

## ENHANCING APPETITE IN PRESCHOOL CHILDREN THROUGH TUINA MASSAGE THERAPY: A TRADITIONAL APPROACH TO MODERN CHALLENGES

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### Abstract

*This study evaluates the effectiveness of Tuina massage therapy in enhancing appetite among preschool children, utilizing a traditional approach to address modern health challenges. Conducted at TK Dharma Wanita Bethet, Kediri, Indonesia, between May and July 2024, the randomized controlled trial involved 30 children aged 3 to 5 years. Participants were divided into an intervention group, receiving Tuina massage three times per week for eight weeks, and a control group with no intervention. Appetite was assessed using a standardized questionnaire and food diaries maintained by parents, along with weight measurements taken at baseline, mid-intervention, and post-intervention. Results showed significant improvements in appetite scores in the intervention group compared to the control group, with a marked increase in appetite and modest weight gain observed over the study period ( $p < 0.01$ ). Qualitative feedback indicated positive behavioral changes in the intervention group, such as increased interest in food and willingness to try new foods. The findings suggest that Tuina massage therapy may serve as a viable non-pharmacological option for managing reduced appetite in young children, providing a practical alternative for parents and healthcare professionals. Future studies with larger samples and diverse populations are recommended to validate these findings and explore the long-term effects of Tuina massage on pediatric appetite and nutrition.*

**Keywords:** *Tuina massage, appetite, preschool children, traditional therapy, pediatric care.*

### 1. INTRODUCTION

Maintaining a healthy appetite in preschool children is essential for their growth, development, and overall well-being. However, many children experience periods of reduced appetite, which can be influenced by various factors such as stress, illness, or changes in routine. Addressing these fluctuations is crucial, as prolonged reduced appetite may lead to nutritional deficiencies, compromised immune function, and delayed physical and cognitive development. Traditional and alternative therapies have been increasingly explored as potential solutions for managing reduced appetite in children, with Tuina massage emerging as a promising approach.

Tuina massage, a form of traditional Chinese medicine, involves the application of various manual techniques, such as kneading, pressing, and rubbing, to specific points on the body to promote health and balance. It is believed to stimulate circulation, enhance digestion, and improve energy flow, potentially influencing appetite regulation in children. While Tuina

massage has been widely practiced in China and other parts of Asia for centuries, its application in pediatric care is gaining recognition in modern medical practice due to its non-invasive nature and minimal side effects.

Despite its growing popularity, there is limited empirical evidence supporting the effectiveness of Tuina massage in enhancing appetite among preschool children, particularly in non-Asian settings. This study aims to fill this gap by evaluating the impact of Tuina massage therapy on appetite enhancement in preschool children at TK Dharma Wanita Bethet, Kediri, Indonesia. By applying a traditional therapeutic approach to a contemporary health challenge, this study seeks to provide evidence-based insights into the potential benefits of Tuina massage for young children.

The research was conducted between May and July 2024, involving a total of 30 preschool children aged 3 to 5 years. The study utilized a randomized controlled design, with participants being assigned to either the Tuina massage intervention group or a control group. The primary objective of this study was to assess the effectiveness of Tuina massage in improving appetite among these children over the study period.

This study contributes to the growing body of literature on complementary and alternative medicine in pediatric care by providing new data on the efficacy of Tuina massage. The findings are expected to offer practical insights for parents, caregivers, and health professionals seeking alternative approaches to support healthy eating behaviors in young children.

## **2. METHODOLOGY**

### **2.1 Study Design**

This study employed a randomized controlled trial design to evaluate the effectiveness of Tuina massage therapy in enhancing appetite among preschool children. The study was conducted over a three-month period from May to July 2024 at TK Dharma Wanita Bethet, Kediri, Indonesia. Participants were randomly assigned to either the intervention group, which received Tuina massage therapy, or the control group, which did not receive any massage intervention.

### **2.2 Participants**

A total of 30 preschool children, aged between 3 to 5 years, were recruited from TK Dharma Wanita Bethet, Kediri. The inclusion criteria for participants were: (1) children with reported reduced appetite as indicated by parents or caregivers, (2) no history of chronic illnesses or conditions that could affect appetite, (3) no current use of medications known to influence appetite, and (4) parental consent to participate in the study. Children with known allergies or contraindications to massage therapy, or those with developmental disorders, were excluded from the study.

### **2.3 Intervention**

The intervention group received Tuina massage therapy three times a week for a total duration of eight weeks. Each massage session lasted for approximately 15 minutes and was administered by a certified Tuina practitioner who was trained in pediatric massage techniques. The Tuina massage focused on specific acupressure points believed to influence appetite, such as the abdomen (Zusanli, ST36), the arm (Hegu,

LI4), and the back (Pishu, BL20). The control group did not receive any massage therapy but continued with their regular activities and routines.

## 2.4 Measurements

Appetite was assessed using a standardized appetite questionnaire completed by the parents or caregivers at baseline (before the intervention), mid-intervention (week 4), and post-intervention (week 8). The questionnaire included items measuring the child's interest in food, frequency of meals, willingness to eat different types of food, and overall food intake. Additionally, a food diary was maintained by parents to record the daily food consumption of their child throughout the study period.

To provide an objective measure of appetite changes, weight measurements of the children were taken at the same time points: baseline, mid-intervention, and post-intervention. Weight was measured using a digital scale with a precision of 0.1 kg. All measurements were performed by trained study staff to ensure accuracy and consistency.

## 2.5 Data Analysis

The collected data were analyzed using SPSS (Statistical Package for the Social Sciences) version 27. Descriptive statistics (mean, standard deviation) were used to summarize the demographic and baseline characteristics of the participants. The effectiveness of the Tuina massage intervention was assessed by comparing changes in appetite scores and weight measurements between the intervention and control groups over time. A repeated measures ANOVA was employed to determine the significance of differences within and between groups. A p-value of less than 0.05 was considered statistically significant.

# 3. RESULTS

## 3.1 Participant Characteristics

A total of 30 preschool children participated in the study, with 15 children assigned to the Tuina massage intervention group and 15 to the control group. The mean age of the participants was  $4.2 \pm 0.7$  years. There were no significant differences in baseline characteristics between the two groups in terms of age, gender, or initial appetite scores ( $p > 0.05$ ). The demographic details of the participants are summarized in Table 1.

| Characteristic          | Intervention Group<br>(n=15) | Control Group (n=15) | p-value |
|-------------------------|------------------------------|----------------------|---------|
| Age (years)             | $4.3 \pm 0.6$                | $4.1 \pm 0.8$        | 0.45    |
| Gender (Male/Female)    | 8/7                          | 7/8                  | 0.72    |
| Baseline Appetite Score | $2.8 \pm 0.5$                | $2.9 \pm 0.4$        | 0.66    |
| Baseline Weight (kg)    | $15.2 \pm 1.3$               | $14.9 \pm 1.4$       | 0.58    |

## 3.2 Changes in Appetite Scores

The Tuina massage intervention group demonstrated a significant increase in appetite scores over the eight-week period compared to the control group. At mid-intervention (week 4), the mean appetite score in the intervention group increased from

$2.8 \pm 0.5$  to  $3.4 \pm 0.6$ , while the control group showed a smaller increase from  $2.9 \pm 0.4$  to  $3.0 \pm 0.5$ . By the end of the intervention (week 8), the appetite scores in the intervention group further increased to  $4.0 \pm 0.7$ , whereas the control group had a slight increase to  $3.1 \pm 0.5$ . The difference between the two groups was statistically significant ( $p < 0.01$ ). These changes are depicted in Figure 1.

### 3.3 Weight Changes

Weight measurements also indicated a positive impact of the Tuina massage on the children's appetite. The intervention group showed a mean weight increase from  $15.2 \pm 1.3$  kg at baseline to  $15.8 \pm 1.4$  kg at week 8. In contrast, the control group exhibited a less pronounced weight gain from  $14.9 \pm 1.4$  kg to  $15.1 \pm 1.5$  kg over the same period. The difference in weight gain between the two groups was statistically significant ( $p < 0.05$ ), as shown in Table 2

| Time Point      | Intervention<br>(Mean $\pm$ SD) | Group Control Group (Mean $\pm$ SD) | p-value |
|-----------------|---------------------------------|-------------------------------------|---------|
| Baseline Weight | $15.2 \pm 1.3$ kg               | $14.9 \pm 1.4$ kg                   | 0.58    |
| Week 4 Weight   | $15.5 \pm 1.4$ kg               | $15.0 \pm 1.5$ kg                   | 0.23    |
| Week 8 Weight   | $15.8 \pm 1.4$ kg               | $15.1 \pm 1.5$ kg                   | 0.04    |

### 3.4 Appetite-Related Behavioral Observations

Parents in the intervention group reported noticeable improvements in their children's eating behaviors, including increased interest in food, more frequent meal consumption, and greater willingness to try new foods. In contrast, parents in the control group did not report significant changes in these behaviors. Qualitative feedback from parents in the intervention group suggested that the Tuina massage was well-received by the children and appeared to promote relaxation and comfort, which may have contributed to the increased appetite.

### 3.5 Mary of Findings

Overall, the results indicate that Tuina massage therapy significantly improves appetite among preschool children compared to the control group. The intervention led to marked improvements in appetite scores and modest but significant weight gain over the study period, suggesting that Tuina massage may be a beneficial complementary therapy for managing reduced appetite in young children.

## 4. CONCLUSIONS

This study demonstrates that Tuina massage therapy is an effective complementary approach to enhancing appetite in preschool children. The intervention group, which received Tuina massage, showed significant improvements in appetite scores and modest but meaningful weight gain over the eight-week study period compared to the control group. These findings suggest that Tuina massage may be a viable non-pharmacological option for

managing reduced appetite in young children, offering a traditional therapeutic method to address a modern health challenge.

The results also highlight the potential of integrating Tuina massage into pediatric care practices, especially in communities where traditional medicine is valued or where access to conventional medical treatments may be limited. However, further research is recommended to confirm these findings in larger, more diverse populations and to explore the long-term effects of Tuina massage on children's appetite and overall health.

Overall, this study provides valuable insights for parents, caregivers, and healthcare professionals looking for safe and effective strategies to promote healthy eating behaviors in preschool children. As a non-invasive therapy with minimal risks, Tuina massage presents a promising alternative for enhancing appetite and supporting child development in various settings.

## 5. ACKNOWLEDGEMENTS

The authors would like to express their sincere gratitude to the staff and management of TK Dharma Wanita Bethet, Kediri, for their invaluable support and cooperation during the study. We are particularly grateful to the parents and children who participated in this research, without whom this study would not have been possible. We also extend our appreciation to the Tuina practitioners who provided their expertise and dedication in delivering the massage therapy sessions. Special thanks go to our colleagues and research assistants for their assistance in data collection and analysis. This study was funded by Universitas Kadiiri, Kediri. The authors declare that there are no conflicts of interest related to this study.

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