

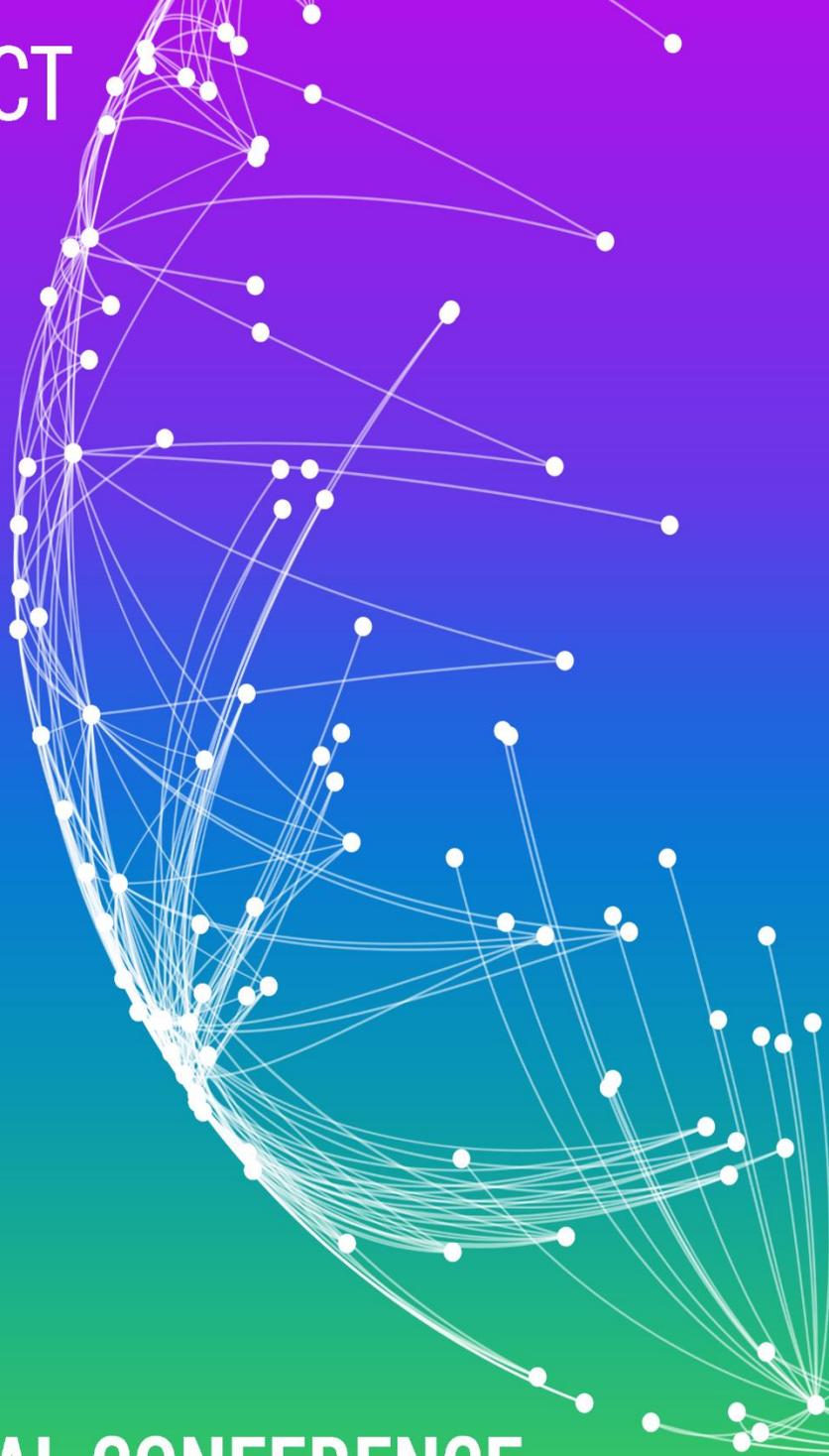


UNIVERSITAS
INDONESIA

Yusuf, Prihatin, Saadiah

HEALTH
SCIENCES

ABSTRACT BOOK



THE 1ST ICGH INTERNATIONAL CONFERENCE ON GLOBAL HEALTH 2016

UPDATING THE GLOBAL HEALTH TRENDS
IN ORDER TO FOSTER NEW GLOBAL SOLUTIONS

JAKARTA, 9-11 NOVEMBER 2016

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**Contributor:
Conference's Delegates**

ISBN : 978-979-9394-37-8

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WELCOME MESSAGES



I wish you all a warm welcome to Jakarta, Indonesia

It is a great pleasure for me to invite you to the 1st International Conference on Global Health. Five faculties within the Health Sciences Cluster of Universitas Indonesia: Faculty of Medicine, Faculty of Dentistry, Faculty of Public Health, Faculty of Nursing, and Faculty of Pharmacy are hand in hand to organize this prestigious conference to raise awareness and seek solutions to tackle global health challenges.

The 1st ICGH is a mean to create sustainable scientific atmosphere for scholars, researchers, and practitioners. More than 400 participants from various countries and backgrounds will share their experiences and discover ideas for strong global health initiatives from 9-11 November 2016 at JS Luwansa Hotel, Jakarta, Indonesia. Workshops with interesting topics are also offered in Pre-Conference Programs held on 7-8 November 2016.

As the Chair Person of Organizing Committee, I would like to express my gratitude to the Rector of Universitas Indonesia, the Vice Rector of Research and Innovation UI, the Deans within the Health Sciences Cluster UI, the President of The 1st ICGH, the committee of the 1st ICGH who have given their best effort, the Directorate of Research and Community Engagement UI, INDOHUN, The School of Public Health and Community Medicine University of South Wales, Inte:Ligand, Indonesian Society of Medicinal Chemistry, BPJS Kesehatan, colleagues, academicians, researchers, and our dearest students and participants. Thank you for your great contribution to the 1st ICGH.

I wish you a productive conference and an enchanted experience during your stay in beautiful Jakarta.

Sincerely,

Dr. Ede Surya Darmawan, SKM, MDM

Chair Person of Organizing Committee

The 1st ICGH Universitas Indonesia



WELCOME MESSAGES

It gives me a great pleasure to welcome you to the 1st International Conference on Global Health (ICGH). Held in JS luwansa Hotel, Jakarta, from 9-11 November 2016, The 1st ICGH is Universitas Indonesia's approach in showing our concern toward global health issues.

As the leading university in Indonesia, Universitas Indonesia's vision is to be the centre of excellence for knowledge, technology, and culture which is competitive, through the effort to educate and increase the prosperity of the people, and contribute to the development of the people of Indonesia and the world. We have strong commitments to accomplish that vision by improving both quality and capacity of our research and community engagements. Every faculty within Universitas Indonesia is encouraged and urged to boost credible scientific publication and hold scientific conference in order to enhance sustainable scientific atmosphere. The 1st ICGH is one of Universitas Indonesia's prestigious scientific events.

The 1st ICGH is a collaborative event by five faculties within the Health Sciences Cluster of Universitas Indonesia: Faculty of Medicine, Faculty of Dentistry, Faculty of Public Health, Faculty of Nursing, and Faculty of Pharmacy. Global Health becomes our utmost concern as interconnected and systemic health problems nowadays have led to challenges on global health. These challenges cannot be tackled alone as the issues encompass wide range areas of medicine, dentistry, public health, pharmacy, and nursing. Therefore, the need for students, academicians, researchers, practitioners, experts, and professionals from various background to work together and collaborate in order to constitute comprehensive solutions for these problems is high. The 1st ICGH brings "Updating The Global Health Trends in Order to Foster New Global Solutions" as the conference's theme and offers 12 topics which represent common global health issues we are facing.

I thank everyone for your participation and great contribution at The 1st ICGH. I hope from experiences, knowledge, and ideas that you share, we could find solution to overcome global health problems and create a much better future.

Sincerely,

Agustin Kusumayati, MD., MSc., PhD.

Chair of The 1st International Conference on Global Health
Universitas Indonesia



WELCOME MESSAGES



Welcome, Selamat Datang

Welcome to all the conference participants, invited speakers, and distinguished guests to the 1st International Conference on Global Health (ICGH) in Jakarta. Universitas Indonesia is so proud to host this conference.

Interconnected and systemic health problems lead to challenges on global health. High numbers of drugs resistance, challenge to overcome burden of the non-communicable diseases, HIV/AIDS and TBC outbreaks, clean water availability, and adequate sanitation closely relate to poverty, starvation, qualified education, economic growth and proper works, energy, industry, and infrastructure problems. To face all of these issues, global health needs to move forward in an integrated, transparent, and holistic action to achieve a better global solution.

Universitas Indonesia as one of the biggest universities in Indonesia truly understands of the importance of global health. This awareness encourages UI to actively involve to seek global solutions by holding this conference. The 1st ICGH is a collaboration of 5 (five) faculties of Health Sciences Cluster within Universitas Indonesia: Faculty of Medicine, Faculty of Dentistry, Faculty of Public Health, Faculty of Nursing, and Faculty of Pharmacy.

A number of interesting topics are being covered by speakers in this conference. Several topics that will be highlighted and discussed are health systems (incl. universal health coverage; management of healthcare services; health policy and financing; etc), global security and disaster, mobile health and new technologies, communicable diseases, non-communicable diseases, mental health, nutrition, youth health, ageing and quality of life, drug design and development, environmental and occupational health, and maternal and child health.

I wish you a richly rewarding conference and a recharging experience in our beautiful capital city, Jakarta.

Sincerely,

Prof. Ir. Muhammad Anis, M.Met

Rector of Universitas Indonesia

ORAL PRESENTATION



Oral Presentation:

AGEING AND QUALITY OF LIFE

Analysis of the Effect of Removable Denture on Psychological Status, Quality of Life, and Masticatory Function in the Elderly

Authors: Ramon Dyas, Lindawati S Kusdhany, Michael Nathanael, Muslita Indrasari, Chaidar Masulili, Tri Budi Rahardjo, Dinni Agustin, Eef Hogervorst

Presenter: Ramon Dyas Sutoro

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- **BACKGROUND:** Older age is a major risk factor for diseases of the teeth, mouth, and dementia. Diseases of the teeth and mouth can lead to teeth loss, causing the elderly's masticatory function, quality of life, and psychological status to deteriorate. The use of removable denture can help the elderly to replace lost teeth; therefore it is expected to improve masticatory function, quality of life and psychological status of the elderly. The aim of this study was to analyze the effects of removable denture usage on the improvement of psychological status, quality of life, and masticatory function on elderly people.
- **MATERIALS AND METHODS:** The data was obtained by analyzing the 30 respondents who came to RSKGM University of Indonesia, with inclusion criteria such as having lost more than 10 teeth, good general health, more than 60 years old, and has never worn dentures prior to the study. Patients answered questionnaires before they used the dentures, 2 weeks after they've begun using dentures, and 2 months after they've started wearing dentures. Four different questionnaires were used: EQ-5D and GDS, to measure psychological status; a mastication questionnaire devised by Hanin et al, to measure masticatory function; and a validated quality of life questionnaire.
- **RESULTS AND CONCLUSION:** Based on the results of this clinical trial, it can be concluded that after 2 months of denture usage, the use of removable denture in the elderly can significantly improve their quality of life, masticatory function and psychological status (both as measured by EQ-5D and by GDS) ($p < 0.05$).
- **KEYWORDS:** elderly; denture; quality; mastication; psychological; questionnaire

Caregiver Burden on Risk of Violence among Community-Dwelling Older Adults in Jakarta

Authors: Dwi Nurviyandari Kusuma Wati, Ni Made Riasmini, Junaiti Sahar, Dwanti Retno Asih

Presenter: Dwi Nurviyandari Kusuma Wati

Institution of Presenter: Faculty of Nursing, Universitas Indonesia

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- **BACKGROUND:** Caregivers who experience high levels of burden are more likely to commit acts of violence to the elderly.
- **OBJECTIVES:** The research objective was to determine the factors that contribute to the risk of violence among community-dwelling older adults in Jakarta.
- **METHODS:** The study design was analytical descriptive with a cross-sectional approach. The number of samples were 262 families with older adults living together, in Pasar Minggu and Jatinegara District. Data analysis was using chi-square test and multiple linear regression.
- **RESULTS:** The results of this study showed that the majority of elderly people aged 60-74 years old, were female and less educated, whereas the majority of caregivers aged adults (21-44 years old), were female and high school level of education. A significant relationship was found between developmental tasks and caregiver burden with the risk of violence in the elderly (p -value = 0.002). There was a significant relationship between the functional status of elderly with a risk of violence in the elderly (p -value = 0.000). The factors that most contributed to the risk of violence in the elderly was caregiver burden.
- **CONCLUSION:** The description of the level of burden experienced by caregivers, while the risk of violence experienced by the elderly can be used as input in developing programs of early detection of violence in the elderly.
- **KEYWORDS:** caregiver burden; developmental task; elderly; violence; violence in the elderly

Quality of Life of Elderly Patients at Outpatient Department, Hospital X, Banten

Authors: Edi Purnomo, Renata Komalasari, Evanny Indah Manurung

Presenter: Evanny Indah Manurung

Institution of Presenter: Universitas Pelita Harapan

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- **BACKGROUND:** Older people may suffer from functional decline of certain organs which affects their quality of life. The purpose of this study was to identify the quality of life of the elderly in an outpatient department of a private hospital in Banten.
- **METHODS:** The design of this research was quantitative descriptive with convenient sampling. Inclusion criteria included elderly aged 60 and plus, ability to communicate and understand Indonesian language, willingness to become respondents, and not in a state that does not allow filling out a questionnaire. Data collection was conducted using the WHOQOL-BREF, a questionnaire which measures four domains of quality of life of elderly as follows: physical health, psychological aspect, social relationships and environment by univariate data analysis.
- **RESULTS:** The results showed that out of 100 respondents, 39% had a good perception about their quality of life, 43% perceived their physical health satisfactory. With regards to four domains of quality of life, 43% had a good physical condition, 37% had a stable psychological condition, 35% had active social activity and 50% lived in an adequate environment.
- **CONCLUSION:** Future research on identifying which demographic characteristics affecting the quality of life of the elderly in hospital settings is warranted.
- **KEYWORDS:** quality of life; elderly; older people; WHOQOL-BREF; outpatient department

Relationship Between Family Coping Strategy and The Incidence of Mistreatment of Elderly

Authors: Ety Rekawati, Achir Yani S Hamid, Junaiti Sahar, Widyatuti

Presenter: Ety Rekawati

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- **BACKGROUND:** Violence is become a learned behavior and passed down from generation to generation in some families. Hence, the family coping strategy greatly affect the incidence of mistreatment of elderly. This study aimed to determine the relationship between family coping strategy and the incidence of mistreatment of elderly.
- **METHODS:** This research applied cross sectional design approach and probability sampling technique with multistage cluster sampling. There were 135 elderly and their family in Depok who participated in this study. Data was analyzed using chi square test.
- **RESULTS:** The result showed that the most widely used family coping in caring for the elderly was seeking spiritual support-coping strategy. The highest type of mistreatment of the elderly was psychological mistreatment. There was a relationship between the use of acquiring social support-coping strategy and the incidence of mistreatment of elderly ($p = 0,032$; $\alpha = 0,05$). However, further research is expected to identify the burden of caregivers in caring for the elderly, by adding family burden instrument.
- **KEYWORDS:** acquiring social support; elderly; family coping strategy; mistreatment

The Ability to Meet Elder's Basic Needs for Healthy Ageing in Low and Middle Income Countries

Authors: Amelia Anggarawati Putri, Chairunnisa Niken Lestari

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- **BACKGROUND:** By 2050, 80% of elder will be living in low-middle income country. Demographic shift challenges low-middle income countries to assure their social and health systems readiness for elder. This paper intends to identify what basic needs that have to be concerned and fulfilled for elder to experience healthy ageing especially in low-middle income countries.
- **METHODS:** The method that was used for this study was literature review on official reports and statistics, and scientific journals.
- **RESULTS AND CONCLUSION:** The first basic need is financial security. In countries where pensions systems are weak, elder live in extended households sharing the budget with their children. Second needs are personal security and safety. Issues such as injuries, crime, and disasters become prominent. Third need is mental health. The number of people with dementia in low-middle income countries is predicted four times higher than high-income country by the year of 2050. Fourth need is an accessible health care. The biggest challenges in low-middle income country are the capability of elder to afford the visit. The last need is self-actualization. These needs have not been fulfilled thoroughly and is still challenging in low-middle income countries whereas this fulfillment is essential to experience healthy ageing to bring welfare for its country.
- **KEYWORDS:** elderly; basic needs; low-middle income countries.

The Impact of Spatial Design on Fall Risk of Elderly Inhabitants of Panti Werdha Budi Sejahtera in Banjarbaru Kalimantan Selatan

Authors: Meilya Farika Indah, Rudi Hartono, Akhmad Fauzan

Presenter: Rudi Hartono

Institution of Presenter: Faculty of Public Health, University of Islam Kalimantan

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- **BACKGROUND:** Spatial desain affects human behaviour pattern. The influence, among others, includes attitude, action, psychological condition, feeling of security, safety, and lenience in conducting activity. In elderly, accident risk is higher than the risk in any other age group.
- **OBJECTIVES:** The objective of this research is to indicate correlation between spatial design and fall risk, and to suggest spatial design solution that embrace accessibility factors and safety.
- **METHODS:** The research population is all inhabitants of Panti Werdha Budi Sejahtera which consist of 104 persons. Purposive Technic Sampling is used with the consideration of the ability of the elderly to respond in communication. Questionnaire and direct observation are used to collect data.
- **RESULTS:** The spatial design of Panti Werdha Budi Sejahtera building does not take accessibilty and safety for elderly into consideration. Thus, it may be one of the causes of the high rate of falling amongs the elderly live there.
- **KEYWORDS:** spatial design; elderly; accessibility; safety

Oral Presentation:

CHILD HEALTH

Birth Weight and Cognitive Development among Children under 2 Years Old

Authors: Ratna Djuwita, Irlina Irawan, Arnelia

Presenter: Ratna Djuwita

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- **BACKGROUND:** Cognitive development is a key factor contributing to the ability to learn and optimal productivity in the future of a human being. Studies showed, that low birth weight (LBW) was considered as a risk factor towards developmental delays.
- **OBJECTIVES:** The objective of this study was to determine the relationship between birth weight with cognitive development in children under two years of age (3-23 months).
- **METHODS:** This study used a prospective cohort study design. 278 live births were followed and the cognitive function was assessed at the age 3 to 23 months using Bayley Infant Scale Of Development.
- **RESULTS:** Most of the under two year child (48.2%) had delayed cognitive development, and the median birth weight was 3100 gram. The results showed a significant relationship between birth weight with cognitive development, those who have birth weight under 3100 gram had Relative Risk (RR) 1.36 (95% CI: 1.06-1.73) to developed delayed cognitive development. By stratifying with the nutritional status of the pre pregnancy mother it was shown that the adjusted RR was higher 1.42 (95% CI; 1.1- 1.83).
- **CONCLUSION:** To achieve optimal cognitive development of children related to birthweight, it is important to increase the nutritional status of adolescent girls as well as mother to be.
- **KEYWORDS:** cognitive development; Bayley Infant Scale Of Development; birth weight

Calf Circumference as a Simple, Easy and Valid Surrogate to Identify Low Birth Weight

Authors: Wahyu Kurnia Yusrin Putra, Asih Setiarini, Kusharisupeni Djokosudjono, Abas Basuni Jahari, Lukas C Hermawan

Presenter: Wahyu Kurnia Yusrin Putra

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- **BACKGROUND:** Basic Health Research (2010) showed the prevalence of LBW in West Borneo Province was higher (13,9%) than the national prevalence (11,1%). Furthermore only 70% of newborns who are weighed at birth dan about 66,6% of birth was done at home. Issues on availability of standarized weighing scale and skilled birth attendant also make a potential loss on identification of LBW babies. Therefore it is necessary to find an accurate, simple and easy measurement as a surrogate for birth weighing in order to identify LBW babies.
- **OBJECTIVES:** The objective of this study was to find a surrogate measurement for birth weighing with optimal validity in order to identify LBW babies.
- **METHODS:** This study was conducted from September to December 2011 with cross sectional design. The sample size was 584 newborns obtained from maternity facilities in Kota Pontianak and Kabupaten Kubu Raya with purposive sampling procedure. Variables of this study including birth weight, calf circumference (CC), chest circumference (ChC), mid-upper arm circumference (MUAC) and head circumference (HC). Pearson correlation and ROC analysis was used to determine the best surrogate.
- **RESULTS:** The result showed that calf circumference had the highest correlation coefficient (0,70) compared with other measurement (ChC 0,67; MUAC 0,66; and HC 0,61). Area Under Curve for calf circumference ROC was 90,2% with sensitivity of 90,4%; specificity of 78,9%, positive predictive value of 29,6%; and negative predictive value of 98,8% at 10,25 cm cut-off point.
- **CONCLUSION:** This study suggested that calf circumference was the best surrogate to identify LBW babies.
- **KEYWORDS:** LBW; calf circumference; ROC; sensitivity; spesificity

Factors Associated with the Behavior of Mothers of Under Five-Year Children in Posyandu of Rorotan Village North Jakarta 2015

Authors: Indah Jamiatun Hasanah, M. Farid Hamzens, Ela Laelasari, Dewi Susana

Presenter: Indah Jamiatun Hasanah

Institution of Presenter: Faculty of Public Health, Universitas Indonesia

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- **BACKGROUND:** Malnutrition among children of under-five year age in Jakarta is still a big problem. In 2014, 19 children age 6-59 month of Posyandu Integrated Health Post (IHP) and one malnutrition children in Rorotan Village North Jakarta.
- **OBJECTIVES:** The study aims to analyze the factors associated with mothers practice to weight their children to Posyandu. It is associated that pregnant visit to Posyandu. To weigh children's weight and to get health care such as the monitor of child weight, vaccination vitamin A, prevent malnutrition any children.
- **METHODS:** The study design is crosssectional, conducted in Rorotan Village North Jakarta using formulate different proportion test, 98 mothers Children ages 6-59 Month were selected Randomly Proportional to Posyandu's size. Mother's Practice was measured using frequency visit in the last six month. The practice was considered good if all visit in the last six month were three or more visit.
- **RESULTS:** The results of study showed that the frequency of mother's child to visit Posyandu good 77,7% in the last six months, 56,3% good knowledges, 60,2% good attitudes, 51,5% near Posyandu, 76,6% good support health providers, 65,0% good support families, 58,3% good support peers, 71,8% good support community leaders, 81,6% good support cadre.
- **CONCLUSION:** There wasn't a significant association between behavior mother's to visit Posyandu with the variables of knowledge, attitude, distances to Posyandu, health providers support, families support, peers support, community roles support, and cadre support with all Pvalue $\geq 0,05$.
- **KEYWORDS:** Posyandu; weight; Integrated Health Post (IHP)

Knowledge, Attitude and Behaviour Nutrition of Parents to the Malnutrition of Under Three Years Old Children In Bandung

Authors: Riswani Tanjung, Yeni Rustina, Tris Eryando, Fatmah

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- **BACKGROUND:** The malnutrition problem of under three years old children in some regions in Indonesia is still big and need to solve immidiately.
- **OBJECTIVES:** This study is trying to identify the relationship of knowledge, attitudes, behaviors about diet, parenting, health care and hygiene with the malnutrition of three years old children in Bandung.
- **METHODS:** There are 166 samples (83 cases and 83 controls) and they are randomly selected from each village and proportionally. The data is collected through questionnaire and a food recall for 3 days within a week and they are analyzed using Chi Square test and logistic regression.
- **RESULTS:** The study shows a significant correlation between knowledge, attitudes and behaviors about diet, parenting, health care and hygiene with the malnutrition of under three years old children. The behavior diet is the most related parameter to the malnutrition of of under three years old children with pvalue = 0.001 (<0.005) and the highest OR = 10.011.
- **CONCLUSION:** There is a significant correlation between knowledge, attitudes and behaviors about diet, parenting, health care and hygiene with the malnutrition of under three years old children.
- **KEYWORDS:** diet; under three years old children; malnutrition

Upper and Lower Lip Growth Evaluation Post Labioplasty Cronin Method in Unilateral Complete Cleft Lip and Palate Cases from Anthropometry Aspect

Authors: Made Widya Utami, Muhammad Syafrudin Hak, Lilies Dwi Sulistyani, Pradono

Presenter: Made Widya Utami

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- **BACKGROUND:** The importance of the lips in influencing the quality of the facial profile becoming one of the goals in surgical treatment for patients with cleft lip. The reconstruction of the orbicularis oris was important in Cronin method labioplasty in order to balance the growth of the upper lip.
- **OBJECTIVES:** This study evaluates upper and lower lip growth post Cronin method labioplasty in patients with unilateral cleft lip and palate (UCLP) based on protocol in Cleft Center Harapan Kita General Hospital.
- **METHODS:** After performing Cronin method labioplasty, thirty-six patients with UCLP were photographed on anterior and lateral side by a standardized method at age one and two years after surgery. Upper and lower lips were measured and compared.
- **RESULTS:** At the age of one year, lower lip height and vermilion length were slightly smaller than upper lip height and vermilion length. At the age of two year, lower lip height and vermilion length were slightly smaller than upper lip height and vermilion length. The lower lip was 94% to 95% as large as the upper lip.
- **CONCLUSION:** Vertical height and vermilion length of upper and lower lip in UCLP cases post Cronin method labioplasty based on the anthropometric measurements had been increased with age.
- **KEYWORDS:** Unilateral complete cleft lip and palate; labioplasty Cronin method; lip symmetry; anthropometry

Characteristic of Asphyxiated Newborn Babies in Referral Hospitals of Banten Province, Indonesia

Authors: Asri C Adisasmita, Yulia Izati

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- **BACKGROUND:** Every year 1 million babies died on the first day of life due to asphyxia. The risk of asphyxia is 8 times higher in the country with high neonatal death. In Indonesia, about 27.000 newborn babies died in the first day of their life due to asphyxia. Asphyxia is the second main cause of death in neonatal periode in Indonesia (27%), after low birth weight (29%).
- **OBJECTIVES:** The study aimed to examine the characteristics of asphyxiated newborn babies.
- **METHODS:** This study used data from a major research project (IMMPACT) in two referral hospitals in Banten Province (n=1628) during period of 2003-2004. Cases were obstetric patients and their in-born babies. Asphyxia of newborn babies was defined as recorded in medical record.
- **RESULTS:** The prevalence of asphyxia among newborn infants during the study period in the two referral hospitals in Serang and Pandeglang District was 24.3%. The majority of asphyxiated babies were from rural areas (34.3%) with majority of mothers (79.9%) experienced non-life threatening complications. Younger mothers, multipara and multigravida showed higher proportion of asphyxiated newborn. Asphyxia, as well as death among newborn infants illustrates health services quality received by mother and baby before and after care in the hospital.
- **CONCLUSION:** The fact that mothers from rural areas had higher proportion of asphyxiated infants showed inadequate health services quality received by mothers, as well as lack of access to hospital care. Access to hospitals, and adequate management of mother with complication in the hospitals need to be improved to lower the risk of birth asphyxia among newborn infants.
- **KEYWORDS:** asphyxia; newborn

Development of Children Behavior Aged 6-12 Years and the Utility of Green Open Space in Purworejo District

Authors: Mirnawati Jasimah, Suyud Warno Utomo, Gelant Sanjaya, Olivia Purnamasari

Presenter: Mirnawati Jasimah

Institution of Presenter: Departement of Environmental Health, Faculty of Public Health, Universitas Indonesia

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- **BACKGROUND:** Children aged 6-12 years are in the process of development, one of the development occurred is behavioral development. Behavioral development be affected of environment and heredity which means children need playful environment, such as playing in green open space. Utilities are supporting facilities in the secure and comfortable area of green open space that are used by children to play. It is necessary for playgrounds and space for children to interact and play with others in green open space.
- **OBJECTIVES:** This study is aimed to analyze the development of children behavior with green open space utilities in Purworejo.
- **METHODS:** This study used a cross-sectional study with dependent variables are children behavior development, and independent variables are green open space utilities. This study uses 216 samples of children (aged 6-12 years). This study used primary data obtained from interviews by using questionnaires. The questionnaires used are about green open space and the Strengths and Difficulties Questionnaire (SDQ) on the development of children's behavior. The research will be analyzed using a Chi-square test.
- **RESULTS:** The results showed that statistically there were a significant relationship between the green open space utilities and behavioral development of children. The OR value was 3.25 (95% CI: 1.51 to 6.98) and the p-value was of 0.003.
- **CONCLUSION:** Research shows that the green open space utilities will impact on the development of children behavior.
- **KEYWORDS:** utility; green open space; behavioral development; development; playing

Relationship between Mother's Knowledge on Balanced Nutritional Guidelines towards School-aged Children Snack Food Selection at School

Authors: Nikita Dewayani, Sukihananto

Presenter: Nikita Dewayani

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- **BACKGROUND:** Eating behaviour of school-aged children was dominated by street foods. BPOM surveillance data on school snacks food in 2007 found that 45% of those foods were not eligible due to containing of harmful chemicals, artificial food substances, and microbacterial contamination.
- **OBJECTIVES:** This study aimed to analyze the relationship between mother's knowledge on Balanced Nutritional Guidelines towards the behaviour of school-aged children in school snack foods selection at school. Researchers focused on a school snack food selection context in which researchers figure out if there is any relationship between mother's knowledge on Balanced Nutritional Guidelines with the behavior of school-aged children in selecting school snacks.
- **METHODS:** This study used descriptive correlational design and involved 118 participants (elementary school children and their mothers) in Depok using simple random sampling techniques.
- **RESULTS:** The result showed that there was no significant relationship between mother's knowledge on Balanced Nutritional Guidelines towards the behaviour of school-aged children in school foods selection (p value=0,108).
- **CONCLUSION:** School-aged children could regulate their own food choices and had less direct supervision by parents during school. This study suggested the importance of education on healthy and safe school snack foods for school-aged children.
- **KEYWORDS:** children; mother; nutrition; selection; snack

Symmetrical Lip Evaluation Post Labioplasty Cronin Method in Unilateral Complete Cleft Lip and Palate Cases From Anthropometry Aspect

Authors: Made Widya Utami, Lilies Dwi Sulistyani, Muhammad Syafrudin Hak, Pradono

Presenter: Made Widya Utami

Institution of Presenter: Universitas Indonesia

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- **BACKGROUND:** Facial balance and harmony are the goals of surgical treatment for patients with cleft lip. Cronin method labioplasty in patients with unilateral cleft lip and palate (UCLP) produces symmetrical lips with minimal scarring.
- **OBJECTIVES:** This study evaluates lip symmetry post Cronin method labioplasty in patients with UCLP based on protocol in Cleft Center Harapan Kita General Hospital.
- **METHODS:** After performing Cronin method labioplasty, thirty-six UCLP patients were photographed on anterior side by a standardized method in two weeks, one month, three months, six months, and one year after surgery. Lips on the cleft side were measured and compared with the opposite side.
- **RESULTS:** There were no significant differences the length of alar curvature points (ac) to ipsilateral commissure and the distance of the peak cupid's bow to the ipsilateral commissure on cleft and non cleft side. There are significant differences the length of subalar (sbal) to the Cupid's bow peak ($p = 0.007$) between cleft and non cleft side in two weeks, one month, three months, and six months post labioplasty.
- **CONCLUSION:** Symmetrical lip post Cronin method labioplasty on cleft and non cleft side based on the ratio of anthropometric measurements can be accomplished perfectly in 1 year after labioplasty.
- **KEYWORDS:** unilateral complete cleft lip and palate; labioplasty Cronin method; lip symmetry; indirect anthropometry

Oral Presentation:

CLINICAL PHARMACY & COMMUNITY

Drug and Medical Supplies Management System: Increasing Accountability, Effectiveness and Efficiency Using Drug Management Information System at Primary Health Center: A Case Study

Authors: Rico Kurniawan

Presenter: Rico Kurniawan

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- **BACKGROUND:** Drug and health supplies management engage important role as a part of health system. In this sense, the entire management activities required good planning as well as the monitoring and evaluation system. A Web Based Drug Management Information System (SIPO) has been developed and deployed to support the interaction and communication between the internal entities of District Health Office (DHO).
- **OBJECTIVE:** The Objective of this study is to assess the performance of SIPO in term of effectiveness and efficiency.
- **METHODS:** This study was used a mix method to explore the system performance and user acceptance at 35 Primary Health Center and DHO.
- **RESULTS:** The result given presents that the utilization at Primary Health Center achieved 97.1%. The monthly office supplies cost reduced up to 2,725,100 rupiah, while compared to the paper based method, SIPO would cut 8 steps out of 10 steps of the process. The real time information brought to the DHO's dashboard to be able to monitor the distribution and current stock at the pharmacy unit from the PHC level up to the DHO level. The system would also reduce the potential error, hence the data quality more valid and reliable.
- **CONCLUSION:** As the conclusion, using SIPO significantly save the working time for almost 80% and give the positive impact for data and information quality improvement.
- **KEYWORDS:** drug management; information system; pharmacy; efficiency

Evaluation of Drug Use for Respiratory Problems Before and After National Formulary Implementation at Depok City Hospital

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- **BACKGROUND:** National formulary as prescribing guidance for national health insurance was first applied in 2014. Patients with respiratory problems are quite high percentage in Depok City Hospital.
- **OBJECTIVES:** The aim of this study was to compare quantity and quality of drug use for patient with respiratory problem before and after the national formulary applied at Depok City Hospital.
- **METHODS:** A cross-sectional study was conducted 2013 and 2015. Initially, prescriptions and data recapitulation patients were reviewed and evaluated. The Anatomical Therapeutical Chemical Classification/Defined Daily Doses (ATC/DDD) and the drug utilisation 90% (DU90%) methodologies were used. The results were statistically analyzed and were compares between before and after implementation National Formulary.
- **RESULTS:** The quantity of drug use by DDD/1000 inhabitant per day in Hospital Depok increases from 0.17 DDD/1000 inhabitants per day to 0.26 DDD/1000 inhabitants per day. Quality use of medicines in Hospital Depok increases with decrease in the amount of drug in the DU 90%. The percentage of drug on the adherence of the National Formulary in Hospital Depok, is 88.67%. The difference before and after implementation of the National Formulary was not statistically significant.
- **CONCLUSION:** The quantity, quality, and adherence of drug use in Depok City Hospital increasing after implementation National Formulary.
- **KEYWORDS:** ATC/DDD; Depok Hospital; drug use evaluation; National Formulary

Role of Pharmacy on Alteration of Drug Cost and Drug Related Problem Prevention for the National Health Insurance Geriatric Outpatient in RSUD Kota Depok

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- **BACKGROUND:** Pharmacy Unit at the hospital has an important role in the prescription review of geriatric outpatient in National Health Insurance (NHI) era.
- **OBJECTIVE:** The purpose of this study was to analyze the role of pharmacy in alteration of the drug cost through the prescription review to geriatric outpatient under NHI and to determine the cost avoidance through the focus group discussion.
- **METHODS:** This was an observational, retrospective, with pre-post study method during January to April 2016. The evaluation was carried out on 599 prescriptions of geriatric outpatient under NHI.
- **RESULTS:** In the prescription review, resulted in cost savings of Rp.1.773.642 (3,78% from the total cost of prescription before review). There was a statistically significant between the prescription cost before and after prescription review by the Wilcoxon test ($p < 0,05$). The cost increased to Rp. 97 392 after being given recommendations regarding the drug-related problem through discussion groups, but these increasements can result in cost avoidance quite significantly by Rp. Rp. 1.466.711,4.
- **CONCLUSION:** Optimization of pharmacist role can generate economic benefits (cost saving and cost avoidance) significantly in NHI era.
- **KEYWORDS:** geriatrics; prescription review; alteration of drug cost; drug related problems

The Impact of The National Vaccine Issue to the Number Of NADFC's Drug Commodity Complaints and Information Services Used by Community

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- **BACKGROUND:** Disclosure of fake vaccines by the National Police's Criminal Investigation Department (Bareskrim) in June 2016 in various media has become a national issue. NADFC besides continuous monitoring of the Drug and Biological Products include vaccines also provides two-way communication through consumer complaints and information services.
- **METHODS:** To determine the impact of national fake vaccines issues against the number of drug complaints and information services used by the community using descriptive analysis using the NADFC's data of consumer complaints and information services and media analysis from April to June 2016.
- **RESULTS:** The analysis showed the news of fake vaccines in the fourth week in June 2016 led to a significant increase in the number of public access to drug Commodity complaint and information services by 26% compared to the average weekly number of access at an earlier time. A greater increase occurred in the week in which the news of the discovery of fake vaccines up to a week after that is equal to 263%.
- **CONCLUSION:** The presence of a national issue fake vaccine in the national media causes an increase in weekly number of public access to complaints and information services for drug commodities accessed by community who required clear health information.
- **KEYWORDS:** ATC/DDD; vaccines; drug; information; complaint; BPOM

The Use of Delphi Technique to Identify Practice Standard of Pharmaceutical Care in Indonesia

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- **BACKGROUND:** This study is trying to establish a framework of practice standards of a patient-centered pharmaceutical care. Eventhough there are a few of conceptual practice standards of pharmaceutical care in Indonesia, there are still principal challenge to its implementation as a new practice philosophy for pharmacy.
- **OBJECTIVE:** Delphi Method was employed to identify pharmaceutical care standards that are feasible and relevant in Indonesia toward the goal of improving patient outcomes.
- **METHODS:** A snowball sample of 36 pharmacists was asked to rate standards approved by 15 experts to compare the results. The 109 standards initially identified were rated on seven-point Likert-type scales of feasibility and relevance. Reductions in standard errors across the rounds of Delphi process verified that a valid consensus had been reached in rating 78 of the initial standards as feasible and relevant.
- **RESULTS:** Analysis revealed that 47 of the 78 standards suggested by the expert panel were rated as feasible and relevant by respondents.
- **CONCLUSION:** It was concluded that pharmacists may be ready to assume responsibilities of some pharmaceutical care practice standards, but not all of them. The significance of this research is its conceptualization of Indonesian pharmaceutical care so that, it may be brought to an operational level.
- **KEYWORDS:** pharmaceutical care; practice standards; Delphi technique

Oral Presentation:

COMMUNICABLE DISEASES

Factors Affecting the Helminthiasis on Elementary School Student

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- **BACKGROUND:** Soil is a media transmission of intestinal diseases caused by helminth. The presence of helminth eggs/larvae in the soil residential as an indicator of soil contamination by human faeces. The prevalence of helminthiasis in Pandeglang is 43.78% which is considered quite high.
- **OBJECTIVE:** The aim of this study was to analyze the association between residential soil contamination by eggs/larvae of the helminth parasite and helminthiasis on elementary students.
- **METHODS:** This study was conducted in Pandeglang in January to June 2016 with case control design of the 56 cases and 62 controls. The proportion of residential soil contaminated eggs/larvae was 43.20%.
- **RESULTS:** This study found no significant associations between residential soil contamination by eggs/larvae of the helminth parasite with helminthiasis in school children (OR 1.696; 95% CI 0.813 to 3.535). While significant association of using of family toilets (OR 2.423; 95% CI 1.147 to 5.119), defecation habits (OR 3.12; 95% CI 1.312 to 7.421), and handwashing habit (OR 4.407; 95% CI 2.034 to 9.547) with the school children. Multivariate analysis showed that soil contamination settlement by eggs / larvae is not significantly associated with helminthiasis. Contamination of soil residential by eggs / larvae of the helminths was one of the confounding variables in helminthiasis and hand washing as the most dominant variable and significantly related to helminthiasis on elementary school students; OR = 4.395 (95% CI 1.982 to 9.745).
- **CONCLUSION:** Efforts were needed to improve public access to eligible family latrines and health education and promotion to the community for clean and healthy living especially hand washing for school children.
- **KEYWORDS:** helminth; helminthiasis; residential soil contamination; Pandeglang; elementary students

Indirect Factors Related to HIV/AIDS in Women

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- **BACKGROUND:** The spreading of HIV/AIDS is undeniable. The data from Dr. H. Abdoel Moeloek Lampung Public Hospital in March 2016 shows that 565 HIV/AIDS patients used antiretroviral treatments, which about 240 of the patients are women. One of the causes of women's susceptibility to HIV/AIDS is gender imbalance. The related factors are age of marriage, education, income, women's role in decision-making in the family and information about HIV/AIDS.
- **OBJECTIVES:** This study aimed to determine relation of indirect factors with HIV/AIDS in women at Dr. H. Abdoel Moeloek Lampung Public Hospital.
- **METHODS:** This study used case control design with 51 respondents either case or control group. The case group is women with positive HIV/AIDS at Voluntary Counseling and Testing clinic at Dr. H. Abdoel Moeloek Lampung Public hospital. The control group is women with negative HIV/AIDS at Indonesian Red Cross Lampung province. The data analyze used chi square, t-test and logistic regression.
- **RESULTS:** Result of study showed women marriage in young age had risk of HIV/AIDS 4,8 higher (2,077 – 11,093). Women with low education had risk of HIV/AIDS 4,176 higher (95% CI 1,801 – 9,684) while women with low income had risk 2,22 higher (95% CI 1,004 – 4,908). Moreover, women with low role in decision-making had risk 7,517 higher (95% CI 3,060 – 18,464), and women with low HIV/AIDS information had risk 7,273 higher (95% CI 3,000 – 17,632).
- **CONCLUSION:** The most related factor is HIV/AIDS information with score Exp 3,87. Therefore, it needs to enhance the effort of providing information about HIV/AIDS not only in key population but also in general population.
- **KEYWORDS:** indirect factor; HIV/AIDS; women

Prevalence of HIV and Risk Factors Associated with HIV Infection among General Population in Tanah Papua 2013

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- **BACKGROUND:** HIV has become a pandemic and remained global health problem. In Tanah Papua, most eastern part of Indonesia, the HIV epidemic has increased sharply, as compared to other regions
- **OBJECTIVE:** To estimate the HIV prevalence predict the contribution of socio-demographic, co-infections, behavioral, environmental and health services factors to the occurrence of HIV infection in Tanah Papua, year 2013.
- **METHODS:** We analyzed extensively the national data of Integrated Biological and Behavioral Survey (IBBS) among general population in Tanah Papua in 2013. Interview of high risk behavior and HIV serologic test were done among total 5,334 people aged from 15-49 years. Multivariable logistic regression analysis was done to make the prediction model of the determinants.
- **RESULTS:** The overall HIV prevalence among general population in Tanah Papua was 2.3%. Among whole respondents, factors strongly increased significant risks of HIV infection were indigenous Papuan ethnicity (OR=5.9; 95% CI: 3.2-10.8), having extra-marital sexual intercourse (OR=2.7; 95% CI: 2.2-3), using intra venous drugs (OR=3.7; 95% CI: 3.1-4.3), condom unavailability (OR=2.8; 95% CI: 2.5-3.2), and unaffordable cost of VCT service (OR=10.3; 95% CI: 5.6-18.8). Among male population only, uncircumcised males were 16.8 times more likely (OR=16.8; 95% CI: 5.3-53.5) to experience HIV infection, as compared to those circumcised. This was the strongest significant determinant of the risk of HIV infection among male population.
- **KEYWORDS:** HIV infection; IBBS; Tanah Papua; general population

The Effect of Reactions to Prognosis of Disability in People Affected with Leprosy: A Retrospective Cohort Study

Authors: Istianah Surury, Bambang Sutrisna

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- **OBJECTIVES:** The purpose of this study was to determine the effect of leprosy reaction to the defective condition at the end of leprosy patients in South Tangerang City after controlling variable age, sex, type of leprosy, status of disability at beginning of diagnose and status at end of treatment in 2008 - 2015.
- **METHODS:** This study used a dynamic retrospective cohort study design from 418 leprosy patients in 25 health centers in South Tangerang City area in 2008 - 2015. The data were taken in total sampling and research process conducted during March-July 2016, with use of cox regression analysis.
- **RESULTS:** The study found that the majority of registered leprosy patients were male (60.05%) with a predominance of type wet/multibacillary leprosy (MB) of 89%. Leprosy reaction proved statistically significant on defective condition of the patients during the treatment process multi drugs therapy (MDT) after controlling type of leprosy, initial conditions of disability, the final status and the age category with a hazard ratio (HR) of 2.43 (95% CI: 1.04 - 5.79).
- **CONCLUSION:** Need to do a special service to the lepers potential for reaction and disability (type MB) by providing counseling by a psychologist or monitor the condition of patients each come take medication.
- **KEYWORDS:** leprosy; leprosy reaction; disability

The Exploration of Supporting Cadres Roles on Encouraging Drug Resistance TB (MDR TB) Patients to Enroll Treatment

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- **BACKGROUND:** This study reviewed Supporting Cadres who had worked 1,5 years in the areas of North and Central Jakarta and the reasons why they have not optimally succeeded on encouraging Multi Drug Resistance TB (MDR-TB) patients to enroll treatment.
- **METHODS:** This study was conducted in April-September, 2015 using qualitative and descriptive quantitative methods. The informants of the study consist of supporting cadres, nurses, MDR TB patients and family, ex MDR TB patients, the Head of Puskesmas and staffs from District Health Offices. In September 2015, refresher training for Supporting Cadres with the main topic of TB and Drug Resistance TB knowledge, implementation of community-based Drug Resistance TB control, effective communication and patient assessment skills.
- **RESULTS:** After observing 3 (three) months after the training, there were no significant increase on the knowledge of Supporting Cadres but they were able to communicate and implement the assessment of patient condition.
- **CONCLUSION:** As for the role of Supporting Cadres on encouraging Drug Resistance TB patients to enroll treatment was mainly to assist the patient tracing process. This activity was an important initial step on understanding the whereabouts and condition of the patient also problem identification faced by patients.
- **KEYWORDS:** Drug Resistance TB; Supporting Cadres; default patient; patient tracing

Zinc and Selenium Status among Lymphatic Filariasis Subjects in Indonesia

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- **BACKGROUND:** Neglected Tropical Diseases (NTDs) are proxy of poverty and Lymphatic Filariasis (LF), 1 of the NTDs is still endemic in Indonesia, as in 2015, microfilaria rate still account for 1-20%. As lower the income received by someone, gave an impact on lower purchasing capability for a good source of food to maintain their health status. Zinc and selenium were known as an important micronutrients for immune response system against the parasite infection.
- **OBJECTIVES:** Aim of the study is to explore zinc and selenium status among 37 LF post therapy subjects, from October 2014 to May 2015 in 3 villages of Balangan District, South Borneo.
- **METHODS:** Zinc and selenium status were measured by ICP-MS procedure taken from hair samples.
- **RESULTS:** There was a deficiency in selenium (0.31 µg/g ; min-max 0.18 – 0.59 µg/g), as the zinc status was normal (172.66 µg/g; min-max 69.11 – 664.65 µg/g). All of the subjects worked as farmer in rubber plantation site with minimum monthly wages compare to regional minimum standard and frequently have vegetable and phyto protein as their daily food which were low in selenium and zinc.
- **CONCLUSION:** Selenium supplementation can be considered to enhance the selenium level to support the body's natural defense system due to filariasis infection.
- **KEYWORDS:** Indonesia; lymphatic filariasis; selenium; zinc

Behaviors for the Prevention of HIV Transmission among Young Men Having Sex with Men (YMSM) Working in Entertainment Places of Chonburi Province, Thailand

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- **OBJECTIVE:** A qualitative research was aimed at identifying behaviors to prevent HIV transmission and its contributing factors among thirty YMSM working in entertainment places in Pattaya City, Thailand, two entertainment place owners and three health personnel responsible for HIV prevention.
- **METHODS:** Indepth interviews using guidelines were conducted between 1 August and 30 September, 2015. Content analysis was used to analyze data to verify key answer themes.
- **RESULTS:** Results revealed that YMSM age ranged between 20-24 years with majority were come from northeastern Thailand. Poverty and being as a good son of family to earn money to support their parents were reasons to join the work. YMSM knew condom use can prevent HIV with more than half reported on condom use every time they had sex. Reasons for not using condoms included being drunk, request from male clients to exchange for money, sexual pleasure, love and trust in their lovers. The other behavior was having sex without penetration. Awareness on risk of HIV transmission, peers and entertainment owners influenced on condom use while work environments exposed all to risk of HIV. YMSM knew benefits of HIV-Pre-Exposure Prophylaxis (PrEP) but reasons not to use were inaccessible and need to buy it. Though health workers raise awareness on STDs/HIV prevention and promote free condom use but YMSM preferred to utilize outreach service at their workplace from NGOs due to embarrassment to go to public hospital.
- **KEYWORDS:** men who have sex with men; HIV prevention; condom use; male commercial sex workers

Social Determinants of Multi-Drug Resistant Tuberculosis (MDR-TB) in Bandung, Indonesia: A Case Control Study

Authors: Ryan Rachmad Nugraha, Nur Afifah, Bony Wiem Lestari, Arto Y. Soeroto, Elsa Pudji Setiawati, Bacht Alisjahbana

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- **BACKGROUND:** Multi-Drug Resistant Tuberculosis is now becoming a major threat to the tuberculosis control program in Indonesia, particularly in Bandung, West Java.
- **OBJECTIVES:** The objective of the study is to determine the social risk factors of MDR-TB patients.
- **METHODS:** Case control study was conducted from November 2011 to November 2015. Resistant to isoniazid were done by MTB/RIF as a rapid confirmation of the MDR-TB. TB patients with MDR-Tuberculosis and non MDR-TB patients consisting of TB-only and non-TB patients were considered as cases and controls. Data was collected with a structured questionnaire with face-to-face interview and by looking at the medical record. Univariate logistical regression was done as to determine the risk from societal perspectives of MDR-TB.
- **RESULTS:** A total of 65 MDR-TB patients and 65 non MDR-TB patients were taken as a participant of the study. Marriage (AOR=1.71, CI=0.8-5.29), income between 1.5-2.5 million Rupiah (AOR=2.83, CI=0.76-10.53), previous history of TB treatment (AOR=2.55, CI=0.25-26.24), history of HIV/AIDS (AOR=8.18, CI=0.07-E), current smoker (AOR=3.95, CI=0.13-E), and burdened by cost (AOR=9.7, CI=0.29-E) were more likely associated with increasing risk of MDR-TB infection in Bandung, West Java.
- **CONCLUSION:** In this study, however, low socio-economic level, high-risk behavior, and history of previous TB treatment alongside history of HIV/AIDS still mainly is the social determinants determining occurrence of MDR-TB in Bandung, Indonesia.
- **KEYWORDS:** TB; MDR-TB; social determinants; Bandung

Analysis of Risk Factors Dengue Hemorrhagic Fever (DHF) in Rural Populations in Panongan Subdistrict, Tangerang 2016

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- **BACKGROUND:** DHF is a disease that affects the population in urban areas. But several recent research shows that the incidence of dengue has spread to rural areas.
- **OBJECTIVE:** This study aims to analyze the risk factors of dengue in rural areas in Panongan Subdistrict, Tangerang in 2016.
- **METHODS:** This study is a case control study. The samples of this study consisted of individuals diagnosed with DHF in the case group and individuals without DHF in the control group as recorded in Puskesmas Panongan in 2016. The research was conducted in June 2016. The study was conducted by interviewing the patients in both groups. The analysis used was logistic regression.
- **RESULTS:** The analysis showed a significant association between sex (4,99; 2.05-12.14) and mobility (2.28; 1.20-4.35) with incidence of dengue. This research concludes that sex is the most dominant variable related to the incidence of DHF with OR = 4,17. It means that males have 4,17 times higher risk of acquiring DHF compared to females after controlling the mobility.
- **CONCLUSION:** Strategies to prevent Ae.Aegypti bite are by using mosquito nets, wearing mosquito repellent and using windows or doors screen.
- **KEYWORDS:** dengue fever; rural areas; risk analysis

Coaching as Nursing Intervention for Improved Quality of Life among Pulmonary Tuberculosis Clients

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- **BACKGROUND:** Pulmonary tuberculosis (TB) is an infectious pulmonary infectious disease that still needs combat in the world, including Indonesia. TB disease symptoms will affect the client's TB physical abilities and social relations in society. Furthermore, several effects of treatment such as nausea, vomiting, pain on extremities will worsen the health status of pulmonary TB clients. It will influence the clients' quality of life, the health aspects of physical, psychological, social relationships, and environment. Various studies suggest that TB clients had impaired movement/mobility, activity, employment, increasing level of stress, and affect social relationships. A nursing intervention such as coaching needs to guide TB clients to manage their health problem.
- **OBJECTIVES:** This study aims to determine the effect of coaching on quality of life for pulmonary tuberculosis clients.
- **METHODS:** This research applied a quasi-experimental design with a control group with 62 pulmonary TB clients as samples. The intervention and control groups consisted of 31 persons in each group. The sampling technique was purposive sampling.
- **RESULTS:** The results showed that coaching has a significant effect to improve quality of life within pulmonary tuberculosis clients ($p = 0.000$).
- **CONCLUSION:** It is recommended to provide coaching as nursing intervention to improve pulmonary tuberculosis clients' quality of life.
- **KEYWORDS:** coaching; pulmonary tuberculosis; quality of life

Effect of Rabies Elimination Program toward Rabies Cases in Bali, 2008-2015

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- **BACKGROUND:** Rabies is zoonotic disease and caused death in animal and human in the world. Bali is one of provinces in Indonesia that reported rabies since its first detected in 2008. Since then, Indonesia government has been taking action to eliminate the disease.
- **OBJECTIVE:** The research aims to describe the rabies cases in dogs and human and to measure effect of rabies elimination program toward rabies cases in Bali, 2008-2015.
- **METHODS:** Data are collected from Livestock and Animal Health Service Bali, Human Health Service Bali, and Disease Investigation Center Kota Denpasar, year of 2008-2015. The study design is observational, ecological study and analyzed using panel poisson method. The variable for the research are rabies cases in dogs and human, number of vaccinated and depopulated dogs, area vaccination coverage, dogs' density, number of human bitten and received prophylaxis, and ratio human and dogs.
- **RESULTS:** The result of the analysis shows that there were no significantly changes in mean and proportion of rabies cases in dogs by rabies dogs' vaccination, area coverage rabies dogs vaccination, dogs' depopulation and dogs' density. The factors of rabies cases in dogs, depopulation in dogs, dog bites, vaccine anti rabies to human bitten, and ratio between human and dogs were no associated with the occurrence rabies cases in human. However the data may contain measurement bias, due to number of estimated dogs are lower than the number of vaccinated dogs.
- **CONCLUSION:** The rabies elimination program in Bali, has not been successfully eliminated the cases. There are many factors that may influence to the successful of the program but it has not been observed, such as vaccine's type used, and rabies surveillance in dogs. Therefore, government should evaluate the vaccine used. It is also important to measure correct number of targeted vaccination in dogs.

Factors Associated with Dropout of Pulmonary TB Treatment in Ciracas Puskesmas, East Jakarta, 2009

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- **BACKGROUND:** High transmission of pulmonary TB (tuberculosis) is caused by treatment failure among patients dropped out from the treatment. The reported treatment dropout rates in Ciracas sub-district Puskesmas (community health center) were still high and increased sharply from year 2007 to 2009.
- **OBJECTIVES:** To identify factors associated with drop-out of TB treatment among pulmonary TB patients treated in Ciracas Puskesmas in 2009.
- **METHODS:** We used cross-sectional study to interviewe 101 randomly selected pulmonary TB respondent.
- **RESULTS:** Among 101 respondents, about 23% dropped out from treatment, which was considered to be quite high as compared to tolerable national rate, i.e. 5%. The results showed that among 22 theoretically presumed determinants (based on Precede and Health Believe Model frames of thought), there were several important factors significantly ($p < 0,05$) associated with increasing risk/probability for experiencing dropout, i.e. availability to pick up the TB medicine, lack of direct counseling, misperception of treatment benefit and experience of adverse effect of the treatment (e.g. headache, nausea, vomiting). The corresponding Prevalent Ratio (PR) with its 95% confidence interval (CI) of the above important risk factors were 3.9 (1.2-12.4), 2.8 (1.3-6.0); 3.3 (1.7-6.7); 3.3 (1.7-6.4); 2.9 (1.2-7.2), respectively. Interestingly, level of knowledge (moderate and low vs. high) has shown gradual increase of risk to experience drop-out with a dose-response pattern.
- **CONCLUSION:** In order to reduce treatment dropout, it is thus recommended that proper knowledge related pulmonary TB treatment (like disease susceptibility, transmission, seriousness/severity, treatment benefit and adverse effect, etc.) needs to be improved through strong health promotion, education and direct counseling.
- **KEYWORDS:** drop-out; pulmonary TB (tuberculosis); treatment; Puskesmas; Ciracas

Review: The Important Zoonoses in East Nusa Tenggara

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- **BACKGROUND:** Zoonoses are infections naturally transmitted from animals to humans caused by bacteria, viruses, parasites, and fungi. Zoonotic disease transmission through various routes such as direct contact with infected animals and infected animal products (food and non-food), air, water, vector, and biological or non-biological vehicles. East Nusa Tenggara region has a high number of animals and reported some zoonotic diseases have occurred.
- **OBJECTIVE:** The purpose of this review is to identify the various zoonotic disease that have occurred in the region of East Nusa Tenggara from aspect of First time incident, the route of transmission, and progress to date.
- **METHODS:** This study was conducted using cross-sectional study of available literature and quoted from 1981 to 2016. Literature must provide information related to the time of occurrence of zoonotic diseases in the region of East Nusa Tenggara, the route of transmission and the development of the case until recent.
- **RESULTS:** Based on a review of articles that have been selected, it is known that there are a variety of disease events Rabies, Antrax, Brucellosis, Toxoplasmosis, Cyticeriosis, Taeniasis, Japanese encephalitis, Anisakiasis, Salmonellosis, and Filariasis. This zoonotic disease occurs route varies. Lifestyle of the people, animals maintenance management system from upstream to downstream, and culture becomes an important reason is the emergence of zoonotic events until today.
- **CONCLUSION:** This study shows the importance of the implementation of one health to decrease the incidence of zoonotic diseases in East Nusa Tenggara.

Risk Factors of Clostridium Difficile Associated Nosocomial Diarrhea in Admitted Liver Cirrhosis Patients

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- **BACKGROUND:** Liver cirrhosis patients tend to have repeated hospitalization, got antibiotics and acid lowering drugs, and decreased immunity. Those characteristic are well known as general risk factors of C. difficile infection. C. difficile infection could increase length of stay and mortality. There is no well-known data related to those especially in Asian population.
- **OBJECTIVES:** The aim is to know characteristic and risk factor of C. difficile associated diarrhea infection in liver cirrhosis patients.
- **METHODS:** This cross-sectional study was conducted at General hospital, Karawaci, Tangerang, Banten, Indonesia from 2013-2014. Fifty-five adult liver cirrhosis patients diagnosed by abdominal ultrasound were included. Previous history of C. difficile infection was excluded. They were asked about the liver cirrhosis data and potential risk factors of C. difficile infection. Their feces were checked C. difficile antigen and toxin using C. Diff complete quick chek. They were evaluated if they werehaving nosocomial diarrhea and all were analyzed using Pearson Chi Square and multivariate analysis.
- **RESULTS:** Of 55 patient subjects, there were 35 males and 20 females. Median age was 51 (16-79) year old. The most common degree of liver cirrhosis was 67.3% child Pugh B. About 14.5% subject had nosocomial diarrhea. All those subjects had positive resultsfor antigen and toxin C. difficile. From 14.5% those patients, 25.5% had historyof antibiotic consumption, 23.6% had history of hospitalization and 20% had historyof using proton pump inhibitor in the last 3 months. Unfortunately, there were no statistically significant related to those potential risk factors.
- **CONCLUSION:** The incidence of C. difficile infection associated diarrhea in liver cirrhosis patients was 14.5%. Antibiotic usage, hospitalization, and proton pump inhibitor usage in last 3 months did not significantly related to C. difficile infection associated diarrhea in liver cirrhosis patients.
- **KEYWORDS:** C difficile; liver cirrhosis; nosocomial diarrhea

Risk of Tuberculosis among Prisoners: A Case Control Study in Prison Class II.A Jakarta

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- **OBJECTIVE:** This study aimed to determine risk factors of tuberculosis in prisons.
- **METHODS:** A case control study conducted at the prison class II.A Jakarta, data collection was taken in December 2013 to February 2014. As much as 76 cases with positive tuberculosis and 152 control healthy prisoners. Multivariate logistic regression was applied to determine risk factors.
- **RESULTS:** The results shows that significant risk factors tuberculosis among prisoners were presence of person(s) with Tuberculosis in the same room, length of detention, HIV positive, and do not use antiretrovirals among HIV positive person. The presence of people with tuberculosis in the same room is the most risk factors on the tuberculosis in prison (OR = 13.0, 95% CI 4.4—38.4). Detention for three year or more have 3.7 time higher risk of tuberculosis (95% CI 1.4—9.5). Those with HIV positive have 4.7 time higher risk of tuberculosis (95% CI 1.4—9.5). Those with HIV positive and do not use antiretrovirals have 5.8 time higher risk of tuberculosis (95% CI 1.1—31.2).
- **CONCLUSION:** Striving for improvement and modification system isolation room environment, as well as increased health care with routine checks on HIV and suspected tuberculosis can be used as prevention efforts Tuberculosis transmission in prison.
- **KEYWORDS:** tuberculosis; prisons; case control

Stigma, Participation Restriction and Quality of Life among People Affected by Leprosy In Cirebon District Indonesia: An Assessment of Pre-Intervention in the Perspective of Public Health

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- **BACKGROUND:** Leprosy known as disease with various impact and consequences, such as physical impairment, physiological, and social impact like broken relationship in the family and the community, stigma is on of them. Stigmatization can happen when people see a deviation from normative assumptions of acceptable states of being for oneself and others. Stigma in the public health perspective is the factor that restricted people to seek or to adhere to the treatment.
- **OBJECTIVES:** This paper aimed to explore the stigma among people affected by leprosy in Cirebon District, Indonesia.
- **METHODS:** This study was part of the Stigma Assessment Reduction and impact (SARI) project which was applied a transdisciplinary and interactive Learning and Action (ILA) approach to develop intervention. We applied qualitative and quantitative approach, we conducted 53 semi-structured interviews and a new adaptation Berger scale (Sari Stigma Scale) to measure stigma, P scale to measure participation restriction and QoL Bref to measure quality of life were used to 394 people affected by leprosy.
- **RESULTS:** The study show stigma among people affected by leprosy was exist, it higher among female, people with low illiterate, and much higher among people with disability. Similar to stigma level, participation restriction also higher among low illiterate, and people with disability. Quality of life is lower among people affected by leprosy with visible impairment. The study found that stigma is a complex situation to people affected by leprosy and neighbors, and exist among health provider.
- **CONCLUSION:** The stigma among people affected by leprosy is prevalent in Cirebon districts, it causes social economic impact and hampered of the health seeking behavior. The study recommend an intervention to reduce stigma impact and consequences that coherent with the complexity of the stigma. An effort to strengthening capacity of people to regain their dignity and self-esteem are be suggested.
- **KEYWORDS:** leprosy; stigma; participation; restriction; quality of life

The Effectiveness of Community Empowerment to Increase Level of Pulmonary TB Clients Self Care Independence in Depok, West Java, Indonesia, 2014

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- **BACKGROUND:** A nursing intervention model to increase the level of pulmonary TB clients' self care independence has been developed.
- **OBJECTIVES:** This study aimed to determine the effectiveness of community health workers' empowerment.
- **METHODS:** The study design was quasi-experiment with nonequivalent groups. Sample size was 108 pulmonary tuberculosis clients represented 54 clients of control group and 54 clients of intervention group. The clients were selected by purposive sampling, that were clients with smear positive who were undergoing pulmonary tuberculosis treatment. TB clients were visited twice a week by community health workers.
- **RESULTS:** Research showed that the model is effective for improving pulmonary tuberculosis clients' level of self care independence. Result of linier regression analysis showed there were strong association of the model to clients' knowledge level ($r=0.685$); to clients' appraisal to community health workers ($r=0.258$); and client's level of independence in caring for themselves ($r=0.725$). They increased 5.611 point, 9.444 points and 5.611 points after intervention.
- **CONCLUSION:** This model is recommended to implement by nurses in the community as referral to empower community health workers, family and pulmonary TB clients. The level of self care independence among pulmonary tuberculosis clients can be improved by providing community health workers visitation.
- **KEYWORDS:** empowerment; self care; pulmonary tuberculosis; nursing care; community health workers

Oral Presentation:

DRUGS DESIGN & DEVELOPMENT

An Invitro Study of Caries Arresting Effect of Propolis Fluoride and Silver Diamine Fluoride on Dentine Carious Lesion

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- **BACKGROUND:** According to Riskesdas, 25.9% Indonesians are having caries, most of them are from the lower economic groups. Limitation of the health facility led to the needs for treatment of caries that are easy to apply and affordable.
- **OBJECTIVE:** To compare the antibacterial and remineralization ability of Propolis Fluoride (PpF) and SDF on arresting caries of primary teeth.
- **METHODS:** PpF and SDF Materials are tested with Total Plate Count (TPC) to determine their antibacterial ability. Observations using SEM and EDX was conducted to determine PpF's dan SDF's remineralization ability.
- **RESULTS:** In TPC method, PpF has the ability to significantly decrease the growth of Streptococcus mutans. In SEM method, negative control group looked more porous than the positive control group. In PpF group, it appears the demineralization porous is covered by granulated layer of PpF.
- **CONCLUSION:** Propolis Fluoride has a big potential to be an alternative for SDF on arresting dentinal caries on dentin caries of primary dentition.
- **KEYWORDS:** antibacterials; fluoride; propolis; remineralization; SDF

Ligand-Based Pharmacophore Modeling and Virtual Screening of NADPH Oxidase Inhibitor from Herbal Antidiabetic and Antioxidant Plants

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- **BACKGROUND:** NADPH oxidase (NOX) is an enzyme that changed NADPH into NADP⁺ by transferring electrons to oxygen and convert it into anion superoxide radicals. This enzyme becomes active in a variety of pathological conditions, especially on the state of hyperglycemia in diabetes mellitus condition. The research to find the NOX inhibitor from both natural and synthetic compound have been done, but the specific NOX inhibitor was still undiscovered from Indonesian plants.
- **OBJECTIVES:** This study aimed to find the NOX inhibitor specific compound with in silico study by screening from several herbal plants that have been known empirically to have the antidiabetic and antioxidant effects.
- **METHODS:** In this research, we use virtual screening method using LigandScout 4.09.1. From 13 active compounds, we divided into 3 groups of training set based on their known mechanisms. Ligand-based pharmacophore models are build using pharmacophore models generation from training set. Ten pharmacophore models per each group are used for virtual screening against 376 Indonesian herbal compounds from 13 plants that have antidiabetic and antioxidant effects.
- **RESULTS:** The best model from group 1 is model 3 with highest pharmacophore fit score are epicatechin and catechin (69.3) which have 7 pharmacophore features such as 3 HBA, 2 HBD, 1 hydrophobic and 1 aromatic ring. The best model from group 2 is model 1 with highest pharmacophore fit score is nirurin (61.98) which have 7 pharmacophore features such as 6 HBA and 1 HBD. The best model from group 3 are model 6 and 7 with highest pharmacophore fit score is maclurin (43.64) which have 5 pharmacophore features such as 2 HBA, 1 HBD, 1 hydrophobic and 1 aromatic ring.
- **KEYWORDS:** Pharmacophore; NOX; anion superoxide; virtual screening; Ligandscout

Optimization of Ionic Liquid-Based Microwave Assisted Extraction to Obtain trans-Resveratrol from *Gnetum gnemon* L. Seeds

Authors: Imalia Nurrachma Ayuningtyas, Maesya Rahmawati, Sutriyo, Abdul Mun'im

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- **BACKGROUND:** *Gnetum gnemon* L. (Melinjo) is popular in Indonesia as a source of nutrition. Its seeds contain trans-resveratrol, that has been shown to have multiple pharmacological activities.
- **METHODS:** The application of ionic liquid 1-n-butyl-3-methylimidazolium ([Bmim]Br) as a selected solvent in the microwave assisted extraction (MAE) method was developed for extraction of trans-resveratrol from Melinjo seeds. MAE method with [Bmim]Br has also been applied to extract trans-resveratrol from different plant samples with a high extraction yield value. Ionic liquids proposed as a green solvent. The Box-Behnken design on four factors (concentration of the ionic liquid, microwave power, time of extraction, and liquid:melinjo seeds powder ratio) with response surface methodology were used to optimize extraction conditions for ionic liquid based MAE of trans-resveratrol content from Melinjo seeds. The trans-resveratrol in the extract was determined semiquantitatively by thin layer chromatography (TLC)-densitometry.
- **RESULTS:** The optimum process for the MAE using ionic liquids was [Bmim]Br concentration 2.5 mol/L; liquid-melinjo seeds powder ratio 15 mL/g; microwave power 10%; and extraction time 10 min with the trans-resveratrol value 1.34 mg/g (0.134%). This extraction technique was a rapid and suitable to apply.
- **KEYWORDS:** ionic liquid; microwave assisted extraction; trans-resveratrol; *Gnetum gnemon*; response surface methodology.

Optimization of Microwave-Assisted Extraction of Resveratrol Compounds from *Gnetum gnemon* L. (Melinjo) Seeds

Authors: Maesya Rachmawati, Imalia Nurrachma Ayuningtyas, Sutriyo, Abdul Mun'im

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- **BACKGROUND:** Polyphenols, the well known naturally occurring antioxidant, are the most abundant secondary metabolites in the plant. Microwave-assisted extraction was used to replace conventional techniques that are time-consuming and need large amounts of solvent. Microwave-assisted extraction (MAE) method was used to extract polyphenols compound. One of the polyphenolic compound from melinjo (*Gnetum gnemon*) seeds is resveratrol.
- **OBJECTIVES:** The purpose of this study was to optimize the effect of microwave power (10, 30, and 50%), irradiation time (5, 10, 15 min), and liquid:solid ratio on resveratrol extraction from melinjo seeds.
- **METHODS:** Melinjo seeds were extracted with 50%, 70%, and 90% ethanol in water using microwave assisted extraction method. To maximize the resveratrol extraction yield, response surface methodology was used to optimize the process.
- **RESULTS:** Resveratrol content was determined in melinjo seeds extract using High-Pressure Liquid Chromatography (HPLC) analysis. The optimized extraction conditions were obtained at a solid loading of 10 gram, 90% ethanol, extraction time of 10 min and 50% microwave power. Under optimized conditions 0.31 mg/g of resveratrol was obtained.
- **KEYWORDS:** *Gnetum gnemon*; microwave assisted extraction; resveratrol; melinjo; response surface methodology

Toxicity Analysis of Crab Shells Chitosan RGD Scaffold Membrane on Human Dental Pulp Cells Viability

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- **BACKGROUND:** Crab shells chitosan is one of the biomaterial for scaffold. In Indonesia, BATAN has made crab shells chitosan RGD scaffold membrane. The addition of RGD aims to enhance cell attachment to the scaffold.
- **OBJECTIVE:** The objective of this research is to analyze the toxicity of crab shells chitosan RGD scaffold membrane on human dental pulp cells viability.
- **METHODS:** The method is human dental pulp cells were cultured for 5 days in α -MEM complete containing amphotericin B, penicillin, streptomycin, and FBS. Then the treatment group was exposed to crab shells chitosan RGD scaffold membrane and crab shells chitosan scaffold membrane and incubated for 24 hours. The toxicity of the material was analyzed with MTT assay.
- **RESULTS AND CONCLUSION:** The result of this research is we found that crab shells chitosan RGD scaffold membrane did not decrease the percentage of human dental pulp cells viability. Therefore, we have concluded that this crab shells chitosan RGD scaffold membrane did not give toxic effects on human dental pulp cells.
- **KEYWORDS:** crab shells chitosan; human dental pulp cells; RGD; scaffold; toxicity

Antimicrobial Resistance in Animal as One Health Challenge (Case Study: Drug Dossier Preparation made from Ciprofloxacin, Enrofloxacin, and Flumequine)

Authors: David Kusmawan, Stevan MS, Indri Hapsari Susilowati, Ira Gustina

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- **BACKGROUND:** One of the goals to be achieved in the Sustainable Development Goals (SDGs) is to ensure a healthy life and encourage prosperity for all people in all ages. One of the challenges in addressing the public health problem is with the One Health approach. One Health concept emphasizes that human health associated with the environment and animal health (CDC 2016). One of factors triggering the increasing incidence of antibiotic resistance is unwise of using antibiotics in humans and animals. The association of antimicrobial resistance in humans is also related to the incidence of antibiotic resistance in animals, especially to livestock due to the use of Antibiotic Growth Promoters (AGP) with a sub-therapeutic level.
- **OBJECTIVE:** This research aims to describe the result of drug content assays; product A, B, and C on drug registration dossier from Company X and its relation to government regulation (Ministry of Agriculture), and then what the impact on public health of antibiotic resistance incidence.
- **METHODS:** This research uses descriptive analysis and laboratory assays of two drug samples using HPLC (High Performance Liquid Chromatography) and one drug sample using spectrophotometer at Pharmacy Laboratory, Pancasila University, in August - October 2015.
- **RESULTS AND CONCLUSION:** Results obtained two samples do not fulfil the standard; Product A (active ingredient: ciprofloxacin) and Product B (active ingredient: enrofloxacin) each obtained at 33.76 g/kg and 41,88 g/kg; while Product C (active ingredient: flumequine) met at 219.45 mg/mL. The distribution of drugs which are not according to standard is one important factor to the presence of antibiotic resistance. Therefore, the government role is important related to the regulations, supervision of drug imports, drug production, and distribution of animal drugs in Indonesia. The implementation of national strategy of antibiotic resistance should involve stakeholders (government, breeders, and drug companies).
- **KEYWORDS:** One Health; AMR; HPLC; flumequine; ciprofloxacin; enrofloxacin

Chitosan-Hydroxyapatite-Collagen Composite Scaffold's Surface Morphology Evaluation after Simulated Body Fluid Immersion as Reconstruction Material

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- **BACKGROUND:** Hydroxyapatite (HA) formation is one of important aspects for bone regeneration. Domestic-made chitosan-hydroxyapatite-collagen composite scaffold from crab's shell as well as bovine's bone and tendon has potential as a maxillofacial reconstruction material. Therefore, its HA forming ability needs to be evaluated.
- **OBJECTIVE:** The aim of this research is to investigate chitosan-hydroxyapatite-collagen composite scaffold potential as a maxillofacial reconstruction material by observing its composition changes.
- **METHODS:** Scaffold specimens were immersed in 37°C simulated body fluid (SBF) for the period of 2, 4, 6, and 8 days. Scaffold composition was evaluated by using Energy Dispersive Spectroscopy (EDS).
- **RESULTS:** Calcium and phosphorus percentage of the scaffold increased after SBF immersion. High Ca/P ratio (3.82) on scaffold indicated HA formation. Ion exchange played a significant role in calcium and phosphorus increasing percentage that lead to a new HA layer formation. Scaffold's HA acted as a nucleation site of calcium and phosphorus from SBF with collagen and chitosan as its matrix.
- **CONCLUSION:** Chitosan-hydroxyapatite-collagen composite scaffold has a potential as a maxillofacial reconstruction material since it shows composition that favors HA formation.
- **KEYWORDS:** chitosan; collagen; Energy Dispersive Spectroscopy; hydroxyapatite

Evaluation of Chitosan/Hydroxyapatite/Collagen Composite's Strength as Scaffold Material by Immersing in Simulated Body Fluid (In Vitro Studies for Reconstruction in Oral and Maxillofacial Surgery)

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- **BACKGROUND:** The reconstruction of bone tissue defect is a major challenge facing the oral and maxillofacial surgeon. The essential elements needed in a tissue engineering is a cell, scaffold (matrix) and stimulant molecules (growth factors).
- **OBJECTIVE:** The mechanical properties of the chitosan-hydroxyapatite-collagen scaffold produced by BATAN, Jakarta, has not been studied. To analyze the mechanical properties of the chitosan-hydroxyapatite-collagen composite scaffold produced by BATAN, Jakarta, before and after immersion in simulated body fluid for eight days.
- **METHODS:** The compressive strength and the tensile strength of the chitosan-hydroxyapatite-collagen composite scaffold analyzed after immersing in SBF at 37°C, for eight days. Each scaffold is removed and dried at room temperature on the day of 0, 2, 4, 6, 8. The data obtained were processed and analyzed.
- **RESULTS:** Variations in the value of the compressive strength and tensile strength attributed to several things, the size of the specimen which is not the same, the composition of the scaffold, scaffold pore size is not the same and the degradation of the content polymer. The chitosan-hydroxyapatite-collagen composite scaffold does not have differences for tensile strength and compressive strength before and after immersion in the simulated body fluid.
- **KEYWORDS:** scaffold of chitosan/hydroxyapatite/collagen; simulated body fluid; mechanical properties of the scaffold

Molecular Dynamics Simulation Of SIRT1 Inhibitor from Indonesian Herbal Database

Authors: Andika, Arry Yanuar, Linda Erlina, Azminah

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- **BACKGROUND:** Sirtuins are protein deacetylases regulating cellular metabolism, life span, stress responses, and linked with diseases pathogenesis such as cancer and neurodegenerative diseases. SIRT1, one of human seven sirtuins, the most widely studied today. Hence, identification of SIRT1 drug compound has attracted in drug discovery community. To find good drug candidates could use in insilico methods as a quick tool for analyzing the biological activity of drugs virtually.
- **METHODS:** In silico methods in this research using molecular dynamics simulations that use Indonesia herbal database to identification hits compounds as the SIRT1 inhibitor. Analysis of molecular dynamics simulations in this study includes RMSD (root mean square deviation), RMSF (root mean square fluctuation), molecular mechanism Poisson-Boltzmann/surface area (MMPBSA) and hydrogen binding.
- **RESULTS:** The results showed that hits compounds, dregamine and 5-oxocoronaridine toward two of macromolecules SIRT1 (PDB ID : 4I5I and 4ZZI) obtained free energy MMPBSA calculation about -23 kcal/mol meanwhile occupancy hydrogen bonding of residues Ile347 and Asp348 about 80%.
- **KEYWORDS:** sirtuin; SIRT1; pharmacophore; herbaldb; molecular dynamics simulation

Pharmacophore-Based Virtual Screening from Indonesian Herbal Database to Finding New Inhibitor of HDAC4 and HDAC7

Authors: Linda Erlina, Andika, Azminah, Arry Yanuar

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- **BACKGROUND:** HDAC4 and HDAC7 known as the member of HDAC class IIa family. Inhibition of HDAC4 and HDAC7 have been suggested as a therapeutic strategy for some diseases such as anticancer, anti-inflammation, Huntington's and antidiabetes. Nowadays, many researchers focused on finding and developing the new inhibitor of HDAC4 and HDAC7 using in silico tools such as docking, pharmacophore approaches, and molecular dynamic simulation. Pharmacophore-based virtual screening is one of in silico innovation to get new potent HDAC4 and HDAC7 inhibitor.
- **METHODS:** In this research, pharmacophore based virtual screening was used to find new HDAC4 and HDAC7 inhibitor from Indonesian herbal database. From MUBD-HDACs database, active compounds of HDAC4 and HDAC7 were divided into training and test set. 3D pharmacophore models were build using LigandScout 4.09.1. Based on pharmacophore models generation for HDAC4 and HDAC7, 10 models were created. All of the models were calculated and evaluated using some parameters of validation (ROC graph, EF1%, AUC100%, accuracy, precision, specificity, and sensitivity).
- **RESULTS:** The results of pharmacophore validation, the best pharmacophore model for HDAC4 are model 6 and 10, and for HDAC7 is model 1. Pharmacophore model 6 and 10 (HDAC4) have 7 pharmacophore features include 3 HBA, 1 HBD, 1 aromatic ring, 1 negatively ionizable area and 1 hydrophobic. Pharmacophore model 1 (HDAC7) have 5 pharmacophore features include 2 HBA, 1 HBD, 1 negatively ionizable area and 1 hydrophobic. These selected models for HDAC4 and HDAC7 were using for virtual screening against Indonesian herbal database. Based on the results of virtual screening, 6 hit compounds were obtained such as artocarpesin, avicularin, dimboa glucoside, eriodictin, luteolin and mirabijalone c.
- **KEYWORDS:** pharmacophore; virtual screening; HDAC4; HDAC7; Indonesian Herbal Database

Strawberry as an Extrinsic Stain Remover

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- **BACKGROUND:** Extrinsic stain on teeth can cause by chromogenic materials. Malic acid in strawberries can erode stain.
- **OBJECTIVES:** Finding the influence of strawberries in removing extrinsic stain on member of academic of Health's Polytechnic Jakarta I.
- **METHODS:** Quasi experimental with pre post experiment design was used on 22 person with stained 12 upper and lower anterior teeth. Data collected within 5 days, two times a day by smearing teeth with crushed strawberries for 5 minutes, brushed and rinsed. Measure the stain before and after treatment with Lobene Stain Index, then analysed statisticaly.
- **RESULTS:** The average of extrinsic stain score change that occurred before and after being treated with strawberries amounted to 2.80. It is proved significant using T test. There is no contribution of sex, age, and chromogenic agents to the decline in extrinsic stain scores after treatment. This study examined extrinsic stain obtained by any chromogenic materials, better outcomes on respondents without chromogenic materials.
- **CONCLUSION:** The conclusion is a decrease in extrinsic stain scores significantly, and strawberries can remove extrinsic stain without being influenced by sex, age, and consumption of chromogenic agents.
- **KEYWORDS:** extrinsic stain; strawberry

Oral Presentation:

ENVIRONMENTAL HEALTH

Distribution, Contamination Load, and Dietary Intakes of Chromium, Iron, Manganese, and Selenium in Artisanal Small-scale Gold Mining Site in Gunung Pongkor, Bogor

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- **BACKGROUND:** Ciguha of Gunung Pongkor in Bogor, Indonesia, had been an artisanal small-scale gold mining site where amalgamations were used intensively. It is predicted that unwanted minerals are released to the environment leading to pollution in water, soil, and foodstuffs. The present study reports the mineral distribution and contamination level (CL) in environmental matrices and dietary intake assessment of Cr, Fe, Mn, and Se representing essential elements but pose toxicity at high level.
- **METHODS:** A total of 62 environmental samples were collected (15 water, 13 rice, 15 fish, 14 vegetable, 5 fruit). All samples were analyzed using standard instruments (AAS, ICP-MS) to determine Cr, Fe, Mn, and Se levels in each samples.
- **RESULTS:** The results shows that Fe was detected quantitatively in all sample matrices, Cr in rise, vegetables, fruits and fish, Mn in vegetables and fish, and Se in rice and fish. The detection frequency of Fe, Mn, Cr, and Se were 51.6%, 48.4%, 31%, and 21%, respectively. Of these, only Hg dan Cr had high CL of 5.57 in vegetables and 1.66 in rice, respectively, while CLs of Fe, Mn, and Se were <1. Meanwhile, dietary intakes (mg/day) of Fe, Mn, Cr, and Se among adult males and females (n = 60) were 5.15, 3.03, and 0.007, respectively. Compared to the Fe RDA of 12-18, Mn AI of 3.03, and Se RDA of 0.055-0.07, current dietary intakes of Fe and Se were deficient while Mn was adequate but tend to be deficient. However, these figures may be underestimates since the intakes from other sources were not assessed.
- **CONCLUSION:** Fe is the highest abundant element followed by Mn, Cr, and Se where Hg and Cr had high CL leading to possible toxic effects. Adverse health effects may also be assessed by chronic deficient intakes of Fe, Mn, and Se.

Effectiveness of Awareness and Health Status of Health Intervention Programme (HIPFarm) Among Farmers in Pasir Puteh, Kelantan

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- **BACKGROUND:** Pesticide has been used widely by the Malaysian farmers to protect their crops. but, they are less aware on the adverse effects of pesticide usage to their health. By focusing on this health related issues, Health Intervention Programme (HIPFarm) has been developed and implemented in Pasir Puteh, Kelantan aimed to increase farmers' awareness regarding pesticide usage.
- **OBJECTIVES:** This research is carried out to evaluate the effectiveness of HIPFarm based on the awareness and health status of farmers.
- **METHODS:** It involved 131 farmers in this study. Intervention effects on insecticide-related knowledge, attitude and practice (KAP) and health status were evaluated in a quasi-experimental study involving two locations which were Pasir Puteh as intervention group and Bachok as the control. The KAP was evaluated by using questionnaire whereas the health status was measured based on the tests of blood pressure, glucose level, cholesterol level, uric acid level, aspartate aminotransferase and alanine aminotransferase. Simple random sampling was employed for subject selection. The result was analysed using SPSS version 22 by mixed design ANOVA, two ways ANCOVA and Multiple Linear Regression.
- **RESULTS:** Reliability test showed good reliability for attitude questionnaire (Cronbach's alpha of 0.7). Descriptively, knowledge shows improvement around 78% while both attitude and practice improved about 67% of the baseline scores. The covariates used in analysis of two ways ANCOVA were pre practices score (5.33), pre attitude score (24.06), pre knowledge (9.39), age (56 years old) and monthly income (RM1021.57). Knowledge score showed significant difference ($p < 0.05$) by location. As for the health status of the farmers in Pasir Puteh, all of the conditions measured; systolic hypertension, diastolic hypertension, hyperglycaemia, hypercholesterolemia and hyperuricemia showed decrease in percentage by 1.4%, 4.9%, 6.8%, 7% and 31.5% respectively.
- **CONCLUSION:** HIPFarm has slight effect in improving the health, practice and attitude among farmers. There were many factors that influenced these result.

Glutathione as Antioxidant Status on Community Related to Artisanal Small-scale Gold Mining in Lebaksitu Village, Banten

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- **BACKGROUND:** Artisanal and Small-scale Gold Mining (ASGM) in Indonesia has been an attempt to improve economic status in some rural areas. However, the mercury (Hg) used to extract gold is discharge into the environment without any treatment, where it poses a hazard for human health. A lot of studies have shown that Hg exposure reduced antioxidant level in human body. Glutathione (GSH) is the human body's natural antioxidant which can act as detoxification factor for heavy metal.
- **OBJECTIVES:** This research aimed to determine the association between total GSH and individual characteristics from community who lived at ASGM in Lebaksitu Village.
- **METHODS:** This cross-sectional study examined GSH levels from blood plasma with Ellman's method by spectrophotometry. Association between total GSH and individual characteristics (age, gender, smoking status, physical activity, and body mass index) were examined using correlate and independent t-Test method.
- **RESULTS:** The average of total GSH were $0.874 \mu\text{g/mL} \pm 0.123 \mu\text{g/mL}$ (mean \pm SD). Among the measured variables of individual characteristic, only physical activities which has significant association with total GSH ($p < 0.05$).
- **CONCLUSION:** The results clearly demonstrated an association between total GSH and physical activity which can be caused by Hg exposure in ASGM area to the community nearby.
- **KEYWORDS:** ASGM; GSH; antioxidant; individual characteristics; physical activity

Malondialdehyde as Biomarker for Oxidative Stress on Community Related to Artisanal Small Scale Gold Mining in Lebaksitu Village, Banten

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- **BACKGROUND:** Oxidative stress has been proposed as the main exposure several mechanisms of toxicity particularly mercury (Hg) and Malondialdehyde (MDA) a product of lipid peroxidation is a good marker for development of oxidative stress. The several studies have shown increased levels of MDA in communities exposed to mercury. One of the largest sources of Hg pollution comes from Artisanal and small scale gold mining (ASGM) in the treatment process will produce hazardous materials and impact on human health.
- **OBJECTIVES:** This research aims to determine the association between MDA level and individual characteristics from community who lived at ASGM in Lebaksitu Village.
- **METHODS:** The research was a cross sectional study examined MDA from 69 blood samples which were measured in plasma with Will's methods used TBARS by spectrophotometry. Association between MDA levels and individual characteristics were examined using correlate and independent t-test method including age, gender, occupation, alcohol consumption, smoking status and physical activity.
- **RESULTS:** The average of MDA level were $0,419 \text{ nmol/mL} \pm 0,130 \text{ nmol/mL}$ (mean \pm SD). Among others individual characteristic, only physical activities which has significant association with MDA with p-value 0,022 (95% CI - 0,135-(-0,011)) and smoking status also potentially affected MDA levels.
- **CONCLUSION:** The results clearly demonstrated an association between MDA levels on communities exposed to mercury (Hg) in ASGM and physical activity of individuals.
- **KEYWORDS:** ASGM; Hg; individuals characteristics; MDA; oxidative stress

Well Water-Consumption High Cadmium and Urinary Cadmium Levels in Community Around Dumping Site

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- **BACKGROUND:** Cadmium (Cd) is nephrotoxic metal and can be accumulates in the kidney for long time (half life 10-30years). It can damage the tubules of the kidney and renal failure.
- **OBJECTIVE:** The aim of this study was to analyze relationship of consumption of well water exposed to cadmium with cadmium in urine.
- **METHODS:** The study was performed with cross-sectional design in the community residence around Namobintang Dumpsite. The population were males and females with a sample of 99 people taken by stratified random sampling based on the distance of people's homes from landfill. Cadmium was measured by GFAAS in spot urine sampled at baseline and normalized by urinary creatinine. Data analyzed by multiple linier regression.
- **RESULTS:** Study result showed that Cd levels from the wells revealed that 65 respondents (65,7%) had exposed to Cd higher than normal levels is 0,005mg/l, 99 urine samples (100%) had high Cd levels above the normal limits is 5 µg/g creatinine. There wasn't significant correlations between Cd levels from wells and urinary Cd. Variable gender, BMI and duration of Cd intake from water were significant with urinary Cd (p value 0,045; 0,025; 0,041).
- **CONCLUSION:** Residents was suggested to not use wells water as a primary resource to drinking water.
- **KEYWORDS:** cadmium; cd-urine; dumpsite area

Cytogenetic Evaluation on Buccal Cells of Paddy Farmers Who Are Exposed to Pesticides in Sawah Sempadan, Tanjung Karang, Selangor, Malaysia

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- **BACKGROUND:** Pesticides are widely used by paddy farmers throughout the plantation of paddy to increase the quality and quantity of paddy produce. However, exposure to pesticides for a long duration of time is hazardous to human health as it can lead to cancer by causing DNA damage. The presence of micronuclei (MN) and binuclei (BNu) in a cell can be an early sign for cancer progression.
- **OBJECTIVE:** Our study was designed to determine the frequency of MN and BNu among paddy farmers who were exposed to pesticides.
- **METHODS:** The frequency of MN and BNu formation was assessed by collecting buccal swabs from 34 farmers in Sawah Sempadan, Tanjung Karang and analysing them cytogenetically using acridine orange staining. The frequency of MN and BNu were then observed under the fluorescence microscope. The data of percentage of MN and BNu frequency was then analysed together with sociodemographic data from a structured questionnaire that was also handed to the farmers.
- **RESULTS:** Results showed there were a weak negative correlation between duration of pesticides exposures and frequency of MN ($r = -0.176$, $p > 0.05$) and BNu ($r = -0.132$, $p > 0.05$). Results demonstratred long exposure to pesticides did not significantly cause the increase of frequency of MN and BNu. In the aspect of application of PPE, there was a weak negative correlation between MN frequency and application of PPE ($r = -0.129$, $p > 0.05$).
- **CONCLUSION:** Our study revealed that exposure to pesticides did not cause increase in MN and BNu formation significantly. However, when there was a low score or incomplete PPE application it would lead to high pesticides exposure that would consequently increase the frequency of MN and BNu formation.
- **KEYWORDS:** pesticides; farmers; cancer; micronucleus; binucleus; personal protective equipment; buccal cells

Effectiveness of Tilapia (*Oreochromis niloticus*) and Betta Fish (*Betta splendens*) as the Larval Predator

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- **BACKGROUND:** Mosquito resistance to chemical pesticides has prompted renewed interest in bio control method that uses water predators in controlling disease based on the mosquito vectors.
- **OBJECTIVE:** The aim of this study was to measure the effectiveness of Tilapia (*Oreochromis niloticus*) and Betta fish (*Betta splendens*) as a larval predator based on their size.
- **METHODS:** This study was a Pre-experimental design with one shot case study. Population in the study were all as fish larval predators. Samples were taken using purposive sampling was Tilapia (*Oreochromis niloticus*) and a Betta fish (*Betta splendens*), we used bivariate analysis by using one way anova and pearson correlation with 95% CI.
- **RESULTS:** There were significantly differences in the ability Tilapia (*Oreochromis niloticus*) eat mosquito larval with a p-value = 0.000 based on their size. No significantly difference in the ability of Betta fish (*Betta splendens*) eat mosquito larval with p-value = 0.111. There is a significant correlation between the size of the fish Tilapia (*Oreochromis niloticus*) with the ability of fish to eat mosquito larval p-value = 0.000. Betta fish (*Betta splendens*) was obtained p-value = 0.054 which shows no significantly correlation.
- **CONCLUSION:** There were significantly different in the ability of Tilapia (*Oreochromis niloticus*) eat mosquito larval based on their size. We recommended to utilize small fish such as Tilapia and Betta fish as biological control of mosquito larval, socialized it to society and used it directly.
- **KEYWORDS:** mosquito larvae; *Oreochromis niloticus*; *Betta splendens*

Factors Associated with the Achievement of Open Defecation Free Status at Desa Summersari, Lampung 2016

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- **BACKGROUND:** The transmission of diseases through fecal-oral route such as diarrhea and cholera has caused many children death in Indonesia. Desa Summersari, Metro Selatan, Lampung has achieved open defecation free status after trigger with Sanitasi Total Berbasis Masyarakat (STBM) programme.
- **OBJECTIVE:** It is necessary to conduct a research to portrait information about the factors that influence that successfull.
- **METHODS:** SANIFOAM used to identified the factors. An assessment with cross-sectional study design in two villages used to explore factors that possibly influence the open defecation behavior. There were 394 responden in Desa Summersari and Purwoasri joined this research. Questionnaires and observation were used to determine the condition of community access to sanitation facilities, knowledge, endorsement, and attitude.
- **RESULTS:** Multivariate analysis found a significant relationship between access to sanitation facilities [or = 21.48 (95% ci, 9.04-51.02)], social support [or = 4.55 (2.04-10.16)], attitude [or = 30.24 (12.61-72.53)] with open defecation free status at community level without interaction among the risk factors.
- **CONCLUSION:** From this result, we concluded that the programme should change people attitude, which is the most significant factor toward this open defecation matter, so open defecation free status can be gained.
- **KEYWORDS:** sanitation; open defecation free; sanifoam; Lampung

Intestinal Parasitic Worm Infection among Food Handler in Cafeteria in University X in Indonesia

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- **BACKGROUND:** Poor personal hygiene working in food-service establishments could be potential sources of infection due to pathogenic organisms.
- **OBJECTIVE:** The study was undertaken to determine the prevalence of intestinal worm among 99 food-handlers working in the cafeterias of the University X.
- **METHODS:** Research design was cross sectional. Research conducted between April and July 2016 in a university X Depok. There were 16 locations. Purposive sampling method applied in the determination of the population and sample. The population of this research is the whole food handlers in food outlets. Samples were 99 food handlers. The data collected were primary data about worm infections in food handlers that identified from the number of worm eggs in its feces, and information about personal hygiene of respondent. Data were collected by interview and observation.
- **RESULTS:** The results showed that most of respondents were on average 36 years old and graduated from senior high school, there were 4 people who have intestinal parasitic worm infections, *Trichuris trichiura* (3 respondents) and *Hymenolepis diminuta* (1 respondent) Personal hygiene assessment showed that 64% of respondents still considered inappropriate category as well as sanitation canteen (83%).
- **CONCLUSION:** The findings emphasize the importance of food-handlers as potential sources of infections and suggest health institutions for appropriate hygienic and sanitary control measures.
- **KEYWORDS:** worm; intestinal parasite; feces; personal hygiene; sanitation

Mercury Poisoning Related to Consumption of Fish in the Community around Small Scale Gold Mining (SSGM) Desa Lebaksitu Kecamatan Lebakgedong Kabupaten Lebak Provinsi Banten

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- **BACKGROUND:** Naturally, mercury is a harmful heavy metals. The use of mercury by humans can cause environmental pollution and health problems in humans. Mercury poisoning form of acute poisoning (disorders of the digestive system, skin and nerves) and chronic (tremor and parkinsonism). Currently heavy metal pollution is a major threat to the environment and should be controlled so as not to exceed the limits of its existence.
- **OBJECTIVE:** This research aims to knowing mercury poisoning related to consumption of fish in the community around small-scale gold mining, Desa Lebaksitu.
- **METHODS:** The research was cross-sectional study, with variables are fish consumption, respondent characteristics and mercury in hair. 60 respondents were selected by random sampling system. Data were analyzed by chi-square test, mann-whitney and logistic regression. Measurements of mercury in hair used an ICP-AES.
- **RESULTS:** The result showed, the prevalence of mercury poisoning in community was 51.7%, fish consumption (high consumption) was 55%. Fish consumption, age, occupation, length of stay, distance from the house and source of drinking water were significant correlation to mercury poisoning, while smoking and sex correlation have no significance. Source of drinking water was the most dominant risk factors that may affect the consumption of fish against mercury poisoning (OR = 14,693, 95% CI=1,818-118,769).
- **KEYWORDS:** fish; hair; mercury

Profile of Aerosol Pesticide Exposure to Chronic Obstructive Pulmonary Disease among Farmer in Purworejo, Central Java 2016

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- **BACKGROUND:** Chronic obstructive pulmonary disease (COPD) causing 3rd highest of mortality worldwide in 2008 and estimated as the highest non communicable disease worldwide in 2030.
- **OBJECTIVE:** This study aimed to describe the distribution of pesticide exposure to lung function abnormalities on farmers.
- **METHODS:** A quantitative descriptive study performed between April to May 2016 in Purworejo. The subject were 66 farmer who suffered from COPD during 2015 by medical record and 59 farmers who showed normal lung function. All subjects were tested by spirometer and CAT questionnaire. Univariate analysis was done by proportion and frequency.
- **RESULTS:** We found 44 subject (66.67%) of COPD were higher in 0-9 units/year of quantity pesticides usage, while there were 26 people of non-COPD (44.07%). The highest category based on duration of pesticide exposure were <11 which 27 of COPD subjects (40.91%), while the highest proportion were 23 subjects (38.98%) in category 11-50 of non-COPD. Based on the length of employment, the highest proportion of the working time >29 years were 43 of COPD subjects (65.15%) which higher than non-COPD were only 33 people (55.93%). Subjects with COPD found highest proportion in 0-9 units/year of quantity pesticide usage, duration of pesticide exposure <11, and length of employment >29 years.
- **KEYWORDS:** pesticide; agriculture; COPD; farmer

Relation between Pesticide Exposure and Anemia on Horticulture Farmers in Cikajang District, Garut 2016

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- **BACKGROUND:** Anemia is a global health problem that affects both developed and developing countries. There are various factors which causes anemia, pesticide exposures was one of them.
- **OBJECTIVE:** This study aim is to determine the relationship of pesticide exposure with anemia.
- **METHODS:** Cross-sectional design was used in this study. The population in this study is a horticulture farmer-sex male domiciled in Cikajang District, Garut. A total of 106 farmers were selected as samples and blood samples were taken to determine hemoglobin concentration.
- **RESULTS:** The results of the analysis of blood samples showed an average Hb farmer is 16.65 g/dL. While bivariate analysis showed no association between exposure to pesticides which consists of working period ($p = 0.440$, $OR = 1.944$, $95\% CI = 0.51$ to 7.325), the dose of pesticides ($p = 1.000$, $OR = 1.244$, $95\% CI = 0.164$ to 9.444), and mixing pesticides ($p = 1.000$, $OR = 1.337$, $95\% CI = 0.176$ to 10.181) with the incidence of anemia.
- **CONCLUSION:** The study concluded that pesticide exposure was not associated with anemia. Therefore, in future studies, it is expected to perform the appropriate biomarker testing to detect the presence of pesticide exposure conical effect on the health of farmers.
- **KEYWORDS:** anemia; pesticide exposures; horticulture farmers

Oral Presentation:

GENDER & REPRODUCTIVE HEALTH

Health Education of Prevention of Sexual Violence among Children Under Five: An Intervention Study in an Integrated Family Planning Health Post (Posyandu)

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- **BACKGROUND:** Sexual abuse among children in Indonesia is worrying within the last 4 years where the number of cases increased each year. In addition, its trend increasingly occurred among early ages (KPAI,2014).
- **OBJECTIVE:** This study aimed to develop the intervention model of health behavior for mothers with children under five (CU5) through Posyandu cadre in preventing child sexual abuse.
- **METHODS:** The study design used quasi-experiment among three group; group of individual intervention model, group intervention model, and control group. The study was conducted in three different sub-districts in Bogor City, North Bogor and East Bogor as intervention group, and Central Bogor as control group; and consisted of two phases; media development and intervention in 12 months. Knowledge, attitude, and practice (KAP) of mothers with CU5 were measured 4 times before the intervention and 3 times after the intervention within four months.
- **RESULTS:** The result showed that the intervention of sexual child abuse education in Posyandu cadre escalated KAP in both group and individual intervention as well. The individual intervention increased KAP higher than group intervention. Booklet was more understandable and commonly used in educating than poster or flipchart.
- **CONCLUSION:** This study expects the model is possibly implemented as a formal program of Ministry of Health, Ministry of women and children empowerment and Child Protection Commission in preventing, reporting and recovering child sexual abuse.
- **KEYWORDS:** intervention; prevention; sexual abuse; children under five

Level and Trends of Modern Contraceptive Use among Young Women According to Wealth Index And Education Levels in Indonesia: Analysis of IDHS 2007 And 2012

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- **BACKGROUND:** Maternal death in Indonesia is still high, and even showing an increasing rate of death in the last ten years. Recent analysis showed that the increase death rates was attributed to death among adolescent pregnancy. Improving a family planning program among young women who are sexually active might reduce maternal, infant, and child death.
- **OBJECTIVE:** The study aims to explore the patterns of contraceptive use among young women in Indonesia.
- **METHODS:** Using pooled Indonesian demographic data surveys (IDHS) of 2007 and 2012, we examine the patterns of contraceptive use among young women age of 15-24 years. Comparable questions were asked in the 2007 and 2012 IDHS, which leads to possibility to analyse trends and compare patterns and characteristic influencing fertility behaviour among Indonesian young women during these periods.
- **RESULTS:** Modern contraceptive use were stagnant among young women age 15-24 years from 71,4% in 2007 to 71,5% in 2012, only 0,1 percentage increase. Most of the increase were attributed to Long Acting Contraceptive System (LACs), especially in IUD use, 2% in 2007 to 3.4% in 2012. While the use of injectable and PIL (nLACs) decreased from 2007 to 2012. Most of the modern contraceptive users were those with secondary level of education. Moreover, significant increase in LACs use was also shown by these group of young women, a 2.3% increase from 2.8% to 5.1% in 2012. Based on SES level, the increase of LACs use was highest (1.1%) among richer group of young women, 0,7% in 2007 to 1,8% in 2012.
- **KEYWORDS:** modern contraceptive; young women; wealth index; education level; IDHS 2007 and 2012

Menstrual Disorder in Adolescents and Its Relationship with Knowledge Level of Menstrual Hygiene and Demographic Factors in Jakarta, Indonesia

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- **BACKGROUND:** Menstrual hygiene is crucial attention for adolescents (10-19 years old). Thakre et al reported only 36,95% from 387 of adolescents in India were aware about menstrual hygiene. That menstrual hygiene behavior is affected by knowledge level of menstrual hygiene. Pitangui et al showed that prevalence of menstrual cycle disorder in Brazilian adolescents was 32,76%, abnormal uterine bleeding was 22,9%, dysmenorrhea was 72,99%. Ceballos et al reported the association between waist-to-hip ratio and estrogen concentration, hormone that regulate menstruation.
- **OBJECTIVE:** To investigate relationship between menstrual disorder in adolescents and its relationship with knowledge level of menstrual hygiene and demographic factors.
- **METHODS:** This study was conducted in three junior high school in Jakarta, Indonesia, by using cross-sectional study. The respondent was selected by consecutive sampling with total respondent was 292 students. The questionnaires was used for collecting the data. All of student who had menarche was included to this study. According to the variable, the data was analyzed by Chi-square test, unpaired T test and Mann-Whitney.
- **RESULTS:** This study showed that 30,8% subjects experienced menstrual cycle disorder, 65,1% experienced abnormal uterine bleeding, and 20,5% experienced dysmenorrhea. Relationship between knowledge level of menstrual hygiene and waist-to-hip ratio as the factors affected menstrual cycle disorder were observed in this study ($p < 0,001$, $p = 0,035$). Abnormal uterine bleeding and dysmenorrhea were not affected by menstrual hygiene ($p = 1,000$, $p = 0,087$) and waist-to-hip ratio ($p = 0,404$, $p = 0,833$). Body mass index and age of menarche do not affect all of the menstrual disorders. Knowledge level of menstrual hygiene is affected by economic level ($p = 0,047$).
- **CONCLUSION:** Knowledge level of menstrual hygiene and waist-to-hip ratio associate with menstrual cycle disorder. Knowledge level of menstrual hygiene is affected by economic level.
- **KEYWORDS:** menstrual disorder; hygiene; waist-to-hip ratio; dysmenorrhea

Residential Density, Sexual Activity of Parents, and the Effects on Sexual Behaviour of Adolescent in Yogyakarta, Indonesia

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- **BACKGROUND:** In the slum and dense area, the parents usually have to spare their bedrooms with children, thus their children were exposed to sexual activity early.
- **OBJECTIVE:** The study aims to know residential density, sexual activity of parents, and its effect on sexual behaviour among adolescents in Yogyakarta.
- **METHODS:** The study uses cross sectional design by interviewing 268 household who have adolescent who were randomly selected in urban slum areas and rural areas during March-May 2015. Data analysis was performed using chi-square test and multiple cox-regression.
- **RESULTS:** The result shows that the parents who live in dense residents have risk two times higher to do sexual activity that has negative effect on their children. The sexual activity of parents has no effect on sexual risk behavior in adolescents. Factors contribute to sexual risk behaviour among adolescents are gender is male, have a negative attitude of sexuality, and negative peer group.
- **CONCLUSION:** District health office and community health centre in that area are should continue to do a campaign for adolescent and training peer groups at schools and also in risked area, especially slum area with high population density.
- **KEYWORDS:** residential density; sexual activity of parents; sexual behaviour of teenagers

The Relationship Between Body Mass Index, Level of Anxiety and Premenstrual Syndrome

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- **BACKGROUND:** Premenstrual syndrome is a syndrome that is found when women were in luteal phase and characterized by appearances of some symptoms: physical, psychological and behavioral.
- **OBJECTIVE:** This study aimed to determine the relationship of Body Mass Index and anxiety level with the level of PMS.
- **METHODS:** Research method using cross sectional design. Total population of reproductive students was 139 people, aged 18-21 from class 2013 and 2014 at Diploma of Midwifery Study Program in Yogyakarta. There were 103 participants selected by proportional stratified random sampling. Data were obtained from the observation of height and weight, 10 questions of Shortened Premenstrual Assessment Form questionnaires and 14 questions of Hamilton Anxiety Rating Scale questionnaires. BMI, level of anxiety, and level of PMS have been collected as variables for data analysis using Spearman Rank test ($\alpha=0.05$).
- **RESULTS:** The result showed that from 103 participants, there were 50 participants (48.54%) experienced mild symptoms and 53 participants (51.46%) experienced moderate symptoms of PMS. Statistical test obtained there was correlation between BMI and level of PMS (p -value < 0.05), whereas there was no correlation between anxiety level and level of PMS (p -value > 0.05).
- **CONCLUSION:** BMI could affect the severity of PMS. However high or low anxiety level were not necessarily affect the level of PMS.
- **KEYWORDS:** body mass index; level of anxiety; premenstrual syndrome

A Qualitative Study to Reveal Perspective of Young Urban Population towards LGBT in Indonesia. Knowledge, Attitude and Practice among University Student

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- **BACKGROUND:** Community perspective towards Lesbian, Gay, Bisexual and Transgender (LGBT) influences by various factors such as culture, religion, family, gender and how their interaction with the LGBT. Publicly the homosexual and LGBT orientation is still a controversy and taboo to be discussed, some interest group especially religious group strongly against it and condemned this behavior, it potentially causes discrimination and restriction to this group and affected their access to HIV prevention and treatment services.
- **OBJECTIVE:** This paper aimed to reveal how knowledge, attitude and practice of young people toward LGBT is.
- **METHODS:** Study conducted in Jakarta, Depok, Bogor, Tangerang and Bekasi. A number of informant were selected to become participant of the in-depth interview and Focus group discussion. Young age between 17 – 25 years old, represent both gender, different education level and religion were the selection criteria for the participants. Teen in-depth interview and 3 FGD were conducted to collect their knowledge, attitude and practice towards LGBT. A triangulation of sources and content analysis were implemented to seek findings.
- **RESULTS:** In general knowledge, attitude and practice towards LGBT among student was classified in three types; supportive, neutral and against it. Their perspective described that LGBT causes by peer environment, it can be cured, and community should involve to treat them. Almost all participant agree that LGBT have right to access thee employment, education and health services, and no restriction and discrimination on political participation. However they should not conducted display affection in public and married among LGBT is unacceptable since against norm, religion and beliefs in community.
- **CONCLUSION:** Perspective student towards LGBT strongly influenced by culture and religion aspects, however the student agree that LGBT have right to fulfill their need as social human being, they need space for living, socialization, employment, education and health services.
- **KEYWORDS:** LGBT; homosexual; knowledge; attitude; practice

Factors of Sexual Behavior of Students in Makassar

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- **BACKGROUND:** Data in 2012 showed that of adolescence aged 15-24 years around 10% had premarital sex. Notably the school-based reproductive health program has been implemented since 2000, including in Makassar as big city in eastern Indonesia.
- **OBJECTIVE:** The study aimed to describe factors associated with sexual related behavior in students in Makassar.
- **METHODS:** An analysis used Makassar data as part of NNB and CHRUI survey in 2011/2012. Resulted 1823 respondents who completed self-administered questionnaire from stratified random sampling that analyzed using logistic regression.
- **RESULTS:** One fifth of respondents admitted sexual related behavior at mean age of 15 years started by lip kissing (18%), masturbation (6%), oral sex (5%), petting (4%), vaginal sex (3%), and anal sex (2%). Around 20% of students were smokers, consumed alcohol (8%), and used drugs (1%). Smoking and alcohol affected students' sexual related behavior (OR=3, 95% CI 2-3) and (OR=2, 95% CI 1-3) respectively. Mother's condition also risk factor such as maternal orphan (OR=2, 95% CI 1-5) and mothers working at private sectors (OR=2, 95% CI 1-2).
- **CONCLUSION:** Reproductive health education program at school must pay a big attention to students' behavior of smoking and alcohol drinking, as well as concerning to student's mother condition.
- **KEYWORDS:** sexual-related behaviour; high-school students; Makassar

Level and Trends of Modern Contraceptive Use According to Wealth Index And Education Levels In Indonesia: Analysis of Indonesia Demographic Health Survey (IDHS) 2007 and 2012

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- **BACKGROUND:** Modern contraceptive use have been increase in most of nearly all populations. However, in Indonesia, the pace of increase seems to be slowing down recently.
- **OBJECTIVE:** This study aims to examine the levels and trends in modern contraceptive use over a ten year period, and to explore the variation of the use by sociodemographic characteristics.
- **METHODS:** This study uses the data from two IDHS, conducted in 2007 and 2012, and employed descriptive analysis to examine the levels and trends of modern contraceptive use. Modern contraceptive method use includes female sterilization, male, IUD, injectables, pil, condom, lactational amenorrhea method (LAM).
- **RESULTS:** Modern contraceptive use increase from 67,5% in 2007 to 69,3% in 2012, only 2.7 percentages increase. Most of the increase were attributed to Long Acting Contraceptive System (LACs), especially in implant use, 3,9% in 2007 to 5.9 in 2012 (41 percentages increase). The rates of injectables and pills use (non LACs) decreased in 2012 compared to 2007: whereas other non LACs i.e, condom use and LAM, showed an increase. Modern contraceptive use consistently increased across wealth quintile subgroup as well as across educational level both in 2007 and in 2012 data. Moreover, among the poorest, as well as, among those with no education, the data showed an increased rate in 2012, compared to 2007. However, unexpectedly, modern contraceptive use was constantly lower in 2012 among women from the richest sub-population, living in urban area, as well as from the highest educational attainment level.
- **CONCLUSION:** Increasing use of modern contraceptive in Indonesia is encouraging, however, an appealing question appeared based on the results, that is the consistent lower use of modern contraceptive use in 2012 compared to 2007 data among women from the richest, highest education, and living in urban group.
- **KEYWORDS:** modern contraceptive; wealth index; education level; IDHS 2007 and 2012

The Impact of Social Support, Stress, Domestic Violence, Depression, and Health Literacy on Quality of Life among Thai Pregnant Teenagers

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- **BACKGROUND:** The pregnant teenager is a major public health problem in worldwide. Traditionally, they have been considered a risk group for poor quality of life (QOL).
- **OBJECTIVE:** The goal of this study was to test a predictive model of QOL among pregnant teens, which include of social support (SS), stressful life event (SLE), domestic violence, depression, and health literacy (HL).
- **METHODS:** The study design was mixed method divided into two phases. The first phase was the development of the HL assessment by conducting in-depth interviews with the experts, and focus groups for pregnant teens. Next was to test the predictive model of QOL among 449 Thai pregnant teenagers. Use thematic analysis and SEM for analysis.
- **RESULTS:** Themes of HL were emerged including functional, interactive, and critical HL. The cultural background represents the way of life. The majority reported moderate to high QOL, high SS, and mild depression. The best fit model found all five causal factors as SS, depression, HL, SLE, and domestic violence had the effect to QOL with the total effect size 0.632, 0.523, and 0.217, 0.132, and 0.081, respectively.
- **CONCLUSION:** The depression and HL were the mediator effects between SS and QOL. The program related to these factors is a special concern.
- **KEYWORDS:** health literacy; social support; stressful life event; domestic violence; depression; quality of life

The Influence of Health Training towards The Informants' Knowledge of Adolescent Reproductive Health at School

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- **BACKGROUND:** Adolescent reproductive health can be leading to another health problems if it doesn't get any attention. School components are one of the important roles beside parents to overcome this health issue, because they are closer to adolescents than their parents. Teachers and friends can be one of resources about reproductive health information. Therefore, school components knowledge, especially teachers and friends, about adolescents reproductive health are important.
- **OBJECTIVE:** This research aims to find out the effects of adolescents reproductive health training to teachers and peer knowledge.
- **METHODS:** This research applied an experimental design with one group pretest and posttest with a purposive sampling technique. This research recruited 26 students and 24 teachers as samples.
- **RESULTS:** The results showed that there is an effect between health training to knowledge with $p < \alpha$ (0.05).
- **CONCLUSION:** It can be concluded that training on adolescent reproductive health for teachers and peers can be implemented at every school to increase their knowledge and skill to prevent digression of adolescent sexual behavior.
- **KEYWORDS:** peer; teacher; reproductive health; adolescents

Why Don't Women Did Not Use the Contraceptive that's Best for Them? Social Determinants of LAPM Non-Use in Indonesia

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- **BACKGROUND:** Although Indonesia historically has been a family planning (FP) success story, reaching a modern contraceptive prevalence rate (CPR) of 58%, the total fertility rate has been stagnant at 2.6 since 2002. For years, injectable and oral contraceptive pills have been favorite methods (60% and 26%, respectively, of all use), whereas only 6% used implants and 7% used IUDs. Improving Contraceptive Mixed Methods (ICMM) aims to broaden the range of contraceptive choices, especially among couples who want to limit future births.
- **OBJECTIVE:** This paper examines social determinants of non-use of LAPMs among couples for whom they are appropriate. This study attempts to ask: why Indonesian couples, whose family composition or fertility intentions would suggest the use of LAPMs, do not use them. What is the social determinants hinder women from choosing LAPMs?
- **KEYWORDS:** contraceptive; LAPMs; family planning; social determinants

Oral Presentation:

GLOBAL HEALTH EDUCATION, mHEALTH, & NEW TECHNOLOGY

Analysis of Tutor Performance with Medical Student Achievement in Problem Based Learning

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- **BACKGROUND:** Problem Based Learning is a new approach teaching that emphasizes active learning in the classroom to real problems. The transition from the old curriculum system of teacher center has changed to student center by using active learning and interaction student with tutor. Performance of a tutor will affect student learning and achievement scores. Therefore, the performance of a tutor must regularly be evaluated in order to improve the interaction with students in the educational process.
- **OBJECTIVE:** This study aimed to analyze the association of competence tutor with student achievement. The results of this study will be very useful in improving the quality of a tutor and identify the problems in the learning process.
- **METHODS:** A total of 188 first year medical student (male 34 % and female 66%) of the Faculty of Medicine, University of PelitaHarapan give an assessment of the tutor performance by using structured questionnaire by Dolmand D and Ginns P (2005).
- **RESULTS:** Spearman correlation of variable self-directed learning (stimulation of tutor to search for various resources) have shown the significant correlation ($r=0.18$ and P value 0.0141) with student performance score. However the assessment of tutor evaluation show that the collaborative learning was the lowest score (mean 7.76 ± 1.4) and Intra Personal Behavior as Tutor (mean 7.8 ± 1.36) compare with the highest score for constructive/active learning (mean 12.4 ± 1.75).
- **CONCLUSION:** The contextual learning has significant association with student performance. Suggestions for further research are proposed.
- **KEYWORDS:** problem based learning; tutor performance; scenario cases; medical students

Arbi Care: A Noteworthy Educational Game to Prevent Diarrhea among Preschoolers

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- **BACKGROUND:** Innovation is needed to improve the healthy behavior of children to prevent diarrhea. Education through the game is widely recommended as a way to change behavior in children.
- **OBJECTIVE:** This study provided the process in developing educational game to increase healthy behavior of preschool children.
- **METHODS:** This study used research and development design with four stages including define, design, develop, and disseminate. Observation sheets used to assess the applicability of the game to educate the children. The process in developing this educational game were gone through several phases: (1) explored the characteristics of the games favored by children, (2) designed the intervention based on game preferred by children; (3) validated the prototype of the game through experts and tested the game to preschool children to find out the applicability; (4) revised the game in order to obtain diarrhea prevention game that can be applied as an intervention.
- **RESULTS:** The results showed that 92% among 10 preschool children were able to play and understand the message of the game.
- **CONCLUSION:** The result showed that arbi care game can be use as learning device to increase healthy behavior in preschool children.
- **KEYWORDS:** diarrhea; educational game; healthy behavior; preschoolers

Care of the Dying, Dead and Bereaved: Developing the Curriculum for Undergraduate Nursing Students in a Public University in Indonesia

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- **BACKGROUND:** Nursing students inevitably experience caring for people who are dying during their clinical practice. Embedding care of the dying, dead and bereaved within the nursing curricula can be viewed as a solution to prepare nursing students to become compassionate practitioners in the future. However, there is no consensus as to how such education should be delivered in Indonesia.
- **OBJECTIVE:** The overall aim of this study is to develop a new curriculum on care of the dying, dead and bereaved for undergraduate nursing students in the Faculty of Nursing of Universitas Padjadjaran. Objectives This study focuses on exploring the views of student nurses and their educators and their experiences of care of the dying, alongside a review of pre-established core competencies and curricular content relating to care of the dying, dead and bereaved. These findings will then support the subsequent planning and designing of a new curriculum using Kern's Six Step Approach as a model of curriculum development.
- **METHODS:** Method An exploratory mixed methods study will be employed as the major approach of this study. Purposive and convenience sampling strategies will be employed to select senior undergraduate students and nursing educators to conduct an individual interview. This will be followed by focus group discussions using a modified nominal group technique involving faculty staff members and clinical instructors, and relevant documentary review. The main data analysis method will employ content and thematic analysis.
- **CONCLUSION:** This study will produce an outline of a curriculum with emphasis on care of the dying, dead and bereaved for undergraduate pre-registration nursing education within the Indonesian context, for future implementation and testing.
- **KEYWORDS:** curriculum; end of life care; palliative care; undergraduate students, nursing education

Assessing Compassionate Care in Nursing

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- **BACKGROUND:** Compassionate care is an important aspect of nursing praxis. Compassionate care has been proposed to become central in health care practice. Compassionate care is a complex process that involves many aspects of life activities and it is associated with the expressive behavior and physiological response. There is a demand that patient need to be treated with kindness and good care in order to fulfill the need of the patient. There are many studies has been done on compassionate care, but there are no standardized instrument tools to measure compassionate care.
- **OBJECTIVE:** The aim of this study was to review tools of compassionate care in the nurse.
- **METHODS:** A systematic review was performed to identify instrument tools which assess compassionate care in nursing. The literature was searched systematically using electronic databases.
- **RESULTS:** There are three articles meet the inclusion criteria out of 11808 articles. Six themes were identified in this studies such as being caring, being empathy, being competent, being effective communication, being sensitive and being a meaningful connection. The components of instrumental tools of compassionate care were identified and intern of validity and reliability is acceptable.
- **KEYWORDS:** compassionate care; tool; validity and reliability

Evaluation of Cell Sheet Application on One Wall Bone Defect in Macaca nemestrina through Periostin Expression

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- **BACKGROUND:** Chronic periodontitis is an oral disease, involving destruction of periodontal tissue, leads to loss of tooth. Regenerative therapy for attachment gain has limitation in one wall bone defect due to minimal healthy bone existed. Tissue engineering in form of cell sheet has been developed to overcome this limitation. On previous study, cell sheet application on one wall bone defect in Macaca nemestrina has given good result clinically.
- **OBJECTIVE:** To evaluate the effectiveness of cell sheet application histologically, a study about level of periostin expression in gingival crevicular fluid of Macaca nemestrina is done. Periostin is a 90kDa-protein which regulate coordination and interaction for regeneration and tissue repair.
- **METHODS:** A laboratory observation study was performed to see the difference on sample collected from Macaca nemestrina's gingival crevicular fluid(GCF) where cell sheet was applied on its bone defect. Electrophoresis with SDS-PAGE was done to detect expression of periostin based on its molecular weight and to compare the expression band between cell sheet and control from one week, two weeks and three weeks after treatment.
- **RESULTS:** The result from electrophoresis gel shows different thickness between group of cell sheet and control of protein band around periostin molecular weight area.
- **KEYWORDS:** periodontitis; cell sheet technology; Macaca nemestrina; periostin; bone defect

Evaluation of Periodontal Tissue Regeneration through Protein 1 Cementum Expression using Mesenchymal Stromal Cells Sheet-Chitosan on Macaca nemestrina

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- **BACKGROUND:** The main objective of periodontal tissue regeneration therapy is to return the function and aesthetics of periodontal tissues. Regeneration therapy in the one-wall defect case - in which the damage involves almost all of the bone surfaces - up until now has not produced optimum and predictable results. Previous studies have identified the mesenchymal stem cell potential in the bone tissue engineering to improve major periodontal defect reconstruction. The use of Cell Sheet Technology(CST)-in which cell culture is obtained from material coated with temperature sensitive substrate-has been developed for the reconstruction of various tissues, including periodontal tissue. Cementumprotein-1 is a 40kDa protein, the key factor in the cementogenesis process enhancing the combining of cells formed by cell cementoblast. This expression is limited only to cementoblast and cell progenitor in the periodontal ligament.
- **OBJECTIVE:** To evaluate periodontal tissue regeneration through the cementumprotein-1 expression on one-wall bone defect post cell sheet application every week for a month on Macaca nemestrina.
- **METHODS:** SDS-page (Sodium Dodecyl Sulfate polyacrylamide gel electrophoresis) was performed to determine proteins based on their molecular weight. To view the band components forming, special coloring material must be applied to the gel.
- **RESULTS:** Protein band expressions on SDS-page gel were identified at area range of 40 kDA, with different thicknesses between treatment.
- **CONCLUSION:** Difference in cementumprotein-1 expressions were observed on the treatment group with and without cell-sheet, at 1-week, 2-week and 4-week after the application of cell sheet. Early indications of cell improvement were observed through molecular protein level.
- **KEYWORDS:** periodontitis; one wall bone defect; protein 1 cementum; cell sheet

Health Data Standard and Extensible Markup Language (XML) Design for Essential Services at Primary Health Center: Toward National Health Data Interoperability

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- **BACKGROUND:** Interoperability was defined as “The ability of two or more systems or components to exchange information and to use the information that has been exchanged”. Nowadays, in Indonesia many health information systems have been developed however, the condition of these systems is fragmented and lack of interoperability. Hence, the quality of national data in return becomes an issue to be tackled.
- **OBJECTIVE:** The aim of this study is to constructing health data standard to optimized interoperability at Primary Health Center and allows greater ease understand the data structure for a wider user in term of application development.
- **METHODS:** This study is using operational research approach, nested with Ministry of Health project on refinement Primary Health Center Recording and Reporting System. Operational Data Model (ODM) was used to construct XML model. Using qualitative method, the variation of existing system was sampled from 4 districts in East Java Province, Sampang, Bangkalan, Situbondo, Bondowoso.
- **RESULTS:** As the result, we develop an XML-based standard for exchanging essential data services. It formalized definitions for the specific variables from the essential service program along with related vocabulary definitions.
- **CONCLUSION:** As conclusion this health data standard demonstrates ease understand of data structure and basic program related vocabulary definition as standardized PHC Information System. For further discussion, how in the foreseeable future this standard data can be deployed into XML encoding, using machine- readable semantics as linked data and accessed via standard web services via streamlined deployments of the data infrastructure for each data provider, rather than a single data warehouse.
- **KEYWORDS:** interoperability; XML; primary health center; data

Regulation Issues on Developing a Mobile Health App in Indonesia

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- **BACKGROUND:** Smartphone usage in health care is unavoidable. In Indonesia, smartphones and its mobile apps may become one way to bring telemedicine to areas where direct healthcare service is inadequate.
- **OBJECTIVE:** The objective of this study was to assess on regulation issues have to be dealt when creating a mobile based health app, and whether Indonesian have enough regulation for its trend.
- **METHODS:** We analyzed the content of available relevant Indonesian regulation, and looking at currently available mobile health apps. We then conducted serial discussion and in depth interview with relevant medical experts, app developers, and peoples involved with telemedicine services in Indonesia.
- **RESULTS:** At present there are 69 million active smartphone user in Indonesia, and the trend was increasing. The present technology was so advance, that we could transfer video, picture, documents and sound interactively through smart phone. Not surprisingly many mobile health apps would be developed in the future. There were 2 distinctly different needs of telemedicine services. In remote areas the need was primarily for service access. While in big cities, the need was more about urgency on and conveniences of getting relevant information and help. In term of developing health mobile apps, developer had to be aware of patient confidentiality. Accuracy was more limited to anamnesis as compare to direct services where doctors could confirm anamnesis by physical diagnosis.
- **CONCLUSION:** Therefore, there should be a preliminary warning of possible misdiagnose or treatment suggestion. In term of available regulation, we found that there were still many things unregulated, i.e.: standard of services, informed consent, patient confidentiality, medical record and so on. However most of informants agreed, that telemedicine, or on this case mobile health apps are here to stay.

The Effectiveness of "Pain Digital Acupressure (PDA)" to Reduce the Labor Pain and the Length of Second Stage During Labor

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- **BACKGROUND:** The Maternal mortality rate in Indonesia is still the highest in the Asian countries. One of the reasons is due to prolong labor that is influenced by anxiety and fear of mother during labor. Anxiety and pain is very connected and influence its other. Due to anxiety mother feel more pain and it will disturb the labor process. Increasing catecholamine hormone will disturb the uterine contraction that will be increase the stimulation of respiratory an decrease the CO₂ in mother and fetal. This will make the fetal oxygenation decrease and baby will in danger. This in turn will influence the wellness of mother and fetal.
- **OBJECTIVE:** The aim of this study is to identify the effectiveness of Pain Digital Acupressure (PDA) to reduce labor pain and the length of second stage during labor.
- **METHODS:** The design is a quasi experimental study, that involve 76 women during normal labor 9 38 women in the intervention group and 38 other women in the control group.
- **RESULTS:** The result shown that there was a significant different of the labor pain scale after using the PDA in the first 30 minutes, second 30 minutes and the third 30 minutes dusing latent stage labor with p values of 0.000 different with pain scale before using PDA. The most effective of using PDA was the first 30 minutes which decreased 1.79. Using of PDA also made faster the length of second stage of labor (Intervention group: 14.36 minutes and control groups were 22.50 minutes, and the significancy was $p=0.00$).
- **CONCLUSION:** It is strongly recommended for women during labor using PDA to influence the labor pain and the length of labor that in turn will reduce the mortality and morbidity of mother and child.

Validity Test Research on Effect of Instruments with Classroom Learning Model of Learning Independence in Bachelor of Nursing Students

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- **BACKGROUND:** Validity and reliability is very important in research instrument as a part of the study. This section is useful to realize the reliability and confidence in the results of research. A scale or measuring instrument in a research can be said to have high validity if the instrument is used to examine its own reliability in carrying measuring function, or can provide measurement results in accordance with objective measurement.
- **OBJECTIVE:** The research objective was tested for the validity and reliability of a research instrument in the influence of Flipped Classroom Model Learning (FCL) towards independent learning for Bachelor of Nursing students.
- **METHODS:** Total population sampling was 30 students from Bachelor science of nursing students, who followed the FCL Model on their subjects in Mental Health Nursing. Guttman scale questionnaire form was used, and numbered to 21 statements with a choice of 'yes', 'no' and 'free'. Techniques of collecting data through a cross sectional approach, the results of computerized data is processed and analyzed using the Pearson Product Moment Correlation.
- **RESULTS:** Test results on the overall validity and reliability of questionnaire's independent learning and critical thinking abilities of items valued and the results are $r > 0.33$ and have been reliable with Alpha r values > 0.666 by Cronbach's Alpha .931.
- **CONCLUSION:** This study concluded that the instrument was valid and thus fulfill the reliable qualification as a measuring tool fit to use in research.
- **KEYWORDS:** validity; reliability; research instruments; flipped class; independent learning

Oral Presentation:

GLOBAL HEALTH SECURITY & DISASTER

Analysis of Community Preparedness in Public Health Emergency

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- **BACKGROUND:** Indonesian territory is geographically in disaster-prone areas. The emergence of infectious diseases due to the disaster, new-emerging and re-emerging disease can also trigger a public health emergency in Indonesia. Public health emergencies can happen anywhere, both in urban and rural areas. Community as a front line that affected, requires preparedness.
- **OBJECTIVE:** The aims of this study are to analyze how far urban and rural community preparedness to face public health emergency.
- **METHODS:** The method used in this study are both qualitative analysis (in-depth interviews and FGD) and quantitative from descriptive statistical analysis based on assessment of preparedness rural/urban community that combined and modified from indicators of Desa Siaga Aktif and Desa Siaga Bencana. Research was carried out at kel.Makasar-East Jakarta, for rural areas was in Campaka Village-Cianjur Regency. Both areas have been selected based on the consideration that the area is prone region and potentially impending public health emergencies issue, both in terms of disaster as well as an increase in cases of the disease.
- **RESULTS:** The results of this study indicate that in rural and urban communities have different levels of preparedness. At the rural level of preparedness that reached level Pratama (score 32.6), while in urban areas have level of achievement in Madya (score 41.9).
- **CONCLUSION:** The 20 indicators aspect almost met in terms of its existence and also vary between rural and urban areas. Point that still lacking is the implementation of these indicators and the performance is not as expected as it should be. It required supervision of the stakeholder (in this study are Puskesmas, government in rural and urban). It certainly reduces the point of community preparedness score of achievement in two study areas. The cause of the most striking differences results between rural and urban are structural differences, accessibility, funding and knowledge of the community.
- **KEYWORDS:** community preparedness; public health emergency; rural; urban

Health Related Quality of Life among People Living in Disaster Risk Area, Kediri, Indonesia: A Cross-sectional Study

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- **BACKGROUND:** On Feb 13, 2014, Kelud volcano, in Kediri District, Indonesia, erupted.
- **OBJECTIVE:** The study is intended to examine the effect of the eruption on health related quality of life (HRQoL) among people living in different levels of volcano eruption risk area.
- **METHODS:** A cross sectional study was conducted in and 252 subjects were randomly selected through multistage cluster sampling.
- **RESULTS:** There was no difference in mean score of HRQoL between those living in the high risk area (35.93) and those living in the moderate/low risk area (35.69). Age, monthly income and history of chronic disease were important predictors of HRQoL in the total population as well as in each risk area. Increase in age was associated with a decreased HRQoL (β -1.951; p 0.000). Chronic disease that existed post eruption has significantly lower score of HRQoL (β -7.709; p 0.014). HRQoL among people living in high risk area was associated with age, income, coping, depression, decreased income, and chronic disease. Factors associated with HRQoL in moderate/low risk area were age, employment, monthly income and history of chronic disease.
- **CONCLUSION:** Approaches to improve people's HRQoL in the high risk area should involve psychological intervention and chronic disease prevention and control.
- **KEYWORDS:** health-related quality of life; disaster risk area; volcano; Indonesia

Framing the Zika Outbreak as a Public Health Issue

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- **BACKGROUND:** The current news of Zika outbreak has caused a global panic. Whereas, the virus itself causes only a mild symptoms that can be taken care like a usual fever symptoms. In addition, currently it does not pose a high rate of mortality, especially towards adult. Nonetheless, seeing the news constantly reporting the unfortunate babies with microcephaly associated with long-life disabilities, followed with the facts that the vaccines are currently limited, intensifies the fear of the global society.
- **OBJECTIVE:** This essay aims to find how to frame the Zika outbreak appropriately.
- **METHODS:** To do so, it uses qualitative method with library research. Using Bary Buzan' securitization concept and human security concept,
- **RESULTS:** I argue that Zika currently is not a threat to national and international security. Therefore, securitization is unnecessary as it does not pose an existential threat to international order, state, and society. In addition, securitization itself entails a demanding consequences that has not needed at the present time. Therefore, I also argue that the Zika outbreak should be framed as a public health issue so its treatment will be appropriate.
- **KEYWORDS:** zika threat; national security; international security; security; securitization

Local Traditional Knowledge and Belief about Volcano among People Living in Mount Kelud, East Java, Indonesia, 2007

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- **BACKGROUND:** Although on 16 October 2007, the authority had commenced evacuation of 116,736 people, living near the volcano's crater of Mount Kelud, there were about 25,000 people still remained in the danger zone, ignoring evacuation order. The disaster risk of people living in surrounding Mount Kelud is related not only to community and government capacity but also to social vulnerability, including local traditional knowledge and belief of the people.
- **OBJECTIVE:** To elaborate local traditional knowledge and belief of local people living in Mount Kelud, as part of social vulnerability of the disaster risk of Kelud eruption.
- **METHODS:** Qualitative design was used. Data was collected through in-depth interview of 7 key informants and focused group discussion of 6 groups of people.
- **RESULTS:** The eruption of Kelud was understood not as independent nature phenomenon, but as an event metaphysically connected to the life of human being. There is close relationship between human and nature as such that one may affect or influence the others. Both man and nature, i.e. the volcano, have consciousness. To maintain harmonious friendship between human and the Mount Kelud, some local people periodically conducted a traditional cultural ritual, called "Larung Sesaji", i.e. offering precious stones (like diamond) to the mountain crater which can ease the mountain from exploding, To understand the 'living' Kelud, people may also rely on a role of special 'intermediary' figure having special spiritual capability to communicate with a supernatural creatures living in Kelud.
- **CONCLUSION:** The spiritual respect may positively endorse living in harmony with the nature and prevent people from exploiting the mountain. However, relying extremely on this belief would reduce rational awareness and inhibit alert to real potential eruption. Thoughtful communication to address empirical disaster risk without disrespect the local knowledge and belief is important.
- **KEYWORDS:** local knowledge; belief; Mount Kelud; eruption; disaster vulnerability

Analysis of Organizational and Community Preparedness in Public Health Emergency After the Epidemic Preparedness Project's Intervention

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- **BACKGROUND:** Under condition of Indonesia with a lot of potential disaster which might cause public health emergency, organizational and community preparedness has become the most important issues. Indonesian Red Cross (PMI) had implemented the epidemic preparedness intervention during 2014 to 2015 in two disaster-prone districts, Cianjur and Central Jakarta. The intervention enhanced the capacity of local organizations to play vital public health emergency roles in the community and identify actions that should be taken by community members to help controlling the disease outbreak and epidemic.
- **OBJECTIVE:** This study aimed to analyse the organization and community preparedness as impacts of the interventions.
- **METHODS:** The study has applied impact analyses with combined both qualitative and quantitative methods. Organizational preparedness analysis have been addressed to three main actors: PMI, District Health Office (DHO) and District Disaster Management Agency (BPBD) through qualitative approach by using national indicators on organizational preparedness. Further, community survey using the modified indicators of 'Desa Tangguh' has been conducted to community members who have been trained through the interventions.
- **RESULTS:** The study has showed the coordination among the organizations was good, however the analysis to the others eight indicators of organizational preparedness on public health emergency have not seen significantly. Refer to the standard of "Desa Tangguh", community preparedness analysis on those two areas showed the level of category Pratama and Madya where all indicators were met tough, but the implementation of preparedness activities have not performed regularly.
- **CONCLUSION:** The local authorities have to include public health emergency as the priority aspects on its disaster preparedness.
- **KEYWORDS:** organizational preparedness; community preparedness; public health emergency

Oral Presentation:

HEALTH SYSTEM

Baseline Data for Partnership for Enhanced and Engagement on Research (Peer) Project on Kangaroo Mother Care (KMC). I. Knowledge, Attitude, and Practice of Nurses and Midwives on Kmc in Karawang District Hospital, Karawang, West Java

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- **BACKGROUND:** Kangaroo mother care, a skin-to-skin method for preterm infants with the mother, is effective to meet baby's needs for warmth, breastfeeding, protection from infection, stimulation, safety and love. Good knowledge of KMC and its benefit is essential for successful KMC implementation.
- **OBJECTIVE:** This study aimed to assess KMC knowledge and benefit, as well as attitude towards KMC among health personnel at hospital level.
- **METHODS:** This study collected data from a total of 64 nurses and midwives at several units (perinatal, delivery, rooming-in wards, and other units related to KMC) in Karawang District Hospital. Data were obtained using self-administered questionnaire to assessed general knowledge, knowledge on benefit of KMC, and also attitude towards KMC. Scores of general knowledge, knowledge on KMC benefit, and attitude towards KMC were assessed based on 24, 20, and 20 questions, respectively.
- **RESULTS:** Personnel in perinatology as well as rooming-in wards have the highest mean score of KMC general knowledge: 18.7 and 18.3 from a maximum score of 24. KMC general knowledge questions that were incorrectly answer were: uses of NGT for small babies, effect of giving nutrition other than breast milk to infants < 6 months, and weight gain achievement per day for infants with KMC, benefit of KMC compared to incubator, among others. Majority of the scores on knowledge of KMC benefit were very high among all units, although there were some questions that were incorrectly answered, such as the use of KMC among infants in incubator, using KMC for babies with fever, among other. All questions for attitude towards KMC were correctly answered by personnel in all units related to Kangaroo care in the hospital.
- **CONCLUSION:** These findings, are very useful to serve as a baseline data for developing subsequent training and intervention for health personnels in order to implement succesful KMC in the hospital.
- **KEYWORDS:** Kangaroo Mother Care; knowledge; newborn care

Baseline Data for Partnership for Enhanced and Engagement on Research (Peer) Project on Kangaroo Mother Care (KMC). II Knowledge, Attitude, and Practice of Nurses and Midwives on KMC in Koja District Hospital, North Jakarta

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- **BACKGROUND:** Kangaroo mother care is the early, and prolonged skin to skin contact between a mother or substitute and LBW infant, with ideally exclusive breastfeeding and proper follow up. KMC has been established in Indonesia since the 1990s, however, its implementation has not been performed optimally.
- **OBJECTIVES:** The study was conducted to evaluate knowledge, attitude and practice toward KMC in relation to preparing an intervention package to improve implementation of KMC at hospital level.
- **METHODS:** Cross-sectional study using self-administered questionnaire was done in Koja Hospital involving all units providing care to mothers and infants. Knowledge and attitude towards KMC data were obtained based on a number questions. For each questions, respondents were asked to state their answer using 5 point Likert-Scale, ranging from strongly agree to strongly disagree. Participants included health professionals (nurses and midwives) in delivery ward (n=15), perinatal ward (n=29), rooming-in ward (n=21). Analyses were done to examine levels of knowledge, attitude and practice of KMC.
- **RESULTS:** All nurses in perinatal ward stated that they had assisted and educated parents to implement KMC on small infants. However, receiving training for KMC specifically was only reported by 12.3% of health staff providing care for mother and infants had been trained for KMC specifically, the figure was 21.5% for any training including KMC elements. Significance barriers in implementing KMC in perinatal ward were heavy workload, insufficient education, lack of hospital support and absence of clear guidelines to implement KMC. However, majority of these health professionals showed positive knowledge and attitude towards KMC implementation. Therefore, an intervention is needed to tackle a number of educational and practical issues for safe and effective KMC implementation in the hospital.
- **KEYWORDS:** Kangaroo Mother Care; KMC knowledge; attitude

Effect of Harm Reduction Program in IDUs on Their Injecting Behavior

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- **OBJECTIVE:** This study wants to identify the effect of harm reduction program of HIV-AIDS among IDUs on injecting behaviors.
- **METHODS:** A cross sectional survey using secondary data from Indonesia Integrated Biological and Behavioral Survey year 2013, selected 430 respondents IDUs who ever met the outreach workers in four major cities, namely Yogyakarta, Tangerang, Pontianak, and Makassar. Multiple logistic regressions were performed to determine the effect.
- **RESULTS:** The prevalence of IDUs who inject risky in the past week is 44,3% and IDUs who do not access harm reduction program is 54,1%. The effect of IDUs harm reduction program on risky injecting behaviour was vary according marital status. Among non married IDUs, those who do not access harm reduction program has 1,3 time higher chance to inject risky (ORa 1.3, 95% CI 0.6—2.7). Among married IDUs, those who do not access harm reduction program has 5.4 time higher chance to inject risky (ORa 5.4, 95% CI 3.6—8.1). Other factors contribute to injecting behaviour were age, place of injection, condom use, duration of injecting drugs and total number of injecting partner.
- **CONCLUSION:** Need more effort to optimalize and comprehensive harm reduction program to decrease injecting risky behavior in order to prevent HIV-AIDS transmission among IDUs.
- **KEYWORDS:** harm reduction; IDUs; injecting behaviors

Intrinsic Motivation of Strategic Health Care Workers Placement in Remote, Border, and Archipelago Areas (RBAA) of Indonesia

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- **BACKGROUND:** Health care worker maldistribution has become a global issue. Health care workers prefer to work in urban areas and stay away from the Remote, Border, and Archipelago Areas (RBAA).
- **OBJECTIVES:** This study aims to analyze the influence of intrinsic motivation of health care workers to stay in remote areas.
- **METHODS:** A systematic review was conducted on scientific articles published in several scientific journal sites which fulfil the study's inclusion criteria. This study was performed in Jambi, Sumbawa, and Papua then enriched with qualitative method through in-depth interviews and also triangulation for Jambi and Sumbawa.
- **RESULTS:** In Jambi, it was revealed that the main factors are the comfortable working atmosphere and environment, opportunities to improve career and competencies. In Sumbawa, the bond of love and desire to worship as a native son of the region, significantly affects retention of health workers, as significant as material incentives for health workers. Meanwhile, in Papua, the opportunity to be recruited as civil servants is the strongest factor that influence the decision.
- **CONCLUSION:** It can be concluded that material incentive is not the primary factor that influence retention of health care workers in RBAA. Non-material aspect is actually more dominant. Local Government need to consider specific situations to develop comprehensive local policies that include personal, organization, socioeconomy to improve retention of health workers.
- **KEYWORDS:** intrinsic motivation; health care worker; RBAA

One Health Approach in Dengue Hemorrhagic Fever Control in Indonesia: A Systematic Review

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- **BACKGROUND:** Indonesia is an endemic area of Dengue Hemorrhagic Fever (DHF). The prevalence of DHF is increased each year. Some program and control effort have done, but still not shown significant changes.
- **OBJECTIVE:** This study aims to analyze the information in the literature about DHF control using One Health approaches.
- **METHODS:** This study using systematic review analysis. The information collect using EndNote program from various sources such as Springer and PubMed. Other sources were such as an article from libraries and national and international health reports and published in the last 5 years.
- **RESULTS:** One Health is a global strategy to develop collaboration and communication of interdisciplinary in the health care aspect. In the DHF control, one health approach can explain the position of human, animal, and environment. DHF has multifactor causes, among others virology factors, vector spreading, the environment and human factors. Some effort to address the DHF problem during this time is controlling DHF vectors, mosquito nest eradication, health promotion and community action.
- **CONCLUSION:** One Health approach will manage the strategy of the health workforce in multidisciplinary and others community to providing health service and collaborate to control all factors in the DHF.
- **KEYWORDS:** dengue hemorrhagic fever; one health

Practices and Barriers to Patient Safety Incident Reporting by Doctors and Nurses in Hospitals: A Narrative Review

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- **BACKGROUND:** As one of health care quality dimensions, patient safety is a global issue that is most important at this time, which is a program to maintain the quality of health care by making patient care safer include risk assessment, identification and management of matters relating to the risk of the patient, reporting and incident analysis, the ability to learn from the incident and follow-up and implementation of solutions to minimize risks and prevent injury caused by errors due to carry out an action or not taking action that should be taken. Reporting incidents in health care is considered as a way to monitor, prevent and reduce the occurrence of patient safety incidents.
- **OBJECTIVES:** This study aimed to identify the practices and barriers to patient safety incident reporting by doctors and nurses in hospitals.
- **METHODS:** The method used was a narrative review which started with systematic searches to ensure that most of relevant articles included. Used a variety of sources that bibliographic databases (MEDLINE, Embase, Proquest), reference lists, citations and related articles (Science Citation Index, Scopus), search engines (Google Scholar, TRIP) and other web searching. Inclusion criteria was defined to filter search results article, then performed the analysis and presentation of results, the discussion and formulation of conclusions.
- **RESULTS:** The results of this narrative review was the identification of patient safety incident reporting practices. The main factors contributing were attitude of doctors and nurses, subjective norms, feeling secure in reporting, support from hospital management, transparent in the reporting process, and feedback after reporting the incident. The identified constraints were the doctors or nurses felt afraid to be blamed or got punishment, the process of reporting consumed much time, lack of feedback after reporting and felt useless when reporting the incident. However, nurses were more aware of reporting the incident rather than doctors.

Role of Place on Immunization Coverage at 6 Districts in Indonesia in 2014

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- **BACKGROUND:** World Health Organization recommended basic immunization while Indonesia had been implemented in Indonesia more than 30 years. Since 1999, Indonesia due the realities of decentralization the coverage of immunization was low every year, especially for measles vaccine. In other had Indonesia and others countries around the world facing with measles elimination.
- **OBJECTIVE:** This study aims to measure role of place on measles immunization coverage at 6 districts in Indonesia in 2014.
- **METHODS:** Rapid survey using 40 clusters with 14 samples for each cluster used at each district in the survey at six districts, hence all information required to measles immunization coverage and the factors had been gathered from the total 2800 children 12-23 months of ages. Bivariate and multiple logistic regression was done to determine what is the different factors associated in each district and with total of 6 districts.
- **RESULTS:** The study found that the factors associated to measles immunization coverage from total of 6 districts were: place of immunization (OR:1,16 95% CI:1,05-1,28), knowledge of mother (OR:1,74 95% CI:1,35-2,25) and Source of information from community leaders (OR:1,55 95% CI: 0,992-2,41). While the factors in each districts showed that the factors associated to measles immunization was different with the total of 6 districts. This difference showed the role of place (district) on measles immunization coverage. In further analysis the role of district (place) was affected by some factors such as: population size, human resources, community participation, etc.
- **KEYWORDS:** measles immunization coverage; factors associated and variation among districts

The Association between Pregnant Women Knowledge Level of National Health Insurance and Antenatal Care Visits in Duren Sawit Primary Health Center 2015

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- **BACKGROUND:** Antenatal care is one of four main pillars in Safe Motherhood Initiative program. National Health Insurance (NHI) is expected to become solution of antenatal care coverage improvement and reduction of Maternal Mortality Rate (MMR). There are still few of researches focusing on association between NHI and antenatal care visits.
- **OBJECTIVES:** The objectives of this study is to find the association between pregnant women knowledge level of NHI and antenatal care visits in Duren Sawit Primary Health Center 2015.
- **METHODS:** Using cross-sectional design study, the amount of samples was 80 pregnant women. The tools of the study are validated questioners and analyzed by SPSS 19.0 for Windows.
- **RESULTS:** 71.3% of the pregnant women have enough knowledge about NHI. 62.5% of respondents had their first antenatal care visits in less than 16 weeks of gestation as WHO recommend, 58.8% of respondents had good preparation for delivery, and 70% of respondents planned to use contraception after delivery. However, the level of knowledge of NHI has no significant association with antenatal care visits.
- **CONCLUSION:** There was no significant association between pregnant women knowledge level and antenatal care visits ($p=0,691$), labor preparedness ($p=0,965$), and family planning ($p=0,266$).
- **KEYWORDS:** National Health Insurance; pregnant women; antenatal care

Variation of Health Care Delivery and its Relation to the Cost of Treatment for Caesarea Section in Indonesia

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- **BACKGROUND:** Diagnosis Related Group (DRG) based payments through the Indonesian Case Based Group (INA-CBG) has been implemented for public hospitals since 2009. Previously hospitals are paid by fee for service. Variations of health care services that delivered by hospital for the same disease will affect the variation in costs per episode of care.
- **OBJECTIVE:** The purpose of this study was to identify the variations of health care delivery for Caesaria Section without CC among hospitals and its relation to the cost of treatment under DRG payment system in Indonesia (INA-CBG).
- **METHODS:** This research is quantitative research with cross sectional approach. Population are all cases in 2 provinces, Jakarta and West java. From each provinces, 2 hospitals selected purposively based on some criterias. Sample is all cases of Caesarea Section without comorbidity and complication at 4 public hospitals in 2012, totaled 3,164 cases. The independent variables are patient demographics (age, type of patient) ; utilization of health services include lengt of stay, doctor visit, laboratory, procedures, drugs and consumables; and class of hospitals. Costing analysis used is micro costing.
- **RESULTS:** There are variations in health care delivery among hospital for Caesarea Section without comorbidity and complication. These variations have an impact on the cost of treatmnet. The lowest average cost is in Hospital D Rp. 2,240,908 and the highest average costs is in Hospital A Rp. 14,516,357. Results of linear regression showed that class of hospital is the variable that most affects to the cost of treatment (R-square 45%).
- **CONCLUSION:** The wide variation of health care delivery affect the cost of treatment for Caesarea Section without CC. Under DRG payment system hospitals should deliver the health care rationally to maintain the cost. The presence of clinical pathway is important to reduce the variation.

Baseline Data for Partnership for Enhanced and Engagement on Research (Peer) Project on Kangaroo Mother Care (KMC). I. Knowledge, Attitude, and Practice on KMC of Health Professionals at Primary Health Center (PHC) in Karawang District, West Java

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- **BACKGROUND:** KMC is one of proven low cost methods in improving the condition of low birth weight babies. However, the implementation of KMC considered low although in countries with low resources setting.
- **OBJECTIVES:** This study aimed to explore KAP of district health personnel.
- **METHODS:** A descriptive study was carried out as a baseline assessment of subsequent intervention study that will be done in Karawang district. Participants of study were all heads, medical doctors, and midwife coordinators of all 50 PHC facilities (n=150). Questionnaire was developed based on existing tools for KAP of Kangaroo Mother Care for health professional.
- **RESULTS:** Overall, the average age of respondent was 42.2 years and the length of respondents' employment in the current institutions was between 1 and 28 years, with an average of 5.5 years. The average score of general knowledge regarding KMC and specific knowledge about the benefits of KMC was 14.51 and 16.85, respectively (max score=24). The lowest percentage of correctly answered questions on benefit of KMC were on feeding using NGT (2.7%); potential effects of early infant-feeding among breastfed infants (15.3%); how to keep baby warm (49.3%); statement about cup-feeding (50.7%); and benefits of KMC compared to using incubator (66%). These figures showed that improvement on knowledge on KMC benefit should be done for health center staff to support the implementation of KMC.
- **KEYWORDS:** Kangaroo Mother Care; KMC; knowledge

Community Health Centre (CHC) Strengthening and HIV-related Services Integration in Bali Province, Indonesia: A Policy Analysis

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- **BACKGROUND:** HIV control activities in Bali are vertically organised, lack of integration at its point of delivery and are heavily reliant on funding from donors. Bali is currently developing an 'exit strategy' from donor funding, emphasising on integration policy.
- **OBJECTIVE:** This study explored strategies to enable integration of HIV services into existing health programs in Bali.
- **METHODS:** A policy analysis was completed using a qualitative design. Policy documents were analysed to identify components of overarching frameworks relevant to integration. In-depth interviews were conducted with 10 respondents to explore the perspectives of policy makers.
- **RESULTS:** Barriers to integration included lack of infrastructure and funding arrangements, lack of program linkages at CHC, lack of inter-sectoral linkages, high turnover and rotation of staff, lack of skills and training, lack of incentives program for increased workload and lack of community awareness about HIV services availability at CHC.
- **CONCLUSION:** Several steps need to be taken to enable implementation of integration. HIV funding should be pooled at health office and distributed based on CHC capacity and need. Training should be conducted with CHC staff to promote HIV services as core business and encourage program cross-linking. Partnerships should be formed between CHC and lay counsellors to raise awareness of CHC services.
- **KEYWORDS:** HIV/AIDS; integration; policy; community health centre; puskesmas; barriers; health system strengthening

Impact of Hospital Payment on the Prescription Behavior

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- **BACKGROUND:** Starting on 2014 Indonesia was launched universal health coverage (uHC) program called jkn. The coverage of jkn program was comprehensive including outpatient as well as inpatient care. Under the jkn program hospital services was paid on the basis of diagnosis related groups (DRGs) called Indonesian Case Based Groups (INA-CBGS). In order to secure profits or surpluses, theoretically the hospital that paid with package payment like INA-CBGS will reduce services, including the number of length of stays (LOS), medicines, medical supplies, etc.
- **OBJECTIVES:** The aim of the study was to assess whether INA-CBGS payment change prescriptions behavior of the doctors.
- **METHODS:** The design of the study was cross-section study. The study was conducted at a local government hospital of the city of Medan, Indonesia. The sample of the study was all patients hospitalized in the year 2015. Data were taken from hospital management and information systems (MIS). We compare average numbers of prescriptions and average cost of medicine per patient to measure the change of prescriptions behavior.
- **RESULTS:** The numbers of patients were 13,168 persons, consisting 12,674 jkn patients and 494 non-jkn patients. The average numbers of prescriptions was 5.69 and the average costs of medicines per episode of inpatient was IDR 1,277,414 (around USD 94). On average jkn patients got more recipes (5.76 items) than non-jkn patients (3.75 items) per episode of inpatient. The cost of medicines of jkn patients was IDR 1,312,151 (around USD 97) and it is more than three times of non-jkn patients IDR 386,208 (around USD 29). Contrary to common sense regarding package payment, the result of this study showed that doctors gave more recipes and more expensive medicines to jkn patients compare to non-jkn patients. It is assumed the doctors did not aware that the transformation of hospital payment methods should be respond with efficiency of services.
- **CONCLUSION:** INA-CBGS payment did not reduce the numbers and costs of prescriptions.

Public Health Intervention on Clean and Healthy Life Behavior in West Java Province: A Case Control Study in District Cianjur, West Java, Indonesia

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- **BACKGROUND:** The Government of West Java Province in collaboration with Universitas Indonesia formulated a creative research to accelerate development in the province, including health sector development, based on the document of Middle-Term (5 Years) Development Plan of the West Java Province (RPJMD) 2013-2018. One of the health problems in West Java is the lack of clean and healthy life behavior (PHBS). Cianjur District for example, is in the 7th lowest rank among hundreds of district in Indonesia which perform PHBS.
- **OBJECTIVE:** This study was aimed to improve PHBS in Cianjur District by activating village administration and community-based organizations.
- **METHODS:** This is an interventions study using quantitative and qualitative approach. Before and after-intervention survey were conducted to assess the clean and healthy life behavior of 50 households in intervention villages and 50 households in control villages. In-depth interviews, focus group discussions, future dialogues were done as interventions in order to raise awareness and activate the role of village administration and community-based organizations in improving the clean and healthy life behavior. The intervention area was at Sukaresmi sub-district while the control area was Gekbrong sub-district. Two villages as sample areas were chosen from each sub-district. The PHBS indicators focused on in-house/room smoking behavior, healthy latrines, and managing domestic disposal.
- **RESULTS:** During intervention processes the village administration and community-based organizations had agreed to raise awareness for in-house/room smoking behavior through comprehensive health education, healthy latrines by stimulating local resources, and managing domestic waste by segregation of organic and un-organic waste. After three months intervention there is a reduction in smoking behavior inside the house, There is also reactivation of Desa Siaga, establishment of healthy latrines and establishment of community-based garbage bank in two intervention villages.
- **KEYWORDS:** public health intervention; community empowerment; clean and healthy behavior

The Effectiveness of Posyandu and its Relation to the Leadership and Management

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- **BACKGROUND:** Data on infant death in the city of Bogor has increased from 26 to be 62 cases in 2013. Posyandu is one of the facility in a society that runs the health program where one goal is carrying out activities to accelerate the decline in the death rate of mothers and babies. The problems at posyandu in Bogor is the number of active cadres continue to decline while cadre recruitment insufficient, and less active of the function of pokja pokjandal of posyandu.
- **OBJECTIVES:** This research would like to see how the effectiveness of Posyandu UKBM through the leadership factor (communication, competence), management functions (planning, organizing, implementing and controlling), work environment (system support, availability, the availability of means of support and incentives) as well as the characteristics of respondents (posyandu classification, age, number of years served and the work).
- **METHODS:** This research uses the unit of analysis of posyandu as much as 70 posyandus chairman cadres as the respondents. Draft research using quantitative methods of cross sectional approach.
- **RESULTS:** The result correlation and regression analysis shows that there is correlation between factor (communications), management functions (planning, organizing, implementation and control), working environment (support system, the the availability of means of support and incentives) as well as the characteristics of respondents (age, occupation). Improved competence and organization intervention will improve the effectiveness of posyandu with controlled occupation and age factors.

Universal Healthcare Systems and Traditional Herbal Medicines of Indonesia and Japan: A Comparative Study

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- **BACKGROUND:** Japan has started the universal healthcare system in 1961 and successfully covered all people in 1973. However, the free medical care policy for the elderly at least 70 years old during 1973-1982 resulted in serious financial and social difficulties. On the other hand, Indonesia has started the universal healthcare system in 2014, targeting the coverage of all people until 2019.
- **OBJECTIVE AND METHODS:** This paper discusses the possibility and limitation of achieving the unique universal healthcare system in Indonesia by comparing universal healthcare systems and traditional herbal medicines of Indonesia and Japan.
- **RESULTS:** One of the most important challenges of the universal healthcare system in Indonesia is to cover the people in the informal sector. In addition, the dissemination process of the universal healthcare system in Indonesia would affect the role of traditional herbal medicines (jamu) as an alternative medical system or a safety net in the long run, although many people heavily depend on alternative healing by traditional healers and herbal medicines, especially in the rural area of Indonesia.
- **CONCLUSION:** Further studies are required on the role of jamu as a safety net for covering the people in the informal sector during transition to universal healthcare system in Indonesia.
- **KEYWORDS:** Indonesia; Japan; universal healthcare system; traditional herbal medicine (jamu); safety net

Oral Presentation:

MATERNAL HEALTH

Development of A Community-Based Breastfeeding Promotion Model (CBPM) for Working Mothers, Ban-Bueng District, Chonburi Province, Thailand

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- **BACKGROUND:** Breastfeeding is a key global public health issue. Global efforts have focused on increasing breastfeeding initiation and duration to reach Millennium Development Goal. "Return to work" is indicated to strongly affect breastfeeding duration. Effective strategy is needed to enable working mothers to continue breastfeeding.
- **OBJECTIVE:** To develop and identify the components of a CBPM for working mothers, Ban-Bueng District, Chonburi Province.
- **METHODS:** Participatory action research and the self-efficacy theory were applied to develop a CBPM. There were 3 phases of data collection and 5 groups of participants engaged in this study including: (1) stakeholders, (2) health volunteers, (3) public health nurses, (4) working mothers, and (5) families. Both qualitative and quantitative methods were used in this study.
- **RESULTS:** Components of a CBPM consisted of 7 elements: 1. Policy and budget support from local government administration/ workplace; 2. Breastfeeding support team in the communities; 3. Breastfeeding training workshop for public health nurses and health volunteers, and Breastfeeding Café; 4. Breastfeeding kits; 5. Systematic home visits with breastfeeding program for working mothers, and Lactation Clinic service in the community; 6. Referring system; 7. Call Center. A CBPM can increase the exclusive breastfeeding rate among working mothers from 0% to 69.23% and 53.85% continue to breastfeed for 1 year.
- **CONCLUSION:** This model bridges the gap of breastfeeding support in the health care system to encourage working mothers to continue breastfeeding.
- **KEYWORDS:** community-based; breastfeeding; working mothers

Health Disparity of Maternal and Child Health in Nine Megacities in Indonesia

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- **BACKGROUND:** Public Health Development Index (PHDI) can be used as one of the monitoring tools to assess health development disparity within 399 districts and 98 cities in Indonesia.
- **OBJECTIVE:** This paper aims to compare maternal and child health performance with the national figures and disparity in nine mega cities in Indonesia (Medan, Bandung, Jakarta, Semarang, Yogyakarta, Surabaya, Samarinda, Denpasar and Makasar).
- **METHODS:** This study is a descriptive analysis of secondary data of 2013 PHDI. Disparity variables include three PHDI sub-indexes (under five health, reproductive health, and health services) and three prevalence data (malnutrition and undernourished under five children, overweight under five children, chronic energy deficiency among productive/fertile age females).
- **RESULTS:** PHDI range among the nine cities was 0.5610 to 0.6992 (Indonesia: 0.5404), Sub-indexes : Under five health range was 0,6429-0,7498 (Indonesia: 0,6114); reproductive health was 0,3935-0,5619 (Indonesia: 0,4756); health services was 0,5187-0,8089 (Indonesia: 0,3808). Range of prevalence of undernourished and malnourished under five was 9,4-28,2 (Indonesia: 37,21); Overweight under five was 4-15,7 (Indonesia: 11,76), chronic energy deficiency among productive/fertile age females was 14,5-26,97 (Indonesia: 20,97). Unfortunately, for reproductive health, overweight under five and chronic energy deficiency among productive some mega cities have worst than national/average score.
- **CONCLUSION:** PHDI scores and health services sub-index within the nine big cities were higher than the national PHDI, however other PHDI sub-indexes such as reproductive health, overweight under five children and chronic energy deficiency among productive/fertile age females, were not better than the national/average figures, thus needs more attention. More cities with better access but seem not always better health performances than the other cities.
- **KEYWORDS:** disparity; nutrition; health index; maternal; child

Perception of Benefits and How to Drink IFA Tablet among Pregnant Mothers, Postpartum Mothers and Kader in Two Selected Districts in Banten and West Java, 2014

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- **BACKGROUND:** Anemia during pregnancy might impact maternal and neonatal health. The provision of a minimum of 90 IFA tablets is effective to prevent anemia during pregnancy. However, compliance of drink IFA tablet is still low. Integrated health post (Posyandu) and Kader (community worker) have potential as community based education and a role model of healthy behavior for local community.
- **OBJECTIVE:** To compare the differences in perceived benefits and correct way to drink IFA tablets among mothers and Kader.
- **METHODS:** Phenomenology involving 12 FGDs pregnant mothers, 24 in-depth interviews post-partum mothers, and eight in-depth interviews Kader.
- **RESULTS:** Mothers (pregnant/postpartum) were aware of IFA tablets, however not all of mother know the tablets and how to drink it. Most mothers perceived anemia as low blood pressure. Some mothers not know the correct number of IFA tablets should be consumed, and most of them not aware the side effects of taking IFA tablet. Some mothers not know how to prevent the nauseous after drink IFA tablets. But, Kader have more and specific information on IFA tablets. The role of kader in Posyandu usually to reminder the mothers to drink IFA tablets.
- **CONCLUSION:** Strengthening capacity of Kader to provide health counseling for mothers will improve Kader's confidence to providing IFA information to mother. Information of IFA tablet should be included in the Kader pocket book so that it can be used as a guidance for them.
- **KEYWORDS:** IFA tablet; perception; kader

Characteristics of Obstetric Near-miss Cases in Indonesia

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- **BACKGROUND:** Maternal health remains challenging for many parts of the world. It is estimated in addition to 529,000 maternal deaths worldwide, 9.5 million women had pregnancy-related morbidity and 1.4 million of them survived life-threatening complications (so called obstetric near-miss). In general, obstetric near-miss cases go through similar life-threatening events as in maternal death cases. The large incidence of near-miss cases provides the opportunity to investigate maternal health problem through obstetric near-miss to complement maternal death investigation which requires a large sample.
- **OBJECTIVE:** This analysis was aimed to describe the characteristics of near-miss cases.
- **METHODS:** This is a retrospective secondary analysis of maternity admissions (pregnancy, delivery, and post-partum) in 2005-2006 collected from two public hospitals in Banten Province, Indonesia (n=1,806). Maternal deaths were excluded from our analysis. The near-miss definition was determined by an expert panel who reviewed the criteria used in previous studies and adjusted to the local context.
- **RESULTS:** About 67% of near-miss cases were near-miss at admission which showed that these cases arrived at the hospitals with life-threatening conditions. The majority of the near-miss cases came from rural/remote areas (65.8%), were uninsured or covered by government/worker compensation insurance (65%), and assisted by traditional birth attendants before being taken to hospital (38.6%). Those characteristics were significantly higher in near-miss than non-near-miss cases ($p < 0.05$). Also, a higher proportion of near-miss cases were grand multiparity (23.9%) and had non-obstetric complications (16.1%) compared to non-near-miss (12.6% and 1.3%, respectively).
- **CONCLUSION:** Women from the rural/remote areas and the low-economic group in Indonesia were still disproportionately affected by maternal health problem. The analysis supports the evidence that characteristics of near-miss cases are consistent with those of maternal death cases in general, suggesting the feasibility to study near-miss cases as a proxy of maternal death.
- **KEYWORDS:** maternal health; obstetric near-miss

Current Knowledge and Perceptions on the Kangaroo Mother Care (KMC) among Health Providers in Two (2) Districts Hospitals in Indonesia

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- **BACKGROUND:** In Indonesia, based on Basic Health Research (2007) showed that the leading causes of deaths (0-6 days newborn) were infection, and hypothermia which are associated with low birth weight infants (LBWI), and most preterms are also born with low birth weight. The KMC has been reported to effectively reduce the incidence of nosocomial infection and hypothermia. Both Karawang and Koja district hospitals were selected for this study based on the degree of LBW problems and readiness of hospital's infrastructure to implement KMC. Both hospitals still reported a high number of LBWs, 287 (Koja) and 345 (Karawang) cases respectively (June – December 2015) and KMC has been implemented over 5 years.
- **OBJECTIVE:** The aim of this study is to assess both knowledge and perception of KMC among health providers in 2 district hospitals.
- **METHODS:** The study used qualitative design and conducted 31 in-depth Interviews, 33 FGDs and observations in hospital and 5 homes of LBWIs. The study was conducted from December 2015 until April 2016. There were 3 categories of health personnel namely clinical providers, and representatives of hospital management and professional organization. All interviews were transcribed and analysed using NVivo version 2.0. with thematic analysis.
- **RESULTS:** The results showed that the majority of the health providers in both hospitals knew about the benefits of KMC in terms of maintaining stable temperature, weight gain, maternal infant bonding and reduction of both manpower as well as cost. They were also aware of which LBWIs were eligible for KMC treatment. Their sources of knowledge were mostly from observation or obtained from paediatricians and own experience. They perceived that the LBWIs who were in the incubator could not be treated with KMC and KMC could only be practiced if there was a special gown to hold the baby. This perception could likely be caused by the fact that most of them did not receive formal KMC training so there was still misperception on some part of KMC practice.
- **CONCLUSION:** It is recommended to have KMC training to prevent any misperception and improve their skills on KMC so they will automatically treat KMC once they encounter prospective LBWIs.

Determinants of Birth Delivery Assistance in Six Provinces in Indonesia 2012

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- **BACKGROUND:** The high maternal mortality rate (MMR) in Indonesia in the last 10 years resulting in low HDI. Some factors contributing to maternal mortality is our helper and place of delivery. Distribution of health workers (midwives) who telah increase access safe delivery. Although no results significant to reduce maternal mortality, therefore, needed research determinan deliveries in Indonesia.
- **OBJECTIVE:** Knowing the influence of individual factors and the province of the aid delivery in six provinces with a Human Development Index (HDI) in Indonesia.
- **METHODS:** Secondary data SDKI in 2012 with a sample of 2542 women who had given birth. The dependent variable composite merupaka where labor and birth attendants. Data Analysis using Multi-Level Analysis multinomial regression.
- **RESULTS:** Around 43% of women give birth at home with non-health personnel. Individual factors influencing that predisposing, enabling, and use of health services OR 2 to 3. The factors that play a role is the ratio of provincial health facilities, the ratio tempatt beds and overcrowding. Contextual variables have a positive effect decreasing 24% variation helper and place of delivery with OR. Increase the proportion of birth deliveries in health facilities through health personnel distribution and increase the number of health facilities based on those population density.
- **KEYWORDS:** birth delivery assistance; individual and province factors

Factors Associated with Maternal Knowledge on Danger Signs of Pregnancy in Trimester I at Puskesmas Ciampea District Bogor West Java in 2011

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- **BACKGROUND:** Maternal Mortality Ratio (MMR) is one indicator that is very sensitive, not only to measure the degree of health but also the level of prosperity of a nation, that can be reduced through quality antenatal checks. Antenatal visit provides a great opportunity for health workers to identify early variety of complications in pregnant women.
- **OBJECTIVE AND METHODS:** This research is descriptive and aims to identify factors associated with maternal knowledge about danger signs of pregnancy trimester I, conducted in Puskesmas Ciampea with 79 pregnant women as sample, using cross sectional approach. The analysis used were univariate and bivariate analysis using Chi Square test.
- **RESULTS:** The result showed that women who have low knowledge were 36 people (45.6%), while having high knowledge were 43 people (54.4%). From the statistical test only educational variables related to the mother's level of knowledge, whereas age, occupation, parity, and resources have no significant relationship with the mother's level of knowledge.
- **CONCLUSION:** The results of this study are expected to provide inputs in the preparation of MCH program DHO Bogor. Based on these results it should be more health workers do counseling and provide information about the danger signs of pregnancy with varying methods and equipped with appropriate media extension.
- **KEYWORDS:** knowledge; danger signs; first trimester of pregnancy

Improved Knowledge on IFA Supplementation is Associated with Compliance with Taking Iron/Folic Acid Supplements during Pregnancy: A Cross-sectional Study in Four Districts in Indonesia

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- **BACKGROUND:** In Indonesia, pregnant women are recommended to take a minimum of 90 tablets of iron/folic acid (IFA), to prevent iron deficiency anaemia.
- **OBJECTIVE:** Our analysis aimed at examining the extent to which improved knowledge on IFA supplementation is associated with women's compliance with taking a minimum of 90 IFA tablets during their last pregnancy in four districts in Indonesia.
- **METHODS:** Data were derived from a cross-sectional study conducted in four districts, i.e. Lebak and Pandeglang District (Banten Province) as well as (Purwakarta and Subang District of West Java Province), Indonesia in June 2014. We used information from 436 mothers who delivered their baby in the last six months from the time of the survey and received at least 90 IFA tablets during her last pregnancy. Logistic regression analysis was used to examine the role of knowledge after controlling for confounders and other significant predictor on compliance with taking a minimum of 90 IFA tablets during pregnancy.
- **RESULTS:** Significant association was found between knowledge of IFA supplements and compliance. Compared to women with poor knowledge of IFA supplementation, the odds of taking a minimum of 90 IFA tables increased by almost 100% in women with moderate knowledge (aOR=1.96, 95% CI: 1.17-3.30, p=0.011); and by more than four times (aOR=5.42, 95% CI: 1.76-16.68, p=0.003) in women with good knowledge of IFA supplementation. Other factors associated with compliance was attendance in at least four antenatal services (aOR=5.71, 95% CI: 1.28-25.53, p=0.023) and pregnant women experience of no side effects resulting from taking IFA tablets during pregnancy (aOR=2.70, 95% CI: 1.63-4.46, p<0.001).
- **CONCLUSION:** Efforts to increase women's knowledge on IFA supplementation through community based education will increase women's compliance of taking IFA supplements. Strengthening counselling services on potential side effects of IFA supplementation and ways to manage them will also help to improve compliance.
- **KEYWORDS:** iron/folic acid supplementation; knowledge; compliance; Indonesia.

Millennium Development Goal 5: Afghanistan in Focus

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- **BACKGROUND:** An estimated maternal mortality ratio (MMR) of 1,600-2,200 was reported in 4 Afghan provinces in 2002. Badkshan province recorded highest MMR of 6500. Millennium Development Goal 5 (MDG 5) aimed to improve maternal health between 1990-2015 by (a) reducing MMR by three quarters from the baseline and (b) achieving universal access to reproductive health. In Afghanistan, MDGs were adopted in 2005 with a deadline of 2020. All six indicators used to monitor and evaluate MDG 5 showed positive change. Three of them were on target: MMR, number of births attended by skilled birth attendants (SBA), and antenatal coverage. MMR target of 400 by 2015 was reached by 2010. SBA attended birth increased by 41%. Antenatal coverage rose by 48%. The other 3 indicators are slower to change. Afghanistan adopted several strategies to reach MDG5: (i) training to increase the number of midwives, community nurses and doctors, (ii) availability of comprehensive care at all levels of healthcare facilities and (iii) better data collection methods.
- **CONCLUSION:** This first-of-its-kind review involving Afghanistan explores maternal mortality in the context of MDG 5, the past and present conditions of maternal health, factors that impact MMR and concludes with suggesting future directions.
- **KEYWORDS:** MDGs; maternal mortality; Afghanistan; midwifery; skilled birth attendants; antenatal care; and protracted war

The Effectiveness of the Maternity Public Health Nursing (MPHN) Module on Increasing the Nurses's Knowledge, Attitude & Skills on Maternity Nursing Care in the Community: A Study in District of Cianjur

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- **BACKGROUND:** Prevention of complication of pregnancy, childbirth, and postpartum requires early intervention started right from the beginning of pregnancy. This is indispensable to avoid maternal deaths.
- **OBJECTIVE:** This study aimed to evaluate the effectiveness of MPHN training on the knowledge, attitudes, and skills of the selected Public Health Center nurses in providing maternity nursing care in the community in Cianjur District. Objective of the study is to assess the impact of the MPHN training module on the level of knowledge, attitudes and skills of health center nurses.
- **METHODS:** This study used a pre- and post-test with control group design, involving 20 nurses which were divided into 10 nurses each in both the control group and in the intervention group. The intervention group received training using MPHN module for 12 weeks, meanwhile the control group received general training PHN.
- **RESULTS:** There were significant differences in scores of the knowledge, attitudes and skills between the intervention and the control group.
- **CONCLUSION:** The MPHN training module was likely to improve knowledge, attitudes, and skills of maternity caring among the nurses. A further study is suggested to evaluate the impact of MPHN training module on the utilization of health care facilities by high-risk pregnant women.
- **KEYWORDS:** MPHN training module; knowledge; attitude and skills on maternity nursing; nurses in public health centers

Oral Presentation:

MENTAL HEALTH

A Policy Review Relating to Support for Carers of People with Serious Mental Illness in Indonesia

Authors: Herni Susanti, Karina Lovell, Hilary Mairs

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- **BACKGROUND:** Government policies and legislation can influence the mental health of the population, including carers of people with serious mental illnesses. Recently mental health policy in Indonesia has been focused on the human rights of people with mental illnesses, and this may explain why there has been little emphasis on supporting carers in Indonesia.
- **OBJECTIVE:** A policy review was conducted to identify government guidance related to directives for mental health services to support carers of people with serious mental illness in the country.
- **METHODS:** A systematic review approach was undertaken for 15 relevant documents related to policies, standards, and guidelines of mental health services for carers of people with serious mental illnesses in Indonesia.
- **RESULTS:** The findings of this policy review suggest that there are significant challenges ahead for mental health services in Indonesia to support the carers on behalf of their needs and wellbeing. The crux of the matter is to involve the carers in services, yet (still) clear and strong policies to support them are unavailable. There have even been policies that should be useful to professionals, carers and service users; yet problems to access these documents may exist. Information from this policy review can enhance understanding about current mental health services in Indonesia. It is also a valuable source to direct an investigation about what Indonesian carers want from the services.
- **CONCLUSION:** It is meaningful to have recommendations, so as to respond to the needs which are practical and realistic in adjusting to the country's own limitations in terms of policy support and information access.

Factors Affecting Treatment and Rehabilitation among Drug Users in Ten Cities of Indonesia in 2014

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- **BACKGROUND:** Drug-use prevalence in Indonesia remains 2.4% at household level within ten years and below 0.5% drug dependence in year 2008, but high impact on national socioeconomic loss. Recognizably, treatment and rehabilitation (TR) can reduce drug-use demand. Survey revealed only 10% of drug-addicts contacted TR, although programs have been delivered by government or non-government institutions, then it questions on factors affecting access to TR among drug-users.
- **METHODS:** The study employed secondary data analysis using 2014 NNB-CHRUI survey result in 10 of 14 selected cities in Indonesia which covered 1411 drug-users chosen by respondent-driven sampling interviewed using structured questionnaire. Binary logistic regression shows adjusted odds ratio as association coefficient.
- **RESULTS:** The result shows that 14.7% of respondents reported accessing to TR in their lifetime, ranging from 5.4% in Mataram and 35% in Jakarta. Advanced analysis revealed factors comprising of support from family and friend (OR 3.7 with 95%CI is 2.6-5.5), involved in outreach program, and self-treatment, each having similar effect (OR 2.7, with 95%CI is 1.8-4), and perception on TR program efficacy (OR 1.9 with 95%CI is 1.2-2.9).
- **CONCLUSION:** Since community including family contributes to access to TR, therefore program has to empower drug-user's family, friends, and neighborhood, in community-based activities.
- **KEYWORDS:** drug-use; access; treatment-rehabilitation; Indonesia

Children's Self Acceptance of Single Mother in Moslem Family

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- **BACKGROUND:** This study describes the child's self acceptance in Moslem family single mother in a phase of adjustment to life changes experienced.
 - **METHODS:** This study used qualitative methods which take 15 subjects who live in Aceh, NTB, Bandung, Depok, Bogor, Jakarta, Bekasi and Tangerang. Data collected by in-depth interviews to explore more comprehensive data.
 - **RESULTS:** The results of this study indicate that self-acceptance to children from families of Moslem single mother influenced by factors of maternal education and the environment. The concept of self-acceptance is also established with the passage of time associated with the healing process of trauma and recollecting the events of separation of their parents, either due to death or divorce. In addition, the reception themselves greatly affect the process of achieving the ideals in which they can be more focused to achieve it.
 - **KEYWORDS:** self-acceptance; a single mother Moslem
-

Stigma and Discrimination of Mental Illness Patients around the World: A Review

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- **BACKGROUND:** In response to high level of stress and changing environment, the number of depression, schizophrenia and psychosis are rising. Unfortunately, this condition is worsen by the stigma and discrimination of the mental illness patients from their society.
- **OBJECTIVE:** The objective of this paper is to compare and describe several cases of stigma and discrimination experienced by the patients and their caregivers in several countries.
- **METHODS:** This is a review study by comparing and analyzing several cases of stigma and discrimination reported in China, India, Brazil and United Kingdom.
- **RESULTS:** In this globalization era, stigma and discrimination of the mental illness patients are still in the perception of many population around the world. Both the patient and caregiver experience stigma and discrimination within their community. The level of stigma and discrimination from one place could be different to another place regarding of the demographic distribution and cultural perception regarding mental illness patients. Community approach are important as to reduce the stigma and discrimination in the community. It is important therefore to apply specific approach in school setting to build mutual understanding between teachers, parents, students and patients.
- **KEYWORDS:** global; mental; health; stigma; discrimination

The Effect of Family Psychoeducation Therapy in Taking Care of Pasung Client

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- **BACKGROUND:** Pasung is a method of installing a log wood around someone's hands and/ or feet, being chained or bounded, detached in a remote area either inside the house or in the forest. The family of pasung client often feels the burden from taking care of the client. There were the reasons of the family to do pasung are to avoid the violence behavior, suicide and the client's attempt to runaway. Another important reason is the inability of the family to take care of client with mental illness. Family Psychoeducation Therapy is a method of family therapy which is developed by NAMI (National Alliance for Mentally Ill) to give support to the family.
- **OBJECTIVE:** The purpose of this research were to identify the effect of the Family psychoeducation (FPE) to family burden and ability in taking care of pasung client and to identify the independency level of pasung client in self-care after received the nursing care about self-care deficit.
- **METHODS:** This research used a quasi experiment design with a pre post test without control group approach. The study was carried out in 8 community health centers (Puskesmas) in Bireuen District using 20 families as total sampling. FPE was carried out within 5 sessions while nursing care about self-care deficit was conducted in 4 sessions.
- **RESULTS:** Dependent T statistic test's result showed that there was a significant decrease in family burden and a noticeable increase in client's independency after receiving FPE. The client's independency (daily activity, social activity, problem solving ability, and medical treatment) in self-care was increased significantly after received the nursing intervention about self-care deficit.
- **CONCLUSION:** The recommendation is FPE to the family with pasung client can be done in the psychiatry division in Puskesmas to achieved 'Aceh pasung free'.
- **KEYWORDS:** client's independency; family's abilities; family burden; family psychoeducation

The Effect of Generalist Therapy to Symptoms, Social Skill and Self Sufficient of the Patient's with Social Isolation

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- **OBJECTIVE:** This research have done to know the effect of generalist therapy for symptoms, sociability and self-sufficient of the patient's level of social isolation.
- **METHODS:** The design used pre-experimental with pre-post one group. The population used is the social isolation of patients who were in the area of North 3rd Denpasar Health Center and East 2nd Denpasar Health Center. Sample of 30 respondents were given 3 session meeting of generalist therapy and measured the symptoms, social skills and level of self-sufficient before and after therapy.
- **RESULTS:** Results show that there are difference in the average symptoms, ability and self-sufficient of the social isolation of patients before and after therapy generalist whereas the symptoms decreased by 2.03, social skill increased by 3.74 and self-sufficient increased by 1.67. In generalist therapy, the patient is assisted to identify the causes of the unwillingness to interact with the environment, identifying the advantages of having a friend and losses do not have friends and help gradually to interact starts with one person, two people, family environment and the environment outside the home.
- **CONCLUSION:** Support is done gradually can help patients improve their confidence so that the desire to interact with the environment to be increased.
- **KEYWORDS:** social skill; symptoms of social isolation; self sufficient

Effect of Communication Skills Improvement Program for Depression Prevention: A Randomized Controlled Trial

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- **BACKGROUND:** Depression symptoms are serious problems that cause morbidity and mortality worldwide. The problems are common and potentially serious problems facing all Thai people including rice farmers. Rice farmers are vulnerable workers at risk for poor mental and physical health. Prevalence of depression among Thai rice farmers were high along with many risks affecting their depression symptoms such as communication style with their family also affect depression symptoms. For this study, health education programs on depression prevention corresponding to improve communication skills were developed.
- **OBJECTIVE:** This study aimed to determine the effectiveness of an education program including communication skills improvement in family.
- **METHODS:** In this randomized control study, 100 rice farmers at risk of depression symptoms were randomly assigned into two groups: communication skills improvement in family (n=50) and control group (n=50). Educational intervention includes one 90-minute session and two follow-up sessions at home in accordance with Social-Cognitive theory. The participants were asked to fill out the questionnaires to measure the baseline prior to the interventions and four weeks later, immediately after intervention and follow up. The data were analyzed through descriptive statistics, Repeated Measures ANOVA, and t-tests.
- **RESULTS:** The mean age among participants was 48.07 ±11.50 year and include 53% female. The communication skills training in family group, the depression symptoms reduced from 50 to 32 individuals (36%) in the following up stage. There was significant improvement across time in the mean of depression symptoms scores ($p < 0.05$). There were significant differences in the mean's constructs of the Social-cognitive theory ($p < 0.05$).
- **CONCLUSION:** Design and execution of training program based on social cognitive theory can lead to promote mental health, especially reducing depression symptoms among rice farmers who are at risk of depression. The health education program on communication skills training showed solid potential in improving the mental health among depressed rice farmers.
- **KEYWORDS:** depression; prevention; farmers; communication skills; intervention

Emotional Problems in High School Students in Jakarta

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- **BACKGROUND:** Indonesia health research (2013) disclosed emotional disorder had higher prevalence (6%) mostly were from aged 15 to 24 years, compared to other types of mental health disorder. Looking at 2007 report, emotional disorder in Jakarta was numerous (14%) than national figure (12%). This emotional disorder may lead to depression that associates with suicide as highest death cause among population aged 15 to 29 years. Thus attending to adolescence group, particularly in school, is a priority to improve their general health.
- **OBJECTIVE:** To describe the prevalence and factors of emotional problem among students of three high schools in Jakarta.
- **METHODS:** An advanced analysis using data sourced from a survey done in two public high schools and one vocational high school purposively taken in 2015 by the Health Ministry in South Jakarta. All students of first and second grade, almost similar in size per school, were assessed using self-administered SDQ questionnaire for measuring emotional problem, which categorized into three groups. Analysis utilized polynomial logistic regression to data of 1387 students to perform adjusted odds ratio.
- **RESULTS:** Respondents' gender was nearly balance in number with age was 15 years in average. Emotional problem was different by gender. Females had high prevalence, which were 21.67% abnormal and 14.67% borderline, while in males were 6.35% abnormal and 6.61% borderline. Females had likelihood almost 4 times (95% CI was 2.56-5.72) for being abnormal bigger than males. Public school students had up to threefold of risk to suffer emotional problem compared to vocational school students.
- **CONCLUSION:** School-based program in Jakarta addressing emotional disorder must be developed using gender-base design. Follow-up study needs to be done to confirm different mental health problem occurred in public and vocational high schools.
- **KEYWORDS:** emotional problem; high school; prevention; Jakarta

Overview to Meaningfulness of Life of Muslim Single Mother: A Qualitative Approach

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- **OBJECTIVE AND METHODS:** This study aims to explore the meaningfulness of life of Muslim single mother with qualitative methods through in-depth interviews to examine the field data in order to discover the meaning behind the facts comprehensively. Subjects numbered twelve people, who are either a divorcee or a widow and live in six different areas: Lombok (West Nusa Tenggara), Bekasi, Bogor, Bandung, Depok and Tangerang.
 - **RESULTS:** The results suggest that subjects are able to find meaningfulness of life through realization of sources of the meaning of life, which are creative values, attitudinal values, experiential values, and hopeful values. Their meaningfulness of life gained by perform the role as breadwinner, as well as fulfill their parental responsibility to raise and educate their children. Furthermore, the searching of meaningfulness of life also indicates a mentally healthy individual according to motto of logotherapy (meaning of life theory) which is use in this study, "health through meaning".
 - **KEYWORDS:** meaningfulness of life; muslim single mother
-

The Needs of Carers from Hospital-based Mental Health Services in Indonesia

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- **BACKGROUND:** One of major issues of mental health provision in Indonesia is related to services for carers of people with serious mental illnesses. Very basic and limited services have been offered to the carers. Understanding the needs of the carers is of key importance in developing appropriate support for them.
- **METHODS:** This was a qualitative study to explore the carers' needs from mental health hospital services in the country. Seven focus groups with carers were undertaken (n=33), recruited from two government mental health hospitals in the capital city of Indonesia. The data were analysed by using framework analysis and resulted in four themes: experiences in caregiving, carer needs and expectations from mental health hospital services, current support for carers, and recommendations for service improvement.
- **RESULTS AND CONCLUSION:** The study has provided a summary of the strategies emerging from the data to improve hospital-based support for carers in Indonesia. The scope of improvement was relatively narrow as the carer participants mainly discussed emotional and informational support provision. However, the ideas revealed were practical because they were derived from first-hand experience of using the hospital services. The suggestions has given an insight of how feasible it would be if the structured established family interventions were applied in the country, given that they are normally time consuming, costly and require highly trained professionals. More importantly, the depicted expectations were sourced from those who became the target of the support development. Therefore, if the suggestions are implemented, the support developed will be more likely to become need-based services for Indonesian carers.

Oral Presentation:

NON COMMUNICABLE DISEASES

Exercise Intervention on Executive Function Diabetes Mellitus Type 2 with Mild Cognitive Impairment

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- **BACKGROUND:** The number of people with diabetes mellitus (DM) in Indonesia is 8.4 % and will be 21.3% by 2030. An association between type 2 DM and mild cognitive impairment at earlier onset, duration and severity is noted. Type 2 DM induces executive function deterioration due to cells neuron destruction and on the contrary exercise reduces its process. The crucial factor to reduce the risk of cognitive impairment in type 2 DM is exercise.
- **OBJECTIVE:** The aim of the study was to determine whether the exercise protects the progression of mild cognitive impairment into moderate-severe cognitive impairment to those with type 2 DM.
- **METHODS:** A true experimental study with pre and posttest group design was used. 17 subjects of type 2 DM with mild cognitive impairment were recruited for each group. Montreal Cognitive Assessment and Trail Making Test B were used as a screening tools of cognitive impairment.
- **RESULTS:** Pretest result showed cognitive impairment both in cases (64.7%) and controls (52.9%) whereas post test showed decreasing proportion in cases (5.9%) and on the contrary increasing proportion in controls (58.8%) The Mc Nemar test showed a significant difference of executive function between cases (pretest and posttest in intervention group, $p=0.000$) without any significant difference between controls (pretest and posttest in non-intervention group $p=1.000$).
- **CONCLUSION:** Executive function to subjects who exercise regularly (twice a week for 1 month consecutively) improving executive function by neuroplasticity.
- **KEYWORDS:** executive function; exercise; type 2 diabetes mellitus with mild cognitive impairment

The Effect of Diabetes Mellitus Diet Standard Modification on Diabetic Patients Soft Food Plate Waste at RSUPN Dr. Cipto Mangunkusumo in 2016

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- **OBJECTIVE:** The objective of this study was to examine the effect of diabetes mellitus diet standard modification on diabetic patients decreased plate waste on soft food.
- **METHODS:** Patients plate waste measured by food weighing method. Patients characteristics, appetite, and perception towards hospital food's quality measured by interview and questionnaire. Time series quasi experimental study was conducted on twelve subjects in third class wards on RSCM A building. Subjects plate waste, appetite, and perception towards hospital food's quality were observed for three days. On the 1st day, patients were given foods based on RSCM's diabetes mellitus diet standard. After that, intervention were given to patients that was food based on RSCM's diabetes mellitus diet standard modified for soft food on the 2nd up to 3rd day. The modification were the reduce of porridge portion which calories loss was substituted by giving additional snack. The plate waste before and after intervention were compared afterwards.
- **RESULTS:** The results showed that patients plate waste after intervention were significantly less than those before intervention ($p=0,001$). The overall mean plate waste after intervention (571+381,6 gr) was 31,9% lower than before intervention (839+471 gr).
- **CONCLUSION:** The implementation of this modified diet standard can be an alternative to minimize plate waste on diabetic patients with soft food diet.
- **KEYWORDS:** plate waste; diet; soft food; diabetes mellitus

The Risk Health Status of Medical Examination in Indonesian Hajj Pilgrims

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- **BACKGROUND:** Around 2 million muslims from 184 countries gather in Saudi Arabia's holy city of Mecca for the annual hajj pilgrimage. Annually more than 50% from 168.800 Indonesian hajj pilgrimage are with high risk health status. Hajj medical examination is a method of identifying the health status as base characterization, prediction and determination of the elimination of health risk factor. There are four category of health risk : 1. White (The age is less than 60 years old without disease), 2. Green (The age is more than 60 years old without disease), 3. Yellow (The age is less than 60 years old with disease) and 4. Red (The age is more than 60 years old with disease).
- **OBJECTIVE:** The aim of this study was to review the risk health status of medical examination.
- **METHODS:** This research conducted a descriptive method to the 154.239 ordinary hajj pilgrims in 2016. Design of the study was cross-sectional studies. Secondary data was taken from "Siskohatkes" of Ministry of Health Indonesia on 8th September 2016.
- **RESULTS:** The result was that most of the Indonesian hajj pilgrims were in high risk health status 102.177 person (66,3%), divided into yellow 56.909 person (36,9%), red 34.958 person (22,7%) and green 10.310 person (6,7%).
- **CONCLUSION:** To overcome the high risk health status of Indonesian hajj pilgrim are increasing examination, promotive and preventive since registration of hajj, increasing the quality of health services in Arab Saudi.
- **KEYWORDS:** risk health status; hajj pilgrim; medical examination

A Study of Factors that Delay Hospital Arrival of Patients with Acute Stroke

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- **BACKGROUND:** Stroke is a medical emergency. The time frame for effective treatment of stroke is about three hours. Thus, it is important to know that urgent intervention can limit the cerebral damage. Surely it would be difficult to do if the patient did not arrive at hospital just in time.
- **OBJECTIVE:** Therefore, there is an urgent call to identify factors related to the arrival time of stroke patients.
- **METHODS:** This study used a quantitative correlation with cross sectional study and was conducted at a Rumah Sakit Pusat Otak Nasional (RSPON), Indonesia National Brain center in Jakarta. The total respondents consisted of 30 family members who are responsible for patient care.
- **RESULTS:** There is a significant correlation between the knowledge of decision makers about the early signs of stroke and the arrival time of patients in RS PON ($p = 0,016$), conversely there was no correlation between age ($p = 0,423$), gender ($p = 0,399$), education level ($p = 1,000$), ethnicity ($p = 0,936$), as well as traffic congestion ($p = 1,000$) with hospital arrival time of stroke patients.
- **CONCLUSION:** The understanding about recognizing early signs of stroke is the most important variable needed to be solve through health education in community or public facilities on how to identify and recognize the stroke symptoms so that the stroke patients can get treatment immediately.
- **KEYWORDS:** acute stroke; delay hospital arrival; demographic factors

Determinant Factors Influencing Cancer-Related Fatigue among Indonesian Children

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- **BACKGROUND:** Most children with cancer suffer from fatigue. Unfortunately, fatigue still becomes a consequence of cancer therapy due to ineffective fatigue management. Fatigue could impact children's quality of life.
- **OBJECTIVE:** This research aims to identify risk factors that contribute to cancer related fatigue in children undergoing chemotherapy.
- **METHODS:** Quantitative design with cross sectional approach was used to identify altered sleep, anxiety, and hemoglobin level in pediatric cancer which is predicted to cause fatigue. Among 73 children with cancer who met the criteria are children who were 3 to 18 years of age, who undergo cancer therapy, filled self-report questionnaires for PedsQL multi-dimensional fatigue scale, HADS of anxiety and depression, sleep alteration and hemoglobin level. Parent proxy was used for children younger than 7 years of age. Statistical analysis was using Spearman Rank, Pearson and linier regression analysis.
- **RESULTS:** Most of children are girls (61.6%), with average age was 10.5 years old (SD + 4.056; 95% CI = 9.56 to 11.45), average hemoglobin level was 11.35gr/dl (SD + 1.55), sleep problem average score was 31.05 (SD + 6.399); average anxiety level was 12.51 (SD + 6.406), and average fatigue score was 24.84 (SD + 11.357). Fatigue prevalence was 44.2%. Furthermore, altered sleep (p=0.038), hemoglobin level (p=0.021), and anxiety (p=0.011) have contributed to cancer related fatigue with R square = 18.5%.
- **CONCLUSION:** Nurses may assess anxiety, hemoglobin and sleep problems to identify fatigue in child who undergoes chemotherapy and treat the causative factors.
- **KEYWORDS:** cancer; chemotherapy; children; fatigue

Determinant of Increasing Waist Circumference in Indonesia

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- **BACKGROUND:** Cardiovascular disease has become the first cause of death in Indonesia. Many studies of the relationship between nutritional factors and cardiovascular disease have been conducted, especially with reference to increasing waist circumference, but studies to understand determinants of increasing waist circumference in Indonesia are lacking. There is an urgent need to gather information about various increasing waist circumference risk factors in Indonesia, which will allow policy makers to provide appropriate intervention programs.
- **OBJECTIVE:** The primary purpose of this study was to investigate determinant of increasing waist circumference in Indonesia.
- **METHODS:** A Basic Health Research study was undertaken in Indonesia in 2013 by National Institute of Health Research using multistage random sampling, total sample was 33. 294 from all provinces in Indonesia. Data were collected through interview using structured questionnaires, anthropometric measurements, biochemical blood analysis, and blood pressure measurements.. Multiple logistic regression analysis were performed to assess determinant of increasing waist circumference.
- **RESULTS:** Prevalence of increasing waist circumference in Indonesia is 11.9% in men and 45.7% in women. Multiple logistic regression analysis were performed to assess the association between risk factors and increasing waist circumference. The analysis showed that the risk of obese and overweight having increasing waist circumference were 12.2 times higher compare to normal weight, women 7 times higher than men, high fasting blood glucose 1.5 times higher than normal fasting blood glucose respectively.
- **KEYWORDS:** body mass index; sex; fasting blood glucose; increasing waist circumference

Prevention of Risk Factors for Non-Communicable Diseases through Community Empowerment (Case In Rural Communities in Yogyakarta)

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- **BACKGROUND:** Non-Communicable Diseases (NCDs) are the leading cause of death in the world. NCDs dominated cause of death in Indonesia, mainly in Yogyakarta.
- **OBJECTIVE:** This study aim to initiate a community intervention program through community empowerment to control risk factors for NCDs in Indonesia, especially in a rural area of Yogyakarta.
- **METHODS:** This study used mixed methods with concurrent nested strategy. Data were collected by focus group discussions, in-depth interviews, observation, and questionnaire. There were 23 informants of community leaders and health workers. The data from two methods are mixed during the analysis phase.
- **RESULTS:** The process of community empowerment for the prevention and control of NCDs in Modinan are as follows: 1) building public trust through meetings with community leaders to discuss about NCDs; 2) raising public awareness through health cadre meetings and conducting FGD; 3) developing health promotion programs; 4) organising health promotion activities on "CERDIK Behavior" includes: routine medical chek up, not smoking doing physical activity, a balanced diet, adequate rest and manage stress 5) initiation to maintenance program.
- **CONCLUSION:** Empowerment is one of health promotion strategies to prevent risk factors for NCDs. The involvement of community leaders, positive perception and knowledge about NCDs of health cadres determine the success of the program.
- **KEYWORDS:** risk factors for non-communicable diseases; health promotion; community empowerment

Stress Factors on Hypertension Occurrence based on Age Group >45 Years in Salted Fish Industry Area, Palembang 2016

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- **BACKGROUND:** Stress is a factor that can affect variety of diseases, including hypertension.
- **OBJECTIVE:** The purpose of this study was to determine the stress factor as a determinant factor of hypertension based on age group >45 years.
- **METHODS:** This study used cross-sectional design with 53 respondents. The measured variable is the level of stress, blood pressure, and other factors by interview. Data analysed by using multiple logistic regression.
- **RESULTS:** The results showed that stress had no relationship with hypertension (OR = 0.02, 95% CI 0.001 to 0.419) after controlled by smoking, fatty food consumption, physical activity, salted fish consumption, BMI index, and sex.
- **CONCLUSION:** So it can be concluded that there is no relationship between stress and hypertension in the age group ≥ 45 years of age in the salted fish industry area.
- **KEYWORDS:** hypertension; stress factor; age group

Determinant Factors Correlated to National Coverage of Visual Inspection with Acetic Acid (via) in Indonesia 2014

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- **BACKGROUND:** Cervical cancer is a major public health problem. Globally, cervical cancer is the fourth most common cancer in women. In Indonesia, it was the second most sizeable cancer following breast cancer.
- **OBJECTIVE:** Actually, cervical cancer can be identified sooner with early detection instruments; however, Indonesia still has limited program to control it. In 2007, the government launched VIA, it is suitable to be applied in puskesmas level. There are many reasons i.e. simple approach that is minimally reliant upon infrastructure, low start-up and sustaining costs, any of health care providers can perform the procedure, test results are available immediately, requires only one visit, and the possibility to integrate VIA screening into primary health care services. To minimize the information gap between the screening coverage of VIA in 33 provinces and the determinant factors, we executed this study.
- **METHODS:** The study utilized ecology design study and secondary data source. Study sample was aggregated data of women aged 30 to 50 years old, sexually active in all puskesmas in 33 provinces, and recorded in routine report until 2014. We analyzed using Spearman correlation test, and also simple linier regression.
- **RESULTS:** The coverage screening of VIA in Indonesia was 17 per 1000 women (1.7%), while this was miniscule from the national target of 10%. More specifically, there is massively correlation between cryotherapy treatment and screening coverage of VIA ($R_s=0,661$), and also among suspected diagnosed cervical cancer and outcome variable ($R_s=0,549$).
- **CONCLUSION:** The increasing of screening coverage of VIA in Indonesia will definitely escalate the early identification of cervical cancer that leads to a profound therapy. This will affect the mortality and survival rate of high-risk women in the nation. To grow the screening coverage of VIA, the education should shoulder some responsibility through proper excellent curricula for midwives and medical schools.

Oral Presentation:

NUTRITION

Corncoobs Biochar to Minimize Contamination of Endosulfan Residues in Rice Products toward Healthy Food

Authors: Elisabeth Srihayu Harsanti, Haryoto Kusnopranto, Matus Suparmoko, Asep Nugraha Ardiwinata

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- **BACKGROUND:** Endosulfan is one of organochlorine insecticide that it was persistent, bioaccumulative, and toxic. This insecticide used for agriculture protection in cotton crops, vegetables, and food crops include rice, during green revolution until 2001. Endosulfan residue can be carried over into the rice; it could disruptive human health potentially.
- **OBJECTIVE:** This research aimed to study the effect and optimal dose of corncob biochar to reduce endosulfan residue in rice product.
- **METHODS:** A Green house experiment with seven treatments of corncob biochar-organic manure and three replications was conducted in paddies soil contaminated from Plandi, Jombang District, East Java, Indonesia. Pot experiment and laboratory analysis were conducted at IAERI (Indonesian Agricultural Environment Research Institute) in May-October 2015.
- **RESULTS:** The result showed that corncob biochar-organic manure can reduce significantly of α -endosulfan (probability= 0.0002) and endosulfan sulphate (probability=0.0265) residue in rice; 67-90% reducing of α -endosulfan residue and 68-84% reducing of endosulfan sulphate residue respectively. The both optimal dose of corncob biochar-manure are 1:4 ratio. Application of corncob biochar-manure with 1:4 ratio can increase rice product 4.3% (corncob biochar-chicken manure) and 9.7% (corncob biochar-cow manure) respectively.
- **CONCLUSION:** Therefore, corncob biochar-organic manure technology can improve quantity and quality of rice product in paddies soil contaminated of endosulfan that it safe for human consume.
- **KEYWORDS:** corncorb biochar; α -endosulfan; endosulfan sulphate; healthy food

Eating Pattern in Toddlers of Urban and Semi Urban Community Study in Kampung Melayu of Jakarta Province and Bantul of Yogyakarta Province, Indonesia

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- **BACKGROUND:** Toddler feeding behavior is influenced by the availability of food, attitudes towards food, portion sizes, values of culture on type of food and its processing, feeding time, and how feeding done by parents.
- **OBJECTIVE:** It is interesting to know toddler's behavior patterns of food consumption in urban and semi urban slum.
- **METHODS:** The study was conducted in Kampung Melayu (Urban Slum) and Bantul (Semi Urban) using qualitative approach Rapid Assessment Procedure (RAP); informants were mothers or caregivers, health workers and local community leaders.
- **RESULTS:** Study results showed knowledge on exclusive breastfeeding in semi-urban areas is better than urban. There was no difference in type of food for adults and children. For urban areas, parents tend to give children freedom to determine type and amount of food. This caused poor diet and unbalanced nutritional intake. The situation coupled with inability of mothers to cook at home due to limited space for cooking. Buying food is considered more practical and relatively cheaper. In Semi Urban, mothers were cooking at home and buy food occasionally. In addition to lack of access to food seller, they also have space for cooking. Cooking considered to be more efficient: reduce flavorings and preservatives; control flavor and food hygiene; and better food variation. No specific timetable in provision of food to children in Urban area. In Semi Urban, children eat 3 meals consisting of breakfast, lunch, dinner and snacking. Milk, considered as snack and given to children under 3 years; children over 3 years considered no longer needing milk. Meal can be done anywhere; eating in dining room is not an essential as limited space in urban houses. Children can have meal anytime.
- **CONCLUSION:** Health offices need to give attention to children's feeding patterns, especially for semi urban areas, given the importance of appropriate food intake for children as young generation.

Food Insecurity Associated with Double-Burden of Malnutrition among Women in Reproductive Age in Rural Indonesia

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- **BACKGROUND:** Double burdens of malnutrition among women have occurred across most developing countries including Indonesia.
- **OBJECTIVE:** This study described and compared the associated factors among overweight and underweight of women in reproductive age (WRA) in rural Ciampea, Bogor, West Java.
- **METHODS:** This cross-sectional study surveyed the nutritional status of 575 mothers (16-49 years-old) who were having under-two years-old children. We assessed nutritional status by measuring body-mass-index (BMI) and mid-upper arm circumference (MUAC), food security status by US-Food Security Survey Module (US-FSSM), dietary intake by single 24-H dietary recall.
- **RESULTS:** The prevalence of underweight, overweight and obese among this group was 10%, 15.8% and 34.2%, respectively. Food security status was the single factor associated with overweight ($p=0.026$). However, after adjustment with other factors, food insecurity with hunger was found to be the highest risk of being underweight (AdjOR=3.95; 95%CI: 1.46-10.64). Contrarily, it contributed to lower chances of being overweight among WRA (AdjOR=0.40, 95%CI: 0.21-0.77).
- **CONCLUSION:** In conclusion, food security status in this population associated with both under- and over-nutrition, in addition to some other factors such as age and education level of WRA. Ensuring availability and affordability of nutritious food together with proper nutrition education to rural communities might be worthwhile to improve the present conditions.
- **KEYWORDS:** women in reproductive age (WRA); maternal health; double-burden of malnutrition; food security; rural community

Food Pattern and Availability of Fruits and Vegetables among High School Students

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- **BACKGROUND:** Most of Indonesian teens (93.7%) had a lack of fruits and vegetables consumption (Balitbangkes, 2013). This fact would give contribution to increasing number of degenerative disease prevalence later on. It is important to know the variety of teens consumption on fruits and vegetables especially its food pattern.
- **OBJECTIVE:** The objective in this study was to investigate the food pattern and availability of fruits and vegetables among high school students.
- **METHODS:** It was a cross-sectional study sited at SMA 8 Pekanbaru on January – April 2015. 65 high school students were randomly selected among 844 students. The food pattern of fruits and vegetables variable consist of type, frequency and amount of fruits and vegetables consumption were taken using FFQ questionnaire and 2 x 24 hours' food recall in non-consecutive days (1-day week day, 1-day week end). Availability of fruits and vegetables were using semi-structured questionnaire regarding availability of fruits and vegetables at school and home. All data were analyzed descriptively using data processing software.
- **RESULTS:** Type of fruits they mostly consumed were orange, apple and banana. Spinach, water spinach and chayote were the mostly consumed vegetables among respondents. Only half of students (60% and 55.38%) ate more than 2x fruits and vegetables respectively. About 43.08% students ate less than 200 grams per day and 41.54% students ate less than 300 grams per day. The availability of vegetables was mostly at home (87.69%) rather than at school (29.23%). On the other hand, the availability of fruits was almost the same between at home and school (35.38% and 32.3% respectively).
- **CONCLUSION:** It is necessary to give nutrition education regarding the important of fruits and vegetables consumption especially wide variety types of fruits and vegetables.
- **KEYWORDS:** fruits and vegetables; adolescent; food pattern

The Positive Deviance Behavior among Families Who Don't Have Stunted Infant through Positive Diviance Inquiry: Qualitative Case Control Study

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- **BACKGROUND:** Stunting is a major nutritional problem in Indonesia and Positive Deviance (PD) is an alternative approach to address it.
- **OBJECTIVE:** This study aimed to explore the positive deviance behavior among family who do not have stunted infant using Positive Deviance Inquiry (PDI).
- **METHODS:** The design of this study was case control that nested research on Child Growth Cohort Study that was conducted by the Center for Intervention Technology of Public Health, Ministry of Health, in Bogor City. The case was infant (aged 0-11 months) who have HAZ z-score increased from birth and not stunted and the control was infant who have HAZ z-score decrease and stunted. The data were collected using qualitative approach. Informants in this study were infant's mother, infant's father, and infant's grandmother. The number of not stunted infant in this study was 8, while stunted infants were 12. Qualitative data were collected using in-depth interview method, Focus Group Discussions (FGD) and observation using an opened-questionnaire. Data were analyzed using thematic analysis.
- **RESULTS:** The results showed that PD behaviors among families who don't have stunted infant (age group 0-6 mo) were early breastfeeding initiative, exclusive breastfeeding, the frequency of breastfeeding, eye contact between mother and baby during feed the baby, also if the baby was sick mother will feed the baby more often. Positive Deviance behaviors among families who don't have stunted infant (aged group 7-11 mo) were babies consume diverse food and frequent snacks, mothers feed the baby by themself (eye contact during feed the baby). Besides, mothers also persuade the infant to eat (by playing, seeing the pets, holding the baby), if the infants were sick, their mother will feed them more often.
- **CONCLUSION:** These findings suggested that to overcome this problem should be focused on eating behavior, caring and health care pattern.
- **KEYWORDS:** stunted; Positive Deviance Inquiry (PDI); infant

Dominant Factor Associated with Behavior of Street Food Consumption in Student of Selected Public Elementary School in Jakarta, 2015

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- **OBJECTIVE:** The aim of the present study is to determine dominant factor associated with behavior of street food consumption among selected public elementary school students.
- **METHODS:** This study uses a cross-sectional study design using primary data on 422 respondents grade 4-5 in 6 public elementary schools located in 5 different regions in Jakarta.
- **RESULTS:** The results showed 65.6% of students had poor behavior of street food consumption. The analysis showed association between breakfast habits, packed lunch practice, poor parental knowledge in nutrition and street food, the amount of student's pocket money, peer influence, and media influence with children's behavior of street food consumption, as interaction between the amount of pocket money and student's attitude towards street food selection is the dominant factor.
- **CONCLUSION:** Researcher suggest schools to held nutrition education for students and parents and require students to bring food and drinks from home and parents to restrict the provision of pocket money as well as restrict and supervise the television watching habits of children.

Stunting is Not An Important Health Issue: Community Perception in Indonesia

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- **BACKGROUND:** To address the persistent challenge of childhood stunting in Indonesia, the Millennium Challenge Corporation is collaborating with the Government of Indonesia to carry out a National Nutrition Communications Campaign (NNCC). Formative research was implemented as a foundation for the communications campaign strategy.
- **OBJECTIVE:** The research objectives are to understand the knowledge, attitude, and practices of nutrition-related issues, especially those related to stunting.
- **METHODS:** The study area covers five regions (Sumatera, Java, Kalimantan, Nusa Tenggara and Sulawesi), in which 10 provinces and 11 districts were selected. The quantitative survey was conducted using structured questionnaires and qualitative study was conducted through Focus Group Discussion, In-depth interview, and observation. Subjects included mothers of young children, husbands, pregnant women, grandmothers, and local officers.
- **RESULTS:** This study found that almost all respondents were unfamiliar with the term "stunting." The term most recognized by respondents was "short". Hereditary factors were mentioned by majority of respondents as a cause of stunting. The most frequently stated effect of stunting was no effect, respondents perceived that stunting was not a health problem. Informants and focus group participants stated that short stature was not a problem as long as the child appeared to be healthy. They said it was normal for young children to be short; later they would catch up. Informants said that health personnel or cadres never informed them about the significance stunting. Informants from health center stated that public had not been informed about stunting. This was caused by a lack of knowledge about stunting among health personnel themselves, particularly on the causes and impact of stunting.
- **CONCLUSION:** However, although people still believed that stunting is caused by hereditary factors, cannot be prevented, and is not a health problem, the negative impact related to limited opportunities or difficulties in adulthood were known.
- **KEYWORDS:** stunting; community perception; health problem

The Effect of Cinnamons bark (*Cinnamomum bumannii*) against *Pseudomonas aeruginosa* on Mackerel

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- **BACKGROUND:** The one of sustainable goals is zero hunger, People need to consume nutritional food. Fish has high nutrient especially protein and affordable for low economic people. Proteins present in fish, especially the type of arginine, lysine and histamine prone to breakdown proteins, so that the fish can cause rapid decay than other foodstuffs. People need to keep nutrition of fish in longterm condition. The main cause of decaying in food is *Pseudomonas aeruginosa*. Therefore, Preservative material is needed in food naturally. Cinnamon (*Cinnamomum bumannii*) is used by the people of Indonesia for cooking and used as a traditional medicine for various diseases, it contains substance which can pursue bacteria growth.
- **OBJECTIVE:** The aims of this research is knowing minimum concentration of cinnamon as inhibitor against bacteria.
- **METHODS:** Design of study is experimental method, Concentrations of cinnamon are 0%;2%;4%;6%;and 8% which tested on Muller Hinton Agar (MHA) and also Most Probable Number Test (MPN) from fish sample.
- **RESULTS:** Based on tests conducted studies that cinnamon bark can be used as a natural preservative substance at a concentration of 8% of the weight of the food. Once applied cinnamon powder 8% in fish can be seen that the shelf life of the fish cinnamon bark is 9 hours.
- **KEYWORDS:** fish; leather powder cinnamon (*Cinnamomum bumannii*); concentration; time; MHA

Effects of Restrained, External, and Emotional Eating Styles to Weight Gain among Female Students at Faculty of Public Health, Universitas Indonesia

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- **BACKGROUND:** The continuous weight gain increases the risk of coronary heart disease.
- **OBJECTIVE AND METHODS:** This research was a six-week prospective cohort study aimed to identify the effect of restrained, external, and emotional eating styles to weight gain by controlling energy intake, physical activity, and social economy status. A total of 40 female students were assessed at three points within six weeks period. Eating styles were assessed by self-made questionnaire based on restrained, externality, and psychosomatic theories.
- **RESULTS:** There was a significant weight gain among female students 0,32 kg on average. Twenty five percent of respondents experienced changes in eating style, while the rest of them were consistent with one eating style. The significant effect to weight gain was only found in external eating before and after being controlled by energy intake ($p < 0,05$). This indicates that external eating, rather than emotional eating and restrained eating, drives weight gain among female college students. This study also found that the proportion of restrained eating was higher for normal weight than overweight, whereas emotional eating was higher for underweight than overweight, and external eating was higher for underweight than obese students.
- **CONCLUSION:** In conclusion, external eating may cause weight gain, yet restrained and emotional eating are not necessarily an effective way to control weight either. Therapies to stop weight gain epidemic are urgently needed.
- **KEYWORDS:** weight gain; restrained eating; external eating; emotional eating; cohort study

Fruggies: Integrated School Based Program to Increase Consumption of Fruit and Vegetable among School-aged Children in Depok, Indonesia

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- **BACKGROUND:** There are 93,6% of Indonesians aged 10-14 years old were reported eating fruit and vegetable (FV) less than five serving portions per day.
- **OBJECTIVE:** Fruggies, a school based program to increase consumption of FV among school-aged children in Depok, Indonesia.
- **METHODS:** The intervention will be given to fourth and fifth grader students in two elementary schools ($n=160$). The students will be given four intervention components in five months.
- **RESULTS:** Based on analysis of collected data, school based intervention programs show a significant level of increased consumption of FV in students. Fruggies is applicable because it is not expensive and is theoretically proven effective.

Resfeed-Play as a Form of Community Nursing Intervention on Children Aged 6-24 Months with Malnutrition In Srengseng Sawah Village

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- **BACKGROUND:** Toddlers are an at risk group prone to health problems including growth problems, one of which is malnutrition. Adequate nutrition in toddlers can promote the growth. Giving solid foods in toddlers can be done by feeding the active / responsive combined with the method according to the stage of playing toddlers.
- **OBJECTIVE AND METHODS:** This paper aimed to provide an overview of the intervention of Resfeed-Play as a form of community nursing intervention on children aged 6-24 months with malnutrition In Srengseng Sawah village. Implementation of the intervention Resfeed-Play performed in families and in society in nutrition post activities.
- **RESULTS:** The results of evaluation of Resfeed-Play is shown an increase in knowledge 24.2%, attitude and skills by 30.3% and 42.4% respectively. After intervention of 6 months, the mean of weight gain toddler was 0.95Kg. After further analysis the weight gain is significant with a P value of 0.000 ($P < 0.05$). Resfeed intervention-Play can increase body weight toddlers and can address the problems of malnutrition in children under five.
- **CONCLUSION:** Based on the results of this activity it is recommended to increase community empowerment through positive activities such as nutrition post in order to prevent and mitigate the problem of malnutrition in children under five.
- **KEYWORDS:** resfeed-play; community nursing intervention; children aged 6-24 months; complementary feeding; growth

Oral Presentation:

OCCUPATIONAL HEALTH & SAFETY

Analysis of Heat Stress Effect on Physiological and Psychological Automotive Manufacturing Workers at PT XYZ

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- **BACKGROUND:** PT XYZ is the manufacturing of automotive parts. The main activities was press and welding process, which in worker exposed to heat stress.
- **OBJECTIVE:** This study aimed to analyze the effect of heat stress on the physiological and psychological workers.
- **METHODS:** The study was conducted in May-June 2016 cross sectional approach, at 70 workers. The assesment physiological response through by measured the body temperature, pulse and urine specific gravity. Psychological assesment questionnaire subjective complaints with regard to heat stress. Using WBGT (Wet basal Globe Temperature) and TWL (Thermal Work Limit) as an index of heat stress were performing risk assesment on work place.
- **RESULTS:** Although heast stress index WBGT exceeds the threshold value, however TWL result in unrestricted area.Badly temeperature, pulse and urine specific gravity values, after shift work were increased. Subjective symptomp of workers welding as a psychological response. The symptomp were excessive thirsty, sweating, skin moist, heat prickly, muscle cramps in appropriate with the measurement results to an increase in pulse rate, temperature and urine specific gravity.
- **CONCLUSION:** Heat stress exposure from press and welding activities affected to physiological and psychological workers.
- **KEYWORDS:** heat stress; manufactur otomotif; physiological & psychological response

Factors Affecting Treatment and Rehabilitation among Drug Users in Ten Cities of Indonesia in 2014

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- **BACKGROUND:** Independently practicing midwives who provide services to the mother and their child for 24 hours a day, may lead to poor sleep . This can result in poor safety performance by midwives, such as injury and medical errors that occur to the midwife in Cimanggis District. Even though midwife spearheading of the health status of mothers and infants by lowering the Maternal Mortality Ratio (MMR) and Infant Mortality Rate (IMR), because 86% of births are attended by midwives. Likewise, research on the safety performance of the midwives is still slightly. Based on the interviews at the initial survey conducted in two midwives in Cimanggis, they feel pain and suffer HNP and did some medical error.
- **OBJECTIVE:** The aim of this study was to find the correlation between sleep quality on the safety performance of midwives in Cimanggis, West Java.
- **METHODS:** This is a quantitative analytical study with cross sectional design. Using Pittsburgh Sleep Quality Index (PSQI), FITBIT Actigraph, and midwives' safety inventory to measure the quality of sleep, and safety performance on midwives. This study took 50 sample by using total sampling technique.
- **RESULTS:** The results showed that 21 of midwives (42%) had injured, 23 of midwives (46%) did medical error, unsafe act of 26 midwives (52%), 23 of midwives (46%) had poor sleep, most of midwives' age are at 35 - 55 years old that is 20 person (60%), 26 person (52%) midwives' working experience \leq 5 years, 33 person (66%) midwives' working period > 12 hours, and 30 of midwives (60%) health status are not in a good condition. Actigraph showed that midwife's average quality of sleep was 4-5 hours. Poor sleep quality had a significant relationship with injury (OR 4.44 0.021), medical error (0.022 OR 4.45), and safety comprising behavior (0,027 OR 3.88).
- **CONCLUSION:** This study concluded that there was a correlation between quality sleep with Safety Performances on midwives practicing independently in District Cimanggis, Depok, West Java.
- **KEYWORDS:** sleep quality; fatigue; safety performance; actigraph; midwives

Associations between Personal Exposure of Particulate Matter 2.5 and hs-CRP Levels on Mechanic Officer in Pusat Pengujian Kendaraan Bermotor Unit Pulogadung and Ujung Menteng DKI Jakarta

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- **BACKGROUND:** Particulate Matter 2.5 (PM2.5) exposure is known to cause an increase in levels of high sensitivity C-reactive protein (hs-CRP). HS-CRP is a biomarker of inflammation and is a predictor of cardiovascular disease risk. HS-CRP levels with grades 3-10 mg/L is a high risk of cardiovascular disease, hs-CRP levels of 1-3 mg/L medium risk, and hs-CRP <1 mg/L is low risk.
- **OBJECTIVE:** This study aims to determine the relationship between PM2.5 exposure with hs-CRP levels.
- **METHODS:** The design of this study is cross sectional, comparing exposed and control groups. Exposure group is the population of the existing mechanic officer at the Pusat Pengujian Kendaraan Bermotor Unit Pulogadung many as 12 respondents and Unit Ujung Menteng 20 respondents. The control group was taken from the workers are not exposed to as many as 23 respondents. Measurement of PM2.5 performed using the IP-10 A Method Update. Levels of hs-CRP were analyzed by enzyme-linked immunosorbent assay (ELISA) and instruments Immulite 2000 high sensitivity-CRP.
- **RESULTS AND CONCLUSION:** The concentration of PM2.5 personal exposure ranged from 110.70 to 480.57 $\mu\text{g}/\text{m}^3$. 43.75% of respondents from exposure group had a higher risk of cardiovascular disease. The test results showed that the higher ranking PM2.5 levels higher mean hs-CRP levels. Kruskal Wallis test shows that the p-value of 0.031 greater than 0.05 alpha so it can be concluded that there is a significant difference value between the average PM2.5 levels of hs-CRP levels.
- **KEYWORDS:** PM2.5; hs-CRP; cardiovascular disease; mechanic officer

Ergonomic Risk Factors and Symptom of MSDs among Natural Stone Carving Craftsmen in Duta Alam Jakarta Selatan 2014

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- **BACKGROUND:** Natural stone carving is a one of informal sector in Indonesia. Due to the nature of stone carving process, the workers are constantly exposed to manual work process and are at high risks for musculoskeletal disorders (MSDs).
- **OBJECTIVE:** This study aimed to analyze the ergonomic risks and symptoms of MSDs among natural stone carving craftsmen in Duta Alam, South Jakarta 2014.
- **METHODS:** Ergonomic risk assessment carried out in 14 work activities using the Rapid Entire Body Assessment (REBA) and Nordic Body Map (NBM) to identify the symptoms of MSDs experienced by 14 workers. Besides, it also collected data about age, period of employment, and hours of work per day, body mass index (BMI), smoking habits, and physical activity/exercise habits using questionnaires.
- **RESULTS AND CONCLUSION:** REBA assessment on the activity of stone carving showed 6 tasks with moderate risk and 8 tasks with high risk. While the measurement results of NBM was found 92.9% of workers complain at the bottom and top of loin, 85.7% complained on the lower neck, right upper arm, right wrist, back and right shoulder respectively 71.4%. Perceived health complaints included stiffness, pain, numbness, and cramps/spasms. Other factors are also associated with complaints of MSDs symptoms are age, length of employment, duration of work per day, BMI, smoking habit, and physical activity. Analysis of the data showed that the symptoms of MSDs are severe occur at workers aged ≥ 30 years, workers with period of employment ≥ 3 years, working more than 8 hours per day, workers with a BMI of obese, smoking, and workers who do not have a habit exercise.
- **KEYWORDS:** MSDs; REBA; nordic body map; craftsmen; natural stone carving

Ferry Port Sustainability Analysis, Based on Health, Safety, Security and Environment (HSSE) Approach Principle: A Case Study at 'Pelabuhan Merak', Banten Province, Indonesia

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- **BACKGROUND:** Ecoport is generally used in European countries, as the pillars of a sea port sounds with environmental management friendly, instead of Ecoseaport term used in this research.
- **OBJECTIVE:** This study focuses on the case of major ferry fort terminal in Indonesia, especially at inter-island hub. It is correspondence with increasing volume of people and vehicles in the last five years.
- **METHODS:** Samples are employed from majority variable involved in ferry port terminal such operator, user, stakeholder, port authority, and community by applying purposive samples approached. This research is aligned with Indonesia Government policy projection to word maritime axis. In addition, the cancellation of the Sunda Strait bridge development this have play important role for inter-island transportation hub. Moreover, the marine transportation services should be taken into prioritizes for safety aspects. In fact, act No. 1/1970 regarding of safety is still remain uses as premise in developing a safety management system of thoroughly industry. Logistic regression and multiple linear regressions will be used to analyze the sustainability of ferry ports based thru HSSE approach. Specifically, the carrying capacity of the environment is calculated by using logistic regression, and environmental capacity by multiple linear regression.
- **KEYWORDS:** analysis; ecoseaport; safety; HSSE; sustainability; logistic regression; multiple linear regressions

The Model of Fire Protection and Emergency Response System at Universitas Sriwijaya

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- **BACKGROUND:** College as the main facility of learning process has a responsibility to assure the safety of everybody in it, especially related to fire risk, in accordance with the requirements of Regulation No 1/1970. Cases of fire occurred at leading universities in Indonesia has become a warning of loss caused, not only science precious assets, but also human resources like lecturers and professors, as well as students as future generations. Previous research showed that fire protection and emergency response system at Universitas Sriwijaya (Unsri) had not meet the expectation.
- **OBJECTIVE:** The purpose of this research was to perform a modeling of fire protection and emergency response systems at Unsri Indralaya and then properly apply it in the future.
- **METHODS:** The objects were rectorate, faculties, and supporting units like libraries and clinic. This was an implementation research with qualitative method by hazard identification, analysis based on in-depth interviews, and evaluation of the system.
- **RESULTS AND CONCLUSION:** The results indicated that Unsri had hazards that might lead to fire risks. Unsri had been working on implementing the fire protection and emergency response system but had not run optimally. Therefore, it is expected to conduct the optimization of this systems implementation starts from the aspect of management.
- **KEYWORDS:** fire; fire protection; emergency response; university

Management Laboratory Aspects of Occupational Health and Safety

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- **BACKGROUND:** Regardless of the workplace, emergencies will occur. Laboratories, even well controlled, are not immune to accidents and emergencies especially when working with variety chemical. Laboratories must have good laboratory management to keep laboratory health and safety. Good laboratory management aspect of occupational health and safety is an increasingly important component of good laboratory practice.
- **OBJECTIVE:** This study aimed to identify, analyze and evaluate laboratory management aspects of safety and health in laboratory X Faculty of Medicine and Health Sciences UIN Jakarta with some reference standards.
- **METHODS:** Data collected from observational the laboratory, interview with laboratory staff and review of documents. This research was conducted from April to June 2016.
- **RESULTS AND CONCLUSION:** The results showed some elements are still not in accordance with the standards of the laboratory management, such as the unavailability of draft management systems and quality management system of the laboratory, there aren't transport system and acceptance of chemicals, chemicals storage are not appropriate, chemical laboratory emergency response didn't running optimally, risk management assessment and biomonitoring of workers are never done before. In order to establish an effective good laboratory management aspect of occupational health and safety, laboratory need to develop the system management lab, and quality management systems, emergency response system, training of emergency in the laboratory, conducting risk assessment in the lab thoroughly and perform health checks the employees on a regular basis
- **KEYWORDS:** laboratory management system; laboratory quality management systems; occupational health and safety; chemicals

Description of Personal Exposure Particulate Matter 2.5 and Subjective Respiratory Complaints on Mechanical Test Officer in Vehicle Testing Centre (VTC) Unit Ujungmenteng in 2015

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- **BACKGROUND:** Exposure to PM_{2.5} in both short and long term has been known to cause the death, that caused by respiratory diseases.
- **OBJECTIVE:** This study purpose is to measure personal exposure concentrations of PM_{2.5} and percentage of subjective respiratory complaints on Mechanic in Vehicle Testing Centre (VTC) Unit Ujungmenteng in 2015.
- **METHODS:** This research is descriptive study by measuring the personal exposure concentration of particulate matter 2,5 during working hours using personal sampling equipment such as Leland Legacy Pump and Sioutas Cascade Impactor. The subject of research in the measurement of personal exposure PM_{2,5} are 21 mechanical test officer.
- **RESULTS:** The result showed the average personal exposure concentrations of PM_{2,5} that received by the mechanical test officer amounted to 272,347 $\mu\text{m}/\text{m}^3$, and 90,5% the mechanical test officer experiencing respiratory complaints with the highest complaints is nasal congestion (76,2%) and sore throat (57,1%). The highest average personal exposure concentrations of PM_{2,5} that received by the mechanical test officer in mechanical testing area 2 which is testing area for heavy vehicles.
- **KEYWORDS:** particulate matter 2,5 (PM_{2,5}); respiratory complaints; vehicle testing

Environmental Factors and Impaired Lung Function among Household Industrial Workers of Stone Carving Crafts at Maritengngae Subdistrict, Sidrap Regency 2016

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- **BACKGROUND:** PM_{2,5} concentration on the air when inhaled by human will be deposited in the alveoli that could inflict an inflammatory reaction that cause decreasing the lung function in human. Temperature, humidity and wind speed can affect the condition of the air pollutants in the workplace.
- **OBJECTIVE AND METHODS:** This cross sectional study purposed to assess the relationship between environmental factors are the concentration of PM_{2,5} and conditions of temperature, humidity and wind speed with impaired lung function among 100 workers in Maritengngae subdistrict, Sidrap District. Lung function was assessed by spirometry. Temperature, humidity and wind speed was assessed by thermohygroanemometer. PM_{2,5} concentration in the workplace was assessed by Haz dust EPAM 5000.
- **RESULTS:** Chi-square analysis was showed a significant correlation between the PM_{2,5} concentration (4.2; 1,68-10.38) and wind speed (4,8; 1.93-11.77) with impaired lung function. There was significant association between the level of dust exposure and condition of wind speed with impaired lung function. Hence, it is necessary to control the dust exposure.
- **CONCLUSION:** The finding of this study could be used as a consideration of health and safety programs implementation among workers and monitoring the implementation of workplace and also the surveillance of occupational health.
- **KEYWORDS:** environmental factor; lung function; stone cutting industry

Time-Exposure of Benzene and Hemoglobin Level among the Footwear Male Workers in Cibaduyut West Java

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- **BACKGROUND:** Benzene is one of the chemical substances which can cause some health effect such as anemia. Research related to benzene generally focused on the level of concentration of benzene exposure. Research related to long exposure to benzene is relatively rare.
- **OBJECTIVE:** The purpose of this study to explain association time-exposure of benzene and effect of hemoglobin.
- **METHODS:** Cross sectional study design was used, and 71 footwear male workers in Cibaduyut selected by cluster random sampling. Benzene measurement used NIOSH 1501 method and hemoglobin measurement used by automated hematology analyzer.
- **RESULTS:** The results showed that means of hemoglobin is $15,34 \pm 1,14$ g/dL and 3% of male-workers have anemia. Statistical analysis using linier regression showed that time-exposure of benzene more than 6 years have decreased of hemoglobin 0,7 g/dL (95% CI: -1.3 s.d. -0.1).
- **CONCLUSION:** Long-time exposure of benzene statistically significant with decreased of hemoglobin.
- **KEYWORDS:** benzene; hemoglobin; male workers

Analysis of Fire Protection System Standards in Hospital: Case Study in Jakarta, Indonesia

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- **BACKGROUND:** A hospital is a place that has a high risk of fire because there are many occupants in there. The risk would be even greater if fire protection systems and means of evacuation are not available in the hospital.
- **OBJECTIVE:** The objectives of this study were to analyze the implementation of active and passive fire protection systems and means of evacuation in the hospital and also analyze the fire protection standard for the hospital, which assumed and focused only on fire process without considered the unique characteristic of hospital and patients.
- **METHODS:** The study is an analytical descriptive using observational approach. The objects of this study are active fire protection, passive fire protection, and means of evacuation. The data was collected by observation, interviews, and document review. The analyses were performed by comparing the findings with NFPA Standards.
- **RESULTS:** The results showed that there are 30 variables of fire protection systems and means of evacuation that does not comply with the NFPA standards. Other findings showed that the fire safety standards in the hospital have not based upon the unique activities and conditions in the hospital. Besides, the priority and commitment of management toward fire safety in the hospital are very low.
- **KEYWORDS:** evacuation facilities; fire protection system; hospital; NFPA

Increasing Health and Safety Leading Indicator Through Involvement in "Recognition and Realignment" Program at PT X

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- **BACKGROUND:** Leading indicator is a proactive way to increase health and safety in workplace. Our plant had launched a program called "Recognition and Realignment" as Behavior Based Safety program that was set as leading indicator. The program based on visit performed by trained managers that focused to handle behavior aspect in health and safety. It had very low achievement in the beginning. We tried to involve more people by 2 involvement programs: training and setting the program to be each department leading indicator.
- **OBJECTIVE:** This study investigated relation the involvement programs to leading indicator.
- **METHODS:** The program reports from June 2010 until November 2015 were recorded and the data was analyzed. From 2010 until 2011, Recognition and Realignment program was still less involvement from employee. In 2013, we started to involve more employees and set the program as leading indicator.
- **RESULTS:** In 2015, we found train more people had significant positive impact in the program with p value 0,01 and Pearson Correlation test result 0,875 while cascading the program as key indicator in each department has positive significant impact also with r value 0,81 using biserial correlation test.
- **CONCLUSION:** The research showed that involving employee can increase leading indicator.
- **KEYWORDS:** health and safety; employee involvement; recognition and realignment program; leading indicator

Lipid Levels and Workers Noise Induced Hearing Loss Correlation

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- **BACKGROUND:** Workers in industries are facing not only their work load but also issues with work environment such as noise. Furthermore, workers' health condition, which is lipid levels, affects hearing impairment which is Noise Induced Hearing Loss (NIHL).
- **OBJECTIVE:** This study aims to know the correlation between blood lipids levels and hearing impairment to workers who are exposed to noise.
- **METHODS:** Research design that is used is historical cohort with 262 samples. Data is obtained from the company's 2008 and 2013 medical check up results.
- **RESULTS:** The results shows that NIHL is related with age, noise, triglycerides levels and LDL cholesterol levels. The logistic regression model equation that is determined NIHL is $\text{Logit } Y (\text{NIHL}) = -3,873 + 1,199 \text{ age} + 1,094 \text{ noise} + 1,085 \text{ LDL cholesterol} + ,841 \text{ triglycerides}$.
- **CONCLUSION:** Suggestion that can be recommended is the company and related parties should synergise Hearing Conservation program (HCP) with workers health promotion so NIHL that is caused by increasing of lipids levels and noise exposure can be pressed.
- **KEYWORDS:** noise; NIHL; cholesterol; HDL; LDL; triglycerides

Occupational Health Profile of Automotive Welders in Jakarta and Surroundings 2016

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- **OBJECTIVE AND METHODS:** Healthy workplace creates healthy workers. This study is one of the research regarding occupational health implementation in manufacturing industries in Indonesia. This study was conducted in welding department in otomotive industries located in Jakarta and surroundings, using a sequential explanatory method, aimed to identify welders health oucomes, exposures and OH implementation at the workplace.
- **RESULTS:** Pre-survey found welders experiencing heat stress, eyes discomfort, respiratory and hearing disorders. In this study, we identified the most disorders might be related to work were restrictive lung disorder 22.58%, crystaluria 39.1%, worsen creatinine clearance 96.73%; we also identified respiratory risk factors i.e. respirable particulate (80%-90%) originated from the rode composed of iron 98%, magnesium 1.1%-1.95%, and nickel, cuprum an chromium 0.2%; smoking 46.65%, reluctant to use masker 50%. We also detected crystaluria risk factors, i.e. environmental heat, metal particulate, reluctant to drink water (85%) due to hard to reach and not enough time to have decent drinking water and toilet at the workplace, infrequent go to rest room (56,8%), high oxalate and purine diet, and frequent to drink which were diuretic. Study also found NIHL risk factors i.e. noise generated from welding machine 80,1-99,3 dBA, and bad working habit of PPE using. Low back pain risk factors were indicated like heavy object when rigging, pushing and pulling, awkward position when squatting and binding, only 5 minutes break during working hours, frequent welding activities, not enough stretching and exercises.
- **CONCLUSION:** We concluded that welders' health was related to organization and workers' health behaviour, not only enviromental risk. It was suggested to improve environmental health hygiene and OHS culture in organization, also enhance health promotion to improve workers lifestyle and workstyle.

Particulate Matter 2.5 Concentration and Subjective Acute Respiratory among Production Workers at Cement Industry

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- **BACKGROUND:** Particulate matter is one of the air contaminant produced by cement factory that can affect respiratory disease to workers.
- **OBJECTIVE:** The objectives of these study are to analyze personal exposure concentrations of particulate matter (PM_{2,5}) and subjective acute respiratory among production workers at a cement factory.
- **METHODS:** The PM_{2,5} concentration of 34 production patrol workers were measured using Leland Legacy Pump and Sioutas Cascade Impactor during work hours on patrol reclaiming, raw mill, firing (pre-heater, rotary kiln, cooler), finish mill, and packhouse work area. Subjective acute respiratory was determined using a questionnaire adapted The American Thoracic Society standard.
- **RESULTS:** The result shows that the average personal exposure concentration of PM_{2,5} on patrol workers in PT X cement factory amounted to 1495,651 µg/m³. All of the patrol workers experienced the subjective acute respiratory effects with the highest effect are a sore throat and sneezing (64,7%).
- **CONCLUSION:** In conclusion, all subject has acute respiratory effects with different symptoms that might be caused by PM_{2,5} exposure, while the further research is needed to determine the association of concentration PM_{2,5} and respiratory effect.

Risk Assessment on Occupational Toluene Exposure in Informal Furniture Industry

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- **BACKGROUND:** The use of chemical substance is common in various industries including furniture industries. Toluene is known as the major chemical substance contained in paint, thinner, and varnish. The most common route of toluene exposure is through inhalation. Exposure to toluene can lead to adverse health effects, mainly of the central nervous system and kidneys.
- **OBJECTIVE:** This study purposed to analyze the risk levels of toluene exposure on workers at furniture industry.
- **METHODS:** This study conducted at one furniture industry in East Jakarta, where 33 workers worked in furniture production. All of the workers were included in this study. Study design was cross sectional. To determine toluene concentration, coconut shell charcoals were used in air sampling, and then analyzed with gas chromatography. Workers were interviewed by questionnaire to obtain data on working pattern, length of work at furniture industry, and also anthropometric measurement. Data were then analyzed with risk assessment method, to calculate the realtime and lifetime risk quotient (RQ) of non-carcinogenic health risk from toluene exposure for every workers.
- **RESULTS:** There were six working areas at the industry, where toluene concentration were measured. Toluene concentration ranged from 0.091 to 22.975 mg/m³, with the highest toluene concentration was found at painting area. Based on realtime RQ calculation, there were 61 percent of workers having non-carcinogenic health risk from toluene exposure. While based on lifetime RQ calculation, there were 88 percent of workers having non-carcinogenic health risk from toluene exposure.
- **CONCLUSION:** Risk management were highly recommended to reduce health risk of the workers, specifically the use of PPEs and apply the working-rolling system for every workers, also reduce toluene concentration by exhausted fan.

The Effect of Transportation Noise on Health: A Case Study in Jakarta

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- **BACKGROUND:** In urban areas is an urgent matter because it has direct impact on health of inhabitants. Motor vehicles are major sources of noise (Doelle, 1993). This study was conducted in August 2013 to August 2015 in the heart of the city, especially along Sudirman-Thamrin road, of Jakarta. The area chosen not only it is a major area, but also it has concentrations of offices, housing, green areas and industrial activities. This area is the central business in Jakarta. According to the noise measurement result, Semanggi areas is the highest level of ambient noise with the range of 64.3–72.8 dB (A), while in Istana Negara (National Palace) with 52–56.3 dB(A), Bundaran HI 61.4–66.1 dB(A), and Patung Pemuda 53.8–66.4 dB(A). Values that have passed the standard noise level for residential areas, based on the Regulation of the Indonesian Minister of Environment (1996), which amounted to 55 dB (A). Noise beyond normal limits can cause a psychiatric disorder (Sagitawaty et al, 2004). Noise may also cause neurological damage (Wardhana, 2001).
- **OBJECTIVE:** The objectives of this study is to know the influence of the noise level generated by motor vehicles for human health.
- **METHODS:** A study of human activity along the Sudirman-Thamrin Area, done by collecting data through interviews and distributing questionnaires. Respondents in this study is the public transport drivers, public transport users, users of private vehicles, pedestrians, bikers, police and security officers.
- **RESULTS:** Based on the results of the study, of the 200 respondents surveyed, 21% feel disturbed by noise. According to the respondents who feel disturbed by noise, 61.9% of respondents said that the noise that occurs quite annoying and they say that this type of disturbing sound occurs continuously. The disorder is convenience (33.3%), communication (31%), concentration (26.2%), activity and disruption to the ears (both 4.7%).
- **CONCLUSION:** This research may be continued with building a model of noise control by observing the extent of green open spaces and the amount of mass transportation, to reduce noise levels received by humans. Jakarta government is expected to set a policy about the restrictions a number of vehicles that pass through Sudirman-Thamrin area.
- **KEYWORDS:** Jakarta; effect of transportation noise; health

The Workstation Design Compliance, Work Posture, and Description of Musculoskeletal System Symptoms among Computer Users at Head Office of PT X Jakarta in 2016

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- **BACKGROUND AND OBJECTIVE:** Risk factor that often encountered by computer users is ergonomic factor, such as improper workstation design, awkward posture, prolonged sitting and static postures, and so forth. Those risk factors if were not managed well may lead to health issues, such as the musculoskeletal symptoms among the computer users. Therefore this research was conducted to get the description of workstation design compliance against the OSHA guidelines, work posture, and brief description about the musculoskeletal symptoms among the computer users.
- **METHODS:** This research was carried out by using descriptive method and cross sectional as a design study. The workstation design (chair, desk, monitor, keyboard and mouse, and telephone) compliance against the OSHA Guidelines was measured by using workstation design compliance checklist, the work posture assessment and the level of work posture risk among the computer users were conducted by using ROSA (Rapid Office Strain Assessment) method, and to get brief description of musculoskeletal system symptoms was conducted by interviewing the 83 respondents and completing CMDQ (Cornell Musculoskeletal Discomfort Questionnaire).
- **RESULTS:** Some workstation designs are not meet with OSHA guidelines such as chair (89.2%), monitor (72.3%), keyboard & mouse (38.6%), and telephone (37.4%), meanwhile only 4.8% desk which is not meet the guidelines. From 83 respondents there are 54 persons (65.1 %) who have ROSA score level 5 (High). The result of musculoskeletal symptoms survey using CMDQ completing by 83 respondents, shows that there are 6 parts of 18 body parts which have the most complaints such as neck (11.09%), lower back (10.70%), upper back (8.56%), and right shoulder (7.59%) and left shoulder (7.00%), and buttocks (6.23%). The awkward posture that may cause the musculoskeletal symptoms and the high level of work posture risk are; arm is not supported properly on the armrest (armrest too low) (96.3%), the back and lower back are not supported properly due to the computer users tend to leaning forward (88.9%), neck tilt down during working with monitor due to monitor is too low (50%), the arrangement of telephone is too far reach and the computer users tend to place the telephone within neck and shoulder when pick up the telephone (44.4%). In order to establish a healthy workplace in the office, the company shall rearrange the workstation designs by considering the OSHA guidelines.
- **CONCLUSION:** The musculoskeletal issues that may cause from the awkward posture and improper workstation designs can be minimized by determining health promotion program (such as; performing ten minutes light exercises for computer users for every two hours).

Development of Oxygen Consumption Formula for Energy Expenditure Prediction among Young Industrial Workers

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- **OBJECTIVE:** The aim of this study is to develop oxygen consumption (VO₂) formula for energy expenditure prediction based on height (H), weight (W), age (A), and heart rate (HR) among young industrial workers. Then, it wants to see the validity of the formula.
- **METHODS:** This is an experimental study. The subjects are 30 males (20 – 25 years old) of young industrial workers; 20 participants are generating VO₂ formula and 10 participants for validation. The experiment protocol was using Keytel protocol which employing a treadmill exercise. The validity was 2 activities; running in the treadmill and conducting manual material handling.
- **RESULTS:** All the determinant factors are strongly related with the formula with adjusted R² for VO₂ and VO₂ relative rate were 76.9% and 75.1% respectively. The formula is: $VO_2 \text{ (L/min)} = 1.117 - 0.012 H(\text{cm}) + 0.015 W(\text{kg}) - 0.039 A(\text{yrs}) + 0.019 HR(\text{beat/min})$ $VO_2 \text{ relative rate (ml/kg/min)} = 60.881 - 0.339 H(\text{cm}) - 0.949 A(\text{yrs}) + 0.351 HR(\text{beat/min})$. The result of validation for treadmill activity, VO₂ relative rate's data is same between the actual value of experiments and estimation value from the formula with the R² was 0.036. But the validation for manual material handling activity is not same.
- **KEYWORDS:** oxygen consumption (VO₂); energy expenditure; maximum aerobic capacity; workload; ergonomics

Urinary S-Phenylmercapturic Acid (S-PMA) Level as Biomarkers of Exposure to Benzene in Informal Shoes Industrial Workers, Cibaduyut Bandung

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- **BACKGROUND:** Urinary S-PMA level is a biomarker of the most specific and sensitive to exposure to benzene at concentrations either high or low because it is not influenced by other than exposure to benzene exposure.
- **OBJECTIVE:** Objectives of this study was to analyze the association between urinary SPMA and individual characteristics in workers exposed to benzene.
- **METHODS:** This study used cross sectional design in five informal shoes industry which are located in Cibaduyut. Urinary S-PMA level in 60 workers was determined by using LC-MS/MS and individual characteristics data were determined by using a questionnaire. The association between urinary S-PMA level and individual characteristics were analyzed using correlation and independent samples T test.
- **RESULTS:** By 33.3% workers have urinary S-PMA level more than BEI ACGIH (>25 µg/g creatinine). Variable of types of job and working hours per day have a significant association and urinary S-PMA level with p-value respectively 0,036 and 0,033.
- **CONCLUSION:** The use of biomarkers to provide benefits to shows the association environmental exposure to the risk of disease caused.
- **KEYWORDS:** benzene; urinary S-phenylmercapturid acid; biomarker; shoes industrial

Risk Factors Related to Work Related Skin Disease among Worker of Sewing Process in PT X 2016

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- **BACKGROUND:** Occupational skin diseases are the most frequent work-related diseases in industrialized countries. Based on the report of patient visits in 2015 at PT. X founded 57.65% of the worker in sewing process suffered from work-related skin diseases (WRSD) and the risk factors that contribute not been analyzed properly.
- **OBJECTIVE:** This study aims to analyze associated between gender, period of employment and a history of allergies, organic dust and organic solvents exposure, duration of exposure per day, hand washing and wearing gloves while working with WRSD among 477 workers in the sewing process.
- **METHODS:** Workers examined and interviewed by using Nordic Occupational Skin Questionnaire-2002/LONG from May to July 2016. Bivariate analysis using chi-square test at a significance level of 95% and multivariate analysis using logistic regression.
- **RESULTS:** The result found 57.7% of workers experienced with WRSD where 70.2% of them is women, 69.1% occurred among workers with work period correlation between all of the risk factors in this study with WSDR except gender. (OR: 2.372 to 5.762). Multivariate analysis showed a history of allergies and do not wear gloves as the two dominant factors associated with WRSD (OR 6.743 and 6.222).
- **KEYWORDS:** work-related skin diseases; sewing process; a history of allergies; wearing gloves

Human Papilloma Virus Transmission Awareness among Female Dentists in Jakarta, Indonesia

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- **BACKGROUND:** Human Papillomavirus (HPV), especially type 16 and 18, are suspected to be the cause of head and neck cancer. HPV transmission by direct contact with the body fluid was frequently reported although the main transmission is sexual contact. Since HPV-16 and 18 were found in saliva, the risk of HPV transmission in dentists was elevated.
- **OBJECTIVE:** This research studied about HPV transmission awareness among female dentists in Jakarta.
- **METHODS:** A cross sectional study was conducted in 152 female dentists in Faculty of Dentistry, Universitas Indonesia using 27 items-questionnaire.
- **RESULTS:** Only 120 respondents' questionnaire can be statistically analyzed, shown that most of female dentist have either fair or poor (44.2%) and only few (11.6%) have a good level of knowledge in HPV. The level of infection control implementation are fair (52.5%), poor level (28.3%) and good (19.2%). The poor level of HPV knowledge might be because few female dentists understand the role of HPV in head and neck cancer. The fair level of the infection control implementation might be because lack of awareness about the importance of its implementation to prevent biological occupational hazard.
- **CONCLUSION:** This study showed the level of HPV transmission awareness in female dentists is sufficient.
- **KEYWORDS:** HPV; knowledge; transmission; infection control

Urine trans,trans-Muconic Acid as Predictor for Health Risk Estimates from Exposure to Benzene in Shoe-Making Industries

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- **BACKGROUND:** Urine trans,trans-muconic acid (t,t-MA) is a biomarker of benzene exposure where benzene-containing air is inhaled.
- **OBJECTIVE:** The present study was to derive regression of urine t,t-MA with inhaled benzene for estimating carcinogenic and noncarcinogenic health risk characteristics indirectly from exposure to indoor air benzene in shoe-making home industries.
- **METHODS:** Indoor air benzene was determined in 28 working rooms of five shoe-making industries in Pulo Gadung, Jakarta, by gas chromatography using flame ionization detector, whereas t,t-MA was determined from urine samples of workers (n = 36) using high performance liquid chromatography with UV-Vis detector. Benzene concentrations (mg/M3) were grouped into low (0.72-63.22), medium (172.96-297.63), and high (513.80-633.89) categories. Meanwhile, anthropometric exposure factors and contact times were surveyed quantitatively from all workers (n = 79) for estimating lifetime and life span average daily dose, life span noncarcinogenic risk quotient (RQ), and lifetime excess cancer risk (ECR). Linear regressions were derived from urine t,t-MA concentration (mg t,t-MA/g creatinine) and benzene concentration (mg benzene/M3 air).
- **RESULTS:** It was found that only low-range benzene concentration gave linear regressions with significant correlation ($p < 0.05$). Of seven regressions obtained, regression of $\log[t,t-MA]$ with $\log[benzene]$ is the best predictor for air benzene concentration ($R^2 = 0.827$, $r = 0.684$, $p = 0.002$), but the best t,t-MA-benzene correlation is regression of t,t-MA with $\log[benzene]$ or t,t-MA with $\ln[benzene]$ ($R^2 = 0.671$, $r = 0.82$, $p = 0.002$). The $\log[t,t-MA]$ with $\log[benzene]$ regression gives RQ 0.07 and ECR $3.3E-6$ to $1.2E-5$, which both of them are acceptable and do not require immediate control measures. If the direct measured benzene concentrations are employed, the RQ and ECR are 1.11 and $4.8E-5$ to $1.2E-4$, respectively.
- **CONCLUSION:** It is concluded that health risks from exposure to benzene estimated directly from benzene are comparable with indirect estimation from t,t-MA, although the first is slightly overestimate than the later.

Analysis of Occupational and Non-Occupational Fatigue Risk Factors on Commercial Pilot in PT. XYZ, Jakarta

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- **BACKGROUND:** Potential accident and health problems related fatigues remain tremendous problem in the commercial flight.
- **OBJECTIVE:** This study is conducted to investigate of risk factors amongst pilot in PT XYZ.
- **METHODS:** The number of sample of this study was 196 personnel. In order to gather deep information, administered questionnaire is disseminated and systematic in depth-interview is performed on the pilots at one time basis. Specific for fatigue measurement, Samn-Perelli Subjective Scale is used to measure the level of fatigue and thus analysed through regressive correlation analysis.
- **RESULTS:** Amongst the participants, 60.5% of them frequently experienced fatigue during the post flight condition. Measured from level of fatigue, showed that as 26 participants (13%) experienced physical fatigue, 61 participants (30.5%) experienced mental fatigue and 47 participants (23.5%) experienced emotional fatigue. Occupational and non-occupational factors play the magnificent role on the fatigue occurrence. Of risk factors such as quality and quantity of sleep, working hours, the numbers of flight sectors have positive correlation toward fatigue. While, smoking habit, exercise, caffeine consumption, flight duration and napping showed negative correlation of fatigue. To reduce the occurrence of fatigue, current established program in PT XYZ such as limitation of flight time, working duration and provision of resting time shall be continued.
- **KEYWORDS:** fatigue; pilot; commercial flight; occupational and non-occupational factors

Oral Presentation:

ORAL & DENTAL HEALTH

Analysis of CPP-ACP Complex in Combination with Propolis to Enamel Remineralization

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- **BACKGROUND:** Continuous acid exposure can cause demineralization at the enamel surface featuring a white spot lesion. This lesion can perform a remineralization depends on its environment. CPP-ACP (Casein Phosphopeptide-Amorph Calcium Phosphate) complex have already known as remineralization agent.
- **OBJECTIVE:** The aim of this study was to analyze the ability of CPP-ACP Complex in combination with propolis to enamel remineralization.
- **METHODS:** A 3 x 5 mm window on the enamel surface of 12 caries free human premolars was demineralized using phosphoric acid 50%. The specimen were divided into 4 groups : 1. Control, 2. CPP-ACP complex, 3. Propolis, 4. CPP-ACP complex + Propolis 4%. The treatment gel were applied 5 minutes for 26 times. Evaluation performed including microhardness, surface microstructure and element analysis.
- **RESULTS:** The result showed no statistical differences microhardness data after gel treatment groups ($p=0,1$) while microhardness data between after demineralized and after gel treatment group also showed no differences ($p=0,16$). Electromicrograph showed that group 2 has irregular deposit at the enamel surface and group 4 showed a homogenous layer at the enamel surface. Element analysis showed no differences between groups.
- **CONCLUSION:** In conclusion, combination between CPP-ACP complex and propolis might have a potential to enamel remineralization.
- **KEYWORDS:** CPP-ACP complex; propolis; enamel remineralization

Effectiveness of Appreciative Inquiry (AI) Approach for Tooth Brushing Habit Formation in Primary School Age (Studies in Children Age 7-8 Years Old Madrasah Ibtidaiyah at Madiun City)

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- **BACKGROUND:** Intervention program to achieve toothbrushing behavioural change with long-term effect still rarely implemented.
- **OBJECTIVE:** This study aims to compare the effectiveness of appreciative inquiry (AI) againsts conventional health education approach for forming automaticity toothbrushing habit.
- **METHODS:** Randomized-Community Trial on 164 children age 7-8 years in Madiun City divided in the control group and intervention group. Both of group conduct the school-based supervised tooth brushing program for two months. Data collection by interview with self-report behavior automaticity index (SRBAI) and intraoral examination with patient hygiene performance modified index (PHP-M) when baseline, after 1 month and after 2 months.
- **RESULTS:** Automaticity proportion was significantly higher in the AI group (63,8%) as compared to conventional group (22,1%) ($P = 0.000$; $OR = 11.9$, 95% $CI = 4.794-29.497$).
- **CONCLUSION:** Appreciative inquiry was more effective than conventional health education approach for tooth brushing behavior change.
- **KEYWORDS:** appreciative inquiry; automaticity; behavioural change; habit; toothbrushing

Level of Salivary Alpha Amylase to Measure Children and Mother's Anxiety Before and After Dental Treatment (Analysis in Children with Visual and Hearing Impairment)

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- **BACKGROUND:** Visual and hearing-impairment children known to have profound effect on psychological development, including anxiety. However, stronger emotional relationship with their mother found in this group can possibly help them cope better. Measurement of salivary alpha-amylase (sAA) in saliva sampling is a widely used reliable non-invasive biomarker of anxiety level in clinical settings.
- **OBJECTIVE:** Our objective was to evaluate sAA level in visual and hearing-impaired children and their mothers before and after dental treatment.
- **METHODS:** 60 children with visual and hearing-impairment and their mothers participated, sAA of both subjects were recorded together in the waiting room before treatment. Children then underwent dental prophylaxis in separated room, and had their post-treatment sAA measured right after. At the same time, mother's post-treatment sAA recorded in the waiting room. Data analyzed using Wilcoxon test.
- **RESULTS:** sAA levels found to be significantly different between pre- and post-dental treatment ($p < 0,05$). Difference found in sAA level between before and after dental treatment indicates that reduction in maternal anxiety would be a great help in reducing anxiety in these children. Our research found that anxiety in children with visual and hearing-impairment and their mothers found to be significantly different in before and after dental treatment.
- **KEYWORDS:** salivary alpha-amylase; anxiety; children; visual impairment; hearing impairment; dental treatment

Oral Squamous Cell Carcinoma Treatment: Free Margin and Better Survival OSCC Patients

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- **BACKGROUND:** Oral Squamous Cell Carcinoma (OSCC) is the most common oral malignancy, approximately 90% of all malignant of oral cancer. The treatment method vary according to the cancer stage and other conditions. The main widely used treatment methods for OSCC is surgery, which can be applied as a single method or combine with radiotherapy or chemotherapy. Many research found that patients who had undergone surgery for OSCC have higher probability to survive after radical dissection and free margin have been applied.
- **OBJECTIVE:** The aim of this study was to assess the impact of free margin on OSCC survival.
- **METHODS:** We conducted a retrospective cohort study of 78 patients with OSCC who were treated in Dharmais National Cancer Hospital from 1 January 2003 to 31 January 2013. Three years survival rate based on margin status, and Kaplan Meier survival curves were computed and tested statistically by log-rank test. Cox proportional hazard model was applied to assess the prognostic significance of margin status.
- **RESULTS:** Results showed that overall survival in 3 years follow-up was 42.5%. The cumulative survival probability among patients with free margin compared to patients with close margin was 56.5% versus 29.4% ($p = 0,007$), respectively. Close margin was found to be an independent risk factor of OSCC death (HR=2.508, CI 95% 1.263-5.092, $p = 0,011$).
- **CONCLUSION:** This study proved that inadequate surgical margin is predictive for poor prognosis of OSCC patients.
- **KEYWORDS:** margin status; OSCC; survival

Salivary and Oral Health Profile in Smoker and Nonsmoker Males at Universitas Indonesia Dental Hospital

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- **BACKGROUND:** Saliva is prone to alterations caused by tobacco smoking. Data on salivary profile and oral health condition of smokers in Indonesia is still limited.
- **OBJECTIVE:** This study aims to compare the salivary flow rate, salivary pH, salivary buffering capacity (BC), caries and oral hygiene index (OHIS) between smoker and nonsmoker group at the Universitas Indonesia Dental Hospital.
- **METHODS:** Fifty males aged 18-60 years old were equally divided into smoker and nonsmoker group. The unstimulated salivary flow rate (USFR), stimulated saliva flow rate (SSFR), salivary pH and BC measured by GC Saliva-Check Buffer Kit. Intraoral examination was also performed.
- **RESULTS:** Higher USFR was noted in smoker, meanwhile higher SSFR and salivary BC were found in nonsmoker. Both groups had similar salivary pH. Smoker showed worse OHIS and higher caries rate. Those results were not significantly different. This study revealed no significant difference on the salivary and oral health profile of smoker and non-smoker males. Factors that might influence this result were small sample size, wide age range and smoking habit pattern.
- **CONCLUSION:** No significant difference in the salivary and oral health profile between smoker and nonsmoker males at the University of Indonesia Dental Hospital.
- **KEYWORDS:** smoking; salivary pH; salivary buffering capacity; salivary flow rate

Salivary Profile of Recovering Illicit Drug Addicts in Rehabilitation Center of The National Narcotics Bureau

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- **BACKGROUND:** Drug abuse may cause some effects to oral cavity, like hyposalivation and alteration in salivary pH and buffering capacity that may lead to another oral problems.
- **OBJECTIVE:** This study aims to determine salivary flow rate (SFR), pH and buffering capacity in recovering drug addicts.
- **METHODS:** This is a cross-sectional study conducted in 86 residents from hope and re-entry group of Rehabilitation Center. Samples used were stimulated (SS) and unstimulated (US) saliva. Saliva was collected using spitting method for 5 minutes and chewing parafin wax prior to collection for SS. US was analyzed for pH and SS for buffer capacity.
- **RESULTS:** The mean values for hope and re-entry group respectively were USFR (ml/min) 0.41 ± 0.17 and 0.45 ± 0.2 , SSFR (ml/min) 1.39 ± 0.59 and 1.21 ± 0.59 , unstimulated pH 6.86 ± 0.4 and 6.9 ± 0.4 , stimulated pH 7.4 ± 0.3 and 7.3 ± 0.3 , buffer capacity 6.8 ± 2.8 and 6.38 ± 2.7 . Salivary buffering capacity which is lower in re-entry group, might be related to SSFR, as the salivary buffer capacity increases as the SFR increases, and vice versa.
- **CONCLUSION:** History of using illicit drugs did not affect SFR and pH since both groups had normal SFR and salivary pH. However, it may affect salivary buffering capacity and caused relatively low buffering capacity in both groups.
- **KEYWORDS:** recovering drugs user; salivary profile

The Comparison of Three Different Concentration of Centrifuged Modified Platelet Rich Fibrin on Fibroblasts Proliferation

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- **BACKGROUND:** One of the most distinct sign of irreversible pulpitis is the presence of permanently damaged fibroblasts, which is the primary component of dental pulp. The low compliance nature of the tooth affect its inability to self repair and leads to the disruption of extracellular matrix. Growth factors is a substantial part of cell regeneration. It is acknowledged that advanced platelet rich fibrin (A-PRF) has the ability to promote healing process on the injured fibroblasts.
- **OBJECTIVE:** This study was performed to evaluate the capability of various concentration of A-PRF.
- **METHODS:** An experimental design was done in serum-starved fibroblasts. Fibroblasts was cultivated for 3 weeks and divided into 2 groups. Group I consists of serum-starved fibroblasts. Group I is divided into 3 subgroups, treated by various concentration of A-PRF (50%, 25%, and 12.5%). Group II consists of normal fibroblasts as positive control. Fibroblasts proliferation was calculated by Luna-IITM automated cell counter to evaluate fibroblasts capability to regenerate after A-PRF application. PRF was demonstrated to stimulate cell regeneration on serum-starved fibroblasts.
- **RESULTS:** The highest proliferation level was shown on 25% group.
- **KEYWORDS:** serum-starved fibroblasts; irreversible pulpitis; growth factors; A-PRF; regenerative endodontic

The Effect of CPP-ACP-Propolis Chewing Gum Towards Calcium and Phosphate Ion Release on Caries-Active Subjects' Saliva and the Formation of Streptococcus mutans Biofilm

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- **OBJECTIVE:** To analyze the effect of CPP-APP and propolis wax if they are combined in a chewing gum formulation, observed from the calcium and phosphate ion level released by CPP-ACP and the emphasis of *S. mutans* mass in the biofilm by propolis wax, towards caries-active subjects' saliva.
- **METHODS:** Chewing gum simulation being done in vitro to 25 caries-active subjects' saliva sample using five concentrations of chewing gums (0% propolis, 0% CPP-ACP; 0% propolis + CPP-ACP; 2% propolis + CPP-ACP; 4% propolis + CPP-ACP; 6% propolis + CPP-ACP), then being tested using Atomic Absorption Spectrophotometer to analyze calcium ion level, Ultraviolet-Visible Spectrophotometer to analyze phosphate ion level, and biofilm assay using crystal violet to analyze the decline in biofilm mass.
- **RESULTS:** After chewing simulation, calcium ion level on saliva+gum eluent have increased significantly compared to saliva control, with the highest calcium level released by CPP-ACP + 2% propolis chewing gum. There is insignificant phosphate level change between saliva control and saliva + gum eluent. There is also significant decline of *S. mutans* biofilm mass in the saliva + gum eluent, most decline by CPP-ACP chewing gum and CPP-ACP + 6% propolis.
- **CONCLUSION:** CPP-ACP-Propolis chewing gum simulation generate the increase of calcium and phosphate ion level and the decline in *S. mutans* biofilm mass of caries-active subjects' saliva.
- **KEYWORDS:** caries; propolis wax; CPP-ACP; saliva; biofilm; Streptococcus mutans

Oral Presentation:

TOBACCO CONTROL

Role of Internal Factors to Stop Smoking Behavior in Indonesia

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- **BACKGROUND:** The percentage of smoking cessation in Indonesia was decreased from 5.4% (2010) to 4% (2013).
- **OBJECTIVE:** This study aims to know the role of family members to smoking cessation in Indonesia.
- **METHODS:** Using a cross sectional design, doing secondary data analysis of the Global Adult Tobacco Survey (GATS) Indonesia in 2011. The chi-square test and logistic regression analysis were used to identify the role of family members to smoking cessation.
- **RESULTS:** The proportion of smoking cessation in Indonesia 2011 is about 15.7 percent. None of family members who are smoking is associated with successful smoking cessation in Indonesia (OR: 204, 95% CI: 117 – 356).
- **CONCLUSION:** Being informed of family members who are smoking were important factors in successful smoking cessation. Implementation regulation of ban smoking at home and provide support to family members who are smoker to quit smoking.
- **KEYWORDS:** family members; smoking cessation; GATS; Indonesia

Students' Attitudes towards Smoke-Free Campus Policy

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- **BACKGROUND:** Smoke-free environment policy contributes to the health of both smokers and non-smokers, and increases the likelihood of smokers to quit smoking. However, Universitas Riau has not yet implemented the policy.
- **OBJECTIVE:** This study aims to assess students' attitudes toward smoking and their view about secondhand smoke and smoke-free campus policy.
- **METHODS:** This study involves 880 students that were taken by using convenience sampling technique from all faculties in Universitas Riau. Participants were asked to fill out a questionnaire.
- **RESULTS:** The results show that most participants are non-smokers (88.8%), female (63.5%), and are 19-21 years old (76.6%). About 61.3% are being exposed to cigarette smoke on campus everyday or several days a week, 77.4% express that the smoke bothers them a lot, and 62.8% have experienced immediate health effects from secondhand smoke exposure. Most participants (81.7%) strongly agree if university prohibits smoking on campus; therefore, participants strongly support Universitas Riau to be smoke-free campus.
- **CONCLUSION:** The results indicate that students have a high expectation that Universitas Riau can implement smoke-free campus policy. These results provide a sound basis for university leaders and administrators to implement smoke-free campus policy. A follow-up study would be needed to assess staff and lecturers' attitudes towards this policy.
- **KEYWORDS:** campus; policy; smoke-free; student

The Risk of Smoking to Cervical Cancer in Indonesia

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- **BACKGROUND:** Cervical cancer is cancer that often strikes women in the world. One of the factors precipitating these cancers are smoking behavior. The proportion of smokers among Indonesian women has increased every year.
- **OBJECTIVE:** This study aimed to assess the risk of smoking to cervical cancer in Indonesia.
- **METHODS:** A cross-sectional study design using data of Basic Health Research year 2013 collected from 33 provinces in Indonesia, as much 216,797 women respondents aged over 20 years were selected randomly.
- **RESULTS:** The prevalence of cervical cancer is 120 per 100,000 women over 20 year years old (95% CI = 9--14 per 100,000). Women who smoke daily have 2.3 times greater risk of suffering from cervix cancer. Women ex-smoker, ever smoked every day, had a 9.6 times greater risk of suffering from cervix cancer. Other risk factors for the cervical cancer were age 50 year or more (ORa 3.0), history of abortion (ORa 1.6), having sex under 18 years old (ORa 1.6), and poor or middle economic status (ORa 0.4 or 0.6). Use birth control pills have a lower risk of cervical cancer (ORa 0.2).
- **CONCLUSION:** Smoker and ex-smoker the same as having the high risk of cervical cancer in Indonesia. It is suggested to women from an early age and young women to never touched a cigarette, once you consumed then various dangers of the disease will threaten your life, including the threat of cervical cancer. Strong policies are needed from the government to avoid the dangers of teen smoker.
- **KEYWORDS:** cervical cancer; smoker; ex-smoker; Indonesia

Oral Presentation:

YOUTH HEALTH

Determinant Factors of Academic Achievement in Budi Mulia Senior High School Bogor, West Java 2016

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- **BACKGROUND:** Poor academic achievement during Senior High School (SHS) will contribute to the failure of social and economic development in a country (Chua and Mosha, 2015); however, SHS students' academic achievement in Indonesia is far behind other countries.
- **OBJECTIVE:** To examine the differences on academic achievement based on nutritional status and other factors after controlling for relevant confounders.
- **METHODS:** Cross sectional study including 130 SHS students, aged 15-18 years, from Budi Mulia SHS Bogor, West Java. Data were collected from March-April 2016. Academic achievement was measured as well as height for age, BMI for age, dietary intake, frequency of breakfast, energy intake during breakfast, cardio-respiratory fitness, sleep duration, cognitive stimulation, and motivation. Multivariate logistic regression models were used to find the dominant factor and other factors that give differences in academic achievement.
- **RESULTS:** There are 51,5% students who have poor academic achievement. Dominant factor that determines students' academic achievement is cognitive stimulation ($P=0,002$; $OR=17$) after controlling other variables. The other factors that give differences on academic achievement are motivation, energy intake, cardio-respiratory fitness level, and protein intake. HAZ, sleep duration, and energy intake during breakfast were found as confounders.
- **CONCLUSION:** Academic success is associated with higher cognitive stimulation, achievement motivation, energy intake, cardio-respiratory fitness level, and protein intake.
- **KEYWORDS:** academic achievement; cognitive stimulation; nutrient intake; nutritional status; senior high school

Determinants of Students Participation on Drug Prevention Program in Jakarta and Makassar

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- **BACKGROUND:** Studies in 16 provinces showed the figure in Jakarta reduced slowly (10% to 8.7%) while Makassar dropped dramatically (8% to 3%). Theoretically, its can be attained by improving knowledge and attitude, pursued through drug-use prevention programs.
- **OBJECTIVE:** Aims of this study is to describe the determinants of students' participation in drug-use prevention program in Jakarta and Makassar.
- **METHODS:** Using secondary data analysis utilized the result of a 2011/2012 survey by NNB and CHRUI. Sampled students (Jakarta 2074 and Makassar 1823) collected using self administered questionnaire, analyzed employing logistic regression, presenting adjusted Odds Ratio.
- **RESULTS:** Half of respondents were female. In both areas, students who did not follow prevention programs actually has a high knowledge. Although there was similarity in respondents' socio-demographics between two sites, regression result shows different determinants pattern. In both provinces, students with fathers suffering from severe illness discouraged students participation ($OR\ 1.09-2.10$ with $CI\ 95\%$). In Makassar, having fathers with middle level of education (affected fewer students' participation).
- **CONCLUSION:** This study conclude that to draw students' participation, school-based program in both cities must concern dissimilar issues. Attention to parents' condition in Jakarta, and improvement of parents' knowledge and attitude on drug-use program in Jakarta shall be strengthened.
- **KEYWORDS:** drugs; students'; school

Final-Year Student Nurses Professional Quality of Life

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- **BACKGROUND:** The professional quality of life (PQL) is associated with the life aspects of nurses or future nurses that includes level of working difficulties, balance between effort and reward, psychosocial resilience, empathy response and clinical practice scope. However, most of PQL studies were conducted in clinical areas, and studies related to PQL in nursing education were limited. Therefore, it is imperative to investigate PQL in nursing education.
- **OBJECTIVE:** This study aims to examine the professional quality of life experienced by final-year student nurses.
- **METHODS:** This study applied a convergent parallel mixed method design. Two instruments were used in this study including a modified Professional Quality of Life (ProQoL V) Scale by Stamm year 2010 and an open-ended questions questionnaire. This study applied a purposive sampling with a criterion sampling method. A sample of 175 final-year students in the academic program was recruited (response rate of 89.28%).
- **RESULTS:** Over half of the students' respondents reported a moderate level of compassion satisfaction (57.71%), moderate level of burnout (50.29%) and low level of secondary traumatic stress (56,6%). Three themes emerged from the open-ended questions that includes the experiences of compassion satisfaction, the causes and the coping strategies of compassion fatigue. Understanding PQL guides to establish psychosocial support services for nursing students.
- **KEYWORDS:** professional quality of life; student nurses

Health Behavior Factors that Influence Achievement of School-Age Children in Agam District, Indonesia

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- **BACKGROUND:** School age children who have poor health status have lower cognitive ability and performance. They also potentially more likely to repeat grades and drop out of school than children who did not experience similar problems.
- **OBJECTIVE:** This study aims to identify health behavior factors that influence achievement of school age children in Agam district, Indonesia.
- **METHODS:** This study used a cross-sectional study. Respondents in this study were elementary school students level 4, 5 and 6 and selected by cluster sampling method. Data analysis was performed using simple linear regression.
- **RESULTS:** The results showed that the variables that had a significant relationship with academic achievement are bullying, breakfast habits, eating fruit habits, eating vegetable habits and smoking behavior.
- **CONCLUSION:** Schools need to implement anti-violence curriculum in teaching and learning activities to avoid bullying and fighting habits in students. The school and the surrounding community can work together to establish a healthy canteen to provide nutritious snacks for students, so that good nutrition can be meet. Tobacco control policies are needed so that students are not easy to get cigarettes. School Health Unit need to be improved in order to students know about good behavior in maintaining their health.
- **KEYWORDS:** school age children; health behavior; school achievement

POSTER PRESENTATION



Poster Presentation:

AGEING AND QUALITY OF LIFE

Relationship Between Quantitative Measurement of *Tannerella forsythia* on Dental Plaque and It's Relationship with Periodontal Status of Patients with Coronary Heart Disease

Authors: Yuniarti Soeroso, Yulianti Kemal, Agus Widodo, Boy Bachtiar, Desire Pontoh

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- **BACKGROUND:** The pathogenesis of the development of atherosclerosis in subjects with coronary heart disease has evolved to the extent where abnormal fat accumulation was no longer the culprit, but rather a certain inflammatory process, including periodontitis. *Tannerella forsythia* is a Gram-negative anaerobic bacteria, with fusiform rod shape, that has played a role in inducing the development of both diseases.
- **OBJECTIVE:** The aim of this study was to analyze the difference in quantitative measurement of *Tannerella forsythia* accumulated in the plaque and the periodontal status of subjects with and without coronary heart disease. *Tannerella forsythia* was counted by utilizing the Real-Time Polymerase Chain Reaction (RT-PCR).
- **METHODS:** Periodontal status of 66 CHD patients and 40 controls was obtained. Subgingival plaque was isolated. *Tannerella forsythia* level were measured using real-time PCR.
- **RESULTS:** *Tannerella forsythia* levels of CHD patients were higher than control. *Tannerella forsythia* was not associated with any periodontal status.
- **CONCLUSION:** *Tannerella forsythia* level of CHD patients ($-6,29 \log_{10}$ CFU/ml) was significantly different from control ($-19,63 \log_{10}$ CFU/ml). *Tannerella forsythia* was not significantly associated with any periodontal status ($p < 0.05$).
- **KEYWORDS:** coronary heart disease; periodontal status; *Tannerella forsythia*

Comparing Masticatory Performance as Measured by Gummy Jelly and Colour-changeable Chewing Gum in Dentate Subjects

Authors: Titus Dermawan, Gabriella Nasserri, Pinta Marito, Nina Ariani, Farisza Gita, Takahiro Ono, Lindawati S Kusdhany

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- **BACKGROUND:** Masticatory ability is an important aspect of stomatognathic function that affects the oral health-related quality of life in everyone. Practical ways to objectively measure the masticatory ability is to use colour-changeable chewing gum and gummy jelly.
- **OBJECTIVE:** The purpose of this study was to analyze the relationship between the masticatory ability measurements obtained with colour-changeable chewing gum and with gummy jelly.
- **METHODS:** The subjects were fully dentate individuals (N=10). Subjects' masticatory function was measured by asking them to masticate colour-changeable chewing gum with 30, 45 and 60 strokes and to masticate gummy jelly with 10, 20 and 30 strokes. The measurement using validated visual chart. Spearman correlation was used to analyze the data.
- **RESULTS:** Significant correlation ($P < 0.05$) was found between the measurement of 30 stroke of chewing gum and 20 stroke of gummy jelly ($r = 0.643$, $p = 0.045$), between 45 stroke gum and 10 stroke jelly ($r = 0.701$, $p = 0.007$), between 60 stroke gum and 10 stroke of gummy jelly ($r = 0.756$, $p = 0.011$), and between 60 stroke gum and 30 stroke jelly ($r = 0.684$, $p = 0.029$).
- **CONCLUSION:** It was suggested that two methods for measuring masticatory performance could be comparable by considering the number of chewing cycles. 60 strokes for colour-changeable chewing gum and 30 strokes for gummy jelly.
- **KEYWORDS:** objective assessments of masticatory ability; colour-changeable chewing gum; gummy jelly

Comparing Masticatory Performance between Dentate and Removable Denture Wearers

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- **BACKGROUND:** Tooth loss replacement with dental prostheses aims to restore the stomatognathic function including masticatory performance. Masticatory performance is one of the factors that affect stomatognathic function and health in general.
- **OBJECTIVE:** The aim of this study was to compare the masticatory performance of fully dentate and partial denture wearers and determine which method is most suited, whether using colour-changeable chewing gum or gummy jelly.
- **METHODS:** Subjects were classified into two groups, fully dentate (n=10) and removable denture groups (n=10). Masticatory performance was measured using colour-changeable chewing gum with 30, 45 and 60 strokes and gummy jelly with 10, 20 and 30 strokes. Mann Whitney analysis was done to compare the masticatory performance of fully dentate and removable denture groups.
- **RESULTS:** There was a significant difference in masticatory performance between two groups ($p < 0.05$) both in chewing gum and gummy jelly. Spearman correlation was used to analyse the correlation between chewing gum and gummy jelly measurement. Statistically, a significant correlation ($P < 0.05$) was found between colour-changeable chewing gum and gummy jelly.
- **CONCLUSION:** Removable denture does improve masticatory performance, but it is not able to fully restore masticatory performance like dentate. Colour-changeable chewing gum and gummy jelly can differentiate masticatory performance in fully dentate and removable denture groups.
- **KEYWORDS:** masticatory performance; gummy jelly; chewing gum; dentate; removable denture

Correlation between Masticatory Performance and Quality of Life of Patient using Posterior Dental Implant

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- **BACKGROUND:** Masticatory performance measurement to evaluate patient's satisfaction using denture, has a contribution in prosthetic treatment, including patient using posterior implant supported single crown. Patient satisfaction rates may affect the value of a person's quality of life. But in Indonesia these examination are still rarely done.
- **OBJECTIVE:** This study was done to investigate the correlation of masticatory performance and oral health related quality of life in patient using posterior implant supported single crown.
- **METHODS:** The study design was cross sectional in 12 patients with posterior implant supported single crown. Sociodemographic data were recorded, quality of life questionnaire and chewing the gum (Xylitol) for 60 strokes were done. Spearman correlation was used to analyze the data.
- **RESULTS AND CONCLUSION:** No significant correlation ($p > 0, 05$) was found between masticatory performance and total OHIP score. This result is expected because of the lack of the number of subject. With the limitation of this study, it can be concluded that masticatory performance and quality of life of patients with posterior implant single supported crown showed good.
- **KEYWORDS:** masticatory performance; quality of life; posterior implant supported single crown

Osseointegration of Dental Implant in M.fascicularis

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- **BACKGROUND:** Osseointegration is an important factor in determining success of dental implant, it can be assessed from the osseointegration process that occurs between implant and bone. Stability of an implant is determined by the osseous support at the implant-bone interface, which is commonly evaluated by histomorphometric analysis.
- **OBJECTIVE:** The purpose of this study was to evaluate whether the osseointegration level measured by Low Resonance Frequency Analyzer (LRFA) gave result as good as histomorphometric examination.
- **METHODS:** Six male Macaca Fascicularis were used in this study. In each animal, two kinds of loading were done, immediate and delayed loading. Clinical examination and LRFA measurement were performed to determine osseointegration on first and second week, first, second, third and fourth month. After four months histomorphometric examination was performed. The relationship of histomorphometric examination and LRFA measurement were compared using the Pearson correlation coefficient.
- **RESULTS:** There was no significant different on osseointegration between immediate loading and delayed loading ($P > 0.05$) The bone-implant contact percentage in the first group did not differ significantly with the second group. Statistical analysis showed that there was a strong correlation between LRFA measurement and histomorphometric examination.
- **CONCLUSION:** Osseointegration could be evaluated through LRFA measurement as good as histomorphometric examination.
- **KEYWORDS:** osseointegration; BMP-2; histomorphometric; Implant; loading

Relationship between Aesthetic Subjective and Objective Evaluation in Anterior Dental Implants

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- **BACKGROUND:** Recent development in implant technologies has caused an increase in dental implant's popularity. More people are replacing their missing teeth with dental implants, which further cause a higher expectation for implants restoration in both functional and aesthetic area. Aesthetic evaluation tend to be subjective and various from one individual to another, these variations causesome difficulties for the practitioners to predict patients' satisfaction at the end of an anterior implant restorations. Pink Esthetic Score/White Esthetic Score (PES/WES) is an index used to objectively evaluate anterior implant restorations, while Orofacial Aesthetic Scale (OAS) is a questionnaire used to evaluate the patients' perceptions of their orofacial appearance after receiving prosthodontic restorations in the anterior region.
- **OBJECTIVE:** The purpose of this study is to assess the relationship between the objective evaluation of an aesthetic implant restoration, by using PES/WES Index, and the subjective evaluation of the same restoration, by using OAS.
- **METHODS:** Intra oral photographs of 56 subjects with anterior implant restorations (N = 56) were taken and evaluated using PES/WES index. Then, subjects were instructed to fill out OAS questionnaire.
- **RESULTS AND CONCLUSION:** The results suggested that patients with high OAS scores tend to also have a high PES/WES score.
- **KEYWORDS:** aesthetic; orofacial; PES/WES; implants; anterior

Relationship of Oral Health Related-Quality of Life and Salivary Cortisol Level in Children with Caries

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- **BACKGROUND:** Children's dental caries have an issue of pain and discomfort. If this condition continues without any treatment, will have an impact of children's quality of life related oral health and trigger cortisol release in salivary. There have been many researches to see the influence of dental caries in quality of life and salivary cortisol level, but none of it explain about the correlation between them.
- **OBJECTIVE:** This research is aimed to see the correlation between oral health related-quality of life and salivary cortisol level in children with caries.
- **METHODS:** This experimental is observational analytical with cross-sectional design and the data of this experiment was statistically analyzed with Kendall and Spearman's correlation to show the correlation of OHRQoL and salivary cortisol level.
- **RESULTS:** The result of this study showed that there was a little correlation ($r = 0,3$) between OHRQoL and salivary cortisol with trend of correlation in negative value. It means, if cortisol level is low, the child's oral health related-quality of life is high. Caries is one of chronic inflammation in dental disease that can influence oral health related-quality of life and trigger releasing cortisol hormone in saliva.
- **CONCLUSION:** In conclusion, children with good oral health-related quality of life is having unstress condition.
- **KEYWORDS:** oral health related-quality of life; salivary cortisol hormone; caries in children

Relationship between the Chronic Pain Severity and Quality of Life of TMD Patient's

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- **BACKGROUND:** The experience of pain may affect one's quality of life. Temporomandibular Disorders (TMD) is the most common chronic orofacial pain. Most TMD patients seek treatment as their pain had started to affect their daily activities.
- **OBJECTIVE:** This study examined the association between chronic pain severity and quality of life of TMD patients using the Indonesian version GCPS and OHIP-TMDs assessment tools (GCPS-ID and OHIP-TMDs-ID).
- **METHODS:** The relationship between sociodemographic factors and quality of life was also assessed. 202 subjects were given three questionnaires (ID-TMD, GCPS-ID and OHIP-TMDs-ID) to fill. The data were collected and analyzed using Kruskal-Wallis test.
- **RESULTS:** Subjects with higher chronic pain severity had higher OHIP-TMDs-ID scores and thus lower quality of life. The relationship between chronic pain severity and quality of life was significant ($p < 0.05$) and corroborated the results of other studies. The quality of life by age, gender, educational level, and employment status were not statistically different ($p > 0.05$). The quality of life was, however, significantly influenced by marital status ($p < 0.05$).
- **CONCLUSION:** Chronic pain severity associated with TMD lowers the quality of life of patients.
- **KEYWORDS:** chronic pain; temporomandibular disorder; quality of life

Masticatory Ability Assessments and Related Factors

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- **BACKGROUND:** One of the most important things in denture treatment is to restore masticatory function to improve the food intake. Masticatory ability assessments are done either objectively or subjectively. There are also various factors that affect masticatory ability in denture wearers.
- **OBJECTIVE:** This study aimed to analyze the relationship between subjective and objective assessments of masticatory ability and factors that possibly affect such as residual ridge heights, age, gender and denture type.
- **METHODS:** A Cross-sectional study with 34 denture wearers as subjects. All of the dentures was fabricated in Dental Teaching Hospital Faculty of Dentistry, Universitas Indonesia. The data collected are as such: sociodemographic data, denture type and masticatory ability, which was measured using two different methods. Masticatory ability assesses subjectively by using a validated questionnaire, while objectively by asking the subjects chewing on Xylitol chewing gum (Evaluating Gum Xylitol®). Residual ridge heights were measured using modified mouth mirror number 3 with metric measurements.
- **RESULTS:** There was no significant correlation between the results of objective and subjective assessments of masticatory ability ($p=0.136$). Residual ridge height ($p=0,003$) had significant relationship with masticatory ability, however age ($p=1,000$), gender ($p=0,711$), and denture types ($p=0,218$) did not.
- **CONCLUSION:** In conclusion, residual ridge height had a relationship with masticatory ability.
- **KEYWORDS:** masticatory ability; residual ridge; removable denture wearers

Efficacy Test of Lotion which containing Fraction of *Sellaginella plana* Leaves and *Lagenaria siceraria* (Molina) Standl Fruits for Skin Erythema Relief

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- **BACKGROUND:** Erythema is one sign of inflammation. Inflammation can occur because it is caused by microorganisms, mechanical trauma, chemicals, and the effects of sun exposure. Cases of erythema caused by sun exposure is the dominant case, because Indonesia is a tropical country with sun exposure throughout the year and most of the population works in the outdoors. Therefore developed skincare lotion by using a combination of active ingredients of the plant to relief erythema due to sun exposure.
- **OBJECTIVE:** *Sellaginella plana* and *Lagenaria siceraria* (Molina) Standl a typical plant native in Indonesia can be used as an active ingredient to relieve erythema of the skin. The active compounds in *Sellaginella plana* are flavonoid quercetin and amino acid glutamate in *Lagenaria siceraria* (Molina) Standl.
- **METHODS:** This design study using randomized controlled trial (RCT), in which the treatment group consisted of five groups: negative, positive, neutral control, the test group of A formulation (containing 1% ethanol fraction *Sellaginella plana* and 0.5% ethanol fraction *Lagenaria siceraria* (Molina) Standl), the test group of B formulation (containing 0.5% ethanol fraction of *Sellaginella plana* and 1% ethanol fraction *Lagenaria siceraria* (Molina) Standl). Each group was induced by exposure to sunlight (outdoor) for 30 minutes at hours 10:00 to 16:00. Then the observed MED after 1 hour, 3 hour and 24 hour getting the treatment of each group.
- **RESULTS:** The result show that the A formulation was significantly ($p < 0.05$) were able to reduce levels of erythema when compared to other formulation.
- **KEYWORDS:** erythema; flavonoids; amino acids; *Sellaginella plana*; *Lagenaria siceraria*

Poster Presentation:

COMMUNICABLE DISEASES

Spatial Pattern of the Economic and Social Tuberculosis Patients in West Java Province

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- **BACKGROUND:** Tuberculosis is one of the major health problems in developing countries. The main cause of the increasing burden of TB issues including poverty in different population groups, such as in countries that are developing. Spatial analysis of area-based disease, an analysis and description of the geography of disease data in regard to population, distribution, environmental, behavioral, social, economic, cases of disease events, and relationships between these variables.
- **OBJECTIVE:** The aim of this study is an analysis of exploratory spatial pattern of socio-economic conditions of Tuberculosis patients in West Java by using data from the Health Research Ministry of Health of the Republic of Indonesia in 2013.
- **METHODS:** Statistical analysis method used is the Moran Index Analysis test and Local Indicators of Spatial Association (LISA).
- **RESULTS:** The results demonstrated using Moran index analysis there is a spatial autocorrelation of tuberculosis patients, so that the spread of tuberculosis patients are evenly spread across the region in the province of West Java. Meanwhile, through the LISA test, it can be concluded that there is a grouping of locations spread of TB patients are in the eastern and northern West Java.
- **CONCLUSION:** The implication of this finding is that policies tackling TB cases in West Java need to consider spatial aspects.
- **KEYWORDS:** tuberculosis; spatial; LISA; Moran Index

The Use of Neutrophil-Lymphocyte Ratio to Predict In-hospital Mortality in Sepsis Patients

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- **BACKGROUND:** Sepsis is a major healthcare problems in the world, killing one in four sepsis patients. The neutrophil-lymphocyte ratio (NLR) is readily available calculated parameters in a basic hematology examination of a complete blood count. Studies have shown that NLR can predict outcomes in many settings including sepsis patients.
- **OBJECTIVE:** This study aimed to evaluate the use of NLR to predict in-hospital mortality in sepsis patients.
- **METHODS:** This retrospective study used medical records data of patients hospitalized in a general hospital in Tangerang District, Banten Province, Indonesia between January to December 2014 which died due to sepsis and non-sepsis causes. The data collected was epidemiological and clinical characteristics including sex, age, length of hospitalization, co-morbidities, laboratories data (leucocyte, neutrophil, lymphocyte count) on admission and survival outcome. NLR was a ratio of neutrophil / lymphocyte, and categorized as high or low based on cut off point of 8.9. The association between NLR with outcome was assessed using univariate logistic regression and then adjusted for potential confounders with multivariate logistic regression. The Kaplan-Meier curves were used to assess the probability of survival between high or low NLR.
- **RESULTS:** Italized patients who died, 57.8% died with sepsis, severe sepsis or septic shock. Characteristics between two group of patients were not significantly different. Patients with sepsis had a statistically significantly higher baseline NLR value compared to patients without sepsis (6.2 (0.2-33.3) vs. 8.4 (0.2-45.5), $p = 0.039$). After multivariate analysis adjustment to the confounding variables there was an association between high or low NLR and in-hospital mortality, with relative risk of 1.094 (95% CI 0.825-1.452), $p = 0.672$.
- **CONCLUSION:** When measured upon admission of sepsis patients, the NLR value was associated with in-hospital mortality, and may be used as predictor of outcome.
- **KEYWORDS:** sepsis; in-hospital mortality; neutrophil lymphocyte ratio

Study of Female Sex Workers in Sukabumi District 2016

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- **BACKGROUND:** Female Sex Workers (FSW) commonly uses smartphone as a media for socialization and communication which called online prostitution. It is because considered a safe, easy, profitable, and they do not need a pimp. By using this way, the spread of HIV AIDS are difficult to track and interventions.
- **OBJECTIVE:** This study aimed to analyse how far the extent of WPS and figure the strategic places (hotspot) in Sukabumi District.
- **METHODS:** The cross-sectional design used to collect the primary data through interview and participatory mapping by key populations and secondary data provided by 'Komisi Peduli AIDS' Sukabumi.
- **RESULTS:** In 2015, there were 80 hotspots in 27 districts out of 47 districts. Some types of hotspot are open space (53%), such as parks, squares; places of entertainment (23%) such as cafes, bars, karaoke; the space to stay, such as rent house, hotels and apartments (15%) and tourism place (9%). WPS direct was as much as 40% and the rest 60% as indirect WPS (WPS TL). The WPS TL hotspots increased around the factories up to 24 hotspots, with 39 cases. WPS TL facilitated by social media such as facebook to display the photos addressed to prospective customers, sometimes they also display unoriginal photos to avoid the acknowledgment their family or friends. They used facebook page then continued with communications via whatsapp, Black Berry Messenger (BBM), Short Message System (SMS) and make a call or phone. After they agree the tariff or price, then the customer transfer sum amount of money or give cash payment. Finally, they can determine when and where they can perform sexual transactions such as in the rent house or hotel.
- **CONCLUSION:** It needs real steps from the government through regulation and monitoring to achieve the Sustainable Development Goals and prevent the explosion of AIDS.
- **KEYWORDS:** HIV AIDS; prostitution; female sex workers

The Role of International Travel and Importation of Chikungunya in Australia: An Enhanced Surveillance Study

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- **BACKGROUND:** Global travel is responsible for the importation and establishment of many infectious diseases around the world including chikungunya. Chikungunya is not yet established in Australia; however sporadic incursions occur due to travellers returning from endemic countries such as Indonesia. Interventions designed to promote health seeking behaviour prior to travel can reduce the incidence of travel related infections and therefore risk of importation and subsequent establishment upon return.
- **OBJECTIVE:** We aimed to describe the health seeking behaviours of returned travellers with chikungunya in order to provide evidence for future public health interventions, thereby reducing the risk of virus establishment in Australia.
- **METHODS:** Newly notified cases of chikungunya in New South Wales and Victoria were surveyed on their pre-travel health seeking behaviour and other relevant demographics between February 2013 and January 2014.
- **RESULTS:** The survey was completed by 20 out of a total 55 notifications during the study period. Indonesia was most commonly reported travel destination (62%). 37% of cases reported always using insect repellent whilst overseas; however of those, 70% only applied repellent at night. The majority (85%) never used mosquito nets compared 32% who reported never wearing clothing with long sleeves and long pants.
- **CONCLUSION:** Our report demonstrates a lack of pre-travel health seeking behavior and utilisation of risk reduction strategies for arboviral diseases such as chikungunya among those returning from overseas to Australia. While some behaviors such as the use of air-conditioning is commonly practiced, other strategies like the use of mosquito nets or repellent are either poorly followed or used incorrectly. We conclude that future interventions focus on the promotion and correct use of these common risk reduction strategies.
- **KEYWORDS:** chikungunya; VFR

Cost Analysis of Two Chemotherapy Regimens (Taxane-Based and Cisplatin Based) among Epithelial Ovarian Cancer in Dharmais National Cancer Hospital

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- **BACKGROUND:** Epithelial ovarian cancer remains to be the most lethal gynecologic malignancy in the world. Standard treatment of ovarian cancer is surgical procedures and combination with chemotherapy. Currently, chemotherapy for ovarian cancer treatment are mainly taxane-based and cisplatin based regimens. Despite of the widely used regimens in Indonesia, cost evaluation of the two chemotherapy regimens for ovarian cancer treatment has not been done yet.
- **OBJECTIVE:** Objective This study aimed to evaluate and compare treatment costs of taxane-based versus cisplatin based chemotherapy.
- **METHODS:** This exploratory study used data from medical and financial records of ovarian cancer patients who were admitted, underwent surgery and treated with chemotherapy, subsequently, between 2008-2012 in Dharmais National Cancer Hospital. There was a total of 41 patients, which 9 patients have data on taxane-based chemotherapy costs and 3 have data on cisplatin-based.
- **RESULTS:** In general, surgical procedures consumed the highest treatment cost, and followed by chemotherapy cost. Taxane-based chemotherapy (6 cycles) was 4 times more expensive than cisplatin-based. Pre and post chemotherapy cost of care among those treated with taxane-based regimen were 3-4 times more expensive than that of cisplatin-based treatment. Patients treated by taxane were more likely to have longer (median=18 months) disease free recurrence time than patients who were treated by cisplatin (median=5 months).
- **CONCLUSION:** Overall results showed that taxane-based protected patients from recurrences 3 times longer than cisplatin-based, but with 4 times higher costs.
- **KEYWORDS:** ovarian cancer, cost analysis, taxane chemotherapy, cisplatin chemotherapy

Poster Presentation:

DRUGS DESIGN & DEVELOPMENT

Evaluation of k-Carrageenan Film Added with Glucomannan for Soft Capsule Application

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- **OBJECTIVES:** Non-gelatin or vegetarian soft capsule was intensively studied to overcome any drawbacks of gelatine formulation due to it is non animal origin. Combination of k-Carrageenan and Glucomannan, a natural polysaccharide, as combination polymer in soft capsule formulation was investigated.
- **METHODS:** Gelling and viscosity characteristic of thin film produced from 1%-3%-4%-5% of k-Carrageenan; 0.25%-0.5%-0.75%-1% of Glucomannan and combination of k-Carrageenan-Glucomannan (4:1) was evaluated. Sodium carbonate were employed as counter ion in concentration of 0.02% and 0.10%. Texture analysis were carried out to study mechanical characteristic of thin film and gelatine formulation with polimer content 45% was used as reference characteristic. Scanning electron microscope (SEM) was performed to study microstructure of thin film.
- **RESULTS:** Both k-Carrageenan and Glucomannan showed logarithmic profile of viscosity. The mechanical characteristic of reference gelatine formulation were 106.67 ± 5.357 mm; $266.68 \pm 13.392\%$; 13.07 ± 0.00 Mpa; 4.91 ± 0.248 Mpa and for combination of k-Carrageenan – Glucomannan (4:1) in total polymer content of 5% and 0.002% sodium carbonate were 43.37 ± 3.092 mm; $108.41 \pm 7.73\%$; 10.58 ± 0.00 Mpa; 9.79 ± 0.652 Mpa for elongation, strain, stress and modulus young, respectively. Both gelatin and k-Carrageenan – Glucomannan formulation had viscoelastic deformation indicating by its low modulus young. The combination of k-Carrageenan – Glucomannan had lower elasticity indicating by it lower elongation and strain due to its polimer content limitation. High viscosity solution was obtained indicating macromolecule interaction between those polysaccharide.
- **CONCLUSION:** The combination of k-Carrageenan – Glucomannan showed close mechanical characteristic to reference gelatine formulation and prospective to be used in non-gelatin soft capsule formulation.
- **KEYWORDS:** k-Carrageenan; glucomannan; counter ion; texture analysis; elasticity

Characterization of Transfersom Xanthone of Extract Mangosteen Pericarp (*Garcinia mangostana* L.)

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- **BACKGROUND:** Xanthenes, the major secondary metabolites of mangosteen (*Garcinia mangostana* L.) possess antioxidant activity, especially the dichloromethane fraction of mangosteen pericarp (DFMP). Elastic vesicular carriers, transfersome were proposed for topical delivery of xanthone.
- **OBJECTIVES:** The aim of this research is to investigate the antioxidative capacity of DFMP and the characteristic of transfersome containing DFMP.
- **METHODS:** The antioxidative capacity of DFMP was evaluated using 2,2-diphenyl-1-picrylhydrazyl free-radical scavenging assay. Transfersom was formed by thin layer hidration method. DFMP was used as the active ingredient and entrapped in vesicles. Transfersome were prepared using Phospholipon 90 H[®], as the lecithin component and Tween 80, as edge activator agent. The ratio between lecithin and tween 80 was 85:15. The active ingredient and lipid components (lecithin and tween 80) ratio were 1:2. Dynamic light scattering was used for the physicochemical characterization of vesicles and the mean size, size distribution and zeta potential were evaluated. The entrapment efficiency of transfersome suspension were also investigated.
- **RESULTS:** The result showed that DFMP has very high potential of antioxidant activity (IC₅₀ 27.05 µg/ml). The Dmean volume, polydispersity index and zeta potential of the transfersome suspension was 399.07 ± 54.8 nm, 1.000 and -36.83 ± 1.7 mV respectively with high entrapment efficiency $99.38 \pm 0.98\%$.
- **KEYWORDS:** *Garcinia mangostana* L.; xanthenes; antioxidant; transfersome; characterization

Preliminary Acute Oral Toxicity Study of White Tea Leaf (*Camellia sinensis* (L.) Kuntze) Ethanolic Extracts

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- **BACKGROUND:** White tea is a type of tea which manufactured with minimal processing only drying without fermentation process. White tea is prepared from very young tea leaves or buds of *Camellia sinensis* (L.) Kuntze, Theaceae, covered with tiny, silvery hairs, and dried immediately after picking to prevent oxidation and commonly used as a beverage and herbal medicine.
- **OBJECTIVES:** The present study was aimed to evaluate the safety of the white tea leaf ethanolic extract (WTE) with acute toxicity tests.
- **METHODS:** The acute oral toxicity of WTE was performed at dose 1250, 2500, and 5000 mg/Kg BW of Deutschland, Denken and Yoken (DDY) mice. The animals were observed for any mortality, behavioral, body weight and feed-water consumption pattern during the 14-day study. All the vital organ such as liver, kidney, and heart were isolated on day-15 to observe macroscopic and relative organ weight (ROW).
- **RESULTS:** This studies showed that the oral LD50 of WTE was greater than 5000 mg/kg BW and suggests that the WTE is practically non-toxic in a single dose of level 5000 mg/kg BW.
- **KEYWORDS:** white tea; *Camellia sinensis* (L.) Kuntze; acute toxicity

Poster Presentation:

ENVIRONMENTAL AND OCCUPATIONAL HEALTH

Development of Children Behavior Aged 6-12 Years and Knowledge of Parents about Green Open Space in Purworejo District

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- **BACKGROUND:** The development of children behavior are affected by environment and heredity. One of the environment that affects children behavior is children playing in environment. Children have many kinds of playing in environment, as like informal playing environment in green open space. There are many factors affecting children to play in green open space, one of them is parent's knowledge about green open space. Parents are expected to know benefit of green open space for children aged 6-12 years.
- **OBJECTIVES:** This study aims to determine the relationship between behavioral development of children aged 6-12 years and the knowledge of parents about the green open space.
- **METHODS:** This study used cross-sectional method. Primary data were used through interviews using a questionnaire about parent's knowledge of green open spaces and the Strengths and Difficulties Questionnaire.
- **RESULTS:** The results showed that there was no significant relationship with an OR of 1.22 (95% CI: 0.62 to 2.41), but there are 81.5% of children who have well behavioral development (have a good prosocial and not impaired psychosocial) and parents who are knowledgeable about the green open spaces.
- **CONCLUSION:** It was concluded that there was no significant correlation between the development of children behavior and knowledge of parents about the green open space, but the results showed that half of older people with a good knowledge of green open space, also has a child with the development of good behavior.
- **KEYWORDS:** green open space; parent's knowledge; behavioral development; children

The Effect Air Borne Bacteria Count in the Air with The Prevalence of Tuberculosis in the District of West Java Indramayu 2016

Authors: Leonita Agustina, Ririn Arminsih

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- **BACKGROUND:** Tuberculosis (TB) is an infectious disease caused by infection with M.Tuberculosis. These bacteria usually attack the lungs, but also can attack any part of the body such as the kidney, spine, and brain. Prevalence of pulmonary TB in Indramayu (1,1%) is high and healthy homes (66,1%) is still under the standards of health ministry.
- **METHODS:** This research using case-control design. Number of samples 50 cases (BTA positive) and 50 control (BTA Negative).
- **RESULTS:** The result of this study indicate an association between PM2.5 (5,63 (2,36-13,42) with incidence pulmonary tuberculosis. There are eight variables that indicate of the risk for the occurrence of pulmonary TB that is variable age (1.63, 0.74 to 3.62), history of contact (2.25; 0.91 to 5.54), smoking (1.78; 0.75 to 4.25), bacteria count (1.67; 0.74 to 3.77), lighting (1.99; 0.82 to 4.83), ventilation (6.68 ; 0.77 to 57.69), the type of floor (1.74; 0.39 to 7.71) and the type of wall (2.55; 0.62 to 10.49). The respondents living in the house with bacteria count that are not eligible at risk of suffering from pulmonary tuberculosis by 1.5 times compared to respondents who lived in the house with bacteria count eligible after controlled by variable PM2.5, contact history and ventilation.
- **KEYWORDS:** tuberculosis; bacteria count; individual characteristics; behavior; home environment

Total Workplace Safety and Health (TWSH) to Preserved and Maintain Workers' Safety, Health, and Wellbeing : A Literature Review

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- **BACKGROUND:** Traditional occupational safety and health protection programs have primarily concentrated on ensuring that work is safe and that workers are protected from the harms that arise from work itself.
- **OBJECTIVES:** This article discuss about history and approach of Total Workplace Safety and Health. Aging workforce, unhealthy lifestyle & lack of safety mindset become challenges of worker's safety and health.
- **RESULTS:** Healthy workplace is inspired by the WHO definition of health as: "A state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity". Safe and Healthy Workplace is one where workers and managers collaborate to use a continual improvement process to protect and promote the health, safety and wellbeing of all workers and the sustainability of the workplace.
- **CONCLUSION:** In conclusion, the paradigm shift must change from labour approach occupational health to public health approach worker's health.
- **KEYWORDS:** healthy workplace; safety and health

Poster Presentation:

HEALTH SYSTEM

The Willingness to Pay of Universal Health Coverage Program (JKN) among Motorcycle Taxi Driver (Ojeker) in the City of Depok

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- **BACKGROUND:** Since 2014 Indonesia was launched UHC program called JKN to cover all Indonesians. To achieve this vision there is a big challenge that the number of informal workers still very large. We will face some difficulties when we try to incorporate informal workers into the JKN system. One group of the informal workers are ojeker.
- **OBJECTIVE:** The aim of research was to assess the willingness to pay of JKN program among ojekers and its determinants.
- **METHODS:** The research design was cross-sectional study and the respondents were the ojekers that stay at a certain places (called ojek pangkalan). The three sites of ojekers were chosen randomly. Furthermore, selection of respondents among ojekers at the site was accidental sampled. The number of samples in each site was proportionate with the number of ojekers there. The number of sample of this study were 158 respondents. We use some inclusion criteria to select the respondent. We also made a research instrument validity and reliability test. We use the Contingent Valuation Method (CVM) with Open Bidding Technique to calculate the value of WTP.
- **RESULTS:** The study shown that the WTP of JKN among ojekers was IDR19,364 per member per month (PMPM) for the third class of hospital service and IDR27,439 and IDR37,159 for the second and first class of hospital service respectively. Its mean that the WTP of JKN program among ojekers was far below the amounts of JKN premium. The value of WTP was affected by income, age, and knowledge of the respondent. The monthly average income of ojeker was IDR1,971,161. This amount was less than the monthly minimum wage of the city of Depok i.e. IDR3,000,000.
- **CONCLUSION:** Ojekers have both low income as well as WTP of JKN, therefore we propose them as the recipients of JKN premiums subsidy from the government.

Regional Government Health Spending in Indonesia: What Drives the Spending?

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- **BACKGROUND:** Health is one of the functions that is decentralized to regions in Indonesia. The government in those regions, both provinces and districts, can use funding from each government level and also use transfers from central government as the consequences of fiscal decentralization. Indonesia consists of more than 30 provinces and more than 400 district/cities, which increased in number over the years. Decentralization has make the regional government health spending also varied across the region. The Indonesia National Health Accounts data revealed that the health spending was mainly spent by subnational government.
- **OBJECTIVE:** This article is trying to analyze what makes the variety of provincial and district government health spending in Indonesia over the years.
- **METHODS:** The author analyzed data from districts and provinces aggregated to provincial level for various years. The data was collected mainly from Ministry of Finance, Ministry of Health, and Central Board of Statistics. The author uses per capita health spending as response variable, while share of senior citizen population, per capita APBD, physician ratio, and other variables as the explanatory variables.
- **RESULTS:** The analysis found that per capita APBD can explain more on the variation of the government spending on health in regions. It can be said that the richer the government the more they expense on health.
- **CONCLUSION:** This study suggests that the central government should pay attention to poorer regions so that they can spend is more on health by using instruments of fiscal decentralization.
- **KEYWORDS:** government; region; health spending

Promoting Hand-washing to Reduce Diarrhea In Amanatun Selatan and Kie Sub Districts, Timor Island, Indonesia: A Planning Phase of A Problem Solving Cycle Report

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- **BACKGROUND:** The Riskesdas 2013 reported the prevalence of diarrhea in Indonesia was 3,5%, and East Nusa Tenggara was the second highest prevalence (7%). Lack of knowledge about healthy lifestyle is the major contributing factor.
- **OBJECTIVE:** We aimed to introduce methods to improve knowledge regarding the importance healthy life style to the school-age children.
- **METHODS:** We identified problems through in-depth interviews and secondary data analysis. Using problem solution matrix, the study selected the interventions that used during the trials. The selected programs were trialed and evaluated.
- **RESULTS:** We found that the high incidence of diarrhea was affected by several factors: lack of awareness regarding personal hygiene, incorrect behavior regarding hand washing and defecation habit, and substandard sanitation and hygiene (STBM) program implementation. Geographical conditions and weather also contributed to diarrhea. The problem solution matrix concluded several intervention programs: the 5-steps hand washing jingle, health promotion, junior doctors, Tippy Tap, and provision of posters and flip charts about hand-washing. The evaluation of the program indicated that there were significant improvement of healthy knowledge and behavior.
- **CONCLUSION:** Our study showed that health promotion through hand-washing education program can be used as the major tool to increase the awareness of diarrhea disease.
- **KEYWORDS:** diarrhea; problem solving cycle; health promotion

Nostril Symmetrical Evaluation Post Cronin Method Labioplasty and Tajima Method Rhinoplasty In Unilateral Cleft Lip and Palate Cases from Anthropometry Aspect

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- **BACKGROUND:** Nasal deformity in Unilateral Cleft Lip and Palate (UCLP) patient is caused by nasal septum deviation, alar cartilage distortion, and unparallel maxilla and alveolar bone which caused by widening of palate. Additional rhinoplasty in labioplasty method becomes a solution in management of UCLP patient in order to achieve nostril symmetrically.
- **OBJECTIVE:** The aim of this study is to compare nostril size and symmetry between cleft side and non cleft side post Cronin method labioplasty and Tajima method rhinoplasty.
- **METHODS:** Evaluation of nostril symmetrical according to anthropometry scale from profile photograph, which are nostril height, nostril width, $\frac{1}{4}$ medial nostril height, and nostril area in 35 UCLP patients post Cronin method labioplasty and Tajima method rhinoplasty.
- **RESULTS:** Based on statistic, the result showed $P < 0,05$ in width and $\frac{1}{4}$ medial nostril height. Height and nostril area result showed $p > 0,05$. There is no significant difference in height and nostril area post Cronin method labioplasty and Tajima method rhinoplasty between cleft side and non cleft side in UCLP patient. There is significant difference in width and $\frac{1}{4}$ medial nostril height between cleft side and noncleft side.
- **KEYWORDS:** cronin method labioplasty; tajima method rhinoplasty; anthropometry; nostril symmetrical

Validation of Sleep Bruxism Questionnaire Based on the Diagnostic Criteria of the American Academy of Sleep Medicine

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- **BACKGROUND:** Sleep bruxism could be an etiology of Temporomandibular disorders (TMD). Patients with sleep bruxism are more likely to experience jaw pain and limitation of jaw movement, than people who don't have sleep bruxism. One common way to diagnose sleep bruxism is by using questionnaire, besides clinical examination, electromyography, and polysomnography. Sleep bruxism questionnaire from American Academy of Sleep Medicine (2005) diagnostic criteria has been used worldwide but it has never been validated in Indonesian.
- **OBJECTIVE:** To analyze the reliability and validity of sleep bruxism questionnaire in Indonesian.
- **METHODS:** The original English version of the questionnaire was translated using the forward-backward technique, pilot tested in 30 subject, and then applied to 92 subjects between 20-50 years old. The internal consistency of questionnaire was evaluated using Cronbach's alpha (α) coefficient. The Intra-class correlation (ICC) coefficients was also evaluated. The validity was analyzed by convergent validity which was done by analyzing sleep bruxism and TMD.
- **RESULTS:** Cronbach's alpha showed moderate result (0.515), and ICC test-retest value was above 0.808. Validity analysis using coefficient contingency correlation showed significantly different ($p < 0.05$) and weak correlation value (0.362). A positive correlation value with a weak correlation showed that sleep bruxism patient is not always causing TMD.
- **CONCLUSION:** The Indonesian version of sleep bruxism questionnaire is reliable and valid for the assessment of sleep bruxism.
- **KEYWORDS:** sleep bruxism; questionnaire; validation

Implementation of Smoking Cessation Counseling Clinic at Respira Pulmonary Hospital, Yogyakarta, Indonesia

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- **BACKGROUND:** Smoking Cessation Counseling Clinic at Respira Pulmonary Hospital of Yogyakarta is a health service that helps smokers to quit smoking. But smokers who visit there were still low, that is 27 (17,4 %) patients out of 155 patients targeted.
- **OBJECTIVE:** The purpose of this research was to explore the implementation of smoking cessation clinic at Respira Pulmonary Hospital of Yogyakarta.
- **METHODS:** This research is qualitative research with case study design. The participants consist of 4 people (3 counselors and 1 patient). Data are collected through interview, observation and documentation. The data are verified by using credibility, transferability, dependability and confirmability and It used tematic content analysis.
- **RESULTS:** Smoking Cessation Counseling Clinic is outpatient counseling in Respira pulmonary hospital of Yogyakarta. Human resources were consisted of 4 people and they responsibel for 5A (ask, advice, assess, assist, arrange) as well as follow the training. The funding came from local government budget of Yogyakarta. It used individual counseling method and follow up system. The division of task was based on scheduling system. The coordination system is done by phone. The supervision is conducted by sharing and discussion. History and current status of patients are listed and reported on the evaluation meeting. Internal barriers occur in the input (human resources, material) and counseling process, while external barriers come from the attitude of the patients.
- **CONCLUSION:** Smoking cessation counseling clinic could not be implemented properly because there were bariers from internal and external organization so It is required replanning and developing new method to increase patients visit.
- **KEYWORDS:** smoking cessation counseling clinic; input; process; barriers

Disparities in Health Care Facilities - A Case Study of Tambora Puskesmas and Puskesmas Aifat Timur

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- **BACKGROUND:** In the era of BPJS, Puskesmas become a fundamental role in the implementation of universal health coverage.
- **METHODS:** This study is a qualitative study with a comparative approach. The conceptual framework developed through a systems approach to explore the phenomenon of disparity of two different health centers.
- **RESULTS:** The findings of the study visits on the input side of human resources HR, HR in Puskesmas Tambora has met the standard of health personnel by Health Minister Regulation No. 75 Year 2014 concerning PHC either the type or amount, while PHC Aifat Timur has only one health worker that is only one nurse alone. In terms of infrastructure and facilities in Puskesmas Tambora has a complete medical appliance, electrical installation and water even a lift, while the infrastructure and facilities in Puskesmas Aifat Timur is not yet complete, lack of electricity flowing so cold chain is not functioning and the generator does not work because there was no power source. In terms of funding sources known to the resources available in the Puskesmas Tambora is almost equal to the resources available in Puskesmas Aifat Timur ie Fund budget and BOK (Operational Cost Health) from the state budget, but in addition to these funds Puskesmas Aifat Timur also get special autonomy funds because it belongs to the region Maybrat Regency, West Papua Province. The process, both Puskesmas routinely perform mini workshops and coordinating with City Health Department. Lastly, side control, evaluation and monitoring of the health centers have in common is their direct supervision of the City Health Department/local district. Fulfillment of health personnel and facilities become a priority in meeting health needs in other areas in Indonesia.

Rehabilitation of Non-Syndromic Oligodontia on Young Adult : Case Report

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- **BACKGROUND:** Tooth agenesis is one of the most common congenital condition that occurs on human. Missing a single tooth is common but absence of multiple teeth is a rare condition. Oligodontia is a congenital anomaly that causes the missing of six or more teeth that only effects 0,1-1,2% of population. Oligodontia could be associated with cleft lip or cleft palate and another genetic syndrome (syndromic oligodontia) or without any other condition (non-syndromic oligodontia), even the exact etiology is yet unknown.
- **OBJECTIVE:** To establish masticatory and esthetic function.
- **RESULTS:** A 20 years old female came to Dental Teaching Hospital Universitas Indonesia complaining multiple decayed teeth. Patient was physically and mentally healthy. Intraoral examination revealed the presence of deciduous 55, 53, 64, 65, 71, 73, 81 – 85 and permanent teeth of 16, 12, 21, 22, 26, 37, 32, 46, 47. Panoramic radiograph showed absence of 18, 17, 13 – 15, 11, 23 – 25, 27, 28, 38, 33 – 36, 31, 41 – 45, 48. Every conditions of each dentition were assesed. Patient was diagnosed non-syndromic oligodontia. Prosthodontic rehabilitation was given to restore the masticatory and esthetic function by using telescopic prosthesis on maxillary and removable partial denture on mandibular.
- **CONCLUSION:** Rehabilitation of non-syndromic oligodontia needs a multidisciplinary approach and many considerations. Preservation of remaining deciduous dentition and fabrication of a telescopic prosthesis and removable denture improve a functional and esthetic rehabilitation for the patient.
- **KEYWORDS:** oligodontia; non-syndromic; agenesis

The Efficacy of Platelet-Rich Fibrin Lysate (PRF-L) for Fibroblast Cell Regeneration

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- **BACKGROUND:** One of the most distinct sign of irreversible pulpitis is the presence of permanently damaged fibroblast, which is the primary component of dental pulp. Regeneration of pulp tissue has been difficult as the tissue is encased in dentin without collateral blood supply except from the root apical end. Growth factors play an important role to promote healing process. It is acknowledged that PRF-L release growth factors and have the potential ability to promote healing process of the damaged fibroblasts.
- **OBJECTIVE:** The aim of this study is to evaluate the proliferation capability of serum-starved fibroblasts by using various concentration of PRF-L.
- **METHODS:** Human dermal fibroblasts were divided into two groups: Group I consist of serum-starved fibroblast and treated by various concentration of PRF-L (50%, 25% and 12,5%). Group II consist of normal fibroblasts as positive control, meanwhile serum-starved fibroblasts without any treatment as a negative control. Fibroblast proliferation capability were evaluated after PRF-L application and compared to control groups.
- **RESULTS:** It showed that in Group I: serum-starved fibroblast inside 25% PRF-L had significant ($p < 0.05$) increased proliferation rates compared to control. Fibroblasts proliferation is lowest in 12,5% group but not significant with other groups.
- **CONCLUSION:** It can be concluded in this study that 25% PRF-L give an optimal result in fibroblast cell proliferation.
- **KEYWORDS:** serum-starved fibroblasts; growth factor; platele-rich fibrin lysate (PRF-L)

Partnership Scheme as a Way to Deliver Qualified Health Professional

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- **BACKGROUND:** Indonesian health system requires qualified health professional to give health services. The internship program and thesis are part of the educational process that takes an important role, and to do that we need a partner. This paper is based on review which found that the quality of internships and thesis topics students of Public Health specialisation Hospital Management didn't meet expectations.
- **OBJECTIVE:** Disseminate the idea related to efforts that can be done to improve the quality of education with the approach of inter-institutional partnership.
- **METHODS:** Qualitative, Interview and Secondary Data Analysis.
- **RESULTS:** Partnership includes Internships and research activities. Students in the implementation will conduct internships at the hospital within 22 days with a number of competencies that must be met and then continue with the completion of the final project in the form of thesis. In the scheme, FKM UI expends some funds which are adjusted to capability of the faculty to arrange internships while Hospital develop research tree into the need and then will be matced based on students' interest in the topic for the thesis. FKMUI Has been conducting a cooperative relationship with one government hospital, three private hospitals and on process with several others. The outcome of this partnership is merely enhancing the quality of students education. These collaborative efforts provide benefit for both parties. Hospital is achieving research results to be used as an evidence based policy, while FKMUI is achieving the quality of education that can meet qualification.
- **CONCLUSION:** Forms of partnership pursued into mutual benefit, therefore both sides feel the need to maintain the quality of education in this internship and thesis.
- **KEYWORDS:** health system; qualified health professional; health professional education; partnership

Contribution Use of Proton Pump Inhibitor with Blood Magnesium Levels Patients at RSUPN Dr. Cipto Mangunkusumo Jakarta

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- **BACKGROUND:** Proton pump inhibitors are one of controller medication gastric acid the most widely prescribed. Long-term use of proton pump inhibitors has a risks decrease of blood magnesium levels (hypomagnesemia).
- **OBJECTIVE:** This study aims to assess the contribution use of proton pump inhibitors with blood magnesium levels patients at RSUPN Dr. Cipto Mangunkusumo Jakarta.
- **METHODS:** The study design was a cross-sectional comparative study with consecutive sampling techniques. Research time on June to August 2016. This study compared blood magnesium levels among patients using proton pump inhibitors (lansoprazole and omeprazole) as standard with patients not taking the drug to control gastric acid. Statistical analysis was performed with the unpaired t-test, one-way ANOVA, and Kruskal-Wallis.
- **RESULTS:** The average levels of magnesium patients using PPIs is $2,092 \pm 0:20$ mg / dL and the average magnesium levels patients who not taking PPIs is $2,298 \pm 0:38$ mg / dL, $p = 0.001$ (significant). The average levels of magnesium patients using omeprazole magnesium lower than lansoprazole and statistically significant.
- **KEYWORDS:** proton pump inhibitors; blood levels of magnesium; omeprazole; lansoprazole

The Experience of Macassarese Receive Nursing Care in Syekh Yusuf Hospital, Indonesia: An Ethno-Phenomenological Study

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- **BACKGROUND:** The Macassarese's behavior as a consequence of local culture is a part of nursing service management. This is done as the implications of caring in nursing, as an effort to improve the quality of nursing care that focuses on client's satisfaction.
- **OBJECTIVE:** This ethno-phenomenological study aimed to explore the experience of Macassarese receiving nursing care in Syekh Yusuf's hospital Gowa, Indonesia.
- **METHODS:** This study involved six participants and four key informants. Data were collected by purposive sampling through depth interview and observation.
- **RESULTS:** Four themes emerged: 1) Believing the concept and health-illness behavior through naturalistic and personalistic approach; 2) Expect more caring and communicative from nurses; 3) Caring of nursing makes comfortable and feeling well faster; 4) Feeling satisfied with the treatment at the Hospital on its services and human resources.
- **CONCLUSION:** This study indicated that the importance of considering local values and culture in the delivery of nursing services that can be contained on the value and philosophy of nursing. Recommendations are offered to formulating standard of culturally sensitive nursing care and doing cultural awareness workshop or culturally sensitive nursing care training to improve the cultural competence of nurses.
- **KEYWORDS:** caring; macassarese; nursing care; nursing service management

Assessment of Antibiotic Utilization Before and After National Formulary Implementation at Primary Health Care of Sungai Penuh City Indonesia

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- **OBJECTIVE:** The objective of this study is to compare the use of antibiotics at the Primary Health Care of Sungai Penuh City before and after National Formulary implementation in 2014 and 2015.
- **METHODS:** This study was cross-sectional study. This study used the data were collected from the monthly drug used the report of outpatient from 2013 to 2015 at 5 Primary Health Care in Sungai Penuh City, Jambi Province, Indonesia. This study was performed by ATC/DDD methodology. The number of defined daily doses, DDDs/1000 inh/day, and the percentage of the total utilization had been determined. The quality of antibiotic use was also assessed in a number of antibiotics that account for 90% of antibiotics used. The study collected 180 monthly drug used reports and found 89 drugs were used in 5 PHC from 2013 to 2015.
- **RESULTS:** The result showed that there were ten antibiotics with J01 Anatomical Therapeutic Chemical (ATC) classification were used. Antibiotic usage decreased insignificantly by 27.32% 53.22 DDDs/1000inh/day in 2013 to 38.68 DDDs/1000inh/day during 2014 ($p=0.496$) and also decreased insignificantly again in the second year of National Formulary implementation by 9.9% 34.85 DDDs/1000inh/day during 2015 ($p=0.45$). Amoxicillin (86.82%), cotrimoxazole (6.81%) and tetracycline (1.60%) are the common antibiotics used.
- **CONCLUSION:** The conclusion is that the effectiveness of National Formulary implementation after two years at 5 PHC in Sungai Penuh City Jambi was not revealed.
- **KEYWORDS:** antibiotic; national formulary; primary health care; ATC/DDD; Sungai Penuh City

Government Strategies to Address Health Human Resources Imbalances

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- **BACKGROUND:** Health human resources (HHR) are the vital resources for health development in a country. But still, many countries face problem with the availability and the distribution of HHR, including Indonesia. According to puskesmas data in 2013, there were more than 10% puskesmas have no doctors. Many strategies have been tried to reduce this situation. In this research will be analyzed the strategies that government have been done.
- **METHODS:** The method for this research is qualitative by reviewing HHR regulation related to fulfill the lack of HHR in remote areas.
- **RESULTS:** The result of this research showed that there are some strategies for HHR problem such as recruitment the part time worker (called Pegawai Tidak Tetap/PTT), special task for HHR diploma, resident special task, scholarship for specialist medical education, education task program for HHR, and medical internship program. The newest program is Nusantara Sehat which is distribution for HRH as a team. The compensation for doctor PTT is Rp. 4.851.250 (in remote area) and Rp. 7.117.500 (in very remote area). The incentive for HHR in Nusantara Sehat program is Rp. 7.850.000 (for doctor and dentist) and Rp. 4.400.000 (for other profession). The incentive for special task for HHR diploma is Rp. 2.500.000. As resident in special task, the doctor will be paid Rp. 7.500.000 which is lower than the incentive for doctor in Nusantara Sehat program. Length of duration task is also different among program. The duration task for Nusantara Sehat is two years but for doctor PTT is one year until three years. Most of those programs are voluntary, only internship program is mandatory for doctors' graduate from competency based program study.
- **CONCLUSION:** It is important to emphasize that local governments have to support and assure the adequate investments and facilities to improve the retention of HHR in remote areas.

Poster Presentation:

MATERNAL AND CHILD HEALTH

The Effect of Pop Up Book "Aku dan Gigiku" to Blood Pressure in Children Aged 4-6 Years

Authors: Kusuma Prita Adriani, Margaretha Suharsini, Eva Fauziah, Meutia Dienda Citrawuni

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- **BACKGROUND:** Dental procedures in children can induce changes in blood pressure due to anxiety.
- **OBJECTIVE:** This study was to evaluate the effectiveness of pop-up book "Aku dan Gigiku" as an intervention in reducing anxiety in early aged children before dental treatment.
- **METHODS:** Seventy-eight children aged 4-6 years randomly divided into two groups, an intervention group and control group without intervention of pop-up book. They were placed in waiting room and blood pressure was measured. This experimental design of clinical research was statistically analyzed with independent t-test, to measure the comparison of decreased blood pressure between intervention group and control group.
- **RESULTS:** The result of this study showed that there was a significant difference of decreased blood pressure with intervention of pop up book "Aku dan Gigiku". Dental anxiety leads to undesirable distresses, and this anxiety will generate physiological changes such as blood pressure. An intervention should be taken to reduce dental anxiety, pop up book is an example of intervention media, as it educates the children and presents interesting illustration.
- **CONCLUSION:** Pop up book "Aku dan Gigiku" seems to be an effective method in reducing anxiety in children aged 4-6 years before dental treatment.
- **KEYWORDS:** pop up book "Aku dan Gigiku"; blood pressure; children aged 4-6 years

Level of Salivary Alpha Amylase in Mother and Children with Sensory Impairment after Dental Treatment

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- **BACKGROUND:** Anxiety facing dental treatment is a very familiar problem found among children. While in children with sensory impairment, oral problems are at a higher risk thus needs to be properly addressed in a regular basis. Stress and anxiety in mothers, especially in this group, can influence their children's behaviour as their emotional bonding is very strong due to their inability. Salivary alpha amylase (sAA) measurement is proven method to show level of anxiety in a noninvasive way.
- **OBJECTIVE:** This study aimed to assess the relationship between sAA level in mother and children with sensory impairment after dental treatment.
- **METHODS:** Sixty pairs of children with sensory impairment with their mothers signed to participate this study. Children with no history of dental treatment had dental prophylaxis done in treatment room continued by measurement of sAA level. In separated room after the child was done with treatment, their mother's sAA level were recorded.
- **RESULTS:** Significant positive correlation was found between sAA level of mother and children with sensory impairment after dental treatment ($r=0.309$; $p<0.05$). Referring to previous study of this series, sAA level of mother and their children with sensory impairment after dental treatment was significantly lower compared to pre-treatment measures. Strong correlation also noted in our previous study between mother and children's sAA level before dental treatment. Continued positive correlation found in this study showed how a controlled maternal anxiety is beneficial for reducing anxiety in children with sensory impairment during dental treatment.
- **CONCLUSION:** Significant positive correlation in sAA level between children with sensory impairment and their mothers after dental treatment.
- **KEYWORDS:** salivary alpha-amylase; anxiety; children; visual impairment; hearing impairment; mother; after dental treatment

The Effect of Pop-up Book "Aku dan Gigiku" to Pulse Rate in Children Aged 4-6 Years

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- **BACKGROUND:** Anxiety becomes a problem to children in dental treatment. One of the physiological response is the increased pulse rate. Early aged children respond aggressive to anxiety and need psychological approach. Pop-up book is an instrument that can improve their interest, so the substance of dental health education can be understood.
- **OBJECTIVE:** The purpose of this study was to investigate the intervention of pop-up book in reducing anxiety through pulse rate.
- **METHODS:** A total of 78 children aged 4-6 years divided into two groups; the intervention group with pop-up book "Aku dan Gigiku" and control group, pulse of both groups were measured. This study was an experimental design of clinical research. Independent t-test was used to measure comparison of decreased pulse rate between both groups.
- **RESULTS:** The result showed there was significant difference of decreased pulse rate with and without intervention of pop-up book "Aku dan Gigiku". Pop-up book often used as education media for children because it presents interesting illustration and easy to understand.
- **CONCLUSION:** Pop-up book as dental health education media give significance contribution to reduce anxiety in children.
- **KEYWORDS:** pop-up book "Aku dan Gigiku"; pulse rate; children aged 4-6 years

The Effect of Pop-Up Book "Aku dan Gigiku" to Salivary Alpha Amylase in Children Aged 4-6 Years

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- **BACKGROUND:** Anxiety are common problems when treating child patients. The psychological approaches have been implemented to manage the problems. Salivary Alpha-Amylase (SAA) an enzyme usually found in saliva can be used as a biomarker of anxiety.
- **OBJECTIVE:** The purpose of this study was to investigate the effectivity of pop-up book "Aku dan Gigiku" in reducing anxiety in children by analyzing the SAA activity.
- **METHODS:** Sixty two children aged 4-6 years were selected and divided into two groups, the intervention group with pop-up book "Aku dan Gigiku" and control group without intervention. From all children, one sample of saliva was collected with a portable saliva strip, before and after the intervention. This study was an experimental design of clinical research. The Mann-Whitney U test was used to analyze the comparison of SAA activity between the intervention group and control group.
- **RESULTS:** The results of study showed the difference of SAA activity in groups with and without the intervention of pop-up book "Aku dan Gigiku". Anxiety may appear in children before dental treatment procedure, which can be detected by SAA activity. Pop-up book could be used as an instrument to reduce the anxiety in children because it is an interesting media for children and easy to understand.
- **CONCLUSION:** Pop-up book could be one of dental health education media in reducing anxiety in children before dental treatment.
- **KEYWORDS:** pop-up book "Aku dan Gigiku"; salivary Alpha-Amylase; children aged 4-6 years

Determinants of Low Birth Weight Neonatal Death

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- **BACKGROUND:** There were 72.4 % infants with less than 2,500 grams (Low Birth Weight) died in their neonatal period in Indonesia. An understanding all factors that influenced the neonatal death is important.
- **OBJECTIVE:** Therefore, this study is conducted to identify factors of LBW neonatal death between 1997 and 2007.
- **METHODS:** Based on 2002-2003 and 2007 Indonesia Demographic Health Survey, 1232 LBW babies are selected. Cox proportional hazard is used to measure the relationship between neonatal death and its determinants name maternal, infant, health care, and mother's social demographic.
- **RESULTS:** After controlling all the variables, the result showed that neonatal death in LBW Babies determinants was immediate breastfeeding, birth weight, sex, the term of birth, complications during pregnancy, delivery complications, birth attendance, type of delivery, place of delivery, wealth index, and mother's education. Variable that showed strongest risk association is complications during pregnancy with HR = 4,12 (95 % CI : 0,64- 26,65 ; p-value = 0,307). Meanwhile, the strongest of protective association is middle class on wealth index variable. Hence, interventions related to all factors that contribute to LBW neonatal death should be addressed. Complications readiness program during pregnancy should conduct to reduce the amount of LBW neonatal death in Indonesia.
- **KEYWORDS:** Low Birth Weight (LBW); IDHS 2002-2003 and 2007; determinants

Effectiveness of Silver Diamine Fluoride and Propolis Fluoride in Arresting Caries on Primary Teeth (The Studies Conducted on Kindergarten Students in West Jakarta)

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- **OBJECTIVE:** To compare the effectiveness of topical application of silver diamine fluoride (SDF) solution and topical application of propolis fluoride in arresting active dentine caries in primary teeth.
- **METHODS:** A total of 224 children, aged 3-4 years, were randomly allocated to one of three groups for treatment of carious dentine cavities in their primary teeth: group 1- application of SDF, group 2 – application of Propolis Fluoride, group 3 – control. Follow-up examinations were carried out 7 days, 1 month and 3 months to assess whether the treated caries lesions had become arrested.
- **RESULTS:** After 3 months follow up, 163 (72,8%) children remained in the study. The caries arrest rates were 88,68%, 55,78% and 2,13% for group 1, group 2 and group 3.
- **CONCLUSION:** Application of SDF solution or Propolis Fluoride solution can arrest active dentine caries. Topical application of SDF is more effective than Propolis Fluoride in inhibiting caries lesions progression, but Propolis Fluoride has the advantage that the arrested caries lesion will not turn black in colour like SDF.
- **KEYWORDS:** childhood caries; arrested caries; silver diamine fluoride; propolis fluoride

Dental Erosion in 12 Years Old School Children Living in Jakarta

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- **OBJECTIVE:** This study aimed to assess the dental erosion status of 12-year-old Indonesian children and study the determinants of dental erosion of these children.
- **METHODS:** The survey was performed in 2016 with ethics approval. Multistage cluster proportional to size random sampling was adopted to select 12-year-old children in 24 primary schools in Jakarta. The participating parents were asked to complete a self-administered questionnaire concerning their diet and oral health habits. The children were examined by a single calibrated examiner. Detection of dental erosion followed by Basic Erosive Wear Examination (BEWE) criteria.
- **RESULTS:** A total of 487 children participated in the survey. Most children (88%) had at least some sign of erosion (BEWE>0), with dentin being involved in 50% of the cases (BEWE=2). Dental erosion were significantly related to gender, frequencies of consuming citric tea, parent's dental knowledge, father's education, and dental caries (OR=3.148).
- **CONCLUSION:** The 12-year-old Indonesian school children who lived in Jakarta children had signs of erosion, although severe erosion was not found. Screening programmes should be provided to identify risk group for early preventive measures.
- **KEYWORDS:** dental erosion; epidemiology; children; Jakarta

Dental Caries in 12 Years Old School Children Living in Jakarta

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- **OBJECTIVE:** The study aimed to analyze dental caries in 12-year-old school children living in Jakarta.
- **METHODS:** This was a cross sectional study. Multistage cluster proportional to size random sampling was conducted to select children aged 12-year-old. 24 from 1346 Junior High Schools in Jakarta, public and private, were included in the study. One examiner measured dental caries status throughout the study. DMFT index was used to record dental caries based on the World Health Organization. Parents were given self-administered oral health questionnaires.
- **RESULTS:** 487 children participated the study. The DMFT mean (SD) score was 1.7 (2.2) The prevalence of dental caries was 63%. Dental caries were significantly related to gender, dental erosion, and mother's education.
- **CONCLUSION:** Dental caries in 12-year-old school children living in Jakarta was high. Further severe clinical implications should be considered.
- **KEYWORDS:** dental caries; epidemiology; children; Jakarta

Gingival Health Status of 12-Year-Old School Children Living in Jakarta

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- **OBJECTIVE:** This study aims to examine the gingival health status of 12-year-old school children living in Jakarta and the associated factors.
- **METHODS:** This was a cross-sectional study. 12-year-old school children living in Jakarta were recruited through a multistage cluster proportional to size random sampling. 24 from 1346 Junior High Schools in Jakarta, public and private, were included in the study. Periodontal status was recorded using the CPI index based on the World Health Organization standards. A self-completed questionnaire was given to the parents to collect information on the background and oral health-related behaviors of their children.
- **RESULTS:** 487 children participated the study and only one child who had healthy gums (no bleeding gums and no calculus). The prevalence of bleeding gums was 99%, and the prevalence of calculus was 84%. Girls had a higher prevalence of calculus than the boys. Periodontal status was not significantly related to tooth brushing habit and dental attendance.
- **CONCLUSION:** The periodontal condition of most of the 12-year-old school children living in Jakarta was poor. Therefore, strategies to promote oral health and prevent periodontal disease is urgently required.
- **KEYWORDS:** gingiva; periodontal status; epidemiology; children; Jakarta

Reconsidering Adolescent Marriage: Contraceptive Use in Younger vs Older Married Women in Indonesia

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- **BACKGROUND:** Between 1970 – 1994, Indonesia successfully decreased its total fertility rate (TFR) from 5,6 to 2,9. However, it has slowed down and TFR has remained stagnant at 2,6 within the last decade. This failure is thought to be strongly related to family planning program, which is not as strongly encouraged as it was thirty years ago. Moreover, there is ambiguity in marriage policies. State Ministry for Population/ National Family Planning Coordinating Board (Bkkbn) is trying to promote ideal married age at 20 for women and 25 for men, which is in concordance with MDG 5 target on reducing adolescent pregnancy, and even older than the standard age recommended by WHO (18 year-old). Ironically, Indonesian law still allows women as young as 16 to get married. Aside from higher risk of maternal complications in adolescent pregnancy, the main concern with younger marital age is mainly linked to longer childbearing period due to biological nature and attitudes towards family planning.
- **METHODS:** We studied 875 married women aged 15 – 19 and 9665 married women aged 20 – 29 from Indonesia Demographic Health Survey (IDHS) 2012 dataset.
- **RESULTS:** In general, younger married women are less likely to do anything to prevent pregnancy. Only 48,8% (427 respondents) of younger group use contraception of all methods, while 62,6% (6052 respondents) of the older group do; crude prevalence ratio (PR) 0,78 (95% CI 0,73 – 0,84).
- **CONCLUSION:** Stratification analysis based on education, place of residence, and wealth index shows relatively similar PR. Without proper intervention, Indonesia's plan to reduce TFR will be impossible. We suggest that National family planning strategies to intensify contraceptive use especially among married adolescents and encourage the effort of delaying adolescent marriage. It is hoped that there will be change on Indonesian law on marriage (Undang-undang Republik Indonesia Nomor I tahun 1974).
- **KEYWORDS:** contraceptive; TFR; family planning; youth; marriage age

Correlation between FLACC Pain Score and Salivary Alpha Amylase Level (A Review in Children with Down Syndrome)

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- **BACKGROUND:** Recommendation by the American Association of Pediatric (AAP) stated that pain assessment in children with developmental disorders must be done appropriately. Based on Local Community Research in 2013, the number of babies born with Down syndrome increased by about 13%. FLACC (acronym for facial, leg, activity, cry, and consolability) pain score is commonly used instrument to assess pain intensity in children with developmental disorders. Salivary Alpha Amylase (SAA) is an enzyme that can be found in saliva and used as a biomarker for reliable anxiety. Several studies showed that the level of SAA and pain were increased along with the activity of sympathoadrenal medullary (SAM) system.
- **OBJECTIVE:** The aim of this study was to analyze the correlation between FLACC pain score and SAA level during dental treatment in children with Down syndrome.
- **METHODS:** A purposive sampling was used to select 25 children with Down syndrome. FLACC pain score was assessed during the treatment. The level of SAA was taken with Nipro Cocoro Meter shortly after local anesthetic injection.
- **RESULTS:** There was a significant correlation between FLACC pain score and SAA level. Activity of SAM system and hypothalamic-pituitary-adrenal axis increased along with painful stimuli, SAA level may reflect pain-relate-stress. Salivary Alpha Amylase level might be used as a non-invasive biomarker of pain.
- **CONCLUSION:** Further studies are required to confirm whether SAA level can be used as pain biomarker for other types of special needs children.
- **KEYWORDS:** salivary alpha amylase level; FLACC pain score; down syndrome

Salivary Alpha Amylase Levels under Primary Tooth Extraction in Children Aged 6-11 Years

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- **BACKGROUND:** Anxiety is usually related to the dental treatment situations. Salivary Alpha Amylase (SAA) can be used as a biomarker for anxiety.
- **OBJECTIVE:** The objective of this study was to compare the SAA levels between children who had never and had undergone tooth extraction procedure with local anesthetic injection.
- **METHODS:** Thirty seven participants aged 6-11 years who will undergo extractions of primary teeth at Dental and Oral Educational Hospital, Faculty of Dentistry Universitas Indonesia were enrolled. The subjects were divided into 2 groups, group 1 consists of 20 children who had never undergone a tooth extraction, and group 2 consists of 17 children who had undergone tooth extraction. From all children, one sample of saliva was collected with a portable saliva strip, 10 minutes before (t0), shortly after (t1) and 10 minutes after (t2) local anesthetic injection, and SAA activity was then determined using portable Nipro Cocoro Meter device.
- **RESULTS:** The SAA levels of both groups were analyzed with Mann-Whitney Test. There were significant differences of SAA levels at t0 ($p=0.001$), t1 ($p=0.018$), and t2 ($p=0.021$) from both groups.
- **CONCLUSION:** Anxiety is a combination of behavioural and physiological reactions. Release of SAA is regulated by autonomic innervation, SAA level increases as a result of acute stress. Dentist should note patients's negative dental experiences in order to provide more effective and less traumatic treatment.
- **KEYWORDS:** salivary alpha-amylase levels; anxiety; tooth extraction; children 6-11 years

Correlation between Anxiety in Mothers and Children with Sensory Impairment Prior to Dental Treatment

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- **BACKGROUND:** Mother has a very important role for their child's development. Their instinctive love will develop strong emotional connection, especially when their children acquire sensory impairment. Feeling experienced by mothers can affect their children's emotion, including anxiety towards dental treatment in mothers. Salivary alpha amylase (sAA) has been proposed as a biomarker of stress sensitive to changes in the body, such as dental anxiety.
- **OBJECTIVE:** This study aimed to analyze the relationship between sAA levels in mothers accompanying children with sensory impairment (SI) before dental treatment.
- **METHODS:** sAA measurement on sixty pairs of SI children and their mothers were taken together in the waiting room prior to child's dental treatment. Spearman's analysis was used to find the correlation between their sAA level.
- **RESULTS:** sAA level in mothers accompanying their SI children in this study found to be significantly correlated with their children's sAA ($r = 0.533; p < 0.002$).
- **CONCLUSION:** Anxiety towards dental care is a phenomenon that frequently arise as problem especially in children having dental care. Mother, as main character in the process of child's development, thought be one cause of high anxiety in children. Correlation between dental anxiety was significantly found in mothers accompanying SI children prior to dental treatment.
- **KEYWORDS:** salivary alpha amylase; anxiety; children; sensory impairment; before dental treatment

Children with Sensory Impairment and Their Mother's Anxiety After Dental Treatment

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- **BACKGROUND:** Children with sensory impairment are at a higher risk to have oral problems due to their inability. However anxiety in facing dental treatment in this group is potentially higher. Stress and anxiety in mothers, can influence their children's behavior as their emotional bonding is very strong due to their inability. Salivary alpha-amylase (sAA) measurement has proved to show level of anxiety in a non-invasive way.
- **OBJECTIVE:** This study aimed to assess the relationship between sAA level in mother and children with sensory impairment after dental treatment.
- **METHODS:** Sixty pairs of children with sensory impairment with their mothers signed for this experiment. Dental prophylaxis continued by measurement of sAA in children done without mother's company. After the child was done with treatment, mother's sAA recorded in the waiting room separately.
- **RESULTS:** Significant positive correlation was found between sAA level of mother and children with sensory impairment after dental treatment ($r = 0.309; p < 0.05$).
- **CONCLUSION:** Positive correlation found in this study showed how a controlled maternal anxiety is beneficial for reducing anxiety in children with sensory impairment during dental treatment. Significant positive correlation in sAA level between children with sensory impairment and their mothers after dental treatment.
- **KEYWORDS:** salivary alpha-amylase; anxiety; children; sensory impairment; after dental treatment

Factors Associated with Parental Knowledge of Acute Respiratory Infections in Sepatan Tangerang, Primary Health Care

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- **BACKGROUND:** Acute Respiratory Infection (ARI), is a communicable disease that mainly contributes to the high morbidity and mortality in children in developing and developed countries. The number of incidence is affected by many factors, parents' knowledge about the disease are one of them.
- **OBJECTIVE:** Find the association of level of education, family's income, age, and involvement in counseling that contribute to parents' knowledge. Increasing the affectivity of compulsory education program and counseling should be done, to reduce the incidence of ARI through increasing parents' knowledge.
- **METHODS:** From the questionnaire, it can be concluded that parents are lacking the knowledge of the self-limiting features of ARI and usage of antibiotics in the management of ARI.
- **RESULTS:** This survey by using cross sectional study have interview 135 respondents from primary health care, which consist of 46% respondent with poor knowledge and 53% have good knowledge about ARI. Most of the participants have the wrong perception of ARI could be recover and more than 80 percent believe that ARI should be treat by antibiotics.
- **CONCLUSION:** The analysis of chi-square show the significant association of education, health promotion, income and age with acute respiratory infection.
- **KEYWORDS:** acute respiratory infection; knowledge; level of education; family

The Interpersonal Factors, Situational and Attitude of Childbearing Women in Tubectomy Selection

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- **BACKGROUND:** Tubectomy contraception among childbearing women has lower number of choosers when compared with other methods of contraception.
- **OBJECTIVE:** The purpose of this study was to analyze the interpersonal factors, situational and behavioral attitudes with tubectomy selection among childbearing women.
- **METHODS:** The design of this study was cross sectional. The population were childbearing women in Pacar Keling Tambaksari. The 71 sample respondents were chosen by purposive sampling technique. The independent variables in this study were interpersonal factors, situational and attitude behavior. The dependent variable was the behavior in selecting tubectomy. The data was collected using questionnaire and analyzed using chi square test with a significance level of $\alpha \leq 0.05$.
- **RESULTS:** The results showed a significant correlation between interpersonal factors ($p=0.000$), and attitude ($p=0.000$) with the tubectomy selection. There was no correlation with situational factors ($p=0.138$).
- **CONCLUSION:** Interpersonal factors and behavioral attitude have a significant correlation with tubectomy selection. However, there was no correlation with the situational factor. The results of this study are expected become the reference for further research related to other factors (family support, norms, culture, economy), so it can be discovered which is the most influential factor in tubectomy contraception selection among childbearing women. Health workers try to develop positive attitude among the community of tubectomy contraception to increase the woman effective contraceptive acceptors.
- **KEYWORDS:** tubectomy contraception; interpersonal factors; situational; attitude; childbearing women

A Psychometric Evaluation of the Malay Version of PedsQLTM Family Impact Module among Caregivers of Children with Learning Disabilities

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- **BACKGROUND:** Parenting a child with learning disability can be a source of significant stress and affects the quality of life of the parents and families.
- **OBJECTIVE:** The aim of this study was to evaluate the psychometric properties of the Malay version of PedsQLTM Family Impact Module that measure the impact of children with learning disabilities on their caregivers' health-related quality of life (HRQoL) and family functioning.
- **METHODS:** A cross-sectional study was conducted involving 383 caregivers of children with learning disabilities in Kelantan, a state of Peninsular Malaysia. Internal consistency reliability, construct validity and construct reliability were evaluated using Cronbach's alpha and confirmatory factor analysis (CFA).
- **RESULTS:** The Malay version of PedsQLTM Family Impact Module showed good internal consistency reliability (Cronbach's alpha > 0.7). Second order CFA showed that the instrument had acceptable construct validity after modification with Goodness-of-fit indices reached the standard indicating acceptable model fit ($\chi^2(426) = 878.842$, $p < 0.001$; RMSEA = 0.053; CFI = 0.918; $\cdot 2/df = 2.063$). Average variance extracted and composite reliability achieved minimum acceptable value for main construct and all subconstructs except Physical Functioning subconstruct.
- **CONCLUSION:** The Malay version of PedsQLTM Family Impact Module with eight subscales and 31 items had adequate construct validity and reliability and could be used to assess the impact of pediatric disability on parent HRQoL and family functioning in Malay-speaking Malaysian families.
- **KEYWORDS:** PedsQLTM Family Impact Module; psychometric; confirmatory factor analysis; caregivers; disability

Correlation between Wong-Baker Pain Scale and Salivary Alpha Amylase Level in Children Aged 6-11 Years Old

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- **BACKGROUND:** Several studies have been attempted to assess objective measurement of pain. Wong-Baker Pain Scale is commonly used instrument to assess pain intensity in children.
- **OBJECTIVE:** The aim of this study was to analyze the correlation between Wong-Baker Pain Scale and Salivary Alpha Amylase (SAA) level during tooth extraction procedure with local anesthetic injection in children aged 6-11 years old.
- **METHODS:** In the study 25 children aged 6-11 years who will undergo extraction of primary tooth at Dental and Oral Educational Hospital, Faculty of Dentistry Universitas Indonesia were enrolled. From all children, saliva was collected with a disposable saliva strip, shortly after local anesthetic injection and SAA activity then determined using portable Nipro Cocoro Meter device. The Wong-Baker Pain Scale was measured at the same time. The correlation between Wong-Baker Pain Scale and SAA level was analyzed with Spearman Correlation test.
- **RESULTS:** The significant level was set at $p < 0.05$. There was a significant correlation between Wong-Baker Pain Scale and SAA level ($p = 0.002$ $r = 0.581$).
- **CONCLUSION:** Our data suggest that SAA level might be a good index for objective pain intensity assessment.
- **KEYWORDS:** Wong-Baker pain scale; salivary alpha amylase level; children age 6-11 years

Shear Bond Strength Evaluation of Chemically-cured and Light-cured Orthodontic Adhesives after Enamel Deproteinization with 5.25% Sodium Hypochlorite

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- **OBJECTIVE:** This study was undertaken to assess the effect of enamel deproteinization with 5.25% NaOCl before etching on the shear bond strength of Unite (3M Unitek) and Xihu-BIOM adhesive.
- **METHODS:** Fifty-two maxillary first premolars were divided into four groups: 1) Unite, 3M Unitek (UN) and 2) Xihu-BIOM (XB) according to manufacturer's recommendation; 3) UN and 4) XB deproteinized with 5,25% NaOCl. Brackets were bonded and the mechanical test was performed in Universal Testing Machine.
- **RESULTS:** The mean shear bond strength value for Group A1 was 13.51 + 2.552 MPa, A2 was 14.36 + 2.902, B1 was 16.43 + 2.615 and B2 was 13.05 + 2.348 MPa. Statistically significant difference in shear bond strengths was observed between chemically cured groups and between group B ($p < 0.05$). No statistically significant difference in shear bond strengths was observed between light-cured adhesive group and between group A ($p > 0.05$). There's a significant effect of sodium hypochlorite enamel deproteinization before acid etching on shear bond strength of Unite adhesive, but not of Xihu-BIOM adhesive. Significant difference on shear bond strength of Xihu-BIOM and Unite adhesive within the enamel deproteinization group was observed in this study.
- **KEYWORDS:** shear bond strength; bracket; composite resin adhesives; enamel deproteinization

Poster Presentation:

MENTAL HEALTH

Relationship Between Mode of Travel to Work and Health Problems in Greater Jakarta

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- **BACKGROUND:** The phenomenon of commuting has become a common practice for people's lives in Jakarta and surrounding areas nowadays. Every day the "commuter" is traveling from the capital city and returned back to resident area/cities in the evening with a variety of transport modes.
- **OBJECTIVE:** This study aims to analyze the relationship between modes of transport and commuters health problems.
- **METHODS:** Using of 3,970 samples of commuters with average ages varies between 15 to 65 years old with commuting time at least 5 working days in a-week.
- **RESULTS:** The results study indicates that about 12 % and 28 % respectively of commuter suffering from physical and social psychological health problems. The highest social psychological health problems are social stress. Commuters women has more risky having a physical health problems, while the issue of social psychological health problem are more perceived by commuter unmarried, commuter graduated from high school and below and use modes of transport more than one movement changes. Use of public transportation according to mode of public or private transportation indicates no large different between these mode of transportation in relation to health problems.
- **CONCLUSION:** This study suggested that there are needed to dissemination strategy of copying stress for commuters with government support to improving the quality of public transport. Therefore, the commuter has alternative options to switch modes of transport using public transportation.
- **KEYWORDS:** commuters; public transportation; health problems

Poster Presentation:

MOBILE HEALTH AND NEW TECHNOLOGIES

Microbiological Evaluation of Dental Implant Using Quantification of *Porphyromonas gingivalis* in Periodontal Clinic Rumah Sakit Gigi Mulut FKG UI from 2009-2014

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- **BACKGROUND:** Dental implants has an excellent results in terms of survival and success rates of oral rehabilitation. RSGMP is one of leading dental hospital which offer dental implant since 2009 and yet there is no evaluation of dental implant treatment.
- **OBJECTIVE:** The aim of this study was to evaluate implant's success rate by quantification of bacteria *Porphyromonas gingivalis*.
- **METHODS:** Twenty nine samples dental implant were taken from patient in Periodontal Clinic Rumah Sakit Gigi Mulut (RSGMP) Faculty of Dentistry, Universitas Indonesia. All of implants were placed from 2009-2014. Samples plaque were obtained in each dental implant using implant probe. Baseline group was measured in healthy teeth and periodontitis teeth which samples plaque were also taken respectively. All samples were subjected to microbiological analysis using quantification of bacteria *Porphyromonas gingivalis* with real time PCR.
- **RESULTS:** There were no significant differences in number of *P. gingivalis* between the dental implant groups compared to healthy tooth group (P value >0.05). Meanwhile, there were significant differences between the dental implant group compared to periodontitis teeth (P value < 0.05).
- **CONCLUSION:** The succes rate of dental implant at RSGMP FKG UI give a satisfactory result through quantification of *P.gingivalis*.
- **KEYWORDS:** dental implant; microbiological; evaluation; *Porphyromonas gingivalis*; realtime PCR

Clinical Evaluation of Dental Implant in Periodontal Clinic Rumah Sakit Khusus Gigi Mulut FKG UI from 2009 to 2014

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- **BACKGROUND:** Dental implants are frequently used in the rehabilitation of missing tooth. There is no long-term evaluation of the clinical conditions of the dental implant in periodontal clinic Rumah Sakit Khusus Gigi Mulut (RSKGM) FKG UI.
- **OBJECTIVE:** The aim of this study is to evaluate the clinical condition of dental implant in periodontal clinic RSKGM FKG UI from 2009 to 2014.
- **METHODS:** 11 patients, received 29 implants from Periodontal Clinic RSKGM FKG UI . The implants were placed from 2009 to 2014. Probing pocket depth, loss of attachment, bleeding on probing, gingival recession, implant mobility, and oral hygiene index were assessed in 2016.
- **RESULTS:** The results of our study, there is no implant mobility was found. The mean pocket depth was $2,43 \pm 1,7$ mm. The mean gingival recession was $0,24 \pm 0,47$ mm. The mean clinical attachment loss was $0,26 \pm 0,54$ mm. 46,6% of the dental implant showed bleeding on probing and another 53,4% of the dental implant showed no bleeding on probing. There was no statistically significant difference between different oral hygiene index to the probing pocket depth, loss of attachment, and bleeding on probing. There was statistically significant difference between different oral hygiene to the gingival recession.
- **CONCLUSION:** From our study, it is concluded that the use of dental implant in Periodontal Clinic RSKGM FKG UI can give satisfactory result after 2 to 7 years.
- **KEYWORDS:** dental implant; probing depth; bleeding on probing; mobility; recession

Effect of Titanium Dioxide (TiO₂) Nanoparticles Addition into Orthodontic Adhesive Resin on Enamel Microhardness

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- **BACKGROUND:** White spot is an early sign of enamel demineralization which may lead to development of dental caries. Enamel demineralization could be determined by examining microhardness number of the enamel. Addition of antibacterial agent such as TiO₂ nanoparticles into orthodontic adhesive (TiO₂ nanocomposite) is expected to prevent enamel demineralization.
- **OBJECTIVE:** Objective of this study is to evaluate the effect of TiO₂ nanocomposite in maintaining enamel microhardness around orthodontic bracket.
- **METHODS:** Bracket was bonded to the premolar using Transbond XT (group 1), 1% TiO₂ nanocomposite (group 2), 2% TiO₂ nanocomposite (group 3). Group 4 was the control group and not given any treatment prior to the microhardness test. The samples of group 1, 2, and 3 were soaked in BHI solution containing Streptococcus mutans then stored in 37°C incubator for 30 days. Demineralization were determined on cross-sectioned tooth 100µm and 200µm cervical to the bracket by Vickers microhardness test.
- **RESULTS:** The micro-hardness value were significantly different between every group, with highest value were obtained by control group, followed by 2% TiO₂ nanocomposite, 1% TiO₂ nanocomposite, then Transbond XT.
- **CONCLUSION:** From the result of this study we can conclude that the 2% TiO₂ nanocomposite has the ability to maintaining enamel microhardness around orthodontic bracket.
- **KEYWORDS:** TiO₂ nanocomposite; white spot; enamel microhardness; Vickers hardness

A Comparison of Orthodontic Bracket Shear Bond Strength on an Deproteinized Enamel by 5.25% Sodium Hypochlorite Using Total Etch and Self Etch Primer

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- **BACKGROUND:** Shear bond strength (SBS) can be increased by removing protein pellicle from the enamel surface using 5.25% sodium hypochlorite deproteinization. SBS of a self etch primer is weaker than total etch, still it prevents white spot lesions.
- **METHODS:** To assess the SBS of total etch Anyetch (AE) and self etch primer FL-Bond II Shofu (FL) after enamel deproteinization using 5.25% sodium hypochlorite (NaOCl).
- 40 extracted human maxillary first premolars were cleaned and divided into 4 groups. In group A brackets were bonded to the enamel without deproteinization prior to etching (A1: 10 teeth using total etch (AE); A2: 10 teeth using self etch primer (FL)). In group B were etched and bonded with brackets after 5.25% NaOCl (B1: 10 teeth using total etch (AE); B2: 10 teeth using self etch primer (FL)). Brackets were bonded using Transbond XT, stored in artificial saliva for 24 hours at 37°C, mounted on acrylic cylinders, and debonded using Shimazu AG-5000 Universal Testing Machine.
- **RESULTS:** There were no significant differences in the SBS between the total etch groups ($p > 0.05$), also between the self etch groups ($p > 0.05$). Significant differences in the SBS were found between group A and the group B. The mean SBS for group A1 was 12.91 ± 3.99 MPa; A2 was 4.46 ± 2.47 MPa; B1 was 13.06 ± 3.66 MPa and B2 was 3.62 ± 2.36 MPa.
- **CONCLUSION:** Deproteinization using NaOCl did not effect SBS of a total etch (AE) and weakened SBS of a self etch primer (FL), not statistically significant.
- **KEYWORDS:** shear bond strength; enamel deproteinization; total etch; self etch primer

The Influence of Immediate Loading on Provisional Restoration to Dental Implant Stability

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- **BACKGROUND:** Successful of dental implant were determined by primary stability occurred at placement. One factor that could influence stability is occlusal loading through provisional restoration. There are two types of loading protocol that usually used, immediate and delayed loading. But there are still controversies about the influence of occlusal loading on implant's stability. Therefore, it was necessary to study the influence of immediate loading to implant's stability.
- **METHODS:** Animal study were done by placing nine dental implants on the mandibular of three Macaca fascicularis. Provisional restorations with various occlusal contacts (no contact, light, and normal contact) were placed to the implant. Implant stability was measured using the Ostell ISQ three times, immediately (baseline), first month and second month after implant placement.
- **RESULTS:** Implant stability between implant with no occlusal contact and normal contact and also light occlusal and normal occlusal contact were found significantly different ($p < 0,05$) at the first and second month after implant placement. However, there was no significant increased ($p > 0,05$) found on implant stability measured at baseline, first and second month after implant placement for all occlusal contact groups.
- **CONCLUSION:** There were influence of immediate loading to implant's stability and provisional restoration of implant without occlusal contact showed highest implant good stability result.
- **KEYWORDS:** implant; immediate loading; occlusal contact

Radiographic Evaluation of Dental Implant in Periodontal Clinic Rumah Sakit Khusus Gigi dan Mulut (RSKGM) Faculty of Dentistry Universitas Indonesia from 2009 to 2014

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- **BACKGROUND:** Dental implant treatment is an alternative replacement of teeth with a success and the highest survival rate. Evaluation of implant treatment is useful for predicting a treatment protocol that can determine the best surgical and implant systems.
- **OBJECTIVE:** The purpose of this study was to evaluate the implant treatment by seeing the condition of the bones around dental implants using radiograph as well as determine their correlation with factors associated.
- **METHODS:** Patients were retrieved from Periodontal Clinic Rumah Sakit Khusus Gigi dan Mulut (RSKGM) Faculty of Dentistry Universitas Indonesia and screened for the specific inclusion and exclusion criteria. Total of 22 ITI® implants system placed from 2009 to 2014 were assess. Radiographic evaluations were carried out using standardized periapical radiograph using dental x-ray Belmont Belray 096 and converted into digital images with digital imaging plate Digora® PCT. Marginal bone loss was analyzed using Digora® for windows software. The data were analyzed using IBM SPSS version 22.
- **RESULTS:** The mean marginal bone loss of mesial aspect was $2,6 \pm 0,62$ mm, distal aspect was $2,7 \pm 0,73$ mm, and overall bone loss was $2,66 \pm 0,66$. There are no statistically significant correlation between marginal bone loss and the location of the implant (maxilla; mandibula), anteroposterior site, oral hygiene and follow-up time.
- **CONCLUSION:** The used of dental implant in Periodontal clinic RSKGM Faculty of Dentistry Universitas Indonesia demonstrated a quite satisfactory result after 8 years.
- **KEYWORDS:** dental implant; radiographic evaluation; marginal bone loss; success criteria

Review Effectiveness Mobile Health Technologies to Improve Maternal Health Care

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- **BACKGROUND:** The current maternal mortality rate is still high although decreased but not significant. One of the causes of maternal deaths is the lack of knowledge of maternal and family about maternal health care. By increasing promotive and preventive which supported by mobile health technologies (mHealth) is expected to improve the knowledge and quality of maternal health care.
- **OBJECTIVE:** This Review used for summarise the effectiveness of mobile health technologies to improve maternal health care.
- **RESULTS:** Globally cellular phone users exceed the number of population, it can be potential utilize mHealth. By approach mHealth can support maternal to find out and take an active role on their health own. mHealth allow communication over a wide range of complexity starting from simple communication such as short message service (SMS) until advanced system such as applications in smartphone. Using mHealth will help out in providing health care for maternal without being limited in time and geographical conditions. However to make it effective any factors that must be considered and prepared in implementation using mobile health kind of human resources for health, facilities and infrastructure.
- **KEYWORDS:** maternal; mobile health; promotive; health care

Optimization of Microwave-Assisted Extraction (MAE) on Rice Bran Using Isopropanol Solvents

Authors: Elsa Trinovita, Siti Nashihah, Sutriyo, Fadlina Chany Saputri, Abdul Mun'im

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- **BACKGROUND:** Indonesia is one country that produces rice as the main agricultural products and have high consumption of rice in the world. The γ -oryzanol content in rice bran oil has various pharmacological activities.
- **OBJECTIVE:** This research aims to determine the optimum condition by the extraction method using microwave-assisted extraction (MAE) in producing rice bran oil.
- **METHODS:** Treatment includes variations of microwave power (95 W, 285 W, 475 W, 665 W, 950 W) and extraction time (5, 10, 15 minutes). Assay γ -oryzanol in rice bran oil was analyzed by HPLC method.
- **RESULTS:** Isopropanol solubility is high in rice bran oil due to the interaction between isopropanol solvent and rice bran matrix material so that it can absorb microwaves. The optimum condition by the method of MAE using isopropanol solvent to the power of 950 W and extraction time for 5 minutes can increase levels of γ -oryzanol at $3.28 \pm 0,013$ (% w/w).
- **KEYWORDS:** rice bran; isopropanol; γ -oryzanol; Microwave Assisted Extraction (MAE)

Determination of Levels γ -oryzanol in Rice Bran Oil Extracts with Microwave Assisted Extraction (MAE)

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- **BACKGROUND:** Indonesia as an agricultural country that has a diversity of rice varieties. The majority of Indonesia's population consumes rice as a staple food. A large amount of rice production then resulted in a large increase also results from the rest of milling paddy into rice, one of which is waste rice bran. Microwave Assisted Extraction(MAE) is used as an extraction method to produce rice bran oil. N-hexane as a solvent non-polar solvent used in the extraction of this.
- **OBJECTIVE:** This study aims to determine the effect of extraction time and power by using n-hexane solvent to produce rice bran oil.
- **METHODS:** The treatment includes a long variation extraction (5, 10, 15 minutes) and power microwave (95 W, 285 W, 475 W, 665 W, 950 W) using n-hexane solvent method Microwave Assisted Extraction (MAE). Rice bran oil is one of the oil that has a high nutrient content as well as various kinds of fatty acids, biologically active compounds and antioxidant compounds. One is γ -oryzanol. γ -oryzanol levels were analyzed using High-Performance Liquid Chromatography (HPLC).
- **RESULTS:** The result suggests that extraction at power 100% for 15 minutes showed the highest oil yield (7.24%).
- **KEYWORDS:** rice bran oil; γ -oryzanol; Microwave Assisted Extraction (MAE)

Poster Presentation:

NON
COMMUNICABLE
DISEASES

Association between Risk Factors Awareness and Service Satisfaction with Cardiovascular Disease Patient's Quality of Life in Sanglah Hospital, Bali

Authors: Nabila Natasya, Muhammad Faisal Putro Utomo, Annisa Alviariza, Edwind Rakatama Fahlevie, Prisela Zharaswati

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- **BACKGROUND:** About 68% of global deaths in 2012 were due to NCD. CVD was the leading causes of NCD deaths, 46% of all NCD deaths. The risks of CVD are hypertension, dyslipidemia, hyperglycemia, obese, smoking, lack of exercise and genetic predisposition. Patients true awareness of this risks is mostly unknown.
- **OBJECTIVE:** This study aims to determine the level of awareness of CVD risks and patients's satisfaction with the Integrated Heart Service in Sanglah Hospital towards patient's QoL.
- **METHODS:** We examine the data from patients registered in Integrated Heart Service Sanglah during June-July 2016, sample of 100 patients voluntarily participated in this study using a form of questionnaire.
- **RESULTS:** We found a significant positive correlation using x-square analytic between risks and PCS ($r=0.296$; $p=0.02$). We found a significant negative correlation using pearson analytic between PCS and MCS ($r=0.438$; $p=0.00$), knowledge and satisfaction ($r=0.565$; $p=0.00$), MCS and knowledge ($r=0.274$; $p=0.005$), and family history and lack of exercise ($r=0.274$; $p=0.004$), also a positive significant correlation between smoking and lack of exercise ($p=0.008$).
- **CONCLUSION:** Patients with a good awareness and knowledge about CVD risks tend to have a poor emotional QoL and also make them less satisfied with the services.
- **KEYWORDS:** CVD; knowledge; PCS; MCS; satisfaction

Risk Factors of Woman Breast Cancer: A Hospital-Based Case Control Study

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- **BACKGROUND:** Breast cancer is the most common cancer among women in Indonesia. In 2013, it is still unknown factors that cause breast cancer on patients of Rumah Sakit Umum Pusat Nasional (RSUPN) dr. Cipto Mangunkusumo.
- **OBJECTIVE:** The purpose of this study is to determine what factors are associated with breast cancer.
- **METHODS:** This research is a hospital-based case control study that was conducted from April to May 2013 in RSCM. An interviewer administered structured questionnaire was used to collect information on potential risk factors from the outpatients at polyclinic of surgery. Sample of 117 breast cancer cases and 119 control were recruited. Chi Squire Test were applied in this research.
- **RESULTS:** The results found increasing risk due to age at menarche of <12 ($OR=2,962$, 95% CI: 1,352-6,488), family history of breast cancer ($OR=3,035$, 95% CI: 1,286-7,165) and family history of breast cancer in first degree relatives ($OR=3,854$, 95% CI: 1,031-14,411) Significant protective effect is breastfeeding for ≥ 6 years ($OR= 0,419$, 95% CI: 0,202-0,868).
- **CONCLUSION:** There are association between age at menarche, family history of breast cancer, and breastfeeding with breast cancer.
- **KEYWORDS:** breast cancer; hospital-based case-control study; risk factors

Body Mass Index as the Dominant Factor of Prehypertension among Adolescent Aged 14-18 in SMA Budi Mulia Kota Bogor 2016

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- **BACKGROUND:** Prehypertension in adolescents known as a risk factor of developing hypertension later in life.
- **OBJECTIVE:** The objective of this study is to identify the dominant factor determining the prevalence of prehypertension among adolescents in SMA Budi Mulia Kota Bogor 2016.
- **METHODS:** Cross-Sectional Study was conducted from April until May 2016 involving 130 students aged 14—18. Blood Pressure measurement were obtained using Riester Novapresameter Mercury Sfigmomanometer and Littman Stethoscope, Body Mass Index data was calculated from weight and height measurements, Physical Activity Questionnaire for Adolescent was used to obtain Physical Activity Data, Sodium Intake was calculated by conducting twice 24-hour food recall. Self Administered Questionnaire was used to collect remaining data such as Birth Weight, Sleep Duration, Family History of Hypertension, and Sex.
- **RESULTS:** The prevalence of prehypertension is 21,5%. Chi-Square analysis found no association between blood pressure and physical activity as well as with sleep duration. Associations adjusted for Sodium Intake, Birth Weight and Sex showed independent relationship with BMI (OR=7,6) and Family History of Hypertension(OR=4).
- **CONCLUSION:** Respondents are advised to maintain BMI below 1 standard deviation according to WHO standards and avoid other risk factors if happen to have hypertension history in the family to reduce the risk of prehypertension.
- **KEYWORDS:** adolescence; body mass index; prehypertension; family history

Policy Analysis toward the Effectiveness of Implementation Back-Referral Program on Indonesia Social Health Insurance : Lessons Learned from Depok City Hospital in Indonesia

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- **BACKGROUND:** Health is fundamental right of all person, and all citizens are entitled to have right toward health care services. The increasing number of non-communicable disease while the infectious disease has not been handled yet that made double burden on the health service in Indonesia. Health BPJS, as a legal entity formed to organize the national health social security, develop back-referral program (BRP) as offer an effective service system for chronic disease patients who have received treatment in hospital and the condition has stabilized in order to become outpatient treatment in primary health care. There are nine type of diseases included in this BRP.
- **OBJECTIVE:** The aim of this study was to examine the effectiveness of implementation of BRP on the BPJS member in Depok Local Hospital.
- **METHODS:** This study used a qualitative method with case study approach using van Horn and van Meter study. There were six variable measured to determine the effectiveness of the program. The variables are standard and policy objectives, resources, communication, characteristics of implementing agencies, implementor disposition and social, economy and politic.
- **RESULTS:** The results showed that according to the six variables, the implementation of the BRP in Depok Local Hospital has not yet effective.

The Characteristic of Lung Cancer Patient Hospitalized In a Medan Hospital

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- **BACKGROUND:** The lung cancer is one of the most common malignancies in the world now. Many people do not know the characteristic of lung cancer patient.
- **OBJECTIVE:** The aim of this study was to know the characteristics of patient who were hospitalized in a Medan hospital in 2004-2007.
- **METHODS:** This study was cross sectional design. The sample was 114 patients (total sampling). The data was collected by medical records and processed by SPSS.
- **RESULTS:** The results showed that the highest proportion of patients were aged ≥ 40 years (94,7 percent); male (86 percent); entrepreneur (25,4 percent); married (93,9 percent); shortness of breath (64 percent); stage three (38,6 percent); symptomatic therapy (90,4 percent); average time of the treatment 6,70 days; and on-going treatment (57,9 percent). There was statistically significant difference in the proportion of age based on gender of lung cancer patients ($p = 0.003$).
- **CONCLUSION:** The number of male patients aged ≥ 40 years old were higher than the female patient aged ≥ 40 years old. This may occurred probably as male patients had been exposed to carcinogenic such as smoke, air pollution, industrial materials from their work environment. Expecting to add variable risk factors in patient's medical record in order to further study.
- **KEYWORDS:** lung cancer; characteristic; patient

Hypertensive Crisis: Epidemiological, Clinical Profile and Management at Emergency Unit of General Hospital in Tangerang, Banten, Indonesia

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- **BACKGROUND:** Hypertensive crisis (HC) in an important and common event in emergency unit, although the incidence is only 1%. HC comprises of hypertensive emergency (HE) and hypertensive urgency (HU) based on the presence or absence of target organ damage. Data on epidemiological and clinical profile and also management of these patients admitted to the emergency unit are limited.
- **OBJECTIVE:** This study aimed to describe the epidemiology, clinical profile and management at emergency unit of General Hospital in Tangerang, Banten, Indonesia.
- **METHODS:** This retrospective descriptive study was based on medical records from January 2014 until December 2015. Data collected were age, sex, history of hypertension, symptoms and signs, systolic and diastolic blood pressure, mean arterial pressure, target organ damage in HE patients, drugs used and duration to achieve the blood pressure target. Chi-square test or Fischer's exact test was used to compare categorical variables, Student's t-test or Mann Whitney test was used for quantitative variables.
- **RESULTS:** Out of 20,435 patients admitted to emergency unit in the study period, HC frequency was 0.03%; 41.94% HE and 58.06% HU. The largest age group of HE was 51-60 years and HU was 41-50 years. History of hypertension in HE compared to HU patient was 84.62% vs. 94.44%. The mean systolic blood pressure in HE compared to HU was 219.69 [20.99] mmHg vs. 203.92 [22.65]mmHg; $p=0.0035$. The most prevalent target organ damage was brain. Approximately 42.86% patients treated with combination of intravenous and oral drugs reached the target blood pressure in 1 hour.
- **CONCLUSION:** Hypertensive emergency patients were older with higher frequency of unknown history of hypertension and higher systolic blood pressure compared to hypertensive urgency. The combination of intravenous and oral drugs seemed to be the most effective in achieving target blood pressure.
- **KEYWORDS:** hypertensive crisis; hypertensive emergency; hypertensive urgency

Comparison of Three Different Wharton's Jelly Mesenchymal Stem Cells Conditioned Medium (WJMSCs-CM) Concentration for Fibroblast Cells Regeneration

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- **BACKGROUND:** Wharton's Jelly-derived mesenchymal stem cells (WJMSCs) have gained interest as an alternative source of stem cell for regenerative medicine. Although many studies have characterized various Wharton's Jelly biologically, the effect of different concentration in cultured medium have not yet been compared. Damaged fibroblast which is the primary component of dental irreversible pulpitis gives impact of irreversible impairment of ability in regenerating and leads to the disruption of extracellular matrix.
- **OBJECTIVE:** This study was performed to evaluate potency of three WJMSCs-CM concentration in improving serum-starved fibroblasts.
- **METHODS:** Fibroblasts cultivated in 5 passages, and divided into 4 groups. First group consisted of fibroblast cells that have been treated with starvation methods as a control group. And the other groups were treated with various concentration of WJMSCs-CM (50%, 25% and 12.5%). The proliferative ability was evaluated using cell count method and analysed with One Way Anova.
- **RESULTS:** Cultivation of serum-starved fibroblasts showed significant elevation in 12.5% WJMSCs-CM compared to 50% group.
- **CONCLUSION:** It can be concluded that 12.5% WJMSCs-CM is the most efficient concentration for fibroblasts proliferation.
- **KEYWORDS:** serum-starved Wharton's Jelly; mesenchymal stem cells; serum-starved fibroblast; proliferation

The Effect of CPP-ACP-Propolis Chewing Gum Towards Calcium and Phosphate Ion Level in Caries-Free Subject Saliva and Streptococcus mutans Biofilm Formation

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- **OBJECTIVE:** To analyze the amount of calcium and phosphate ion released by CPP-ACP to support the remineralization and the effectiveness of propolis wax in suppressing the mass formation of Streptococcus mutans biofilm on caries-free subjects and observing if these two active components are effective when combined into one substance of sugar-free chewing gum.
- **METHODS:** 25 samples of caries-free saliva before and after the mastication simulation (five concentrations of chewing gum) in vitro were observed for the release of calcium and phosphate ion along with a biofilm assay. The release of calcium ion was detected using AAS, phosphate ion was detected using Spectrophotometry UV-VIS, and the biofilm assay was detected using crystal violet 96-well plate ELISA and was evaluated with a ELISA reader.
- **RESULTS:** Chewing gum with a concentration of 0% Prop + 5% CPP-ACP has shown the highest release level of calcium ($p < 0,05$) and phosphate ion ($p > 0,05$) and is significant in suppressing the mass formation of the S. mutans biofilm ($p < 0,05$).
- **CONCLUSION:** Mastication simulation of CPP-ACP-Propolis chewing gum can increase calcium and phosphate ion level in caries-free saliva and decrease S. mutans biofilm mass formation, so that supports remineralization and become dental caries prevention alternative.
- **KEYWORDS:** caries; saliva; CPP-ACP; propolis wax; biofilm

The Characteristics and Comorbidities of Atrial Fibrillation Patients in Cipto Mangunkusumo National General Hospital

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- **BACKGROUND:** Atrial fibrillation (AF) is recognized as a major global health concern. The prevalence and incidence of AF increase over years. A variety of clinical characteristics and comorbidities may be associated with AF.
- **OBJECTIVE:** The aim of this study is to identify the clinical characteristics and comorbidities in AF patients.
- **METHODS:** 165 AF patients were involved in this study. Data were reviewed from patient's medical records in cardiology outpatient clinics, Cipto Mangunkusumo National General Hospital, in 2 different periods, May 2014 and September 2015.
- **RESULTS:** The average age of AF patients was 59.6 ± 14.88 years and 52% of the patients were women. Almost 60% of AF patients are younger than 65 years old. From the analysis, it was found that older patients more likely to have hypertension compared to younger age groups ($p < 0.001$). But on the other hands, younger patients tend to have valvular heart disease compared to older age groups ($p < 0.002$).
- **CONCLUSION:** The prevalence of AF will keep rising as its frequency increases with advancing age. However, young people are not exempt from the incidence of AF. The presence of other comorbidities will increase the risk of stroke. An assessment of characteristics and comorbidities of AF in both older and younger patients is warranted to prevent the complication of AF.
- **KEYWORDS:** atrial fibrillation; cardiovascular disease; arrhythmia

Physical Activity Associated with Diabetes Mellitus Type II in Kelapa Dua, Tangerang Primary Health Care

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- **BACKGROUND:** Diabetes mellitus is a chronic, metabolic disorder characterized by hyperglycemia as a result of a defect in insulin secretion and/or insulin resistance. Physical activity is one of four main management and prevention for diabetes mellitus (DM) patients.
- **OBJECTIVE:** This research aims to determine the relation between physical activity with diabetes mellitus type 2 in Kelapa Dua Tangerang, Primary Health Care.
- **METHODS:** This study was an analytical study with case control design that took 50 DM and 50 control. The population of this research was all of type 2 diabetes mellitus patients (40-50 years old) who came to Puskesmas Kelapa Dua. The samples of the research were taken by consecutive Sampling technique, which means the samples were taken in sequence and fulfill inclusion criteria and then put into this research until the number of the respondents fulfilled.
- **RESULTS:** About 100 respondent (50% male and 50% female) was involved in this study. Independence t-test show the significant mean difference of fasting blood sugar (mean 151 ± 34) higher than control group (mean 104 ± 12). Physical activity Analysis of logistic regression show the significant association of physical activity with DM ($p=0.01$, with OR 17.2, 95% CI 5.3-55.4).
- **CONCLUSION:** There is significant association of physical activity with Diabetes Mellitus Type 2.
- **KEYWORDS:** diabetes mellitus type 2; physical activity

Poster Presentation:

NUTRITION

Differences of Cardiorespiratory Fitness Based on Body Mass Index and Other Factors among the Employees of PT Pos Indonesia Regional IV Jakarta in 2016

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- **BACKGROUND:** Low cardiorespiratory fitness is associated with the risk of cardiovascular disease and hypertension. Cardiorespiratory fitness in workers is still low.
- **OBJECTIVE:** This research was aimed to determine the difference in cardiorespiratory fitness status based on the Body Mass Index (BMI), body fat percentage, dietary intake, physical activity, smoking status, and quality of sleep.
- **METHODS:** Cardiorespiratory fitness was measured by YMCA 3 minutes Step Test. The research was conducted on the employees of PT Pos Indonesia Regional IV Jakarta in April to May 2016. Study design that used in this research is cross sectional in 124 employees.
- **RESULTS:** The results showed 44.4% of employees were classified as poor cardiorespiratory fitness. Chi-square and T-independent test were used in analysis. The analysis showed that BMI, body fat percentage, dietary intake of energy, carbohydrates, and iron gave significant differences to cardiorespiratory fitness.
- **CONCLUSION:** Based on these results, employees are advised to monitor BMI and body fat regularly, increasing physical activity, and nutrition balanced diet.
- **KEYWORDS:** cardiorespiratory fitness; employees; YMCA 3 minutes step test; body mass index; dietary intake

Correlation Between Food Consumption Style, Physical Activities, and Personal Preference on Body Image with Female Nutritional Status

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- **BACKGROUND:** Adolescence is a phase of life in which female has the highest risk suffering from malnutrition. It may threaten both herself and her fetus.
- **OBJECTIVE:** To rationalize recent studies that found a lot of malnutrition on female, this study comes to correlate between food consumption style, physical activities, and personal female preference on their body image with their nutritional condition.
- **METHODS:** The object for this study was focused on Undergraduate female students of Faculty of Public Health. The study was done with cross-sectional design taken from 210 samples of regular undergraduate students on Academic year 2009-2010.
- **RESULTS:** It was found that 15% of respondents were malnutrition, and 17% of them were overweight. Further the study based on bivariate analysis by chi-square, it was also found that age, ethnicity, budget for meal, variety on meal, fast food consumption, and physical activities do not have statistics correlation with female nutritional condition. However, personal female preference on their body image, and junk food consumption have statistics correlation with it.
- **KEYWORDS:** nutritional status; fast food; junk food; physical activity; body image preference

The Relation of Mothers' Nutritional Status and Primary Teeth Eruption Timing

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- **BACKGROUND:** Primary dentition is developed starting from 4 months of pregnancy, then the mothers' health status may determine their children primary dentition status. Nutrition is essential factor in dental development, and in the National Health Survey 2013 showed that the nutrition problems in Indonesia is still a concern. One form of how the nutrition problems affect the growth and development of teeth, is delayed tooth eruption.
- **OBJECTIVE:** The aim of this study was to analyze the relationship between nutritional status of mothers and their children primary teeth eruption time.
- **METHODS:** 172 under-3 year-old children were selected from a health screening in Depok sub district, West Java. Information about the mothers' nutrition were collected through the mother and child health book. The primary teeth eruption phase were examined with Hulland method.
- **RESULTS:** The prevalence of mothers with poor nutritional status during pregnancy was 18%. Mothers' nutritional status made a significant difference to the initial timing and duration of primary dentition eruption process ($p < 0.05$).
- **CONCLUSION:** Children from mothers with poor nutritional status during pregnancy had later timing and longer duration of eruption process in their children' primary teeth.
- **KEYWORDS:** nutritional status; primary teeth; eruption timing

The Relation of Mothers' Nutritional Status and Primary Teeth Dental Caries

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- **BACKGROUND:** The nutrition problems in Indonesia is still a concern according to the national health survey in 2013, and caries is the most prevalent dental diseases. Primary dentition is developed during the mothers' pregnancy period. Thus, mothers' nutritional status during pregnancy could determine the health of their children primary dentition.
- **OBJECTIVE:** The aim of this study was to analyze the relationship between nutritional status of mothers and dental caries of their children primary teeth.
- **METHODS:** 281 under-five year-old children were selected from a health screening in Depok sub-districts, West Java. Information about the maternal nutritional status was collected through the mother and child health book. Dental caries were collected through clinical examination using deft index.
- **RESULTS:** The prevalence of mothers with poor nutritional status was 22.8% and 55.2% of the children had caries. Dental caries in primary dentition between mothers with poor and good nutritional status was significantly different ($p < .001$). Mothers' poor nutritional status had risk of their children getting caries 1.85 (95% CI: 1.5-2.2) times higher than those with good nutritional status.
- **CONCLUSION:** Children whose mothers' had poor nutritional status would likely to have the dental caries present and higher risk of dental caries than good nutritional status.
- **KEYWORDS:** nutritional status; primary teeth; caries

Factors Associated to Primary Teeth Eruption Pattern in Children Under 3 Years Old in Beji, Depok

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- **BACKGROUND:** There are many factors associated with eruption pattern of primary dentition. One factor was maternal and the first 3 years of a child's life health condition, because primary dentition is developed starting from 4 months of pregnancy to the time before the last primary tooth erupt in oral cavity at 3 years old. There are limited studies about primary dentition eruption in Indonesia.
- **OBJECTIVE:** Then the aim of this study was to assess factors related to primary teeth eruption pattern.
- **METHODS:** 172 mother and child under-3 year-old children, who had mother and child health book, were selected in Beji Depok. The primary teeth eruption phase were examined with Hulland method. Eruption age was computed for mean age, starting age and duration of each tooth eruption.
- **RESULTS:** There was significant difference in starting age and duration of eruption process in groups based on maternal ($p < 0.05$) and child ($p < 0.01$) nutritional status. Female took longer duration of eruption process to complete than male ($p < 0.05$). Mother's educational level and occupation were also significant.
- **CONCLUSION:** The study showed that eruption pattern was influenced by maternal and child nutritional status, child's gender, mother's educational level and occupation.
- **KEYWORDS:** nutritional status; primary teeth; eruption pattern

Poster Presentation:

YOUTH HEALTH

The Impact of Family Structure to The Occurrence of Obesity and Overweight in School Aged Children: An Evidence-Based Case Report

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- **BACKGROUND:** A 7 years old child diagnosed with dengue hemorrhagic fever and obesity. The caregiver was a single mother with two children. She was going to work because her family financial problem. She was worried her job and her status as a single mother could affect her children nutritional status.
- **METHODS:** In order toknow the impact of family structure with single mother to the occurrence of obesity and overweight in school aged children, a literature search was conducted on Pubmed®, Proquest®, and ScienceDirect® based on the clinical question. As the results, two relevant articles with longitudinal design study were critically appraised in the aspect of validity, importance, and applicability.
- **RESULTS:** Both of the articles showed that there were a positive results on the impact of family structure to the occurrence of obesity and overweight in children. The results were based on bivariate analysis. Some literature reviews and some cross-sectional studies with big number of subjects support the results of the articles. However, the validity of both articles was poor because the study design did not show causation.
- **CONCLUSION:** The impact of family structure to the occurrence of obesity and overweight in school aged children is inconclusive. There were not enough valid studies to be conclude. More studies with better methodology are needed to show the causation.
- **KEYWORDS:** children; family structure; obesity; overweight

“What Do I Tell My Children?” Association between Knowledge of Condom Functions and Condom Use Among Sexually-Active Unmarried Male Adolescents in Indonesia

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- **BACKGROUND:** Indonesia Demographic and Health Surveys (IDHS) show gradual increase in the prevalence of sexually-active adolescents nationwide, particularly among unmarried males (from 4,9% in 2003 to 8,3% in 2012). Sadly, this alarming trend is not accompanied by protective behavior as most of them do not wear condoms. Meanwhile, knowledge on sexual and reproductive health remains low, even for basic information on condom’s functions.
- **OBJECTIVE:** Aim of this study is to see whether there is an association between knowledge on condom functions and the use of condom.
- **METHODS:** Cross-sectional study of 913Indonesian unmarried males aged 15 – 24 who have had sex (IDHS Adolescent Reproductive Health 2012 dataset). The main independent variableis knowledge on condom functions while the dependent variable is the use of condoms. Statistical analysis is performed using Chi Square and Cox regression.
- **RESULTS:** The prevalence of condom use is about twice higher in respondents who have sufficient knowledge on condom functions (31%), than in respondents who do not (15,1%); adjusted PR 2,38 (95%CI 1,47 – 3,85).
- **CONCLUSION:** Parents and teachersmust be aware of children’s sexual status. Although it is dilemmatic, sexual and reproductive health education for adolescents must provide accurate information on the consequences and prevention of sexual activity, without neglecting moralities and religious values.
- **KEYWORDS:** premarital sex; condom; adolescent; male; knowledge; risky behavior

Palatal Dimension Changes of Mouth Breathing Children Caused by Nasal Obstruction

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- **BACKGROUND:** During growth and development of children, breathing process plays an important role in craniofacial growth, especially palate. Nose breathing can stimulate lateral growth of maxilla, thus making the palate becomes flat. Disturbances in nose breathing caused by nasal obstruction such as allergic rhinitis, adenoid hypertrophy, rhinosinusitis, nasal polyp, and obstructive sleep apnea can lead mouth breathing habit in children. This habit can cause palatal dimensional changes such as narrow V-shaped maxillary arch and high palatal vault.
- **OBJECTIVE:** This pilot study analyzed relationship between mouth breathing habit in children with nasal obstruction with palatal dimensional changes.
- **METHODS:** Cross-sectional descriptive study was conducted with consecutive sampling method on children aged 7-18 years old with history of allergic rhinitis, adenoid hypertrophy, rhinosinusitis, nasal polyp, and obstructive sleep apnea in Pediatric Respiriology and Pediatric Immunology Allergy Outpatient Clinic Kiara Maternal and Child Health Center at Cipto Mangunkusumo Hospital Jakarta. The palatal dimension is measured by its height and its transversal width of the hard palate from models of upper dental arch using vernier caliper.
- **RESULTS:** This study showed that palatal dimensional changes were found in children with mouth breathing habit due to nasal obstruction.
- **KEYWORDS:** nasal obstruction; mouth breathing; palatal dimension

Malocclusion of Mouth Breathing Children caused by Nasal Obstruction

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- **BACKGROUND:** Nasal breathing is necessary to achieve correct growth and development of cranio facial complex. Difficulty in breathing through the nose can lead to an abnormal condition known as mouth breathing habit. Malocclusion is one of the main problems in oral cavity which can be caused by mouth breathing. Nasal obstruction is one of the main causes of mouth breathing habit that often occurs in children.
- **OBJECTIVE:** This pilot study analyzed the relationship between mouth breathing habit and malocclusion in patients diagnosed with nasal obstruction attending Pediatric Respiriology and Immunology Allergy Outpatient Clinic Kiara Maternal and Child Health Center at Cipto Mangunkusumo Hospital in Jakarta.
- **METHODS:** Cross-sectional descriptive study was conducted with consecutive sampling method on children / adolescents having allergic rhinitis, rhinosinusitis, nasal polyp, adenoid hypertrophy, and obstructive sleep apnea syndrome with age range from 7 to 18 years. The subjects were questioned with questionnaire about their mode of breathing. Then, impression was taken and Vernier caliper was used to analyze the occlusion.
- **RESULTS:** Several types of malocclusion were found in mouth breathing subjects from this study.
- **CONCLUSION:** Mouth breathing habit in nasal obstructions patients may contributes in the development of malocclusion.
- **KEYWORDS:** nasal obstruction; mouth breathing; malocclusion; child; adolescent

Head Posture and Facial Profile of Mouth Breathing Children Caused by Nasal Obstruction

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- **BACKGROUND:** Mouth breathing children often associated with obstruction of the upper respiratory tract that caused by adenoid hypertrophy, allergic rhinitis, nasal polyps, sinusitis, and obstructive sleep apnea. Nasal obstruction will result in body respond by change of the head posture to increase the permeability of oropharyngeal. Mouth breathing also alter the tension of muscle on the maxilla and mandible, which resulted in changes of facial profile.
- **OBJECTIVE:** The objective of this study isto analyze the change in head posture and facial profile caused by nasal obstruction.
- **METHODS:** A cross-sectional descriptive study was conductedin Pediatric Respiriology and Pediatric Immunology Allergy Outpatient Clinic Kiara Maternal and Child Health Center at Cipto Mangunkusumo Hospital with consecutive sampling method on children with age range from7-18 years. Lateral cephalometry performed to determine the head posture and facial profile.
- **RESULTS:** This study showed that mouth breathing habit caused by nasal obstruction may contribute to the change in head posture and facial profile.
- **KEYWORDS:** nasal obstruction; mouth breathing; head posture; facial profile

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ISBN 978-979-9394-37-8

