

Role of Intervention in Improving Maternal Stimulation Level

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ABSTRACT The present investigation was carried out on 120 mothers of children between 3-5 years in rural areas of Hisar district. Control-Experimental and Pre-Post test design was followed to improve the level of maternal stimulation. After exposure of experimental group sample to the intervention package for 16 weeks, it was found that experimental group mothers were significantly ahead of their counterparts in the stimulation level. Though the control group sample had also improved but the mean gain of control group was lower than the mean gain of experimental group mothers. So to compute the gain due to intervention only, the achievement score of experimental group mothers was computed. The net maternal stimulation gain of 8.58 was, thus, attributed to the intervention program in favor of experimental group. To see the relatively permanent impact of intervention, follow up testing after 16 weeks of post testing was carried out. It revealed retention of learnt capacities as indicated by an achievement score of 6.81. The lower gain at follow-up than the gain at post testing revealed that continuous interaction with the subjects had a very strong impact and a long lasting impact.

INTRODUCTION

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. Home environment provided by the parents, parental behavior, their interaction with the child and other related factors tend to influence the development of children though the degree of influence may vary. The home environment is the first environment that a child

gets. The quality of the environment inputs through the material and non-material process has the ever-lasting impact on child. 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. There has been some evidence, however, that certain specific environmental process may be significantly related to early measures of competence (Wachs, 1976; Yarros et al., 1973). So, the environment has the powerful effect on the development of child's competence. Looking at the importance of stimulating environment in early years, which forms the basis for later development of the child, the need for improving child's environment increases many folds.

METHODOLOGY

In order to carry out an intensive study, four villages of Hisar district of Haryana state were selected purposively as the locale of study. Samples of 120 mothers of children between 3-5 years of age equally distributed between both the sexes were selected proportionately from these villages. Half of the mothers i.e., 60 mothers served as control group sample while the rest half served as experimental group sample. Multi-stage sampling technique was followed to collect the data. At Pretesting stage, the existing status of stimulation provided by mothers was judged using Mohite's Home Environment Inventory.

Stimulation level of mothers for providing enriched environment to the children refers to parental or maternal efforts for providing an environment full of enriched opportunity for enhancing development of children. The stimulating activities are related to language, physical environment, encouragement of social maturity and disciplining etc. At second stage, only the experimental group mothers were exposed to the stimulatory intervention package for 16 weeks to improve the stimulation level while the control group sample was left unexposed to any such kind of program. Intervention package is the package, which is based on the preplanned activities using easily available and low cost material from the immediate environment of children for the stimulatory home environment provided by mothers. To assess the impact of intervention, Post-testing, after a period of 4 weeks of completion of intervention was conducted on all subjects i.e., 120 mothers from experimental as well as control group for maternal stimulation.

To see the relatively permanent impact of intervention, Follow-up testing was carried out on the same sample after a gap of 16 weeks for maternal stimulation.

RESULTS AND DISCUSSION

The probing of data in Table 1 and 2 indicate comparison of mean gain achieved by mothers

of control and experimental group in their stimulation at Post-testing and Follow-up. ANOVA was run using groups as independent and mean gain in every item of MHEI as dependent factor. The mean gains of control group mothers were lower than the mean gains of experimental group mothers. Duncan's multiple range test revealed that significant differences existed in the experimental group and control group mother's stimulation at both the post testing. At Post-testing, the F values ranged from 30.23 to 47.02. The corresponding values at Follow-up ranged from 28.92 to 41.77. It is also clear from Table 1 and 2 that significantly higher stimulation was provided by experimental group mothers as compared to control group mothers at Post-testing as well as Follow-up, the F values were as high as 192.36 and 185.92 respectively. Thus, the gain in experimental group mother's stimulation for home environment was significantly higher than the gain of control group mothers on each sub-item of MHEI indicating the impact of intervention. Jaqueline Wendland et al. (1999) examined an intervention designed to influence mother's sensitive responsiveness towards their infant. The enhancement group showed a reliably greater frequency of co-occurrences involving vocal exchange and physical contacts. The findings show that even a modest videotaped early intervention can enhance mother's sensitive responsiveness to the infant.

Table 1: Mean gain in maternal stimulation of control and experimental group mothers at Post-testing.

S. No.	MHEI sub-items	Mean gain		
		Control	Experimental	F
1.	Language stimulation	0.12	2.35	47.02**
2.	Physical environment	0.15	1.62	36.79**
3.	Encouragement of social maturity	0.14	1.06	30.23**
4.	Variety in stimulation	0.15	2.06	42.78**
5.	Maternal attitude and disciplining	0.10	2.13	45.73**
6.	Maternal stimulation	0.65	9.23	192.36***

Significant at ** p<0.01 and *** p<0.001

Table 2: Mean gain in maternal stimulation of control and experimental group mothers at Follow-up.

S. No.	MHEI sub-items	Mean gain		
		Control	Experimental	F
1.	Language stimulation	0.25	2.04	36.72**
2.	Physical environment	0.18	1.47	34.85**
3.	Encouragement of social maturity	0.34	0.98	28.92**
4.	Variety in stimulation	0.30	1.86	41.77***
5.	Maternal attitude and disciplining	0.15	1.66	39.42**
6.	Maternal stimulation	1.21	8.01	185.92***

Significant at ** p<0.01 and *** p<0.001

Achievement Score in Maternal Stimulation

It is apparent from the results that there was gain in maternal stimulation in both the study groups. Though the control group mothers did not receive any intervention, a gain in mean scores was evident. This gain might be gain due to developmental changes in children or due to some other factors that could not be controlled. Whatever were the reasons of the gain in maternal stimulation scores of control group; these might have also been operating behind the gain in maternal stimulation of experimental group. To compute the gain due to intervention exposure only, the mean gain of control group was subtracted from mean gain of experimental group after intervention and follow up. The remainder was termed as Achievement score. The net maternal stimulation gain was thus, attributed to the intervention program.

As per Table 3, the achievement scores worked out at Post-testing in favour of experimental group mothers were 2.23, 1.47, 0.92, 1.91 and 2.03 for language stimulation, physical environment encouragement of social maturity, variety in stimulation and maternal attitude and disciplining respectively. The respective corresponding scores were 1.79, 1.29, 0.64, 1.56 and 1.51 at Follow-up (Table 4). It can be concluded that experimental group mothers gained by 8.58 at Post-testing and 6.81 at Follow-up. This gain was the contribution of intervention package only.

Thus the results revealing the impact of intervention exposure indicated that though there was an improvement in control group from the time of Pre-testing but the improvement in maternal stimulation was of higher rate in experimental group as compared to control group. The findings are supported by results of Lifter and Karin (1995). They studied the impact of early language intervention programme on development of children's language, cognition, emotion and social interaction. After intervention they found that experimental group performed better than the control group.

Though stimulation was provided to the experimental group mothers only, but the stimulation trend was found to be improving in control group as well. The reason which might be responsible for control group improvement was that growing children demand certain activities at home on the part of parents and parents have to perform those as a compulsion. Another reason might be that due to joint family system, the family members from the very beginning communicate with the child, which promotes language development. Kaliramana (1999) too observed high quality of language stimulation among parents and reported that roots of the same may be the cultural values and practices used in our society. On the other hand, improvement in experimental group was no doubt due to exposure of mothers to the intervention. The increase in stimulation was due to intervention provided to mothers on various

Table 3: Maternal stimulation achievement score of experimental group mothers at Post-testing.

S. No.	MHEI sub-items	Mean gain		Achievement score of experimental group
		Control	Experimental	
1.	Language stimulation	0.12	2.35	2.23
2.	Physical environment	0.15	1.62	1.47
3.	Encouragement of social maturity	0.14	1.06	0.92
4.	Variety in stimulation	0.15	2.06	1.91
5.	Maternal attitude and disciplining	0.10	2.13	2.03
6.	Maternal stimulation	0.65	9.23	8.58

Table 4: Maternal stimulation achievement score of experimental group mothers at Follow-up.

S. No.	MHEI sub-items	Mean gain		Achievement score of experimental group
		Control	Experimental	
1.	Language stimulation	0.25	2.04	1.79
2.	Physical environment	0.18	1.47	1.29
3.	Encouragement of social maturity	0.34	0.98	0.64
4.	Variety in stimulation	0.30	1.86	0.56
5.	Maternal attitude and disciplining	0.15	1.66	0.51
6.	Maternal stimulation	1.21	8.01	6.81

aspects while providing home based intervention programme. Regarding the stimulation level, she found that in both the groups, parental stimulation was found to be low initially. The parental stimulation level was found to be better among intervention group parents at post-testing stage. Parental stimulation of intervention group was found to be much better as compared to control group children who speak the impact of intervention programme itself.

Further, mean differences in each of the five sub-items of MHEI were computed in both the study groups. These differences came out to be significantly higher in experimental group mothers than those of control group mothers. It can be concluded that all the aspects studied for maternal stimulation showed significant differences between two groups at Post testing stage. It was noticed that stimulation trend was found to be better in mothers of experimental group. The reasons for better stimulation in experimental group mothers may be the result of intervention package that improved their stimulative skills. The results of the present study are in line with the findings of Dhanda (2000) and Sandhu (2001) who revealed that coverage of cognitive and language aspects by researcher with maximum use of literature and various teaching aids, which led to improvement of experimental group's knowledge on these aspects. The differences of control group were found to be significant but the mean value of experimental group were much higher than those of control group at Post-testing stage which means the gain in maternal stimulation score was higher in experimental group. The reason responsible for better maternal stimulation in case of experimental group may be the contribution of intervention package.

At Post-testing, the time till which the respondents were exposed to intervention package, the scores of mothers were increasing. But a downfall in mean scores of mothers on stimulation level was observed at Follow-up. This indicates that continuous interaction with mothers had a very strong impact. Approaching children and mothers continuously was no doubt very importance. A higher mean gain in scores of experimental group mothers at Follow-up indicates that the intervention package had a long lasting impact on stimulation level of mothers of experimental group. Thus it can be said that the activities carried out by the

researcher had a vital role to play in stimulating mothers, and secondly, even after the seizure of exposure the impact of stimulatory intervention package could be retained.

This show that the aspects that require resources take more time for adaptation on part of mothers and difficult to be retained longer as suggested by the Follow-up scores. Though it was found that maternal stimulation improved in both the groups but the stimulation trend was still better in mothers of experimental group. The reason which may be responsible for better maternal stimulation in experimental group may be the impact of intervention to which they were exposed for improving the stimulation skills to affect the learning and performing abilities of their children. Kaliramana (1999) too corroborating the above results concluded that parental stimulation was better in intervention group as a result of discussion on the part of mothers with the researcher to improve their stimulation skills.

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