JMH
Jurnal Medika Hutama
Vol 06 No 04, Juli 2025
http://jurnalmedikahutama.com

e-ISSN. 2715-9728
p-ISSN. 2715-8039

Open Acces

SMOKING IN THE FAMILY AND THE INCIDENCE OF RESPIRATORY INFECTIONS IN TODDLERS

Hartawan[1], Dwi Septian Wijaya[2]

[1] Puskesmas Darek, Lombok Barat, Indonesia
[2] Program Studi Gizi, Institut Teknologi Bisnis dan Kesehatan Muhammadiyah Tulungagung, Indonesia

Corresponding Author: Hartawan, Puskesmas Darek, Lombok Barat, Indonesia
E-Mail: irmi-syafaah@fk.unair.ac.id

Received 10 Juli 2025 ; **Accepted** 28 Juli 2025; **Online Published** 30 Juli 2025

Abstract

Respiratory tract infections (RTIs) are one of the most serious respiratory diseases and cause the highest number of deaths. To date, RTIs remain a global health issue. Deaths from respiratory infections among infants reach 12.4 million annually worldwide among children aged 0–4 years, with two-thirds of these being infants aged 0–1 years, and 80.3% of these deaths occurring in developing countries. Factors that may influence the incidence of ARI include parental smoking, with the harmful effects of secondhand smoke being greater for passive smokers than active smokers, population density, and low birth weight (LBW). Tobacco smoking, as one of the causes of ISPA, is the third leading cause of death after coronary heart disease and cancer. Exposure to tobacco smoke affects the incidence of ISPA in infants, with infants exposed to tobacco smoke being at a higher risk of developing ISPA compared to those not exposed to tobacco smoke.

***Keywords*:** Respiratory tract infections (RTIs), *Children, Smoking.*

INDTRODUCTION

Respiratory tract infections (RTIs) are one of the most serious respiratory diseases and the leading cause of death. To date, RTIs remain a global health problem. This can be seen from the high morbidity andmortality rates due to RTIs. Deaths from respiratory infections among infants reach 12.4 million annually worldwide among children aged 0–4 years, with two-thirds being infants aged 0–1 years, and 80.3% of these deaths occurring in developing countries (WHO, 2007).

According to UNICEF data, in 2015, more than 14% of 147,000 children under the age of 5 in Indonesia died from upper respiratory tract infections. From these statistics, it can be interpreted that 2-3 children under the age of 5 die from upper respiratory tract infections every hour. This is what makes upper respiratory tract infections the leading cause of death for children under 5 years of age in Indonesia. Additionally, upper respiratory tract infections are more deadly for children than diarrhea, malaria, or measles (IDAI, 2017).

Upper respiratory tract infections are caused by a number of infectious agents, including viruses, bacteria, and fungi. Factors that increase the risk of severe upper respiratory tract infections include poor nutritional status, breastfeeding for less than 6 months (non-exclusive breastfeeding), low birth weight, incomplete basic vaccination,

indoor air pollution, especially from cigarette smoke and smoke, and maternal education (Kartasasmita, 2010).

An analysis by the World Health Organization (2007) shows that the harmful effects of cigarette smoke are greater for passive smokers than for active smokers. When a smoker lights a cigarette and inhales it, the smoke inhaled by the smoker is called mainstream smoke, and the smoke that comes out of the end of the cigarette (the burning part) is called sidestream smoke or secondhand smoke.

Cigarettes, as one of the causes of respiratory infections, are the third leading cause of death after coronary heart disease and cancer. One cigarette shortens life expectancy by 12 minutes. 10,000 people worldwide die from smoking, and 57,000 people die each year in Indonesia due to smoking, with Indonesia having the highest increase in cigarette consumption in the world at 44%.

Currently, Indonesia ranks third in the world for the number of smokers, behind China and India. Data from 2010 shows that the current smoking prevalence is 34.7%, with 76.6% of smokers smoking indoors with other family members (Bustan, 2007). Exposure to cigarette smoke affects the incidence of respiratory tract infections in infants, where infants exposed to cigarette smoke are at a higher risk of developing respiratory tract infections compared to infants not exposed to cigarette smoke (Hidayat, 2005).

Theory Description

Definition of Toddler

A toddler is a child aged up to 59 months (Indonesian Ministry of Health, 2015). The toddler period is a time of rapid physical and brain growth in which optimal function is achieved, and fundamental growth that will influence and determine the development of language skills, creativity, social awareness, emotional awareness, and intelligence (Supartini, 2004).

Toddlers are defined as young children who are at least 1 year old and are usually children under the age of 5. Children between the ages of three and five are referred to as toddlers or preschoolers (3-5 years old). Children's speech and walking skills have developed more at this age, but other skills are still limited. The toddler years are an important period in a person's growth and development. Therefore, development and growth play a role as predictors of children's future performance in terms of growth and development. Given that the growth and development phase is often referred to as the "golden age," this is a time that passes very quickly and never returns (Febrianti, 2020).

Characteristics of Toddlers

Children aged 1-3 years (toddlers) and preschool-aged children (toddlers) are two distinct categories (Nyomba, 2022)

1) Children aged 1-3 years (toddlers) are passive consumers, accepting and consuming food provided by their mothers. Due to the faster rate of change during the toddler stage compared to

the preschool stage, toddlers require more food than children of the same age.

2) Preschool-aged children (3-5 years old) are children who begin to choose foods they like and develop into active consumers. Children tend to lose weight at this age because they are more active and begin to choose or reject foods provided by their parents.

Acte Respiratory Infectious (ARI)

Acute Respiratory Infections (ARI) According to the WHO, ARI is an infectious disease of the upper or lower respiratory tract, depending on the bacteria that cause it, cultural factors, and environmental variables, which can result in various disorders, from moderate infections to severe and fatal diseases. The primary infectious disease responsible for morbidity and mortality worldwide is ARI. As the leading cause of death in low- and middle-income countries, ARI is also the third leading cause of death globally.

Acute respiratory tract infection (ARTI) is a severe infection of the sinuses, throat, airways, or lungs, and is more often caused by viruses, although bacteria can also cause this condition. ARTI is a common disease in children and toddlers (Imaniyah and Jayatmi, 2019:19).

ISPA is an infectious condition that affects one or more segments of the respiratory tract, including the sinuses, middle ear cavity, and pleura as well as the alveoli (lower airways) and surrounding tissue. The respiratory tract infection known as ISPA has an incubation period of 14 days. Children and infants are often affected by ISPA, which can range in severity from moderate to severe. If severe ISPA enters the lung tissue, pneumonia will occur. Pneumonia is a contagious disease that can be fatal, especially for young children (Jalil, Yasnani, and Sety, 2018).

Etiology of Acte Respiratory Infectious (ARI)

Upper respiratory tract infections (URIs) can be caused by various agents such as bacteria, viruses, mycoplasmas, fungi, and others, with over 300 types identified. Upper URIs are typically caused by viruses, while lower URIs can be caused by bacteria, viruses, and mycoplasmas. Bacterial causes of URIs include Streptococcus, Pneumococcus, Haemophilus, Bordetella, and Corynebacterium. Viruses causing ARI include the Myxovirus group (including influenza virus, parainfluenza virus, and measles virus), Adenovirus, Coronavirus, Mycoplasma, and Herpesvirus. ARI caused by pollution is ARI caused by air pollution occurring both indoors and outdoors. (Ministry of Health, 2009).

Signs And Symptoms Of Acte Respiratory Infectious (ARI) In Infants.

In implementing the ARI eradication program (P2 ISPA), the criteria for using the ARI management pattern are infants, characterized by coughing and/or difficulty breathing accompanied by an increase in respiratory rate (rapid breathing) according to age group. In determining the classification of the disease, two groups are distinguished: those under 2 months of age and those between 2 months and under 5 years of age (Harwina, 2010).

Transmission of acute respiratory infections. Acute respiratory infections are

airborne diseases (transmitted through the air) that occur without contact with infected individuals or contaminated objects. The transmission of ISPA occurs in the form of droplet nuclei (very small particles resulting from coughing or sneezing that can remain in the air for a considerable amount of time and are directly inhaled during breathing) or in the form of dust (particles of various sizes resulting from the resuspension of particles located on the floor, bed, and other surfaces and carried by the wind along with dust). (Noor, 2006).

Control and prevention measures are implemented through case management, immunization, environmental health improvements, and community education. Prevention is directed at factors that can reduce the incidence of ARI, including DPT immunization, family nutrition improvement, improved health of mothers and low birth weight babies (LBW), and improvements in the quality of the indoor and outdoor environment (Noor, 2006).

Risk Factors For ARI In Toddlers

Risk factors are factors or conditions that make a child susceptible to illness or severe illness (Kartasasmita, 2010). According to Notoatmodjo (2010), there are two types of risk factors: 1) Intrinsic factors are risk factors that originate from the organism itself. Intrinsic factors are further divided into gender and age factors, anatomical and constitutional factors, and nutritional factors. 2) Extrinsic factors are factors originating from the environment that facilitate an individual's susceptibility to a specific disease. Based on their nature, extrinsic factors can be physical, chemical, biological, psychological, socio-cultural, or behavioral. Risk factors differ from agents (disease-causing agents). Disease agents are microorganisms or environmental conditions that directly react with an individual, causing them to become ill. Agents are factors that must be present for a disease to occur, while risk factors are conditions that enable the mechanism of interaction between disease agents and the host (human) to occur, resulting in illness (Notoatmodjo, 2010).

Ministry of Health, RI (2010) Various risk factors contribute to the incidence and severity of disease, as well as deaths from ARI, namely malnutrition, non-exclusive breastfeeding, overcrowding, indoor air pollution, especially cigarette smoke, poverty, low maternal education, ignorance, and difficult access to health services. Chandra (2007) explains that air pollution has effects on human life, one of which impacts health, namely an increase in the number of cases of illness and death due to respiratory tract diseases.

Risk Factors of Smoking on Respiratory Tract Infections

According to the Indonesian Ministry of Health (2012), a single cigarette contains 4,000 types of chemical compounds that are harmful to the body, with three main components: nicotine, tar, and carbon monoxide. 1) Nicotine, nicotine is a harmful substance that causes addiction (addictive). Nicotine acts on the brain to stimulate the release of dopamine, which provides a sense of comfort and leads to dependence. 2) Tar, tar in cigarettes is a carcinogenicsubstance that can cause cancer (Sitepoe, 2000).

CO produced by cigarettes can reduce oxygen levels in the blood because this gas is toxic and competes with oxygen in hemoglobin transport (Sitepoe, 2000). Blood has 200 times greater ability to bind CO than oxygen, and the reduced ability of blood to carry oxygen can lead to the death of body cells (Ministry of Health of the Republic of Indonesia, 2006).

The effects of cigarette smoke can increase mortality rates among patients with respiratory tract infections, kidney failure, and high blood pressure. Furthermore, the harmful substances and toxins in cigarettes not only cause health problems for smokers but also for non-smokers around them, most of whom are infants, children, and mothers who are forced to become passive smokers because there are smokers in their homes. A smoky environment can worsen the condition of someone with asthma, cause bronchitis, and ISPA (Susanna, 2003).

Research by Fatichaturrahchma S et al (2016) shows that toddlers who live in homes where there are smokers have a 2.9 times greater risk of contracting ARI than toddlers who live in homes where there are no smokers. This aligns with the findings of Sugihartono & Nurjazuli (2012), which showed a significant association between the presence of smokers in the home and the occurrence of ISPA, with an odds ratio (OR) of 5.74. This means that infants living with smokers in the home have a 5.74 times higher risk of developing ISPA compared to infants who do not live with smokers.

REFERENCES

Adawiyah, R & Duarsa, A. B. S. (2016). *Faktor-Faktor yang Berpengaruh terhadap Kejadian ISPA pada Balita di Puskesmas Susunan Kota Bandar Lampung Tahun 2012*. Jurnal Kedokteran YARSI 24(1): 051-068

Alimul, Hidayat (2009). *Metode Penelitan Kebidanan dan Teknik Analisis Data. Jakarta. Renika Cipta*

Aldrian, N. (2014). *Faktor-Faktor yang Berhubungan dengan ISPA pada Balita di Wilayah Kerja Puskesmas Rambah Samo 1 Tahun 2014*. Jurnal Maternity and Neonatal Vol 1 (6).

Alnur, R. D et al. (2017). *Kebiasaan Merokok Keluarga Serumah dan Kejadian ISPA pada Balita di Bantul*. Berita Kedokteran Masyarakat, Vol. [33]No.[3]

Anwar, A. er al. (2014). *ISPA pada Anak Balita di Indonesia*. Jurnal Kesehatan Masyarakat Nasional vol. 8 (8). Jakarta: Pusat Teknologi Intervensi Kesehatan Masyarakat Litbangkes RI.

Asnawati, S & Wasniman. (2016). *Faktor Risiko Kejadian ISPA pada Balita di Wilayah Kerja Puskesmas Siberida Kecamatan Batang Gansal Tahun 2015.* Jurnal Mutiara Kesehatan Masyarakat, 25/11 (2016), 9-18

Azwar, A. (2002). *Pengantar Epidemiologi Edisi Revisi*. Jakarta Barat: Binarupa Aksara

Bustan. (2007). *Epidemiologi Penyakit Tidak Menular. Jakarta. Rineka Cipta*

Bansu, I. A. (2017). *Faktor Risiko Kejadian ISPA pada Balita di Wilayah Kerja Puskemas Wonomulyo Kabupaten Polewali Mandar Tahun* 2017. Tesis. Jakarta :SPS UHAMKA

Chandra, B. (2007). *Pengantar Kesehatan Lingkungan*. Jakarta: Penerbit Buku Kedokteran. Hal. 124, dan 144-147.

Damayanti, R. (2010). *Pertumbuhan Fisik Kota Karena Pengaruh Industrialisasi, Studi Kasus Kota Ahmedabad – India*. Yogyakarta: UGM

Efni, Y, et al., (2016). *Faktor Risiko yang Berhubungan dengan Kejadian ISPA pada Balita di Kelurahan Air Tawar Barat Padang*. Jurnal Kesehatan Andalas. 2016; 5(2)

Fatichaturrahchma S et al., (2016). *Hubungan Lingkungan Fisik Rumah dengan Kejadian Penyakit ISPA pada Balita di Puskesmas Pekayon Jaya Kota Bekasi.* Jurnal Kesehatan Masyarakat (4).http://ejournal-s1.undip.ac.id/index.php/jkm.

Fikri, B. A. (2016). *Analisis Faktor Risiko Pemberian Asi dan Ventilasi Kamar Terhadap Kejadian ISPA Balita*. The Indonesian Journal of Public Health, Vol. 11 No. 1, Desember 2016: 14–27

Ginting, I. A. T (2017). *Analisis Faktor Resiko ISPA pada Balita di Wilayah Kerja Puskesmas Bogor Utara Kota Bogor Tahun 2017*. Skripsi. Depok: FKM UI

Hidayat, A. (2005). *Studi Retrospektif Kejadian ISPA Pada Balita di Wilayah Kerja Puskesmas Tongkuno Kecamatan Tongkuno Kabupaten Muna. Skripsi Kendari: STIK Avicenna*

Handayani, R. W. (2016). *Beberapa Faktor Risiko Kejadian ISPA pada Balita (Studi di Kecamatan Kalikajar Kabupaten Wonosobo)*. Tesis: SPS UNDIP

Hariadi, et al., (2010). *Buku Ajar Ilmu Penyakit Paru*. Surabaya: Departemen Ilmu Penyakit Paru FK Unair SUD Dr. Soetomo Surabaya.

Hatta, M. (2001). *Hubungan Imunisasi Campak dengan Kejadian ISPA pada Balita di Kabupaten Ogan Komering Ulu Sumatera Selatan Tahun 2000.* Program Pascasarjana. Depok: FKM UI.

Hananto M. (2004). *Analisis Faktor Resiko yang Berhubungan dengan Kejadian ISPA pada Anak Balita di RSUD Pasar Rebo.* Jakarta. Tesis. Jakarta :FKIK UI

Hidayati, A. N & Wahyono, B. (2011). *Pelayanan Puskesmas Berbasis Manajemen Terpadu Balita Sakit Dengan Kejadian ISPA Balita*. Jurnal Kesehatan Masyarakat. Vol (7) (1) (2011) 35-40

Hidayat, (2005). *Penganter Ilmu Keperawatan Anak*. Jakarta: Salemba Medika

Hockenberry, M. J & Wilson, D. (2009). *Essential of Pediatric Nursing*. St. Louis Missoury: Mosby

http://www.africanjournalofrespiratorymedicine.com/articles/march_2013/AJRM%20%20Mar%2013%204-9.pdf

Kartasasmita CB. (2010). *Morbiditas dan Faktor Risiko ISPA Pada Balita di Indonesia Majalah Kedokteran Jakarta. 25:135-142*

Katona P & Katona A. J (2008). *The Interaction Between Nutrition and Infection.* Clin Infect Dis 46, 1582-1588

Kartasasmita, C. (2010). *ISPA Pembunuh Balita.* Kemenkes RI: Buletin Jendela Epidemiologi Vol 3, September 2010. ISSN 2087-1546 ISPA Balita

KepMenKes, RI No. 829/Menkes/SK/VII/1999

Kemenkes RI (2004). *Pedoman Program Pemberantasan Penyakit Infeksi Saluran Pernapasan Akut (ISPA) untuk Penanggulangan ISPA pada Balita*. Jakarta: Kemenkes RI.

Kemenkes RI. (2005). *Pelatihan Pelayanan Kegawatdaruratan Obstetric Neonatal Esensial Dasar*. Jakarta : Kemenkes RI

Kemenkes RI. (2006). *Panduan Promosi Perilaku Tidak Merokok.* Jakarta: Kemenkes RI

Kemenkes RI. (2012). *Modul Tatalaksana Standar ISPA: Lihat & Dengarkan dan Selamatkan Balita Indonesia dari Kematian*. Jakarta: Kemenkes RI

Kemenkes RI. (2013). *Riset Kesehatan Dasar 2013.* Jakarta: Kemenkes RI

Kemenkes RI. (2015). *Pedoman Tatalaksana ISPA Balita.* Jakarta: Kemenkes RI

Kemenkes RI. (2016). *Revisi buku Pedoman Pencegahan dan Pengendalian Infeksi Saluran Pernapasan Akut (ISPA).* Jakarta: Kemenkes RI

Kemenkes RI. (2017). *Buku Saku Pemantauan Status Gizi Tahun 2017*. Jakarta: Kemenkes RI

Khasanah M et al., (2016). *Hubungan Kondisi Lingkungan dalam Rumah dengan Kejadian ISPA pada Balita di Wilayah Kerja Puskesmas Puring Kabupaten Kebumen.* Jurnal Kesehatan Masyarakat. 4 (2), htttp://ejournal-s1.undip.ac.id/index.php/jkm%0A.

Kisworini. P et al., (2010). *Mortality Predictors of ISPA in Children*. Pediatric Indonesian. 50;149-153

Lailiyah, A. (2016) *Hubungan Faktor Pejamu dan Lingkungan dengan ISPA pada Balita di Provinsi Pulau Sulawesi (Analisis Data SDKI 2012)*. Skripsi. Depok: FKM UI

Lindawati, (2010). *Partikulat (PM10) Udara Rumah Tinggal yang Mempengaruhi Kejadian Infeksi Saluran Pernapasan Akut (ISPA) Pada Balita (Penelitian di Kecamatan Mampang Prapatan, Jakarta Selatan Tahun 2009-2010*) Tesis. Depok: FKM UI

Machmud, R. (2006). *ISPA Balita di Indonesia dan Peranan Kabupaten dalam Menanggulanginya.* Padang: Andalas University Press.

Mamdy, Z. (2001). *Pendidikan Kesehatan dan Ilmu Perilaku*. Jurnal Ilmu Kesehatan UHAMKA. 1 (1).

Mangoenprasodjo, A. S., & Hidayati S. N. (2005). *Hidup Sehat Tanpa Rokok.* Yogyakarta: Pradiptu Publishing

Misnadiarly (2008). *Penyakit Infeksi Saluran Nafas ISPA pada Anak, Orang Dewasa dan Usia Lanjut*. Jakarta: Pustaka Obor Populer.

Mukono. H. J. (2008). *Pencemaran Udara dan Pengaruhnya Terhadap Gangguan Saluran Pernapasan.* Surabaya: Airlangga University Press

Munthe, S. A. & Wasniman. (2016). *Faktor Risiko Kejadian ISPA pada Balita di Wilayah Kerja Puskesmas Siberida Kecamatan Batang Gansal Tahun 2015*. Jurnal Mutiara Kesehatan Masyarakat, 25/11 (2016), 9-18

Noor, M, et al., (2014). *Faktor-Faktor yang Mempengaruhi Kejadian ISPA pada Balita di Wilayah Kerja Puskesmas Guntung Payung Tahun 2013.* Mutiara Kusuma Wardani Jurkessia, Vol. IV, No. 2, Maret 2014

Notoatmodjo (2010). *Metodologi Penelitian Kesehatan.* Jakarta: Rineka Cipta.

Padmonobo, H, et al. (2012). *Hubungan Faktor Lingkungan Fisik Rumah dengan Kejadian ISPA pada Balita di Wilayah Kerja Puskesmas Jatibarang Kab. Brebes.* Jurnal Kesehatan Lingkungan Indonesia, vol 11 (2) hal 194-198

Painter, et al., (2013). Poor Growth and ISPA Seasonality in Infants in The Philippines: *Cohory and Time Series Studies*. PLoS One. Jun 28;8(6):e67528

Pangandaheng, F, et al., (2014). *Hubungan antara Faktor-Faktor Lingkungan Fisik Rumah dengan Kejadian ISPA pada Balita di Wilayah Kerja Puskesmas Tobelo Kabupaten Halmahera Utara*. Jurnal. Universitas Sam Ratulangi Manado

Peraturan Menteri Kesehatan No. 1077 Tentang Penyehatan Udara dalam Ruang Rumah Tahun 2011

Perhimpunan Dokter Paru Indonesia. (2003). *ISPA Komuniti: Pedoman Diagnosis & Penatalaksanaan di Indonesia.* www.klikpdpi.com/

Price, S. A & Wilson, L. M. (2006). *Patofisiologi: Konsep Klinis Proses-Proses Penyakit.* Jakarta: EGC.

Oktaviani, I & Maesaroh, S. (2017). *Faktor-Faktor yang Berhubungan dengan Kejadian ISPA pada Balita di Puskesmas Kecamatan Teluknaga Kabupaten Tangerang.* Jurnal Komunikasi Kesehatan Vol.VIII No.1 Tahun 2017

Rahmawati, D. A. (2013). *Faktor Risiko yang Berhubungan dengan Kejadian ISPA pada Balita Umur 12 - 48 Bulan di Wilayah Kerja Puskesmas Mijen Kota Semarang*. Jurnal Kesehatan Masyarakat 2013, Vol 2, (1), Tahun 2013.

Sary, A. N., (2017). *Analisis Faktor Risiko Intrinsik yang Berhubungan dengan ISPA pada Anak Balita di Wilayah Kerja*

Puskesmas Andalas Kota Padang. Jurnal Kesehatan Medika Saintika vol 8 no 1

Sidiq, R. et al., (2016). *Risiko Kejadian ISPA pada Anak Bawah Lima Tahun di Lambatee, Aceh.* National Public Health Journal, 2016; 11 (2): 69-73

Sitepoe, M. (2000). *Kekhususan Rokok di Indonesia*. Jakarta :PT Gramedia Widiasarana Indonesia.

Soesanto, S. S. et al., (2000). *Hubungan Kondisi Perumahan dengan Penularan Penyakit ISPA dan TB Paru*. Artikel. Media Litbang Kesehatan Vol X (2) Tahun 2000. http://ejournal.litbang.depkes.go.id/index.php/.

Sualangi. A. F. (2012). *Pendidikan Kesehatan: Pedoman Pelayanan Kesehatan Dasar.* Bandung: Penerbit ITB dan Universitas Udayana

Sugihartono & Nurjazuli (2012). *Analisis Faktor Risiko Kejadian ISPA pada Balita di Wilayah Kerja Puskesmas Sidorejo Kota Pagar.* Jurnal Kesehatan Lingkungan Indonesia. 11(1), 82-86.http://doi.org/10.14710/jkli.11.1.82-86

Supariasa., et al., (2012). Penilaian Status Gizi. Jakarta: ECG

Supartini, Y. (2004). *Buku Ajar Konsep Dasar Keperawatan Anak*. Jakarta: EGC.

Supartini, (2004). *Konsep Keperawatan Anak*. Jakarta: EGC

Triana, H. (2017). *Faktor Risiko yang Memengaruhi Kejadian ISPA pada Balita di Puskesmas Medan Krio Kabupaten Deli Serdang Tahun 2017*. Jurnal STIKNA, Vol. 1, No.2 (2017), 165-174

WHO *(World Health Organization*), (2007). *Penanganan ISPA Pada Anak di Rumah Sakit Kecil Negara Berkembang. Pedoman Untuk Dokter dan Petugas Kesehatan Senior. Jakarta. EGC*

UU Kesehatan no 36 tahun 2009

WHO. (2003). *Penanganan ISPA pada Anak di Rumah Sakit Kecil Negara Berkembang*. (Widjaja, A. C, Penterjemah). Jakarta: EGC.

WHO & UNICEF (2006). *The Forgotten Killer of Children*. New York: WHO

WHO. (2008). *Manajemen Terpadu Balita Sakit*. Jakarta: Depkes RI

WHO. (2009). *Pelayanan Kesehatan di Rumah Sakit*. Jakarta : Depkes RI

WHO. (2010). *ISPA*, Sumber: http//222.who.int/mediacentre/,

WHO. (2018). 10 *Facts on Immunization*. http://www.who.int/

WHO. (2018). *Exclusive Breastfeeding for Optimal Growth, Development and Health Of Infants*. http://www.who.int/elena/titles/exclusive_breastfeeding/

Wicaksono, H. (2015) *Nutritional Status Affects Incidence of ISPA in Underfives.* Folia Medica Indonesiana Vol. 51 No. 4. 285-291. https://e-journal.unair.ac.id/FMI/article/viewFile/2861/2074

Widodo, N. (2006). *Hubungan Faktor Lingkungan Fisik Kamar Tidur dan Karakteristik Anak dengan Kejadian ISPA pada Anak Balita di Wilayah Puskesmas Kawalu Kota Tasik Malaya*. Tesis. Depok: FKM UI

Yunihasto, E. B. (2007). *Lingkungan Rumah Balita Penderita ISPA di Kecamatan Sukmajaya Kota Depok Propinsi Jawa Barat*. Tesis: Yogyakarta : FKM UGM

Yuwono, T. A. (2008). *Faktor – Faktor Lingkungan Fisik Rumah yang Berhubungan dengan Kejadian ISPA pada Anak Balita di Wilayah Kerja Puskesmas Kawunganten Kabupaten Cilacap*. Program Pasca Sarjana UNDIP

Zairinayati, et al., (2013). *Analisis Faktor Lingkungan Fisik Rumah yang Berhubungan dengan Kejadian ISPA pada Balita di Wilayah Kerja Puskesmas Sosial Kecamatan Sukarame Palembang*. Jurnal. Volume 1, edisi 2, November 2013