

EFFECT OF HYPERTENSION ON COGNITIVE FUNCTION DISORDER AMONG THE ELDERLY IN MEDAN, NORTH SUMATERA

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ABSTRACT

Background: Hypertension is an increase in blood pressure that can interfere the circulation of blood flow in the brain. It can develop to be a risk factor for cognitive function disorder. The cognitive function disorders include five areas: concentration, language, orientation, memory, and attention. This study aimed to examine the effect of hypertension on cognitive function disorder among the elderly in Medan, North Sumatera.

Subjects and Method: This was a cross-sectional study conducted at 3 community health centers (Puskesmas) in Medan, North Sumatera. A total sample of 65 patients with regular anti-hypertensive treatment was selected for this study, consisting of 41 men and 24 women. Blood pressure was measured by blood pressure gauge NOVA brand. Cognitive function was measured by psychometric assessment screening using Mini Mental State Examination (MMSE). The dependent variable was cognitive function disorder. The independent variable was hypertension. The data were analyzed using chi-square test.

Results: A total of 23 (62%) of 37 patients with level I hypertension had mild cognitive impairment, and 14 (38%) had severe cognitive impairment. Eleven (39%) of 28 patients with level II hypertension had mild cognitive impairment, and 17 (61%) had severe cognitive impairment. Hypertension increased the risk of cognitive function disorder ($p= 0.004$).

Conclusion: Hypertension increases the risk of cognitive function disorder among the elderly.

Keywords: hypertension, cognitive function disorder, elderly

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THE ASSOCIATION BETWEEN ORGANOPHOSPHATE PESTICIDE EXPOSURE AND ERYTHROCYTE SEDIMENTATION RATE AMONG FARMERS IN SUMBEREJO VILLAGE, MAGELANG, CENTRAL JAVA

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ABSTRACT

Background: The major occupation of Sumberejo villagers is a vegetable farmer. A lot of farmers use organophosphate pesticide spray. Improper use of spraying pesticide may cause harmful health impact in human. Organophosphate pesticide is poisonous and it affects the blood profile of farmers. This study aimed to examine the association between organophosphate pesticide exposure and erythrocyte sedimentation rate (ESR) among farmers in Sumberejo Village, Magelang, Central Java.

Subjects and Method: A cross-sectional study was conducted in Sumberejo Village, Magelang, Central Java, on April 2017. A total sample of 43 farmers was selected from a population of 110 farmers for this study by purposive sampling. The dependent variable was ESR. The independent variables were frequency of spraying (exposure/week), number of pesticide, dose of pesticide, length of work (exposure/day), work period (years of exposure), the use of personal protection equipment (PPE), and level of cholinesterase. The ESR data were collected by laboratory test. The other data were collected by questionnaire. The bivariate analysis used the chi-square test.

Results: Frequency of spraying, number of pesticides, length of work, work period, the use of PPE, and level of cholinesterase, were associated with ESR, but they were not statistically significant ($p > 0.050$). The association between dose of pesticide and ESR was statistically significant ($p = 0.048$).

Conclusion: Dose of pesticide is associated with ESR. However, PPE usage, length of work, work period, number of pesticides, frequency of spraying, and level of cholinesterase, do not show statistically significant association with ESR in this study.

Keywords: exposure, organophosphate pesticide, erythrocyte sedimentation rate, farmer, level of cholinesterase

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DETERMINANTS OF CORONARY HEART DISEASE AMONG OUTPATIENTS IN KUPANG, EAST NUSA TENGGARA

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ABSTRACT

Background: Indonesian Basic Health Research in 2013 reported that the East Nusa Tenggara (NTT) province had the highest prevalence of coronary heart disease (CHD), and was followed by Central Sulawesi and South Sulawesi. Medical records data of Prof. Dr. W.Z. Johannes Hospital in Kupang showed that CHD patients from January to September 2018 were 125 people. The study aimed to estimate the determinants of CHD among outpatients in Kupang, East Nusa Tenggara.

Subjects and Method: A cross-sectional study was conducted in Kupang. All outpatients undergoing CHD treatment in Kupang City during November 2018 were selected for this study. The dependent variable was CHD. The independent variables were diet, alcohol consumption, smoking habits, family history of illness, and physical activity. The data were collected by questionnaire and food frequency questionnaire (FFQ). The data were analyzed using multiple logistic regression.

Results: Low education (OR= 2.26; $p < 0.001$) and smoking habit (OR= 0.60; $p = 0.08$) increase the risk of CHD and it was statically significant. The associations between CHD and history of hypertension (OR= 0.80; $p = 0.460$) and nutritional status (OR= 1.00; $p = 0.540$) were statistically not significant in this study.

Conclusion: Low education and smoking habit increase the risk of coronary heart disease.

Keywords: smoking, eating pattern, history of hypertension, nutritional status, coronary heart disease,

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ABSTRACT

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BIOLOGICAL, SOCIAL ECONOMIC, AND ENVIRONMENTAL DETERMINANTS OF CHILD PNEUMONIA AFTER EARTHQUAKE: AN EVIDENCE FROM WEST NUSA TENGGARA

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ABSTRACT

Background: People who experienced natural disasters were likely to lose their properties and forced to live in evacuation center or shelter. Dramatic life changes among evacuees caused by various infectious diseases due to many factors, such as stress, hygiene, and environmental issues. Groups lived in a confined place with insufficient ventilation easily lead to outbreaks of respiratory infection, influenza, tuberculosis, pneumonia, and others. This study aimed to analyze biological, social economic, and environmental determinants of child pneumonia after earthquake.

Subjects and Method: This was a case control study. A sample of 237 children aged 12 to 59 months was selected by fixed disease sampling. The independent variable was pneumonia. The independent variable were maternal education, family income, birth weight, exclusive breastfeeding, nutritional status, immunization, healthy behavior, quality of house, fuel smoke exposure, cigarette smoke exposure, and village level. The data were collected by questionnaire and analyzed by a multiple logistic regression.

Results: Maternal education (b= -1.46; 95% CI= -2.63 to -0.28; p= 0.014), family income (b= -1.86; 95% CI= -3.32 to -0.41; p= 0.012), birth weight (b= -1.45; 95% CI= -2.97 to -0.06; p= 0.062), exclusive breastfeeding (b= -1.12; 95% CI= -2.27 to 0.03; p= 0.057), nutritional status (b= -2.38; 95% CI= -3.58 to -1.19; p<0.001), immunization status (b=-0.97; 95% CI= -2.12 to 0.17; p= 0.097), healthy behavior (b= -1.16; 95% CI= -2.27 to -0.05; p= 0.040), quality of house (b= -1.16; 95% CI= -2.30 to -0.02; p= 0.044), and village development level (b= -1.83; 95% CI= -3.37 to -0.28; p= 0.020) decreased the risk of pneumonia. Fuel smoke exposure (b= 1.46; 95% CI= 0.23 to 2.68; p= 0.019) and smoking activity in family (b= 1.91; 95% CI= 0.42 to 3.41; p= 0.012) increased the risk of pneumonia.

Conclusion: Maternal education, family income, birthweight, exclusive breastfeeding, nutritional status, immunization status, healthy behavior, quality of house, and village development level, decrease the risk of pneumonia. Fuel smoke exposure and smoking activity in family increase the risk of pneumonia

Keywords: pneumonia, village level, smoking, birthweight

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PSYCHOLOGICAL AND SOCIAL FACTORS AFFECTING THE RISK OF HIV INFECTION IN JEPARA, CENTRAL JAVA

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ABSTRACT

Background: Social capital is a well-established predictor of several behavioral health outcomes. However, studies that examined the relationship between social capital and HIV/AIDS infection is scarce. This study aimed to analyze psychological and social factors affecting the risk of HIV infection in Jepara, Central Java.

Subjects and Method: A case control study was conducted in Jepara Health District, Central Java, from April to May 2019. A sample of 200 study subjects was selected for this study by fixed disease sampling. The dependent variable was HIV infection. The independent variables were unsafe sex behavior, sexual orientation, frequency of sexual behavior, social capital, and geographical location. The data were collected by medical record and questionnaire. The data were analyzed by a multiple logistic regression.

Results: Unsafe sex behavior ($b = 0.55$; 95% CI= 0.26 to 0.83; $p < 0.001$), frequency of sexual intercourse > 4 times per week ($b = 1.72$; 95% CI= 0.38 to 3.06; $p = 0.012$), homosexual ($b = 3.28$; 95% CI= 0.48 to 6.08; $p = 0.022$), and residence close to the port ($b = 2.54$; 95% CI= 1.17 to 3.91; $p < 0.001$) increased the risk of HIV infection. Strong social capital ($b = -0.51$; 95% CI= -0.70 to -0.32; $p < 0.001$) decreased the risk of HIV infection.

Conclusion: Unsafe sex behavior, frequency of sexual intercourse > 4 times per week, homosexual, and residence close to the port increase the risk of HIV infection. Strong social capital decreases the risk of HIV infection.

Keywords: HIV infection, sexual behavior, social capital

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FACTORS ASSOCIATED THE OCCURANCE OF HYPERTENSION IN HIGH SCHOOL STUDENTS

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ABSTRACT

Background: Risk factors in cardiovascular disease such as hypertension have been increasingly prevalent among adolescents and follow the growing trend of the cases of obesity, physical inactivity, and inadequate nutrition intake, and lack of quality of sleep. However, prevention and detection of hypertension among adolescent are still lacking. This study aimed to examine factors associated with hypertension among high school students.

Subjects and Method: This was a cross sectional study. It was carried out in Bantul, Yogyakarta, from April to May 2019. A sample of 200 adolescents aged 15-19 years old was selected by probability sampling. The dependent variable was hypertension. The independent variables were sex, genetic factor, obesity, dietary intake, sleep duration, stress, and money pocket. Blood pressure was measured by sphygmomanometer. Body weight was measured by weight scale. Body height was measured by microtoise. Stress was measured by perceived stress scale. The other variables were collected by questionnaire. The data were analyzed by a multiple logistic regression.

Results: The risk of hypertension among adolescents aged 15-19 years old increased with male ($b= 1.56$; 95% CI= 0.35 to 2.76; $p= 0.011$), history of hypertension in family ($b= 1.65$; 95% CI= 0.44 2.85; $p= 0.007$), obesity ($b= 1.89$; 95% CI= 0.73 to 3.05; $p= 0.001$), poor dietary intake ($b= 1.25$; 95% CI= 0.07 to 2.44; $p= 0.037$), short sleep duration ($b= 1.81$; 95% CI= 0.63 to 2.99; $p= 0.003$), high stress ($b= 3.06$; 95% CI= 1.66 to 4.46; $p<0.001$), and high money pocket per month ($b= 1.67$; 95% CI= 0.43to 2.91; $p= 0.008$).

Conclusion: The risk of hypertension among adolescent increases with male, history of hypertension in family, obesity, poor dietary intake, short sleep duration, high stress, and high money pocket.

Keywords: hypertension, stress, sleep duration, money pocket, adolescents

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BIOLOGICAL AND SOCIAL ECONOMIC FACTORS AFFECTING TREATMENT COMPLAINT AND CURE AMONG TUBERCULOSIS PATIENTS IN YOGYAKARTA

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ABSTRACT

Background: TB can be cured in almost all cases by taking the medications as prescribed by the doctor for the full course of treatment (at least six months). All patients receiving TB treatment should be monitored during their treatment to assess their response to the drug treatment. Regular monitoring also helps to ensure that patients complete their treatment. It can also help to identify and manage adverse drug reactions. This study aimed to examine biological and social economic factors affecting treatment complaint and cure among tuberculosis patients.

Subjects and Method: A cross-sectional study was carried out in Bantul, Yogyakarta, from April to May 2019. A sample of 225 TB patients was selected by random sampling. The dependent variable was treatment cure. The independent variables were age, gender, education, income, nutritional status, health behavior, complication, family support, drug taking supervisor, drug taking adherence, environmental, and smoking. The data were collected by questionnaire and analyzed by a multiple logistic regression.

Results: TB treatment cure decreased with aged ≥ 65 years old ($b = -0.82$; 95% CI = 0.16 to 2.13; $p = 0.900$), female ($b = -0.13$; 95% CI = 0.42 to 2.14; $p = 0.411$), complication ($b = -2.34$; 95% CI = 0.07 to 0.79; $p = 0.019$), smoking ($b = -2.74$; 95% CI = 0.07 to 0.65; $p = 0.006$), unhealthy behavior ($b = -3.42$; 95% CI = 0.006 to 0.25; $p = 0.001$), and weak family support ($b = -2.19$; 95% CI = 0.02 to 0.80; $p = 0.029$). TB treatment cure increased with drug taking supervisor ($b = 3.00$; 95% CI = 3.53 to 411.86; $p = 0.003$), healthy environment ($b = 1.91$; 95% CI = 0.90 to 3661.39; $p = 0.056$), drug taking adherence ($b = 3.26$; 95% CI = 4.38 to 372.66; $p = 0.001$), family income ($b = 1.17$; 95% CI = 0.65 to 5.50; $p = 0.244$), good nutritional status ($b = 2.04$; 95% CI = 1.02 to 4.43; $p = 0.042$).

Conclusion: TB treatment cure decreases with aged ≥ 65 years old, female, complication, smoking, unhealthy behavior, and weak family support. TB treatment cure increases with drug taking supervisor, healthy environment, drug taking adherence, family income, and good nutritional status.

Keywords: tuberculosis, treatment complaint and cure, unhealthy behavior

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EFFECTIVENESS OF CHRONIC DISEASE CONTROL CLUB ON BLOOD SUGAR LEVEL CONTROL IN SUKOHARJO, CENTRAL JAVA

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ABSTRACT

Background: Exercise, dietary change, and medications are frequently used in the management of type 2 diabetes. Chronic disease control club (*prolanis*) is a proactive approach involving health facilities, health insurance, and patients in order to maintain quality of life of chronic disease patients with effective and efficient cost. This study aimed to examine effectiveness of chronic disease control club on blood sugar level control in Sukoharjo, Central Java.

Subjects and Method: This was an analytic observational study with a cross-sectional design. The study was conducted at Sukoharjo community health center, Sukoharjo, Central Java, from August to September 2018. A sample of 245 type 2 DM patients was selected by random sampling. The dependent variable was blood sugar level. The independent variables were physical training, anxiety, chronic disease control club participation, and complication. Data on anxiety was measured by HARS. The other variables were measured by questionnaire. The data were analyzed by a multiple logistic regression run on Stata 13.

Results: Blood sugar level increased with high anxiety ($b = 2.78$; 95% CI= 1.30 to 4.26; $p < 0.001$) and complication ($b = 33.14$; 95% CI= 8.02 to 58.26; $p = 0.010$). Blood sugar level decreased with active participation in chronic disease control club ($b = -30.14$; 95% CI= -49.09 to -11.19; $p = 0.002$) and high physical training ($b = -15.12$; 95% CI= -19.96 to -10.27; $p < 0.001$).

Conclusion: Blood sugar level increases with high anxiety and complication. Blood sugar level decreases with active participation in chronic disease control club and high physical training.

Keywords: type 2 diabetes mellitus, blood sugar level, chronic disease control

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**RISK FACTORS OF DIARRHEA INCIDENCE IN CHILDREN
AGED 6-24 MONTHS AT MANGULEWA AND KOELODA
COMMUNITY HEALTH CENTERS, NGADA,
KUPANG, EAST NUSA TENGGARA**

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ABSTRACT

Background: Water, sanitation, and hygiene behavior contribute to approximately 94% of the 4 billion cases of diarrhea annually. Although the Indonesian government concerns to improve clean water and sanitation, there are still people with lack of access to safe drinking water and improved sanitation. This study aimed to determine risk factors of diarrhea incidence in children aged 6-24 months in Kupang, East Nusa Tenggara.

Subjects and Method: This was a cross sectional study carried out at Mangulewa and Koeloda community health centers, Ngada, Kupang, East Nusa Tenggara, Indonesia. A sample of 83 children aged 6-24 months was selected by probability sampling. The dependent variable was diarrhea. The independent variables were maternal age, maternal education, employment, exclusive breastfeeding, access to clean drinking water, clean water, sanitation, latrine, and type of floor. The data were collected by questionnaire and observation. The data were analyzed by a multiple logistic regression.

Results: Low maternal education (OR= 5.57; 95% CI= 0.53 to 59.04; $p < 0.001$), poor drinking water (OR= 3.70; 95% CI= 0.22 to 62.78; $p = 0.006$), poor hand wash behavior (OR=3.97; 95% CI= 0.19 to 82.37; $p < 0.001$), poor access to clean water (OR=22.46; 95% CI= 3.00 to 168.02; $p < 0.001$), poor latrine (OR= 49.13; 95% CI= 4.21 to 573.85; $p < 0.001$), and ground floor (OR= 8.25; 95% CI= 0.97 to 69.90; $p < 0.001$) increased the risk of diarrhea. Maternal employment (OR= 0.13; 95% CI= 0.01 to 2.76; $p = 0.007$) and exclusive breastfeeding (OR= 0.32; 95% CI= 0.02 to 6.19; $p = 0.013$) decreased the risk of diarrhea.

Conclusion: Low maternal education, poor drinking water, poor hand wash behavior, poor access to clean water, poor latrine, and ground floor increase the risk of diarrhea. Maternal employment and exclusive breastfeeding decrease the risk of diarrhea.

Keywords: diarrhea, environmental factors, children aged 6-24 months

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EFFECTIVENESS OF COAGULANT AND DISINFECTANT ON WATER TREATMENT IN EAST NUSA TENGGARA

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ABSTRACT

Background: District local water department acquire, maintain, operate, and distribute water supply for domestic, industrial, municipal, and agricultural uses. The safe quality of water supplied to communities is an important consideration in the protection of human health and well-being. The parameters recommended by World Health Organization (WHO) for the minimum monitoring of community water supplies were total E. coli, chlorine residual, pH, and turbidity level. Chlorine can be easily monitored and controlled as a drinking-water disinfectant. This study aimed to examine the effectiveness of coagulant and disinfectant on water treatment in East Nusa Tenggara.

Subjects and Method: A randomized controlled trial was carried out in district local water department (PDAM) in Kupang, East Nusa Tenggara. This study used 2 groups of treatment included (1) 100 kg Alum and 30 kg chlorine; and (2) 200 kg Alum and 15 kg chlorine. The dependent variable was turbidity level, chlorine residual, and total Coliform bacteria. The independent variables were dosage of Alum and chlorine addition. Turbidity level was measured by turbidity meter. Chlorine residual was measured by chlorine meter. Total Coliform bacteria were measured by Brilliant green lactose broth (BGLB) medium. An inoculation loop of a positive sample from lactose broth has been isolated and separated. BGLB was carried out aseptically and incubated at 37°C for 2x24 hours. Turbidity level, chlorine residual, and total Coliform bacteria between groups were analyzed by t test.

Results: Turbidity level, chlorine residual, and total Coliform bacteria in the 100 kg Alum and 30 kg chlorine group (mean= 66.14; SD= 6.44) was lower than the 200 kg Alum and 15 kg chlorine group (mean= 86.57; SD= 4.20), and it was statistically significant ($p < 0.001$).

Conclusion: Turbidity level, chlorine residual, and total Coliform bacteria in the 100 kg Alum and 30 kg chlorine group is lower than the 200 kg Alum and 15 kg chlorine group.

Keywords: turbidity, chlorine residual, Alum, total Coliform bacteria

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PREDISPOSING FACTORS OF SOLID MEDICAL WASTE MANAGEMENT AT PENYANGGA PERBATASAN BETUN HOSPITAL, EAST NUSA TENGGARA

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ABSTRACT

Background: Medical waste disposal is one of the biggest day-to-day challenges faced by healthcare providers. Medical waste is classified as any possibly contaminated by product of medical research, treatment, or other healthcare activity. The purpose of this study was to investigate predisposing factors of solid medical waste management at Penyangga Perbatasan Betun hospital, East Nusa Tenggara.

Subjects and Method: A cross sectional study was carried out at penyangga perbatasan Betun, East Nusa Tenggara, Indonesia. A sample of 23 nurses was selected for this study purposively. The dependent variable was medical waste management. The independent variables were knowledge and attitude. The data were collected by questionnaire and analyzed by Chi square.

Results: Poor knowledge reduced quality of solid medical waste management (OR= 0.02; 95% CI= 0.38 to 3.10; p= 0.004). Positive attitude improved quality of solid medical waste management (OR= 5.00; 95% CI= 1.28 to 208.97; p= 0.001).

Conclusion: Poor knowledge reduces quality of solid medical waste management. Positive attitude improves quality of solid medical waste management.

Keywords: medical waste management, knowledge, attitude, nurse

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**ASSOCIATION BETWEEN ENVIRONMENTAL FACTORS
AND TUBERCULOSIS AMONG CHILDREN AGED 0-14 YEARS
IN KUPANG, EAST NUSA TENGGARA**

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ABSTRACT

Background: The best-known health impacts are related to environmental (air) pollution, poor water quality, and inadequate sanitation. Tuberculosis (TB) occurs in poor socio-environmental conditions where mean infectivity cases are able to maintain a sufficiently high effective contact number. This study aimed to examine the association between environmental factors and TB among children aged 0-14 years in Kupang, East Nusa Tenggara.

Subjects and Method: A case control study was carried out at 14 community health centers in Kupang, East Nusa Tenggara. A sample of 141 children aged 0-14 years old was selected for this study purposively. The dependent variable was TB. The independent variables were occupancy density and light exposure. Data on TB status were obtained from medical record. The other data were collected by questionnaire and observation. The data were analyzed by a multiple logistic regression.

Results: TB in children aged 0-14 years old increased with high occupancy density (OR= 11.51; 95% CI= 1.91 to 69.44; p= 0.008) and low light exposure (OR= 2.99; 95% CI= 1.18 to 7.48; p= 0.022).

Conclusion: TB in children aged 0-14 years increases with high occupancy density and low light exposure.

Keywords: tuberculosis, environmental factors, children aged 0-14 years old

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FACTORS ASSOCIATED WITH RISKY BEHAVIOR FOR HIV/AIDS TRANSMISSION AMONG YOUTH ORGANIZATION IN DEPOK, WEST JAVA

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ABSTRACT

Background: Depok Health Office, West Java, in 2017 reported that there were 278 HIV infection cases in 2016. In Indonesia, there are 785,821 HIV infection cases, including 90,915 new HIV infection cases. This study aimed to determine the factors associated with risky behavior of HIV/AIDS transmission among youth organizations in Depok city, West Java.

Subjects and Method: A cross-sectional study was conducted in Depok city, West Java. A total of 50 respondents was selected for this study at random. The dependent variable was HIV/AIDS risky behavior. The independent variables were knowledge, attitude, information source, parenting style, traumatic experience, and peer-group influence. The data were collected by questionnaire and analyzed by multiple logistic regression.

Results: HIV/AIDS risk behavior increased by lack of knowledge (OR= 0.19; 95% CI=0.43 to 0.86; p=0.006), poor parenting style (OR= 0.15; 95% CI=0.02 to 0.96; p=0.016), traumatic experience (OR=12.21; 95% CI=1.64 to 91.04; p=0.017), and poor peer-influence (OR=6.50; 95% CI=1.71 to 24.68; p=0.007).

Conclusion: HIV/AIDS risky behavior increases by lack of knowledge, poor parenting style, traumatic experience, and poor peer-group influence.

Keywords: HIV/AIDS risky behavior, knowledge, attitude, information sources, parenting style, traumatic experience, peer-group influence

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FACTORS ASSOCIATED WITH STUNTING AMONG CHILDREN 1 - 3 YEARS OF AGE IN BATU CITY, EAST JAVA

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ABSTRACT

Background: Stunting status among children indicate a chronic malnutrition that illustrate the inhibition of growth. Stunted in children can reduce the cognitive intelligence of children facing a greater likelihood of growing into adults who are less educated, poor, less healthy and more vulnerable to non-communicable diseases. This study aimed to determine the factors associated with stunting among children around 1 to 3 years of age in Batu City, East Java.

Subject and Method: This was a case-control study conducted in Batu City, East Java. A total of 90 children around 1 to 3 years of age was selected for this study, consisting of 45 stunted and 45 non-stunted children. The dependent variable was stunting. The independent variables were low birth weight, exclusive breastfeeding, complementary feeding, history of illness, completeness of immunization, duration of breastfeeding, and length of birth. The data were collected by questionnaire and analyzed by Chi-square.

Result: The risk of stunting increased by low birth weight (OR= 1.75; 95% CI=0.39 to 7.81; p= 0.714), non-exclusive breastfeeding (OR= 1.11; 95% CI= 0.46 to 2.68; p= 0.822), inappropriate complementary feeding (OR= 2.07; 95% CI=0.89 to 4.83; p= 0.09), history of illness (OR= 2.00; 95% CI= 0.61 to 6.52; p= 0.245), uncompleted immunization (OR= 0.39; 95% CI= 0.12 to 1.23; p= 0.980), duration of breastfeeding < 1 year (OR= 0.41; 95% CI= 0.16 to 1.06; p= 0.630), but they were not statistically significant. The risk of stunting increased by length birth < 48 cm (OR= 0.22; 95% CI=0.07 to 0.72; p= 0.008), and it was not statistically significant.

Conclusion: Length of birth < 48 cm increases the risk of stunting among children aged 1-3 years.

Keywords: stunting, low birth weight, length of birth

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THE ASSOCIATION BETWEEN PERSONAL HYGIENE AND EGG POSITIVE RATE OF ENTEROBIUS VERMICULARIS AMONG PRIMARY SCHOOL CHILDREN

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ABSTRACT

Background: Pinworm or *Enterobius vermicularis* is the most common type of intestinal worm infection worldwide. The prevalence of pinworm infection in primary school children is high (17-38%). In theory, pinworm infection is related to personal hygiene, but empirical study to estimate this relationship in Indonesia is lacking. This study aimed to determine the association between personal hygiene and egg positive rate of pinworm among primary school children.

Subjects and Method: This was a cross sectional study conducted in the working area of Kaliwungu community health center (puskesmas), Kendal, West Java. A total of 150 students in grades 1 to 3 at Kutoharjo 1 primary school was selected for this study. The independent variable was personal hygiene, which was measured by questionnaire. The dependent variable was the presence of pinworm worm egg, which was measured by periplaswab using the Graham Scot tape method and saturated NaCl floatation examination. The data were analyzed by Chi-square.

Results: Positive number of worm egg was 37.3% in the perianal and 44% in the hand nail area. Poor personal hygiene was positively associated with the presence of pinworm egg in the perianal (OR= 3.60; 95%CI= 1.72 to 7.55; p= 0.001) and hand nail (OR= 2.93; 95%CI= 1.47 to 5.85; p= 0.002). Worm egg presence in the hand nail was positively associated with the presence of worm egg in the perianal area (OR= 3.39; 95%CI= 1.70 to 6.76; p= 0.001).

Conclusion: Poor personal hygiene is positively associated with pinworm infection and the transmission process occurs through hands to mouth.

Keywords: pinworm, infection, worm egg, personal hygiene, primary school student

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THE ASSOCIATION BETWEEN PERSONAL HYGIENE AND EGG POSITIVE RATE OF ENTEROBIUS VERMICULARIS AMONG PRIMARY SCHOOL CHILDREN

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SPATIAL ANALYSIS OF THE DISTRIBUTION AND TRANSMISSION OF CLINICAL SCABIES

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ABSTRACT

Background: The prevalence of scabies in tropical countries is still high at more than 200 million cases per year. In some developing countries, the prevalence of scabies is around 6% to 27% of the general population. The prevalence of scabies ranks third in the 12 most common skin diseases in Indonesia. The study aimed to describe the spatial modeling using geographic information systems (GIS), and to determine the relationship between environmental sanitation and clinical scabies.

Subjects and Method: This was a case-control study conducted in Jatilawang, Banyumas, Central Java. Sample size was 100 study subjects consisting of clinical scabies (cases) and healthy people (controls) with a ratio of 1:1. The dependent variable was clinical scabies. The independent variable was environmental sanitation. The data were analyzed using GIS modeling to determine the spatial distribution of clinical scabies. The association between the variables were analyzed using a multiple logistic regression.

Results: The distribution of clinical scabies incidence was clustered. The transmission was in a clockwise direction with Southeast and Northwest ellipses. Poor environmental sanitation was positively associated with clinical scabies incidence (aOR= 3.05; 95% CI= 1.19 to 7.81).

Conclusion: The distribution of clinical scabies incident is clustered, and the transmission is in a clockwise direction with Southeast and Northwest ellipses. Poor environmental sanitation is positively associated with clinical scabies incidence.

Keywords: spatial analysis, risk factors, incidence, scabies

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**RELATIONSHIP BETWEEN ENVIRONMENTAL FACTORS AND
PERSONAL HYGIENE WITH DIARRHEA AMONG CHILDREN
UNDER FIVE IN WEST KOTAWARINGIN,
CENTRAL KALIMANTAN**

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ABSTRACT

Background: Globally, nearly 1 million children die each year because of diarrhea. Diarrhea is a major public health problem in developing countries, including Indonesia. The occurrence of diarrhea has been known to be linked with poor hygiene and sanitation. This study aimed to determine the relationship between environmental factors and personal hygiene with diarrhea among children under five in West Kotawaringin, Central Kalimantan.

Subjects and Method: This was a cross-sectional study conducted at West Kotawaringin, Central Kalimantan. A total of 1,007 households with children under five was selected for this study. The dependent variable was diarrhea. The independent variables were access to drinking water, latrine ownership, type of latrine, environmental hygiene, children defecation habit, and disposing of children feces habit. The data were collected by a set of questionnaire and analyzed by multiple logistic regression

Results: The risk of diarrhea increased with absence of latrine ownership (OR= 1.93; 95%CI=1.28 to 2.91; p=0.002), sub-standard type of latrine (OR= 1.88; 95%CI=1.27 to 2.78; p=0.002), poor child defecation habit (OR=1.85; 95%CI= 1.26 to 2.71; p=0.002), and free disposal of child feces (OR=1.72; 95%CI= 1.28 to 2.91; p=0.007).

Conclusion: The risk of diarrhea increases with absence of latrine ownership, sub-standard type of latrine, poor child defecation habit, and free disposal of child feces.

Keywords: diarrhea, hygiene, behavior, environment, children under five

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DENTAL AND ORAL CARE TO REDUCE THE INCIDENCE OF VENTILATOR ASSOCIATED PNEUMONIA AMONG PATIENTS WITH VENTILATOR IN INTENSIVE CARE UNIT: A SYSTEMATIC REVIEW

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ABSTRACT

Background: Patients in the intensive care unit (ICU) are at risk for dying not only from their critical illness but also from secondary processes such as nosocomial infection. Ventilator-associated pneumonia (VAP) is the second most common nosocomial infection in the ICU and the most common in mechanically ventilated patients. Oral and dental care may reduce microorganisms in the oral cavity. This study was aimed to review the effect of dental and oral care to reduce the incidence of ventilator-associated pneumonia among patients with ventilator in the intensive care unit.

Subjects and Method: A systematic review was conducted by searching published articles from 2014 to 2019, from PubMed. The inclusion criteria were articles in English, full text, randomized controlled trial, and open access. The dependent variable was the incidence of VAP. The independent variable was dental and oral care. After the review process, 8 articles were included in this review.

Results: Eight articles reported that dental and oral care is one of the key factors for VAP prevention. It is an effective procedure to decrease nosocomial infections, colonization of the bacteria, and a tendency to reduce the incidence of VAP.

Conclusion: Dental and oral care reduces the incidence VAP.

Keywords: ventilator associated pneumonia, oral care, intensive care unit

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EFFECT OF WORK ENVIRONMENT ON THE RISK OF BREAST CANCER IN INDONESIA

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ABSTRACT

Background: Breast cancer is the second-leading cause of cancer death in the world and the most common cancer among women in Indonesia. Combination of genetic, hormonal, and environmental factors are the cause of breast cancer. The chemical carcinogen from mining and industry in the working environment can increase the risk of breast cancer. This study aimed to determine environmental exposure in the workplace on breast cancer in Indonesia.

Subjects and method: This was a cross sectional study. A sample of 35,595 female workers were selected for this study. The dependent variable was breast cancer. The independent variable was exposure of carcinogen in the workplace. The data were obtained from the Non-Communicable Disease Research by the National Institute of Health Research and Development Ministry of Health in 2016. The data covered 34 provinces in Indonesia. The data were analyzed by a multiple logistic regression.

Results: As many as 7.5% of women were exposed to carcinogen in the workplace. 3.4% of unmarried women had breast cancer and 1.2% of married women had breast cancer. The risk of breast cancer increased with exposure of carcinogen in the workplace (OR= 1.85; 95% CI= 1.39 to 2.47; $p < 0.001$). Age, marital status, education, and social economic condition, were also associated with the risk of breast cancer.

Conclusion: The risk of breast cancer increases with exposure of carcinogen in the workplace among female worker.

Keywords: breast cancer, carcinogen, workplace, women

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FAMILY ROLE IN ELDERLY CARE: A SYSTEMATIC REVIEW

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ABSTRACT

Background: United Nations in 2015 reported the number of elderly people were 900 million. This amount is equivalent to 12.3% of the world population. In 2014, the Central Statistics Bureau survey showed the elderly population was 20.24 million or equivalent to 8.03% of the entire population of Indonesia. It is the responsibility of family members to take care of the elderly. However, in these modern societies, elderly people are mainly alone at home or they are cared in elderly home. This study aimed to systematically review the family role in elderly care.

Subjects and Method: A systematic review study was conducted by searching articles from PubMed database. The keywords were "family care", "elderly", and "family role". The inclusion criteria were: (1) Elderly care of the family; (2) Full text; (3) published articles from 2008 to 2018; (4) Qualitative study; and (5) International journal. Appraisal studies were using the Critical Appraisal Skills Program (CASP) and synthesis methods using PICO modifications.

Results: Gathering together with family and children was the most pleasant thing for the elderly. The elderly felt more comfortable when gathered and cared by their family. Family care was the main support system for the elderly in maintaining their health. Family health care consisted of physical, psychological, social and spiritual care for elderly.

Conclusion: The elderly feel more comfortable when gathered and cared for by the family. Family care is the main support system for the elderly in maintaining their health.

Keywords: family care, elderly

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RISK FACTORS OF BREAST CANCER IN SOUTH-EAST ASIA: A SYSTEMATIC REVIEW

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ABSTRACT

Background: Breast cancer is a reproductive cancer that increases morbidity and mortality. Global Burden Cancer data showed, breast cancer incidence has increased by more than 20%, while the mortality rate has increased by 14% since 2008. This study aimed to systematically review the risk factors of breast cancer in South-East Asia.

Subjects and Method: A systematic review were conducted by searching articles from electronic databases. The keywords were “breast cancer” OR “breast cancer risk” AND “parity” OR “contraceptive” Or “smoking” AND “South-East Asia”. The dependent variable was breast cancer. The independent variables included age, body mass index, menarche, menopause, parity, contraceptive use, breastfeeding, and smoking. The data were reviewed using PRISMA flow diagram.

Results: Seven articles met the inclusion criteria. Articles reported that age, obesity, menarche at an early age, unhealthy lifestyles, menopause, contraceptive use, and Human Papilloma Virus (HPV) infection were associated with the incidence of breast cancer in South-East Asia.

Conclusion: Breast cancer incidence increases with age, obesity, menarche at an early age, unhealthy lifestyles, menopause, contraceptive use, and HPV infection.

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PM₁₀ EXPOSURE AND RESPIRATORY TRACT DISORDERS AROUND THE INDUSTRY: A SYSTEMATIC REVIEW

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ABSTRACT

Background: Air pollution from industrial activities and motor vehicle emission disrupt respiratory tract in the community. People who live around the industry are at risk of experiencing respiratory problems. PM₁₀ measurement is needed to determine the quality of ambient air in accordance with the established quality standard. This study aimed to systematically review PM₁₀ exposure and other factors associated with respiratory tract disorders around the polluting industry.

Subjects and Method: This was a systematic review conducted by searching articles from Google Scholar database. The keywords were "acute respiratory infection", "ARI", "PM₁₀", and "community". The study population was people who live around the industry exposed to PM₁₀ and those not exposed. The inclusion criteria were articles published in the range of 5 years around 2014 to 2019, located in Indonesia, cross-sectional study, and published in Indonesian or English language. The exclusion criteria were articles without complete file unit and not located in Indonesia.

Results: Five articles were reviewed out of 176 articles obtained. The articles reported that factors affecting the occurrence of respiratory tract disorders were age, sex, occupancy density, smoking in the house, ventilation, and PM₁₀ concentration in the exposed community.

Conclusion: Several studies have linked PM₁₀ exposure with respiratory tract disorders in the communities living around the polluting industries. There is a need for handling the poor air quality.

Keywords: PM₁₀, industry, respiratory tract disorders, community

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ASSOCIATION BETWEEN PLAYING GADGET AND THE RISK OF OVERWEIGHT IN CHILDREN UNDER FIVE

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ABSTRACT

Background: A child is considered healthy if his weight does not exceed the appropriate growth curve of his age. World Health Organization states that obesity is a global epidemic that requires serious treatment. This study aimed to examine the association between playing gadget and the risk of overweight in children under five.

Subjects and Method: This was an analytic observational study with a cross-sectional design. The study was conducted at 8 Early Childhood Education Programs (PAUD) in Kediri, East Java. A sample of 127 children aged 2-5 years were selected by simple random sampling. The dependent variable was overweight. The independent variable was playing gadget. Confounding factors controlled for included age, gender, maternal education, paternal education, maternal employment, paternal employment, and number of family members. The data were collected by questionnaire and analyzed using multiple logistic regression tests.

Results: Playing gadget for ≥ 1 hours increased the risk of overweight (OR= 23.59; 95% CI= 1.26 to 442.04; $p= 0.035$). Age 2-3 years (OR= 2.93; 95% CI= 0.24 to 35.37; $p= 0.398$), mother's education lower than high school (OR= 54.35; 95% CI= 2.48 to 1191.10; $p= 0.011$), father's education lower than high school (OR= 70.98; 95% CI= 2.23 to 2259.76; $p= 0.016$), mother as homemaker (OR= 184.74; 95% CI= 1.43 to 239.03; $p= 0.035$), increased the risk of overweight. Paternal employment, number of family members, and gender, did not affect the risk of overweight significantly.

Conclusion: Playing gadget for hours increases the risk of overweight. Age 2-3 years, low maternal education, low paternal education, and mother as homemaker, increase the risk of overweight.

Keywords: overweight, playing gadget, sociodemographic variable

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