

## **EXPLORING THE IMPACT OF KINETIC PLAY SAND ON THE SOCIALIZATION AND INDEPENDENCE OF PRESCHOOL CHILDREN**

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### **Abstract**

Socialization and independence problems in preschool-age children, namely children are not yet able to eat on their own, put on and take off shoes or cloths, clean up toys, interact with others, and other things. Socialization and independence problems in each child vary according to the age of the child, and can be handled by providing appropriate stimulation. Stimulation that can be done is by playing exploration centers (playing sand). Preschoolers' socialization and independence are the variables that this research seeks to investigate in relation to kinetic sand play. Employing a pre-experiment, one-group post-test design, the investigation that was carried out is quantitative in nature. In this case, quota sampling was utilized. The study's findings, derived from univariate analysis of pre-test scores, indicated the following scores: 8.08 (median), 6.67 (mean), and 7.67 (all 48 months and 54 months, respectively) (72 months). Mean 6.50 (48 months), mean 7.00 (54 months), mean 8.33 (60 months), mean 8.33 (66 months), and median 8.50 are the values of the increasing post-test scores (72 months). P values of 0.007 (48 months), 0.015 (54 months), 0.038 (60 months), and 0.025 (66 months), with a median of 0.025, were found by bivariate analysis (72 months). The p-value derived from the bivariate analysis was less than 0.05. Preschool-aged youngsters undergo socialization and develop a sense of independence, according to the findings of the research. Socialization education and stimulation are anticipated to be enhanced and preschoolers' independence increased as a result of the findings of this study.

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**Keywords:** Kinetic Play Sand, Socialization and Independence, Preschool Children

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### **INTRODUCTION**

The process of growth and development at the preschool age began to occur steadily. Socialization and independence problems in preschool-age children, namely children not be able to eat alone, not be able to wear their clothes, not be able to wear and take off their shoes, not be able to clean up their toys after playing, not be able to socialize or interact with others, want always to be accompanied by parents or caregivers in every activity, keep crying when left by parents or caregivers, and other

things. The problem of socialization and independence in each preschool-age child differs according to the preschool-age age (Khadijah & Nurul, 2021).

If not addressed, the impact of socialization and independence problems on preschool children is that preschool-age children socialize and are independent of others, spoiled, shy, easy to cry, hopeless, passive, and other things. The impact of socialization and independence problems on preschool children will complicate life and success in the future. Socialization stimulation can address problems in preschool-age children (Hartutik et al., 2021).

Play stimulation is one way to facilitate interventions to train socialization and independence in preschool children. Games that can be done in preschool children to teach socialization and independence, namely by doing center activities, including art and creation centers (self-creation, anti-coloring), design centers (my house, my palace, skyscrapers), imagination centers (fishermen go to sea), exploration centers (playing sand) and preparation centers (making things from objects) (Nurfadilah et al., 2021).

Kinetic play sand is a sand that can be kneaded, easily blended, easily formed, and not quickly dried (Smith et al., 2020). Kinetic play sand or sand play can be found in stores that sell children's toys with ready-made properties or shapes. Researchers can also make kinetic play sand or sand play by mixing safe ingredients for preschool-age children, such as rice flour, food coloring, and cooking oil. Sand games for preschoolers are fun activities because they involve preschoolers acting to do something (manipulation), gaining experience (exploration), and stringing together (construction) to create or realize the imaginary world of preschool-age children (Bouchard, 2021).

## **RESEARCH METHODS**

Conducting initial observations (pre-test) prior to the intervention and re-establishing final observations (post-test) subsequent to the intervention, the research employed a quantitative approach and utilized a one-group pre-test and post-test design.

### ***Participants***

The quota sampling method was utilized to select the 30 respondents; the ages of the children represented the following age groups: six at 48 months, three at 54 months, three at 60 months, six at 66 months, and twelve at 72 months. The sampling approach is non-random. November 2023 seen the completion of the three-week study.

### ***Instruments***

The instrument used to measure socialization and independence is a modified observation sheet from KPSP or PDQ (Pre-screening Development Questioners) and Denver II (Nurhidayah et al., 2020), consisting of 9 – 10 questions. Researchers and enumerators conducted interrater reliability tests on ten preschool-age children. Based on the principle of statistical test kappa interrater reliability, the conclusion is that there is a similar perception regarding the assessment of socialization and independence in preschool children observed. The data collection technique used in this study was direct observation of children. The pre-test is implemented by observing and assessing one-on-one socialization and independence in preschool-age

children for a week. The kinetic play sand intervention was carried out for six days, namely the 1-3 days in groups and the 4-6 days individually, and doing a post-test for a week.

### *Data analysis*

Univariate analyses at ages 48, 54, 60, and 66 months were normally distributed data using the mean. Data at 72 months is abnormally distributed using the median, and bivariate analysis uses a dependent t-test and Wilcoxon test

## **RESULT AND DISCUSSION**

### **Univariate Analysis**

**Table 1. Mean/ Median Socialization and Independence in Preschool Children Before Kinetic Play Sand Intervention, n = 30**

Variable	Mean/ Median	SD	Min-Max	95% CI	n
Preschool age 48 months	Mean 5,00	2,366	2 – 8	2,52 – 7,48	6
Preschool age 54 months	Mean 4,33	1,528	3 – 6	0,54 – 8,13	3
Preschool age 60 months	Mean 6,67	2,517	4 – 9	0,42 – 12,92	3
Preschool age 66 months	Mean 7,67	1,033	6 – 9	6,58 – 8,75	6
Preschool age 72 months	Median 8,08	0,996	7 – 9	7,45 – 8,72	12

**Table 2. Mean/ Median Socialization and Independence in Preschool Children After Kinetic Play Sand Intervention, n = 30**

Variable	Mean/ Median	SD	Min- Max	95% CI	n
Preschool children 48 months	Mean 6,50	1,761	4 – 8	4,65 – 8,35	6
Preschool age 54 months	Mean 7,00	1,000	6 – 8	4,52 – 9,48	3
Preschool children 60 months	Mean 8,33	2,082	6 – 10	3,16 – 13,50	3
Preschool age 66 months	Mean 8,33	0,816	7 – 9	7,48 – 9,19	6
Preschool children 72 months	Median 8,50	0,522	8 – 9	8,17 – 8,53	12

**Bivariate Analysis**

**Table 3. Impact of Kinetic Play Sand on Socialization and Independence in Preschool Children Age 48, 54, 60 months**

Variable	S.D	S.E	P Value	n
Preschool Children age 48 Months	$\frac{2,366}{1,761}$	$\frac{0,966}{0,719}$	0,007	6
Preschool Children Age 54 Months	$\frac{1,528}{1,000}$	$\frac{0,882}{0,577}$	0,015	3
Preschool Children Age 60 Months	$\frac{2,517}{2,089}$	$\frac{1,453}{1,202}$	0,038	3
Preschool Children Age 66 Months	$\frac{1,033}{0,816}$	$\frac{0,422}{0,333}$	0,025	6

**Table 4. Impact of Kinetic Play Sand on Socialization and Independence in Preschool Children Age 72 months**

Variable	Mean Rank	P Value	n
Socialization and independence in preschool children age 72 months	Before Intervention	0,00	0,025 12
	After Intervention	0,00	

**1. Socialization and Independence in Preschool Children Before Kinetic Play Sand Intervention**

For children aged 72, 66, 60, 54, and 48 months, the study's findings are presented in Table 1. Upon conducting observations, it was discovered that a subset of youngsters remained undeveloped in terms of sociability and independence. The outcome fails to meet the criteria outlined in the Pre-Screening Developmental Questionnaire (PDQ) and Denver II (Ministry of Health of the Republic of Indonesia, 2019), which establish the expected level of socialization and independence for children based on their age as determined by the Stimulation, Detection, and Early Intervention of Child Growth and Development (SDIDTK). This target is not met. Distinguishing between themselves and their caregivers, socializing, interacting with their surroundings, and so on, are all facets associated with the lack of independence exhibited by preschool-aged children (Febrianti et al., 2023).

The reason is that preschool-aged children can quickly draw conclusions from errors in their reasoning (transductive) and consider everything they do to be the right action (Balqis & Rizqiyah, 2021). There are still preschool children who are challenging to manage, easy to draw conclusions based on their will, and feel that all the actions they take are correct, so providing appropriate stimulation to improve aspects of socialization and independence in preschool children is very necessary.

Factors that affect the socialization and independence of preschool-age children are based on internal and external factors. Internal factors originate from within preschool-age children that can affect the socialization and independence of preschool-age children, such as genes or heredity, birth order, physical

condition, talent, intellectual potential, age maturity level per individual that differs from one child to another, and gender. External factors come from within preschool-age children that can affect the socialization and independence of preschool children, such as parenting patterns at home in educating their children, the education system provided at school by their teachers, and the system in community life in their environment, this is by theory (Suryaningsih et al., 2020).

## **2. Socialization and Independence in Preschool Children After Kinetic Play Sand Intervention**

According to Table 2, preschoolers aged 72, 66, 60, 54, and 48 months who received a kinetic play sand intervention demonstrated growth in independence and socializing. Both the pre-intervention and post-intervention mean and median scores for each age group exhibited an upward trend. Socialization and independence in preschoolers are distinguished by their capacity to function autonomously, including the ability to determine their own activities and needs without relying on others. The development of socialization and independence in preschoolers has a significant impact on their capacity to adapt to different circumstances and conditions they encounter. This is due to the fact that socialization and independence can influence a child's life process, either directly or indirectly (Muslihan, 2021). Socialization and independence pertain to the capacity of preschool-aged children to behave in accordance with the objectives of socialization and independence development, which are achieved through many forms of stimulation, including kinetic play and interventions.(Debora et al., 2020).

This result is influenced by habits instilled and taught in preschool children before with other stimulation. Based on the results of the study, increased socialization and independence in preschool children, in this study, there was an increase with varying values from various factors (internal and external); this is by theory (Wahyuningsih, 2021). In the ongoing research during the intervention, almost all preschool children were enthusiastic about the kinetic play sand intervention given because they had never received such stimulation, so even with only two interventions, there was an increase in aspects of socialization and independence in preschool children. On the basis of the Stimulation Detection and Early Intervention of Child Growth and Development (SDIDTK) theory as reflected in the Pre-Screening Developmental Questionnaire (PDQ or KPSP) and Denver II, researchers can deduce that training preschool-aged children in socialization and independence can be accomplished through the provision of suitable stimulation and adequate time to improve these skills (Sholikhah et al., 2020).

## **3. The effect of kinetic play sand on socialization and independence in preschool-aged children**

The dependent variable is affected by the independent variable, as seen by the increase in the mean and median scores for preschoolers' sociability and independence before and after receiving kinetic play sand, as shown in Tables 3 and 4. The efficacy of kinetic play sand as a stimulant for enhancing socialization and independence in preschool-aged children is evident in the manner in which the children engage in individual and group play: communicating, cooperating, socializing, tidying up toys, assisting peers, adhering to rules, and making decisions. As a result, the children are effectively instructed in socialization and

independence (Mardiati & Hartati, 2020). This success adds to the success of research stimulation on improving aspects of socialization and independence in preschool children because kinetic play sand influences socialization and independence in preschool children.

Kinetic play sand is a natural evolution of informal play with soil practiced by children worldwide because sand play has a long and fascinating history for children worldwide. Sand is becoming the most common and suitable method of play for preschool-aged children because playing with sand is a fun activity. In everyday life, especially in a sandy cape area (beach), you will often find sand that can be played (Nuryulianti & Ernawati, 2021).

The benefits of kinetic play sand or sand play in preschool children are chosen as a medium to train socialization and independence because kinetic play sand or sand play is a fun activity and involves preschool children in acting to do something (manipulation), gain experience (exploration), and string (construction) to create or realize the imaginary world of preschool children (Umah & Rakimahwati, 2021).

The provision of the kinetic play sand method or sand game researchers adapted from the research of Rufaida (Rufaida & Reza, 2020). Based on the research "Application of Sand Play to Improve Fine Motor Skills in Group A Kindergarten Children," this study consists of two cycles, each with stages: planning, implementation, observation action, and reflection. The yield of cycle I is 49% and increases in cycle II by 87%. Based on a study entitled "Improving Children's Fine Motor Skills and Creativity Using a Scientific Approach through Magic Sand Media in Children in Pohuwato Regency" using two cycles. Using a scientific approach through magic sand media can improve fine motor skills and increase creativity (Trinurmi, 2020)

## **CONCLUSION**

Socialization and independence in preschool children before the intervention of Kinetic Play Sand: age 48 months mean = 5.00, age 54 months mean = 4.33, age 60 months mean = 6.67, age 66 months mean = 7.67, age 72 months median = 8.08. Socialization and independence in preschool children after the intervention of kinetic play sand: age 48 months mean = 6,50, age 54 months mean = 7.00, age 60 months mean = 8.33, age 66 months mean = 8.33, age 72 months median = 8.50. P value <0.05 means kinetic play has an influence on socialization and independence in preschool children.

The educational game kinetic play sand is recommended for preschool-aged children since it enhances, stimulates, and fosters the development of independence and socializing in this age group. As such, it is suitable for implementation in schools with children. As a means of stimulating preschool-aged children's socialization and independence, kinetic play sand interventions can be implemented at home by parents in the form of educational games. As an intervention to promote the development of preschool children, particularly in the areas of socialization and independence, it is anticipated that the findings of this research will assist nurses in their capacity as educators, specifically in regards to instructing and facilitating kinetic play sand. Regarding the impact of kinetic play sand on stimulation to enhance socialization and independence in preschool children while directing attention towards other variables that may influence independence in preschoolers,

the findings of this study are anticipated to serve as primary and reference material for subsequent researchers.

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