24	6.83	
15	Intervention	52.53	1.48	2.82	5.93*	114.53	3.86	3.37	4.70*
	Control	48.93	2.00	4.08		107.67	7.02	6.52	
16	Intervention	53.57	0.77	1.44	5.02*	119.63	3.06	2.56	6.48*
	Control	50.23	1.87	3.72		111.13	6.51	5.85	
17	Intervention	54.07	0.64	1.18	6.56*	122.97	2.59	2.11	6.92*
	Control	51.67	1.90	3.68		114.87	5.86	5.11	
18	Intervention	55.07	0.83	1.50	6.24*	125.30	2.25	1.79	6.77*
	Control	52.67	1.94	3.68	6.24*	117.57	5.83	4.96	6.77*

service. 80% of the families of intervention group were joint and 20.00 percent were nuclear. 86.67 percent of families in the control group were joint and 13.33 percent nuclear.

DEVELOPMENT OUTCOMES OF FEMALE INFANTS (13-18 MONTHS) BY AGE

Mental Development: Results from the table 2 (a) depicted mean mental scores increase with increase in age among female infants from both intervention and control groups. Infants from control group had higher scores than their counterparts in intervention group at 13 months. By the age of 15 months infants of intervention group performed much better. At 16, 17 and 18 months infants from intervention group scored more than their control counterparts.

Coefficient of variability values for mean Mental scores of both groups were comparable. Variabilities decreased with increase in age in both groups but magnitude of decrease was higher for the intervention group.

Motor Development: Mean motor scores of both the groups are comparable at 13 months, 14 months, and 15 months of age. Infants of intervention group performed significantly better than their counterparts in the control group at the age level of 16 months and 17 months. Similarly at 18 months of age intervention group infants scored significantly ($p < 0.05$) higher than infants in the control group. In the last three months of intervention period i.e. at 16, 17 and 18 months of age the coefficient of variability

relatively reduced in the intervention group; there by indicating increase in homogeneity in the intervention group which could be attributed to the intervention programme.

Standard Scores: From the table 2 (b) it is evident that 36.7 percent of female infants from both groups i.e. intervention and control improved in their motor scores.

Only 40% of intervention group samples 36.7% in control group had shown no change.

Almost 23.33% of samples in the intervention group had shown degradation in motor scores whereas in control group 26.6 percent of sample showed decline in motor scores.

In mental scores, 33.4% infants of intervention group and 26.67% of control group gained in their

Table 2 (b): Differences in standard scores of female infants at 13 to 18 months of age for motor and mental developmental outcomes in intervention and control groups

Particulars	Intervention Group		Control Group	
	Development outcomes		Development outcomes	
	Motor Standard Score	Mental Standard Score	Motor Standard Score	Mental Standard Score
Gain/Increase (+1 to +3 SD above mean)	36.7%	33.4%	36.7%	26.67%
No change (Average/Mean)	40.0%	46.6%	36.7%	43.33%
Loss/Decrease (-1 to -3 SD Below mean)	23.3%	20.0%	26.6%	30.00%

mental scores. In the intervention group 20 percent and in control group 30 percent of infants showed loss in mental scores. Both groups showed no gain in motor scores. This may be because physical development is independent of environmental factors from the results it can be concluded that motor development occurs as the age increases though there is no gain in these scores but it is evident that with providing intervention to the parents decline in motor development can be controlled.

Socio-personal Characteristics of Families Across Different Categories (Gain, No Change, Loss) of Developmental Outcomes

From the table 3 it is evident that both the parents of female infants of intervention group who showed substantial increase in motor scores at the end of the intervention (at 18 months of age of child) were educated upto matric and above and belonged to service class. In this regard, a different pattern emerged for the control group where majority of infants who gained in motor scores were from families where parents were illiterate and most of them were labourers.

Mothers of infants of intervention group who gained in mental scores were educated upto Matric and middle level; fathers' education was

upto Matric and primary level. Majority of parents belonged to service class whereas in control group, parents of infants who gained in mental scores were educated upto Matric level and belonged to service class.

Results showed that intervention package had sensitized the parents of intervention group belonging to labour class as well as service class.

In case of infants from the intervention group who had declined in their mental scores, majority of the (40%) parents were educated upto middle level and very few (15% mothers and 9% fathers) were educated upto Matric and belonged to business and labour class.

In control group, majority of parents of infants who declined in their mental scores were those who were illiterate and belonged to labour class. From the results, it can be concluded that parents with more education and high occupation were more receptive to intervention than parents with less education and low occupation.

CONCLUSION

1. Mean motor scores and mean mental scores increased steadily with age in both the groups but rate of increase was little faster in intervention group than in control group.
2. Mothers especially who were more educated

Table 3: Socio-personal characteristics of families across different categories (gain, no change, loss) of developmental change

General Information	Intervention						Control					
	Motor			Mental			Motor			Mental		
	Gain	No change	Loss	Gain	No change	Loss	Gain	No change	Loss	Gain	No change	Loss
Mother's Education												
Illiterate	28.50	43.00	28.50	14.20	85.80	0.00	50.00	0.00	50.00	0.00	50.00	50.00
Primary	20.00	60.00	20.00	20.00	5.00	75.00	40.00	40.00	20.00	0.00	60.00	40.00
Middle	0.00	60.00	40.00	60.00	20.00	20.00	50.00	37.50	12.50	12.50	75.00	12.50
Matric & Above	53.80	31.20	15.00	38.46	51.54	10.00	18.10	54.80	27.20	63.60	18.30	18.10
Father's Education												
Illiterate	0.00	66.66	33.33	0.00	100.0	0.00	33.33	33.33	33.33	0.00	34.00	66.00
Primary	16.67	66.66	16.67	33.33	16.67	50.00	50.00	25.00	25.00	0.00	75.00	25.00
Middle	20.00	40.00	40.00	30.00	50.00	20.00	60.00	20.00	20.00	20.00	60.00	20.00
Matric & Above	63.60	27.40	9.09	45.45	45.45	9.00	10.00	7.00	30.00	60.00	20.00	20.00
Occupation												
Labour	25.00	50.00	25.00	37.50	37.50	25.00	33.33	33.33	33.33	0.00	55.60	44.00
Service	60.00	20.00	20.00	50.00	40.00	10.00	25.00	50.00	25.00	50.00	25.00	25.00
Business	20.00	50.00	30.00	10.00	60.00	30.00	46.15	30.78	23.07	30.70	46.23	23.07
Others	50.00	0.00	0.00	50.00	0.00	0.00	50.00	0.00	0.00	50.00	0.00	0.00

and belonged to service class were more receptive to the intervention and hence showed better results.

3. Education should be emphasized. Education of the girl child appears to be the solution to alleviate ignorance.
4. Incentives should be provided to the parents to motivate them for making efforts towards the progress of their children.

KEY WORDS Comprehensive Intervention. Developmental Outcomes. Socio-Personal Characteristics.

ABSTRACT A longitudinal study and sample (n=60) enrolled in a comprehensive intervention programme was drawn from two clusters of villages of Ludhiana-1 block of Ludhiana Distt, of Punjab each consisting of three villages. Equal number (n=30) of female infants from each village cluster were drawn to form intervention and control samples. Socio-economic status of each child of 13 months of age was assumed for motor and mental development using Bayley Scales of Infant Development. Comprehensive age paced intervention focusing on various aspects of Development was designed and administered fortnightly for six months to the primary and all secondary child caretakers in the families. t-test was used to compute the Statistical significance of difference in the means of motor/mental scores, before and after intervention. Socio-Personal characteristics of

parents of infants during post intervention were again studied. Results revealed that age-paced intervention of infants, parents' education and occupation significantly contributed in infants' motor and mental development gains. Statistically significant difference was observed in the developmental outcomes of infants of intervention and control group.

REFERENCES

- Bayley, N.: *Bayley Scales of Infant Development. Modified Version of Bayley Scale by Baroda.* Manual—The Psychological Corporation, New York (1969).
- Brar, S. and Brar, S.S.: A comparative study of home environment and its relationship with intelligence of socially advantaged and disadvantaged preschool children. *Presented in Seminar on Disadvantaged children, held on 11-12 May, 1989 at PAU, Ludhiana* (1989).
- Dymphna, V.C. : Do 1st year intervention effects endure? Follow up during toddlerhood of a sample of Dutch uritable infants. *Child Development*, **66 (4-6)**: 1798-1816 (1995).
- Kulshrestha, S.P.: *Socio-Economic Status Scales Catalogue for Psychological Tests.* Instruments and Monographs, National Psychological Corporation, Agra (1981).
- Zeskind, P.S. and Ramey, C.D.: Fetal malnutrition: An experimental study of its consequences on infants development in two care-giving environments. *Psychological Abstracts*, **62**: 849 (1979).

Authors' Address: **S. Jaswal, Professor** and **Vandana Kanwar, Research Fellow**, Department of Human Development, Punjab Agricultural University, Ludhiana 141 004, Punjab, India