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Series: *Advances in Health Sciences Research*

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- HOME
- PREFACE
- ARTICLES
- AUTHORS
- SESSIONS
- ORGANIZERS
- PUBLISHING INFORMATION

< PREVIOUS VOLUME IN SERIES

NEXT VOLUME IN SERIES >

2nd Sriwijaya International Conference on Public Health (2nd SICPH) was held in 6th to 7th November 2019 at 101 Hotel Palembang, Indonesia. This seminar is a continuation of first event on 2017 organized by Faculty of Public Health, Sriwijaya University (UNSRI). The theme of this second seminar is "The Impact of Climate Change on Infectious Disease Transmission".

Please click [here](#) for the conference website. (*Conference website no longer available.*)

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- ▶ JOURNALS
- ▶ BOOKS
- ▶ POLICIES
- ▶ MANAGE COOKIES/DO NOT SELL MY INFO
- ▶ ABOUT
- ▶ NEWS
- ▶ CONTACT
- ▶ SEARCH

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- HOME
- PREFACE
- ARTICLES
- AUTHORS
- SESSIONS
- ORGANIZERS
- PUBLISHING INFORMATION

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Proceedings of the 2nd Sriwijaya International Conference of Public Health (SICPH 2019)

Search

+ Advanced search

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68 articles

Proceedings Article

Correlation Between Components of Gender Development to Women of Childbearing Age Couples Morbidity in Remote Indigenous Community of Suku Anak Dalam at Sungai Terap Area and Nyogan of Jambi Province, Indonesia

Asparian, Evy Wisudariani

Results of MDGS in 2015 declares that maternal mortality rate (MMR) in Indonesia still at 305/100.000 live births level, which still far away from the target of 105/100.000 live births. Maternal morbidity and mortality rates are more risky at those with low social, cultural, political, and economic status,...

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- Download article (PDF)

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Nanoparticle of Silver Nitrate (Ag₂NO₃) and Organophosphate (C₁₀H₁₉O₆PS₂) for Vector Control of Anopheles Larvae

Mursid Raharjo, Agus Subagyo, Sulistiyi

The climate change has an impact on various lives, including in the vector breeding. The Anopheles resistance as an infectious agent of Plasmodium is harmful for life, especially to non-target organisms and the environment. Nano-silver (Ag₂NO₃), is a new form of engineering in vector control. The aim...

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Family Awareness of Congenital Rubella Syndrome in Palembang, Indonesia

Amrina Rosyada, Dini Arista Putri, Rini Mutahar

Rubella infection is a dangerous infectious disease that mostly affects pregnant women. This infection causes children born with some disabilities called congenital rubella syndrome which is visual impairment, deafness, calcification of the brain, and heart trouble. Treatment for this syndrome is quite...

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Association Between Toothbrushing and Cardiovascular Disease Risk Factors: A Systematic Review

Sabrina Intan Zoraya, Abdillah Adipatria Budi Azhar

Background: Cardiovascular disease is still the leading cause of death globally. For a decade, interest has been growing in linking cardiovascular disease risk factors and oral hygiene. A method that is commonly applied to maintain oral hygiene is toothbrushing. The purpose of this review is to synthesize...

- Article details
- Download article (PDF)

HOME

PREFACE

ARTICLES

AUTHORS

SESSIONS

ORGANIZERS

PUBLISHING INFORMATION

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Identification of Road Safety Hazards in the Roadway of Palembang-Indralaya

Desheila Andarini, Anita Camelia, Dwi Septiawati, Novrikasari

One of common problem in the road user accident is the condition of road infrastructure. Road accidents was categorized as the ninth rank of death most common cause in 1990 and are estimated to be the third by 2020. Road Safety Audit is needed to identify and eliminate potential hazards from roads and...

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Safety Analysis of Light Rail Transit in Palembang

Novrikasari, Desheila Andarini, Mona Lestari, Poppy Fujianti, Sarah Aprilisa, Anita Camelia

As the first rail-based mass transportation means for moving and transporting passengers / goods, the additional function of Light Rail Transit is as a tourist attraction. People flocked to try to use Light Rail Transit. This study aims to analyze the safety of Light Rail Transit in Palembang. Method...

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Analysis of Physical Activity on the Quality of Life of Pregnant Women in the Plaju Public Health Center, Palembang

Muthia Felyanti, Novrikasari, A. Fickry Faisya

Many pregnant women who do not understand what physical activities can be done during pregnancy that will affect the quality of life of pregnant women. A good quality of life is associated with good eating and drinking arrangements, a balance of daily routine activities, work, exercise, rest, to recreational...

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Analysis of Physical Activity Against Musculoskeletal Disorders in Pregnant Women in Plaju Health Center

Putri Rizki Amalia Badri, Novrikasari, Rostika Flora

During pregnancy, pregnant women can experience some complaints of discomfort that can be caused by hormonal changes and physical changes associated with an enlarged uterus. Complaints of discomfort such as pain in the waist, shoulders and other limbs is one symptom of Musculoskeletal Disorders (MSDs)...

[Article details](#)

[Download article \(PDF\)](#)

| |
|------------------------|
| HOME |
| PREFACE |
| ARTICLES |
| AUTHORS |
| SESSIONS |
| ORGANIZERS |
| PUBLISHING INFORMATION |

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Reliability Evaluation of Emergency Reponse Plan Design in Buildings of Sriwijaya University 2019

Anita Camelia, Fatmalina Febry, Sayang Ajeng Mardhiyah, Poppy Fujianti, Adji Randika, Anggun Ikha Maqpiroh

Sriwijaya University consists of several different buildings for administration and academic purpose to student accommodations. A proper Emergency Response Plan (ERP) is an important factor in ensuring the safety of building occupants from hazard such as fire, as it may reduce evacuation time and prevent...

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Effect of Glyphosate Herbicide on Environmental Health

Akhmad Dwi Priyanto, Daniel Saputra, Fuad Abd. Rachman, Rico Januar Sitorus

One of the active ingredients of herbicide is Glyphosate (N-(phosphonomethyl) glycine) which is widely used in plantation land. Herbicide residues will accumulate in agricultural products, pollution in the environment (water, air and soil), poisoning in humans both acute and chronic that have an impact...

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Factors Affecting the Infectious Waste Management System on Practice Disposal Waste Among Health Workers in Bengkulu Hospital

Afriyanto, Somsak Pitaksanurat, Rittirong Junggoth, Noor Alis Setiyadi

Hospital activities restore health and save lives at the same time, however, they can generate infectious wastes to a human being or the environment. Infectious waste have to used specifically treatment for reduce waste. In most of hospital of Bengkulu Indonesia do not use an incinerator and then good...

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Spatial Analysis of Water Quality in Area of the Riverbank of Musi River in Palembang City

Inoy Trisnaini, A. Fickry Faisya, Haerawati Idris

The report by WALHI in 2016 showed that based on the quality status of the Musi River water in Gandus District is in abad status, which means that it has been polluting, which can come from the high activity of citizens and industry in the riverbank on that river. Geographic Information System (GIS) as...

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Concentration of Total Suspended Particulate on X Coal Mining in Kutai Kartanegara District

Hansen, Ratna Yulawati, Deddy Alif Utama

The quality of inhaled air is determined by the amount of pollutant gases and by particulates in the air. Particulate especially total suspended particulate (TSP) contains heavy metal elements that can have serious health effects. Among all the processes that produce particulates, the coal mining process...

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[HOME](#)

[PREFACE](#)

[ARTICLES](#)

[AUTHORS](#)

[SESSIONS](#) ▼

[ORGANIZERS](#)

[PUBLISHING INFORMATION](#)

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Livelihoods System and Level of Vulnerability of Rice Farmer Households Due to Climate Change at Swampy Lowland in Sungai Pinang Village Banyuasin Regency

Elly Rosana, Thirtawati, Muhammad Arbi

The main problems in the development of swampy lowland are floods during the rainy season and drought in the dry season which cannot yet be predicted accurately. Climate change causes problems in swampy lowland farming. Farmers find it difficult to run their farming, especially in terms of determining...

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Risk Factor Analysis: Filariasis Events in Sembawa Public Health Center Area at Banyuasin District in 2019

Luthfia Resi Puspaningrum, Elvi Sunarsih

Banyuasin is the district with the highest number of filariasis sufferers in South Sumatra. Nearly all of the areas here are filariasis endemic, with an mRate greater than 15%. The purpose of this research, therefore, is to analyze what risk factors may contribute to increased filariasis events in...

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The Relationship Between Personal Hygiene, Environmental Sanitation, and the Nutritional Status of Toddlers Age 12–59 Months in the Settlements Wetlands

Imelda Gernaui Purba, Elvi Sunarsih, Inoy Trisnainy

Underweight among toddlers is a chronic problem in wetland settlements. The objective of this research, therefore, was to analyze the association between a toddler's personal hygiene and environmental sanitation with nutritional status. The focus on this research was on children in Ogan Ilir Regency...

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Analysis on Incidents of Helminthiasis Based on Home Sanitation of Elementary-School Children in Seluma Regency

Mario Sandro, Achmad Fickry Faisya, Rostika Flora, Mohammad Zulkarnain, Nur Alam Fajar, Samwilson Slamet

Intestinal helminthiasis is a worm infection transmitted from soil contaminated by helminths (soil-transmitted helminths). The incident of helminthiasis is commonly found in school-age children. Frequent outdoor activities, contact with soil, and poor environmental sanitation increase the incident of...

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Ammonia Exposure Among Citizen Living Surrounding Fertilizer Factory

Achmad Fickry Faisyah, Yustini Ardillah, Dini Arista Putri

Air pollution remains problem around the world. One of dangerous chemical substance is ammonia. Fertilizer factory emission is ammonia that could affect to people health. The purpose of this study was to describe ammonia effect to health among citizen living surrounding fertilizer factory. Methods: This...

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HOME

PREFACE

ARTICLES

AUTHORS

SESSIONS

ORGANIZERS

PUBLISHING INFORMATION

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Obstacles of the Implementation of the Healthy Indonesia Program with Family Approach (PIS-PK)

Fitri Afrianti, Pujiyanto

The Healthy Indonesia Program with a family approach (PIS-PK) is one of the ways for health center (puskesmas) to improve access of the community to health services by visiting families. This study aimed to describe the obstacles of PIS-PK implementation. The method used was a systematic review. We look...

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Bacteriological Quality of Water and the Occurrence of Diarrhea in Household in the Work Area of Karya Jaya Public Health Center in Palembang

Farida Kumalasari, Rico Januar Sitorus, A. Fickry Faisya

Globally, there are about 2 billion cases of diarrhea with a mortality rate of 1.5 million per year. The limited access to clean water and the poor personal hygiene in the households are the major causes of diarrheal disease through water transmission. The aim of this study is to analyse the relationship...

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Epidemiology of Pediculosis Capitis of Foster Children in Orphanages Palembang, Indonesia

Rico Januar Sitorus, Chairil Anwar, Novatria

Pediculosis capitis is the most common ectoparasites which endemic globally in developed and developing countries that have tropical and subtropical climates. Head lice are obligate blood-sucking which has the potential to cause anaemia. Itching caused by flea saliva can cause children to have a sleeping...

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Injection Drug Abuse Risky HIV Infection Among Indonesian Prisoners (Data Analysis IBBS 2015)

Sri Utami, Rico Januar Sitorus

Prisoners are one of the community groups that are vulnerable to HIV/AIDS. Prison put people in high-risk situations for the spread of HIV, because of the risky practice behavior. The purpose of this study was to analyze the effect of injection drug abuse with HIV infection among Indonesian prisoners...

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Analysis of Noise Factors in Increasing Blood Pressure of Railway Employees in Semarang Poncol Train Station

Dwi Sutiningsih, Prafista Filaely, Ari Udiyono, Emi Puji Nur Wijayanti

Noise is one of the negative impacts of the rapid development of transportation facilities in Indonesia. One of the potential means of transportation is train. Noise can affect human health, among others, can cause hearing loss, communication disorders, psychological disorders, and increased blood pressure....

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HOME

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ARTICLES

AUTHORS

SESSIONS

ORGANIZERS

PUBLISHING INFORMATION

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Relationship Between Obesity and Diabetes Mellitus in People Above 40 Years Old in Indonesia: A Retrospective Cohort Study, Analysis of 2007 and 2014 Indonesian Family Life Survey Data

Dita Zami Kosupa, Feranita Utama

Diabetes mellitus is one of the most common diseases in the world with an incidence increase from 151 million in 2000 to 425 million in 2017. It is estimated that in 2045, its occurrence has the tendency of increasing to 629 million cases. Also, Indonesia is among the top 10 countries with the highest...

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Risk Factors for the Incidence of Anemia in Elementary-School Children Living in Malaria-Endemic Regions

Maraden Sirait, Rostika Flora, Chairil Anwar, Mohammad Zulkarnain, Nur Alam Fajar, Achmad Fickry Faisya

Anemia is an indicator of both poor nutrition and poor health. The most common anemia caused by malnutrition is iron deficiency anemia. Helminthiasis, clinical history of malaria, nutritional status, and breakfast-eating habits are the main factors that contribute to the increased incidence of anemia...

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From Drawings to Puppet Shows: Creating a Collective Space for HIV-Positive Women: Learning from Feminist-Participatory Action Research

Najmah, Sari Andajani, Sharyn Graham Davies

Women with HIV are the real knower of their life, however, women living with HIV are highly stigmatized in Indonesia. As researchers we are, therefore, conscious of the sensitive nature of our research. The article explores the use of creative and visual methods to create a space with HIV-positive mothers...

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Relationship Between Sources of Information on Knowledge and Adolescent Attitude AT SMA N 1 Kayuagung, OKI, Sumatera Selatan

Rini Mutahar, Rini Angraini, Dewie Suranti, Siti Raesa Rahmah, Poppy Tarigan

Adolescence is a transition from childhood to adulthood. Teenagers experience rapid growth and need good nutrition to support their growth and development. One of the factors that play a role in the formation of adolescent behavior is that the cue factor acts in the form of mass media campaigns where...

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Breastfeeding Education: Its Effect on Cadres Knowledge and Attitudes of Exclusive Breastfeeding

Putri Widita Muharyani, Antarini Idriansari, Mutia Nadra Maulida, Dina Aprimilda

Posyandu cadre is an extension of health workers in educating mothers regarding breastfeeding. However, there are still many cadres who do not yet have good knowledge related to exclusive breastfeeding. This study aims to analyze the effect of breastfeeding education on the knowledge and attitudes of...

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| |
|------------------------|
| HOME |
| PREFACE |
| ARTICLES |
| AUTHORS |
| SESSIONS ▼ |
| ORGANIZERS |
| PUBLISHING INFORMATION |

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[Determinants of Healthy Latrines Ownership in Working Area at Public Health Center of Suak Tapeh in Banyuasin Regency South Sumatra 2019](#)

Yunita Theresiana, Leni Triayana, Septa Clara

Family latrine is a building used to dispose of feces for a family that is commonly called the latrine/WC. One of the health efforts made in public is the provision of basic sanitation. One of several basic sanitation facilities in the community is latrine. This study was a quantitative study using analytical...

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[The Effectiveness of Smart Palliative Bed to Measure a Patient's Weight](#)

Khoirul Latifin, Sigit Purwanto, Dian Wahyuni

Patient safety is the most important thing in health services at the hospital. Hospital services have a high risk of patient safety, especially in providing medical care and treatment. The most common incidence of patient safety in Indonesia is the mistake of administering drugs. It needs innovation...

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[Gastric Acid Detection Device for Cancer Patients](#)

Karolin Adhistry, Mutia Nadra Maulida, Nabilla Rizki Oktadini

Management of treatment in cancer patients is still dominated by chemotherapy. Chemotherapy is a method used to reach cancer cells so that cell growth can be inhibited and controlled. Implementation of this action with side effects that can cause nausea and vomiting, thereby affecting the nutritional...

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[Development of Screening for Early Detection of Depression, Anxiety and Stress in Adolescents Based on Android Services](#)

Zulian Effendi, Sri Maryatun, Herliawati

The adolescent is a transition period from childhood to adulthood. Adolescents are often associated with problems because of the changes that occur during adolescence in the form of biological, cognitive, and social-emotional changes. Changes that occur during adolescence, making adolescents vulnerable...

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[Factors Associated with Risky Sexual Behavior in Adolescent Boys in Indonesia](#)

Harneda Noviva, Tri Yunis Miko Wahyono

According to World Organization World, adolescents are residents in the age range of 10-19 years. According to Hurlock puberty is a phase of the range of children's development changing from asexual beings to sexual beings. One of the symptoms that arise at this time is preoccupation with sex (starting...

- [Article details](#)
 - [Download article \(PDF\)](#)
-

HOME

PREFACE

ARTICLES

AUTHORS

SESSIONS

ORGANIZERS

PUBLISHING INFORMATION

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Effect of LIMA Discharge Planning Model on Discharge Readiness Among Patients with Diabetes Mellitus

Fitri Y. Eka Yulia, Andhini Dhona, Natosba Jum

One of the health care services for hospitalized patients is discharge planning. The main goal is maintaining continuity of advanced care at home after the patient discharge. As the chronic illness, patients with diabetes mellitus desperately need discharge planning. Effective discharge planning can...

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Relationships of Self-Efficacy, Outcome Expectation, Career Intention and Career Exploration in Nutrition Science Student's Career Choice

Fidyah Pratiwi, Rizma Adlia Syakurah, Indah Yuliana, Reynold Siburian

The international world agreed that in 2030, Sustainable Development Goals (SDGs) were goals that needed to be achieved well. Given the current focus of the world and Indonesia, especially on the issue of stunting, namely the high number of malnutrition such as low body weight and short stature. The...

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Evaluation of Iron Tablet Program Among Adolescent Girl

M. Rifki Naufaldi, Haerawati Idris

Anemia is one of the health problems throughout the world, especially in developing countries. Anemia often occurs in young women. Prevention of anemia in young women can be done by giving iron tablets. The study aimed to evaluate of iron tablet program among adolescents in the work area of Muntok Health...

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Low Birth Weight and Underweight Association in Children Aged 6–59 Months in Palembang, Indonesia: A Cross-Sectional Study

Indah Purnama Sari, Yustini Ardillah, Anita Rahmiwati

Underweight and low birth weight are important markers for The Global Nutrition Targets in 2025, expressed especially in newborns, with a 30 percent reduction in between 2012 and 2025. This study was, therefore, aimed to comprehensively analyzing the association between low birth weight and underweight,...

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Strengthening Peer Educator on Mother's Knowledge and Attitudes of Stunting in Ogan Komering Ilir Regency

Anita Rahmiwati, Feranita Utama, Indah Purnama Sari

Short children is a predictor of poor-quality human resources that are widely accepted, which in turn reduces the productive ability of a nation in the future. Stunting or malnutrition based on height by age is an indicator of chronic malnutrition. The prevalence of stunting for five-year-old infants...

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- [Download article \(PDF\)](#)

| |
|------------------------|
| HOME |
| PREFACE |
| ARTICLES |
| AUTHORS |
| SESSIONS |
| ORGANIZERS |
| PUBLISHING INFORMATION |

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Relationship Between Characteristics of the Third-Trimester Pregnant Women and Incidence of Anemia in Malaria-Endemic Regions in Bengkulu City

Rostika Flora, Misnaniarti, Fatmalia Febry, Suci Destriatania, Ditia Fitri Arinda, Anita Rahmiwati, Agusdik, Nurlaily, Ikhsan

Background: Pregnant women who live in malaria-endemic regions are highly vulnerable to the incidence of anemia. The presence of malarial infections and pregnancy are two major causes that worsen the incidence of anemia in most women. The purpose of this study was to find out the relationship between...

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Adolescent Need to Know About Cigarettes Content

Fenny Etrawati, Yeni, Widya Lionita

Adolescents smokers are increase in prevalence. This is because the characteristics of adolescents tend to try new things which are populer among peer group without knowing the content of cigarettes and it's effects to their health. This study aimed to identify the knowledge possessed by adolescents...

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The Determinant of Chronic Energy Deficiency Incidence in Adolescent Girls in Ogan Komering, Ilir Regency

Fatmalina Febry, Fenny Etrawati, Ditia Fitri Arinda

Stunting starts from pre- conception when adolescents becomes an malnutrition and anemic mother. One problem of malnutrition in adolescents is chronic energy deficiency which will have an impact on increasing the prevalence of stunting in infants. The purpose of this study was to determine the determinant...

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The Effect of Murottal Alquran Therapy on Heart Rate, Respiration Rate, Saturation Oxygen of Premature Infants Using Mechanical Ventilation in the Neonatal Intensive Care Unit

Nurhusna, Fadliyana Ekawaty, Andika Sulistiawan

Prematurities or low birth weight commonly contributes to the mortality rate of newborns. About 35% of babies born prematurely are very vulnerable for inability to adapt to the extrauterine environment. This condition often requires intensive monitoring such as the Neonatal Intensive Care Unit (NICU)...

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The Determinant of National Health Insurance Membership in Ogan Komering Ilir District

Dian Safriantini, Haerawati Idris, Asmaripa Ainy

Membership in social security is one of the dimensions formulated by the World Health Organization in achieving Universal Health Coverage. It is also an indicator of the successfulness of the National Health Insurance (NHI) program. In the SP. Padang Subdistrict of Ogan Komering Ilir Regency, the number...

- [Article details](#)
- [Download article \(PDF\)](#)

[HOME](#)

[PREFACE](#)

[ARTICLES](#)

[AUTHORS](#)

[SESSIONS](#) ▼

[ORGANIZERS](#)

[PUBLISHING INFORMATION](#)

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Factors Associated with Village Midwives Performance in Antenatal Care Services, Ogan Ilir Regency 2019

Iwan Stia Budi, Ella Amalia, Afriyan Firdaus

Maternal mortality is still the main problem in Indonesia. Based on SDKI 2012, maternal mortality in Indonesia is 346 each 1000 of birth while national target in 2019 is 305 each 1000 of birth. The aim of research is to analyze factors that correlate with village midwives performance in ante natal care...

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Factors Related to Age of Menopause in Elderly Mothers in Cimanggis Community Health Center Depok

Nurmalia Ermi, Sudijanto Kamso

Women who face menopause are included in the risk group because in this group there is a drastic change in physical, psychological, and socio-cultural. The age of menopause between a woman and another woman is not the same and depends on the factors that influence it. Menopause at an earlier age will...

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Evaluation of Chronic Diseases Management Program (Prolanis)

D. Fitria Sari Firdaus, Haerawati Idris

Diabetes and Hypertension are diseases that are on the ten most diseases list in Indonesia, thus increasing health costs. The government implemented chronic disease management program (prolanis) to prevent the disease. This study aims to analyze the implementation of prolanis conducted at the Sako Health...

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Low Birth Weight and Asphyxia Neonatorum Risk: A Case-Control Study

Rahmatillah Razak, Asri Adisasmita

Asphyxia neonatorum is the cause of 23% of all neonatal mortality in the world. Three quarters from the neonatal mortality are caused by conditions that can be prevented and treated, including the incident of asphyxia. Low Birth Weight (LBW) has the risk of having a respiratory failure that can cause...

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Efficiency of Outpatient Service at Three Health Centers in Palembang City, Indonesia

Asmaripa Ainy, Iwan Stia Budi, Dian Safriantini

Background: Health center (it is called Puskesmas) is a health facility that provides basic health services through outpatient units. In an effort to improve the efficiency of outpatient services, the health center could apply the Lean Concept. The aim of this study was to analyze efficiency of outpatient...

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 - [Download article \(PDF\)](#)
-

HOME

PREFACE

ARTICLES

AUTHORS

SESSIONS

ORGANIZERS

PUBLISHING INFORMATION

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The Impact of High Temperature to the Occurrence of Urine Crystallization at CV Aluminium Mandiri Palembang, South Sumatra

Meta Rosalina, Yuanita Windusari

Hottest temperatures make body adapting by excreting excessive sweating. CV Aluminium Mandiri Palembang manufacture in making fan and pot that is fire furnace causing hottest temperatures. When the body loses fluid without being accompanied by the consumption of replacement fluids for a long time, it...

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Prevalence of Unmet Needs for Family Planning and It's Reasons for Women of Reproductive Age in Ogan Ilir

Yeni, Fenny Etrawati, Feranita Utama

The total birth rate of Indonesia's population in 2015 was 2.1, it is estimated that Indonesia's population in 2025 will increase to 282 million. The contraceptive method was one of the government's efforts to control the rate of population growth. The purpose of this study was to determine the prevalence...

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Effect of Education and Provision of Drinking Water on Adolescents' Drinking Consumption and Hydration Status

Ditia Fitri Arinda, Zaenal Muttaqien Sofro, Fatma Zuhrotun

Water is an essential substance for body health. A body fluid imbalance leads to dehydration, which is not only detrimental to fitness level and cognitive performance but is also related to psychological disorders and various other chronic diseases. Incidence of dehydration is higher among adolescents...

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Association Between Lifestyle with Hypertension in Communities in Healthy at Working Area of Merdeka Health Center, Palembang City

Dini Arista Putri, Amrina Rosyada, Yeni

The case of hypertension is a problem that is often not realized by the public, this disease usually begins to be detected when complications begin with other diseases. Many factors affect the emergence of this case, one of them is an unhealthy lifestyle. Unhealthy lifestyle includes smoking habit, coffee...

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Burdens and Quality of Life of Chronic Disease Patients' Family Caregivers: A Systematic Review

Jum Natosba, Fernaliza Rizona, Zulian Effendy, Adelia Pradita

Chronic illness is a disease that requires long-term treatment and care. Chronic illnesses have a big impact not only on patients but also on family caregivers which can affect the quality of life and even become a burden on family caregivers. This systematic review aims to find out the view of burdens...

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ARTICLES

AUTHORS

SESSIONS

ORGANIZERS

PUBLISHING INFORMATION

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The Self-Efficacy in Hemodialysis Patients

Yosi Oktarina, Andika Sulistiawan

Hemodialysis is one of the treatments for patient with chronic renal failure. Previous study showed that the level of self efficacy could prevent complication and improve quality of life. The purpose of this study was to determine the patients' self efficacy in chronic renal failure who underwent hemodialysis...

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Forest and Wetland Fire in Ogan Ilir Regency

Mona Lestari, Novrikas, Poppy Fujianti, Nyayu Zaskia Fatturahma

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Dwi Septiawati, Inoy Trisnaini, Elvi Sunarsih, Mona Lestari, Minarti

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Simanjuntak Widya Linawati, Imelda Gernauli Purba

PT Pupuk Sriwidjaja Palembang produce various kinds of fertilizers Ammonia one. Primary reformer 101-B is one of process equipment in the production of ammonia with the highest temperature and pressure as well as the most at risk of failure which could result in a fire or explosion. Primary reformer...

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Feranita Utama, Anita Rahmiwati, Ditia Fitri Arinda

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Correlation Between Timing of Hepatitis B Immunoglobulin to the Effectiveness of Mother to Child Transmission Prevention Program

Tonggo Margareta Butarbutar, Misnaniarti, Rostika Flora

The Prevention Program for Hepatitis B from Mother to Child Transmission (PMTCT) was carried out in Pangkalpinang City, Bangka Belitung Province since 2016. Pregnant women detected HBsAg positive were recorded so their newborn could get Hepatitis B Immunoglobulin (HBIG). The aim of study to analyze the...

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Erna Mutiara, Syarifah, Lanova Dwi Arde

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Correlation Between Timing of Hepatitis B Immunoglobulin to The Effectiveness of Mother to Child Transmission Prevention Program

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Abstract -The Prevention Program for Hepatitis B from Mother to Child Transmission (PMTCT) was carried out in Pangkalpinang City, Bangka Belitung Province since 2016. Pregnant women detected HBsAg positive were recorded so their newborn could get Hepatitis B Immunoglobulin (HBIg). The aim of study to analyze the correlation between the timing of Hepatitis B Immunoglobulin (HBIg) to the effectiveness of Hepatitis B PMTCT program in Pangkalpinang City. This study using cross sectional approach. Number of research samples was 59 children born to HBsAg positive mothers, who were taken using consecutively sampling from HBIg recipient data of Pangkalpinang Health Office. Independent variables are the timing of HBIg, and completeness of the Hepatitis B immunization, that were known from the MCH books and interviews with mothers using questionnaires. Dependent variable is effectiveness of the Hepatitis B PMTCT program, that measured from HBsAg and AntiHBs testing of children using the Rapid Diagnostic Test (RDT). Data analysis using chi-square test. The results showed that 1 (1.7%) children with HBsAg were positive, and 29 (49.2%) children with Anti-HBs were positive. Based on the results of the chi-square test there is a significant correlation between the timing of HBIg administration (p-value = 0.007) and the completeness status of Hepatitis B immunization (p-value = 0.026) on the success of the Hepatitis B PMTCT program in Pangkalpinang City. The timing of HBIg is effective in preventing transmission of Hepatitis B from HBsAg positive mothers to their newborn. Recommendation for health workers to cause immunity or antibodies on child, the HBIg is given immediately or less than 12 hours after birth, and is supplemented with a completeness of Hepatitis B vaccine.

Keywords: *Hepatitis B, immunoglobulin, HBsAg, immunization, PMTCT*

I. INTRODUCTION

Maternal and Child Health (MCH) is still a global development priority (SDGs), with a focus on promotive and preventive efforts such as the Prevention of Mother To Child Transmission (PMTCT) program (United Nations, 2018).

World Health Organization (WHO) estimates that 257 million people in the world live with the chronic hepatitis B virus. Around 1.34 million mortality due to chronic hepatitis, cirrhosis and liver cancer. It is even expected to continue to increase, because vertical transmission from mother to baby has the potential to become cirrhosis of the liver and death (WHO, 2017). Indonesia is a country with a high prevalence. This is shown from the results of the 2018 riskesdas which showed that the prevalence of Hepatitis B was 0.39% (Riskesdas, 2018).

The prevalence of pregnant women infected with hepatitis B is currently 2.5%. With the risk of transmission from mother to child more than 90%. For this reason, the government in this case the Ministry of Health of the Republic of Indonesia undertakes preventive promotive efforts to eliminate infectious diseases in the context of Preventing Mother-to-Child Transmission (PPIA). Early detection in pregnant women is done to find out the presence of the HIV virus, syphilis and hepatitis B, this program is called triple elimination (Permenkes 52, 2017).

Vertical transmission of Hepatitis B from mothers with positive HBsAg in their infants has a 90% risk of becoming chronic and carrier. Specific prevention against hepatitis B infection is by immunization, which is divided into passive and

active Hepatitis B immunization. Passive immunization is by giving Hepatitis B immunoglobulin (HBIg) in a short time to immediately provide protection even if only for a short period (3-6 months). HBIg is only given in post-exposure conditions (needle stick injury, sexual contact, infants of Hepatitis B mothers, blood splattered to the mucosa or eyes).

HBIg should be given with the Hepatitis B vaccine so that the protection lasts longer. Whereas Active Immunization is to implement a universal immunization program for newborns by providing a recombinant Hepatitis B vaccine available. This vaccine consists of three series and if given as recommended will lead to the formation of a protective response which will ultimately succeed in reducing the prevalence of Hepatitis B virus infection (Permenkes 53, 2015).

Immunizations or vaccinations are given from birth to early children. Basic immunizations that must be given before a child is 1 year old include are : Hepatitis B (HB₀), BCG, Polio₁, DPT/HB₁, Polio₂, DPT/HB₂, Polio₃, DPT/HB₃, Polio₄, and Campak. After 1 year of age the child also receives additional immunization (booster) at the age of 18 months, namely DPT / HB₄, Polio₅ and when the child enters school age (Permenkes 12, 2017).

In infants of mothers with Hepatitis B virus, HBIg should be given together with the Hepatitis B 0 vaccine on different sides of the body within 12 hours after birth. This policy has been proven effective (85-95%) in preventing hepatitis B virus infection and preventing chronicity (19-20%) whereas with the hepatitis B vaccine alone it has an effectiveness rate of 75%. If the mother's HBsAg is discovered a few days later, HBIg can be given if the baby is <7 days old. However, its effectiveness will decrease if given 3 days after exposure. Generally, HBIg is given with the Hepatitis B vaccine so that in addition to providing immediate protection, this combination also provides long-term protection (PPHI, 2006).

Therefore the purpose of this study was to analyze the correlation between the timing of HBIg and the effectiveness of the Prevention of Mother to Child Hepatitis B Transmission (PPIA) in Pangkalpinang City.

II. METHOD

Study Design

This research is observational study using cross sectional design. Samples were children aged

> 1 year who were born by Hepatitis B mothers and received HBIg. Sampling was done using consecutive sampling from HBIg recipient data from the City Health Office of Pangkalpinang.

III. DATA AND ANALYSIS

The dependent variable is the effectiveness of the PPIA Hepatitis B program, measured from children born to Hepatitis B mothers who are not infected with Hepatitis B virus (HBsAg negative) and children who have immunity or antibodies against Hepatitis B virus (positive Anti-HBs). Child HBsAg and Anti-HBs examination uses the Rapid Diagnostic Test (RDT) method.

The independent variable in this study was the timing of HBIg (time of injection) and the completeness status of Hepatitis B immunization on children. Data obtained from interviews with mothers using a questionnaire and checking the notes on the children's MCH handbook. Data analysis using the chi-square test, with $\alpha = 0.05$ and the confidence interval set was 95%.

IV. RESULTS

Characteristics of respondents

Based on the results of this study obtained a sample of 59 children (see Table 1). More male sex is 32 people (54.2%) than women. The most children blood type is blood type O Rh (+), which is 19 people (32.2%). More children who received HBIg injections in the <12 hour group were 45 people (76.3%) children, compared to children who got HBIg ≥ 12 hours. Likewise, the variable status of completeness of Hepatitis B immunization is more children with complete immunization status (84.7%) than children who are incomplete.

Next, for the status of transmission of Hepatitis B, it is known that there are 1 person (1.7%) children with HBsAg positive, while 58 children with HBsAg negative. As for the immunity or antibody known only 29 children (49.2%) who have positive Anti-HBs (Table 1).

This analysis shown the correlation between timing of HBIg with the effectiveness of Hepatitis B Mother to Child Transmission Prevention program (PPIA) obtained data for 27 (60.0%) of children who received HBIg <12 hours did not successfully contract Hepatitis B and had positive antibodies. Whereas in the group of children who received HBIg immunization ≥ 12 hours that succeeded in 2 (14.3%) children.

Table 1. Characteristic of Respondents

| Variables | Frequencies | |
|---|-------------|------|
| | n | % |
| Age of child | | |
| ≥ 2 years | 31 | 52.5 |
| < 2 years | 28 | 47.9 |
| Sex | | |
| Male | 32 | 54.2 |
| Female | 27 | 45.8 |
| Blood Type | | |
| A Rh (+) | 18 | 30.5 |
| B Rh (+) | 15 | 25.4 |
| AB Rh (+) | 7 | 11.9 |
| O Rh (+) | 19 | 32.2 |
| Timing of HBIG | | |
| ≥ 12 hours | 14 | 23.7 |
| < 12 hours | 45 | 76.3 |
| Completeness of Hepatitis B Immunization | | |
| No complete | 9 | 15.3 |
| Complete | 50 | 84.7 |
| HBsAg | | |
| Positive | 1 | 1.70 |
| Negative | 58 | 98.3 |
| Anti-HBs | | |
| Negative | 30 | 50.8 |
| Positive | 29 | 49.2 |

Table 2. Results of bivariat analysis using chi-square test

| Variables | Effectiveness PPIA | | | | Total | | p-value | PR 95% CI |
|---|--------------------|------|-----|------|-------|-----|---------|--------------------|
| | No | | Yes | | n | % | | |
| | n | % | n | % | | | | |
| Timing HBIG | | | | | | | | |
| ≥ 12 hours | 12 | 85.7 | 2 | 14.3 | 14 | 100 | 0.007 | 9.00 (1.79-45.08) |
| < 12 hours | 18 | 40.0 | 27 | 60.0 | 45 | 100 | | |
| Completeness of Hepatitis B Immunization | | | | | | | 0.026 | 10.18 (1.18-87.63) |
| No complete | 8 | 88.9 | 1 | 11.1 | 9 | 100 | | |
| Complete | 22 | 44.0 | 28 | 56.0 | 50 | 100 | | |

The analysis results obtained p-value <0.05 so it can be concluded that there is a statistically significant relationship between the time of HBIG immunization with the success of the PPIA program. Known OR value of 9,000 means children who receive HBIG <12 hours have 9 times the chance to succeed without contracting hepatitis B and have immunity (antibodies), compared with children who get HBIG ≥ 12 hours.

Correlation between the completeness status of the hepatitis B immunization with the effectiveness of the PPIA Hepatitis B program obtained data that there were 28 (56.0%) children

with complete hepatitis B immunization who did not successfully contract Hepatitis B and had immunity or antibodies. While in the group of children with incomplete immunizations, there were 1 (11.1%) children who successfully were not infected and had immunity. P-value = 0.026 or <0.05.

So it can be concluded that there is a significant correlation between the completeness of Hepatitis B immunization of children with the success of the PPIA Hepatitis B program. OR value of 10.182 can be interpreted that children who have complete hepatitis B immunization have a 10.182

times greater chance of successfully not contracting and having immunity against the hepatitis virus. B, compared to children whose Hepatitis B immunization status is incomplete.

V. DISCUSSION

Babies born to mothers with HBsAg positive, the administration of Hepatitis B vaccine (HB-0) and immunoglobulins should be done as soon as possible, preferably <24 hours (Ministry of Health, 2015). However, another theory in the technical guidelines for babies born to mothers with Hepatitis B, states that the action immediately after the baby is born <12 hours is the administration of a recombinant Hepatitis B vaccine and at the same time on the other side of the body is given immunoglobulin (HBIg) IM at a dose 0.5 ml (Pujiarto, et al, 2000).

The timing injection of HBIg is in accordance with the research of Evans, et al., In Haimen City China which obtained the results of HBIg and HB0 for 183 respondents in total <23 hours (Evans, et al, 2015). However, different results are shown by Ahmad N.'s research, in Magelang District, Central Java, only 42 of 61 respondents (68.85%) received HBIg <12 hours, while the remaining 19 respondents did not get HBIg at all because of the relatively high price and not knowing that their child must get HBIg immunization (Ahmad N., 2017).

Immunoglobulin is a passive immunization, so the child immediately gets antibodies or immunity against Hepatitis B. In contrast to the Hepatitis B vaccine which stimulates the child's body to release its own antibodies (active immunization). When the child goes through childbirth there is a risk of transmission from the mother, so the administration of HBIg after 12 hours has passed because it is feared that the virus from the mother has infected the child, before the child has antibodies.

Based on the results of this study it is known that all children born receive HBIg immunization but not all of them complete with Hepatitis B vaccine. There are 84.7% of children with complete hepatitis B immunization status, namely getting HB0, HB1, HB2 and HB3 vaccines before 1 year of age. While there are incomplete respondents who only receive HBIg and HB0 at birth, without being equipped with any other immunizations. There was even 1 respondent who only received HBIg without HB0 after birth, and

this Anti-Hbs respondent was still negative. The results of this study show that there is a significant relationship between the completeness of the immunization status of children with the success of the PPIA program ($p = 0.026$).

Based on the Republic of Indonesia Minister of Health Regulation (*Permenkes*) number 53 of 2015 about the prevention of Hepatitis Virus it is stated that every baby born is given the Hepatitis B vaccine (HB-0) as soon as possible, but for babies born to mothers with positive HBsAg, the immunizations given are immunoglobulin (HBIg) and HB- 0 on different thighs, then proceed with the hepatitis B vaccine in accordance with the national immunization program, which is at the age of 2 months, 3 months and 4 months. Hepatitis B immunization can provide protection against hepatitis B infection for more than 20 years. The success of immunization is assessed from the detection of antibodies (anti-HBs) after giving full immunizations 3-4 times (Permenkes 53, 2015).

The result of this study similar with the results of the Beasley, et al. (1983), which states that the efficacy of HBIg alone is 71%, the efficacy of Hepatitis B vaccine alone is 75%, while the efficacy of Hepatitis B vaccine along with HBIg is 94%. However, different results were shown by Ahmad N, 2017 in Magelang District, where 61 respondents all received HB0 <12 hours, but only 68.85% received HBIg, and showed 0% transmission (Ahmad N., 2017).

VI. CONCLUSION AND RECOMMENDATION

Based on the results of this study there is a significant relationship between the time of HBIg administration ($p = 0.007$), and the status of completeness of Hepatitis B immunization ($p = 0.026$) with the success of the PPIA Hepatitis B program. The administration of HBIg immunization is effective in preventing transmission of Hepatitis B from mother to child, but to cause antibodies or immunity in children, HBIg alone is not enough so it must be supplemented with the entire Hepatitis B vaccine.

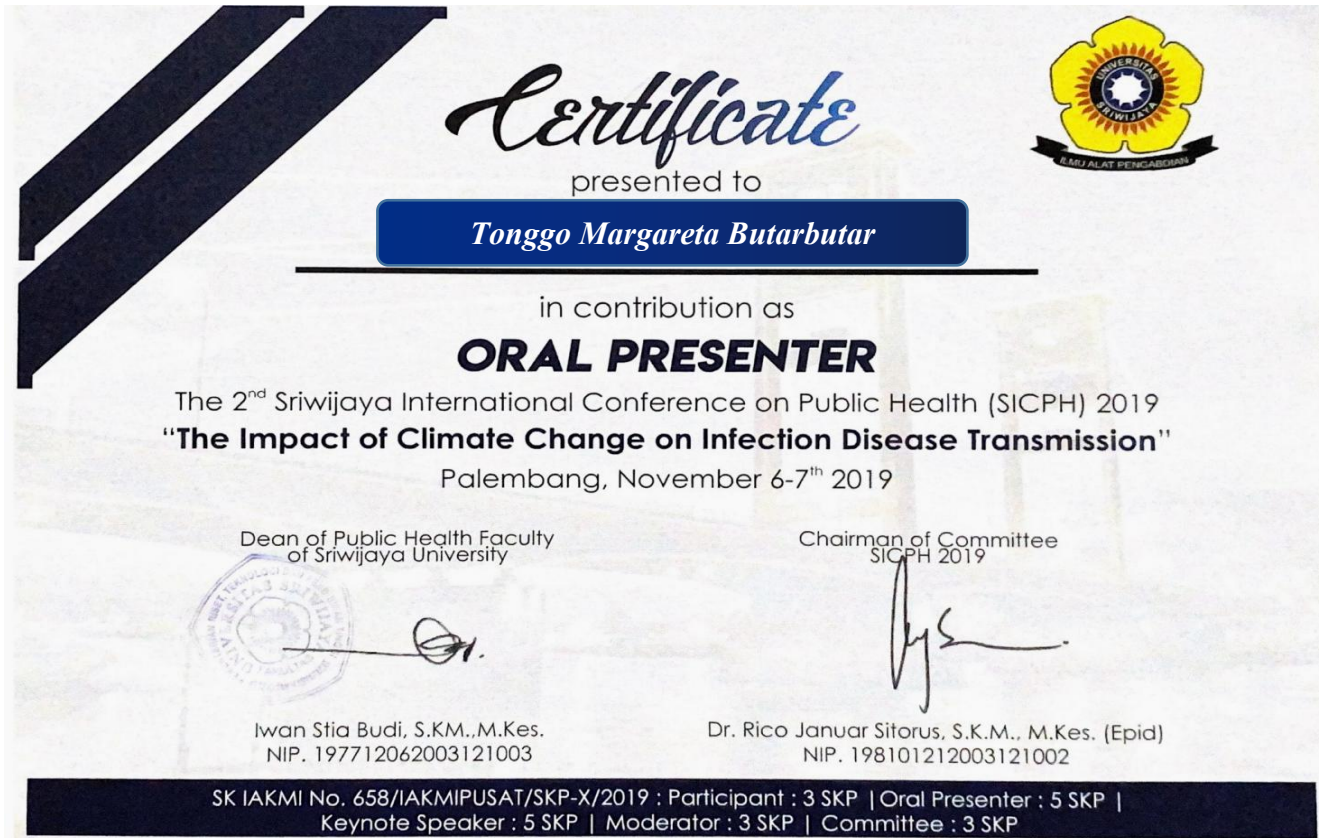
It is important to inform the health workers and family of Hepatitis B that the best time to give HBIg is <12 hours after the baby is born, and the baby must also get a complete Hepatitis B vaccine to prevent contracting Hepatitis B.

Acknowledgment

Thank you to Sriwijaya University, and that to Head of the Bangka Belitung Islands Provincial Health Office, Head of the Pangkalpinang City Health Office, and all Hepatitis B program managers at the Puskesmas for their participation and cooperation so that this research can well done.

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The research protocol proposed by

Peneliti Utama
Principal in Investigator

: Tonggo Margareta Butar Butar

Nama Institusi
Name of the Institution

: Fakultas Kesehatan Masyarakat Universitas Sriwijaya

Dengan Judul :
Title

**"ANALISIS EFEKTIVITAS PROGRAM IMUNISASI HEPATITIS B IMUNOGLOBULIN (HBIG)
DALAM PENCEGAHAN PENULARAN DARI IBU KE ANAK DI KOTA PANGKALPINANG"**

**"ANALYSIS OF THE EFFECTIVENESS OF IMMUNIZATION PROGRAMS OF THE HEPATITIS B
IMMUNOGLOBULIN (HBIG) IN PROVENTION OF MOTHER TO CHILD TRANSMISSION
IN PANGKALPINANG"**

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This declaration of ethics applies during the period March 25, 2019 until March 25, 2020.



Indralaya, March 25, 2019
Head of the Committee,

[Signature]
Dr. Rostika Flora, S.Kep., M.Kes
NIP. 197109271994032004

Correlation Between Timing of Hepatitis B Immunoglobulin to the Effectiveness of Mother to Child Transmission Prevention Program

by Rostika Flora

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Keywords: Hepatitis B, immunoglobulin, HBsAg, immunization, PMTCT

I. INTRODUCTION

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active Hepatitis B immunization. Passive immunization is by giving Hepatitis B immunoglobulin (HBIG) in a short time to immediately provide protection even if only for a short period (3-6 months). HBIG is only given in post-exposure conditions (needle stick injury, sexual contact, infants of Hepatitis B mothers, blood splattered to the mucosa or eyes).

HBIG should be given with the Hepatitis B vaccine so that the protection lasts longer. Whereas Active Immunization is to implement a universal immunization program for newborns by providing a recombinant Hepatitis B vaccine available. This vaccine consists of three series and if given as recommended will lead to the formation of a protective response which will ultimately succeed in reducing the prevalence of Hepatitis B virus infection (Permenkes 53, 2015).

Immunizations or vaccinations are given from birth to early children. Basic immunizations that must be given before a child is 1 year old include are : Hepatitis B (HB₀), BCG, Polio₁, DPT/HB₁, Polio₂, DPT/HB₂, Polio₃, DPT/HB₃, Polio₄, and Campak. After 1 year of age the child also receives additional immunization (booster) at the age of 18 months, namely DPT / HB₄, Polio₅ and when the child enters school age (Permenkes 12, 2017).

In infants of mothers with Hepatitis B virus, HBIG should be given together with the Hepatitis B 0 vaccine on different sides of the body within 12 hours after birth. This policy has been proven effective (85-95%) in preventing hepatitis B virus infection and preventing chronicity (19-20%) whereas with the hepatitis B vaccine alone it has an effectiveness rate of 75%. If the mother's HBsAg is discovered a few days later, HBIG can be given if the baby is <7 days old. However, its effectiveness will decrease if given 3 days after exposure. Generally, HBIG is given with the Hepatitis B vaccine so that in addition to providing immediate protection, this combination also provides long-term protection (PPHI, 2006).

Therefore the purpose of this study was to analyze the correlation between the timing of HBIG and the effectiveness of the Prevention of Mother to Child Hepatitis B Transmission (PPIA) in Pangkalpinang City.

II. METHOD

Study Design

This research is observational study using cross sectional design. Samples were children aged

> 1 year who were born by Hepatitis B mothers and received HBIG. Sampling was done using consecutive sampling from HBIG recipient data from the City Health Office of Pangkalpinang.

III. DATA AND ANALYSIS

The dependent variable is the effectiveness of the PPIA Hepatitis B program, measured from children born to Hepatitis B mothers who are not infected with Hepatitis B virus (HBsAg negative) and children who have immunity or antibodies against Hepatitis B virus (positive Anti-HBs). Child HBsAg and Anti-HBs examination uses the Rapid Diagnostic Test (RDT) method.

The independent variable in this study was the timing of HBIG (time of injection) and the completeness status of Hepatitis B immunization on children. Data obtained from interviews with mothers using a questionnaire and checking the notes on the children's MCH handbook. Data analysis using the chi-square test, with $\alpha = 0.05$ and the confidence interval set was 95%.

IV. RESULTS

Characteristics of respondents

Based on the results of this study obtained a sample of 59 children (see Table 1). More male sex is 32 people (54.2%) than women. The most children blood type is blood type O Rh (+), which is 19 people (32.2%). More children who received HBIG injections in the <12 hour group were 45 people (76.3%) children, compared to children who got HBIG ≥ 12 hours. Likewise, the variable status of completeness of Hepatitis B immunization is more children with complete immunization status (84.7%) than children who are incomplete.

Next, for the status of transmission of Hepatitis B, it is known that there are 1 person (1.7%) children with HBsAg positive, while 58 children with HBsAg negative. As for the immunity or antibody known only 29 children (49.2%) who have positive Anti-HBs (Table 1).

This analysis shown the correlation between timing of HBIG with the effectiveness of Hepatitis B Mother to Child Transmission Prevention program (PPIA) obtained data for 27 (60.0%) of children who received HBIG <12 hours did not successfully contract Hepatitis B and had positive antibodies. Whereas in the group of children who received HBIG immunization ≥ 12 hours that succeeded in 2 (14.3%) children.

Table 1. Characteristic of Respondents

| Variables | Frequencies | |
|---|-------------|------|
| | n | % |
| Age of child | | |
| ≥ 2 years | 31 | 52.5 |
| < 2 years | 28 | 47.9 |
| Sex | | |
| Male | 32 | 54.2 |
| Female | 27 | 45.8 |
| Blood Type | | |
| A Rh (+) | 18 | 30.5 |
| B Rh (+) | 15 | 25.4 |
| AB Rh (+) | 7 | 11.9 |
| O Rh (+) | 19 | 32.2 |
| Timing of HBIg | | |
| ≥ 12 hours | 14 | 23.7 |
| < 12 hours | 45 | 76.3 |
| Completeness of Hepatitis B Immunization | | |
| No complete | 9 | 15.3 |
| Complete | 50 | 84.7 |
| HBsAg | | |
| Positive | 1 | 1.70 |
| Negative | 58 | 98.3 |
| Anti-HBs | | |
| Negative | 30 | 50.8 |
| Positive | 29 | 49.2 |

Table 2. Results of bivariat analysis using chi-square test

| Variables | Effectiveness PPIA | | | | Total | | p-value | PR 95% CI |
|---|--------------------|------|-----|------|-------|-----|---------|--------------------|
| | No | | Yes | | n | % | | |
| | n | % | n | % | | | | |
| Timing HBIg | | | | | | | | |
| ≥ 12 hours | 12 | 85.7 | 2 | 14.3 | 14 | 100 | 0.007 | 9.00 (1.79-45.08) |
| < 12 hours | 18 | 40.0 | 27 | 60.0 | 45 | 100 | | |
| Completeness of Hepatitis B Immunization | | | | | | | 0.026 | 10.18 (1.18-87.63) |
| No complete | 8 | 88.9 | 1 | 11.1 | 9 | 100 | | |
| Complete | 22 | 44.0 | 28 | 56.0 | 50 | 100 | | |

The analysis results obtained p-value <0.05 so it can be concluded that there is a statistically significant relationship between the time of HBIg immunization with the success of the PPIA program. Known OR value of 9,000 means children who receive HBIg <12 hours have 9 times the chance to succeed without contracting hepatitis B and have immunity (antibodies), compared with children who get HBIg ≥ 12 hours.

Correlation between the completeness status of the hepatitis B immunization with the effectiveness of the PPIA Hepatitis B program obtained data that there were 28 (56.0%) children

with complete hepatitis B immunization who did not successfully contract Hepatitis B and had immunity or antibodies. While in the group of children with incomplete immunizations, there were 1 (11.1%) children who successfully were not infected and had immunity. P-value = 0.026 or <0.05.

So it can be concluded that there is a significant correlation between the completeness of Hepatitis B immunization of children with the success of the PPIA Hepatitis B program. OR value of 10.182 can be interpreted that children who have complete hepatitis B immunization have a 10.182

times greater chance of successfully not contracting and having immunity against the hepatitis virus. B, compared to children whose Hepatitis B immunization status is incomplete.

V. DISCUSSION

Babies born to mothers with HBsAg positive, the administration of Hepatitis B vaccine (HB-0) and immunoglobulins should be done as soon as possible, preferably <24 hours (Ministry of Health, 2015). However, another theory in the technical guidelines for babies born to mothers with Hepatitis B, states that the action immediately after the baby is born <12 hours is the administration of a recombinant Hepatitis B vaccine and at the same time on the other side of the body is given immunoglobulin (HBIG) IM at a dose 0.5 ml (Pujiarto, et al, 2000).

The timing injection of HBIG is in accordance with the research of Evans, et al., In Haimen City China which obtained the results of HBIG and HB0 for 183 respondents in total <23 hours (Evans, et al, 2015). However, different results are shown by Ahmad N.'s research, in Magelang District, Central Java, only 42 of 61 respondents (68.85%) received HBIG <12 hours, while the remaining 19 respondents did not get HBIG at all because of the relatively high price and not knowing that their child must get HBIG immunization (Ahmad N., 2017).

Immunoglobulin is a passive immunization, so the child immediately gets antibodies or immunity against Hepatitis B. In contrast to the Hepatitis B vaccine which stimulates the child's body to release its own antibodies (active immunization). When the child goes through childbirth there is a risk of transmission from the mother, so the administration of HBIG after 12 hours has passed because it is feared that the virus from the mother has infected the child, before the child has antibodies.

Based on the results of this study it is known that all children born receive HBIG immunization but not all of them complete with Hepatitis B vaccine. There are 84.7% of children with complete hepatitis B immunization status, namely getting HB0, HB1, HB2 and HB3 vaccines before 1 year of age. While there are incomplete respondents who only receive HBIG and HB0 at birth, without being equipped with any other immunizations. There was even 1 respondent who only received HBIG without HB0 after birth, and

this Anti-Hbs respondent was still negative. The results of this study show that there is a significant relationship between the completeness of the immunization status of children with the success of the PPIA program ($p = 0.026$).

Based on the Republic of Indonesia Minister of Health Regulation (*Permenkes*) number 53 of 2015 about the prevention of Hepatitis Virus it is stated that every baby born is given the Hepatitis B vaccine (HB-0) as soon as possible, but for babies born to mothers with positive HBsAg, the immunizations given are immunoglobulin (HBIG) and HB- 0 on different thighs, then proceed with the hepatitis B vaccine in accordance with the national immunization program, which is at the age of 2 months, 3 months and 4 months. Hepatitis B immunization can provide protection against hepatitis B infection for more than 20 years. The success of immunization is assessed from the detection of antibodies (anti-HBs) after giving full immunizations 3-4 times (*Permenkes* 53, 2015).

The result of this study similar with the results of the Beasley, et al. (1983), which states that the efficacy of HBIG alone is 71%, the efficacy of Hepatitis B vaccine alone is 75%, while the efficacy of Hepatitis B vaccine along with HBIG is 94%. However, different results were shown by Ahmad N, 2017 in Magelang District, where 61 respondents all received HB0 <12 hours, but only 68.85% received HBIG, and showed 0% transmission (Ahmad N., 2017).

VI. CONCLUSION AND RECOMMENDATION

Based on the results of this study there is a significant relationship between the time of HBIG administration ($p = 0.007$), and the status of completeness of Hepatitis B immunization ($p = 0.026$) with the success of the PPIA Hepatitis B program. The administration of HBIG immunization is effective in preventing transmission of Hepatitis B from mother to child, but to cause antibodies or immunity in children, HBIG alone is not enough so it must be supplemented with the entire Hepatitis B vaccine.

It is important to inform the health workers and family of Hepatitis B that the best time to give HBIG is <12 hours after the baby is born, and the baby must also get a complete Hepatitis B vaccine to prevent contracting Hepatitis B.

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