



Maternal Stimulation Level and Intervention

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ABSTRACT Home environment provided by the parents, parental behavior, their interaction with the child and other related factors such as socio personal and economic factors tend to influence the development of children though the degree of influence may vary. The social and physical home environment variables are uniquely related to the development of young children. Age trends showed that the highest correlations between environment and development tended to be found during the preschool years. To assess the stimulation provided to children by mothers, Mohite's Home Environment Inventory was used on 120 mothers from four villages of Hisar district of Haryana state. Control-Experimental group and Pre-Post test design was used to find out the impact of intervention programme used for enhancing maternal stimulation level. As observed, the mean scores of both the groups were almost similar for all the five aspects and the overall maternal stimulation also at the initial stage. The differences also came out to be non significant statistically showing that children in both the study groups had almost similar stimulation environment at Pre-testing stage. The results of post test after introduction of experimental group mothers with the intervention programme revealed that the mean scores of experimental group were higher than those of control group. These differences in mean scores of control and experimental group were found significantly higher in favor of experimental group. The mean score of control group mothers was 8.20 whereas, in experimental group it was as high as 16.73 at Post-testing stage showing the efficacy of the intervention programme.

INTRODUCTION

For thousand of years, philosophers have expressed the belief that children's earliest experiences have the greatest impact on their development—that is "As the twig is bent, so grows the tree." Especially the preschool years demand new adaptations within the family as the child moves rapidly through a highly significant series of changes. In this formative period, development takes place rapidly in terms of acquisition of skills, habits, attitudes, concepts and power of observance as well as ability to think and to communicate. Dr. Benjamin Bloom has shown that about fifty percent of the child's intellectual development is completed by the time the child is four years old and it forms the basis for future growth and optimum development takes place by the time the child attains the age of eight years. The child is not only a growing organism; he is also a learning organism. Development of the child is the outcome of combined and cohesive impact of heredity and environment whereas environment is envisioned as a series of vested structures that extend beyond the home, school and neighborhood. Environment has a powerful impact on the competence development of the child. The environment must be rich and appropriate for interaction and

problem solving if full potential is to be reached. But majority of the infants and young children in our country do not receive the required rich environment and stimulation at home for the natural growth and development. This is mainly due to ignorance and poverty. The rural life in particular is fraught with innumerable problems and rural mothers tend to take bare minimum care of their little ones. Environment in which the child grows can accelerate or slow down the child's development. A congenial or conducive home environment is one where parents are sensitive and responsive to the developmental needs of the child; provide the right type of material for stimulating the child and where mothers are empowered with the scientific knowledge on child care and disciplining. Environment may have a direct or indirect bearing on the child's cognitive skills. For thousands of years Indian culture has emphasized the influence of 'Vamsa', that is, the family in which the child is born and brought up. The parents are the primary agents in the transmission of the culture of the group to the child and the socialization of child. Environment around the child, therefore, must be rich and stimulating to develop his/her capacities. Thus, the early development opportunities provided to children by their parents in the socio cultural context of the home and community establish

much of child's development. But if the child does not have the opportunity to explore his/her environment, if his/her environment is uninteresting or sterile, or if caregivers are harsh, controlling or neglectful- he/she may not develop to the same extent when provided with a stimulating environment and affective caregivers.

Mother's intelligence and family demographic factors such as SES and parental education related to cognitive development as well as home stimulation variables. Variables measuring family social climate, which includes cohesion, expressiveness and intellectual cultural orientation were related to cognitive development and virtually all social climate variables were related to home stimulation variables. Mothers of higher intellect, education and socio-economic status knowledgeably provide more stimulating home environments to facilitate their children's cognitive development. (Gottfred 1984; Gottfried et al. 1984). Zuckow (1998) reported that children playing with their mothers stimulated them more than playing alone. In addition, parental warmth, use of praise and encouraging them to do work motivate the child for higher success. Estrada (1999) reported that the mothers who have good relationships with their children encouraged them to engage in and support them in problem solving. Children in these relationships may also be more competent and more willing to accept maternal assistance. Children who have warm and flexible relationship with their mothers use them more readily as a stable emotional base for exploring the wider world and learning from these experiences. So through this study an attempt has been made to improve the maternal stimulation level which will ultimately enhance the children's development.

METHODOLOGY

In the present study conducted in the year 2006, quality of home environment describes environmental stimulation provided by mothers to their children. In day to day life, mothers perform certain activities consciously or unconsciously which may become an effective stimulative channel for the development of children. To assess the stimulation provided to children by mothers, Mohite's Home Environment Inventory (1989) was used. The maternal stimulation provided to the children in various aspects of MHEI i.e. language stimulation,

physical environment, encouragement of social maturity, variety stimulation, maternal attitude and disciplining was assessed using this scale. A list of villages of Block I (Hisar I) and Block II (Hisar II) of Hisar district was procured from Block Development Office. Following a simple random selection, a survey of 10 villages, 5 from each block, was done. Further to meet the sample size, two villages namely Ladwa and Kharar from Hisar I and two villages namely Rawalwas and Neolikalan from Hisar II were selected purposively as they were found to be matching up to the maximum in their base line profile. Ladwa and Rawalwas from Block I and II respectively served as experimental group villages and Kharar and Neolikalan from Block I and II respectively served as control group villages. All the mothers were pretested for their stimulation level using MHEI. The sample was then divided into control and experimental group each consisting of 60 mothers. Experimental group mothers were exposed to intervention programme for 16 weeks. The programme was specially designed to improve the maternal stimulation level incorporating their routine activities in a modified scientific manner. The control group sample was not exposed to any such kind of programme. After one month of completion of the programme, all the mothers whether experimental or control group were post tested for their stimulation level using the same scale.

RESULTS AND DISCUSSION

Consideration of the home environment is basic to understanding of the development of the child. Home lays the groundwork for basic personality structure. Parental attitudes, behavior and relationships all determine child's development. Parent-child relationship characterized by warm, supportive and communicative environment in the family is likely to produce a number of cognitive skills and tend to account for a substantial proportion of variance in the performance of children. The perusal of Table 1 reveals the stimulation provided by mothers of control and experimental group at Pre-testing stage. The mean scores of control group mothers on language stimulation (2.98), physical environment (1.25), encouragement of social maturity (1.01), variety in stimulation (0.40) and maternal attitude and discipline (1.90) while for experimental group, these mean values were 2.96, 1.13, 0.95, 0.55 and

Table 1: Mean scores obtained by respondents on MHEI at Pretest (N=60+60)

<i>Items</i>	<i>Control Gp</i>	<i>Exptl. Gp</i>	<i>F test</i>
1. Language stimulation	2.98±0.70	2.96±0.68	0.021
2. Physical environment	1.25±0.43	1.23±0.53	0.035
3. Encouragement of social maturity	1.01±0.62	0.95±0.46	0.439
4. Variety of stimulation	0.40±0.49	0.55±0.56	2.395
5. Maternal attitude and disciplining	1.90±0.70	1.80±0.73	0.580
Total	7.55±1.50	7.50±1.30	0.038

1.80 respectively. The mean scores of both the study groups reveal lower mean scores of experimental group on all the sub-items of home environment except for variety in stimulation, where the experimental groups mean score was a little higher. Mean score on maternal stimulation was 7.55 and 7.50 in control and experimental group respectively revealing almost similar status of sample at initial stage in both the study groups.

A good look at the Table 1 further throws light on stimulation provided by the mothers on each aspect in control as well as experimental group and the differences thereof. ANOVA was used to see the differences in maternal stimulation of both the study groups. As observed, the mean scores of both the groups were almost similar for all the five aspects and the overall maternal stimulation also. The differences also came out to be non significant statistically as the F values for language stimulation (0.021), physical environment (0.035), encouragement of social maturity (0.439), variety in stimulation (2.395), maternal attitude and disciplining (0.580) and overall maternal stimulation (0.038) too proved to be non-significant. This shows that children in both the study groups had almost similar stimulation environment at Pre-testing stage.

It is very important for children to have stable and loving relationships with their caregivers usually their mothers. Because of the love and affection they receive, they learn to rely on the caregiver and to trust her. As they grow they learn by watching and imitating her, as well as by getting instructions and guidance from her. When they manage to do something, their learning is reinforced by her praise and approval. This is a normal scenario. For this the mother does not need any special training, this kind of caregiving comes naturally and instinctively to her. This is the ideal environment for a child to develop his potential to the maximum. Studies have shown that infants who are abandoned and separated from their mothers become unhappy and depressed, sometimes to the point of panic. After

long periods of separation and isolation, they show symptoms of apathy and withdrawal or restlessness, hyperactivity, inability to concentrate, and craving for affection. When the group of children who were deprived of interactive contact was compared with a group of children receiving early stimulation and social enrichment, the difference was striking: "These children wore alert and interested expressions. They were almost always interacting with toys or people of their own choice and tended to approach with interest almost any adult who came within view..." Their language development was normal, and the difference in terms of IQ points between the two groups was 47 points or 3 standard deviations. This dramatic difference was the outcome of a simple intervention programme in which caretakers were made aware of the needs of children and instructed to respond to their needs as soon as these were expressed, to show them love and to play with them. The caregivers gradually developed a strong emotional attachment to their children, which again strengthened their sensitivity to the children's needs and initiatives (Hunt 1991). Seeing the importance of intervening with children, present investigation also carried out intervention program with the mothers with a view of improving the development of children by improving the maternal stimulation level. To see the impact of intervention package on maternal stimulation, mothers of both the study groups were tested again after one month of completion of intervention programme. Table 2 shows item-wise mean scores of control and experimental group mothers on MHEI to judge their maternal stimulation at Post-testing. Control group mothers were not provided exposure to any intervention, while experimental group mothers received intervention package. It was noticed that mean scores of control group ranged from 0.55 to 3.10 and of experimental group ranged from 2.01 to 5.00 on language stimulation, physical environment, encouragement of social maturity,

Table 2: Mean scores obtained by respondents on MHEI at Posttest (N=60+60)

<i>Items</i>	<i>Control Gp</i>	<i>Exptl. Gp</i>	<i>F test</i>
1. Language stimulation	3.10±0.68	5.00±0.53	391.908*
2. Physical environment	1.40±0.52	2.70±1.34	265.342*
3. Encouragement of social maturity	1.15±0.68	2.01±0.12	92.861*
4. Variety of stimulation	0.55±0.59	2.41±0.49	431.581*
5. Maternal attitude and disciplining	2.00±0.68	3.46±0.77	207.611*
Total	8.20±1.59	16.73±1.72	964.245*

variety in stimulation, maternal attitude and discipline. The mean score of control group mothers was 8.20 whereas, in experimental group it was as high as 16.73 at Post-testing stage. The results are in line with those of Galotti (2000) who reported that parental stimulation was much better at post testing stage. The increase in stimulation was due to intervention provided to parents on various cognitive aspects. Kaliramna (1999) too provided home based intervention programme to mothers and found significant improvement in their children's cognitive development because of intervention programme.

Further probing of data in Table 2 reveals that the mean scores of experimental group were higher than those of control group. These differences in mean scores of control and experimental group were found significantly higher in favor of experimental group. The F values were language stimulation (391.908), physical environment (265.342), encouragement of social maturity (92.861), variety in stimulation (431.581) and maternal attitude and disciplining (207.611). Similarly, the overall maternal stimulation mean score for control (8.20) and experimental group mothers (16.73) also varied significantly ($F=964.245$). Thus it can be concluded that mean scores of control and experimental group mothers on each sub item of MHEI differed significantly at Post-testing though they varied negligibly at Pre-testing as per Table 1 and 2. The significant gain in scores of experimental group sample at post test may be attributed to the intervention programme carried out with the experimental group mothers. Goodman and Andrews (2000) too examined the effects of three different educational program (high, medium and low structure) and two types of delivery systems (teacher only and teacher plus mother) on the cognitive performance (determined by the Peabody picture vocabulary test, the Preschool inventory and the Basic concepts inventory) of 52/2-4 year old preschool children in family day care centre and reported improved

cognition among children who received high structure program and of teacher plus mother delivery system.. Family day care students showed greater and more consistent enhancement of cognitive functioning than did a comparison group of 68 children in professionally run group day care center. The results clearly illustrates that for optimum development of the children, they need appropriate psychosocial as well as physical care. To be able to give this, one does not need extensive academic training. In fact, it is something very simple and natural that seems to be part of our biological and cultural heritage and can therefore be easily facilitated or reactivated in sensitive human caregivers. All adults have the capacity to love and care for and guide children under their care. But it is also true that some caregivers do this more than others and the reasons for this are many: extreme poverty, stress of daily living, ill health, depression or other emotional problems – to name just a few. In some cases it can simply be a lack of awareness and understanding of the need for such care. Through intervention, one hopes to reactivate such capabilities if they are dormant or to encourage the caregivers to improve the quality of their care giving by providing them with some guidance and motivation. Hence when one talks about intervening to promote better psychosocial care for children, it is not so much to teach new caring skills but more to release the innate capabilities already in the caregivers.

Maternal stimulation was measured at Pre and Post-testing and differences were calculated between control and experimental group as depicted in Table 3. As presented, there were significant differences in maternal stimulation during Pre and Post-testing of control group. The mean differences between stimulation scores at Pre and Post-testing on various dimensions of maternal stimulation vis-à-vis language stimulation, physical environment, and encouragement of social maturity, variety in stimulation, maternal attitude and disciplining

Table 3: Mean scores obtained by Control group respondents on MHEI (N=60)

<i>Items</i>	<i>Pre test</i>	<i>Post test</i>	<i>Mean diff.</i>	<i>t value</i>
1. Language stimulation	2.98±0.70	3.10±0.68	0.12	2.79*
2. Physical environment	1.25±0.43	1.40±0.52	0.15	3.27*
3. Encouragement of social maturity	1.01±0.62	1.15±0.68	0.14	3.01*
4. Variety of stimulation	0.40±0.49	0.55±0.59	0.15	3.22*
5. Maternal attitude and disciplining	1.90±0.70	2.00±0.68	0.10	2.56*
Total	7.55±1.50	8.20±1.59	0.65	5.72*

ranged from 0.10 to 0.15. These mean differences between Pre and Post-testing mean scores in control group came out to be statistically significant as t-value for language stimulation was 2.79, 3.27 for physical environment, 3.01 for encouragement of social maturity, for variety in stimulation; t value was 3.22 and for maternal attitude and disciplining it came out to be 2.56. The maternal stimulation score too suggested same as the t value was 5.72 with a mean difference of 0.65 between mean score of Pre and Post-testing stage in control group. On the other hand, experimental group mothers too improved upon their stimulation as depicted by high mean differences and highly significant 't' values (Table 4). The mean difference in language stimulation was 2.04, 1.47 in physical environment, 1.06 in encouragement of social maturity and it was 1.86 for variety in stimulation and 1.66 for maternal attitude and disciplining. The differences proved to be significant as the respective 't' values were 35.34, 23.91, 17.12, 33.18 and 25.42 for language stimulation, physical environment, encouragement of social maturity, variety in stimulation and maternal attitude and disciplining. Similarly maternal stimulation mean score also improved from 7.50 and 16.73 suggesting a mean difference of 9.23 and supported by significant 't' value of 56.44. The results can be corroborated with a the study of Malik et al. (2000) who in a study of impact of intervention on cognition concluded that experimental group's gain was significantly higher than the control group on cognitive development scores after the intervention period.

Martini and Norris (2000) too revealing the significance of intervention program indicated that sample in experimental group outperformed control group sample on cognitive alongwith other skills after a 10 week program. Therefore it can be concluded that the intervention programme carried out with mothers of experimental group was detrimental in improving the stimulation level of mothers. The impact of intervention can be proved by the higher mean scores and higher mean gain in favor of experimental group mothers after exposure to the intervention program.

So these experiences should be planned in accordance with the child's maturation level can help child achieve optimum level of development. These should be given emphasis right from birth and involve activities that demand close interaction between the child and parents and care takers. The outcomes of the findings of Kumari (1998) on family relations revealed that the presence of parental supportiveness, warmth and acceptance helps in promoting development of child. Parent's attitudes, behaviors and relationships all determine the child's personality and subsequent behavioral patterns. While interacting in the family, the child learns various skills and develops concepts. A close, communicative and supportive environment in the family provides for balanced and favorable atmosphere for the development of social-cognitive skills. Piaget's cognitive development theory asserts that experiences rather than maturation define the essence of cognitive

Table 4: Mean scores obtained by Experimental group respondents on MHEI (N=60)

<i>Items</i>	<i>Pre test</i>	<i>Post test</i>	<i>Mean diff.</i>	<i>t value</i>
1. Language stimulation	2.96±0.68	5.00±0.53	2.04	35.34*
2. Physical environment	1.23±0.53	2.70±1.34	1.47	23.91*
3. Encouragement of social maturity	0.95±0.46	2.01±0.12	1.06	17.12*
4. Variety of stimulation	0.55±0.56	2.41±0.49	1.86	33.18*
5. Maternal attitude and disciplining	1.80±0.73	3.46±0.77	1.66	25.42*
Total	7.50±1.30	16.73±1.72	9.23	56.44*

development (Maier 1969). Erikson also holds that the organism learns to regulate its system in accordance with the way in which the environment is organized in its method of child care. Even though most parents want to encourage their children's development, many do not know when to provide the proper experiences. This aspect of the parent as teacher role includes knowledge of normal child development, and the ability to 'read' children's readiness for given experiences. Parent education, it follows, should emphasize interpreting child behavior as it relates to the timing of experiences, especially for parents who may feel that infants and toddlers cannot benefit from early stimulation. Parents also need to know 'what to' provide in the way of stimulation and 'how to' are instrumental component of parenting. Duties of parents towards the education of their children shall not be substituted or shouldered by any third person. Any planned training or intervention programs can no doubted help parents in enhancing their child's development. It has become very clear that for a programme of psychosocial intervention to be sustainable, it is not experts, who should carry it out, but the child's parents or other stable caregivers, who must do this. They have to be empowered through training and supervision, so that they become confident and can carry out the programme independently. The intervention programmes should not impose foreign ideas on the caregivers but as far as possible encourage them to continue with the best of their cultural ways of child rearing, so that there is no alienation from local traditions and customs of care. By reinforcing the existing positive skills of the caregivers, a double benefit is achieved. First the caregiver starts to feel more confident about her own capacity to care. Secondly she becomes more aware of her own skills and this in itself will improve the quality of her care giving. This is not instruction from without, but rather guidance or facilitation of her existing competence and empowering her to trust her own capacity to care for her children.

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