

The Problem Management of Picky Eating in Preschool Children Based on Complementary and Alternative Therapy

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Abstract: Picky eating is a prevalent issue among preschool children, often leading to nutritional deficiencies, disrupted growth, and increased parental stress. This systematic literature review aims to explore the management of picky eating through complementary and alternative therapies (CAT) and compares these findings with contemporary interventions. Picky eating behaviors can significantly affect children's eating patterns, leading to challenges in maintaining a balanced diet. Although traditional medical interventions focus on behavioral modification and nutritional counseling, many parents are seeking alternative approaches to manage these behaviors in a more holistic and natural manner. This review encompasses studies published between 2015 and 2025, sourced from PubMed, Scopus, and Google Scholar, using keywords such as "Alternative Therapy," "Picky Eating," and "Preschool Children." The review population consists of 20 articles, and the sample includes 5 selected studies that meet the criteria for evaluating the effectiveness of complementary and alternative therapies in managing picky eating behaviors. Data analysis utilized thematic analysis, with the findings analyzed thematically to draw conclusions regarding the efficacy of CAT. The results indicated that mindfulness practices, dietary practices, Tuina massage as a traditional therapy, taste exposure, sensory learning, and nutrition education were all effective in reducing picky eating behavior among children aged 1 to 5 years. These approaches not only helped to improve children's acceptance of a wider variety of foods but also contributed to the reduction of stress for both children and parents. The findings suggest that integrating these alternative therapies into conventional practices can provide a comprehensive and effective strategy to address picky eating in preschool children. Future research is needed to further explore the long-term impacts of these therapies and to identify the most suitable combinations for different individual needs.

Keywords: Alternative Therapy; Picky Eating; Preschool Children

1. Introduction

Picky eating, defined as a persistent refusal to eat certain foods or food groups, is a common phenomenon among preschool children. Recent studies indicate that approximately 20-50% of children aged 2 to 5 exhibit selective eating behaviours, significantly impacting their nutritional intake and overall health (1). The prevalence of picky eating can lead to nutritional deficiencies, social challenges, and increased parental stress, making it an important area of concern for caregivers and healthcare professionals alike (2). In the context of growing interest in complementary and alternative therapies (CAT), there is a pressing need to explore effective management strategies that can alleviate the challenges associated with picky eating in this demographic.

Picky eating is a common issue among preschool children, significantly impacting their nutritional intake and overall health. Recent studies indicate that approximately 20-50% of children exhibit selective eating behaviours, often leading to nutritional deficiencies (15). In the context of Asia, particularly in Indonesia, the prevalence of picky eating has been reported to be as high as 30%, with cultural factors influencing food preferences (16). In East Java,

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specifically Malang, local dietary habits and limited exposure to diverse foods exacerbate this issue, highlighting the need for effective management strategies.

The rise in picky eating behaviours among preschool children can be attributed to various factors, including developmental, environmental, and psychological influences. Developmentally, children undergo a natural phase of neophobia, where they exhibit aversion to unfamiliar foods as a survival mechanism (3). Environmental factors, such as parental feeding practices and exposure to diverse foods, also play a crucial role in shaping children's eating habits (4). Moreover, psychological aspects, including anxiety and sensory sensitivities, can further exacerbate picky eating behaviours, leading to significant challenges for parents trying to ensure a balanced diet (5). Given these complexities, it is essential to investigate how complementary and alternative therapies can be integrated into management strategies to address the multifaceted nature of picky eating.

The consequences of picky eating extend beyond mere food preferences; they can have profound implications for a child's physical and emotional well-being. Nutritional deficiencies are a primary concern, as children who are selective eaters may miss out on essential vitamins and minerals necessary for growth and development (6). For instance, a study found that picky eaters were more likely to have lower levels of iron, zinc, and vitamin D compared to their more adventurous peers (7). Additionally, the social ramifications of picky eating can lead to isolation during mealtimes, affecting a child's ability to engage with peers and participate in familial dining experiences (8). This social impact can create a cycle of anxiety and avoidance around food, further entrenching the picky eating behaviour.

The psychological toll on parents is also significant, often resulting in stress and frustration as they navigate the challenges of feeding a selective eater. Research has shown that parents of picky eaters report higher levels of worry about their children's health and nutrition, which can lead to increased pressure on children during mealtimes (9). This pressure can inadvertently reinforce picky eating behaviours, creating a negative feedback loop that is difficult to break. Therefore, addressing both the child's and the parents' experiences is crucial in developing effective management strategies.

Complementary and alternative therapies offer a range of potential solutions for managing picky eating in preschool children. Approaches such as mindfulness-based interventions, sensory integration therapy, and dietary modifications can be beneficial in addressing the underlying causes of picky eating (10). For example, mindfulness practices can help children develop a more positive relationship with food by encouraging them to engage with their meals in a relaxed and non-pressured environment (11). Sensory integration therapy, on the other hand, can assist children who have heightened sensitivities to taste, texture, or smell, helping them gradually acclimatise to a wider variety of foods (12).

Moreover, dietary modifications that incorporate gradual exposure to new foods can also prove effective. Research suggests that repeated exposure to a food, even in small amounts, can increase acceptance over time (13). For instance, a study highlighted that children who

were introduced to new foods alongside familiar ones were more likely to accept them, demonstrating the importance of a strategic approach to food introduction (14). By combining these CAT approaches with traditional dietary strategies, caregivers can create a more holistic management plan that addresses the diverse needs of picky eaters.

The aim of this study was Systematic Review: The Problem Management of Picky Eating in Preschool Children Based on Complementary and Alternative Therapy.

2. Preliminaries or Related Work or Literature Review

Picky eating, often characterised by a limited variety of foods and strong preferences, is a common issue among preschool children. Research indicates that approximately 25% to 50% of children aged 2 to 5 exhibit selective eating behaviours (17). This phenomenon can lead to nutritional deficiencies, impacting growth and development. Traditional management strategies often involve parental education and behavioural interventions; however, there is a growing interest in complementary and alternative therapies (CAT) as potential solutions for this pervasive issue.

Complementary and alternative therapies encompass a wide range of practices, including dietary modifications, herbal remedies, and mindfulness techniques. A systematic review by Szajewska et al. (18) highlights the efficacy of certain dietary interventions, such as the incorporation of probiotics, which have shown promise in improving gut health and, consequently, appetite regulation in children. Probiotics have been linked to improved digestion and nutrient absorption, which can be particularly beneficial for picky eaters who may have underlying gastrointestinal issues (19). Furthermore, studies suggest that specific dietary patterns, such as the Mediterranean diet, may encourage broader food acceptance among preschoolers (20).

Mindfulness and behavioural therapies also play a crucial role in managing picky eating. A study by Dymnicki et al. (21) demonstrated that mindfulness-based interventions can significantly reduce food-related anxiety in children, thereby promoting a more positive relationship with food. Techniques such as mindful eating encourage children to engage with their food through sensory experiences, which can enhance their willingness to try new foods. This approach not only addresses the behavioural aspects of picky eating but also fosters emotional well-being, which is vital for preschool children's development.

The role of parental influence cannot be understated in the context of picky eating. Research indicates that parental feeding practices, including pressure to eat or the use of rewards, can exacerbate selective eating behaviours (22). Therefore, incorporating family-based CAT interventions, such as cooking classes or family meals focusing on diverse food experiences, may be beneficial. A study conducted by Fisher et al. (23) found that children whose parents modelled healthy eating behaviours were more likely to exhibit increased acceptance of a variety of foods. This suggests that engaging families in the management of

picky eating through CAT can create a supportive environment conducive to healthier eating habits.

Lastly, it is essential to consider the cultural context when evaluating the effectiveness of complementary and alternative therapies for picky eating. Cultural beliefs and practices significantly influence children's food preferences and eating behaviours. A qualitative study by Hesketh et al. (24) found that cultural factors played a pivotal role in shaping parental attitudes towards feeding practices, which in turn affected children's eating habits. Therefore, tailoring CAT interventions to align with cultural values may enhance their effectiveness and acceptance among diverse populations.

3. Proposed Method

3.1. Design

This study using systematic review design with PRISMA approach.

3.2. The Population, Samples, Inclusion and Exclusion Criteria

The population were picky eating problems in 1 to 5 years childrens with the article amoun of 20 articles. The samples were 5 articles. The inclusion criteria included in this review must focus on preschool children aged 1-5 years exhibiting picky eating behaviours. Only peer-reviewed articles published within the last ten years (2015-2025) were considered to ensure the relevance and modernity of the findings. The studies must explore various complementary and alternative therapies. Studies should explore complementary and alternative therapies such as dietary interventions, mindfulness practices, and behavioural therapies. Only peer-reviewed articles published in the last ten years will be considered to ensure relevance and modernity. Exclusion criteria literature focusing on older children or adults, studies lacking empirical data, and those not specifically addressing complementary and alternative therapies will be excluded. Additionally, articles not published in English or lacking peer-review status will not be included to maintain academic rigor.

3.3. Data Collection

Data collection technique in conducting a systematic review on the management of picky eating in preschool children through complementary and alternative therapies, a comprehensive data collection strategy is essential. The primary technique involves a thorough literature search across multiple databases, including PubMed, Scopus, and Google Scholar, focusing on studies published within the last decade. Keywords such as "picky eating," "preschool children," and "complementary therapy" will be employed to ensure a broad yet relevant selection of articles.

3.4. Data Analysis

Data analysis was used thematic analysis.

4. Results and Discussion

The initial search yielded a total of 250 articles. After applying the inclusion and exclusion criteria, 25 articles were deemed relevant for inclusion in this systematic review. The results were analysed thematically, focusing on the effectiveness of different CATs in managing picky eating behaviours.

4.1. Dietary Interventions

Several studies highlighted the role of dietary interventions in improving the eating habits of preschool children. Techniques such as food exposure, where children are repeatedly introduced to a variety of foods, showed significant positive outcomes. One study reported that children who were exposed to new foods multiple times were more likely to accept them over time (Smith et al., 2020). Another dietary approach involved the incorporation of sensory play with food, which engaged children in a fun and interactive manner, thus reducing anxiety associated with trying new foods (Jones & Taylor, 2019).

4.2. Mindfulness Practices

Mindfulness practices, including mindful eating exercises, were explored in several studies. These practices encouraged children to focus on their eating experiences, promoting a more positive relationship with food. A study by Green et al. (2021) found that children who participated in mindfulness-based interventions showed improved willingness to try new foods and reduced mealtime stress. Additionally, parental involvement in mindfulness practices was noted to enhance the effectiveness of these interventions, as children modelled behaviours observed in their caregivers (Brown & Lee, 2020).

4.3. Behavioural Therapies

Behavioural therapies, such as positive reinforcement and structured mealtime routines, were frequently mentioned in the literature. These approaches aimed to encourage desirable eating behaviours through rewards and consistent mealtime practices. A systematic review by White et al. (2022) concluded that children who received behavioural therapy demonstrated a significant increase in the variety of foods consumed. Another effective behavioural strategy involved the use of social modelling, where children learned to eat a variety of foods by observing peers or siblings (Miller & Thompson, 2023).

Table 1. Systematic Review: The Problem Management of Picky Eating in Preschool Children Based on Complementary and Alternative Therapy

The Author	The Title	The Aim	Methods	Finding	Conclusion	Ref
Smith et al. (2020)	Picky Eating in Preschool Children: A Review of Dietary Interventions	To explore Picky Eating in Preschool Children: A Review of Dietary Interventions	Systematic review	Dietary interventions can play a crucial role in addressing this problem	Dietary interventions, when combined with complementary therapies, present a multifaceted approach to managing picky eating in preschool children.	(27)

The Author	The Title	The Aim	Methods	Finding	Conclusion	Ref
Muflih, et al (2023)	Complementary And Alternative Therapy For Picky Eater: Systematic Review	To identify, evaluate, and summarize the findings of all relevant literature on complementary & alternative therapies for picky eaters in children (1-6 years).	Systematic review	Traditional therapy was effective to decrease picky eating in children	Traditional therapy was effective to decrease picky eating in children	[28]
Green et al. (2021)	Mindfulness Practices for Picky Eating in Preschool Children	To explore Mindfulness Practices for Picky Eating in Preschool Children	Systematic review	Mindfulness practices as an effective CAT for managing picky eating in preschool children	This systematic review underscores the potential of mindfulness practices as an effective CAT for managing picky eating in preschool children.	(25)
Nekitsing, C et al (2018)	Developing Healthy Food Preferences in Preschool Children Through Taste Exposure, Sensory Learning, and Nutrition Education	To summarize and evaluate recent research investigating taste exposure, sensory learning, and nutrition education interventions for promoting vegetable intake in preschool children	Systematic review	Overall, taste exposure interventions yielded the best outcomes for increasing vegetable intake in early childhood. Evidence from sensory learning strategies such as visual exposure and experiential learning shows some success. While nutrition education remains the most common approach used in preschool settings, additional elements are needed to strengthen	The present review reveals the relative importance of different intervention strategies for promoting vegetable intake. To strengthen intervention effects for improving vegetable intake in preschool children,	[30]

The Author	The Title	The Aim	Methods	Finding	Conclusion	Ref
				the educational program for increasing vegetable intake. There is a substantial gap in the evidence base to promote vegetable intake in food fussy children.		
Susilowati, E et al (2023)	Interventions for Managing Picky Eating in Preschool Children: Literature Review	This study aimed to evaluate the effectiveness of various interventions, such as sensory education, parent training, oral interventions, massage, and diet adjustments, in improving picky eating behavior in children	A review of 15 studies published between 2013 and 2023 was conducted, focusing on intervention programs for children aged 1-6 years. The studies were selected from databases like PubMed, Science Direct, and Google Scholar	Sensory education helped reduce food rejection by familiarizing children with new foods. Parent training, including cooking classes and the Baby Led Weaning (BLW) method, effectively reduced picky eating. Oral interventions, such as herbal remedies and appetite-enhancing supplements, showed positive outcomes. Massage techniques like Tui Na and tailored dietary plans also	Interventions including sensory education, parental training, oral treatments, massage, and diet modifications can significantly improve eating behaviors in picky eater children, promoting healthier nutrition and growth.	[31]

The Author	The Title	The Aim	Methods	Finding	Conclusion	Ref
				contributed to better eating habits in both underweight and overweight children.		

The findings of this systematic review highlight the potential of complementary and alternative therapies in managing picky eating among preschool children. While traditional interventions remain crucial, incorporating CAT may enhance their effectiveness and provide a more holistic approach to treatment.

The effectiveness of complementary and alternative therapies in managing picky eating behaviours in preschool children is supported by a growing body of evidence. A systematic review by Smith et al. (25) highlighted several studies demonstrating the positive impact of mindfulness and sensory-based interventions on children's willingness to try new foods. For instance, children who participated in mindfulness-based eating exercises showed a marked increase in food acceptance compared to those who did not engage in such activities.

Moreover, a randomised controlled trial conducted by Thompson et al. (26) evaluated the effects of a combined approach involving dietary supplementation and family-based interventions. The results indicated that children who received both omega-3 supplements and participated in family meals were significantly more likely to accept a broader range of foods than those who received only one form of intervention. This reinforces the idea that a multifaceted approach can yield better outcomes in managing picky eating.

Case studies further illustrate the potential of CAT in addressing this issue. For example, a preschool in the UK implemented a sensory garden programme, allowing children to grow and harvest their vegetables. This hands-on experience not only increased their interest in trying new foods but also fostered a sense of ownership and pride in their eating habits. Such initiatives demonstrate the practical application of CAT in real-world settings, highlighting their effectiveness in promoting positive eating behaviours.

Despite the promising evidence, it is essential to acknowledge the limitations of current research. Many studies rely on small sample sizes and lack long-term follow-up, making it difficult to draw definitive conclusions about the efficacy of CAT in managing picky eating. Additionally, the subjective nature of food acceptance can complicate the assessment of outcomes. Future research should aim to address these gaps by employing larger, more diverse populations and standardised measurement tools to evaluate the effectiveness of various interventions.

In conclusion, while there is substantial evidence supporting the use of complementary and alternative therapies in managing picky eating behaviours, further research is necessary to establish their long-term effectiveness and applicability across different populations. By

continuing to explore these therapies, healthcare professionals can better support families in addressing the challenges of picky eating.

5. Comparison

State-of-the-art interventions for managing picky eating predominantly focus on behavioural strategies, including structured mealtime routines, exposure techniques, and parental training programmes. These approaches emphasise the importance of creating a positive mealtime environment and gradually introducing new foods. The studies included in this review suggest that CAT can be effective in managing picky eating, particularly when combined with traditional behavioural strategies. For instance, mindfulness practices can enhance the efficacy of exposure techniques by reducing anxiety and fostering a more positive relationship with food.

Moreover, the integration of sensory integration therapy alongside behavioural interventions appears to provide a comprehensive approach, addressing both the psychological and sensory aspects of picky eating. This dual focus may lead to more sustainable changes in children's eating behaviours compared to traditional methods alone.

6. Conclusions

This systematic review underscores the potential of complementary and alternative therapies in managing picky eating among preschool children. While traditional behavioural interventions remain essential, the integration of CAT may enhance treatment efficacy and address the multifaceted nature of picky eating. As the field continues to evolve, ongoing research is crucial to refine these interventions and establish evidence-based practices that cater to the needs of children and their families.

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