



## RESEARCH ARTICLE

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**The Effect of Playing Stimulation on Children Development**

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**ABSTRACT**

**Introduction:** To develop high quality of Indonesian human resources, parent have an obligation to support children development to gain optimum and balance state of intellectual, emotional, and spiritual development. Preliminary that was conducted on several Early Age Educational Program (PAUD) in Magetan district we got the data: in first location 62,5% of mother performed stimulation, and 37,5% others didn't performed any stimulation, on second location 33,33% of mother perform stimulation and 66,67 % others didn't perform any stimulation, on the third location 50 % perform stimulation and 50 % others didn't performed stimulation. From preliminary study we conclude that most of mother didn't realize the urgency of giving stimulation for children development yet. **Method:** It was a survey or observational study with Cross Sectional study design on first phase. On second phase we used Quasi experimental study with Non Randomized Pre test Post test Control Group Design. Population on this study were mother who have children and accompanying them during study on Early Age Educational Program (PAUD), samples of this study were 232 respondent. Collecting data using questionnaire, KPSP, screening kit. Data were analyzed using Structural Equation Modeling (SEM). **Result:** We found there were effect on stimulation performed by mother and environment outside their house toward children development with statistical t value  $> t$  table, meanwhile mother characteristic didn't affect toward children development with statistical t value 0,090 where this value less ( $<$ ) than t table 1,96. This scientific founding on this study were creating playing stimulation model from mother by stimulation. **Conclusion:** Stimulation by mother, environment outside the house, giving direct effect toward children development, meanwhile mother characteristic, basic need of children and mother commitment didn't giving effect toward children development.

**Keywords:** Early age children, Playing stimulation, Children development

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**INTRODUCTION****Background**

To develop high quality of Indonesian human resources, parent have an obligation to support optimum children development. According SDKI 2010, number of children on the age of 0-3 years old are 13,5 million, 14,08 % of them having delay of development (Endang, 2010). Several study conducted by Hariweni, Ali, Sofyani, & Lubis (2014) about knowledge, attitude and behaviour of stimulation toward children on mother who neither employed and unemployed. Result of study show that there were a significant relation between educational level and age of mother who employed toward their knowledge about stimulation.

Preliminary that was conducted on several Early Age Educational Program (PAUD) in Magetan district we got the data: in first location 62,5% of mother performed stimulation and 37,5% others didn't performed any stimulation, on second location 33,33% of mother perform stimulation and 66,67 % others didn't perform any stimulation, on the third location 50 % perform stimulation and 50 % others didn't performed stimulation. From preliminary we conclude that most of mother didn't realize the urgency of giving stimulation for children development yet.

**Formulation of Problem**

Formulation of problem on this study was: How to create playing stimulation model for early age children development ?

### Aim of Study

Creating playing stimulation model from mother with playing on early age children.

### Advantage of Study

This development stimulation model from mother with playing on early age children can be developed by involving role of multidiscipline not only from medical and nursing field but also could be developed by social, psychology, and behavior subject so that these phenomenon could be well explained and giving contribution for science especially on stimulation of children development topic.

We hope that this development stimulation model by mother with playing on early age children could be implemented by mother in Magetan regency so that mother could perform proper and good stimulation to prevent and manage deviation of children development.

## METHODS

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### First Phase

First Phase on this study using survey or observational to create stimulation of development model by mother with on early age children with *cross sectional* approach. Location of study on Early Age Educational Program (PAUD) that have been selected randomly in 4 sub district in Magetan regency, there were 12 Early Age Educational Program (PAUD) involved.

Population on this study were mother who accompanying her children at Early Age Educational Program (PAUD) in Magetan regency. Sample on this study were a part of mother who accompanying her children at Early Age Educational Program (PAUD) in Magetan regency. Estimation of sample size using *rule of thumb* (Neuman, 2000) where the sample size were 5-10 times of amount of parameters. On this study, 232 respondent were collected as sample, sampling technique was *Multistage random sampling*, then performed stratification and collecting sample using *simple random sampling*.

Variable of study: (X1) Mother Characteristic (Age and Education level), (X2) Mother Knowledge about children basic need (Asah, Asih, Asuh), (X3) Mother Commitment to perform stimulation (Role of Mother), (X4) Home /Family environment, (X5) Environment outside the house, (Y1) Stimulation from mother, (Y2) Children Development (measure by KPSP). Instrument that used on this study were questionnaire and KPSP. Questionnaire used to measure playing stimulation variable, meanwhile KPSP to measure children development variable. Analysis method using *Structural Equation Modeling* method using *Partial Least Square* (PLS) approach.

After got *model fit*, according to strategic issue we conduct FGD then modul was created. Module was tested on 5 mother that not participate as respondent on interventional group and after evaluation mother could understand and able to use module on performing stimulation.

### Second Phase (Implementation of Intervention Model)

It was a Quasi Experimental study with *Non Randomized Pre test Post test Control Group Design* as study design. Population on this study were all of mother who attend and accompanying her children on PAUD AS and PAUD M during august 2016. Sample on this study were a part of mother who attend and accompanying her children at PAUD AS and PAUD M. Sample size were 20 respondent that proper with criteria from researcher consist of : 10 respondent as interventional group (PAUD M) and 10 respondent as control group (PAUD AS). Sampling technique was consecutive sampling, 2 PAUD were chosen as its criteria.

Variable of study: (X2) Mother knowledge of children basic need (Asah, Asih, Asuh), (X3) Mother commitment to perform stimulation (Mother role), (X4) Family Environment and (X5) Environment outside the house, (Y1) Stimulation by mother, (Y2) Children development (KPSP).

Independent T-test used to see whether or not any differences between interventional group and control group, then we see difference between pre and post, compare the result, then comparing post test result between intervention and control group.

### Outcome

Outcome on this study was creating development stimulation model by mother with playing on early age children.

**Product of Study**

Product that created on this study is module about development stimulation by mother with playing in early age children.

**Ethical Clearance**

This study was conducted by using human respondent, it was approved by Ethical Research Committee from Surabaya Health Polytechnique of Ministry of Health. On field study, reseacher had permission form every respondent to participated on this study by informed consent.

**RESULTS**

**Analyzing Model of Structural Equation Modeling (SEM)**

Analyzing method on this study with development stimulation model by mother with playing on early age children based on *Health Promotion Model theory*, using *Structural Equation Modelling* method with *Partial Least Square (PLS)* approach.

**Structural Model Analysis (Inner Model)**

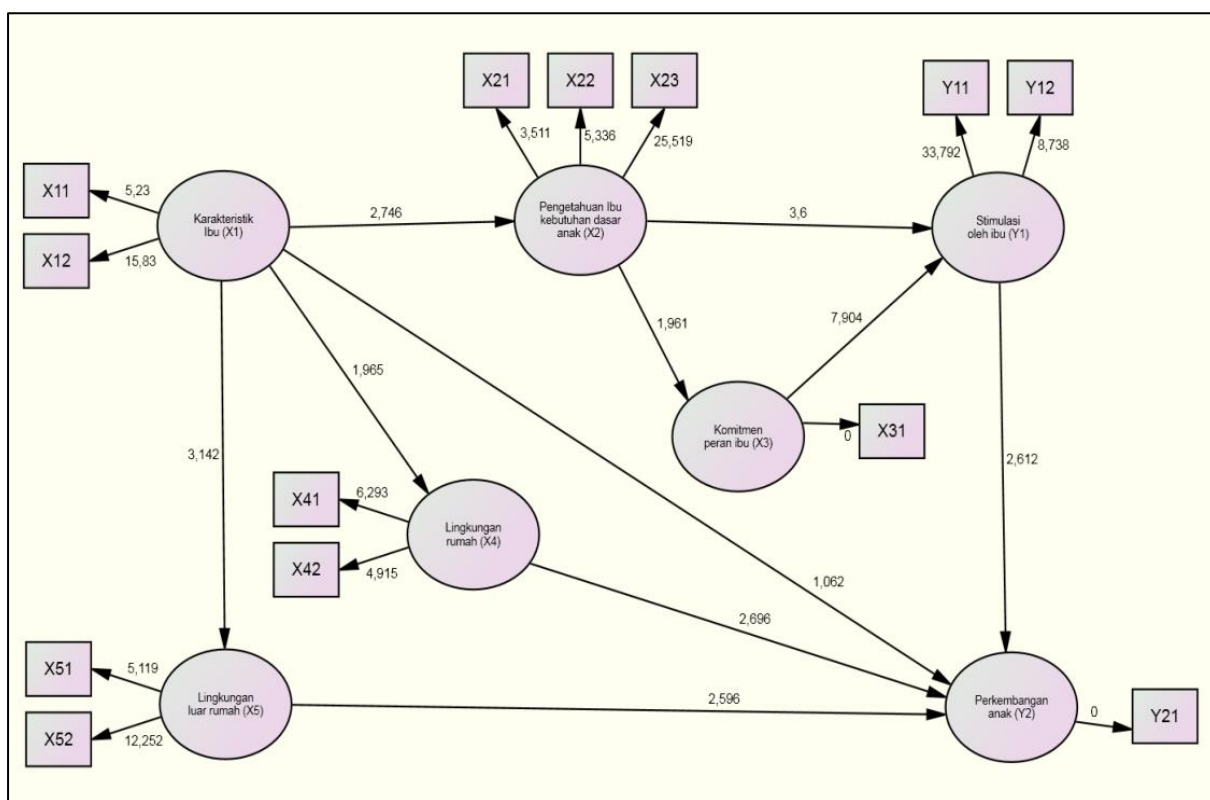


Figure 1. T-statistics value on structural model

According data on picture above we know that t-statistic value in every pathway have value  $\geq$  t-table (1.96), except t-statistic value on mother characteristic pathway (X1) to children development factor so that this pathway could be eliminated in final model.

**DISCUSSION**

Result of statistical test by structural equation formula or *Structural Equation Modeling (SEM)* show that structural model of development stimulation by mother with playing on early age children generally showed goodness of fit or fine. That's result indicate that theoretical model of children development model that consist of: mother characteristics, children basic need, mother committment, inhouse environment and environment outside

the house as exogenous variable and mother stimulation as endogenous variable has contribution toward children development variable supported by empirical data.

### **Effect of Mother Characteristic (Age and Education Level of Mother) Toward Early Age Children Development**

Result of study showed that most of mother on age 20-35 (early of adolescence). This study is proper with previous study conducted by Sinambela (2005) who state that study pattern of education and development of children in Medan Belawan sub-district showed that older the age of mother related with better pattern of education and children development.

Result of study showed that biggest number of respondent were have graduate from Senior High School, so it could be concluded that most of respondent have medium education level. Education level of parent especially mother has significant impact for children development. Low education level of mother could be risk factor of delaying children development because mother doesn't understand yet in order to give stimulation toward their children instead of mother who have higher education level.

### **Effect of Mother Knowledge about Children Basic Need (Asah, Asih, Asuh) Toward Early Age Children Development**

Result of study show that most of mother were able to fulfill children basic need (asah, asih, asuh) carefully. Children could growth with fullfill of physical and mental needs. On physical needs parent provide all of children needs such as home, feeding, clothing, and interaction with another people meanwhile mentally needs such as a children need love and carity, children must have good education either on formal or informal institution. Factor of Mother knowledge about basic need of children, significantly effect children development, it means if mother knowledge about basic need of children factor would be given by value of 1 unit it would be increase factor of children development 0.190 times of children development factor.

### **Effect of Mother Commitment to Perform Stimulation for Early Age Children Development**

Result of study show that most of mother having strong committment / role for early age children development. Factor of mother committment giving significant effect toward children development. It means if committment factor given by value of 1 unit it will increase children development factor by 0.145 times of children development factor. Role of father as leader in family having significant role to fullfil family expenses, a teacher, guardian or protection, to give feel of safety for every family member and also as a member of a particular society, meanwhile mother role are even to manage daily household, protect family, and even as fullfil family expenses and as a member of a particular society.

### **Effect of In House / Family Environment for Early Age Children Development**

Result of this study, stimulation by playing was frequently perform meanwhile stimulation by recreation was rarely perform. Inhouse environment giving significant effect for children development. It means that if inhouse environment factor given by value of 1 unit it will increase children development factor by 0.273 times of children development factor. According Bronfenbreuner (on Santrock, 2006) state that there were a part of system that affect microsystem, mesosystem, ecosystem, macrosystem and chronosystem. One of the most powerful is microsystem. Microsystem means by Bronfenbreuner was environmet situation that make a direct contact and affect each other. Microsystem has special role in children development, because it consist of role of parent, teacher and also quantity and quality of education.

### **Effect of Environment Outside the House for Early Age Children Development**

Result of this study in environment outside the house with sama age children are frequently performed. Environment outside the house factor giving significant effect toward children development. It means that if Environment outside the house factor given by value of 1 unit it will increase children development factor by 0.339 times of children development factor. Condition of environment around children giving strong effect toward children behaviour, emotional, and attitude development. Frequency and intensity of children interaction in same age is strongly depend on stimulus they have got. Relation with same age children was increased during preschool age. Frequency of interaction with their friends even in positive or negative manner will continous and increase during that's age. Friend for children was an important part of activity. Activity with

friend in a group, is very joyful for them. They can share the job, share the role, and share their bussines. Even in preschool-age, sometimes friend will be identification object and their important need (Jotzey, 2014).

**Effect of Playing Stimulation by Mother for Early Age Children Development**

Result of study show that most of playing stimulation by mother was frequently performed. It means that if stimulation by mother factor given by value of 1 unit it will increase children development factor by 0.420 times of children development factor. According to Davida (2004), stimulating children on preschool age could be by playing. Playing undirectly will make children develop their physical – motoric, social - emotional ability and their cognition and parent support by giving stimulation to perform much more playing activity.

**Implementation of Intervention Model**

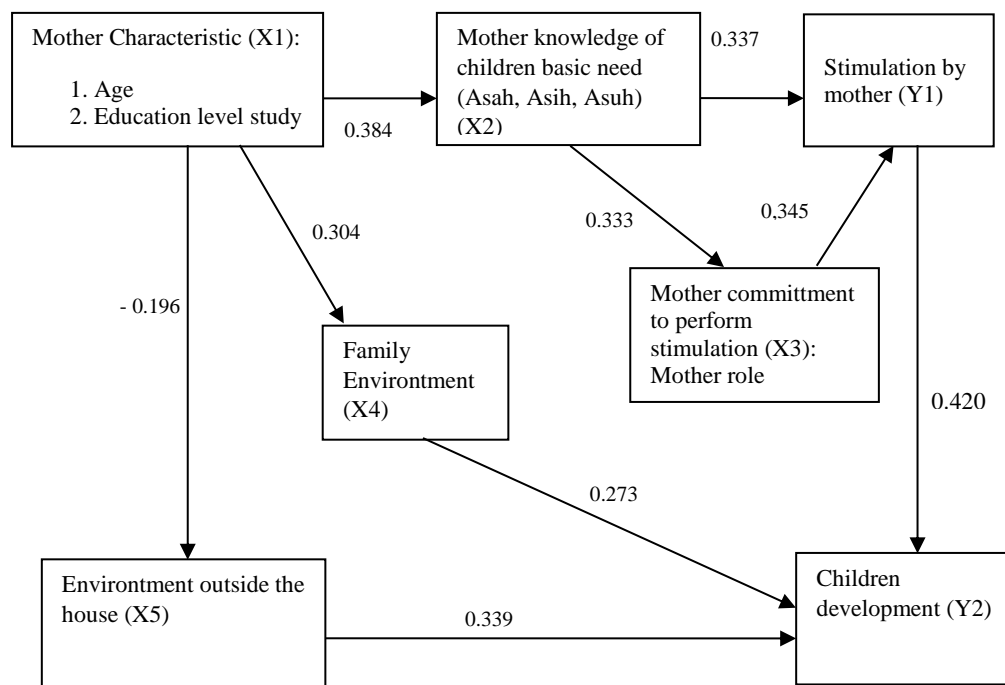
Result of independent T test on playing stimulation with mother on intervention and control group show significant differences. Playing stimulation model applied on interventional group to prove efectivity of a model.

Result of study showed that indicator of asah, asih and asuh that explain knowledge factor of basic need, having the same average score between interventional and control group (not different). Indicator of role of mother that explain committment factor, having different average score between control and interventional group. Where the average score of interventional group bigger than control group.

Indicator of stimulation with playing at home that explain stimulation factor in house environment, playing stimulation at home having the same average score between interventional and control group. Indicator of playing interaction with same age child and frequency of playing with them explain stimulation factor outside the house, having difference average score between interventional and control group, even indicator of playing interaction with same age child and frequency of playing with them. Where average score of interventional group bigger than control group.

Indicator of playing stimulation by mother, having different average score between interventional and control group. Where the value of interventional group were bigger than control group. KPSP indicator that explain children development factor, having the same average score between interventional and control group.

**Research Finding**



Picture 2. New finding on stimulation model of children development by mother with playing in early age children based on Health Promotion Model theory (Nurlailis)

According the picture above we know new finding based on structural model test are:

1. Mother Characteristic didn't giving significant direct effect on children development. But it giving undirect effect by family, environment outside the house, knowledge of children basic need, mother commitment and stimulation by mother. Value of undirect effect was 0.090.
2. Mother knowledge about children basic need giving significant effect toward children development. Value of effect was positive that is 0.190.
3. Mother commitment giving significant effect toward children development. Value was positive that is 0.145.
4. Inhouse Environment giving significant effect toward children development. Value of effect was positive that is 0.273.
5. Environment outside the house giving significant effect toward children development. Value of effect was positive that is 0.339.
6. Stimulation by mother giving significant effect toward children development. Value of effect was positive that is 0.420.

### CONCLUSION

Based on the results could be concluded that: 1) Mother characteristic was factor that giving undirect effect for children development, 2) mother knowledge about children basic need (asah, asih, asuh) giving undirect effect for children development by mother commitment/role of mother and mother stimulation, 3) mother commitment giving undirect effect for children development by mother stimulation, 4) inhouse environment giving direct effect for children development, 5) environment outside the house giving direct effect for children development, 6) we found playing stimulation model with mother toward children development that created by several pathway even direct or undirect and also created by every factor, stimulation by mother is the most effective factor toward children development.

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