



Effectiveness Of Tui Na Massage On Increasing Appetite: A Scoping Review

Sara Eka Cahya^{1}, Dewi Rokhanawati²*

¹Master of Midwifery, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, Yogyakarta, Indonesia

²Master of Midwifery, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, Yogyakarta, Indonesia

Corresponding Email: * saraekacahya97@gmail.com

About the Author

1st Author : Sara eka cahya
Affiliation : Master of Midwifery, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, Yogyakarta, Indonesia
Mailing Address : Jalan Ringroad Barat No.63, Mlangi Nogotirto, Gamping, Area Sawah, Nogotirto, Gamping Kabupaten Sleman, Yogyakarta
Email of Author : saraekacahya97@gmail.com
Orcid ID : <https://orcid.org/0000-0003-2413-8533>
Google Scholar URL : <https://scholar.google.com/citations?user=uXQcqzEAAAAJ&hl=id>
Phone Number : 082289241425

2nd Author : Dr Dewi Rokhanawati, S.SiT., M.PH
Affiliation : Master of Midwifery, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, Yogyakarta, Indonesia
Mailing Address : Jl Jalan Ringroad Barat No.63, Mlangi Nogotirto, Gamping, Area Sawah, Nogotirto, Gamping Kabupaten Sleman, Yogyakarta
Email of Author : dewirokhanawati@unisayogya.ac.id
Orcid ID : <https://orcid.org/0000-0002-7895-1362>
Google Scholar URL : <https://scholar.google.com/citations?user=IhcKSVkAAAAJ&hl=en>
Phone Number : +62 812-3609-3816

ABSTRACT

Toddlers (1–5 years) are most vulnerable to nutritional problems, especially wasting or being underweight for their height. According to WHO (2024), although the global prevalence of wasting decreased from 8.7% (2000) to 6.8% (2022), around 45 million toddlers are still affected. In Indonesia, the 2022 Health Profile data recorded the prevalence of severely underweight toddlers at 1.1% and underweight at 6.2%, with significant disparities between provinces. In Jambi Province, the prevalence of severely underweight toddlers reached 0.77%, and underweight 3.51%, with Batanghari Regency as the highest area (6.98%). Objective: This study aims to map evidence regarding the effectiveness of tui na massage on increasing appetite in toddlers. Method: This study is a scoping review referring to the steps taken by Arksey and O'Maley, the framework used is PICO, the selected articles are articles from 2020 to 2025, English and Indonesian articles and articles that focus on increasing appetite in toddlers, in selecting articles using a Prisma flow chart checklist, data sources from journals are accessed through the PubMed, Wiley, Science Direct and Google Scholar databases with keywords (Tuina Massage) OR (Children's Appetite). Studies that meet the inclusion criteria are assessed for quality using the Joanna Briggs Institute (JBI) guidelines. This study conducted a critical appraisal. Results: A scoping review of 10 journals on the effectiveness of tui na massage on increasing appetite in toddlers identified the main research themes, namely: Tuina massage in increasing appetite, Factors influencing the efficacy of tuina massage, Obstacles in implementing tuina massage therapy, Supporting roles in the success of tuina massage therapy, Physical effects of tuina massage on toddlers, Psychological effects of tuina massage on toddlers, Prevention of long-term appetite disorders, and based on the results of four journals, it can be concluded that tui na massage is effective in increasing appetite in toddlers.

Keywords: Tuina Massage, Child's Appetite, Scoping review

ABSTRAK

Anak balita (1–5 tahun) merupakan kelompok usia yang paling rentan terhadap masalah gizi, terutama wasting atau kekurangan berat badan menurut tinggi badan. Menurut WHO (2024), meskipun prevalensi wasting global menurun dari 8,7% (2000) menjadi 6,8% (2022), masih terdapat sekitar 45 juta balita terdampak. Di Indonesia, data Profil Kesehatan 2022 mencatat prevalensi balita berat badan sangat kurang sebesar 1,1% dan berat badan kurang 6,2%, dengan ketimpangan antarprovinsi yang signifikan. Di Provinsi Jambi, prevalensi balita berat badan sangat kurang mencapai 0,77%, dan berat badan kurang 3,51%, dengan Kabupaten Batanghari sebagai daerah tertinggi (6,98%). Tujuan: Penelitian ini bertujuan untuk memetakan bukti-bukti mengenai adanya efektivitas pijat tui na terhadap peningkatan nafsu makan pada balita. Metode : Penelitian ini adalah scoping review mengacu pada langkah yang dilakukan arksey dan o'maley, framework yang digunakan adalah PICO, artikel yang dipilih adalah artikel tahun 2020 sampai 2025, artikel bahasa inggris dan bahasa indonesia dan artikel yang berfokus pada peningkatan nafsu makan pada balita, dalam pemilihan artikel menggunakan checklis prisma flow chart , sumber data dari jurnal di akses melalui database pubmed,wiley,science direct dan google scholar dengan kata kunci (Tuina Massage)OR(Children's Appetite). Studi yang memenuhi kriteria inklusi dinilai kualitasnya menggunakan pedoman dari joanna briggs institute (jbi) penelitian ini melakukan critical appraisal. Hasil : Scoping review dari 10 jurnal tentang efektivitas pijat tui na terhadap peningkatan nafsu makan pada balita teridentifikasi tema utama penelitian yaitu Pijat tuina dalam meningkatkan nafsu makan, Faktor-faktor yang mempengaruhi efektivitas pijat tuina, Hambatan dalam pelaksanaan terapi pijat tuina, Peran pendukung dalam keberhasilan terapi pijat tuina, Efek Fisik pijat Tuina pada balita, Efek psikologis pijat Tuina pada balita Pencegahan gangguan nafsu makan jangka panjang dan berdasarkan hasil dari empat jurnal dapat disimpulkan bahwa pijat tui na memiliki efektivitas dalam peningkatan nafsu makan pada balita.

Kata kunci: Pijat Tuina, Nafsu Makan Anak, Scoping review

INTRODUCTION

According to the World Health Organization (WHO), toddlers aged 1 to 5 years are among the most vulnerable age groups to nutritional problems, particularly acute malnutrition, such as wasting or underweight for height. High nutritional needs cause this vulnerability during rapid growth, where a short-term lack of nutritional intake can significantly impact a child's health status. According to WHO data, the global prevalence of wasting has shown a downward trend since 2000, from 8.7%,

but this condition remains a serious concern at the international level (Anggraini et al. 2025). By 2022, it is estimated that around 45 million children worldwide will still experience wasting, with a prevalence of 6.8%. This figure indicates that despite the decline, the burden of acute malnutrition remains high and requires ongoing efforts in terms of Prevention and management, especially in developing countries. This emphasizes the importance of effective nutritional interventions, including promotive and preventive approaches, to ensure that dietary needs are met in toddlers (WHO., 2024).

Based on the 2022 Indonesian Health Profile data, the prevalence of severely underweight toddlers was 1.1%, and that of underweight toddlers was 6.2%. East Nusa Tenggara had the highest prevalence of severely underweight toddlers at 17.5%, and South Sumatra had the lowest prevalence at 0.3%. This demonstrates significant disparities between provinces (Fetrisia, Mulia, and Rahmadheny 2023). These differences in prevalence illustrate the uneven distribution of toddler nutritional status in Indonesia (Kemenkes RI 2022). Based on the 2022 Jambi Provincial Health Profile data, the prevalence of severely underweight toddlers was 0.77%, and underweight toddlers reached 3.51%. Batanghari Regency had the highest prevalence of underweight toddlers, at 6.98%, and Sungai Penuh Regency had the lowest, at 0.98%. These figures indicate a significant difference in prevalence between districts in Jambi Province (Dinkes Provinsi Jambi 2022).

Toddlers are children under the age of five, a period during which physical growth and brain function develop rapidly (Novelia et al. 2025). During this period, significant development occurs in various aspects, such as motor, cognitive, social, and emotional development. Toddlerhood is often called the golden age because it is a crucial period that lays the foundation for subsequent development (Sofiyati 2024). This age is particularly vulnerable, as toddlers experience rapid growth and development. During this period, toddlers are susceptible to various disturbances, whether from the environment, inadequate nutrition, or other health issues. These disturbances can significantly impact a child's growth, particularly skeletal or bone development ('Aliah Istiqomah et al., 2024)

Growth is a measurable change. For example, a person's physical growth can be predicted by height, weight, bone density, tooth structure, and pattern. Stages of growth occur during the prenatal period, infancy, and adolescence (Linda Fitria Nuraini et al., 2024). Child growth and development is a complex process influenced by various internal and external factors. One of the main factors determining optimal growth and development is adequate and balanced nutrition. Adequate nutrition supports physical growth, cognitive development, and a child's immune system. Meeting nutritional needs is influenced by several important factors, such as the availability and consumption of nutritious food, adequate physical activity, and the child's medical and psychological condition, including their overall health history (Muthohiroh 2021).

Appetite is a person's drive or desire to eat, which is usually characterized by hunger and an attraction to certain foods. In children, especially toddlers in a period of rapid growth, appetite is an important aspect that influences daily nutritional intake (Tiwery et al. 2025). However, the problem of low or unstable appetite is a reasonably complex condition and is often found in this age group. Factors such as health conditions, eating habits, environment, emotions, and the variety of foods can affect a child's appetite. When appetite is disturbed, nutritional intake is not optimal, impacting the child's overall growth and development (Anggraini et al. 2021).

Tui Na massage is a form of stimulation or therapeutic technique that involves physically stimulating the body to trigger specific activity responses, both physically and mentally. Originating from traditional Chinese medicine, this massage technique balances the body's energy by applying pressure to specific skin surface points. Tui Na massage is effective in helping to increase appetite in children, especially those experiencing appetite problems (District, Rimbani, and Keperawatan 2024). A state-of-the-art study titled "Tui Na Massage Against Appetite" found 209 articles discussing the link between Tui Na massage and appetite. However, after screening using established inclusion criteria, only eight articles met the requirements for further analysis. The analysis of these articles revealed evidence that Tui Na massage significantly improves appetite in toddlers. Furthermore, this therapy is effective in addressing eating difficulties and contributing to weight gain in children. Therefore, Tui Na massage can be a beneficial non-pharmacological intervention to support toddler growth and development, particularly in meeting nutritional needs by increasing appetite (Tiwery & Anggryni, 2023)

A study titled "Complementary therapy using Tui Na massage has an impact on increasing children's appetite." Based on the search results, 16 journals discussed the link between Tui Na massage and appetite (Anggraini et al. 2025). However, only six journals met the inclusion criteria after selection using the established inclusion criteria. The articles were eligible for further analysis. The analysis of these articles revealed evidence that Tui Na massage significantly increases appetite in toddlers (Anggraini et al. 2025). Research innovation: Recent studies over the past five years have shown significant innovation and development in complementary therapy approaches to addressing poor appetite in toddlers, particularly through Tui Na massage interventions. This innovation is reflected in the emergence of several recent scientific journals that not only present cutting-edge empirical data but also embrace diverse methodological approaches, reflecting an increasingly in-depth and multidimensional understanding of the effectiveness of this therapy. Variations in research designs, such as randomized controlled trials (RCTs) and quasi-experimental designs, provide a comprehensive overview of how much Tui Na massage can impact toddlers' appetite.

In addition to these factors, the relationship between malnutrition problems in toddlers and the Tui Na massage intervention needs to be explained earlier to provide a rational basis for choosing this therapy. One of the leading causes of acute malnutrition in toddlers, such as wasting or underweight, is low food intake due to appetite disturbances. In this context, Tui Na massage is considered a relevant non-pharmacological approach because it has physiological mechanisms that can support digestion and increase appetite (Muthohiroh 2021). Theoretically, Tui Na works by stimulating specific meridian points associated with the digestive system, particularly the spleen, stomach, and intestinal meridians. Pressure and rhythmic movements on these points are believed to improve the flow of qi and blood circulation in the abdominal area, thereby helping to optimize gastrointestinal function, stimulate the production of digestive enzymes, improve intestinal motility, and reduce discomfort, such as bloating or constipation, which often decreases a child's appetite. Nerve stimulation through the gate control mechanism and activation of the parasympathetic system also play a role in creating a sense of relaxation that facilitates increased desire to eat (Novelia et al. 2025).

Through these mechanisms, Tui Na not only affects sensory and relaxation aspects but also directly affects the digestive organs, supporting toddlers' nutritional needs. Therefore, the relationship between poor appetite as a cause of malnutrition and the effectiveness of Tui Na massage warrants

further exploration. Understanding this physiological basis provides a clear scientific rationale for using Tui Na as a complementary therapy. It can be justified as an effort to increase nutritional intake and support optimal growth in toddlers (Linda Fitria Nuraini et al., 2024).

Studies with RCT designs, for example, demonstrate high validity and reliability of results due to randomized group allocation and control for external variables. In contrast, quasi-experimental studies provide flexibility in implementing interventions in more natural and representative settings. This diversity of approaches not only strengthens the scientific evidence for the benefits of Tui Na massage but also demonstrates that this method has been widely applied and evaluated in various contexts, making Tui Na massage a promising alternative therapy for supporting child growth and development, particularly in the aspect of increasing appetite. Thus, the accumulation of evidence from these recent studies underscores the importance of integrating traditional therapies such as Tui Na into holistic, evidence-based pediatric health practices. This scoping review aims to determine the effectiveness of Tui Na massage in increasing toddler appetite?.

METHOD

This study is a scoping review that aims to map the existing evidence regarding the effectiveness of Tui Na massage in increasing appetite in toddlers. The scoping review method was chosen because it can provide a comprehensive overview of the scope and characteristics of the available literature and identify research gaps in the field. Compiling this scoping review refers to the steps proposed by Arksey and O'Malley, which include several systematic stages (Novelia et al. 2025).

Identifying Research Questions or Identifying Review Focus Using the PICO Framework.

In this scoping review, the focus was identified using the PICO framework, which includes Population, Intervention, Comparison, and Outcome. This framework guided the journal search process, determining inclusion and exclusion criteria and selecting suitable articles for analysis. The population of focus was toddlers, and the intervention studied was a Tui Na massage. The comparison could be a control group that did not receive the massage intervention or other treatments, and the outcome measured was increased appetite in toddlers. Based on this PICO framework, the review question posed in the scoping review was: "How effective is Tui Na massage in increasing appetite in toddlers?".

Table 1. PICO Framework

Framework	Keywords
Population	Children aged 1 to 5 years with decreased appetite
Intervention	Tui na massage
Comparison	Average appetite of toddlers in the intervention group and the control group
Outcome	The effectiveness of tui na massage in increasing appetite in toddlers

Identify Relevant Articles

Researchers identified inclusion and exclusion criteria as the basis for journal selection to ensure the relevance and quality of the data sources used in this scoping review. The inclusion criteria included journals published between 2020 and 2024, in both English and Indonesian, and journals directly related to the topic, namely the effectiveness of Tui Na massage on increasing appetite in toddlers. Furthermore, selected articles must focus specifically on Tui Na massage interventions in the context of increasing appetite in toddlers. Exclusion criteria included articles not available in full text, thus precluding a comprehensive analysis, and articles that did not present relevant results or data related to increasing appetite in toddlers. Establishing these inclusion and exclusion criteria is crucial to minimizing bias and improving the quality of the evidence gathered in this review.

The search for articles in this scoping review used keywords and Boolean operators to obtain relevant and comprehensive results. The keywords used were (Tuina Massage) OR (Children's Appetite), designed to capture studies related to Tui Na massage and its relationship to children's appetite. The search was conducted using four primary database sources: PubMed, Wiley, ScienceDirect, and Google Scholar.

Table 2. Article Search Keywords

Population	Intervention	Comparison	Outcome
-	(Tuina Massage) OR	-	(Children's Appetite)

Article Selection or Identifying Literature With PRISMA Flow Chart

The article selection process for this scoping review was conducted step-by-step and systematically to ensure the suitability and quality of the data to be analyzed. The initial stage began with eliminating duplicate articles that emerged from searches across various databases to avoid data duplication. Next, screening was conducted based on title and abstract to identify relevant articles. The research focuses on the effectiveness of Tui Na massage in increasing the appetite of toddlers. Articles that passed the screening stage were then thoroughly read to assess the suitability of the content and research methodology for the objectives of this scoping review. Through this rigorous selection process, researchers could ensure that only articles were relevant and met the criteria (Novelia et al. 2025). The Prisma flow chart checklist is needed to provide an overview of the process of searching for scientific articles, compiling review reports, and presenting information related to the research procedures that have been carried out (Boleo et al. 2025).

Based on the search results with keywords in the database, there are 653 journals. All articles were entered into Mendeley, exported to Covidence, there were no duplicate journals, 653 journals were filtered, 12 articles were taken based on the title and abstract, 12 journals were assessed for eligibility, two were excluded because they did not meet the inclusion and exclusion criteria, 10 journals were included in the review that met the requirements. Synthesis of article data using data charting: author, year, country, title, research design, data collection methods and instruments, sampling techniques, number of respondents, data analysis methods, and data mapping results.

Data Charting

Five articles that had been critically assessed were then extracted to include key articles based on criteria including author, year, country, research title, objectives, research design, data collection methods and instruments, sampling techniques, and number of respondents, data analysis methods, and results. Mapping data was created through discussions with the second author, adopting a modified Joanna Briggs Institute (JBI) approach. The author recorded and compared the extracted data, as shown in the following table:

Table 3. Charting Data

No	Author/ Year/ Country/ Title	Research Design	Data collection methods and instruments	Sampling techniques and number of respondents	Results
A1	(Isa et al., 2020) Indonesia, <i>Comparison of Tuina Massage Therapy and Citronella Aromatherapy Oil in Toddler Appetite Enhancement</i>	Quasi-experimental	Comstock questionnaire and sheet to measure toddlers' appetite and eating patterns	Purposive sampling, 50 respondents (25 Tuina massage interventions, 25 lemongrass oil aromatherapy interventions)	Population: Children aged 1-5 years with decreased appetite. Intervention: Tuina massage 3x/week for 8 weeks (15 minutes/session). Comparison: Average appetite score of toddlers in the intervention group vs. the control group. Outcome: Tuina massage effectively increased toddlers' appetite with an average increase of 1.644 vs. 1.092 in aromatherapy ($p < 0.01$).
A2	(Saidah & Dewi, 2020)/ Indonesia, <i>Differences in the effectiveness of massage Tuina and the essential oil of lemongrass (Cymbopogon nardus), Kediri City</i>	Quasi-eksperimental	Population: Children aged 1-5 years with decreased appetite. Intervention: Tuina massage 3x/week for 8 weeks (15 minutes/session). Comparison: Average appetite score of toddlers in the intervention group vs. the control group. Outcome: Tuina massage effectively increased toddlers' appetite with an average increase of 1.644 vs. 1.092 in aromatherapy ($p < 0.01$).	Sample of 32 toddlers aged 12-59 months who had difficulty eating	Population: Toddlers aged 12-59 months with feeding difficulties. Intervention: Lemongrass oil (Cymbopogon nardus) aromatherapy. Comparison: Tuina massage. Outcome: After the intervention, 68.8% of children in the aromatherapy group and 56.3% in the Tuina massage group showed a decrease in feeding difficulties to a low level. Both interventions were effective ($p = 0.007$ and $p = 0.002$), but Tuina massage was statistically more effective ($p = 0.005$).
A3	(Anggraeni et al., 2022) Indonesia, <i>The Effect of Tui Na Massage on Increasing Appetite in Toddlers at Ami Medika Clinic, Sukabumi District</i>	Quasi-eksperimental	Observation and measurement of Body Mass Index (BMI) as an indicator of appetite and nutritional status	Purposive sampling, 35 toddlers	Population: Toddlers experiencing appetite problems at Ami Medika Clinic, Sukabumi. Intervention: Tui Na massage therapy. Comparison: Condition before and after therapy. Outcome: Average appetite increased from 17.32 to

A4	(Azizah Laksono & Nursitiyarah, 2023)/Indonesia, The Effectiveness of Tuina Massage in Overcoming Feeding Difficulties in Toddlers Aged 1–2 Years	Quasi-eksperimental	Direct observation of changes in children's eating patterns (pretest & posttest Tuina massage therapy)	Accidental sampling, 40 toddlers	19.06 after the intervention. The results were statistically significant ($p = 0.0001$), indicating that Tui Na massage effectively increases appetite. Population: Toddlers aged 1–2 years with feeding difficulties in Talaga Village. Intervention: Tuina massage therapy. Comparison: Eating patterns before and after the intervention. Outcome: 92.5% (36 children) had no appetite before the intervention. After the intervention, 90% (37 children) showed improved appetite. The results were significant ($p = 0.00 < 0.05$), indicating that Tuina massage effectively addresses feeding difficulties.
A5	(Wulandari & Ramayanti, n.d.)/2020/ indonesia, Enhancing Appetite in Preschool Children Through Tuina Massage Therapy	Randomized Controlled Trial (RCT)	Questionnaire measure appetite	to Randomized controlled trial, 30 balita	Population: Preschool-aged children with appetite problems. Intervention: Tuina massage therapy. Comparison: Control group without Tuina massage. Outcome: There was a significant increase in appetite in the intervention group compared to the control group ($p < 0.01$), indicating that Tuina massage therapy is effective in increasing appetite.
A6	(Lubis & Sihombing, 2024)/ indonesia, The Effectiveness of Tuina Massage on Increasing Appetite in Toddlers Who Experience Difficulty in Eating	Quasi-experiment	Interview with a questionnaire	Purposive sampling, 20 toddlers	Population: Toddlers experiencing feeding difficulties. Intervention: Daily Tuina massage for seven consecutive days. Comparison: Before the intervention, 100% of toddlers experienced feeding difficulties. Outcome: After the intervention, 90% (18 toddlers) had normal appetites, and only 10% (2 toddlers) still experienced feeding difficulties. The results were significant ($p = 0.000 < 0.05$), indicating that Tuina massage improved toddlers' appetites.
A7	Wulaningsih et al/ 2022/Indonesia, The effect of tuina massage on the appetite level of malnourished toddlers	Quasi-experimental	Interview with a questionnaire	Purposive sampling 30 toddlers	Population: Toddlers Intervention: Tuina massage 3x/week for 8 weeks (15 minutes/session).

A8	(Anisya & Farida, 2022) Indonesia, The Effectiveness of Tui Na Massage to Increase the Appetite of Toddlers	Pre-experimental (One-Group Pretest–Posttest Design)	Observation of meal frequency before and after intervention	Purposive sampling 30 toddlers 20 toddlers who met the inclusion criteria	<p>Comparison: The appetite score in the intervention group increased from 2.8 to 4.0, while the control group only increased from 2.9 to 3.4.</p> <p>Outcome: Tuina massage significantly increased appetite ($p = 0.000$).</p> <p>Population: Toddlers aged 1–5 years who experience feeding difficulties.</p> <p>Intervention: Tuina massage once a day for six consecutive days.</p> <p>Comparison: Meal frequency before and after therapy.</p> <p>Outcome: Meal frequency increased after Tuina massage, $p = 0.000$, indicating a significant improvement. Tuina is effective in overcoming feeding difficulties.</p>
A9	(Rangkuti, 2022) Indonesia, The Effect of Tui Na Acupressure on Appetite in Children (Toddlers)	Quasi-experiment	Direct observation and interviews using questionnaire instruments	Accidental sampling, 25 toddlers (from a population of 50 toddlers)	<p>Population: Toddlers aged 1-3 years at Wulandari Purba Clinic, Batang.</p> <p>Intervention: Tui Na acupressure massage.</p> <p>Comparison: Before and after therapy (pretest vs. posttest).</p> <p>Outcome: After the Tui Na massage, 72% of toddlers showed an increase in appetite compared to 56% who had previously experienced a lack of appetite; there was a significant effect of the Tui Na massage on increasing appetite.</p>
A10	(Agustari et al., 2022), The Effect of Tui Na Massage on Increasing Toddlers' Appetite	Quasi-experiment	Direct observation and interviews using questionnaire instruments	Random sampling, 32 toddlers with low appetite	<p>Population: Toddlers with low appetite ($N=32$).</p> <p>Intervention: Tui Na massage.</p> <p>Comparison: Before and after massage (pretest vs. posttest).</p> <p>Outcome: The average appetite score increased from 3.09 to 6.53 ($p = 0.000$), indicating that Tui Na massage significantly improved toddler appetite.</p>

RESULTS AND DISCUSSION

Characteristics Based on Research Design

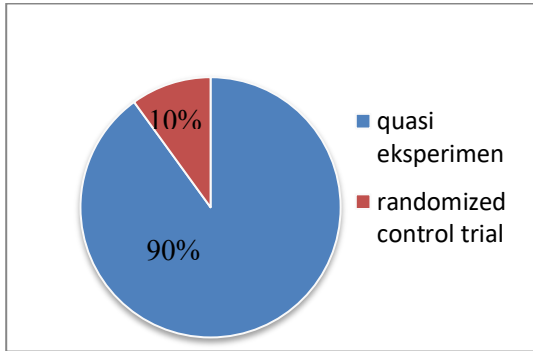


Figure 1 Characteristics of Articles Based on Research Design

Based on the research design, only one article used a Randomized Controlled Trial (RCT), namely article A5 by Wulandari & Ramayanti. Meanwhile, the other nine articles used non-RCT designs, such as quasi-experimental and pre-experimental, which are generally used to evaluate interventions in settings that do not allow for full randomization. This indicates that despite the high interest in the effectiveness of Tuina massage, most studies still use a limited experimental approach.

Characteristics of Articles Based on Year of Publication

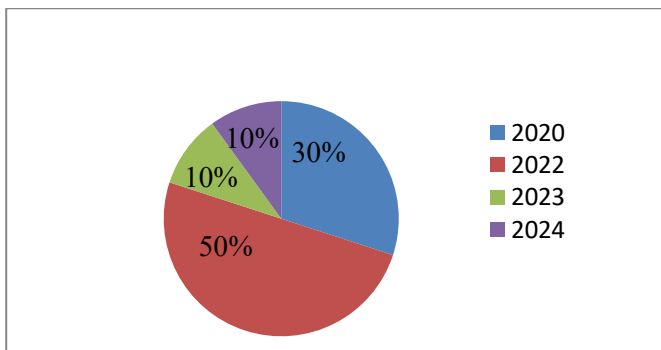


Figure 2 Characteristics of Articles Based on Year of Publication

Based on the year of publication, there were three articles published in 2020, Meanwhile, only one article came from 2021, Furthermore, there were five articles published in 2024, indicating an increase in attention and intensity of research on the effectiveness of Tuina massage in recent years.

Characteristics Based on Sampling Techniques

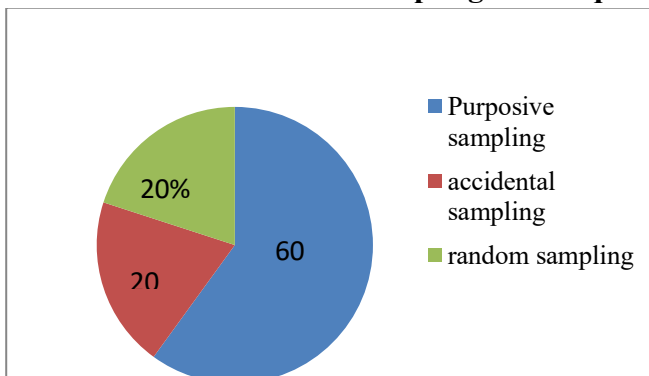


Figure 3 Characteristics of Articles Based on Sampling Techniques

Based on the sampling technique, most articles used purposive sampling, such as in articles A1, A2, A3, A6, A7, and A8, where subjects were selected based on certain criteria, namely toddlers experiencing decreased appetite. Meanwhile, accidental sampling was used in two articles, namely A4 and A9, which involved respondents who happened to meet the criteria when the research was conducted. Furthermore, two articles, namely A5 and A10, used random sampling. Thus, the most widely used sampling technique was purposive sampling, indicating a research approach that is more focused on subjects with certain conditions.

Characteristics based on data collection methods and instruments

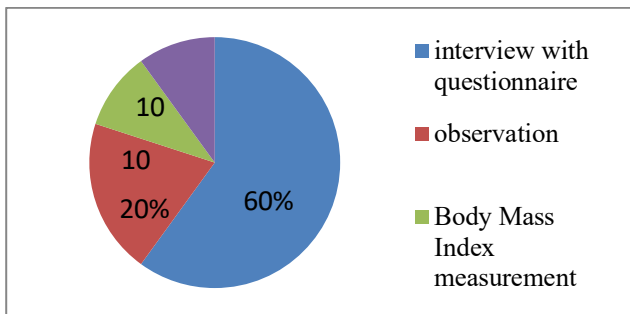


Figure 4 Characteristics of articles based on data collection methods and instruments

Based on data collection methods and instruments, most articles used questionnaires as the primary tool to assess changes in appetite or feeding difficulties in toddlers, as seen in articles A1, A2, A5, A6, A7, and A10. In addition to questionnaires, several studies also used direct observation, as in articles A3, A4, and A8, to assess changes in eating behavior or meal frequency before and after the intervention. Article A3 specifically used Body Mass Index (BMI) measurements as an indicator of nutritional status and appetite. Meanwhile, A1 added the Comstock sheet as an additional instrument to measure toddlers' eating patterns.

Theme Analysis

After analyzing the themes and evaluating the quality of the journals through data extraction, the main themes of the selected journals are as follows.

Table 7. Analysis and Mapping of Research Article Themes

No	Theme	Sub Theme	Research Articles
1	Tuina massage to increase appetite	Tuina massage technique	A1, A3, A4, A5, A6, A7, A8, A9, A10
		The working mechanism of Tuina massage on appetite	A1, A3, A4, A5, A7, A10
		The role of Tuina massage in improving the digestive system function of toddlers	A1, A3, A4, A5, A7
2	Factors that influence the effectiveness of tuina massage	Frequency and duration of therapy	A1, A3, A4, A5, A6, A7
		Toddler's health condition and response	A1, A2, A3, A4, A5
		The role of parents and caregivers	A3, A6, A8
3	Obstacles in implementing tuina massage therapy	Lack of knowledge about massage	A2, A4, A5
		Difficulty accessing or consistent therapy	A4, A6, A8
		Inconsistency in massage frequency	A6, A8
4	Supporting role in the success of tuina massage therapy	Family and caregiver support	A1, A2, A3, A5
		Environmental factors	A2, A4, A6
		Motivation and education of parents	A1, A3, A5
5	Physical effects of Tuina massage on toddlers	Significantly increases appetite	A1, A3, A4, A5, A6
		Improving the nutritional status and growth of toddlers	A3, A7, A10
		Helps the function of the digestive system	A1, A3, A4, A5, A7
6	Psychological effects of Tuina massage on toddlers	Child's acceptance of massage	A1, A4, A6
		The effect of calm and comfort	A4, A6, A8
		Impact on mother-child relationship	A1, A3, A5
7	Prevention of long-term appetite disorders	Massage as Prevention	A4, A5, A8
		Routine therapy as early education	A1, A4, A5
		Monitoring toddler growth	A3, A7, A10

Tuina Massage to Increase Appetite

Appetite in toddlers is a physiological and psychological drive to consume food. Internal factors that influence it include physical condition, health, and hormonal function. Furthermore, a toddler's emotional state also plays a significant role in increasing or decreasing appetite. On the other hand, external factors such as the shape, taste, and variety of food also influence a child's interest in food. A regular eating pattern and a supportive environment are also important determinants. An environment that provides sensory stimulation, such as the aroma and color of food, can stimulate a toddler's appetite. Therefore, a combination of internal and external factors plays a crucial role in developing a healthy appetite in toddlers (Sulistyawati 2023). Signs and symptoms of decreased appetite include weight loss, lack of interest in food, feelings of excessive fullness, psychological symptoms such as stress, anxiety, or depression, and physical symptoms such as feeling full or wanting to vomit (Tiwery et al. 2025). Loss of appetite in children usually lasts a long time. The impact is nutritional deficiencies such as calorie, protein, vitamin, mineral, and electrolyte deficiencies, as well as anemia. Further consequences include the risk of disability, morbidity, and death (Azizah, K. F. N., Wijayanti, T. R. A., & Widiatrilupi, 2024).

A child's growth and development are influenced by various factors, including adequate nutrition and medical or psychological conditions. Children require balanced nutrition to achieve optimal nutritional status. Nutrition is influenced by food, physical activity, and medical history. Low food consumption results in inadequate nutrition, leading to malnutrition (Muthohiroh 2021). Tuina massage, also known as tui na massage, is a traditional Chinese massage performed using specific movements on the body's meridian points. This technique aims to improve blood circulation and the flow of energy (qi) in the body. By improving this circulation, Tuina massage can help improve

digestive system function. Consequently, this therapy contributes to increased appetite, especially in toddlers experiencing eating and growth problems (Karmila et al., 2023).

Tuina massage plays a vital role in increasing appetite. Tuina massage plays a vital role in increasing appetite, especially in infants and toddlers. Various studies have shown that Tuina massage effectively increases children's appetite by stimulating the nervous system and improving digestive function. This massage increases gastric peristalsis, thereby accelerating gastric emptying, reducing hunger, and increasing appetite. Furthermore, Tuina massage stimulates the production of digestive enzymes, which aid in optimal nutrient absorption, contributing to weight gain and improved nutritional status in children (Wulaningsih, Sari, and Wijayanti 2022). Massage can increase body resistance and improve blood circulation to the spleen and digestion (Rechika Amelia Eka Putri1, 2024).

This massage technique includes various specific movements aimed at stimulating acupressure points and improving digestive function, especially in children. Some of the main techniques include rubbing the line on the side of the thumb on the palm side 100-500 times to strengthen the spleen function, circular pressure massage on the base of the thumb 100-300 times to improve digestion, circular pressure massage on the base of the thumb 100-300 times to improve digestion, and circular rubbing the middle of the palm with a radius of about 2/3 from the middle of the palm to the base of the little finger 100-300 times. In addition, pressure is applied to the acupressure points in the knuckles near the palm from the index finger to the little finger with a prick and pressure massage, circular pressure on the navel area clockwise 100-300 times, and pressing the line under the ribs towards the side of the stomach with both thumbs 100-300 times, and pressing the line under the ribs towards the side of the stomach with both thumbs 100-300 times. Other techniques include applying circular pressure to a point below the outer knee, about four finger widths below the kneecap, 50–100 times. Additional movements such as gliding, massaging, tapping, pulling, rotating, shaking, and vibrating specific points are also used to stimulate the flow of chi energy, maintain body balance, and improve overall health (Peningkatan et al., 2020).

There are eight steps to performing a tui na massage. The first step is to bend the child's thumb and gently massage it on the outer side from the base to the tip of the thumb. The second step is to press in a circular motion on the base of the thumb. The third step is to gently massage the middle of the child's palm, 2/3 of it. The fourth step is to gently press the child's lower finger joints with the thumb tip. Do this on the index finger, middle finger, ring finger, and little finger. The fifth step is to position the child lying down and press in a circular motion above the navel with the palm of your hand in a clockwise direction. The sixth step is to position the child lying down and place your thumb under the child's ribs. Then press it wide to the right and left sides of the stomach. The seventh step is to press in a circular motion on the outer point of the knee about two finger widths from the kneecap down. The final step is to position the child on his stomach and massage the child's back by pressing lightly in a circular motion along the backbone from top to bottom. Next, gently pinch the child's skin on the right and left sides of the tailbone down to the neck (Nadhiifah, Pristiano, and Charisa 2024).

This massage technique is able to stimulate the body's working mechanism. The Tuina massage technique is able to stimulate the body's working mechanism by influencing the body's energy flow (Qi) through massage and pressure on certain acupressure points, which not only work on muscles, bones, and joints but also on a deeper energy level to maintain body balance. This massage improves

blood circulation, especially in the spleen and digestive system, so that these organs can work more optimally. In addition, Tuina massage stimulates the parasympathetic nerves, especially the vagus nerve, which plays a role in increasing the secretion of the hormone gastrin and digestive enzymes, accelerating intestinal motility, and increasing bile flow, so that children's appetite and nutrient absorption increase (Beno, Silen, and Yanti 2022).

The digestive system in toddlers is often a major concern, given its still-fragile development. Digestive issues such as constipation, gas, or bowel movements can cause discomfort that can impact a toddler's physical and psychological well-being. Tuina massage, with its gentle techniques, can help improve energy flow and stimulate digestive activity. For example, massage of the abdominal area can stimulate bowel movements, improve blood circulation to the digestive organs, and enhance the overall digestive process (Bhardwaj et al. 2024). Tui na massage works by stimulating meridian points connected to the digestive system, thereby improving digestive function, improving blood circulation, and stimulating the parasympathetic nerves to help nutrient absorption and increase appetite (Putri, S. D. Y., Wijayanti, A., Apriani, M., Yulia, & Aprillinda, 2025).

Tuina massage also plays a role in improving digestive system function. Tuina massage plays an important role in improving digestive system function by strengthening the spleen and facilitating digestion through special massage techniques at certain points, such as the edge of the thumb, the base of the thumb, the middle of the palm, the navel area, and under the ribs. This massage helps break down accumulated undigested food, facilitates gastric and intestinal peristalsis, and increases the production of digestive enzymes that play a role in nutrient absorption. In addition, Tuina massage stimulates the parasympathetic nervous system, especially the vagus nerve, which triggers the secretion of the hormone gastrin, thereby increasing intestinal motility, accelerating gastric emptying, and increasing appetite. This stimulation also improves blood circulation in the digestive organs, thus optimizing organ function. Various studies have shown that Tuina massage is effective in treating digestive disorders, increasing metabolism, and helping improve nutritional status, especially in children who have difficulty eating or are stunted (Diana et al. 2024).

Previous research entitled "The effect of tui na massage on increasing toddler appetite" showed that the average appetite of toddlers before tui na massage was 3.09, and after the massage, it increased to 6.53. Statistical tests produced a p-value = 0.000, which shows that tui na massage has a significant effect on increasing appetite in toddlers (Agustari, Novitasari, and Sembayang 2022). Previous research entitled "The Effectiveness of Tui Na Massage on Increasing Appetite of Children Aged 1-2 Years in the Working Area of Ramlah Parjib 2 Samarinda General and Maternity Clinic" obtained a significant value of $0.000 < 0.05$. The results of the analysis of the table above also obtained a value of $t = 3.924 > 2.179$, where the calculated t is greater than the value of the t table. This shows that Tui Na Massage is effective on Appetite Levels (Wang et al., 2022).

Factors Affecting the Effectiveness of Tuina Massage

The effectiveness of Tuina massage in increasing a toddler's appetite depends not only on the technique used but also on several important factors. One of the main factors is the frequency and duration of therapy. Frequency and Duration of Therapy: Effective Tuina massage therapy is generally performed once daily for at least 15 minutes, using eight massage movements, and

performed consecutively for six days. Some studies suggest that this therapy can be repeated with a 1-2 day interval if necessary, but regular massage for six consecutive days shows optimal results in improving appetite and weight gain in toddlers. Furthermore, Tuina massage is usually performed on only one side of the hand per session to avoid fatigue and trauma to the child. This consistent massage frequency is important to ensure effective stimulation of acupressure points and meridians, improving blood circulation to the spleen and digestive system, and stimulating the body's overall functioning mechanisms (Himawati and Wigati 2023).

A toddler's health and response to Tuina massage therapy significantly influence the results. Most toddlers who receive Tuina massage show significant weight gain and appetite gains, especially if they are healthy and regularly receive therapy. However, toddlers who are sick, for example, with a fever or declining health, tend not to show weight gain because their bodies are more focused on recovery than growth (Fifit and Luvi Dian Afriyani 2023). In addition, educating parents about the importance of Tuina massage and supportive parenting is very helpful in the active role of parents. The active role of parents is crucial in the success of Tuina massage therapy in improving toddlers' appetite, growth, and development. Parents not only act as the main actors in providing Tuina massage directly to children, but also as caregivers who provide affection and tenderness, which strengthens emotional bonds and creates a comfortable atmosphere for toddlers during therapy. With good understanding and skills, parents can perform massage independently at home according to the protocol, so that therapy can be consistent and effective in preventing problems such as stunting and eating difficulties. Parental involvement also prevents psychological trauma in children, because they can recognize the child's condition during the massage and adjust the treatment so that the child remains cooperative. Overall, empowering parents to perform Tuina massages is the main foundation for improving the health, appetite, and optimal growth of toddlers while preserving cultural values and family togetherness in caring for children (Deviana and Dini 2024).

Parental support and knowledge are crucial for the success of Tuina massage therapy in addressing decreased appetite in toddlers. Through training and education, parents can properly understand Tuina massage techniques and understand its benefits in stimulating the digestive system and increasing appetite. This empowerment allows them to perform the massage independently at home with love and tenderness, strengthening the emotional bond between parent and child. Studies show that after receiving education, parents' knowledge and skills significantly improve, enabling them to provide Tuina massage consistently and appropriately, positively impacting toddler growth and health. Furthermore, parents' understanding of the importance of massage as a non-pharmacological therapy reduces reliance on unwarranted multivitamins, making this approach a holistic solution that combines aspects of a child's physical and psychological health. With adequate support and knowledge, parents play an active role in ensuring that Tuina massage is optimally implemented to improve their child's overall well-being and growth (Siti Suciati, Anita Dwi Agustinasari, and Ernik Rustiana 2022).

Obstacles in Implementing Therapy

Lack of knowledge among parents or caregivers regarding massage techniques is a major obstacle to implementing this therapy to increase appetite in toddlers. Many parents do not understand how to properly perform Tuina massage. Traditionally, infant and toddler massage has often been performed

by traditional birth attendants or individuals with traditional skills. This leaves mothers feeling afraid or hesitant to massage their own children without adequate training. This leads to Tuina massage not being performed routinely or even not being performed at all, even though this technique is relatively easy to learn and can be performed independently by parents at home. Therefore, providing training and counseling to parents is crucial to address this lack of knowledge and ensure that Tuina massage can be effectively implemented as a non-pharmacological therapy to improve toddler health and appetite (Ningsih et al. 2023).

Difficulty accessing professional therapists or valid learning resources is a significant obstacle to implementing Tuina massage in communities, especially in remote areas or those with limited healthcare facilities. Many parents and caregivers have not received direct training from qualified healthcare professionals, such as midwives or massage therapists, making it difficult for them to learn Tuina massage techniques correctly. Furthermore, the lack of easy-to-understand educational materials and the availability of valid learning media also limit parents' ability to perform massage independently at home (Heryandi, Susanti, and Samsuni 2024). Inconsistent massage frequency, caused by busy parents, is one of the obstacles to the effectiveness of Tuina massage therapy. Effective Tuina massage requires a frequency of once a day for at least 15 minutes, with eight movements, and performed consecutively for six days. Research shows that toddlers who do not receive consistent Tuina massage are less likely to experience significant weight gain. Conversely, parents who regularly massage their children, even twice a month, report weight gain in their toddlers. Busy parents can prevent regular massage, thus reducing the optimal benefits of this therapy (Ningsih, F., & Ramadhena, 2023).

Supporting Roles in the Success of Tuina Massage Therapy

The success of Tuina massage therapy is greatly influenced by the supportive environment surrounding the toddler. Family support plays a crucial role in the success of Tuina massage therapy in improving the toddler's appetite and health. In addition to directly providing massage, parents and other family members play a role in creating a comfortable and loving atmosphere during therapy, which strengthens the emotional bond between child and parent. Gentle touch and positive communication during massage help prevent psychological problems in children, making them more receptive to therapy and increasing their appetite. Family support also includes active involvement in Tuina massage education and training, so they have sufficient knowledge and skills to perform massage consistently and appropriately at home. Family collaboration with health workers and community health post (Posyandu) cadres also strengthens the success of the Tuina massage program as an effort to prevent stunting and improve child nutrition. Thus, family support not only enhances the physical effectiveness of Tuina massage but also builds emotional bonds that support the optimal growth and development of toddlers as a whole (Ceria, Inayati et al, 2019).

A conducive environment plays a crucial role in the success of Tuina massage therapy in improving a toddler's appetite and health. A calm, comfortable, and loving atmosphere during the massage helps the child feel safe and relaxed, allowing the massage stimulation to be well-received by their body and nervous system. A massage performed with a happy and gentle touch by a parent or caregiver also strengthens the emotional bond between child and parent, supporting the therapy's effectiveness. This conducive environment includes a clean, warm, and distraction-free environment so the child can focus on receiving the massage without feeling afraid or anxious. Research shows that children

who receive a comfortable and caring massage experience the maximum benefits of Tuina massage, including improved appetite and weight gain. Therefore, creating a conducive environment is a crucial factor in implementing Tuina massage to optimize therapy results and positively impact toddler growth and development (Budiati, T., & Fatimah, 2021).

Parental motivation and education are crucial in implementing Tui Na massage to improve toddlers' appetites. Through communicative and easy-to-understand counseling, parents are encouraged to actively apply Tui Na massage techniques at home as a non-pharmacological effort to address eating difficulties and prevent stunting, while also strengthening emotional bonds with their children. This education includes an introduction to proper massage techniques, the use of supporting oils such as citronella oil, and an emphasis on the importance of not forcing children to eat to avoid psychological trauma. With sufficient understanding and skills, parents can independently provide consistent massage, thereby increasing their children's appetite and optimal growth and development (Astuti et al. 2024).

Assistance from health workers or therapists greatly strengthens the role of parents in providing Tui Na massage to increase the appetite of toddlers, because health workers can provide direct training, supervision, and correction of correct massage techniques so that the massage is carried out effectively and safely; in addition, this assistance also helps increase the knowledge and skills of parents in understanding the child's condition and avoiding psychological trauma due to coercion, so that the results of Tui Na massage can be optimal in improving blood circulation and digestive function which has an impact on increasing the child's appetite and weight.

Physical Effects of Tuina Massage

In Toddlers, Tui Na massage has several significant positive effects, particularly in increasing weight and appetite. This massage works by stimulating acupressure points that improve blood circulation in the spleen and digestive system, thereby increasing intestinal motility and optimizing nutrient absorption. Stimulation of nerve endings through massage also triggers action potentials in the sympathetic and vagus nerves, which increase gastric peristalsis and digestive enzyme production, resulting in faster gastric emptying and a reduced appetite (Prastiwi, Ikha & Alindawati, 2020).

Tuina massage can stimulate a child's digestive system by improving blood circulation. Furthermore, this massage also increases gastric motility, thus facilitating smoother digestion. Massage at specific points helps facilitate better nutrient absorption in the child's body. With optimal digestive function, a child's appetite can also significantly improve. This increased appetite contributes to better and sufficient food intake. As a result, children can gain weight in a healthy and balanced manner. Therefore, Tuina massage is very beneficial in supporting children's growth and development by improving appetite and nutrition (Fetrisia et al. 2023). Tuina massage significantly supports the physical growth and development of toddlers, particularly through weight gain and improved nutritional status. Several studies have shown that after Tuina massage, most toddlers experienced significant weight gain compared to a control group that did not receive massage (Tiwery et al. 2025).

Psychological Effects of Tuina Massage on Toddlers

In addition to its physical effects, Tuina massage also has a positive psychological impact on toddlers. Children's acceptance of massage: In addition to its physical effects, Tuina massage also has a positive

psychological impact on toddlers, particularly through their positive acceptance of the massage. Tuina massages performed with gentle and affectionate touch by parents can strengthen the emotional bond between children and parents, which is known as bonding attachment. This touch not only calms toddlers but also helps prevent psychological problems that can interfere with a child's appetite and development (Ode Sri Kamba Wuna et al., 2023).

Tuina massage provides significant calming and comforting effects for toddlers. This gentle, loving massage touch can stimulate the parasympathetic nervous system, specifically the vagus nerve, which plays a role in calming a child's body and mind. This increased vagus nerve tone helps reduce stress and anxiety in toddlers, so they become more relaxed and sleep better after the massage. The calmness gained from Tuina massage also contributes to increased appetite and nutrient absorption, which ultimately supports a toddler's physical growth. Children who feel comfortable and calm during a massage tend to receive the massage with a feeling of happiness, so that the benefits of the massage can be maximized. Furthermore, this message also strengthens the emotional bond between parent and child, which provides a sense of psychological security and comfort for toddlers (Padilah, AlfikaL, and Linmus 2024). Tuina massage can strengthen the emotional bond between mother and child through direct, loving touch during the massage. The mother's gentle touch and massage techniques not only help improve the child's physical health, such as improving blood circulation and increasing appetite, but also build a strong emotional bond between mother and toddler (Nadhiifah et al. 2024).

Long-Term Prevention of Appetite Disorders

Tuina massage has strong potential as a long-term preventive therapy for appetite disorders in toddlers. This therapy effectively increases appetite by improving blood circulation to the spleen and digestive system, thereby helping to maximize digestive function and nutrient absorption, which are crucial for child growth. By improving appetite and optimal nutrient absorption, Tuina massage can prevent chronic malnutrition problems such as stunting caused by long-term inadequate nutritional intake (Astuti et al. 2024).

Regularly implementing tuina massage can provide early education for parents on how to maintain their child's diet and health. Through Tuina massage counseling and training, parents, especially mothers, gain the knowledge and skills to perform this massage independently at home, thereby helping to address eating difficulties in toddlers non-pharmacologically. This education enhances parents' understanding of the importance of massage stimulation to improve appetite and support child growth (Qonitatun et al. 2024).

Consistent Tuina massage therapy not only increases appetite in toddlers but also significantly contributes to weight gain and improved nutritional status. This massage works by improving blood circulation to the spleen and digestive system, thereby helping maximize digestive function and nutrient absorption, which are essential for physical growth. Several studies have shown that toddlers who receive regular Tuina massage experience significant weight gain compared to those who do not receive massage (Qonitatun et al. 2024).

CONCLUSIONS

The results of a scoping review of 10 selected articles indicate that Tui Na massage is efficacious in improving appetite among toddlers, especially those with feeding difficulties or reduced appetite.

This effectiveness is consistently found across various research designs, including quasi-experimental studies and randomized controlled trials, with significant improvements in appetite scores, meal frequency, and even nutritional status. Physiologically, Tui Na massage works by stimulating meridian points associated with the digestive system, thereby increasing intestinal motility, improving blood circulation, accelerating gastric emptying, and stimulating the secretion of digestive enzymes. These mechanisms help children feel more comfortable, reduce complaints such as bloating or fullness, and enhance the natural urge to eat. In addition, psychological effects such as comfort, relaxation, and improved emotional bonding between the child and parents also indirectly support increased appetite.

The success of the therapy is strongly influenced by the frequency and consistency of the massage, the child's health condition, and the active role of parents in providing proper and regular stimulation. However, several barriers remain, including parents' limited knowledge of Tui Na techniques and restricted access to trained healthcare providers. Overall, these findings affirm that Tui Na massage is a safe, easy-to-apply, and potentially effective non-pharmacological intervention for improving toddlers' appetite, while also serving as a preventive measure against long-term nutritional problems. Therefore, Tui Na deserves consideration as a complementary therapy in child healthcare services, supported by adequate education and training for parents to ensure its optimal and sustainable application.

LIMITATION OF THE STUDY

The results of this scoping review have several important implications, particularly in the context of addressing nutritional issues in toddlers through non-pharmacological approaches. Tui na massage has been shown to have potential as an effective alternative intervention to increase toddler appetite, and therefore can be used as a complement to conventional therapies. These findings also emphasize the important role of families, especially parents, and healthcare professionals in supporting the success of therapy through appropriate education and training in tui na massage. Furthermore, the results of this study can contribute to the development of integrative health service-based policies by incorporating traditional therapies such as tui na massage as part of strategies for the Prevention and treatment of mild eating disorders in children. Furthermore, this study also raises awareness of the importance of complementary therapies in supporting children's holistic growth and development.

However, this study also has several limitations. First, the number of studies meeting the inclusion criteria was relatively small, only 10 journals, with most using observational and quasi-experimental designs, which limits the generalizability of the results. Second, methodological variations existed between studies, including massage techniques, frequency of implementation, and appetite measurement instruments, which made comparative analysis and quantitative synthesis difficult. Third, language limitations and database access also affected the study coverage, as only English and Indonesian-language articles were included, while potentially relevant Chinese-language journals were not. Fourth, the study's focus was limited to improving appetite, and it did not directly evaluate the impact of tui na massage on nutritional status, such as body weight or other growth indicators. Finally, although the article selection process followed PRISMA guidelines and quality assessment tools from the Joanna Briggs Institute (JBI), there remains the potential for selection and publication bias that could impact the overall validity of this review.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

ACKNOWLEDGMENTS

We express our deepest gratitude to Universitas Aisyiyah Yogyakarta for their invaluable support in the preparation of this systematic review. The university's assistance, both in terms of providing resources, continuous guidance, and comprehensive academic support, greatly facilitated the smooth and successful implementation of this research. Their contributions and collaboration not only supported the technical and academic aspects but also provided encouragement and inspiration for the research team. We hope this good working relationship will continue in the future.

FUNDING STATEMENT

The authors did not receive any funding or grants from other organizations in conducting this review.

REFERENCES

- Agustari, Fadila, Dwi Novitasari, and Septian Mixrova Sembayang. 2022. "Jurnal Peduli Masyarakat." *Jurnal Pengabdian Kepada Masyarakat (JPKM) - Aphelion* 4(Desember):603–8.
- Aliah Istiqomah, Kristin Masmur S, Ribby Aurellia Amali, and Sulis Tiawati. 2024. "Peran Gizi Terhadap Pertumbuhan Dan Perkembangan Balita." *Antigen : Jurnal Kesehatan Masyarakat Dan Ilmu Gizi* 2(2):67–74. doi:10.57213/antigen.v2i2.260.
- Anggraeni, Reni, Tukimin Bin Sansuwito, Nisha Nambiar, and Nenden Lesmana Wati. 2022. "The Effect of Tui Na Massage on Increasing Appetite in Toddlers At Ami Medika Clinic, Sukabumi District." *Proceedings of the 1st International Conference on Social Science (ICSS)* 1(1):407–12. doi:10.59188/icss.v1i1.53.
- Anggraini, Nofa, Cica Repita, Devi Apriliani, Dinda Amalia, Fatma Tuzakia, Risna Dewi, and Sri Wahyuni. 2025. "The Effect of Tuina Massage in Improving Diet in Underweight Children Under Five in 2024." *Jurnal Penelitian Pendidikan IPA* 11(10):848. doi:10.29303/jppipa.v11i10.12319.
- Anggraini, Refida Fitria, Aries Chandra Ananditha, Latifiyan Nurnaningtiyas Aminoto, and Oski Illiandri. 2021. "The Relationship between Modification of Food Presentation and Changes in Appetite of Toddler Children at Puskesmas Mojo Surabaya." *MAGNA MEDICA Berkala Ilmiah Kedokteran Dan Kesehatan* 1(3):18. doi:10.26714/magnamed.1.3.2016.18-30.
- Anisya, Shelaa Maulana Kholbi, and Siti Farida. 2022. "The Effectiveness of Tui Na Massage to Increase the Application Of Toddlers." *Proceedings of the International Conference on Nursing and Health Sciences* 3(1):201–6. doi:10.37287/picnhs.v3i1.1148.
- Astuti, Yanti, Noorbaya, Siti, Lidia, and Besse. 2024. "Efektivitas Pijat Tui Na Terhadap Peningkatan Nafsu Makan Anak Usia 1-2 Tahun Di Wilayah Kerja Klinik Umum Dan Bersalin Ramlah Parjib 2 Samarinda Jurnal Media Informatika [JUMIN]." 6(1):54–60.
- Azizah, K. F. N., Wijayanti, T. R. A., & Widiatrilupi, R. M. V. 2024. "Pengaruh Pijat Bayi Terhadap Nafsu Makan Balita Usia 3 Tahun. Jurnal Asuhan Ibu & Anak, 59-65. Institut Teknologi Sains Dan Kesehatan RS Dr. Soepraoen Malang."
- Azizah Laksono, Nur, and Nursitiyaroh Nursitiyaroh. 2023. "The Effectiveness of Tuina Massage in Overcoming Feeding Difficulties in Toddlers Aged 1-2 Years at Posyandu Mekar in the Talaga Village Area." *International Journal of Health and Pharmaceutical (IJHP)* 3(4):750–54. doi:10.51601/ijhp.v3i4.228.
- Beno, J., A. P. Silen, and M. Yanti. 2022. "No 主観的健康感を中心とした在宅高齢者における健康関連指標に関する共分散構造分析Title." *Braz Dent J.* 33(1):1–12.
- Bhardwaj, Raju Lal, Aabha Parashar, Hanuman Prasad Parewa, and Latika Vyas. 2024. "An Alarming Decline in the Nutritional Quality of Foods: The Biggest Challenge for Future Generations' Health." *Foods* 13(6).

- Boleo, Daswi, Shinta Mona Lisca, Retno Sugesti, Khumaedah Novalia, E. Melda Shany, and Rizka Febriyanti. 2025. "Effects of Tuina Massage and Johnson Massage on Weight Gain in Babies Aged 0-12 Months." *Jurnal Maternitas Kebidanan* 10(2).
- Budiati, T., & Fatimah, S. 2021. "Efektivitas Terapi Komplementer Dalam Menangani Masalah Gizi Anak." *Jurnal Kesehatan Holistik*, 5(2), 112–120."
- Ceria, Inayati et al., . 2019. "Pengaruh Pemberian Pijat Tui Na Dengan Berat Badan Anak Balita." *Prosiding Seminar Nasional UNRIYO* 469–75.
- Deviana, Meli, and Agi Yulia Ria Dini. 2024. "Pemberdayaan Orang Tua Dalam Pemberian Pijat Tuina." *Jurnal Pengabdian Masyarakat Kesehatan* 03(01):1–9.
- Diana, Elsa, Ayu Efrita Dewi, Heni Widiyani, Universitas Maritim Raja Ali Haji, and Prodi Ilmu Hukum. 2024. "Perlindungan Anak: Mencegah Dan Menanggulangi Pelecehan Seksual Terhadap Anak Di Bawah Umur." *Jurnal Ilmu Hukum* 1(2):102–8.
- Dinkes Provinsi Jambi. 2022. "Profil Kesehatan Provinsi Jambi." *Journal of Chemical Information and Modeling* 192.
- District, Subdistrict Grobogan, Adil Liya Rimbani, and Sarjana Ilmu Keperawatan. 2024. "Pengaruh Pijat Tuina Terhadap Peningkatan Berat." 24:1–9.
- Fetrisia, Wiwit, Gelisma Mulia, and Suci Rahmadheny. 2023. "Effectiveness of Tui Na Massage on Eating Frequency in Batita Children at The Working Area of Lubuk Alung Puskesmas, Padang Pariaman District, 2020." *International Health Sciences Journal* 1.
- Fifit, Kusuma Intan Setianing, and Luvi Dian Afriyani. 2023. "Pengaruh Metode Pijat Tui Na Terhadap Penambahan Berat Badan Pada Balita Usia 1-5 Tahun Dengan Masalah Berat Badan Dan Picky Eater." *Journal of Holistics and Health Science* 5(1):135–43. doi:10.35473/jhhs.v5i1.255.
- Heryandi, Rifki, Fajar Susanti, and Samsuni Samsuni. 2024. "Pencegahan Stunting Dengan Edukasi Dan Terapi Tuina Massage Pada Balita Di RW 004 RT 003 Kelurahan Bambu." *Jurnal Nusantara Mengabdikan* 3(2):65–71. doi:10.35912/jnm.v3i2.2964.
- Himawati, Laily, and Dhiyan Nany Wigati. 2023. "Pengaruh Pemberian Tui Na Massage Terhadap Peningkatan Berat Badan Balita Di Desa Selojari the Effect of Providing Tui Na Massage on Increasing the Weight of Toddler in the Village of Selojari." *Jambura Journal of Health Science and Research P-Issn (2623-0674), E-Issn (2655-643X)* 5(4):1135–43.
- Isa, Nora, Tri Novadela, and Ani Gusnia. 2020. "Comparison of Tuina Massage Therapy and Citronella Aromatherapy Oil in Toddler Appetite Enhancement." 41–54.
- Karmila, Elis, Kurnia Pratiwi, Nesi Erista, and Widayati. 2023. "Pijat Tui Na Untuk Meningkatkan Nafsu Makan Pada Bayi Dan Balita Di Desa Blater Lor Kec Bandungan Kab Semarang." *Prosiding Seminar Nasional Dan Call for Paper Kebidanan Universitas Ngudi Waluyo* 2(2):956–62.
- Kemenkes RI, Kementerian Kesehatan Republik Indonesia. 2022. "Profil Kesehatan Indonesia. <https://Kemkes.Go.Id/Id/Profil-Kesehatan-Indonesia-2022>."
- Linda Fitria Nuraini, Delta Rahma Dela, Nining Tunggal Sri Sunarti, and Reni Tri Lestari. 2024. "Pemantauan Pertumbuhan Dan Perkembangan Sebagai Upaya Deteksi Dini Stunting Pada Balita Di Dusun Bibis Desa Timbulharjo Kapanewon Sewon Kabupaten Bantul." *NUSANTARA Jurnal Pengabdian Kepada Masyarakat* 4(1):119–25. doi:10.55606/nusantara.v4i1.2378.
- Lubis, Nur Azizah, and Juliana Sion Sihombing. 2024. "The Effectiveness of Tui Na Massage on Increasing Appetite in Toddlers Who Experience Difficulty in Eating." *Journal of Midwifery and Nursing* 6(1):379–83.
- Muthohiroh, Miftaql. 2021. *Gangguan Perilaku Makan (Picky Eaters), Pengetahuan Orang Tua Tentang Gizi Dan Pola Asuh Anak Kebutuhan Khusus*.
- Nadhiifah, Rana Dhiya', Arif Pristianto, and Anis Dwi Charisa. 2024. "Edukasi Pijat Tui Na Sebagai Upaya Untuk Meningkatkan Nafsu Makan Di Kelas Ibu Balita." *Jurnal Abdimas BSI: Jurnal Pengabdian Kepada Masyarakat* 7(2):280–86. doi:10.31294/jabdimas.v7i2.19655.

- Ningsih, Diah Ayu, Rini Susanti, Kebidanan Program Sarjana, Universitas Ngudi Waluyo, and Pijat Bayi. 2023. "Pengetahuan Pengasuh Tentang Pijat Bayi Sehat Di Panti Asuhan Manarur Mabur." 6(1):187–98.
- Ningsih, F., & Ramadhena, M. P. 2023. "Pengaruh Pijat Tuina Untuk Meningkatkan Berat Badan Pada Balita Di PMB D Kecamatan Rengasdengklok Kabupaten Karawang. Mahesa: Malahayati Health Student Journal, 3(10), 3166-3182. <https://doi.org/10.33024/Mahesa.V3i10>."
- Novelia, Shinta, Vindi Akati, Yeni Andriani, Evi Puspita Sari, Siti Khotijah, Cynthia Febriani, Raden Nova Nurutami, Puji Sutarna Putri, and Herlinah. 2025. "'Gebyar Ceria Pinam' as Complementary Therapy to Increase Toddlers' Appetite." *Journal of Community Empowerment for Multidisciplinary (JCEMTY)* 3(1):60–67. doi:10.53713/jcemty.v3i1.203.
- Ode Sri Kamba Wuna, Wa, Andriyani Andriyani, Program S. Studi, Kebidanan dan Profesi Bidan, and STIKes Pelita Ibu Jl Kampung Baru. 2023. "Pengaruh Vicarious Learning Tui NA Massage Terhadap Kenaikan Berat Badan Anak Usia 12-47 Bulan The Effect of Vicarious Learning Tui Na Massage on Weight Increase in Children Aged 12-47 Months." 33(3):16–23.
- Padilah, AlfikaL, and Linmus. 2024. "Musyawarah Masyarakat Desa (MMD I Dan MMD II) Serta Implementasi Praktif Profesi Keperawatan KOMunitas Di RW 10 RT 01-06 Kecamatan Priuk KOta Tangerang." *Ilmu Kesehatan* 4(1):1–6. doi:10.5455/mnj.v1i2.644xa.
- Peningkatan, PKPBM, E. Perawat-Seminar Nasional Universitas, and Undefined 2017. 2020. *Arief Yanto*.
- Prastiwi, Ikha & Alindawati, Rifka. 2020. "Baby Spa Treatment Untuk Optimalisasi Pertumbuhan Dan Perkembangan Bayi. CV. Media Sains Indonesia."
- Putri, S. D. Y., Wijayanti, A., Apriani, M., Yulia, & Aprillinda, I. 2025. "Pijat Tui Na Terhadap Peningkatan Nafsu Makan Pada Anak Dengan Usia 1–3 Tahun Di Poskesdes Kutapandan. Jurnal Kesehatan Abdurahman, 14(1), 99–105. <https://doi.org/10.55045/Jkab.V14i1.22>."
- Qonitaton, Anisa, Alfina Ifada, Dewi Larasari, and Wahyu Kristiningrum. 2024. "Edukasi Peningkatan Nafsu Makan Pada Balita Dengan Pijat Tui Na." *Prosiding Seminar Nasional Dan CFP Kebidanan Universitas Ngudi Waluyo* 3(1):234–40.
- Rangkuti, Saddiyah. 2022. "The Effect of Tui Na Acupressure on Appetite in Children (Toddlers) Aged 1-3 Years at the Wulandari Purba Clinic, Batang Quiz in 2022." *Science Midwifery* 10(5):3603–11. doi:10.35335/midwifery.v10i5.902.
- Rechika Amelia Eka Putri1, Dian Ratna Elmaghfuroh2. 2024. "Medic Nutricia 2024,." 4(1):1–6. doi:10.5455/mnj.v1i2.644xa.
- Saidah, Halimatus, and Rahma Kusuma Dewi. 2020. "Differences In The Effectiveness Of Massage Tuina And Grant Aromatherapy Oil Lemongrass (Cymbopogonardus) In Overcoming Difficulties Eating In Children In The Work Area Health Balowerti Kediri City." *STRADA Jurnal Ilmiah Kesehatan* 9(2):1309–22. doi:10.30994/sjik.v9i2.467.
- Siti Suciati, Anita Dwi Agustinasari, and Ernik Rustiana. 2022. "Pemberdayaan Masyarakat Di Bidang Kesehatan Ibu Dan Anak Melalui Pendidikan Kesehatan." *Janita : Jurnal Pengabdian Kepada Masyarakat* 2(1):46–50. doi:10.36563/pengabdian.v2i1.436.
- Sofiyati, Sofiyati. 2024. "Penyuluhan ASI Eksklusif Dengan Kejadian Stunting Pada Usia Balita (1-5 Tahun) Di Desa Kalikoa Kecamatan Kedawung Kabupaten Cirebon." *Natural: Jurnal Pelaksanaan Pengabdian Bergerak Bersama Masyarakat*. 2(1):17–35.
- Sulistiyawati, H. 2023. "Pengaruh Baby Massage Terhadap Peningkatan Nafsu Makan Dan Tidur Berkualitas Pada Balita Usia 1-5 Tahun. Jurnal Keperawatan, 22(1). Fakultas Vokasi, ITS Kes Insan Cendekia Medika Jombang."
- Tiwerly, Indah Benita, and Meri Anggryni. 2023. "Tui Na Massage Terhadap Appetite: Literature Review." *Nightingale: Journal of Nursing* 2(2):33–40.
- Tiwerly, Indah Benita, Vanny Leutualy, Vriyana Palapessy, and Wuilel Marok Akely. 2025. "Improving Toddlers' Appetite through Tuina Massage and Feeding Rules: A Preventive Approach to Stunting." *JGA* 10(3):449–58. doi:10.14421/jga.2025.103-02.

- Wang, Jun Xia, Ying Zhang, Shu Fang Wang, Juan Li, and Peng Cheng Li. 2022. "Efficacy of Xiyanping in the Treatment of Elderly Patients with Chronic Obstructive Pulmonary Disease and Its Effect on the Expression of GDF-15 and HIF-1 α in Serum." *Computational and Mathematical Methods in Medicine* 2022:6193110. doi:10.1155/2022/6193110.
- WHO., World Health Organization. 2024. "Child Malnutrition Estimates. <https://www.who.int/data/gho/data/themes/topics/joint-child-malnutrition-estimates-unicef-who-wb>."
- Wulandari, Siswi, and Eva Dwi Ramayanti. n.d. "Enhancing Appetite In Preschool Children Through Tuina Massage Therapy : A Traditional Approach." 2–7.
- Wulaningsih, Indah, Novita Sari, and Heny Wijayanti. 2022. "Pengaruh Pijat Tuina Terhadap Tingkat Nafsu Makan Balita Gizi Kurang." *Jurnal Edunursing* 6(1):33–38.