


Contents lists available at [IOCS](#)

**Science Midwifery**

journal homepage: [www.midwifery.iocspublisher.org](http://www.midwifery.iocspublisher.org)

# Kepiting massage effect on weight gain and illness in wasting toddlers

Hikmah Ifayanti<sup>1</sup>, Nopi Anggista Putri<sup>2</sup>, Linda Puspita<sup>3</sup>, Eliya Septi Lestari<sup>4</sup>  
<sup>1,2,3,4</sup>Fakultas Kesehatan, Universitas Aisyah Pringsewu, Pringsewu, Indonesia

ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p>Received Nov 16, 2025 Revised Nov 21, 2025 Accepted Des 1, 2025</p> <p><b>Keywords:</b></p> <p>Illness Frequency Kepiting Massage Toddlers Wasting Weight Gain</p>	<p>Wasting is an acute form of malnutrition in children under five, marked by low weight-for-height (<math>W/H &lt; -2</math> SD). It increases the risk of infection, impaired immunity, growth delays, and mortality. In 2020, an estimated 45.4 million under-five children were wasted globally. In Indonesia, the prevalence in 2023 was 8.5%, with 7.3% in Lampung, 2.87% in Pringsewu, and 9.49% in Pekon Pamenang. One complementary approach to improve nutritional status is pijat kepiting (kepiting massage), a combination of acupressure and pediatric massage believed to enhance appetite, digestion, and immunity. This study assessed its effect on weight gain and illness frequency among wasted children under five. Methods: A quasi-experimental non-equivalent control group pretest-posttest design was applied to 20 wasted children divided into intervention and control groups. The intervention group received kepiting massage in addition to standard care. Results: Weight increased significantly in both groups but was greater in the intervention group (0.66 kg vs. 0.30 kg; <math>p=0.002</math>). Illness frequency decreased more sharply in the intervention group (1.5 to 0.3 episodes/month; <math>p=0.010</math>) than in the control group (2.5 to 1.9; <math>p=0.014</math>), with significant between-group differences (<math>p=0.000</math>). Conclusion: Kepiting massage effectively improves weight gain and reduces illness frequency among wasted children.</p> <p><i>This is an open access article under the <a href="#">CC BY-NC</a> license.</i></p> <div></div>

**Corresponding Author:**

Hikmah Ifayanti,  
Fakultas Kesehatan,  
Universitas Aisyah Pringsewu,  
Jl. A Yani No. 1 A Tambak Rejo, Wonodadi, Kec. Pringsewu, Kabupaten Pringsewu, Lampung, 35372,  
Indonesia  
Email: [hikmahifayanti@aisyahuniversity.ac.id](mailto:hikmahifayanti@aisyahuniversity.ac.id)

## INTRODUCTION

Wasting in toddlers is a life-threatening form of acute malnutrition characterized by a weight-for-height z-score below  $-2$  SD. It results from inadequate nutrient intake and/or recurrent infectious diseases. Children with wasting have compromised immune function, making them highly vulnerable to infections, developmental delays, and mortality, particularly in cases of severe wasting. Rapid weight loss or failure to gain weight is a hallmark of wasting and can initiate long-term growth impairment. Recurrent or prolonged wasting increases the risk of stunting because

the body consistently lacks essential nutrients required for bone and linear growth (Luzingu et al., 2022)(WHO, 2021).

Globally, an estimated 45.4 million children under five (about 8%) were wasted in 2020 (UNICEF, 2021). In Indonesia, the prevalence of wasting in 2023 was 8.5%, with 7.3% in Lampung Province (RI, 2023). Pringsewu District reported a prevalence of 2.87%, but Pekon Pamenang still had a high rate of wasting (9.49%) and stunting (13.77%) (Lampung, 2023) (Dinas Kesehatan Kabupaten Pringsewu, 2024). Wasting significantly affects child development. In the short term, children exhibit reduced environmental exploration, limited social interaction, and apathy. Long-term consequences include physical and cognitive delays, lower academic achievement, and increased mortality risk. Early malnutrition also impairs brain development, which progresses most rapidly during the first 2–3 years of life (Black RE et al, 2021), (Ifayanti, Agustina, et al., 2024). Without timely intervention, wasting undermines future human resource quality. Recurrent infections are a major contributor to wasting. Infections reduce appetite and nutrient intake, exacerbating malnutrition, while malnourished children are more susceptible to infections, creating a vicious cycle. Evidence shows that toddlers with a history of infection are 7.196 times more likely to experience wasting (Ifayanti, Agustina, et al., 2024).

Addressing wasting requires comprehensive and innovative strategies. One promising non-pharmacological intervention is *kepiting massage*, a combination of acupressure and pediatric massage. Acupressure, a traditional Chinese therapy, stimulates specific acupoints to enhance digestive function and appetite through hypothalamic activation (Ifayanti et al., 2023), (Zhang Y, 2022). Studies indicate that acupuncture and acupressure can increase body weight, hemoglobin levels, and subcutaneous fat while reducing anorexia recurrence without serious side effects. These techniques are safe, low-cost, and feasible for implementation in community settings. Additionally, recent studies show that pediatric massage can improve weight gain and sleep quality in toddlers (Lita & R, 2024). This research aligns with Indonesia's national development agenda, particularly the *Asta Cita* of the President, which emphasizes strengthening human resource development through health, education, and science. Optimal early childhood nutrition is fundamental to building a strong future generation.

The urgency of choosing *kepiting massage* is not to replace existing evidence-based techniques, but to provide an intervention that is low-cost, integrative, easy to implement, and sustainable, addressing the needs of wasting management at the community level. In settings with limited resources and a high burden of malnutrition, such locally adapted approaches are essential to ensure that interventions are accessible, scalable, and sustainable. The proposed study utilizes a combination of acupressure and pediatric massage, both of which have established scientific evidence. However, no studies in Indonesia have systematically integrated these two modalities into a single technique—known as *kepiting massage*—nor evaluated its effects on wasted children. This research offers several novel contributions: a touch-based combinative intervention (acupressure and massage), a specific focus on wasting rather than general weight outcomes in toddlers, and community-based implementation in a high-prevalence area. Based on this background, the research question is: What is the effect of *kepiting massage* (a combination of acupressure and pediatric massage) on weight gain and illness frequency among wasted toddlers in Pekon Pamenang?

Hypothesis, the hypothesis in this study is that *kepiting massage* has an effect on weight gain and frequency of illness in toddlers in Pamenang.

## RESEARCH METHOD

The study was conducted in Pekon Pamenang, under the jurisdiction of the Bumiratu Health Center, Pringsewu Regency, Lampung. A quasi-experimental design with a non-equivalent control group and a pretest–posttest approach was employed. This design involved measuring outcomes in an intervention group before and after receiving the *kepiting massage*, while a separate control

group did not receive the intervention. The intervention population consisted of all toddlers with wasting in Pamenang in July 2025 (n=16), and the control population comprised newly registered toddlers in August 2025 (n=12). The intervention and control samples were both selected through accidental sampling, producing 10 toddlers with wasting in each group (Sulung & Yasril, 2023).

Kepiting massage is a combined technique of acupressure and pediatric massage. Acupressure offers several physiological benefits, including enhancing stamina, improving circulation, reducing pain, alleviating stress, supporting recovery, and preventing disease recurrence. Pediatric massage stimulates natural killer cell activity, thereby strengthening immunity. It also improves digestive function by increasing intestinal motility and enhancing nutrient absorption (Ifyanti et al., 2024).

Body weight was measured using calibrated scales and verified with posyandu records before and after the intervention. Illness frequency was documented based on parental reports and posyandu health records, specifically noting episodes of fever, cough, cold, or diarrhea prior to and following the intervention. The kepinging massage was administered twice weekly for four weeks by parents under the supervision of researchers and trained enumerators.

Pressure was applied 30 times at specific acupressure points: (a) ST 36 point: four finger-widths below the patella on the lateral side of the tibia (Maria Conchita Leyla Centis, Yuni Kusmiyati, 2022)(Ifayanti, Komalasari, et al., 2024). (b) ST 25 on the upper abdomen midway between the ends of the sternum (Maria Conchita Leyla Centis, Yuni Kusmiyati, 2022)(Wintoro & Wahyuningsih, 2022). (c) SP 6: four finger-widths above the medial malleolus (Maria Conchita Leyla Centis, Yuni Kusmiyati, 2022). (d) CV 12: five finger-widths above the navel (Arya et al., 2022). (e) L14: between the thumb and index finger (Tresiana Effendi et al., 2020). (f) GB 39: four finger-widths above the lateral (J.-N. Liu et al., 2021). (g) KI 1: Located one-third of the way toward the arch on the sole of the foot (Endah & Patriyani, 2022). (h) BL 23: located 2 fingers to the right and left of the spine, parallel to the center (Endah & Patriyani, 2022). (i) Perform pediatric massage 3 times each, namely massaging above the lips outward, massaging below the lips outward, massaging around the lips, massaging the cheeks in a circular motion, gently moving the chin, massaging the ears along the ears, neck, and chin (Ifayanti et al., 2023)(Ifayanti et al., 2024).

The independent variable (kepinging massage) and the dependent variables (weight gain and frequency of illness) in this study were measured using numerical data. Therefore, a normality test was conducted prior to the bivariate analysis. Univariate analysis was presented using mean values. Bivariate analysis to assess differences in weight before and after the kepinging massage was performed using the paired t-test. Differences in the frequency of illness before and after the intervention were analyzed using the Wilcoxon test. To determine the effect of kepinging massage on weight gain and illness frequency between the intervention and control groups, the Mann-Whitney test was used (Lolombulan, 2020).

## RESULTS AND DISCUSSIONS

Based on the analysis performed using SPSS 27.0, the Shapiro-Wilk normality test results in Table 1 show that the toddler weight variable in both the pretest and posttest had p-values greater than 0.05 in both groups (control: 0.51 and 0.62; intervention: 0.333 and 0.174). Therefore, the weight data were considered normally distributed. In contrast, the illness frequency variable had p-values below 0.05 in all pretest and posttest measurements (control: 0.002 and 0.004; intervention: 0.002 and 0.000), indicating that the data were not normally distributed. Based on these findings, the toddler weight variable was analyzed using parametric tests, while the illness frequency variable was analyzed using non-parametric tests. The Shapiro-Wilk results also showed that the weight-gain variable (posttest minus pretest) had a p-value < 0.05, and the posttest illness frequency variable likewise had a p-value < 0.05. These results indicate that both variables were not normally distributed. Consequently, differences in weight gain and illness frequency between the

intervention and control groups were further analyzed using the Mann-Whitney test, as presented in Table 1.

The results of the analysis showed clear differences in mean values between the control and intervention groups. For the weight variable, both groups experienced an increase after the intervention. In the control group, mean body weight rose from  $10.72 \pm 3.12$  kg to  $11.02 \pm 3.09$  kg, whereas in the intervention group it increased from  $10.67 \pm 2.51$  kg to  $11.33 \pm 2.22$  kg. The paired t-test indicated that these increases were statistically significant in both groups ( $p=0.000$ ). Between-group comparison after the intervention demonstrated that the weight gain in the intervention group (0.66 kg) was greater than that of the control group (0.30 kg), with a significant difference based on the Mann-Whitney test ( $p=0.002$ ). Regarding illness frequency, the control group showed a reduction from  $2.5 \pm 0.71$  to  $1.9 \pm 0.57$  episodes, while the intervention group experienced a larger decrease from  $1.5 \pm 0.71$  to  $0.3 \pm 0.48$  episodes. The Wilcoxon test confirmed that these reductions were statistically significant in both groups ( $p=0.014$  for the control group;  $p=0.010$  for the intervention group). Between-group comparison indicated that post-intervention illness frequency was significantly lower in the intervention group than in the control group, as shown by the Mann-Whitney test ( $p=0.000$ ). These findings indicate that the intervention had a greater effect on increasing body weight and reducing illness frequency among toddlers compared with standard care alone, as shown in Table 2.

**Table 1.** Shapiro wilk normality test

Variable	P Value*	P Value*	P-Value*
	Control Group	Intervention Group	
Toddler Weight Pre Test	0.51	0.333	0.002
Toddler Weight Post Test	0.62	0.174	
Toddler Weight Gain			
illness frequency Pre Test	0.002	0.002	0.004
illness frequency Post Test	0.004	0.000	
illness frequency			

Description:

\* : Shapiro Wilk Normality Test

**Table 2** Comparison of the mean scores of toddler weight gain and illness frequency between the study groups

Variable		Mean+SD	Mean+SD	P Value
		Control Group	Intervention Group	
Toddler Weight ( Kg)	Pre Test	$10.72 \pm 3.12$	$10.67 \pm 2.51$	0.002 <sup>c</sup>
	Post Test	$11.02 \pm 3.09$	$11.33 \pm 2.22$	
	P Value	0.000 <sup>a</sup>	0.000 <sup>a</sup>	
Toddler Weight Gain (Kg)		0.30	0.66	
Illness frequency	Pre Test	$2.5 \pm 0.71$	$1.5 \pm 0.71$	0.000 <sup>c</sup>
	Post Test	$1.9 \pm 0.57$	$0.3 \pm 0.48$	
	P Value	0.014 <sup>b</sup>	0.010 <sup>b</sup>	

Description:

a: Paired T-test

b: Wilcoxon test

c: Mann-Whitney test

This study demonstrates that the keping massage intervention—a combination of acupressure and pediatric massage—had a positive effect on weight gain and reduced illness frequency among toddlers with wasting. The findings show significant increases in mean weight in both the intervention and control groups, with the intervention group achieving greater weight gain, indicating a beneficial effect of keping massage on nutritional improvement. Similarly, both groups experienced reductions in illness frequency, but the decline was more pronounced in the

intervention group, suggesting that the intervention contributed to improved immunity and reduced morbidity.

The findings align with prior studies reporting that pediatric or infant massage promotes weight gain in neonatal and small-infant populations. Recent meta-analyses and systematic reviews have shown that moderate-pressure massage accelerates weight gain and facilitates the achievement of full enteral feeding among preterm infants (Lu et al., 2020), (Mollà-Casanova et al., 2023), (Zhang et al., 2023). A specific analysis of the population of children under 5 years of age also reported significant weight gain benefits when pediatric massage was administered in a structured manner compared to routine care (Su et al., 2025). Additionally, evaluations of Tui Na/pediatric tuina and acupressure interventions have highlighted improvements in growth parameters and reductions in minor ailments, although protocol heterogeneity remains substantial (Yang et al., 2025), (Xiaoyu et al., 2023). Variability in effect size across studies may be influenced by differences in population characteristics, intervention duration, nutrition standards, and control of confounding variables.

Several physiological mechanisms have been proposed to explain the effects of massage and acupressure on weight gain and reduced morbidity. These include vagal nerve stimulation, which enhances gastrointestinal motility and digestive hormone secretion; improved peripheral blood flow and local metabolism; and stress modulation through reduced cortisol levels, which supports both immune function and growth. Evidence from physiological models and biomarker assessments (e.g., vagal tone, salivary cortisol) supports these mechanisms, although further mechanistic research is needed (Liu et al., 2025), (Chen et al., 2023), (Fu et al., 2022).

This study has several strengths, including the comparative design with pre-post measurements, the ability to quantify changes attributable to the intervention, and the use of clinically relevant outcomes aligned with community-based wasting prevention. However, limitations include a relatively small sample size, limited follow-up duration, the inability to implement blinding in massage interventions, potential confounding factors such as variability in energy intake, immunization status, socioeconomic conditions, and household infection exposure, as well as heterogeneity in massage/acupressure protocols. Similar limitations have been noted in recent systematic reviews, underscoring the need for larger randomized controlled trials with standardized intervention protocols (Zhang et al., 2023), (Su et al., 2025), (Xiaoyu et al., 2023).

Overall, this study supports the potential of keping massage as a complementary intervention to improve weight gain and reduce illness frequency among toddlers with wasting. When integrated into community health programs, such approaches may offer practical, low-cost, and culturally acceptable strategies to enhance child growth and reduce morbidity.

## CONCLUSION

The keping massage intervention demonstrated beneficial effects on both weight gain and illness frequency among toddlers. These findings can serve as a basis for formulating evidence-based policies that promote: (1) The integration of keping massage into community-based health programs (such as Posyandu, home visits, and mother-toddler classes). (2) The standardization of procedures and training for community health workers and healthcare providers, ensuring that keping massage is performed correctly and safely. (3) The development of guidelines for non-pharmacological interventions that include keping massage as an easily applicable option in resource-limited settings. (4) The strengthening of promotive and preventive health policies, particularly for reducing wasting through approaches that do not require expensive equipment. (5) The combination of massage interventions with improvements in nutrition and sanitation, enabling the establishment of comprehensive and sustainable policies.

## ACKNOWLEDGEMENTS

The authors would like to express their deepest appreciation to the Directorate of Research and Community Service Kemendikisaintek, for funding this study through the *Dosen Pemula* Research Grant Scheme in 2025. This financial support was instrumental in enabling the successful implementation of the research. The authors also gratefully acknowledge the invaluable contributions of the participating families, community health workers, and all members of the research team, whose collaboration and assistance were essential to the completion of this project.

## References

- Arya, B., Nihayah, F., & Cholifah, S. (2022). Pijat Akupresur dalam Meningkatkan Nafsu Makan Balita sebagai Penguatan Pencegahan Kurang Gizi dan Stunting *Procedia Of Social Sciences and Humanities*. *Procedia Of Social Sciences and Humanities*, 0672(c), 845-849.
- Black RE et al. (2021). Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet*, 397(10284).
- Chen, S.-C., Cheng, H.-L., Wang, D.-D., Wang, S., Yin, Y.-H., Suen, L. K.-P., & Yeung, W.-F. (2023). Experience of parents in delivering pediatric tuina to children with symptoms of attention deficit hyperactivity disorder during the COVID-19 pandemic: qualitative findings from focus group interviews. *BMC Complementary Medicine and Therapies*, 23(1), 53. <https://doi.org/10.1186/s12906-023-03891-3>
- Dinas Kesehatan Kabupaten Pringsewu. (2024). *Profil Dinas Kesehatan Kabupaten Pringsewu*.
- Endah, R., & Patriyani, H. (2022). Pelatihan Akupresur Untuk Meningkatkan Daya Tahan Tubuh Masyarakat. *Empathy*, 3(2), 139-145.
- Fu, S., Li, Y., Li, R., Ren, F., Piao, Y., Wang, Y., & Luo, M. (2022). Pediatric tuina for allergic rhinitis in children: A systematic review and meta-analysis of randomized controlled trials. *Frontiers in Pediatrics*, 10. <https://doi.org/10.3389/fped.2022.1043322>
- Ifayanti, H., Agustina, R., Puspita, L., Pringsewu, U. A., Lampung, P., Pringsewu, U. A., Lampung, P., Pringsewu, U. A., Lampung, P., & Email, C. (2024). *The Prediction Model for Wasting in Toddlers within The Gisting Sub-district Lampung Authors* : 1105-1114.
- Ifayanti, H., Komalasari, & Puspita, L. (2023). *Surat Pencatatan Ciptaan; Pijat Kepiting (Akupresur Dan Masase Pencegah Balita Wasting Dan Stunting)*. Republik Indonesia Kementerian Hukum Dan Hak Asasi Manusia.
- Ifayanti, H., Komalasari, & Sulis, S. S. (2024). *Laporan Penelitian Pengaruh Akupresur pada Titik ST 36, SP6, KI1, LI4, CV12 dan ST 25 terhadap Daya Tahan Tubuh Balita Gizi Kurang di Sidoharjo Tulang Bawang*. Universitas Aisyah Pringsewu.
- Ifyanti, H., Pratiwi, A. R., Komalasari, K., & Puspita, L. (2024). Pemberdayaan Ibu dalam Melakukan Pijat Balita dengan Metode Bioakupressure dan Pediatric Massage untuk Meningkatkan Daya Tahan Tubuh Balita Wasting di Pekon Sidokaton. *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, 7(4), 1429-1442. <https://doi.org/10.33024/jkpm.v7i4.12565>
- Imandiri, A., P., D. I., L., M. S., & Priskila, O. (n.d.). *Peran dan Fungsi Meridian, perjalanan Meridian dan Titik Akupunktur pada Meridian Limpa dan Lambung*. Universitas Airlangga.
- Lampung, D. K. P. (2023). *Profil Dinas Kesehatan Provinsi Lampung*.
- Lita, D., & R, S. (2024). Pengaruh pijat bayi terhadap nafsu makan dan berat badan bayi. *J Midwifery Care*, 5(1):95-10.
- Liu, D., Lin, T.-Y., Yu, T., Wu, F., Zhang, Y., Liu, J.-Y., Sun, J.-W., & Zhang, H.-Y. (2025). Effectiveness and safety of Tuina massage therapy for paediatric fever: a systematic review and meta-analysis of randomised controlled trials. *BMC Pediatrics*, 25(1), 343. <https://doi.org/10.1186/s12887-025-05441-x>
- Liu, J.-N., Tang, X.-Q., He, X.-Q., Wu, X.-M., & Sui, M.-H. (2021). Location of acupoint Xuanzhong(GB39). *Zhen Ci Yan Jiu*, 46(1):73-5.
- Lolombulan, J. H. (2020). *Analisis Data Statistika Bagi Peneliti Kedokteran dan Kesehatan*. ANDI.
- Lu, L.-C., Lan, S.-H., Hsieh, Y.-P., Lin, L.-Y., Chen, J.-C., & Lan, S.-J. (2020). Massage therapy for weight gain in preterm neonates: A systematic review and meta-analysis of randomized controlled trials. *Complementary Therapies in Clinical Practice*, 39, 101168. <https://doi.org/10.1016/j.ctcp.2020.101168>
- Luzingu, J. K., Stroupe, N., Alaofe, H., Jacobs, E., & Ernst, K. (2022). Risk factors associated with under-five stunting, wasting, and underweight in four provinces of the Democratic Republic of Congo: analysis of

- the ASSP project baseline data. *BMC Public Health*, 22(1), 1-33. <https://doi.org/10.1186/s12889-022-14842-x>
- Maria Conchita Leyla Centis, Yuni Kusmiyati, A. S. (2022). *Peran Akupresur Ki3, SP 6, ST 36, ST 25 untuk Meningkatkan Berat Badan, Tinggi Badan, dan Perkembangan Motorik pada Baduta Stunting*.
- Mollà-Casanova, S., Sempere-Rubio, N., Muñoz-Gómez, E., Aguilar-Rodríguez, M., Serra-Añó, P., & Inglés, M. (2023). Effects of massage therapy alone or together with passive mobilisations on weight gain and length of hospitalisation in preterm infants: Systematic review and meta-analysis. *Early Human Development*, 182, 105790. <https://doi.org/10.1016/j.earlhumdev.2023.105790>
- RI, K. (2023). *Badan Kebijakan Pembangunan Kesehatan. Laporan SSGI 2023*.
- Su, H., Mao, H., H, Y. Z. c, Yin, H., Chen, S., Hong, J., Yang, Y., Song, Y., Chen, S. C., Wang, H., Xu, L., Li, H., Zhou, M., & Li, X. (2025). Impact of pediatric Tui Na over three months on children's growth: A systematic review and meta-analysis of randomized controlled trials. *European Journal of Integrative Medicine*, 79. <https://doi.org/https://doi.org/10.1016/j.eujim.2025.102548>
- Sulung, N., & Yasril, A. I. (2023). *Metode Besar Sampel dan Teknik Pengambilan Sampling Untuk Penelitian Kesehatan*. Deepublish Digital.
- Tresiana Effendi, M., Fatmasari, D., & Sakundarno Adi, M. (2020). The Effect of Acupressure Point of LI4, PC6, ST25, and ST36 on Increasing the Immunoglobulin and Weight Loss among Toddler. *International Journal of Nursing and Health Services (IJNHS)*, 3(3), 364-373. <https://doi.org/10.35654/ijnhs.v3i3.200>
- UNICEF. (2021). *Malnutrition – Wasting*.
- WHO. (2021). WHO recommendations on the management of severe acute malnutrition in infants and children. *World Health Organization*. [http://apps.who.int/iris/bitstream/10665/95584/1/9789241506328\\_eng.pdf?ua=1%0Ahttps://www.who.int/teams/nutrition-and-food-safety/guidelines/severe-acute-malnutrition](http://apps.who.int/iris/bitstream/10665/95584/1/9789241506328_eng.pdf?ua=1%0Ahttps://www.who.int/teams/nutrition-and-food-safety/guidelines/severe-acute-malnutrition)
- Wintoro, P. D., & Wahyuningsih, A. (2022). Efektifitas Pijat Bayi Terhadap Penambahan Berat Badan Bayi Di Klinik Kusuma Husada Bayat. *INVOLUSI: Jurnal Ilmu Kebidanan*, 12(1), 23-28. <https://doi.org/10.61902/involusi.v12i1.337>
- Xiaoyu, W., Lianjun, Y., Xue, B., Zefang, M., Yikun, W., Huanan, L., & Jingui, W. (2023). Pediatric tuina for recurrent respiratory tract infection in children: A systematic review and meta-analysis. *Medicine*, 102(51). [https://doi.org/https://journals.lww.com/md-journal/fulltext/2023/12220/pediatric\\_tuina\\_for\\_recurrent\\_respiratory\\_tract.42.aspx](https://doi.org/https://journals.lww.com/md-journal/fulltext/2023/12220/pediatric_tuina_for_recurrent_respiratory_tract.42.aspx)
- Yang, Q., Wu, J., Deng, X., Chen, L., & Chen, Y. (2025). To Evaluate the Effect of Pediatric Massage Combined with Comprehensive Management on Growth Parameters and Biochemical Indicators in Children with Short Stature. *International Journal of General Medicine*, Volume 18, 4987-5000. <https://doi.org/10.2147/IJGM.S535676>
- Zhang, Y., Duan, C., Cheng, L., & Li, H. (2023). Effects of massage therapy on preterm infants and their mothers: a systematic review and meta-analysis of randomized controlled trials. *Frontiers in Pediatrics*, 11. <https://doi.org/10.3389/fped.2023.1198730>
- Zhang Y. (2022). Acupressure for pediatric anorexia: A meta-analysis. *B. MC Complement Med Ther*, 22(1):140.