HERBAL EXTRACT OF GINGER AND HONEY TO ACUTE RESPIRATORY INFECTION IN TODDLER; LITERATURE REVIEW

Esti Susilowati[1], Fitri Yuliana[2*], Ali Rakhman Hakim[3]

[1,2]Program Studi Sarjana Kebidanan, Fakultas Kesehatan, Universitas Sari Mulia
[3]Program Studi Sarjana Farmasi, Fakultas Kesehatan, Universitas Sari Mulia
[*]Corresponding e-mail: fitri.yuliana89@gmail.com

ABSTRAK : EKSTRAK HERBAL JAHE DAN MADU UNTUK INFEKSI PERNAPASAN AKUT PADA BALITA; TINJAUAN LITERATUR

Latar Belakang: ISPA adalah penyebab utama morbiditas dan mortalitas pada balita. ISPA akan menyebabkan kematian pada bayi dan balita karena memiliki dampak pada gangguan fungsi pernapasan. Infeksi saluran pernafasan akut merupakan penyakit yang sering terjadi pada balita dengan kejadian tiga sampai enam kali dalam setahun. Pemberian herbal tradisional sebagai terapi non farmakologi dapat digunakan sebagai terapi pendamping perawatan medis dalam menangani ISPA pada balita. Kandungan herbal jahe dan madu dikenal dapat menurunkan tingkat keparahan batuk di malam hari sehingga mengurangi gangguan tidur. Kualitas tidur yang baik dapat memperbaiki kondisi ISPA sehingga tidak terjadi komplikasi yang lebih buruk.

Tujuan: Mengidentifikasi bukti ilmiah ekstrak herbal jahe dan madu terhadap ISPA pada Balita.

Metode: Penelitian ini menggunakan pendekatan Literatur Review dengan mencari artikel pada database Pubmed, DOAJ, Google Scholar dengan kata kunci “Balita, Jahe, Madu, dan ISPA” dan diperoleh 6 artikel yang sesuai dengan penilaian The JBI *Critical Apprasial Tool.*

Hasil: Berdasarkan hasil penelitian bahwa hasil yang ditemukan dari enam (6) jurnal Internasional, 5 dengan metode *RCT* dan 1 menggunakan metode *Quasi Eksperimen*. terbukti dari 3 jurnal yang membenarkan bahwa jahe efektif dalam mengatasi batuk dan ISPA, dan 3 diataranya masih belum menemukan efek dari madu untuk penanganan ISPA pada balita. Dari hasil yang didapatkan Terapi non farmakologi pemberian jahe madu terbukti dapat menurunkan keparahan batuk serta meningkatkan kualitas tidur pada penderita ISPA.

Kesimpulan: Ekstrak herbal jahe dan madu dapat mengurangi batuk maupun ISPA pada balita, terbukti dari 3 jurnal yang membenarkan bahwa jahe efektif dalam mengatasi batuk dan ISPA, dan 3 diataranya masih belum menemukan efek dari madu untuk penanganan ISPA pada balita.

Saran: Diharapkan dapat digunakan sebagai obat herbal yang aman tanpa menimbulkan efek samping

Kata Kunci: Balita, Ekstrak Herbal Jahe, Honey, ISPA

ABSTRACT

Background: Acute respiratory infections (ARI) is the main cause of morbidity and mortality in children under five. ARI will cause death in infants and toddlers because it has an impact on respiratory function disorders. Acute respiratory infection is a disease that often occurs in toddlers with an incidence of three to six times a year. The provision of traditional herbs as non-pharmacological therapy can be used as a complementary therapy for medical care in dealing with ARI in toddlers. The herbal content of ginger and honey is known to reduce the severity of coughs at night, thereby reducing sleep disturbances. Good sleep quality can improve the condition of ARI so that there are no worse complications.

Purpose: Identify scientific evidence of herbal extracts of ginger and honey to ARI in toddlers.

Method: This study uses a Literature Review approach by searching for articles in the Pubmed, DOAJ, Google Scholar databases with the keywords "Toddler, Ginger, Honey, and Acute Respiratory Infections" and obtained 6 articles that match the assessment of The JBI Critical Apprasial Tool.

Results: Based on the results of the study that the results were found from six (6) international journals, 5 using the RCT method and 1 using the Quasi Experiment method. it is proven from 3 journals that confirm that ginger is effective in overcoming coughs and ARI, and 3 of them still have not found the effect of honey for handling ARI in toddlers. From the results obtained, non-pharmacological therapy with ginger honey has been shown to reduce cough severity and improve sleep quality in ARI patients.

 DOI 10.33024, http://ejurnalmalahayati.ac.id/index.php/kebidanan

Conclusion: Ginger and honey herbal extracts can reduce coughs and ARI in toddlers, as evidenced by 3 journals that confirm that ginger is effective in treating coughs and ARIs, and 3 of them still haven't found the effect of honey for treating ARI in toddlers.

Suggestion: It is hoped that it can be used as a safe herbal medicine without causing side effects

Keyword: Acute Respiratory Infections, Extract of Ginger, Honey, Toddler

INTRODUCTION

Acute Respiratory Tract Infection (ARI) is still a disease that is often experienced by children under five with a high mortality and morbidity rate. However, ARI is still often forgotten, so ARI is dubbed as *The forgotten A killer of Children.* (Jayatmi & Imaniyah, 2019). Acute Respiratory Infections or ARI is an infection that attacks the throat, nose and lungs. ARI is the most frequent disease in the list of 10 (ten) most diseases in public health centers and hospitals. This disease begins with fever, sore throat or pain when swallowing, runny nose, dry cough or phlegm. The cause of ARI comes from *the genus Streptococcus, Staphylococcus, Pneumococcus,Hemovilus, Bordetella, and Corynebacterium.* Viruses that cause ARI are *Microvirus, Adenovirus, Coronavirus, Picomavirus*, and *Herpesvirus* (Setyaningrum, 2019).

In Indonesia, ARI is a disease that often occurs in toddlers. Cough and cold disease in children under five in Indonesia is estimated at three to six times per year. This means that an average toddler gets a cough and cold attack three to six times a year. Toddlers with severe pneumonia have a 20.274% risk of dying (Setyaningrum, 2019).

Traditional herbs as non-pharmacological therapy can also be used to treat ARI in toddlers. Traditional herbs against ARI can use honey ginger herbal drink because it is very effective and safer to use. Honey contains pinobanksine and vitamin C as antioxidants and antibiotics (Setyaningrum, 2019).

Ginger is one of the most effective herbal medicines to treat coughs because it contains essential oils which are active substances to treat coughs, while honey contains antibiotics that function to relieve coughs (Setyaningrum, 2019).

Honey can stimulate the release of the hormone melatonin which functions to trigger the release of growth hormone which regulates the restoration of the body's physiological functions, maintains and rebuilds bones, as well as muscles and other body tissues (Wahisah, 2018).

Given that ginger and honey are known to have benefits for treating ARI, it is necessary to further identify the scientific evidence that supports this non-pharmacological therapy.

RESEARCH METHODS

The method used in this research is *literature review.* The sources of literature used in this study were traced through *Mendeley Web, Google Scholar, Pubmed,* and *DOAJ with the keywords "ARI, Toddler, Ginger, and Honey"*. Based on article searches in the database, there are 275 articles and 6 articles are obtained that meet the criteria and are in accordance with the assessment of *The JBI Critical Appraisal Tool.*

RESEARCH RESULTS

Based on the results of the literature review, it was found that there were studies that combined ginger and honey herbal extracts to treat ARI in toddlers and there were studies that compared the two. The results of the article review can be seen in the following table:

The results of a review of 6 articles, there are 2 articles that combine herbal extracts of ginger and honey to treat ARI in toddlers, 3 articles about the effect of honey to treat ARI in toddlers, and 1 article about the effect of ginger to treat ARI in toddlers.

Table 1
Data Extraction

Tahun	Sumber	Tujuan	Metode Penelitian	Hasil/ Temuan
2021	*Google Scholar*	Knowing the effect of the comparison of a mixture of ginger and honey with dextromethorphan on dry cough in children	Two-way analysis of variance test	The mixture of ginger and honey helped faster recovery compared to dextromethorphan (p value 0.005).
2017	*Pubmed*	Evaluating the efficacy and safety of an Iranian poly herbal formulation (compound honey syrup) in the treatment of mild to moderate pediatric asthma	*Randomized Controlled Trial*	A mixture of honey and ginger syrup is very effective and can be used as an asthma treatment (P<0.05).
2017	*Pubmed*	Comparing the effects of two types of Iranian honey with diphenhydra mine (DPH) at pediatric nocturnal cough and sleep quality of children and the elderly	*Randomized Controlled Trial*	Honey was superior to DPH in relieving cough symptoms in children and improving children's sleep quality (P<0.05).
2020	*Google Scholar*	Assessing the efficacy and safety of ginger extract compared with loratadine for the treatment of AR	*Randomized Controlled Trial*	Ginger extract and loratadine treatment group significantly reduced TNSS scores, but there was no significant difference between the two groups. In acoustic rhinometry measurements, the ginger treatment group gradually increased the estimated nasal cavity volume and decreased the distance from the nostrils, but the loratadine group did not cause any changes (P<0.05).
2018	*Pubmed*	Evaluating the effectiveness of honey for acute cough in children in an outpatient setting	*Randomized Controlled Trial*	Scores of all cough-related aspects decreased after in-group intervention. The mean difference between cough-related aspects was significantly different between the three groups except for cough frequency and sleep quality in the children (P<0.05).
2020	*Pubmed*	Knowing the effect of Sumbawa ginger and honey drinks on cough frequency in children with respiratory infections	*Quasy Experiment*	The average frequency of coughing in children before being given ginger water and Sumbawa honey was 63.8 times. The mean (mean) frequency of coughing decreased after consuming ginger water and honey from Sumbawa to 46.75 times. Statistical test results obtained p value = 0.016 (p-value <= 0.05) which means that there is an effect of giving honey ginger drink to reduce cough frequency in children 3-5 years

 DOI 10.33024, http://ejurnalmalahayati.ac.id/index.php/kebidanan

DISCUSSION

The results of a review of 6 articles related to the theme obtained 5 studies using the *Randomized Control Trails* and 1 article using a *Quasi Experiment.* The research method used *Randomized Control Trails* from researchers Deepali L. Jaybhaye, Saeed Sadr, Parviz Ayazi, Rodsarin Yamprasert, and Oduwole O. Cough is a protective reflex caused by obstruction or irritation of the airways. Many medicines are available for the treatment of dry cough which can cause drowsiness in children due to the side effects produced by the medicine, this research conducted that ginger and honey are widely used in Indian families, and in Ayurveda ginger and honey are used for the treatment of dry cough and productive. In accordance with the journal with the largest sample of 100 people who proved that ginger and honey extracts had significant benefits in reducing the frequency of ARI. Evaluating the effectiveness and safety of Iranian poly herbal formulations (compound honey syrup) in the treatment of mild to moderate pediatric asthma, honey proved to be better than Diphenhydramine (DPH) in treating cough in children caused by Acute Respiratory Tract Infection (ARI), Each group received double doses of honey type 1 and 2 (10ml), DPH (10ml) given 30 minutes before bedtime on 2 consecutive nights (2 doses) for ages 1-5 years and 5-12 years. Comparison of ginger extract and loratadine in the treatment of allergic rhinitis (AR), this method was administered to 40 ARI patients treated with ginger extract (50mg) and loratadine (10mg) in a randomized controlled trial, double-blind for 3 and 6 weeks both proved to be the same - Equally effective in reducing cough significantly. In this study loratadine was favored in terms of side effects compared to ginger extract which caused a slight effect of drowsiness, fatigue, dizziness and constipation, ginger extract can be used as an alternative treatment besides loratadine. Comparison of Placebo Honey and Salbutamol with the aim of overcoming acute cough in children by comparing honey with other chemical cough medicines, it is proven that honey is able to beat other chemical drugs such as placebo, salbutamol with a record given for up to three consecutive days. However, honey has no difference with dextrimethorphan and bromelain but honey is prohibited for the treatment of children under 12 months, because honey may contain bacteria that can reduce immunity in children. (Jaybhaye et al., 2021) (Sadr et al., 2017) (Ayazi et al., 2017) (Yamprasert et al., 2020) (Oduwole O, Udoh EE, Oyo-Ita A, 2019).

The research method used a *Quasi Experiment*, namely researcher Ari Khusuma, handling coughs due to Respiratory Tract Infections in children using ginger and honey drinks. 2.5cc before going to bed from statistical data using ginger and pure honey from Sumbawa has been shown to significantly reduce coughing with an incubation period of 2 to 3 weeks. (Khusuma et al., 2021).

Deepali L. Jaybhay (2021), Ari Khusuma (2021), and Ramadhani, et.al (2018) used quantitative descriptive research. Where Deepali L. Jaybhay uses data processing tools using observations, questionnaires and interviews. Meanwhile, Ari Khusuma in his research carried out data processing through timers, stethoscopes, observation sheets, and questionnaires. Deepali L. Jaybhay (2021) conducted a study using 100 patients by comparing ginger and honey with dextromethorphan and found ginger to be more effective and cough recovery time faster. while Khusuma, et.al. (2021) conducted a study that focused on Sumbawa ginger and honey and also proved to be effective in overcoming ARI and even beneficial for the prevention of covid 19. (Jaybhaye et al., 2021) (Khusuma et al., 2021) (Ramadhani et al., 2018).

Ayazi, et.al (2017) and Oduwole O (2018) and Saeed Sadr (2017) both conducted research that focused on the benefits of honey, a data processing tool with a questionnaire with a quantitative research type. Meanwhile, Oduwole O in his research carried out data processing through a comparative study with the type of randomized control ledtrials (RCTs) research. The three studies did not find significant results and even Oduwole O did not recommend giving honey to children under 12 months on the grounds that there was a possibility of bacteria contaminated with honey that could cause constipation in children. (Ayazi et al., 2017) (Oduwole O, Udoh EE, Oyo-Ita A, 2019) (Sadr et al., 2017).

Yamprasert, R. (2020) using a quantitative study using a prospective randomized, double-blind and controlled trial (phase two) conducted a study comparing ginger and loratadine by treating two different groups and both have proven to be equally effective in overcoming ARI in toddlers and the elderly. (Yamprasert et al., 2020)

CONCLUSION

Based on the results of a review of articles on handling ARI in toddlers, it can be concluded that herbal extracts of ginger and honey can reduce cough and ARI in toddlers, as evidenced by 3 journals that confirm that ginger is effective in treating cough and ARI, and 3 of them still have not found the

effect of ARI. honey for the treatment of ARI in toddlers. Non-pharmacological therapy of ginger honey has been shown to reduce the severity of cough in patients with ARI. This proves several research results that have been done to clients with ARI, that giving ginger honey can be used as an alternative to ARI treatment that is cheap, easy, and safe. The results of the analysis from 6 journals showed that ginger extract was proven to be effective in alleviating ARI symptoms in toddlers and the elderly and a mixture of ginger and honey extracts was more effective for treating coughs.

SUGGESTION

Giving honey ginger drink can reduce the severity of cough in children, because the essential oil content in ginger which is an active substance that can treat coughs, while the antibiotic substances in honey can cure some infectious diseases such as cough in children with ARI.

REFERENCE

Amrillah, N. W. (2020). *Faktor-Faktor Yang Berhubungan Dengan Kejadian Ispa Pada Balita : Literature Review*. http://repository.bku.ac.id [Diakses 11 Desember 2021]

Ayazi, P., Mahyar, A., Yousef-Zanjani, M., Allami, A., Esmailzadehha, N., & Beyhaghi, T. (2017). Comparison of the effect of two kinds of iranian honey and diphenhydramine on nocturnal cough and the sleep quality in coughing children and their parents. *PLoS ONE*, *12*(1), 1–11. https://doi.org/10.1371/journal.pone.0170277 [Diakses 25 Desember 2021]

Dwiyana, N. (2018). *Sikap Ibu Tentang Pencegahan Infeksi Saluran Pernafasan Atas (Ispa) Pada Balita : Literature Review*. http://localhost:8080/xmlui/handle [Diakses 11 Desember 2021]

Jayatmi, I., & Imaniyah, E. (2019). Determinan Kejadian Infeksi Saluran Pernapasan Akut (ISPA) pada Balita. *Jurnal Ilmiah Kebidanan Indonesia*, *9*(01). https://doi.org/10.33221/jiki.v9i01.212 [Diakses 11 Desember 2021]

Jaybhaye, D. L., Chandra, S., Johar, S., & Nagre, A. S. (2021). Comparative effect of mixture of ginger and honey with dextromethorphan in dry cough in children. *International Journal of Basic & Clinical Pharmacology*, *10*(5),545. https://doi.org/10.18203/2319-2003.ijbcp20211651 [Diakses tanggal 15 Januari 2022].

Keifer Geffenberger. (2018). Pengertian Balita (Bayi Bawah Lima Tahun). *Angewandte Chemie International Edition, 6(11), 951–952.*, 10–43. https://www.mendeley.com/search/?page=1&publishedIn=Angewandte Chemie International Edition%2C 6%2811%29%2C 951–952.&query=Pengertian Balita %28Bayi Bawah Lima Tahun%29.&sortBy=relevance [Diakses 30 November 2021]

Kementerian Kesehatan RI. (2017). Infodatin: Pusat data dan informasi - Situasi Kesehatan Anak Balita di Indonesia. In *Kementerian Kesehatan Republik Indonesia* (Issue situasi kesehatan anak balita di Indonesia, pp. 1–8). https://www.mendeley.com/catalogue/8176cbc3-f391-376f-b98d-c19ff197a527/?utm_source=desktop [Diakses 30 November 2021]

Khusuma, A., Roselyn, A. P., Agata, A., Polytechnic, M. H., Tenggara, W. N., Food, N., Agency, D., Jakarta, C., & Lampung, B. (2021). Effects of ginger and Sumbawa honey drinks on cough frequency in children with respiratory tract infection. *International Conference on Science and Technology (ICST)*, *2*(June),489492.https://procceding.unram.ac.id [Diakses Tanggal 20 Januari 2022].

Mundar. (2020). *Metode Penelitian (Literature Review)*. 37–43. http://https//opac.perpusnas.go.id [Diakses 30 November 2021]

Nur Khosim. (2017). *Pengaruh Pemberian Madu Terhadap Frekuensi Napas Pada Balita Dengan Ispa Di Desa Wonorejo Kecamatan Kaliwungu Utara Kabupaten Kendal*. http://https//zdocs.hu/doc [Diakses pada tanggal 31 Desember 2021]

Nurislaminingsih, R., Rachmawati, T. S., Winoto, D. Y., & Raya. (2020). literature Riview.*Anuva*,*4*(2),169–182. https://ejournal2.undip.ac.id/index.php/anuva/article/view/7960 [Diakses tanggal 30 November 2021].

Oduwole O, Udoh EE, Oyo-Ita A, M. M. (2019). Honey for acute cough in children.*Portuguese Journalof Pediatrics*,*50*(4),289–292. https://doi.org/10.25754/pjp.2019.18542 [Diakses tanggal 12 Desember 2021.

Putri Ekarina BR Perangin-Angin. (2020). Literature Riview Hubungan Fakor Lingkungan Dalam Rumah Dengan Kejadian Penyakit Ispa Pada Balita Umur 1-5 Tahun 2020. In *Sustainability (Switzerland)* (Vol. 4, Issue 1). https://pesquisa.bvsalud.org/portal/resource/

en/mdl [Diakses 20 Desember 2021]

Putri Rizkia Purdaningtyas. (2019). *Notivasi Pemberian Minuman Jahe Madu Untuk Mengatasi Ketidakefektifan Bersihan Jalan Nafas Pada Anak Dengan Ispa*. 4–11. https://eprintslib.ummgl.ac.id/2771/1/15.0601.0096_BAB I_BAB II_BAB III_BAB V_DAFTAR PUSTAKA_Putri Rizkia Purdaningtyas.pdf [Diunduh 12 Desember 2021]

Ramadhani, A. N., Novayelinda, R., & Wofers, R. (2018). Efektivitas Pemberian Minuman Jahe Madu Terhadap Keparahan Batuk Pada Anak Dengan ISPA. *Program Studi Ilmu Keperawatan Universitas Riau*, *1*, 1–7. https://jom.unri.ac.id/index.php/JOMPSIK/article/view/4137/4030 [Diakses 25 Desember 2021]

Retno Sari. (2021). literature review. *Nuevos Sistemas de Comunicación e Información*, 2013–2015. https://https//metodepenelitiana.wordpress.com [Diakses 20 Desember 2021]

Rizki, Ok. (2017). *Pengaruh Pemberian Minuman Jahe dan Madu tehadap Penyembuhan Batuk pada Anak*. *July*, 1–23. https://id.scribd.com/document/390672967/EBN-JAHE-MADU-docx [diakses 5 Januari 2022]

Sadr, S., Kaveh, S., Choopani, R., Bayat, H., & Mosaddegh, M. (2017). Formulation (Compound Honey Syrup) in Pediatric Patients with Mild to Moderate. *Galen Medical Journal*, *6*(4), 291–301. https://doi.org/10.22086/gmj.v6i3.88 [Diakses pada tanggal 15 Desember 2021].

Sakmawati. (2021). *Studi Literature : Penerapan Bahan Herbal Daun Sirih Merah (Pipper Crocatum) Terhadap Proses Penyembuhan Luka Kaki Diabetik*. https://https//repository.unmul.ac.id/bitstream/handle/123456789/9812/18-011 Sakmawati.pdf?sequence=1&isAllowed=y [Diakses 30 November 2021]

Santi Deliani Rahmawati, H. S. (2020). *kata kunci pencarian literature review*. *3*(2017), 54–67. http://repositorio.unan.edu.ni/2986/1/5624.pdf [Diunduh 30 November 2021]

Setyaningrum, R. (2019). Aplikasi Pemberian Minuman Herbal Jahe Merah Dan Madu Untuk Mengatasi Ketidakefektifan Bersihan Jalan Nafas Pada Balita Dengan Ispa.*ISPA*,*8*(5),55.http://eprintslib.ummgl.ac.id [Diakses tanggal 28 November 2021].

Siwi, D. B. (2018). *madu untuk kesehatan*. *October*. https://www.researchgate.net/publication/328131070_ARTIKEL_MADU [Diakses 31 Desember 2021]

Wahisah. (2018). *Efektifitas Kencur Madu dan Jahe Madu Terhadap Batuk Pada Ispa Balita 1-5 Tahun Di Desa Tirto*. http://eprintslib.ummgl.ac.id[Diakses tanggal 27 November 2021]

Yamprasert, R., Chanvimalueng, W., Mukkasombut, N., & Itharat, A. (2020). Ginger extract versus loratadine in the treatment of allergic rhinitis: A randomized controlled trial. *BMC Complementary Medicine and Therapies*, *20*(1), 1–11. https://doi.org/10.1186/s12906-020-2875-z [Diakses tanggal 12 Desember 2021].