



ORIGINAL ARTICLE

Impact of Play-Based Activities on Appetite Among Preschool Children: A Cross- Sectional Study



Anggi Fairuz Zulkholi¹, Yuana Dwi Agustin²

¹ Universitas Nurul Jadid, Indonesia

² Universitas Bondowoso, Indonesia

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Corresponding Author:

Anggi Fairuz Zulkholi
Universitas Nurul Jadid,
Indonesia
Email:
anggifai.fz@gmail.com

ABSTRACT

Introduction: Play is an essential component of preschool children's development; however, excessive play may influence eating patterns and appetite. Appetite in children is also shaped by emotional factors and parent-child interactions, which may affect nutritional intake and overall health.

Objectives: This study aimed to analyze the relationship between play activities and appetite among preschool children aged 4-5 years.

Methods: This study employed a correlational design with a cross-sectional approach. The population consisted of all preschool children at Al Irsyad Kindergarten, and a total of 168 children were included as the sample using a total sampling technique. The variables examined were play activities and children's appetite. Data were collected using structured questionnaires and analyzed using Spearman's rho correlation test with a significance level of 0.05.

Results: The results showed that the majority of children engaged in excessive play, while a smaller proportion did not. Appetite levels were categorized as good, moderate, and poor. Statistical analysis revealed a significant relationship between play activities and appetite ($p = 0.004$), indicating that higher levels of play activity were associated with variations in children's appetite.

Conclusions: Play activities were significantly associated with appetite among preschool children. Therefore, maintaining a balanced play schedule and applying appropriate parenting practices are important to support optimal nutritional intake and overall child health.



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A. Introduction

Play is a fundamental activity in the daily life of children and plays a crucial role in their physical, cognitive, emotional, and social development. Through play, children develop motor skills, creativity, and social interaction abilities, which are essential for optimal growth and development (Yogman et al., 2018; Zosh et al., 2017). In early childhood, play is not only a medium for learning but also a key determinant of overall well-being, as it supports brain development and adaptive functioning. However, while play provides significant developmental benefits, excessive engagement in play activities may interfere with other essential aspects of child health, including eating behavior and appetite regulation.

Appetite in children is a multifactorial process influenced by physiological, psychological, and environmental factors. Parent-child interactions and feeding practices play a significant role in shaping children's eating behaviors. Inappropriate parenting approaches, such as coercive feeding or the use of pressure, may negatively affect appetite and contribute to feeding difficulties (Hurley et al., 2016; Scaglioni et al., 2018). Feeding problems remain common among preschool children and are associated with poor dietary intake and suboptimal growth outcomes (Taylor et al., 2015; Russell & Russell, 2018).

Preschool-aged children (4–5 years) are particularly susceptible to appetite changes due to increased independence and preference for play activities. At this developmental stage, children tend to prioritize play over structured routines, including eating, which may result in irregular meal patterns or decreased food intake (Johnson et al., 2016). If not properly addressed, prolonged feeding difficulties can lead to inadequate nutritional intake and negatively impact physical growth and cognitive development.

Previous research has shown that behavioral and environmental factors, including excessive play, lack of structured routines, and family dynamics, significantly influence children's eating behavior (Vaughn et al., 2016; Ventura & Birch, 2018). In addition, responsive feeding practices and parental involvement are critical in maintaining healthy eating habits among children (Hurley et al., 2016). Despite the growing body of evidence on child feeding behavior, limited studies have specifically examined the relationship between play activities and appetite, particularly in preschool-aged children in educational settings.

In Indonesia, issues related to child nutrition and eating behavior remain a public health concern, particularly among preschool children. Preliminary observations at Al Irsyad Kindergarten, Kademangan, Bondowoso, indicated that several children experienced decreased appetite, with many consuming only half of their meal portions. This condition was assumed to be associated with excessive play activities, which may distract children from eating and reduce their interest in food.

Based on this background, understanding the relationship between play activities and appetite among preschool children is essential. Therefore, this study aims to analyze the relationship between play activities and appetite among children aged 4–5 years in Al Irsyad Kindergarten, Bondowoso, Indonesia.

B. Methods

This study employed an analytic observational design with a cross-sectional approach to examine the relationship between play activities and appetite among preschool children. The study was conducted at Al Irsyad Kindergarten, located in Kademangan, Bondowoso, Indonesia. The population consisted of all preschool children aged 4–5 years enrolled at the kindergarten, and a total of 168 children were included in the study using a total sampling technique. Children who were actively enrolled and whose parents or guardians provided informed consent were included,

while those with diagnosed chronic illnesses affecting appetite or who were absent during the data collection period were excluded.

The variables examined in this study were play activities as the independent variable and appetite as the dependent variable. Play activities were defined as the frequency and intensity of children's engagement in play and were categorized into excessive and non-excessive play. Appetite was defined as the child's willingness and desire to consume food and was categorized into three levels: good, moderate, and poor.

Data were collected using structured questionnaires completed by parents or caregivers. The questionnaire consisted of items assessing children's play activities and appetite and was developed based on relevant literature on child behavior and feeding practices. Prior to data collection, the instrument was reviewed to ensure content validity. Data collection was conducted after obtaining permission from the school authorities, and informed consent was obtained from parents or guardians. Questionnaires were distributed and collected during school hours with the assistance of teachers.

Data analysis was performed using statistical software. Descriptive statistics were used to summarize the characteristics of respondents and study variables in the form of frequencies and percentages. The relationship between play activities and appetite was analyzed using Spearman's rho correlation test, as the data were ordinal in nature. A significance level of $p < 0.05$ was used to determine statistical significance. Ethical principles were applied throughout the study, including ensuring participant confidentiality, anonymity, and the use of data solely for research purposes.

C. Results

A total of 168 preschool children aged 4–5 years were included in this study. The majority of children were categorized as engaging in excessive play activities (66.7%), while 33.3% were classified as not engaging in excessive play. In terms of appetite, most children were categorized as having poor appetite (46.4%), followed by moderate (33.3%) and good appetite (20.2%), as presented in Table 1.

Table 1. Distribution of Play Activities and Appetite (n = 168)

| Variable | Category | Frequency (n) | Percentage (%) |
|-----------------|---------------|---------------|----------------|
| Play Activities | Excessive | 112 | 66.7 |
| | Not excessive | 56 | 33.3 |
| Appetite | Good | 34 | 20.2 |
| | Moderate | 56 | 33.3 |
| | Poor | 78 | 46.4 |

Further analysis was conducted to examine the relationship between play activities and appetite. The cross-tabulation results showed that among children who did not engage in excessive play, the majority had poor appetite (60.7%), followed by moderate appetite (39.3%), and none were categorized as having good appetite. In contrast, among children who engaged in excessive play, most had moderate appetite (65.2%), followed by poor appetite (39.3%) and good appetite (9.8%), as shown in Table 2.

Table 2. Cross-tabulation of Play Activities and Appetite (n = 168)

| Play Activities | Poor n (%) | Moderate n (%) | Good n (%) | Total |
|-----------------|------------|----------------|------------|------------|
| Not excessive | 34 (60.7) | 22 (39.3) | 0 (0.0) | 56 |
| Excessive | 44 (39.3) | 73 (65.2) | 11 (9.8) | 112 |
| Total | 78 | 95 | 11 | 168 |

Statistical analysis using Spearman's rho test revealed a significant relationship between play activities and appetite ($p = 0.004$). The correlation coefficient ($r = 0.379$) indicated a moderate positive relationship, suggesting that variations in play activities were associated with differences in children's appetite.

D. Discussion

The present study found that the majority of preschool children engaged in excessive play activities, while most of them demonstrated poor to moderate levels of appetite. More importantly, the statistical analysis revealed a significant relationship between play activities and appetite, indicating that variations in play behavior are associated with differences in children's appetite. These findings suggest that although play is essential for child development, excessive engagement in play may have unintended consequences on children's eating behavior.

This finding is consistent with previous research indicating that behavioral factors play a critical role in shaping children's eating patterns. Preschool-aged children tend to prioritize play over structured routines, including eating, which may result in irregular meal patterns and decreased food intake (Johnson et al., 2016). At this developmental stage, children are increasingly autonomous and may resist interruptions during play, including mealtime, leading to reduced appetite or delayed eating. This behavioral tendency explains why children who engage in high levels of play activity may demonstrate lower interest in food consumption.

In addition, the findings of this study can be explained through the behavioral and environmental framework of child feeding, which emphasizes the role of parental influence and daily routines in shaping children's eating behavior (Hurley et al., 2016; Vaughn et al., 2016). Children who lack structured mealtime routines or parental guidance may be more likely to prioritize play over eating. Furthermore, inappropriate feeding practices, such as coercion or pressure to eat, may negatively affect children's appetite and contribute to feeding difficulties (Scaglioni et al., 2018). Therefore, the interaction between play behavior and parenting practices becomes a crucial determinant of children's appetite.

Interestingly, the results of this study showed that children who engaged in excessive play were more likely to have moderate appetite rather than poor appetite. This may indicate that play does not always have a negative effect but rather influences appetite depending on the context and balance between activities. Moderate levels of appetite among children with high play activity may be related to increased energy expenditure, which can stimulate hunger. However, when play becomes excessive and disrupts structured eating routines, it may lead to decreased appetite. This dual effect highlights the importance of balance in children's daily activities.

The findings of this study also align with the concept that children's eating behavior is influenced by a combination of internal and external factors, including biological needs, emotional states, and environmental stimulation (Russell & Russell, 2018). Play activities, as a form of environmental stimulation, may compete with eating behavior for children's attention. As a result, children may delay or skip meals, particularly when they are highly engaged in enjoyable play activities.

From a practical perspective, these findings emphasize the importance of establishing structured routines that balance play and mealtime. Parents and caregivers should ensure that children have adequate time for both play and eating, without one activity interfering excessively with the other. Responsive feeding practices, where parents provide guidance without coercion, are essential to support healthy appetite and eating behavior (Hurley et al., 2016). In addition, creating a positive mealtime environment and minimizing distractions, including play activities, may help improve children's appetite.

This study has several implications for early childhood education and public health. Schools and caregivers should collaborate to develop structured schedules that integrate play and mealtime appropriately. Health promotion programs should also focus on educating parents about the importance of balanced daily routines and appropriate feeding practices. Such interventions may contribute to improving children's nutritional intake and overall health outcomes.

Despite its contributions, this study has several limitations. First, the cross-sectional design limits the ability to establish causal relationships between play activities and appetite. Second, the use of questionnaire-based data may introduce reporting bias, as responses depend on parental perceptions. Third, the study was conducted in a single kindergarten, which may limit the generalizability of the findings to broader populations. Future research is recommended to use longitudinal or experimental designs and include larger and more diverse samples to better understand the causal mechanisms underlying the relationship between play activities and appetite.

E. Conclusion

This study demonstrates that play activities are significantly associated with appetite among preschool children aged 4–5 years. Children who engage in higher levels of play activity tend to exhibit variations in appetite, indicating that excessive play may interfere with regular eating patterns.

These findings highlight the importance of maintaining a balance between play and mealtime in early childhood. Play remains essential for development; however, without appropriate regulation, it may negatively influence children's nutritional intake. Therefore, structured daily routines and appropriate parental guidance are critical in supporting healthy eating behavior.

In addition, this study contributes to the existing body of knowledge by emphasizing the role of behavioral factors, particularly play activities, in shaping children's appetite within early childhood settings. The results underscore the need for integrated approaches involving parents, caregivers, and educational institutions to promote optimal child health and development.

F. Recommendations

Based on the findings of this study, several recommendations can be proposed. First, parents and caregivers are encouraged to establish structured daily routines that balance playtime and mealtime to prevent excessive play from interfering with children's appetite. Implementing consistent meal schedules and minimizing distractions during mealtime may help improve children's eating behavior.

Second, early childhood education institutions, such as kindergartens, should integrate structured activity schedules that ensure an appropriate balance between play and eating periods. Teachers can also play a role in promoting healthy eating habits by reminding children to eat on time and creating a supportive mealtime environment.

Third, healthcare providers and public health practitioners should develop educational programs for parents focusing on responsive feeding practices and the importance of managing children's play activities. These interventions may enhance parental awareness and contribute to improved nutritional intake among preschool children.

Finally, future research is recommended to explore additional factors influencing children's appetite, such as dietary patterns, physical activity levels, and parenting styles, using larger samples and longitudinal or experimental designs to establish causal relationships.

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