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# **Efficacy of virtual education program to evaluate the knowledge of young mothers in Developmental Milestones: A survey in Delhi/NCR**

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**Abstract**--Efficacy of Virtual Education Program to evaluate the Knowledge of Young Mothers in Developmental Milestones. -A survey in Delhi/NCR. Objective: To evaluate the effectiveness of virtual education program to assess knowledge of young mothers in identifying developmental milestones. Design: A Cross section study was performed on young mothers via online mode of (pre-posttest). Outcome measures: Google form. Population: Young mothers within

Delhi NCR, with no more than two children, and a mean age of 20-45 years were included. Background and Purpose: In this study online session have given to assess the knowledge of young mothers in identifying developmental milestones. The purpose of this study was (1) to evaluate the efficacy of online education program on knowledge of young mothers to identifying developmental milestones, (2) To evaluate the outcomes of pre-test and posttest. Subjects. The participants were 100 young mothers from Delhi NCR. Methods. Self-structured questionnaire on knowledge regarding developmental milestones was used in this study, the questionnaire consists of 12 multiple choice answer questions in both the pre-test and post-test, with a video demonstrating the chronological progression of each gross motor milestone ranging from first month of life to twelve months respectfully. Each mother participated in the questionnaire. In the final position, the questionnaire score was obtained and the results was evaluated using inferential and descriptive statistics. Results. A mean value of 77.50 pre-test and a mean value of 86.83 post-test were obtained for all the subjects. There was a strong correlation between the pre-test and post-test measurements ( $df=9.33$ ). There was a difference between the pre/posttest *St. Deviation* of 2.81 and 4.20, with *t value* of 3.658. The results from the analysis shows that after the administration of the VEP which was conducted online, there was a significant increase in the knowledge regarding DM among young mothers. There were few mothers whose scores remained the same but as for the majority there was a significant increase in their score before and after the VEP showing that they grasp the information delivered in the VEP which was evident in their post-test score. Conclusion and Discussion. The study showed that prior to the VEP Most young mothers had inadequate and moderately adequate knowledge regarding DM, and after the VEP there was a statistically significant ( $p>0.05$ ) increase I knowledge of the young mothers on DM, while very few of the young mothers still had inadequate knowledge regarding DM and the case may have been due to lack of knowledge or other cases which were not easily identified since the VEP was administered online. The study proved that video-based teaching program had an effect in improving the knowledge of young mothers on DM.

**Keywords**--Video-based teaching program, developmental milestones, knowledge, young mothers.

## Introduction

Being a mother is a greatest thing that may happen to a woman, many children are born with different kind of developmental delays which varies from the Symptoms they present with. Developmental delay is referring to a state of when a child does not reach the expected developmental milestones achieved by each child at every stage of life in normal children. The delay in developmental milestones may occur in all aspect and area of child development such as, fine

motor, gross motor language and social development. Identification of developmental delay is indeed essential for introducing early intervention programs, with the aim of decreasing childhood disability. <sup>(1)</sup>

In the recent pandemic such as COVID-19, it produces potential risks to child development due to the risk of illness, protective confinement, social isolation, and the increased stress level of parents and caregivers respectfully. This situation becomes an adverse childhood experience (ACEs) and may generate toxic stress, with consequent potential losses for brain development, individual and collect health, and the long-term impairment of cognition, mental and physical health, and working capacity of future adults. <sup>(2)</sup>

Studies to improve the understanding of the impact of pandemic such as COVID-19 on children's mental health and development can help to guide strategies to prevent damage to children's growth and promote positive development. <sup>(2,3)</sup> The most important reason for monitoring each child's development is to determine whether a child's development is on track. Looking for developmental milestones is important to understanding each child's development and behavior. The aim of this study is to find out the effectiveness of video-based teaching program to assess the knowledge of young mothers in identifying developmental milestones in Delhi NCR, India.

## **Materials and Method**

### *Subjects:*

A total of 100 young mothers within Delhi NCR, participated in the study. The subjects were mothers from different region within Delhi NCR, with the mean age between 20-45 years. The Study was Approved by the Institutional research review Committee and the Institutional ethical committee of Noida International University, Greater Noida. A sample of 100 young mothers who met the inclusion criteria were chosen using convenient sampling technique. All subjects were given a detailed explanation of the procedure and informed consent was obtained before any intervention.

### *Instrumentation:*

Assessment form

Consent form

Questionnaire

DM video

Outcome questionnaire

The structured questionnaire was the tool which included the demographic data and some specific questions on knowledge regarding developmental milestones among young mothers. The tool was constructed for the purpose of obtaining data for the study. It was developed by the researcher on reviewing the relevant literature in consultation with medical and physiotherapy experts.

The self-structured questionnaire consists of 12 multiple answer choice questions, in both the pre-test and post-test. To assess the knowledge of young mothers regarding DM such as (a) when do children begin to look up (b) when should mothers begin to let child sit (c) when do children begin to play with a toy

(d) when do children begin to walk. The questionnaire was distributed online starting with pretest followed by a 1 minute 40 seconds video teaching program on DM and ends with a post test, total takes about 10 minutes to complete the survey.

Table 1.1.

Pre-test	Intervention	Post-test
01	X	02

Procedure:

- 01- Pre-test knowledge regarding DM
- X- Video-based teaching program on DM
- 02- Post-test knowledge regarding DM

The study was conducted on young mothers who were readily available and met the inclusion and exclusion criteria, online pre-test questionnaire was send to the mothers, followed by a video on DM. After 30min post-test questionnaire was send to the young mothers again to assess their post knowledge after watching the video. The study shows that there was a significant increase of knowledge regarding DM after the intervention of VBTP with a P-value of 0.05 and the difference in knowledge of pretest and post was 19. The young mothers participated in pilot study were excluded from the main study. The tool was then modified in Hindi subtitled as some of the young mothers did not understand the meaning of some words.

Scoring of response for knowledge regarding DM was done as follows. Each question consisted of multiple answer choice option. Each correct response was given a score of 1, and incorrect response a score of 0. The maximum possible score was 12 point and minimum score was 0 point.

The subjects were classified into three groups based on their score:

- Adequate knowledge 80% - 100%
- Moderately adequate knowledge 60% - 80%
- Inadequate knowledge 49% and less

The Tool was Validated by different Experts in the fields of Physiotherapy and Pediatrics. Based on the expert's suggestions only the tool got its final form.

## Results and Discussion

The table presents the mean and standard deviations for the pre-test and post-test of the young mothers. It shows that the mean of post-test knowledge score (86.83) was significantly higher than that of pre-test mean score (77.50). In order to find out the significant difference between the mean of the pre-test and the post-test level of knowledge scores of the samples paired 't' test is used. The calculated value is 9.33 significant at 0.000% level.

Table 1.2  
Analysis of pre-test and post-test knowledge of young mother

Categories	Mean	St Deviation	Mean Difference	t-test value	P value
Pre-test	4.94	2.37	6.23	22.70	0.001*
Post test	11.17	1.45			

Since the calculated t-value is higher than the mean value, the researcher concluded that the video-based teaching program would definitely improve knowledge.

Analysis revealed that the highest score (54%) in pretest of correct responses observed in 'When should mothers begin to hold a child hand for a walk within the house and lowest score (29%) of correct response observed in 'When should mothers begin to let children sits with support' and posttest highest score (98%) 'When do children begin to walk alone with good balance' and lowest score (87%) of correct responses observed in 'When do children begin to play imaginary play like driving a toy car'. This indicates that the young mothers did not know when do children begin to play imaginary play like driving a toy car, which shows that developmental delay awareness during prenatal/postnatal period is important in the hospitals as it will cover all aspects including developmental milestones.

### **Conclusion**

In our study we concluded that prior to the VEP most young mothers had inadequate and moderately adequate knowledge regarding DM, and after the VEP there was a statistically significant ( $p > 0.05$ ) increase in knowledge of the young mothers on DM, while very few of the young mothers still had inadequate knowledge regarding DM and the case may have been due to lack of knowledge or other cases which were not easily identified since the VEP was administered online. The study concluded that Virtual Based education Program had significantly play important role to improve the knowledge of young mothers about DM.

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