

Behaviour Development in Babies: Its Improvement in Relation with Ecological Factors

Bimla Dhanda and Sudha Chhikara

*Department of Human Development and Family Studies, College of Home Science, CCS
Haryana Agricultural University, Hisar, Haryana, India*

KEYWORDS Biology. Culture. Environment. Social Skill Development. Babies

ABSTRACT The infants' early interaction experiences are determined by a multitude of biological, cultural and environmental factors. If the performance of infants in a particular development is declining that may be improved by improving his home environment or enforcement by intervention programme. In view of these points present investigation was undertaken with a view to identify the developmental deficiencies in babies with reference to social skill development, to delineate the crucial ecological factors affecting this development, and to study the impact of intervention programme on social skill development. Present study was conducted at two locations, viz., Hisar city as urban and Rawalwas Klan and Siswal villages as rural. The purposes of selection of localities were easy accessibility and rapport with the respondents. A total of 400 babies during the age of 12-24 months were selected randomly for investigation. The sample was divided into four age groups, viz., 12 - 15, 15-18, 18-21 and 21-24 months, and over the localities and gender. Thus, there were 25 male and 25 female babies in each age group. Significant differences for all the age groups were observed for all the variables. This indicated that formation of different age groups at the interval of 3 months for these variables were appropriate. In social skill development, males, in general, were better than females. Interaction of age x gender also revealed that the boys learned social skills differently than girls over the different age groups. Comparison of urban and rural sample also revealed that urban babies, in general were better than rural in social skill development. Regarding associations with economic factors, it appeared that the babies from higher income group generally had better development in social skills under both urban and rural areas. Intervention proved highly effective for development of social skills in both urban and rural areas.

INTRODUCTION

A human infant's attachment behaviour becomes apparent through discrete observable such as smiling and crying, which are deemed to possess a signalling function that serves to activate maternal behaviour and bring the adult into proximity to the child. Rooting, grasping, sucking, following, approaching, clinging are behaviours whereby the infant plays an active role in seeking proximity and contact. As from birth these behaviours become coordinated and focused on the mother to form the basis of attachment. In any case, the infant becomes attached to the caregiver with whom he has had more interaction, generally his mother (Cooper et al. 2002). When the child achieves locomotion a new behavioural becomes activated, that of exploratory behaviour. Exploration of the environment is antithetical to attachment. It is of the utmost importance to focus the relationship of the infant to his mother as keeping a balance in the interplay between both systems.

One of the most important functions of the attachment behavioural system is to intervene in the baby's excursions into the environment, in response to a variety of potentially dangerous

events, thereby deactivating the exploratory system and activating the attachment system thus seeking proximity to his mother. Several studies show that children approach their caregivers not only in response to dangerous external stimuli but also they do so to check the availability and attentiveness of the caregiver, in a sort of permanent monitoring activity. After such checking the child wanders off to play again; after a while he returns again, and so on. This kind of behavioural pattern is referred to in the literature as the baby using his mother as a Secure Base (Ainsworth et al., 1978).

Infants tried facial expressions, vocalizations and body movements to get their mothers to respond again. When these efforts failed they reacted to their mothers' sad, vacant gaze by turning away, frowning and crying (Ellsworth et al., 1993; Gusella et al., 1988; Mayes and Carter, 1990). By the end of the first year, infants deliberately look to others for emotional cues and evaluate uncertain events, such as, the approach of a stranger. Since, infants cannot describe their feelings, researchers face challenging tasks determining exactly which emotions they are experiencing. Although vocalizations and body movements provide some information, yet facial

expressions seem to offer the most reliable cue during the age of 18-24 months (Mc Donald, 1997).

Cross-cultural evidence indicates that when infants are looking photographs of different facial gestures, people around the world associate them with emotions in the same way. In the 1970s and 1980s, the pragmatic movements in the field of speech-language pathology influenced by social-cognitive learning theory re-established the idea that language is embedded in a social matrix. This movement taught us that children do not talk about objects of interest in isolation. They communicate in the context of social interactions often for socially and emotionally driven reasons (Klein and Mosses, 1994). This orientation underscored the importance of care-giver-child interactions for language development and broadened our awareness of the range of issues that need to be considered in language intervention. Social and environmental factors have become so intricately related to health and diseases that often care must go beyond medical intervention. Child developmentalists have partially succeeded in designing and implementing early childhood intervention programmes to ameliorate social aspects of childhood morbidity.

Interventions and impact studies offer a wide variation in goals, coverage, theoretical assumptions and research designs. Most studies, carried out in the seventies and eighties, are empirical in nature. A substantive analysis of these studies indicates that a wide range of dimensions, mainly language, cognitive and social development have been studied thus, opening a large area for future research and action. Another crucial point is that many intervention evaluation studies lack a theoretical base in terms of the relationship between the organism and the environment (Gottfried, 1983). Such an approach may prove useful in gaining deeper insight into alternative intervention strategies appropriate for different groups of children.

The intervention may act directly on children by including new capacities and programmes in individuals or may attempt to modify the behaviour of various people, institutions or media that influences the lives of children (Gholson and Rosenthal, 1984). In view of this, the present study was undertaken with the objectives, namely, to identify the developmental

deficiencies in babies for social development, to delineate the crucial ecological factors and to study the impact of intervention programme affecting social development of babies.

MATERIALS AND METHODS

Present study was conducted at two locations, viz., Hisar city as urban and Rawalwas Klan and Siswal villages as rural. The purposes of selection of localities were easy accessibility and rapport with the respondents. A total of 400 babies during the age of 12-24 months were selected randomly for investigation. The sample was divided into four age groups, viz., 12-15, 15-18, 18-21 and 21-24 months, and over the localities and gender. Thus, there were 25 male and 25 female babies in each age group. This data were collected in two phases. During phase I the babies were observed for social skills by Vineland Scales of Social Maturity (Sparrow et al., 1984). In addition, data for family income were also observed.

During phase II the deficient group of babies for social development was identified on the basis of the mean performance of the babies. Thus, the intervention programme on home based techniques were developed for each age group for all the domains under study. Before administering the intervention, the programme was assessed by the team of learned scientists of College of Home Science, CCS HAU, Hisar as well as from other institutions. All the necessary suggestions were incorporated. The intervention programme was first applied on a part of sample and its effects were assessed. Then all the items were scrutinised carefully and some of unimportant items were dropped. Intervention was finally applied for a period of one month.

RESULTS AND DISCUSSION

Social development of babies start in early life and by the end of second year, self recognition is well established and underlines children's first struggle with peers over objects, personal acts and formation of a categorical self (Berk, 1996). Analysis of variance revealed that social skills of babies differed significantly over the age groups in urban ($F = 5.71^*$) and in rural ($F = 17.83^{**}$) areas (Table 1). Mean squares for gender in urban ($F = 14.44^{**}$) and in rural ($F = 6.05^{**}$) areas were also significant. The interaction between age x gender was significant

Table 1: Analysis of variance for social skills of babies during the age of one to two years

Source of variation	D.f.	SS	MS	F
<i>Urban</i>				
Age	3	4489.18	1496.39	5.71**
Gender	1	3784.50	3784.50	14.44**
Age X Gender	3	3538.37	1179.46	4.50**
Error	192	50336.64	262.17	
Total	199	62148.69		
<i>Rural</i>				
Age	3	11403.06	3801.02	17.83**
Gender	1	1290.32	1290.32	6.05*
Age X Gender	3	1332.62	377.54	1.77
Error	192	40930.56	213.18	
Total	199	54756.56		

*, **: Significant at 5% and 1% level of significance, respectively.

only in urban area ($F = 4.50^{**}$). When the mean values of males and females were compared, it was found that mean of females (97.85 ± 2.86) were higher than males (89.14 ± 3.67) in urban ($F = 14.44^{**}$) area (Table 2). Similar trend was found in rural area. Significant Z values for all the age groups as well as for overall means, revealed that mean values of rural babies were higher than urban babies in all the age groups ($Z = 6.95^{**}$).

In present study the babies showed significant differences in development of social development skills for all the age groups. Females were better than males in social skills. This revealed the natural instinct in the babies had in their respective fields. Morriset et al. (1995) also found that girls were better than boys in social development during the age of 20 to 30 months. Similarly, Crandell, and Hobson (1999) found significant differences in various aspects of social development in different socio-economic groups. They also found that social development of babies was related to parent child relationship and intellectual development of babies. The interaction of gender with different intervals of age group revealed that differences observed for development of social skills only in urban areas. Social development was an important predictor of personality development and closely related with social-life abilities (Sun et al., 1997). In addition, study of social development of babies is an important particularly during first year of life because it is the period of emerging self and shaping children for predominant modes of viewing and experiencing world (Mayes and

Table 2: Means and standard deviations of social skills domain for children during the age one to two years

Gender	Age in months				
	12-15	15-18	18-21	21-24	Pooled Mean
<i>Urban</i>					
Boys	80.55 (4.20)	86.45 (2.92)	90.15 (3.60)	99.50 (3.52)	89.14 (3.67)
Girls	90.25 (3.10)	105.45 (2.00)	100.50 (2.90)	95.20 (3.85)	97.85 (2.86)
Pooled Mean	85.40 (3.52)	95.95 (2.61)	95.33 (3.21)	97.35 (3.62)	93.51 (3.11)
<i>Rural</i>					
Boys	90.50 (4.75)	98.50 (4.65)	105.15 (3.10)	110.20 (2.96)	101.09 (3.15)
Girls	96.35 (3.65)	100.15 (2.38)	117.65 (3.45)	110.50 (2.13)	106.16 (2.73)
Pooled Mean	93.43 (3.57)	99.33 (3.17)	111.40 (3.25)	110.35 (2.24)	103.63 (2.81)
Z test for Urban vs Rural	11.28**	5.82**	24.88**	21.59**	6.95**

Figures in parentheses denote standard deviations,

**: Significant at 1% level of significance.

Cohen, 1993). Among different domains of social development, social skills had significant impact because these skills contribute to behaviour for human social interactions. During the age of 12 months, the infants become sensitive to self and perceptual features of other objects mainly inanimate objects (Pipp-Siegel and Foltz, 1997).

As a whole, there was significant increase in all the activities of social development after every three months of interval. As usual the social development of urban babies was better than of rural babies. Interaction effects revealed that boys and girls learn social development differently.

Impact of Intervention Programme

Constructing an intervention programme is as much art as a science, requiring a creative interplay between existing cultural and political realities, prevailing scientific theories and paradigms and the research data applicable to the processes or deficits to be modified. The task of this investigation was to explore methods for preventing developmental deficiencies. In order to complete this task the current knowledge of theory and research pertaining to home environment and various developments of babies were examined. Finally, workable intervention strategies were devised and evaluated by learned experts.

Table 3: Effect of intervention programme on social skills of babies during the age of one to two years

Variable/	No. of babies	Mean of babies before intervention	Mean of babies after intervention	Mean of babies in control	% of increase over control	t test control vs intervention
<i>Urban</i>						
12-15	13 (3.25)	60.78±1.25	96.35±1.17	62.75±0.85	53.55	51.95**
15-18	11 (2.75)	65.35±2.78	94.40±2.86	63.70±4.65	48.19	12.57**
18-21	11 (2.75)	60.15±3.95	99.30±3.05	69.85±3.90	42.16	13.30**
21-24	10 (2.50)	67.79±2.86	97.15±1.96	73.20±4.37	32.72	11.18**
Total/Pooled mean	45(11.25)	63.52±3.67	96.80±2.03	47.38±5.00	43.66	20.48**
<i>Rural</i>						
12-15	12 (3.00)	56.17±2.68	86.10±3.96	59.15±1.18	45.50	14.58**
15-18	13 (3.25)	54.87±3.70	90.15±1.75	61.10±1.91	47.55	25.08**
18-21	16 (4.00)	59.69±2.61	85.70±3.65	60.75±1.10	41.07	14.63**
21-24	14 (3.50)	60.17±1.93	92.65±1.10	62.35±0.75	45.71	50.89**
Total/Pooled mean	55(13.75)	57.73±2.61	88.65±3.34	60.84±1.32	45.71	17.32**

Figures in parentheses denote percentages; ?± values indicate standard deviations.

*, **: Significant at 5% and 1% level of significance, respectively.

Table 4: Association of economic status of the family with social skills of babies during the age of one to two years

	<i>Urban</i>				χ^2	<i>Rural</i>				χ^2
	H	M	L	Total		H	M	L	Total	
H	21 (38.2)	22 (40.0)	12 (21.8)	55		27 (42.9)	26 (41.3)	10 (15.8)	63	
M	26 (32.5)	38 (47.5)	16 (20.0)	80		18 (24.7)	41 (56.2)	14 (19.2)	73	
L	20 (30.8)	24 (36.9)	21 (32.3)	65		11 (17.2)	23 (35.9)	30 (46.9)	64	
Total	67	84	49	200	1.81	56	90	54	200	27.73**

*, **: Significant at 5% and 1%, respectively; Figures in parenthesis represent percentages.

H, M, L: Denote high, medium and low categories, respectively.

Intervention programme had significant impact on social skill development. Mays and Cohen (1993) said that it is an important period for improvement of social abilities of babies. Because during this period, personality of child may be shaped, refined and remodeled in the context of loving relations. Sun et al. (1997) also reported that early period of childhood is an important period for personality of children to be developed towards extroversion tendencies. Therefore, social learning aspect should be an important component of child's learning process (Lutjeijn et al., 1998). In order to develop an intervention programme for developing social skill in babies the positive emotion of children should be taken care of and false belief on the parts of parents (Watson et al., 1999). In addition, parental involvement and avoidance of negative emotions should also be an important tool for improvement of social development of babies (Iurko et al., 1999). Parental reactions to children's negative emotions and socially

appropriate behaviour of children were the important aspect in the improvement of social behaviour of babies (Eisenberg et al., 1999).

Impact of Economic Status on Social Skills Development

The aim of the intervention was to provide the mother with emotional support and to encourage her in sensitive responsive interactions with her infant. A major aspect of the intervention was the use of particular items from the manuals prepared for the purpose. Family income appeared to be the important variable as it was associated with development of social skills. This may be attributed to better nutrition, play material, care and involvement with children in high income group Bradley and Caldwell (1984). Similarly in a study of 12 to 24 months old babies, Gottfried (1983) observed that SES was positively related with various parameters of child development and particularly with

cognitive development. Wachs (1984) also reported that family income was closely related with developmental parameters of babies.

As a whole, there was significant increase in all the activities of social development after every three months of interval. As usual the social development of urban babies was better than of rural babies. Interaction effects revealed that boys and girls learn social development differently. Therefore, more emphasis should be given in rural area to improve the status of rural babies.

REFERENCES

- Ainsworth, M.D.S., Blehar, M.C., Waters, E. and Wall, S.: Platters of attachment: A psychological study of the strong situation. Erlbaum, Hillsdale, N.J. (1978).
- Berk, L. E.: *Child Development*. Prentice, Hall of India, New Delhi (1996).
- Bradley, R. H. and Caldwell, B. M.: A study of the relationship between home environment and cognitive development during first five years. In: A. W. Gottfried. (Ed.): *Home Environment and Early Cognitive Development*. Academic Press, N. Y. (1984).
- Cooper, P. J., Landman, N., Tomlinson, M., Molteno, Mark and Swartz, L.: Impact of a mother—infant intervention in an indigent peri-urban South African context. *The British Journal of Psychiatry*, **180**: 76-81 (2002).
- Crandell, L. E. and Hobson, R. P.: Individual differences in young children's I. Q: A social-developmental perspective. *J. Child Psychol. Psychiatry*, **40**(3): 455-464 (1999).
- Eisenberg, N., Fabes, R. A., Shepard, S. A., Guthrie, I. K., Murphy, B.C. and Reiser, M.: Parental relations to children's negative emotions: Longitudinal relations to quality of children's social functioning. *Child Dev.*, **70**(2): 513-534 (1999).
- Ellsworth, C. P., Muir, D. W. and Hains, S. M.: Social competence and person - object differentiations: An analysis of still face effect. *Dev. Psychol.*, **29**: 73-87 (1993).
- Gottfried, A. W.: Measures of socio-economic measures in child development research: Data and presentations. *Presented at Biennial Convention for the Society for Research in Child Development*, Detroit (1983).
- Gholson, B. and Rosenthal, T. L.: *Applications of Cognitive Development Theory*. Academic Press, New York (1984).
- Gusella, J. L., Muir, D. W. and Tornick, E. Z.: The effect of manipulating maternal behaviour during an interaction on 3 and 6 - month - olds effect and attention. *Child Dev.*, **59**: 1111-1124 (1988).
- Iurko, G. P., Terent, G. V., Ivanova, O. G., Veremkovich, L. V., Lashneva, I. P., Berezina, N. O. and Latkina, L. I.: Increasing of functional abilities of preschool children by means of physical Training. *Vestn Ross. Akad. Med. Nauk.*, **6**: 7-13 (1999).
- Klein, H. B. and Moses, N.: *Intervention Planning for Children With Communication Disorders: A Guide for Clinical Practicum and Professional Practice*. Prentice Hall, New Jersey (1994).
- Luteijn, E., Jackson, S., Volkmar, F. R. and Minderaa, R. B.: The development of the children's social behaviour questionnaire. *J. Autism Dev. Disord.*, **28**(6): 559-565 (1998).
- Mays, L. C. and Carter, A. S.: Emerging social regulatory capacities as seen in the still face situation. *Child Dev.*, **61**: 754-763 (1990).
- Mays, L. C. and Cohen, D. J.: The social matrix of aggression: Enactment and representation of learning and hating in the first year of life. *Psychonal. Study Child.*, **48**: 145-169 (1993).
- Mc Donald, J. L.: Language acquisition: The acquisition of linguistic structure in normal and special populations. *Ann. Rev. Psychol.*, **48**: 215-241 (1997).
- Morriset, C. E., Barnard, K. E. and Booth, C. I.: Toddlers language development: Sex differences within social risk. *Dev. Psychol.*, **31**: 851-865 (1995).
- Pipp-Siegel, S. and Foltz, C.: Toddlers acquisition of self/other knowledge. *Child Dev.*, **68**(1): 69-79 (1997).
- Sparrow, S. S., Balla, D. A. and Cicchetti, D. V.: *Vineland Adaptive Behaviour Scales*. AGS Circle Pines, Minnesota, USA (1984).
- Sun, R., Zhang, Q. and Shang, C.: Study on relationship between personality traits and social life. *Chung Hua. Hu. Li. Tsa. Chih.*, **32**(3): 135-137 (1997).
- Wachs, T. D.: Proximal experience and early cognitive-intellectual development. In: A. W. Gottfried. (Ed.): *Home Environment and Early Cognitive Development*. Academic Press, N. Y. (1984).
- Watson, A. W.: Height, body weight, skinfold thickness and endurance fitness of children attending national schools in Ireland. *Jr. J. Med. Sci.*, **162**(9): 358-361 (1993).