

MALAYSIAN JOURNAL OF

**PUBLIC HEALTH
MEDICINE**

e-ISSN: 2590-3829

ISSN: 1675-0306

Volume 19 (Supplement 3) 2019

Official Publication of the

MALAYSIAN PUBLIC HEALTH PHYSICIANS' ASSOCIATION





MJPHM

Official Journal of Malaysian

Public Health Physicians' Association

EDITORIAL BOARD

Chief Editor

Prof. Dato' Dr. Syed Mohamed Aljunid

International Centre for Casemix and Clinical Coding,
Faculty of Medicine, National University of Malaysia

Deputy Chief Editor

Prof. Dr. Sharifa Ezat Wan Puteh

(Universiti Kebangsaan Malaysia)

Members:

Dato' Prof. Dr Lokman Hakim Sulaiman	International Medical University (IMU)
Assoc. Prof. Dr Retneswari Masilamani	UCSI University, Malaysia
Assoc Prof. Dr. Mohamed Rusli Abdullah	University Sains Malaysia
Assoc. Prof. Saperi Sulong	University Kebangsaan Malaysia
Prof. Dr. Maznah Dahlui	University Malaya
Dr. Roslan Johari	Ministry of Health Malaysia
Dr. Othman Warijo	Ministry of Health Malaysia
Dr. Amin Sah bin Ahmad	Ministry of Health Malaysia
Dr. Ghazali bin Chik	Ministry of Health Malaysia
Dr. Sabrina binti Che Abd Rahman	Ministry of Health Malaysia
Dr. Mariam binti Mohamad	Universiti Teknologi MARA (UiTM)
Dr. Amrizal Muhd Nur	National University of Malaysia

Chief Editor

Malaysian Journal of Public Health Medicine (MJPHM)
International Centre for Casemix and Clinical Coding
Universiti Kebangsaan Malaysia Medical Centre(UKMMC)
Jalan Yaacob Latif, 56000 Cheras, Kuala Lumpur
Malaysia

ISSN:1675-0306

The Malaysian Journal of Public Health Medicine is published twice a year

Copyright reserved @ 2001

Malaysian Public Health Physicians' Association

Secretariate Address:

The Secretariate

International Centre for Casemix and Clinical Coding

Universiti Kebangsaan Malaysia Medical Centre (UKMMC)

Jalan Yaacob Latif, 56000 Cheras, Kuala Lumpur Malaysia

Tel: 03-91456986/6987/6988 Faks: 03-91456685, Email: editor@mjphm.org.my



MJPBM
Official Journal of Malaysian
Public Health Physicians' Association

The 13th South East Asia Regional Scientific Meeting of International Epidemiological Association joined with International Conference on Public Health and Sustainable Development

5-8 October 2018

Sanur Prime Plaza Hotel, Bali, Indonesia

EDITORIAL BOARD

Chairman : Defriman Djafri, PhD
(*Dean, Faculty of Public Health – Andalas University*)

Co-chairman : Ade Suzana Eka Putri, PhD
(*Faculty of Public Health – Andalas University*)
dr. I Md. Ady Wirawan, MPH, PhD
(*Faculty of Medicine – Udayana University*)

Members :

Prof. Dr. Vinod Srivastava	<i>International Epidemiological Association</i>
Prof. Dr. Umesh Kapil	<i>International Epidemiological Association</i>
dr. I Wayan Gede Artawan Eka Putra	<i>Udayana University</i>
Dr. Masdalina Pane	<i>Indonesian Epidemiological Association</i>
dr. Mondastri K. Sudaryo	<i>University of Indonesia</i>
Nurhayati Adnan, MPH, MSc,	<i>University of Indonesia</i>
Dr. Tri Yunis Miko Wahyono	<i>University of Indonesia</i>
dr. Made Ady Wirawan, PhD	<i>Udayana University</i>
dr. Pande Januraga, DrPH	<i>Udayana University</i>
Dr. Ketut Subrata	<i>Udayana University</i>
Luh Putu Suaryani MHhDev	<i>Udayana University</i>

CONTENTS

ORAL PRESENTATION - HEALTH EQUITY

OP01	Health needs assessment of elderly in Salo Village, Agam District, West Sumatera Province, Indonesia <u>Defriman Djafri</u> , Werry Dartta Taifur, Fauziah Elytha, Putri Nilam Sari, Yose Prima Putra	1
OP02	Palliative Care from Patient's and Family's Perspective <u>Nita Arisanti</u> , Elsa Pudji Setiawati, Veranita Pandia, Dany Hilmanto	2
OP03	The effect of health services perception to the utilization of public health center services at coastal area of Soropia, Indonesia <u>Haryati</u> , Mubarak, Esra L. Sitorus	3
OP04	Reproductive health education at school of special need students (deafness) in Denpasar <u>Ni Luh Putu Suariyani</u> , Desak Putu Yuli Kurniati, Desak Nyoman Widyantini, Luh Putu Wulandari Artha, Anak Agung Gede Rudhi Arsana	4

ORAL PRESENTATION - AIDS, TB, MALARIA AND COMMUNICABLE DISEASES

OP05	The costs of reaching injecting drug users (IDUs): a costs analysis of IDUs outreach program in Indonesia <u>Jorghi Vadra</u> , AdiatmaY.M Siregar, Rozar Prawiranegara	5
OP06	Identifying the disclosure status of HIV infected children in Myanmar <u>Kyaw-Min Htut</u> , Myo-Myo Mon, Htun Nyunt Oo, Lwin-Lwin Ni, Aung-Soe Min, Ni-Ni Htay Aung	6
OP07	Development of pulmonary tuberculosis active case finding based on community mobilization <u>Yunus Ariyanto</u> , Dwi Martiana Wati, Nikmal Baroya	7
OP08	Risky sexual behavior among favorites state school students in Padang, Indonesia: recommendations for teen counselor training <u>Dien GA Nursal</u> , Aprianti	8
OP09	Prevalence and correlates of Amphetamine-Type Stimulant (ATS) use among transgender women in Cambodia <u>Kolab Chhim</u> , Gitau Mburu, Sovannary Tuot, Phalkun Mun, Pheak Chhoun, Navy Chan, Siyan Yi	9
OP10	Factors associated with condom use with non-commercial partners among transgender women in Cambodia <u>Kolab Chhim</u> , Sovannary Tuot, Phalkun Mun, Srean Chhim, Pheak Chhoun, Navy Chan, Siyan Yi	10
OP11	Geographical variation was significantly associated with unfavorable treatment outcomes among pulmonary tuberculosis patient in West Sumatera Indonesia <u>Ratno Widoyo</u> , Defriman Djafri, Virasakdi Chongsuvatwong	11
OP12	Fetters of "Batu Balender" among Alifuru Tribe in the Buru Island, Maluku, Indonesia <u>Usman</u>	12
OP13	The effect of initiation time of ARV treatment to 1-year survival among patients with TB-HIV co-infection <u>Siti Maemun</u> , Nina Mariana, Syahrizal Syarif, Adria Rusli	13

OP14	Environmental rapid survey of tuberculosis risk factors in Jember, Indonesia <u>Irma Prasetyowati</u> , Yunus Ariyanto, Rahayu Sri Pujiati, Candra Bumi, Pudjo Wahjudi	14
OP15	Risk factors and social determinants of tuberculosis transmission in Medan City <u>Fazidah A Siregar</u> , Sori Muda Sarumpaet, Asfriyati, Tri Makmur	15
OP16	The implementation of family approach for Healthy Indonesia program to improve tuberculosis early detection and cases finding <u>I Wayan Gede Artawan Eka Putra</u> , Ni Made Dian Kurniasari, Ni Putu Eka Purnama Dewi, I Ketut Suarjana, I Made Kerta Duana, I Ketut Hari Mulyawan, Pandu Riono, Bachtis Alisjahbana, Ari Probandari, Hari Basuki Notobroto, Chatarina Umbul Wahyuni	16
OP17	Transgender women with and without access to community-based HIV programs <u>Kolab Chhim</u> , Sovannary Tuot, Phalkun Mun, Srean Chhim, Pheak Chhoun, Navy Chan, Siyan Yi	17
OP18	Reinforcing factor of premarital sex behavior among senior high school students in Padang <u>Aprianti</u> , Dien Nursal, Yudi Pradipta	18
OP19	Knowledge, behaviour, and prevalence of HIV and syphilis among Indonesian military personnel based on integrated behavior and biological surveillance in 2017 <u>Yuli Subiakto</u> , Dimas Budi Wicaksono, Ciptasari Prabawanti	19
OP20	The influence of perception and self-efficacy of Malaria toward preventive behavior at Pesawaran Districts, Lampung Province, Indonesia <u>Tri Widiarti</u> , Antono Suryoputro, Farid Agushybana	20
OP21	Young key affected population in Myanmar: Is there any challenge in seeking HIV/Sexually transmitted infection, reproductive health information and care? <u>Kyaw-Min Htut</u> , Myo Myo Mon, Htun Nyunt Oo, Zin Mar Aye, Lwin Lwin Ni, Aung Soe Min, Ni NiHtay Aung	21
OP22	Transmission and sources of translation <i>Mycobacterium leprae</i> in 16S rRNA genes in leprosy patients <u>A Rizki Amelia</u> , Ridwan Amiruddin, A. Arsunan A, Burhanuddin Bahar, Mochammad Hatta	22
ORAL PRESENTATION - ENVIRONMENTAL AND OCCUPATIONAL HEALTH		
OP23	Prevalence and correlates of work stress among nurses working in psychiatric inpatient facilities, in Colombo District, Sri Lanka <u>Jeewaranga Gunasekera</u> , Inoka Suraweera	23
OP24	Peer educators as change leaders: effectiveness of peer education process in creating awareness on reproductive health among women workers in garment industry <u>Suvetha Kannappan</u> , Karthikeyan Shanmugam	24
OP25	Review of disciplinary contributions to planetary health collaborations focused on sustainable urban development: an integrated approach to Sustainable Development Goals 3 & 11 <u>Umar Ibrahim</u> , Jason Prior	25
OP26	The influence of ovitrap utilization to the density index of <i>Aedes sp</i> larvae in Samarinda City, Indonesia <u>Mardiana</u> , Erni Wingki Susanti, Lisa Wahidatul Oktaviani	26
OP27	Hospital safety preparedness for disaster in Yogyakarta: a study at Wates hospital government of Kulon Progo District, Yogyakarta <u>Oktomi Wijaya</u>	27

OP28	Differences of radon concentration according to house physical condition in High Background Radiation Area (HBRA), Mamuju District, West Sulawesi, Indonesia <u>Zahra</u> , Eko Pudjadi, Yusniar Ariati, and Miko Hananto	28
OP29	Vision problems and eye occupational safety and health among manufacturing workers in Selangor, Malaysia <u>Mohd Zaki A Isa</u> , Zurin F Yaacob, Mohd Ferdaus Sari, Raemy M. Zein	29
OP30	The variation of patient safety implementation in terms of health workers characteristics in community health center, West Sumatera Province, Indonesia <u>Dien GA Nursal</u> , Rizanda Machmud	30
OP31	The role of county's Community-Based Total Sanitation Team (STBM) to establish Open Defecation Free (ODF) in Wonosobo District: study in Kertek and Kaliwiro County <u>Novi Handayani</u> , Budi Laksono, Laksmono Widagdo	31
OP32	Health risk analysis of pesticide exposure on vegetable farmers in Alahan Panjang Regency, Indonesia, 2017 <u>Septia Pristi Rahmah</u> , Arya Gusti	32
OP33	Climate change, health risks, and community adaptation strategies in urban heat island area: a case study in Koto Tangah Sub-district, Padang City <u>Putri Nilam Sari</u> , Defriman Djafri	33
OP34	Proportion of work fatigue among workers of manufactory building construction in Bali, Indonesia <u>Luh Putu Putri Jayanthi</u> , Baiduri Widanarko	34
OP35	Evaluation of subjective symptoms, urinary trans trans muconic acid and hippuric acid in printing industry <u>Taufik Ashar¹</u> , Rahayu Lubis ² , Kintoko Rochadi ³	35
OP36	Increasing knowledge about Mckenzie stretching method to reduce muskuloskeletal disorder complaints: A quasi experimental study among grade X high school students in Banjarbaru City, Indonesia <u>Ratna Setyaningrum</u> , Ihya Hazairin Noor	36
OP37	Barriers and contributing factors in the implementation of occupational health services for informal workers in community health centers of Manado <u>Paul A.T. Kawatu</u> , Budi T. Ratag, Grace E.C. Korompis	37
OP38	Management of hazards and toxic waste on medical solid waste at Tanjungpinang Public Hospital, Riau Island, Indonesia <u>Muchsin Maulana</u> , Septian Emma Dwi Jatmika, Elsa Utami	38
OP39	Relationship between safety riding behavior with road traffic accident among high school students in Yogyakarta <u>Ihya Hazairin Noor¹</u> , Eko Maulana Syaputra ²	39
OP40	Spatial distribution of sanitation access and the association with stunting prevalence in Bali Province, Indonesia <u>Ni Made Utami Dwipayanti¹</u> , Ni Ketut Sutiari ¹ , Cok Istri Dewiyani Cakrawati ² , Ketut Hari Mulyawan ¹	40
OP41	Factors related to work accidents among production employees in spring bed industry, Padang, 2018 <u>Nizwardi Azkha</u> , Herlisa Dilla	41

OP42	Relationship between occupational health and safety program (OHS) and hearing complaints among industrial employees in Padang, 2018 <u>Luthfil Hadi Anshari, Dici Putri</u>	42
OP43	Risk assessment of plumbum contamination in drinking water from wellbores in coastal area <u>Sri Malem Indirawati, Setiaty Pandia, Herman Mawengkang</u>	43
OP44	Potential hazard analysis and risk control at production of Indarung V Plant, Padang Cement Corporate in 2018 <u>Nopriadi, Nurul Alfatiah, Nizwardi Azkha, Emy Leonita</u>	44
OP45	Correlation between the role of supervisor and occupational health and safety (OHS) training on heavy dump accidents at PT. Pamapersada Nusantara, Kcmb District <u>Julian Dwi Saptadi</u>	45
OP46	The potential of leadership, trust and norms towards the success of community led total sanitation implementation in urban area <u>Ardini S Raksanagara, Iqnatya D Indrayani, Insi F D Arya, Sri Y.I Sari, Deni K Sunjaya</u>	46
OP47	Disaster response readiness: a key to achieving SDGs 3 target of disaster risk reduction by 2030 <u>Weiam Al-hunaishi¹, Umar Ibrahim²</u>	47
ORAL PRESENTATION - MATERNAL AND CHILD HEALTH		
OP48	Maternal age and the risk of recurrent miscarriage in Indonesia <u>Fovilia Dewi, Djaswadi Dasuki</u>	48
OP49	Informal health care provider's practices for under-five diarrhea management in rural India <u>Vishal Dogra</u>	49
OP50	Association between maternal dietary diversity (MDD) and neonatal survival in India <u>Rahul Bawankule</u>	50
OP51	Implementation challenges of sexual violence prevention on children in Payakumbuh City <u>Sri Siswati, Yulia Hartati, Syafrawati</u>	51
OP52	Information system model of community health surveillance in school-age children <u>Arief Hargono, Kurnia Dwi Artanti</u>	52
OP53	A cross sectional study of anemia status during pregnancy and maternal nutritional status with stunting among toddlers in Sukoharjo, Central Java <u>Rahmatika Nur A, Didik Gunawan T, Diffah Hamin</u>	53
OP54	Improvement and challenges in maternal and newborn care: community intervention in hard to reach areas of Chin State, Myanmar <u>Myo-Myo Mon, Kyaw-Min Htut, Aung-Ye-Naung Win, Myo-Win Tin², Khin Zaw</u>	54
OP55	Increasing midwifery skill for pregnancy health care with AMMUNTULI BIJA TIANANG NA BEJA-BEJA model <u>Mustamin, Ridwan Amiruddin, Sukri Palutturi, Stang Abdul Rahman, Risnah</u>	55
OP56	Anthropometric indicators among schoolchildren of a tribal district in Jharkhand, India: analyzing using centiles and LMS method <u>Rishabh Kumar Rana, Devesh Kumar, Vidyasagar, Vivek Kashyap</u>	56

OP57	Breastfeeding as a protective factor against stunting among children aged 6-23 months in border area of West Kalimantan <u>Dini Suciyanti</u> , Aisyah N. Dewi, Helda Khusun, Evy Ermayani, Daniel P. Sahanggamu, Indriya L. Pramesthi	57
OP58	Association of gestational hyperglycemia with adverse maternal outcomes: Results from the MAASTHI birth cohort in Bangalore, South India <u>Giridhara R Babu</u> , Deepa R, Jatin Agarwal, Yamuna A, Prafulla S, Sanjay Kinra, GVS Murthy.	58
OP59	India: A vaccine hesitant or vaccine ignorant country Nusrat Noor, <u>Dewesh Kumar</u> , Vivek Kashyap, Mahendra Singh, Neelesh Kappoor, Rishabh Kumar Rana	59
OP60	Social phenomena in breastfeeding on baby's health status <u>Andi Nurzakiah Amin</u> , Andi Zulkifli, Nurhaedar, Suriah	60
OP61	Occupational factors associated with exclusive breastfeeding among working mothers in Manado <u>Diana V Doda</u> , Herlina I S Wungouw, Nancy Malonda, Grace Kandow, Billy J Kepel, Damayanti Pangemanan, Joice Engka, Silvia R. Marunduh, Pemi M Wowor, Marie Kaseke	61
OP62	The relationship between anemia during pregnancy and exclusive breastfeeding with stunting among children under two years of age <u>Novianti T Dewi</u> , Sri Sumarmi	62
OP63	The comparison of knowledge level in antenatal care, early detection of pregnancy risks and interpersonal communication of midwives during pre and post ANC: RINI training module development in Tangerang District, Banten, Indonesia <u>Rini Kundaryanti</u> , Nursyirwan Effendi, Masrul, Asmawi	63
OP64	Secondhand smoke in pregnancy and fetal growth restriction <u>Mery Ramadani</u> , Budi Utomo	64
OP65	Outbreak investigation of hepatitis A in Hasanuddin Islamic Boarding School, Bajeng Sub-district, Gowa, South Sulawesi <u>Muammar</u> , Ansariadi, Ni Wayan Deisy Arisanti, A. Jusmawati, Indra Dwinata, Debsy Pattilima	65
OP66	Investigation of rubella outbreak in Mananggu Subdistrict, Gorontalo Province 2018 <u>Ni Wayan Deisy Arisanti</u> , Ansariadi, Indra Dwinata, Sri Vitrianti Lexi Noor	66
OP67	Mapping of HIV-AIDS epidemic among pregnant women at Gresik Regency, East Java, Indonesia <u>Alinea D Elisanti</u> , Efri T Ardianto	67
OP68	Factors associated with contraceptive use behavior among married women: a comparative analysis <u>Vivi Triana</u>	68
OP69	A family-based health communication comprehensive model on exclusive breastfeeding for infant's quality of life in health services: A Study Protocol <u>Insi Farisa Desy Arya</u> , Elsa Pudji Setyawati, Dani Ferdian, Mira Suryani, Nanan Sekarwana, Dida Ahmad Gurnida	69
OP70	Autism spectrum disorder: characteristics of children and perceived risk factors in Mumbai, India <u>Rati Kapoor</u> , Manas Ranjan Pradhan	70

OP71	The knowledge on diarrheal disease among street children in Manado, North Sulawesi, Indonesia <u>Angela Kalesaran, Eva Mantjoro, Grace Kandou</u>	71
OP72	Relationship between infectious diseases and wasting among 6-11 months old infants in Padang, West Sumatera, Indonesia <u>Idral Purnakarya</u>	72
OP73	Polymorphism of <i>tmprss6</i> gene and iron intake are both associated with iron status among under-two-years-old children in Lombok, Indonesia Dewi Shinta, Asmarinah, Chris Adhiyanto, Min Kyaw Htet, <u>Umi Fahmida</u>	73
OP74	Health decision makers, parent's religiosity, and complete immunization status among 1-5 years' children in Indonesia <u>Erni Astutik, Tika Dwi Tama, Ayik Mirayanti Mandagi, Atik Choirul Hidajah</u>	74
OP75	Mapping analysis of low birth weight babies in Makassar Municipality, Indonesia <u>Muhammad N Bustan, Ayu Lestari Darti Akhsa, Arman</u>	75
ORAL PRESENTATION - THE EMERGING & RE-EMERGING DISEASE		
OP76	<i>Dengue</i> cases treated in Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar in year 2016 <u>Harpreet Kaur, Shyam Lal Mahajan</u>	76
OP77	Qualitative study: leverage and barrier factors of Mass Drug Administration (MDA) lymphatic filariasis elimination programs in Tangerang and Subang Regency <u>Mara Ipa, Endang P Astuti, Wawan Ridwan, Ina Rachmalina</u>	77
OP78	Tensely clustered outbreak of visceral leishmaniasis (kala-azar) in a setting of seasonal migration in a village of Bihar, India <u>Suman Saurabh, Sarosh Jamil, Vijay Kumar, Arvind Kumar</u>	78
OP79	Analysis of diphtheria in Padang City: A qualitative study <u>Masrizal, Fauziah Elytha, Fauriza Afifah, Randa Ilham</u>	79
OP80	Determining the epidemiology of leptospirosis based on environment factor in Central Java Province, 2017 <u>Chatarina U.W, Ahmad Zamzam Hariro</u>	80
OP81	<i>Taenia solium</i> infection in pig farming community of North India <u>Kashi N Prasad, Chandra M Pandey</u>	81
OP82	Evaluating the implementation of filariasis elimination in Kotawaringin Barat District, Indonesia <u>Nita Rahayu, Sri Sulasmi, Yuniarti Suryatinah</u>	82
OP83	Accuracy of <i>dengue</i> rapid diagnostics test in hospital, Semarang City, Indonesia <u>Martini Martini, Soraya Hidayati, Retno Hestningsih, Sri Yuliawati, Atik Mawarni, Indranilla Kustarini</u>	83
OP84	Digital surveillance system: the potential of Epicollect5 Data Collection as a tool for outbreaks epidemiological investigations in Bali Province, Indonesia <u>Ngakan Putu Anom Harjana</u>	84
OP85	Ovitrap products with attractant rice straw to reduce larva density in <i>dengue</i> endemic areas in Bali <u>Sang G. Purnama, Pasek Kardiwinata, Santyayuniarsa</u>	85

ORAL PRESENTATION - UNIVERSAL HEALTH COVERAGE

OP86	Information technology (IT)-enabled epidemiological applications for improving universal health coverage: a case study from North India <u>Dharamjeet Singh Faujdar</u> , Sundeep Sahay, TarundeepSingh, PVM Lakshmi, Manmeet Kaur, Rajesh Kumar	86
OP87	Distribution of social media facebook account content on “BPJS kesehatan” during November to December 2017: a descriptive study <u>Lelitasari</u>	87
OP88	The efficiency of public health centres in Padang based on data envelopment analysis <u>Adila Kasni Astiena</u>	88
OP89	Related factors of contribution-based participation in national health insurance among Sakai tribe in, Bengkalis Regency, Indonesia <u>Ch Tutu Ernawati</u> , Dhina Uswatul K	89
OP90	Exclusivism behavior from informal groups to the participation of national health insurance program <u>Firman</u> , Mubasasyir Hasanbasri	90
OP91	Eating habits among hyperuricemia patients in Padang City <u>Cesar Welya Refdi</u> , Rina Yenrina, Kesuma Sayuti, Prima Yaumil Fajri	91

ORAL PRESENTATION - PUBLIC HEALTH NUTRITION

OP92	Nutritional status of elementary school children in Manado City <u>Nelly Mayulu</u>	92
OP93	Zinc supplementation increases taste acuity and body weight in malnourished children under five with normal albumin level Siti Muslikhah, <u>Rofida Lathifah</u> , Nanda Aulya Ramadhan, Bambang Wirjatmadi, Merryana Adriani	93
OP94	Husband’s support to optimize breastfeeding practice in Korong Gadang Village, Padang Municipality, West Sumatera <u>Denas Symond</u> , Erwinda	94
OP95	Using the nutrition care process form to identify factors related obesity and obesity treatment among children in Padang, West Sumatera <u>Hafifatul A Rahmy</u> , Mahdalena, Vinna Y Zulfikar, Astri Gita Jefsy, Monica Yuliasari	95
OP96	The effect of balanced nutrition education on nutritional behavior and microcytic anemia adolescent girls Sitti Patimah, <u>Andi Imam Arundhana</u> , Ansar Mursaha	96
OP97	A cross sectional study of obesity among school children using WHO BMI - for- age charts in North East India <u>Rajesh Kunwar</u> , Sukhmeet Minhas	97
OP98	The cadre involvement model in controlling to the fast food traders to reduce the foodborne diseases in Kendari City, Southeast Sulawesi <u>Tasnim Tasnim</u> , Maria Inge Lusida	98
OP99	Nutritional status of underfive children - a community-based study in urban field practice area of a government medical college Aurangabad (Maharashtra) India <u>Mohan Doibale</u> , Smita Andurkar, Sunayana Kumthekar	99

OP100	Summary of evidence for development of best practices for healthy school canteen: lessons learned from some selected primary schools in Jakarta <u>Eflita Meiyetriani</u> , Judhiastuty Februhartanty, Dwi Nastiti Iswarawanti, Arienta Sudibya	100
OP101	Factors associating food intake of international students in Surabaya, Indonesia <u>Airin Levina</u> , <u>Lailatul Muniroh</u>	101
OP102	The exposure of infant formula advertisement on early complementary feeding practice in catchment Area of Tanjungsari public health center Surabaya, East Java <u>Dara Putri Puspitasari</u> , Sri Sumarmi	102
OP103	Related factors of low carbohydrate intake among adult women In Indonesia <u>Firdaus</u> , Rimbawan	103
OP104	Relationship between nutritional status and physical fitness among elementary school students in Bali Province in 2018 <u>Cok Istri Dewiyani Cakrawati</u> , A.A.S. Sawitri, Cok Istri Sri Dharma Astiti	104
OP105	Food poisoning outbreak in Banjar Mudita Sukawati Village, Bali, Indonesia, 2018 <u>Michelle Rampengan</u> , Putu Suariyani, Dewa Oka	105
OP106	Effects of <i>dadih</i> and zinc supplementation during pregnancy on pregnancy outcome in West Sumatera, Indonesia <u>Helmizar</u> , Andani Eka Putra, Marlina	106
OP107	Characteristics of stunted children aged 24-36 months in Padang City <u>Azrimaidaliza</u> , Dien GA Nursal, Hafifatul A. Rahmi, Rozaliny Asri	107
OP108	Risk behavior related to nutritional status among adolescents in Luwuk City, Central Sulawesi, Indonesia <u>Erni Y. Lalusu</u> , Ramli, Fitrianty S. Lanyumba, Marselina Sattu, Winnie T. Mutika	108
OP109	The effect of health education on knowledge and attitude for consuming fruit, vegetables and fish among state elementary school students in Semarang City, Indonesia <u>Eny Listiyarini</u> , S.A. Nugraheni, Farid Agushybana	109
OP110	Low birth weight and children aged 6-8 month as risk factors of anemia among under two years old children in Sambas District, Indonesian borderland area <u>Ahmad Thohir Hidayat</u> , Nurbaya, Evi Ermayani, Indriya Laras Pramesthi, Daniel Paulus Sahanggamu, Umi Fahmida	110
OP111	Risk factors of stunting among children aged 6-24 months at primary health center of Koya, Minahasa Regency, North Sulawesi Province <u>Nancy Malonda</u> , Adisti Rumayar, Finny Warouw	111
ORAL PRESENTATION - NCD AND RISK FACTORS		
OP112	Prevalence of knee osteoarthritis and its impact on quality of life among elderly in rural Ballabgarh, Haryana <u>Abhishek Jaiswal</u> , Harshal R Salve, Partha Halder, Kiran Goswami, U Singh	112
OP113	Controlled hypertension: risk factor of non-communicable diseases in prospective cohort study in Bogor, 2011-2016 <u>Pradono J</u> , Riyadina W, Kristanti D, Turana Y	113
OP114	Validation of clinical scores for identification of bacterial sore throat among pediatric outpatient attendees in North India Raghavan Parthasarathy, Anita Saxena, Arti Kapil, Sumit Malhotra, <u>Anand Krishnan</u>	114

OP115	Prevalence of hypertension among adolescents in rural North India Roy Arokiam Daniel, <u>Partha Haldar</u> , Shashi kant, Anand Krishnan, Rakesh Kumar, Sanjeev Kumar Gupta	115
OP116	Prevalence of smoking and its contributing factors among medical students of Kathmandu Valley <u>Sujan Babu Marahatta</u> , Anupama Bhusal, Bipin Adhikari, Durga Mishra	116
OP117	Influence of health promotion through instagram on improving knowledge and attitude Breast Self-Examination to student of Faculty of Public Health Andalas University <u>Ayulia Fardila Sari ZA</u> , Hayatul Rahmi	117
OP118	Obesity and lifestyle factors as determinants of Type 2 diabetes mellitus in Manado City <u>Grace D. Kandou</u> , Budi T. Ratag, Angela F.C. Kalesaran, Priscilla C. Kandou	118
OP119	Analysis of sexual health education application in the family and relations with the incidence of sexual abuses at children in Dumai City 2018 <u>Mellia Fransiska</u> , Evi Susanti	119
OP120	Association of depression symptom in elderly hypertension patients with the usage of beta-blockers in Kuala Lumpur <u>Zulhabri Othman</u> , Fatini Zahari, SyahirahFarhana Mohd Saleh, Noor Azimah Ahmad, Mohd Hazayri Jamaluddin, Glendon Lau, Anantha Raj Daniel	120
OP121	Risk factors of dyslipidemia in adults: a cohort study <u>Sudikno</u> , Julianti Pradono	121
OP122	Effects of physical activity, obesity and smoking on the risk of type 2 diabetes mellitus <u>Fauzie Rahman</u> , Dian Rosadi, Mulyadi	122
OP123	Pattern of extra-articular manifestations among rheumatoid arthritis patients: a hospital based cross-sectional study <u>Bhaskar Thakur</u> , Prashanta Padhan, Mona pathak	123
OP124	Determinants of hypertension among women in Talawaan, North Minahasa, Indonesia <u>Adisti Rumayar</u> , Nancy Malonda, Ardiansa Tucunan	124
OP125	Risk factors of chikungunya outbreak at Kusamba Village Klungkung Regency, 2014 <u>Putu Cintya Denny Yuliyatni</u> , I Wayan Pujana	125
OP126	Screening descendants Type 2 diabetes mellitus in Kulon Progo District, Indonesia <u>Fatma Nuraisyah</u> , Solikhah Solikhah, Rochana Rullyandari	126
OP127	Cost effectiveness analysis of low back pain treatment at Teaching Hospital of University of Airlangga: comprehensive rehabilitation with medication versus pain intervention <u>Nanda A Ramadhan</u> , Rofida Lathifah, Abdulloh Machin, Thinni N Rochmah	127
OP128	Spatial analysis of major NCD's risk factors in Indonesia <u>Ansariadi</u>	128
OP129	Risk factors of cognitive function score among post ischemic stroke patient at Hajj General Hospital Surabaya <u>Atik Choirul Hidajah</u> , Wahid N Alfi, Riky Hamdani	129
OP130	Individual religiosity and smoking cessation among working-age population in Indonesia <u>Tika Dwi Tama</u> , Erni Astutik	130

OP131	Influence of social media and peer group on smoking among selected public & private university students in Urban Dhaka <u>Naym U Roby</u> , M Tasdik Hasan, Kapil Ahmed, Fatema Ashraf, Ariful B Chowdhury	131
OP132	The postponement of scheduled surgeries Momia Yashpal, Talati Shweta, Bhagat Hemant, Koushal Vipin, <u>Kumar Ashok</u>	132
OP133	General obesity based on body mass index and abdominal obesity measured by waist circumference to pre-diabetes among adults in central Bogor <u>Nur R Ramadhani</u> , Nurhayati Adnan	133
OP134	Screening metabolic syndrome among Bangladeshi population using different recommendations <u>Manisha Das</u> , Omar Faruque, Zahid Hassan	134
OP135	Risk factors of pre-hypertension among medical students in Sam Ratulangi University, Manado <u>Ribka Wowor</u>	135
OP136	Correlation between sleep duration and physical activity with central obesity among Indonesian adolescents <u>Lilik Sofiatu Solikhah</u> , Dono Indarto, Adi Magna P. Nuhriwangsa, Grace Wangge	136
OP137	Social determinants of delay on medical consultation among women with breast cancer: a study in West Sumatera Province, Indonesia <u>Ade Suzana Eka Putri</u> , Ismeldi Syarief	137
OP138	Socio-demography and quality of life associated with social interaction among the elderly insocial house of Tresna Werdha Ina-Kaka, Ambon <u>Ardiansa A.T. Tucunan</u> , Adisti A. Rumayar	138
ORAL PRESENTATION - PUBLIC HEALTH POLICY		
OP139	Utilizing Tele-health to improve accessibility, optimize resources and cost in the era of national health insurance <u>Anthony P. Sunjaya</u> , Ernawati So	139
OP140	It is not too early to think of long-term care in Indonesia: lessons from experiences of other countries and challenges <u>Mika Ito</u> , Purnawan Junadi	140
OP141	Implementation of exclusive breastfeeding policy on working mother in Padang City <u>Shelvy Haria Roza</u> , Wiya Elsa Fitri	141
OP142	Implementation of health operational aid program: a case study in East Java Province <u>Ernawaty</u> , Ratna Kartikasari, Hari B. Notobroto, Nuzulul K. Putri, Nurhasmadiar Nandini	142
OP143	Correlates of tobacco quit attempts and missed opportunity for tobacco cessation among adult population in India <u>Manas Ranjan Pradhan</u> , Surendra Kumar Patel	143
OP144	Contributing factors in the allocation of village funds for health Ida Ayu Regina Kosinta Putri, <u>Ni Made Sri Nopiyani</u>	144
OP145	Analysis of community leaders and public health center's role in community empowerment for non-communicable diseases prevention and control in Kampar, Indonesia <u>Tuti Retuastuti</u> , Zahtamal, Fifia Chandra, Ridha Restila	145

OP146	Factors associated with hospital bed availability in Public Hospital of Surabaya: a cross sectional study <u>Nurul Jannatul Firdausi, Agus Aan Adriansyah</u>	146
OP147	The challenge to be health promoting school: the qualitative study in Surabaya, Indonesia <u>Muji Sulistyowati, Kuntoro, Oedojo Soedirham, Budi Prasetyo</u>	147
OP148	Surveillance system capacity analysis in Padang City, West Sumatera Province - Indonesia: A pilot study <u>Yudi Pradipta, Defriman Djafri, Hafifah Nanda, Nengsih Purnama Sari</u>	148
OP149	Challenges and opportunities for health information system strengthening for sustainable development: a primary health facility-level analysis in North Sulawesi, Indonesia <u>Rutler P. Masalamate, Aprisa Chrysantina, Chreisy K.F. Mandagi</u>	149
OP150	Analysis of moral hazard prevention program for national health insurance providers in West Sumatera Hospital <u>Syafrawati</u>	150
OP151	A study on measurement, evaluation, and follow-up the quality indicators of health care facilities using web-based approach <u>Eva Tirtabayu Hasri, Novika Handayani, Hanevi Djasri</u>	151

POSTER PRESENTATION

PP01	Identifying health system barriers using simplified WHO building blocks: a case study in Bandung City, West Java, Indonesia <u>Arya I.F Desy, Maharani F., Prawiranegara R., Setiawati E. Pudji, Sekarwana N.</u>	152
PP02	Predictor of coronary heart disease (CHD) incidence among adults: cohort study on risk factors of non-communicable disease <u>Sulistiyowati Tuminah Darjoko, Tri Wahyuningsih, Sudikno</u>	153
PP03	Characteristics of hajj pilgrims from Surabaya Embarkation who died in 2015 <u>Dwi Handayani, Wiwik Afridah</u>	154
PP04	Woman has higher risk for having metabolic syndrome than man: a prospective cohort study during 6 years in Bogor, Indonesia <u>Srilaning Driyah, Ratih Oemiati, Rustika, Nova Sri Hartati, Sedy Agita, Indra Cans Yunina</u>	155
PP05	Influencing factors of voluntary counseling and testing implementation among pregnant women <u>Heri Sugiarto, Setyo Dwi Widyastuti, Muhamad Fauzi, Isna Oktaviana</u>	156
PP06	Decentralization and district health sector reform: civil servant's perception of the practice and anti-corruption commitment in local government health agencies in Indonesia <u>Faisal Mansur, Mubasysyir Hasanbasri</u>	157
PP07	Relationship between school environment, media and family support to the risk of adolescent disorders among teenagers in Karo District, Indonesia <u>AlamB Keloko, Zulfendri, Dhani S Bukit</u>	158
PP08	Health status of migrant workers attending primary care clinics in Malaysia <u>Nataman Miskam, Erwin Martinez Faller, Siti Zaharah, Chan Chee Khoo, Adrian Pereira</u>	159

PP09	Association of common mental disorders and diabetes mellitus - evidence from case control study in Rural Ballabgarh, Haryana <u>Harshal R Salve</u> , Bhushan Kamble, Anand Krishnan, Rajesh Sagar, Shashi Kant, Baridalyne Nongkynrih, V Sreenivas	160
PP10	Evaluation and implementation plan of risk factors surveillance for non-communicable diseases based on primary health facility, Gianyar District 2018 <u>Venessa V.M Susanto</u> , P.C Denny Yuliyatni, D Harimbawa	161
PP11	Comparison of the lipid profile between routine blood donation and non-routine blood donation among subjects with central obesity <u>Frans Wantania</u>	162
PP12	Stress and hypertension among housewives in Sidotopo, Surabaya <u>Fitria Nurrahmawati</u> , Trias Mahmudiono	163

ORAL PRESENTATION - HEALTH EQUITY

OP01

Health needs assessment of elderly in Salo Village, Agam District, West Sumatera Province, Indonesia

Defriman Djafri¹, Werry Darta Taifur³, Fauziah Elytha¹, Putri Nilam Sari², and Yose Prima Putra¹

¹ Department of Epidemiology & Biostatistics, Faculty of Public Health, Andalas University, 25129, Indonesia

² Department of Environmental Health & Occupational Health & Safety, Faculty of Public Health, Andalas University, 25129, Indonesia

³ Faculty of Economics and Business, Andalas University, 25147, Indonesia

There are presently 21 million Indonesians aged 60 years and over and this number is projected to rise to 48 million by 2035 when the percentage of the population at these older ages will be almost 16 per cent, double the present level. A high proportion of these older persons (57%) live in rural areas, commonly being areas from which younger people have moved to the rapidly growing cities and towns. This situation presents challenges for the traditional family-based aged health care system in rural Indonesia. This study was examined the assessment of the fulfillment of elderly health status and health needs in the Salo district of Agam district in 2018. A cross sectional study was conducted from March 2018 to September 2018 in Agam District, West Sumatera. In total, 202 elderly persons were interviewed to assess health status and health needs. All data were documented and analyzed by Epidata and R software. More than seventy percent of elderly described their health status as good. Some diseases that have been confirmed by medical doctors in this study obtained hypertension have the highest proportion 22.3%, followed by Liver / Kidney 12.4%, Uric Acid 11.4%, Rheumatism / Arthritis 9.9%, Diabetes 5.97%. In fulfilling the needs of the elderly, 38.3% said that it was sufficient, while 34.8% of the elderly said they were in good condition. Independence in financial management and having a business in making money in meeting their needs. In general, the economy was good, young people in Salo village, generally migrate to other regions, both to the islands of Java, Sumatra and Kalimantan and abroad. Elderly people in Salo village can be said to be independent in meeting their needs, even though there are some elderly people who need relatives or relatives to meet their needs and health. The study concluded elderly persons are a highly vulnerable population needing health surveillance and family assistance. Health status is an important part in supporting independence for the elderly in meeting their needs. I would also like to acknowledge and thank the Agam District Health Office, Faculty of Public Health, Andalas University, who encouraged and provided extensive support this study.

Keywords: Health Needs Assessment, Elderly, Elderly Health Status, Older Age

OP02

Palliative Care from Patient's and Family's Perspective

Nita Arisanti¹, Elsa Pudji Setiawati¹, Veranita Pandia², and Dany Hilmanto³

¹ Department of Public Health, Faculty of Medicine Universitas Padjadjaran, Bandung, 45363, Indonesia

² Department of Psychiatry Faculty of Medicine Universitas Padjadjaran, Bandung, 45363, Indonesia

³ Department of Child Health, Faculty of Medicine Universitas Padjadjaran, Bandung, 45363, Indonesia

Palliative care became the agenda of the Indonesian government in 2007 with the issuance of Decree on Palliative Care Policy. However, the implementation is still very limited to certain hospitals, which in turn many patients died in their home without optimal care. The access to palliative care is the patients' rights. The purpose of this study was to explore the implementation of palliative care from the perspective of patients and family. A qualitative study was conducted using in-depth interviews with 14 informants. Informants were patients with terminal illness and family members. An interpretative qualitative study with content analysis was used. Data were analyzed by transcription and coding using NVivo 11. The interview was conducted in a community setting and hospital. The study was conducted in Bandung, West Java Province, Indonesia from March to June 2018. In-depth interviews were conducted to explore the perspective of patients and family members about care for patients with terminal illness. There are some issues raised in this study (1) there are constrain for accessibility of care such as financial support, feasibility of health care facilities; (2) care may be effectively supported by symptom management, communication, follow up, and coordination; and (3) socio-cultural-spiritual support such as family understanding, acceptance and coping should be tackled. From the perspective of patients and family members, there are some constraints in the implementation of palliative care and the implementation should consider social-cultural-spiritual aspects of the patient. The author would like to thank to Lembaga Pengelola Dana Pendidikan RI for supporting this study.

Keywords: Family, palliative care, patient, perspective

OP03

The effect of health services perception to the utilization of public health center services at coastal area of Soropia, Indonesia

Haryati¹, Mubarak¹, and Esra L. Sitorus²

¹ Medical Faculty of Halu Oleo University, Kendari, 93132, Indonesia

² Doctoral Program of Nursing Science, Faculty of Medicine, University of Halu Oleo, Kendari, 93132, Indonesia

The utilization of health services at public health center by patients represents the quality of health services given by health providers as well as patients trust of health services. The condition of public health services in Indonesia especially the coastal communities in eastern Indonesia is very disconcerting. This study aims to determine the influence of perception on health services on the utilization of primary health services in the coastal area of Soropia sub-district. This study was quantitative research using the cross-sectional analytic design, conducted on October until December 2017 in six villages at the coastal area of Soropia sub-district. Purposive sampling was used to obtain 62 respondents based on the inclusion criteria. Primary data was obtained through a survey using a questionnaire. Data analysis used statistical chi-square test ($\alpha = 0.05$). The study found that respondents with a positive perception of the doctor services were 45 respondents (72.6%), on nurse services were 55 respondents (88.7%), on paramedic services were 56 respondents (90.3%), on medical and non-medical facilities were 40 respondents (64.5%), on physical environment were 14 respondents (22.6%). Respondents who will use the public health center were 47 respondents (75.8%). The utilization of public health center services was influenced by community perception on medical services (p -value = 0.001), nursing services (p -value = 0.007), paramedical services (p -value = 0.002), medical and non-medical facilities (p -value = 0.001), and physical environment (p -value = 0.001). There is an influence of perception of the service of doctors, nurses, paramedical, medical and non-medical facilities, and the physical environment to the utilization of public health center services at the coastal area of Soropia sub-district.

Keywords: Health Services, Health Services Perception, Utilization, Public Health Center

OP04

Reproductive health education at school of special need students (deafness) in Denpasar

Ni Luh Putu Suariyani^{1,2}, Desak Putu Yuli Kurniati^{1,2}, Desak Nyoman Widyantini^{1,2}, Luh Putu Wulandari Artha¹, and Anak Agung Gede Rudhi Arsana¹

¹ School of Public Health, Faculty of Medicine, Udayana University, Denpasar, 80361, Indonesia

² Department of Public Health and Preventive Medicine, Faculty of Medicine, Udayana University, 80361, Indonesia

Adolescents with disability are also adolescents who are sexually active. Their reproductive health needs similar to their normal peers. However, people with disabilities need special treatment especially for those with hearing impairments; deafness needs special treatment because they use specific language. Therefore, it needs to know the method of reproductive health education among deafness in the schools with special needs in Denpasar. This research was a qualitative study conducted in 2017 at one of the special need schools in Denpasar. Respondents were 1 teacher, 1 principal, and 2 students. The data were analyzed by content analysis. This study got ethical clearance from Medical Faculty of Udayana University. Based on interviews with the school, it was found that there was no specific reproductive health curriculum in the school but integrated reproductive health materials in several subjects such as science, nationality, and religion. The material provided was often not in accordance with the needs, so it needs to be simplified. There is still a low level of education in reproductive health for persons with disabilities, especially deafness. There is a need for cross-sector cooperation in reproductive health education for deaf people. Thank you to the Faculty of Medicine for the funds that have been given so that this research is carried out.

Keywords: Reproductive Health, Health Education, Reproductive health education, Special Need Students, School Health Education

ORAL PRESENTATION - AIDS, TB, MALARIA AND COMMUNICABLE DESEASES

OP05

The costs of reaching injecting drug users (IDUs): a costs analysis of IDUs outreach program in Indonesia

Jorghi Vadra^{1,2}, AdiatmaY.M Siregar^{1,2}, and Rozar Prawiranegara^{2,3}

¹ Center for Economics and Development Studies (CEDS), Department of Economics, Faculty of Economics and Business, Padjadjaran University, Bandung, 45363, Indonesia

² HIV/AIDS Priority Setting Involving Stakeholder Using Multiple Criteria (PRISMA)

³ Infectious Disease Research Unit, Faculty of Medicine, Padjadjaran University, Bandung, 45363, Indonesia

28.8% of 620.000 of estimated people living with HIV/AIDS in Indonesia is Injecting drug users (IDUs). An outreach program to this high-risk group is necessary, and economic analysis is needed to show the costs of the program as an input to policy making. Direct costs data were collected by interviewing an NGOs which is focusing on the IDUs group in Bandung City, West Java. Indirect costs were estimated by interviewing IDUs who were covered by this program. All data were collected in 2017 and converted to US\$ (Rp14,185/US\$). A total direct cost incurred in this program were US\$9,727.98 (US\$19.46/person). Cost items included personnel (77.1%), supplies (1.7%), training (8.9%), building (8.8%), and equipment costs (3. 5%). IDU's outreach program direct cost is half of the transgender and male-having-sex-with-male outreach program, and it is almost six times higher than female sex workers outreach program (more specifically on the personnel cost). Given the importance of IDUs within the HIV/AIDS epidemic, further research on the effectiveness of the program is required in comparison with other outreach programs. We would like to thank Grapiks Foundation and Bandung City AIDS for extensively supporting our research.

Keywords: HIV/AIDS, injecting drug user (IDU's), outreach program, cost analysis, Indonesia

OP06

Identifying the disclosure status of HIV infected children in Myanmar

Kyaw-Min Htut¹, Myo-Myo Mon¹, Htun Nyunt Oo², Lwin-Lwin Ni¹, Aung-Soe Min¹, and Ni-Ni Htay Aung¹

¹ Department of Medical Research, Ministry of Health and Sports, Yangon, 11191, Myanmar

² National AIDS Program, Naypyitaw, Myanmar

Disclosing HIV status to children on Anti-Retroviral Therapy (ART) is crucial to maintain drug adherence and prevent further transmission of HIV. The study was conducted to identify disclosure related information among HIV infected children. A cross-sectional, mixed methods study was conducted in 2017 at 21 public ART centers by applying face-to-face interviews and in-depth interviews with guardians of children on ART. Total of 359 children under 15 years participated and mean age (SD) was 9.03 ± 3.5 years. About 47% (168/359) of children knew their HIV status in which 46% (77/168) was disclosed by one of their parents. Considerably higher proportions of 11-15 years old children than 6-10 years (69.7% and 37%, p<0.001), children staying with other relatives than staying with parents (60.2% and 48.9%, p<0.05), children with non-parent head of household than children with parent head of household (65.6% and 50.3%, p<0.05) and orphans than non-orphans (55.9% and 47.1%, p<0.01) have been disclosed. During discussions, some guardians stated that they told their children as having a chronic disease. A considerable proportion of children has not known their HIV status although they are on ART. Awareness raising activities for guardians on advantages of disclosure counseling are recommended.

Keywords: HIV, HIV Infected Children, Disclosure Status, Myanmar

OP07

Development of pulmonary tuberculosis active case finding based on community mobilization

Yunus Ariyanto¹, Dwi Martiana Wati¹, and Nikmal Baroya¹

Department of Epidemiology, Biostatistics, and Population Study, Faculty of Public Health, University of Jember, Jember, 68121, Indonesia

Tuberculosis is a social problem that requires a social approach. The previous study in Jember, Indonesia showed a complex social problem leading to TB case finding delay. This study aims to organize an active case finding to reduce the delay. The method used in this research is action research. We applied the collaborative betterment model involving health cadres, community/religious leaders, Primary Health Centers, and the District Public Health Office. This research was conducted in Kalisat and Suboh village of Jember district for 1st year intervention. As a result of this activity, 86 suspects were identified, 56.9% of suspects were persuaded, and 85.7% of them were willing to be examined. 48.9% persuasion was carried out by the cadres themselves, 40.9% by cadres with community/ religious leaders, and 10% by cadres with community/ religious leaders and health staff. Positive predicted value was 0.071. This model is an appropriate approach to organize an active case finding in the community. Health staff positions to assist the cadres in persuasion activity can be replaced by community/ religious leader. This model could accelerate TB case finding, thereby shortening the period of diagnostic delay, and at the same time educated the community and reduced TB stigma. We thank to the DP2M DIKT1 Ministry of Research Technology and Higher Education and the Research Center of University of Jember for funding this research using HIBER scheme on 2016.

Keywords: Tuberculosis, Pulmonary Tuberculosis, Active Case Finding, Community Mobilization

OP08

Risky sexual behavior among favorites state school students in Padang, Indonesia: recommendations for teen counselor training

Dien GA Nursal and Aprianti

Department of Reproductive Health, Andalas University, Padang, 25129, Indonesia

Based on Indonesian Adolescent Reproductive Health Survey, risky sexual behavior increased from 2007 to 2012. Percentage of boys who had ever kissed increased from 41.2% to 48%, and from 29.3% to 30% among girls. Risky sexual behavior related to sexually transmitted disease, unwanted pregnancy, abortion, and high-risk labor which finally lead to maternal death. This research aimed to know risky sexual behavior as a basis for developing a training module for teen counselors. The research design was cross-sectional. Data were collected on April 2018 with 1400 respondents, students from favorite state schools who were selected by using probability proportional to size technique. Data were collected with reliable and validated questionnaire on risky sexual behavior, students' knowledge and attitude, religiosity, exposed to the pornographic, role of parents and friends. The data were analyzed by Chi-square test and logistic regression with $\alpha=0.05$. The study found that 26.6% of respondents had risky sexual behavior, 31.5% had low knowledge, 21.8% had negative attitude, 21.8% had low religiosity, 53.4% of respondents exposed to pornographic media, 41.3% parents that does not play a role, 33.8% of respondents had negative friend role. There was relationship between risky sexual behavior and knowledge ($p=0.001$), attitude ($p=0.001$), religiosity ($p=0.001$), media ($p=0.001$), parents ($p=0.007$) and friends ($p=0.001$). The most related variable was friends ($p=0,001$). Knowledge, attitude, religiosity, media, parents, and friend have a significant role in risky sexual behavior. A friend's role is the most influencing factors. We suggest developing training modules for teen counselors. We would like to acknowledge to principle and students of favorite state high school in Padang for their support along this study. We also thank Rama, Mona, Mutia, Iska, Rima, Ulfa, Syura and Lina for theirs support throughout the process.

Keywords: *risky sexual behavior, favorite high school, students, adolescent, friend's role*

OP09

Prevalence and correlates of Amphetamine-Type Stimulant (ATS) use among transgender women in Cambodia

Kolab Chhim¹, Gitau Mburu², Sovannary Tuot¹, Phalkun Mun³, Pheak Chhoun¹, Navy Chan³, and Siyan Yi^{1,4,5}

¹ KHANA Center for Population Health Research, Phnom Penh, Cambodia

² Division of Health Research, Lancaster University, Lancaster, United Kingdom

³ National Center for HIV/AIDS, Dermatology and STD, Phnom Penh, Cambodia

⁴ Saw Swee Hock School of Public Health, National University of Singapore, Singapore

⁵ Public Health Program, Touro University California, Vallejo, United State

The use of amphetamine-type stimulants (ATS) is associated with increases in HIV infections in HIV key populations. This study explores correlates of ATS use among transgender women in Cambodia. A national survey was conducted in 2016 among 1375 transgender women recruited from 13 provinces using respondent-driven sampling method. We performed multivariate logistic regression analysis to identify independent correlates of recent ATS use. Overall, 10.4% of the participants reported ATS use in the past three months. After adjustment, recent ATS use remained significantly associated with living in urban areas ($p= 0.01$), lower level of formal education ($p= 0.02$), involvement in transactional sex in the past three months ($p< 0.001$), other substance use including higher frequency of binge drinking ($p< 0.001$) in the past three months, a feeling that co-workers/classmates were not supportive regarding their transgender identity ($p= 0.002$), depressive symptoms ($p= 0.002$), and experiences of emotional abuse during childhood ($p= 0.002$). ATS was the most common illicit drug among transgender women in Cambodia. Developing and implementing additional harm reduction strategies tailored to ATS use among transgender women are needed. Integration of HIV and mental health interventions into harm reduction programs should be more focused.

Keywords: Amphetamine-Type Stimulant, ATS, Transgender, Transgender Women, Cambodia

OP10

Factors associated with condom use with non-commercial partners among transgender women in Cambodia

Kolab Chhim¹, Sovannary Tuot¹, Phalkun Mun², Srean Chhim³, Pheak Chhoun¹, Navy Chan², and Siyan Yi^{1,4,5}

¹ KHANA Center for Population Health Research, Phnom Penh, Cambodia

² National Center for HIV/AIDS, Dermatology and STD, Phnom Penh, Cambodia

³ FHI 360, Phnom Penh, Cambodia

⁴ Saw Swee Hock School of Public Health, National University of Singapore, Singapore

⁵ Public Health Program, Touro University California, Vallejo, United States

The rate of consistent condom use among transgender women in Cambodia remains persistently low. This study explores factors associated with consistent condom use with their non-commercial partners among transgender women in Cambodia. In 2016, Respondent Driven Sampling (RDS) method was used to recruit 1203 transgender women from 13 provinces for a national survey. A multivariate logistic regression model was constructed to identify independent factors associated consistent condom use. There were 41.6% of the study sample reported not always using condoms with non-commercial partners in the past three months. The likelihood of consistent condom use was significantly higher among participants who reported being unmarried but living with a sexual partner, self-perceiving high HIV risks, high alcohol consumption, having both inceptive and receptive role in anal sex with men, and using condom inconsistently with commercial partners in the past three months. This study confirms the persistently low rate of condom use, particularly in non-commercial relationship among transgender women in Cambodia. To address these concerns, efforts towards condom use and safer sex key messaging to transgender women should be increased. Education about harmful effects of multiple, concurrent relationships, and inconsistent condom should be reinforced among transgender women.

Keywords: Condom Use, Consistent Condom Use, non-commercial partners, transgender women, Cambodia

OP11

Geographical variation was significantly associated with unfavorable treatment outcomes among pulmonary tuberculosis patient in West Sumatera Indonesia

Ratno Widoyo^{1,2}, Defriman Djafri¹, and Virasakdi Chongsuvivatwong²

¹ Faculty of Public Health, Andalas University, Padang, 25127, Indonesia

² Prince of Songkla University, Hatyai, Thailand

Patient with tuberculosis must take antibiotics for at least six to 24 months, depending on age, drug resistance pattern, co-morbid disease, and others. In the long-term period of treatment, the patient adherence associated with spatial accessibility and healthcare facility. Accessibility and health care facility varied between geographical pattern. The objective of this study is to compare unfavorable treatment outcome between geographical variation in West Sumatera Province of Indonesia. The study analyzed TB treatment register data of West Sumatera Province from 2014 until 2016. There were 18,390 notified pulmonary TB/MDR-TB. Geographical variation defined as coastal area and non-coastal area. All district in West Sumatera that interface the sea was categorized as the coastal area. Logistic regression was carried out to assess the association of unfavorable treatment outcome by geographical variation, adjusted by TB types, previous treatment history, age groups, sex, and smear result. The descriptive data indicated that in coastal area had 5.1 % MDR-TB, 5.6% retreatment, median age at 44 (IQR,29,59), 64.8% male, and 75.4% smear positive comparing with non-coastal with 4.1 % MDR-TB, 4.6% retreatment, median age at 44 (IQR,29,59), 64.2% male, and 71.3% smear positive. The proportion of unfavorable treatment outcome in the non-coastal was higher than in the coastal area (24% vs 17.5%). By using logistic regression model, geographical variation was significantly associated with unfavorable treatment outcomes. TB patient in the non-coastal area was approximately 1.5 (95%CI:1.39-1.61) times to have unfavorable treatment outcome than in coastal area. Geographical variation is the associated factor of unfavorable treatment outcome, however, the distribution and accessibility of the TB facility to all individuals or groups in the community are unknown. Dot-spot mapping of TB patient with TB control facilities is our priority for providing important information for TB control program.

Keywords: Tuberculosis, Geographical variation, coastal area.

OP12

Fetters of “Batu Balender” among Alifuru Tribe in the Buru Island, Maluku, Indonesia

Usman

Midwifery, Baubau Polytechnic, Baubau City, Southeast Sulawesi, 93721, Indonesia

Indonesia is one of the 27 countries in the world with MDR TB cases. The coverage of TB treatment is challenging in Indonesia because Indonesia is a country with more than hundred tribes. The culture and beliefs adhered by those tribes determine their health seeking behavior. This study aims to reveal health-seeking behavior for TB treatment among Alifuru tribe in Buru Islands, Maluku, Indonesia. Ethnography qualitative research design was conducted. Information regarding health seeking behavior was collected through interviewing 15 informants from all risk groups related to TB. In addition, an observation was done for triangulation to ensure the validity of the data. TB was called as “Batu Balender” by Alifuru tribe in Buru Islands. Alifuru tribe believed that diseases were categorized into natural illness, sick submissions, and ancestral curse pain. Indigenous people believed that Batu Balender was a disease of the ancestral curse that could not be cured anymore. They believed on “Orang Pintar”, a traditional healer who is believed to be the holder of natural herbs to treat TB with the leaves and barks. All of those who gained access to health services for DOTS were failed because of the existence of a local tradition rules forbidding the people to take the drugs when there was any news of deaths. On the other hands, health care facilities or hospital were literally called the house of death. The results of this study suggest that an increase in education and counseling for TB treatment to be much improved in health improvement efforts. The authors acknowledge the Head of Buru Health Service to provide data and technical support and Alex Pan to read the manuscript draft and provide meaningful insights.

Keywords: Fetters, Health-Seeking Behavior, TB Treatment, Ethnography

OP13

The effect of initiation time of ARV treatment to 1-year survival among patients with TB-HIV co-infection

Siti Maemun^{1,2}, Nina Mariana¹, Syahrizal Syarif², and Adria Rusli¹

¹ Prof. Dr. Sulianti Saroso Infectious Disease Hospital, Jakarta, 14340, Indonesia

² Department of Epidemiology, Faculty of Public Health, University of Indonesia, Depok, 16424, Indonesia

Tuberculosis is the most frequent co-infection in people with HIV. Antiretroviral therapy (ART) was very important to increase the survival of patients with TB-HIV co-infection and preventing early deaths. The aim of this study was to examine the effect of ARV treatment initiation within TB treatment duration on the survival of patients with TB-HIV co-infection. This study was a retrospective cohort study, of all patients aged ≥ 18 years with TB-HIV co-infection and naive ARV at Prof. Dr. Sulianti Saroso Infectious Disease Hospital between January 2011 and May 2014 (N=275). The survival was analyzed by Kaplan-Meier method, bivariate with log-rank test, and multivariate with Cox regression. Cumulative survival probability of the patient with TB-HIV co-infection receiving ARV in one year was 81.5%. Multivariate analysis showed that patient with TB-HIV co-infection received late ART initiation during TB treatment had 2.398 times the rate of death (aHR = 2.398; 95% CI: 1.289-4.461; p = 0.006) than the patients in early ART initiation after was controlled by the location of M. tuberculosis infection. The effect of ARV therapy initiation is essential in the intensive phase (2-8 weeks) of anti-TB medication to increase the survival of patients with TB-HIV co-infection. The authors would like to thank director and staff of Prof. Dr. Sulianti Saroso Infectious Disease Hospital for making this research possible.

Keywords: Antiretroviral, TB-HIV co-infection, survival

OP14

Environmental rapid survey of tuberculosis risk factors in Jember, Indonesia

Irma Prasetyowati¹, Yunus Ariyanto¹, Rahayu Sri Pujiati², Candra Bumi¹, and Pudjo Wahjudi¹

¹ Department Epidemiology, Biostatistic and Population, Faculty of Public Health, University of Jember, Jember, 68121, Indonesia

² Department of Environmental Health and Occupational Safety Health, Faculty of Public Health, University of Jember, Jember, 68121, Indonesia

TB is the leading cause of death worldwide. The World Health Organization (WHO) estimates that between 2000 and 2020, almost 1 billion people worldwide will be infected with TB. Without better prevention and treatment measures, 35 million people will die during this period. The use of ventilation can be a primary environmental control against the transmission of TB. The research aimed to describe TB environmental risk factors. This research used a rapid survey method. The environmental variables under study were the ceiling, wall, floor, bedroom window, family room window, ventilation, kitchen smoke hole, lighting, temperature, humidity and history of TB. The multi-stage sampling method was employed. The first stage selection was probability proportionate to size (PPS) sampling, and second stage selection used simple random sampling. 30 clusters were selected, and 10 households were selected from each cluster. The total samples were 300 respondents. Epicollect 5 application was used to assist data collection. The study found that 61% of respondent's house had adequate ceiling, 86.2% with permanent wall, 90.2% with adequate floor, 81.8% of bedroom windows were available, 84.8% family room windows were available, 52.2% had adequate ventilation, 23.5% kitchen smoke hole were available, 58.5% had adequate lighting, 83.8% had adequate temperature and 78.1% were not humid. This research found that 93.9% of respondents did not have a history of TB, 86.2% stayed in appropriate environment. It can be concluded that overall, the physical environment was adequate, even though some households need to improve their ceiling, ventilation, kitchen smoke hole, and lighting for TB prevention. Therefore, it was necessary for the community to keep healthy and socializing the awareness-raising regarding the importance of TB prevention by maintaining environmental health. Thank you very much to Rector of University of Jember, Dean of Faculty of Public Health, University of Jember for the support and assistance of this research realization.

Keywords: tuberculosis active case finding, persuasion, community mobilization

OP15

Risk factors and social determinants of tuberculosis transmission in Medan City

Fazidah A Siregar¹, Sori Muda Sarumpaet¹, Asfriyati¹, and Tri Makmur²

¹ Faculty of Public Health, University of Sumatera Utara, Medan, 20155, Indonesia

² Faculty of Medicine Islamic, University of Sumatera Utara, Medan, 20155, Indonesia

Tuberculosis is still a health problem in North Sumatera Province, especially Medan city as an endemic area with high incidence. Many factors contribute to tuberculosis transmission including social factors. This study aims to determine risk factors for tuberculosis transmission including social determinants. This study was an unmatched case-control study. The total number of study recruits was 140 at a case control ratio of 1:1 and all subjects were selected using purposive sampling based on inclusion criteria. Data were analyzed using simple and multiple logistic regressions. Social determinants were associated with tuberculosis transmission. Households contact (aOR= 40.03, 95% CI: 3.13-498.09), diabetes mellitus history (aOR= 33.04, 95% CI: 6.18- 176.62), low nutritional status (aOR= 14.00, 95% CI: 4.12- 47.67), low knowledge on TB (aOR= 5.02, 95% CI: 1.57- 16.11), and inadequate ventilation (ad OR= 4.85, 95% CI: 1.54- 15.23) were predictors for tuberculosis transmission. Social factors including household contact, diabetes mellitus history, low nutritional status, low knowledge on TB, and inadequate ventilation play a role in tuberculosis transmission. In designing a strategy for effective prevention and control program, is necessarily focused on social factors to strengthen tuberculosis control program. We are grateful to Rector University of Sumatera Utara provide the research funding. We also thank to the heads of district health offices and heads of health facilities for their supports and all people were participated in this research.

Keywords: risk factors, social determinant, transmission, tuberculosis

OP16

The implementation of family approach for Healthy Indonesia program to improve tuberculosis early detection and cases finding

I Wayan Gede Artawan Eka Putra², Ni Made Dian Kurniasari², Ni Putu Eka Purnama Dewi³, I Ketut Suarjana^{1,2}, I Made Kerta Duana², I Ketut Hari Mulyawan², Pandu Riono⁴, Bacht Alisjahbana⁵, Ari Probandari⁶, Hari Basuki Notobroto¹, and Chatarina Umbul Wahyuni¹

¹ Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia

² School of Public Health, Faculty of Medicine, Universitas Udayana, Bali, Indonesia

³ Health Office of Badung District, Badung, Indonesia

⁴ Faculty of Public Health, University of Indonesia, Depok, Indonesia

⁵ Faculty of Medicine, Universitas Padjajaran, Bandung, Indonesia

⁶ Faculty of Medicine, Universitas Sebelas Maret, Surakarta, Indonesia

Tuberculosis (TB) Cases Detection Rate (CDR) in Indonesia in 2016 was relatively low (33%). The Ministry of Health initiates family approach for Healthy Indonesia Program including TB. One of important strategy is early detection and active cases finding on household contact. The study aimed to implement and assess the contribution and potency of this strategy to improve cases finding and also the problems of the implementation. This was operational research conducted in Badung District, Bali, Indonesia. The samples were the contact of people with TB that identified on third quarter 2017. Contact was household and close contact who are living and share room with people with TB in 3 months before diagnosis. Early detection is a systematical screening and diagnosis procedure to detect disease (TB) in the earlier stage (before sign and symptoms occurred). Data were collected through face to face interview using a structured questionnaire and registration review using a checklist. The study succeeded to identify 498 contacts from 124 people with TB or ratio contact to cases was 4:1. 122 (24.5%) contact were children, 254 (51.0%) were female and 328 (65.9%) were the nuclear family of people with TB. 114 (22.9%) of contact with one or more TB symptoms. Among contact with the symptom, only 16 (14,0%) completely following diagnosis procedure and 7 (43.8%) were positive: 2 bacteriological confirmed and 5 childhood TB. Among contact without any symptom, only 25 (6.5%) completely following diagnosis procedure and 3 (12.0%) were positive: 1 bacteriological confirmed, 1 clinically confirmed and 1 childhood TB. We found totally 6 (46.2%) childhood TB among 13 children contact who completely participated in the diagnosis procedure. This study shows the high potency of early detection on contact investigation to improve TB cases finding particularly childhood TB. The main barrier was the lack of contacts participation on following diagnosis procedure. A comprehensive education is needed to encourage them following the diagnosis procedure.

Keywords: Tuberculosis early detection, Family approach, Active cases finding

OP17

Transgender women with and without access to community-based HIV programs

Kolab Chhim¹, Sovannary Tuot¹, Phalkun Mun², Srean Chhim³, Pheak Chhoun¹, Navy Chan² and Siyan Yi^{1,4,5}

¹ KHANA Center for Population Health Research, Phnom Penh, Cambodia

² National Center for HIV/AIDS, Dermatology and STD, Phnom Penh, Cambodia

³ FHI 360, Phnom Penh, Cambodia

⁴ Saw Swee Hock School of Public Health, National University of Singapore, Singapore

⁵ Public Health Program, Touro University California, Vallejo, United States

Despite their particular needs, data regarding access to HIV services among transgender populations is scant globally. This study explores barriers in access to community-based HIV services among transgender women in Cambodia. This national survey was conducted in 2016 among 1375 transgender women recruited from 13 provinces using respondent-driven sampling method. Multivariate regression analysis was conducted to explore factors associated with access to HIV services. There were 45.0% of participants reported having received at least one community-based HIV service in the past three months. Having access to HIV services was significantly associated residing in an urban setting, having used gender-affirming hormones, having been tested for HIV, having been arrested by police or authorities because of their transgender identity, and using condoms consistently. Participants with access to community-based HIV programs were significantly less likely to perceive that their co-workers or classmates were not supportive regarding their transgender identity. Intervention programs should be tailored to respond to the needs of transgender women who are at greater risks of HIV and less likely to access the traditional outreach services using the respondent-driven sampling method this effective to reach transgender women who are not reached by the traditional strategies.

Keywords: Transgender women, Access, HIV Services, Community-Based HIV

OP18

Reinforcing factor of premarital sex behavior among senior high school students in Padang, West Sumatera Province

Aprianti¹, Dien Nursal¹ and Yudi Pradipta²

¹ Department of Health Reproductive, Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

² Department of Epidemiology, Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

Sexual behavior among adolescents has been increased lately. There were 107 sexual behavior cases among adolescents in 2016, 80% occurred in Padang City. This research aims to investigate reinforcing factor related to premarital sexual behavior among students of senior high school in Padang. A quantitative research using a cross sectional design with 547 samples taken by probability proportional to size was conducted. Data collection through interview to 547 samples by using questionnaire. Data analysis by using logistic regression ($\alpha=0.05$). There were 53.2% adolescents had high-risk sexual behavior. Bivariate analysis showed that there was correlation between role of teacher ($p = 0.025$), role of friends ($p = 0.001$), role of parent ($p = 0.012$) with premarital sex behavior. There was no relationship between the role of health provider ($p = 0.075$) with premarital sex behavior of the adolescent. Multivariate analysis showed that the role of friends was most significant variables ($p = 0.001$) after controlled by predisposing variables (knowledge, attitude, religiosity) and enabling variable (mass media exposure). Role of friends was most related reinforcing factor of premarital sexual behavior among senior high school students. We suggest the adolescents to more selective in receiving information from friends and to be more active having a discussion about the impact of premarital sexual behavior on the adolescent.

Keywords: premarital sexual behavior, adolescent of Senior High School, role of friends.

OP19

Knowledge, behaviour, and prevalence of HIV and syphilis among Indonesian military personnel based on integrated behavior and biological surveillance in 2017

Yuli Subiakto¹, Dimas Budi Wicaksono² and Ciptasari Prabawanti³

¹ Faculty of National Security, Indonesia Defense University, Bogor, 16810, Indonesia

² Yayasan Siklus Indonesia, Jakarta, Indonesia

³ Faculty of Psychology, University of Ahmad Dahlan Yogyakarta, Yogyakarta, 55166, Indonesia

Indonesian Military (TNI) has a susceptibility to HIV and Sexual Transmitted Diseases (STDs), although Indonesia's Ministry of Defense (MoD) and TNI have disseminate the health promotion about the mode of transmission and prevention. The Integrated Behavior and Biological Surveillance Survey (IBBS) was conducted to investigate the effectiveness of health. This study aimed to compare the knowledge, behavior and prevalence of HIV and syphilis among TNI based on IBBS 2017 and IBBS 2012. IBBS Survey in 2017 was conducted towards TNI personnel in 6 provinces. The survey used a cross-sectional design. The data on behavior were collected by using Lime survey application beside examination of the biological sample of HIV and Syphilis. The ethical clearance approved by Research and Development Health Agency of the Ministry of Health. The data analysis of IBBS in 2017 has been compared to IBBS in 2012 descriptively. There were 3,728 TNI participated, divide to Riau Island (94.2%), West Java (92.4%), DKI Jaya (85.8%), East Java (99.1%), Bali (94.1%) and Papua (99.2%). Overall, the comprehensive knowledge among the respondents in the 2017 IBBS was two times higher than 2012 (19% and 9% respectively). Compared to the previous survey, HIV prevalence decreased to 0.21%. The result also showed 0.15% reduction of syphilis prevalence from 0.5% in 2012 to 0.35% in 2017. The highest prevalence of Syphilis at provincial level was 0.61%. Respondents with positive Syphilis tests showed a significantly high prevalence of HIV at 7.69%. HIV and syphilis prevalence decreased in 2017 compared to the IBBS 2012. Overall, the survey shows a reduction in the level of HIV and STDs risk behavior. The 2017 IBBS showed an increase in the coverage of the HIV and STDs control program.

Keywords: Knowledge, Behaviour, HIV and Syphilis, Military Personnel

OP20

The influence of perception and self-efficacy of Malaria toward preventive behavior at Pesawaran Districts, Lampung Province, Indonesia

Tri Widiarti¹, Antono Suryoputro¹ and Farid Agushybana²

¹ Health Promotion, Diponegoro University, Semarang, 50275, Indonesia

² Faculty of Public Health, Diponegoro University, Semarang, 50275, Indonesia

Malaria is an endemic disease in Pesawaran Districts, with an outbreak on 2015. Malaria control has been carried out by applying vector control and health promotion to reduce the breeding place of Malaria vector and also encouraging the community to keep off mosquito bites. However, it still ineffective. Self-efficacy can predict prevention behavior and perception is important to avoid elimination fatigue. This study examined self-efficacy and perception of malaria prevention among society in Pesawaran district. A cross-sectional study was applied to collect information from 205 household heads in six villages using a questionnaire on Mei until July 2018. Multiple logistic regression was employed to analyze the relationship of variables. The findings from the study showed that self-efficacy was significantly related to preventive behavior of household (AOR=2.15, 95% CI: 1.57-1.82) and perception become a protective factor (AOR=0.34, 95% CI: -0.14-(-0.13)). The study suggests that motivation and trust need to be transferred through local figures in the community such as the head of the village to improve self-efficacy especially in eliminating mosquito breeding and resting place, mosquito nets use, and repellent use. We would like to thank Health District Office of Pesawaran, Hanura Primary Health Care, Hanura society, and Master Program of Health Promotion UNDIP.

Keywords: Malaria prevention, self-efficacy, perception

OP21

Young key affected population in Myanmar: Is there any challenge in seeking HIV/Sexually transmitted infection, reproductive health information and care?

Kyaw-Min Htut¹, Myo Myo Mon¹, Htun Nyunt Oo², Zin Mar Aye¹, Lwin Lwin Ni¹, Aung Soe Min¹ and Ni Htay Aung¹

¹ Department of Medical Research, Ministry of Health and Sports, Yangon 11191, Myanmar

² National AIDS Program, Naypyitaw, Myanmar

Reducing HIV/Sexually transmitted infection (STI) and reproductive health (RH) related risks among young people is one of the priority interventions in Myanmar. Therefore, the study was conducted to determine the health-seeking behaviors regarding HIV/STI and RH, and the challenges in seeking health information among YKAP. A mixed-methods cross-sectional study was conducted at Yangon and Mandalay in Myanmar. Face-to-face interviews and focus-group-discussions were conducted with YKAP aged 15-24 years. A total of 119 young men who have sex with men (YMSM) and 123 young female sex workers (YFSW) included and mean age was 20.9 ± 2.4 and 21.7 ± 2.2 respectively. YFSW were identified as brothel-based (40%), entertainment-based (karaoke/restaurant/nightclub/massage) (32.5%) and street-based (28.5%), and nearly 60% of YMSM are Feminine-Type. Over 30% of YMSM and 49.3% of YFSW had experience of any STI symptom and many of them sought health care at NGO clinics. Over 13% of YMSM and 14.6% of YFSW have challenges in seeking health information on HIV/STI and RH. Common reasons were "reluctant to ask" and "not knowing a relevant person to ask". Provision of health information to YKAP should be done since there is a considerable proportion of YKAP with unmet need in seeking HIV/STI and RH information and care.

Keywords: Young Key Affected, Health-Seeking Behaviors, HIV, Sexually Transmitted Infection, Reproductive Health Information

OP22

Transmission and sources of translation *Mycobacterium leprae* in 16S rRNA genes in leprosy patients

A Rizki Amelia¹, Ridwan Amiruddin², A. Arsunan A², Burhanuddin Bahar² and Mochammad Hatta³

¹ Departemen Public Health, Universitas Muslim Indonesia, Makassar, 90231, Indonesia

² Microbiology Departement of Medical Faculty, Hasanuddin University, Makassar, 90245, Indonesia

Leprosy is a chronic disease caused by the *Mycobacterium leprae* bacteria that first attacks the peripheral nervous system, which can then attack the skin, mucosa, upper respiratory tract, endothelial reticulo system, eyes, muscles, bones and testes. The gene that is often used in identifying bacteria is the 16s rRNA gene. This gene is a gene that encodes ribosomal RNA in small ribosomal subunits and has a distinct and distinct nucleotide sequence in each bacterium. In addition, 16S rRNA is more stable and is suitable for use as a specific molecular marker for bacterial identification. Case control study were conducted to investigate the association between children/wives, income, education, gender and duration of contact with leprosy. Laboratory tests by using RFLP-PCR technique in dust samples to detect *M. leprae*. Odds ratio (OR) were measured to assess the risk factors with 95% Confidence Interval. There were no association between income, education, gender and duration of contact with leprosy (OR<1), while children/wives are risk factor for leprosy. In the results of the 16S rRNA gene electrophoresis, the *Mycobacterium leprosy* gene was positive at 531bp. Based on observations and results of laboratory analysis based on 16S rRNA gene using RFLP-PCR technique in house control (HC) and Household control, it was found that 2 (25%) positive homes identified with *M. leprae* in dust and 25 houses were identified as negative *M. leprae* dust and for house dust contact there were 4 houses identified with *M. leprae* in dust and 23 houses identified as negative *M. leprae* in dust while in house hold contact there were 2 houses identified with *M. leprae* in dust and 25 houses identified as negative *M. leprae*. Children/wives were potential to infected *M. Leprae*. We found 2 houses detected *M. leprae* and in control 1 (non leprosy patients), there were 4 houses detected *M. leprae*, while for control 2 (non leprosy) there were 2 houses.

Keywords: Transmission, Leprosy Patients, Sources of Translation, Genes

ORAL PRESENTATION - ENVIRONMENTAL AND OCCUPATIONAL HEALTH

OP23

Prevalence and correlates of work stress among nurses working in psychiatric in-ward facilities, in Colombo District, Sri Lanka

Jeewaranga Gunasekera¹ and Inoka Suraweera²

¹ MD Trainee in Community Medicine, Health Promotion Bureau, Ministry of Health, Sri Lanka

² Consultant Community Physician, Directorate of Environmental and Occupational Health, Ministry of Health, Sri Lanka

Work stress among nurses in psychiatric care is considered an important occupational health problem due to the special working environment and nature of psychiatric patients they interact with. Globally, the prevalence of work stress is higher among psychiatric nurses compared to other specialties. However, studies on work stress in this study group are scarce in Sri Lanka. The objectives of this study were to determine the prevalence and describe correlated of work stress in this population. This descriptive cross-sectional study was conducted among nurses working in the three in-ward psychiatric facilities in capital Colombo District namely, National Institute of Mental Health, National Hospital of Sri Lanka and Colombo South Teaching Hospital. The entire population (N=345) was given a pre-tested self-administered questionnaire composed of two parts; a validated Job Content Questionnaire and questionnaire on correlates. Prevalence of Work Stress was measured using two indices as described by Karasek in the dynamic job strain model, namely High Job Strain (HJS) and Iso-strain (IS). The response rate was 89.5%(N=309). Prevalence of HJS and IS was 37.2% and 21.4% respectively. Factors significantly associated with HJS were; being single (OR=1.84, 95%CI=1.15-2.95), working more than 48 hours weekly (OR=1.71,95%CI=1.05-2.78), violence by patients (OR=3.45, 95%CI=1.81-6.57), verbal abuse by patients (OR=3.11, 95%CI=1.80-5.39), mental health concerns (OR=2.68,95%CI=1.595-4.40), stigma (OR=2.21, 95%CI=1.24-3.94), lack of assistance at work (OR=4.56, 95%CI=1.68-12.27), difficulty in obtaining leave (OR=2.98, 95%CI=1.48-6.00), inadequate welfare facilities (OR=1.62, 95%CI=1.01-2.59) and poor work recognition (OR=2.89, 95%CI=1.68-4.96). The prevalence of HJS was significant among Nursing Officers. A large proportion of them was subjected to IS as well. Several factors unique to in-ward psychiatric facilities were significantly associated. A screening program on work stress and an administrative plan to minimize violence recommended.

Keywords: Work Stress, Nurses, Occupational Health

OP24

Peer educators as change leaders: effectiveness of peer education process in creating awareness on reproductive health among women workers in garment industry

Suvetha Kannappan and Karthikeyan Shanmugam

Department of Community Medicine, PSG Institute of Medical Sciences and Research, Coimbatore, India

India is one of the leading manufacturers of garments with roughly 80% of the workforce dominated by female migrant workers. Lack of education and access to resources in these women contribute to unsafe sexual behaviors, sometimes leading to unwanted pregnancies or sexually transmitted infections. This study aims to study the effectiveness of peer health education in improving the awareness on reproductive health among women workers in garment industries. A health educational interventional study for women in garment factory using peer education process carried out over a period of 18 months. The process includes orientation to factory management, health needs assessment, identifying health topics, peer educator selection, peer educator training followed by outreach sessions and impact measurement. The impact of peer education on reproductive health has been assessed among 597 participants from 9 factories. Data entered in SPSS version 24 and analyzed. The mean age of the workers in both the groups is 25.4 (± 9.6) years and 25.1 (± 8.3) years. Most of the workers were single and more than half of them reside within the factory premises. Chi-square test revealed a significant change in menstrual hygiene practices, knowledge in family planning methods, sexually transmitted infections and cervical cancer following peer health education. A well-designed health educational interventional program using peer educators could be a successful approach to create awareness on sensitive topics. Business for social responsibility (BSR), Faculty and staff of Department of Community Medicine, Management, staff and workers from the factories.

Keywords: Peer health education, Reproductive health, Garment industry, Women workers

OP25

Review of disciplinary contributions to planetary health collaborations focused on sustainable urban development: an integrated approach to Sustainable Development Goals 3 & 11

Umar Ibrahim and Jason Prior

Institute for Sustainable Futures, University of Technology Sydney, 123, Australia

This study focuses on interconnections between health and environmental governance from a Planetary Health perspective in the context of sustainable urban development. As such, the article presents a review of disciplinary contributions to Planetary Health collaborations for sustainable urban development, which is designed to simultaneously address Sustainable Development Goals 3 & 11. The study explores linkages between environment and health governance issues, to provide insight into how some disciplines address planetary health challenges. Systematic literature review search conducted in five databases and Google Scholar from April 4th to 30th May 2018, applying inclusion and exclusion criteria, uncovering 232 articles from which 57 relevant articles were selected. Preliminary outcomes indicate potential contributions of global health governance, ecological public health, health geographies and sustainable development as disciplines that seek to contribute to planetary health transdisciplinary collaborations. Calls for Planetary Health transdisciplinary collaborations have drawn significant attention across different levels of decision-making. Addressing it requires methodological approaches that drive environmental change in connection with health and promotes coordinated actions locally and internationally, utilizing Sustainable Development Goal 3 & 11 stipulations in policy and practice.

Keywords: *Planetary Health, Sustainable Urban Development, Integrated Approach*

OP26

The influence of ovitrap utilization to the density index of *Aedes sp* larvae in Samarinda City, Indonesia

Mardiana¹, Erni Wingki Susanti² and Lisa Wahidatul Oktaviani²

¹ Masters Program, Public Health Study Program, Faculty of Public Health, Universitas Airlangga, Surabaya 60115, Indonesia

² Department of Public Health, Faculty of Health, Universitas Muhammadiyah Kalimantan Timur (UMKT), Samarinda 75124, Indonesia

Samarinda has been noted as a city with a high incidence of dengue fever in East Kalimantan. Eradication program (fogging, abate, eradication of mosquito nests) could not reduce the population of *Aedes* sp. Ovitrap as an alternative could decrease the risk of dengue fever. It was modified by using the attractant (combination of fermented sugar and yeast) to attract the mosquito's smell and trap mosquito eggs. The aim of the study was to determine the influence of modified ovitrap on the density index of *Aedes sp. larvae*. Quasi-experimental with the pretest-posttest design was used. Non-randomized control was employed. The study was conducted in April - May 2016. Samples were 30 houses in each experimental and control group. *Aedes sp* density was compared before and after the utilization of ovitrap in both experimental and control group. Mean difference of mosquito's density before and after utilization of ovitrap in the experimental group was 2.39 (there was no significant difference with p -value = 0.06). Mean difference of mosquito's density before and after the utilization of ovitrap among control group was 2.36 (there was no significant difference with p -value = 0.07). Utilization of fermented sugar and yeast as ovitrap attractant did not influence *Aedes sp* density in the environment. Utilization of ovitrap did not influence the density index of *Aedes sp* in Samarinda city. It can be influenced by uncontrolled factors.

Keywords: Ovitrap, Attractant, Larvae density index, *Aedes sp*, Dengue Fever

OP27

Hospital safety preparedness for disaster in Yogyakarta: a study at Wates hospital government of Kulon Progo District, Yogyakarta

Oktomi Wijaya

Faculty of Public Health, University of Ahmad Dahlan, Yogyakarta, 55166, Indonesia

Hospitals are an important infrastructure that should remain safe and operational, particularly continuous operations on disaster management. The continuing functionality of the hospital depends on a range of factors, including the safety of its buildings, critical systems and equipment, the availability of supplies, and the emergency and disaster management capacities of the hospital, particularly for response to and recovery from hazards or events which may occur. The objectives of this research were identifying critical hospitals that will be evaluated in Wates Hospital, evaluating their readiness and resiliency in the event of disasters using the Hospital Safety Index checklist. Hospital safety preparedness was measured by 3 elements, including structural safety, non-structural safety, and functional safety. The level and value of each element were determined by the evaluators in consensus. Each element had three levels: high, average, and low, as defined in the Hospital Safety Index (HSI) evaluation guideline. The value of each level was 1, 0.5 or 0, respectively. HSI was categorized into A (0.66-1) as a high level of preparedness, B (0.36-.065) as a medium level of preparedness, C (0-0.35) as a low level of preparedness. Hospital safety preparedness level of Wates Hospital was Level B with a score of 0.573. Structural safety was a high level of preparedness with a score of 0.694, nonstructural safety was in medium level with a score of 0.544, and functional safety was on low-level preparedness with a score of 0.313. The level of hospital safety preparedness was on the medium level. Intervention measures are needed in the short term. The hospital's current levels of safety and emergency and disaster management are such that the safety of patients and hospital staff, and the hospital's ability to function during and after emergencies and disasters, are potentially at risk.

Keywords: *Hospital Safety, Hospital Safety Preparedness, Disaster*

OP28

Differences of radon concentration according to house physical condition in High Background Radiation Area (HBRA), Mamuju District, West Sulawesi, Indonesia

Zahra¹, Eko Pudjadi², Yusniar Ariati¹ and Miko Hananto¹

¹ Center for Public Health Research and Development, National Institute of Health Research and Development, Ministry of Health, Jakarta, 10560, Indonesia

² Center for Technology of Nuclear Safety and Metrology, National Nuclear Energy Agency of Indonesia, Jakarta Selatan, 7043, Indonesia

Radon is radioactive. When radon was found to accumulate in houses, there was concern about the public health impact from exposure to a known carcinogen. This paper aims to determine the effect of house physical condition to the indoor radon concentration in Botteng Village, Mamuju District. Mamuju was known as one of the areas in the world with High Background Radiation Area (HBRA). The variables analyzed were house physical condition including wall type, floor type, wall and floor crack, window condition and house ventilation, and also other environmental risk factor variable including cooking fuel type, cigarette smoke in house and occupancy density. The unit of analysis was the household, with 59 household sample in Botteng Village. Inclusion criteria were families who have been lived in Botteng Village for at least 5 years. The analysis was using mean difference test. The analysis shows that there was no variable of house physical condition has statistically significant correlation to indoor radon concentration, but the average indoor radon concentration in risky house physical condition was higher than the non-risky house physical condition. Analysis of window and ventilation variables showed that houses with open windows have a higher average of indoor radon concentration than houses with no windows or rarely opened windows. Although the relationship between house physical condition variable and indoor radon concentration was not statistically significant, the significant mean difference in window condition variables indicated that the amount of indoor radon was induced by external exposure. It is recommended that policies educating the community to open windows of houses every day in areas with high natural radiation, need to be reviewed.

Keywords: Radon, Radon Concentration, House Physical Condition

OP29

Vision problems and eye occupational safety and health among manufacturing workers in Selangor, Malaysia

Mohd Zaki A Isa¹, Zurin F Yaacob¹, Mohd Ferdaus Sari¹ and Raemy M. Zein²

¹ Department of Optometry and Vision Science, Management and Science University, Shah Alam, Selangor, 40100, Malaysia

² Department of Ergonomic, National Institute of Occupational Safety and Health (NIOSH), Johor Bharu, 79100, Malaysia

Workers in manufacturing industries are highly exposed to visual hazards which lead to visual dysfunctions or eye injuries while performing their tasks at the workplace. This article aims to describe vision problems, visual hazards and eye occupational safety and health among workers in manufacturing industries in Selangor, Malaysia. A self-administered Visual Profile Questionnaires (VPQ) was distributed to 1522 workers from manufacturing industries aged between 20-60 years during a vision screening program. Vision screening was conducted using Snellen standard visual acuity test at 6 meters following full eye examination by qualified optometrists. A total of 1214 (959 Male, 252, Female) participants with mean aged of 39.33 ± 9.80 years completed the study. Blurred vision (55.4%), reading a small print (38%), visual fatigue or visual strain (36.7%), dry eyes (34.4%) and Itchiness (33.4%) are among the major eye problems. Meanwhile, smoke/dust (55.8%), chemical (30.2%) and eye injuries (20.4%) are the major visual hazards experienced by the workers. More than 72% of workers did not get proper eye tests, not wear eye protection shield and had a poor knowledge on visual hazards while performing their job at the workplace. Regular eye examination, assessment and policy on the eye related occupational safety and health are needed to be established for Manufacturing industries to help prevent eye problems and improve employees' productivity at the workplace. This research is funded by NIOSH Grant 11.03/03/NG01_03/2015

Keywords: Vision Problems, Eye Occupational Safety, Manufacturing Workers

OP30

The variation of patient safety implementation in terms of health workers characteristics in community health center, West Sumatera Province, Indonesia

Dien GA Nursal¹ and Rizanda Machmud²

¹ Department of Reproductive Health, Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

² Faculty of Medicine, Andalas University, Padang, 25129, Indonesia

Improved patient safety should be developed in every community health center as a primary care provider. Patient safety is health worker responsibility to prevent the adverse events. No report of adverse event in the community health center yet. Adverse events just detected when it involves a legal process or published in the media. This study aims to investigate the relationship of implementation of patient safety implementation and health workers characteristics. A cross-sectional study was conducted. Data were collected from January to December 2017 involving 408 respondents taken by proportional random sampling in six urban and six rural community health centers in West Sumatera province. Data regarding the implementation of patient safety, health workers' age, place of work, length of employment, last education, and employment status, were collected by using questionnaire. The data were analyzed by Chi-square statistical test with $\alpha=0.05$. More than half (50.5%) health workers had not implement patient safety properly. Education attainment was significantly related to the implementation of patient safety ($p = 0.042$) and no relationship between age, place of work, length of employment, and employment status with patient safety. Majority of health workers did not implement patient safety properly. Health workers education attainment was significantly related to the implementation of patient safety. The implementation of patient safety needs to be improved by conducting a workshop and improve health workers' education level especially among health workers graduated from high school only. We would like to acknowledge to West Sumatera Provincial Health Office for their support along this study. We also thanks Mr/s Eryati Darwin, Nana Mulyana, Herkutanto, Adang Bachtiar, Nur Indrawati Liputo and Nilda Triputri for theirs support throughout the process.

Keywords: patient safety, adverse event, community health center, primary care, last education.

OP31

The role of county's Community-Based Total Sanitation Team (STBM) to establish Open Defecation Free (ODF) in Wonosobo District: study in Kertek and Kaliwiro County

Novi Handayani¹, Budi Laksono² and Laksmono Widagdo²

¹ Health Promotion, Diponegoro University, Semarang, 50275, Indonesia

² Diponegoro University, Semarang, 50275, Indonesia

Sanitation still becomes one of the global health issues that requires special attention including in Indonesia. Wonosobo District was the poorest village in Central Java have low access to sanitation. However, there is county which has been declared as an ODF. One of the strategies is establishing STBM Team at a county level. This study aimed to evaluate the role of the STBM Team in the county in terms of their ability to make ODF in Wonosobo District. This was a qualitative approach study. We conducted in-depth interview with two STBM teams. One was the team from Kaliwiro county, the only ODF county in the area and the other was the team from Kertek county, a county with the most inadequate access to sanitation. We chose the subject of research purposively in STBM in county level. We also discussed with village authorities. We used triangulation sources; stakeholders in the District Health Office, documents related to the activities, and report for data validation. The result of the study shows that Kaliwiro team had been more active on pursuing the local residents on ODF awareness issue by regularly participate or coordinate community awareness events. STBM team has a role and task in terms of coordination, infrastructure, media innovation, and continuous evaluation monitoring. All sectors have to be involved. They have to all together deliver the message about ODF program to the community, either in sub-district, public health center, school, sub-district police office, sub-district military office, sub-district office of religion affairs. The STBM team will run well if all the elements want to coordinate and communicate.

Keywords: Sanitation, STBM Team, ODF County

OP32

Health risk analysis of pesticide exposure on vegetable farmers in Alahan Panjang Regency, Indonesia, 2017

Septia Pristi Rahmah and Aria Gusti

Department of Environmental and Occupational Health, Andalas University, Padang, 25129, Indonesia

Indonesia is an agricultural country which most of the population works in agriculture. Farmers use pesticides on a large scale to increase their production. The prevalence of pesticide poisoning among workers ranged from 8.5% to 50%. This research aims to analyze the risk of pesticides exposure among farmers in Alahan Panjang Regency. This research study used EHRA by calculating intakes or concentrations of substances as well as estimate the risk due to exposure. This research was conducted from March to December 2017 involving 40 farmers in Alahan Panjang Regency. The results showed that substances of propenofos, dimetoat, diazinon and sipemetrin were detected on three kinds of vegetables. The highest exposure intakes were Diazinon (2.000 mg/kg) in onion, Dimetoat (1.151 mg/kg) in cabbage and Propenofos (0.275 mg/kg) in tomato. The RfD value of Propenofos in tomato, Dimetoat in cabbage, Diozonin in onion was 2×10^{-4} mg/kg/day (EPA-IRIS), Sipermetrin in onion is 5×10^{-5} mg/kg/day (EPA-IRIS). The highest RQ value was found in Dimetoat (84.6) in cabbage. The value of $RQ > 1$ was classified as a health risk in respondents who have an average weight of 58 kg, exposed for 324 days per year for 12 years working as a farmer. The results of the calculation of the intake and the risk shows that there is no location is assumed to be secure, thus farmers in the research area have the risk of non-communicable diseases due to accumulation of pesticides exposure in the future years. Monitoring should be enforced regarding the control of pesticide in vegetables.

Keywords: Pesticide, Dose-response, Intake

OP33

Climate change, health risks, and community adaptation strategies in urban heat island area: a case study in Koto Tangah Sub-district, Padang City

Putri Nilam Sari¹ and Defriman Djafri²

¹ *Department of Occupational and Environmental Health, Faculty of Public Health, Andalas University, Padang, 25129, Indonesia*

² *Department of Epidemiology and Biostatistic, Faculty of Public Health, Andalas University, Padang, 25129, Indonesia*

Health risks caused by climate change are higher in urban heat island areas. This is due to high activity and increasing population density that is followed by low vegetation cover. Therefore, this area becomes hotter than its surrounding. This study aims to determine the level of health risks and adaptation strategies to climate change in urban heat island area. This study was conducted on 141 household samples taken by multistage random sampling on July 2018. The health risk status was analyzed with a risk assessment matrix and then followed by the determination of community adaptation strategy to minimize the health impact of climate change. The effects of heat waves for heart disease and respiratory problems are at medium risk. Heat stress impacts such as sluggish and headache are at medium risk, but muscle cramp at low risk. Extreme weather impacts such as deaths, injuries, food shortages and difficulty accessing health facilities are at medium risk while water pollution is at high risk. Respiratory disorders that are caused by air pollution is at high risk, but eye irritation is at low risk. Infectious diseases such as malaria, dengue fever, and typhoid are at moderate risk while diarrhea is at high risk. The lowest adaptation strategy was doing daily physical activity (35.5%). Health risks due to climate change are mostly at a moderate level while high risk is water pollution, diarrhea and respiratory disorders caused by air pollution. It needs adaptation to the health impacts of climate change, especially by doing regular physical activity.

Keywords: *climate change, urban heat island, health risk, adaptation strategy to climate change*

OP34

Proportion of work fatigue among workers of manufactory building construction in Bali, Indonesia

Luh Putu Putri Jayanthi and Baiduri Widanarko

Department of Occupational Health and Safety, Faculty of Public Health, Universitas Indonesia, Depok, 16424, Indonesia

Fatigue caused by work activities. Higher risk of fatigue was found in construction work. The aim of this study is to determine the proportion of fatigue among workers of manufactory building construction in Bali. The research used cross-sectional design with quantitative descriptive approach. The study population was 71 manufactory workers in Bali. Sampling technique used was total sampling. Data were collected by using questionnaires of Industrial Fatigue Research Committee (IFRC) Japan and reaction time test equipment (reaction timer). Study results showed that all respondents were in a state of fatigue (score of 30-75), while according to the reaction timer measurement, all respondents were in a state of being tired (value of 410 to 580 milliseconds) and weight (value ≥ 580 milliseconds). Severe fatigue had the highest incidence among workers aged more than 29 years ($p = 0.007$), tenure of more than 60 days ($p = 0.002$), abnormal nutritional status ($p = 0.697$), married (0.011), and working hours of more than 8 hours/day ($p = 0.013$). The proportion of work fatigue was significantly higher among workers aged more than 29 years, over 60 working days, abnormal nutritional status, married, and working hours of more than 8 hours/day. Thank you for my colleagues from Public Health Udayana University who provided insight and expertise that greatly assisted the research.

Keywords : *Work fatigue, Workload, Construction workers.*

OP35

Evaluation of subjective symptoms, urinary trans trans muconic acid and hippuric acid in printing industry

Taufik Ashar¹, Rahayu Lubis² and Kintoko Rochadi³

¹ Department of Environmental Health, Faculty of Public Health, University of Sumatera Utara, Medan, 20155, Indonesia

² Department of Epidemiology, Faculty of Public Health, University of Sumatera Utara, Medan, 20155, Indonesia

³ Department of Health Education and Behavioral Science, Faculty of Public Health, University of Sumatera Utara, Medan, 20155, Indonesia

Printing industry uses various chemical substances that affect to worker's health. Toxic substances such as dyes containing benzene and toluene are used in the finishing process. This study was aimed to assess subjective symptoms and the concentrations of urinary trans trans muconic acid (tt-MA) and hippuric acid among printing workers in Medan City, Indonesia. This study was observational descriptive design conducted from June to July 2018. A total of 16 workers in 6 industries in Medan were selected for this study. From each worker, the urine sample was collected at the end of a shift and analyzed for tt-MA and hippuric acids by high-performance liquid chromatography. Data regarding workers' demographic characteristics and subjective symptoms were collected via questionnaires. The most frequent symptoms reported by workers were dizziness (68.8%), followed by exhausted and headache (56.3%), and difficult to concentrate (43.8%). The concentrations of tt-MA and hippuric acids ranged from 35.36 to 909.72 µg/g creatinine (Cr) ppm and 3.39 to 555.31 mg/g Cr, respectively. There were 2 workers (12.5%) exceeded the maximum level of 500µg/g Cr for urinary tt-MA level. The results showed that subjective symptoms had affected more than half workers, and the benzene exposure has contributed to increasing urinary tt-MA. This research was supported financially by Directorate of Research and Community Service, General Directorate of Strengthening Research and Development of Research, Technology and Higher Education Ministries in Accordance with the Funding Agreement of Research and Community Service for Fiscal Year 2018.

Keywords: Evaluation, Subjective Symptoms, Urinary Trans Trans Muconic Acid, Hippuric Acid

OP36

Increasing knowledge about McKenzie stretching method to reduce musculoskeletal disorder complaints: A quasi experimental study among grade X high school students in Banjarbaru City, Indonesia

Ratna Setyaningrum and Ihya Hazairin Noor

Occupational Health and Safety Department, Public Health Program, Faculty of Medicine, Lambung Mangkurat University, Banjarbaru, 70714, Indonesia

The school activity causes various health complaints, one of them is musculoskeletal disorders (MSDs). More than half of students (52%) of grade X in Banjarbaru City have complaints of back pain. Students never get health promotion regarding stretching and MSDs complaints. This study aims to analyze the effectiveness of McKenzie stretching method training to improve the knowledge of grade X students in Senior High School 3, Banjarbaru City. The research was quasi-experimental research using one group pre-test and post-test. The sample was 33 respondents taken by purposive sampling technique. The method used was the provision of knowledge regarding McKenzie method. The dependent variable was knowledge on McKenzie stretching method. This research used a questionnaire as an instrument. Data were analyzed by statistical analysis using Wilcoxon test with $\alpha=0.05$. Average pre-test score was 58.24 and the average post-test score was 72.73. There was an increase in the average score by 24.87%. Statistical analysis by Wilcoxon test showed that there was a difference of knowledge level before and after intervention (p -value $<0,05$). McKenzie stretching method training can increase the knowledge among respondents. We would like to thank the principals, teachers and students at Senior High School 3 Banjarbaru, as well as all related parties who support the implementation of this research.

Keywords: knowledge, McKenzie stretching method's, musculoskeletal disorder complaints, training

OP37

Barriers and contributing factors in the implementation of occupational health services for informal workers in community health centers of Manado

Paul A.T. Kawatu¹, Budi T. Ratag² and Grace E.C. Korompis³

¹ Department of Occupational Health and Safety, Sam Ratulangi University, Manado, 95115, Indonesia

² Department of Epidemiology and Biostatistics, Sam Ratulangi University, Manado, 95115, Indonesia

³ Department of Health Administration and Policy, Sam Ratulangi University, Manado, 95115, Indonesia

Informal workers in Manado have low access to occupational health services (OHS) and were found in community health centers (CHCs). It has been thought that limited insurance system and different program priorities might have marginalized informal workers from receiving the services. This study aimed to investigate barriers and contributing factors in the implementation of OHS for informal workers in CHCs of Manado. Data were collected qualitatively using field observation, in-depth interview, focus group discussion, and documents analysis. The informants were the head of six CHCs currently implementing OHS in Manado, Indonesia. OHS staff were either new or regularly re-assigned worker of CHCs, while other staff had very minimum knowledge of OHS, and thus they were not a qualified informant. Data from the informants were triangulated with CHCs' reports and the records from the district health service of Manado. All centers run OHS as a part of other programs. The services were mostly general medical examination. Strong commitment, the existence of policies for OHS, and effective and efficient utilization of budget were identified as the facilitators of OHS implementation in the six CHCs. However, lack of skills among staff, frequent delay in disbursement of funds, and low level of participation by workers in the CHC's area were barriers in the implementation of OHS. Implementation of OHS in CHCs of Manado was not optimal due to untrained human resources, funding limitation, and restriction of services on general medical examination. It is recommended that CHCs promote OHS more rigorously among staff and working community in the area, recruit trainers and train their staff to implement OHS, and persistently ensure the availability of funds for the services.

Keywords: Occupational Health, Barriers, Informal Worker.

OP38

Management of hazards and toxic waste on medical solid waste at Tanjungpinang Public Hospital, Riau Island, Indonesia

Muchsin Maulana, Septian Emma Dwi Jatmika and Elsa Utami

Public Health Faculty, University of Ahmad Dahlan, Yogyakarta, 55166, Indonesia

There were several groups who may be threatened by hospital waste disposal. Patients who come to the hospital to get treatment were the most vulnerable group. Besides, hospital's employees who have direct contact with the patients, and the visitor or those who accompany the patients, their risk is big as well. The last group is the society, people who live nearby the hospital, even when the waste disposal is done appropriately. It causes the decrease of environmental quality which leads to the decline of health quality in the area. Hence, the hospital has a responsibility to manage the disposal process of waste correctly and appropriately by conducting sanitation programs in hospital. This study aims to evaluate the management of hazardous and toxic waste in Tanjungpinang public hospital. This was a descriptive qualitative study. Informants were the Head of Installation Facilities and the Hospital Infrastructure, Environmental Health Staff, Wastes Management Officer, and Cleaning Service officer in Tanjungpinang public hospital. Data were collected by using observation and interview. Source triangulation and method triangulation were conducted to ensure the validity of the data. The management of hazardous and toxic waste was good enough toward the medical solid waste. Human resources and Standard Operational Procedure (SOP) were quite adequate. Moreover, waste management process of hazardous and toxic waste including collection, packaging, storage, and destruction was in compliance with established SOPs. The management of hazardous and toxic waste toward the medical solid waste at Tanjungpinang Public Hospital, Riau Island consisted of input, process, and output. It is already in accordance with the Decree of The Minister of Republic Health of Indonesia Number 1204 the year 2004 on Health Requirements for Hospital Environment, but still, it needed to optimize the implementation in the future.

Keywords: B3, Medical, Solid, Waste

OP39

Relationship between safety riding behavior with road traffic accident among high school students in Yogyakarta

Ihya Hazairin Noor¹ and Eko Maulana Syaputra²

¹ School of Public Health, Lambung Mangkurat University, Banjarbaru, 70714, Indonesia

² School of Public Health, Wiralodra University, Indramayu, 45213, Indonesia

Road accident is one of the most contributors to global death, also in Indonesia. Based on data from the Yogyakarta City Police Traffic Unit from January 2013 to February 2016 there have been more than 1771 traffic accidents and involving 2502 motorbike units. Most of the traffic accident victims were students and most accidents located in residential areas and shopping centers. This study was conducted in a high school in Yogyakarta City that met these criteria. The number of vehicles passing the school main road was quite high and nearly 50% of the students ride a motorcycle to school, without safe driving behavior. The purpose of this study was investigating the relationship between safety driving behavior and road traffic accident among high school students. This research was a quantitative type and used an observational analysis method with cross-sectional study design. Sample on this study using purposive sampling technique involving 111 students from high school in Yogyakarta. Data were collected by using questionnaire and analyzed by using Fisher's Exact Test. The results showed that 22.5% of respondents had unsafe driving behavior, 16.2% of respondents had experienced an incident on the highway on the last 12 months. The bivariate analysis showed that there was a statistical relationship between driving safety behavior with road traffic incidents ($p=0.045$). Driving safety behavior was related to road traffic incidents. From these results, high school was necessary to socialize and promote about driving safety to students, in order to prevent road accidents in the future.

Keywords: Safety Riding, Safety Riding Behavior, Road Traffic Accident

OP40

Spatial distribution of sanitation access and the association with stunting prevalence in Bali Province, Indonesia

Ni Made Utami Dwipayanti¹, Ni Ketut Sutiari¹, Cok Istri Dewiyani Cakrawati² and Ketut Hari Mulyawan¹

¹ Department of Public Health and Preventive Medicine, Faculty of Medicine, Udayana University, Bali, 80232, Indonesia

² Health Office of Bali Province, Bali, Indonesia

The prevalence of stunting in several districts in Bali Province were still higher than the national average which might be caused by environmental health condition in those areas. This study aimed to explore the spatial distribution of stunting prevalence and sanitation access in the province and to examine the potential association between stunting and sanitation access. Secondary data used in this study were obtained from the Nutritional National Survey Data of 2017 and National Monitoring of Sanitation Access 2017. Stunting prevalence and sanitation access for each sub-district (57 in total) were mapped based on the quartile category. A potential association between stunting prevalence and sanitation access at sub-district level was analyzed using linear regression. Although stunting prevalence and prevalence of household without adequate sanitation access were visually located at the distant areas from the capital city (Denpasar), the sanitation and stunting prevalence were not clustered significantly. There is a positive association between stunting prevalence with low access to adequate sanitation ($F(1,55) = 10.133, p < 0.05$) with $R^2=0.156$, where stunting prevalence (%) is equal to $0.166 + 0.252$ percentage household without adequate sanitation access (%). There is a correlation between stunting prevalence with sanitation coverage at the sub-district level in Bali province. Future study needs to explore the association at the individual level as well as at a lower community level.

Keywords: Sanitation, stunting, spatial distribution

OP41

Factors related to work accidents among production employees in spring bed industry, Padang, 2018

Nizwardi Azkha and Herlisa Dilla

Faculty of Public Health, Andalas University, Padang, 25128, Indonesia

The occupational accident still become problem and the risk factors of occupational accidents are still high. A total of 25 cases of occupational accidents at spring bed Industry in Padang was reported from 2014 to 2017. The purpose of this study was to determine the related factors of workplace accidents among employees in spring bed industry in Padang, 2018. The design of this study was quantitative by using a cross-sectional approach. This study was conducted on February - Mei 2018. The total of the population was 113 and study samples were 57 workers. The primary data were collected by using questionnaire through interview and observation. Data were analyzed by univariate and bivariate analysis with $\alpha = 0.05$. The results showed that 61.4% of workers had experienced work accidents. It was found that 57.9% of workers did not use PPE at work, 57.9% of workers had non-ergonomic work attitudes, 54.4% of workers experienced heavy workloads. There was a significant relationship between the use of PPE ($p = 0.020$), work attitude ($p = 0.015$), and workload ($p = 0.006$) and work accidents. Factors related to work accidents are the use of PPE, work attitudes, and workload in the production section of spring bed industry in Padang. It is expected that the company will provide OSH training regarding work attitudes, increase supervision of the use of PPE, and sanction if not using PPE while working.

Keywords: *Workload, Work Accident, Use of PPE, Work Attitude*

OP42

Relationship between occupational health and safety program (OHS) and hearing complaints among industrial employees in Padang, 2018

Luthfil Hadi Anshari and Dici Putri

Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

Noise-Induced Hearing Loss (NIHL) is a hearing loss caused by high exposure for a long period of time and can be caused by work environment noise. The purpose of this study was to determine the relationship between the implementation of OHS program and hearing complaints among industrial employees in Padang. The study was a cross-sectional study, conducted in an industry in Padang City from January to April 2018. The population was all of the employees working in the production section (164) people with 60 samples. Simple stratified random sampling was used with correlation and logistic regression test were employed for data analysis. The results showed the 21 employees got hearing complaints (35%). Less supervision was reported by 36 respondents (60%), less commitment was reported by 40 respondents (66.7%), the less good working environment was reported by 32 respondents (53.3%). There was significant relationship between supervision, employee commitment, conditions of working environment with the incidence of hearing complaints ($p < 0.05$). OHS program related to hearing complaints among industrial workers. OHS Program need more attention and supervision from company managers, as well as the necessary training.

Keywords: OHS Program Implementation, labor, Hearing Complaints

OP43

Risk assessment of plumbum contamination in drinking water from wellbores in coastal area

Sri Malem Indirawati¹, Setiaty Pandia² and Herman Mawengkang ²

¹ STIKes SUMUT, Medan, 20136, Indonesia

² University of Sumatera Utara, Medan, 20136, Indonesia

Pollution in the Belawan coastal area causes wellbores as a source of drinking water polluted by plumbum (Pb). The purpose of this study was to analyze health risks based on the wellbores distance from pollutant sources and the depth of wellbores. A cross-sectional study with an analytical design was carried out in a purposive sample of 241 adult people living in a coastal area in Bagan Deli who used wellbores as sources of drinking water. Data were collected by using questionnaire, and analyzed by using environmental health risks formula. Plumbum concentration in drinking water was measured by Atomic Absorption Spectrophotometer. Spacing and depth of wellbores in the spatial analysis used the Inverse Distance Weighted method. The study found that 73.5% of drinking water polluted by Plumbum came from wellbores with a depth of 0-100 m. The amount of health risk due to Pb pollution was still below 1 ($RQ < 1$). RQ Plumbum based on distance which closed to the shoreline tend to approach the mean value, as well as depth. The study implied that health risk could decreases if the depth of the wellbores more than 100 meters. I would like to extend my sincere gratitude to Ministry of Research and Technology as a funding of this research, and the head of technicians of Chemistry Department in North Sumatera who helped in analyzing this research.

Keywords: health risks, drinking water, distance, depth, borewell

OP44

Potential hazard analysis and risk control at production of Indarung V Plant, Padang Cement Corporate in 2018

Nopriadi¹, Nurul Alfatiah¹, Nizwardi Azkha¹ and Emy Leonita²

¹ Department of Occupational Health Safety and Environmental Health, Faculty of Public Health, Andalas University, Padang, 25149, Indonesia

² Stikes Hang Tuah, Pekanbaru, 28000, Indonesia

There are potential hazards in Indarung V Plant, Padang Cement Corporate such as heights, dust, excavators, combustible materials, rotating objects, electrical currents, and material collapses. Some hazards can cause risks from the lightest to the most severe if not properly managed. One of the preventive efforts that company can do is risk management. This research aims to analyze hazards, risks and appropriate control in the production of Indarung V Plant, Padang Cement Corporate. This semi-quantitative study took place from January to April 2018. The analysis used HIRARC (hazard identification, risk assessment and risk control) employing AS / NZS 4360: 2004 calculation. Data were collected through interview, occupational observation, and document analysis. There are 8 people as informants chosen by Purposive Sampling technique.

The potential hazards and risks during the production process were found in the storage area (very high=4, 1st priority=2 and 1 substantial), coal mill area (very high=8, 1st priority=2), raw mill area (very high=5 and 1st priority=4), kiln area (very high=8, 1st priority=4 and 1 substantial), cement mill area (very high=3 and 1st priority =7). Controls that have been applied are PPE, routine inspections, maintenance (machine), instruction of work, installation of HSE signs, the using of fire extinguisher and Hydrant. The study found 49 risks and 7 to 11 hazards at each step of process production. The company have to improve job training such as emergency response, how to use a fire extinguisher, Hydrant, and improve supervision in HSE enforcement in the workplace. We would like to thank Padang Cement Corporate who has given permission to the author to conduct research in the company.

Keywords: Risk Analysis, HIRARC, AS / NZS 4360: 2004

OP45

Correlation between the role of supervisor and occupational health and safety (OHS) training on heavy dump accidents at PT. Pamapersada Nusantara, Kcmb District

Julian Dwi Saptadi

Faculty of Public Health, University of Ahmad Dahlan, Yogyakarta, 55166, Indonesia

A working accident that frequently happened and caused financial losses on the mining process of PT. Pamapersada Nusantara was a heavy dump truck accident in hauling process from front loading to disposal area, about 2 kilometers distance. It caused by potential risk or hazard, such as speeding, sliced road surface, the unsafe distance between vehicles, avoiding traffic sign on hauling road, and insecure overtaking. This study aims to investigate the correlation between the role of supervisor and occupational health and safety (OHS) training on heavy dump accidents at PT. Pamapersada Nusantara. A cross-sectional design was conducted to 34 respondents in PT. Pamapersada Nusantara. Data on respondents' characteristics, supervisor's role and OHS training were collected by using questionnaire and analyzed by bivariate analysis. Most of respondents have received Occupational Health and Safety (OHS) training from the OHS department of PT. Pamapersada Nusantara, KCMB district (52.9%). Most of the respondents considered the role of their supervisor as good (91.2%), the other consider the role as sufficient in carrying out their duties (8.8%). There is no significant relationship between OHS variable with the incidence of damage while driving ($p>0.05$). But, the role of the supervisor has a significant p-value of <0.001 and have coefficient of correlation $r=0.634$. There was a significant correlation between the role of supervisor and the incidence of work accidents at PT. Pamapersada Nusantara. The company should improve the role of supervisor in order to prevent the accidents in the future.

Keywords: accidents, safety, work

OP46

The potential of leadership, trust and norms towards the success of community led total sanitation implementation in urban area

Ardini S Raksanagara¹, Iqnatya D Indrayani², Insi F D Arya¹, Sri Y.I Sari¹ and Deni K Sunjaya¹

¹ Department of Public Health, Faculty of Medicine, Padjadjaran University, Bandung, 45363, Indonesia

² Public Health Magister Program, Faculty of Medicine, Padjadjaran University, Bandung, 45363, Indonesia

Social capital builds community togetherness to solve problems together and achieve common goals. This study aimed to explore the potential role of social capital in urban society towards the success of the implementation of community led total sanitation (CLTS). It was a qualitative study with a narrative approach and constructivism paradigm. The study was conducted in a sub-district in the center of Bandung City. Data was collected through in-depth interview, focus group discussion, and participant observation for 8 months on February-September 2016. The informants were 19 people consisting of local leaders, head of the sub-district, primary health center officers and Bandung health officers. The potential social capital existed in the urban community were leadership, trust, and norms, with additional factors of network, role, reciprocity, solidarity, and communication. Factors influencing social capital were economic and acculturation while the driving factors consisting of environmental conditions of the settlements and related programs. Social capital existed in Bandung City, thus the proper utilization of these potential social capital would increase the success of CLTS program, organization, and its regulation in the society.

Keywords: community, implementation, sanitation

OP47

Disaster response readiness: a key to achieving SDGs 3 target of disaster risk reduction by 2030

Weiam Al-hunaishi¹ and Umar Ibrahim²

¹ *Social and Preventive Department, Faculty of Medicine, University Malaya, Kuala Lumpur, 50603, Malaysia*

² *Institute for Sustainable Future, University of Technology Sydney, Ultimo NSW, 2007, Australia*

Disasters caused diseases, injuries, and destruction of health structures and services. Disaster Risk Reduction (DRR) call for approaches that promotes health and well-being in line with Sustainable Development Goals no 3 (SDG 3) stipulations. SDG 3 thrived well on the integration of those measures that reduce disaster risk, promotes health and vice versa. Therefore, the study aims to highlight ways that guides Disaster Risk Reduction (DRR). This study synthesized secondary data obtained through desk literature survey. Articles, reports, and policy brief related to DRR, published between 2005 and 2017, meet the inclusion technique. The preliminary outcome of the review suggests that DRR entails establishment of a strategic planning in-line with SDG 3.d stipulations, to address DRR related challenges such as poor public health facilities, inadequate trained personnel and breaks in supply chain of essential materials among other issues, applying Sendai framework. DRR is a multi-sectorial task involving all stakeholders from planning to implementation phase, through collaborations and coordination across governance platforms. Succinctly, disaster readiness demands an effective integration of SDG 3.d and Sendai framework to ensure successful reduction of disaster risk by 2030.

Keywords: *disaster, reduction, risk*

ORAL PRESENTATION - MATERNAL AND CHILD HEALTH

OP48

Maternal age and the risk of recurrent miscarriage in Indonesia

Fovilia Dewi¹ and Djaswadi Dasuki²

¹ Field Epidemiology Training Program, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, 55281, Indonesia

² Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, 55281, Indonesia

A study in 2013 observed an increased rate of marriage delay in Indonesia and will result in advancing maternal age during pregnancy which is known as a major risk factor for recurrent miscarriage. This study aimed to measure the association between maternal age and risk of recurrent miscarriage in Indonesia. An unmatched case-control study was performed using IFLS data. Cases were women with 3 or more pregnancies, had 2 or more consecutive miscarriage, and preceded by one or more birth(s). The exposure variables were maternal age, paternal age, menarcheal age, body mass index (BMI), sex of the firstborn, and smoking status. Two hundred and fifty-one cases were compared to 1.004 controls. Adjusted by BMI and compared to women aged 20 - 29, the risk of recurrent miscarriage increased on women aged 30 - 34 (OR=1.68; 95% CI 1.0 - 2.7), women aged 35 - 39 (OR=2.79; 95% CI 1.7 - 4.4), and women aged 40 years or more (OR=4.91; 95% CI 3.0 - 7.9). Menarcheal age and sex of the firstborn were not associated with recurrent miscarriage. Multivariate analysis found the effects of paternal age and smoking ceased while BMI persisted (adjusted OR=1.67; 95% CI 1.3-2.3). Advanced maternal age and BMI were risk factors for recurrent miscarriage. We suggest that the women should consider their age and BMI before pregnancy in case for prevent the miscarriage.

Keywords: maternal, miscarriage, risks

OP49

Informal health care provider's practices for under-five diarrhea management in rural India

Vishal Dogra

Piramal Swasthya Management & Research Institute, Hyderabad, Telangana, 500073, India

Informal healthcare providers (IHPs) are the first point of contact for the majority of diarrheal cases in rural India. Oral rehydration solution (ORS) and Zinc (Zn) prescription to under-five diarrheal patients are the recommended practices for effective diarrhea management. This study aims to understand the IHPs current diarrhea management practices and predictors to improve the ongoing programs aimed at reducing diarrhea-related morbidity and mortality. A cross-sectional survey of IHPs in rural areas of Uttar Pradesh and Bihar was conducted in May 2015. Multi-stage sampling was employed to select IHPs from 240 villages in 8 districts of Uttar Pradesh and Bihar. Diarrheal caseload and management practices (including prescription & availability of ORS) among IHPs were the broad areas of inquiry. We used logistic regression to establish associations between providers' prescription practices of ORS/Zinc and other predictor variables such as education, experience, the source of learning new practices, outlet types, ORS/Zinc availability, and diarrheal caseload etc. A total of 720 informal healthcare providers (265 in Bihar & 455 in Uttar Pradesh) were surveyed. Of all, 16% identified themselves as rural health care providers and 84% as chemists/drug sellers. Nearly half (49%) of them were graduate or postgraduate and had 16 years of experience. A high proportion of providers (80%) reported both prescribing and dispensing medicines to rural patients. Higher numbers of providers carried ORS (78%) than Zinc (25%). Under-five diarrheal cases receiving ORS or Zinc differed significantly ($p < 0.000$). The likelihood of prescribing ORS (adjusted OR 1.96; $p < 0.001$) or Zinc (adjusted OR 4.15; $p < 0.001$) was significantly associated with the availability respectively. Use of zinc by IHPs for managing the under-five diarrheal cases in rural areas is significantly lower than that of ORS. Programs engaging IHPs should ensure adequate Zinc availability and use. Thanks to Shubham Akshat and Sarang Deo for research assistance and Sambodhi, and Bill and Melinda Gates Foundation for funding support.

Keywords: *Informal Healthcare providers, Diarrhea, ORS, Zinc, rural India*

OP50

Association between maternal dietary diversity (MDD) and neonatal survival in India

Rahul Bawankule¹

¹ International Institute for Population Sciences, Mumbai, India

Many studies reported the effect of maternal dietary diversity (MDD) on child growth and nutrition, but a little is known about its effect on child survival. The objective of the study is to examine the association between MDD and neonatal survival in India where neonatal mortality is highest in the world. The study analyzed the recently released nationally-representative population-based National Family Health Survey (NFHS)-4 data conducted in 2015-2016 in India. The MDD score was generated using daily/weekly/occasionally/never consumption of 9 food items. The study used a multivariable binary logistic regression model for investigating the association between MDD and neonatal survival after adjusting for probable socioeconomic, bio-demographic, behavioral and reproductive confounding factors. One-fourth mother had low dietary diversity and 3 percent neonates died before 28 days of birth in India in 2015-2016. The risk of neonatal death was 1.17 times (AOR: 1.17; 95% CI: 1.08-1.27) higher among mothers having low dietary diversity than those having high dietary diversity. The study confirms the association between MDD and neonatal survival, independent of socioeconomic, bio-demographic, behavioral and reproductive factors related to mothers and children. Mothers must be educated and counseled about the most diverse and balanced diet during pregnancy for gain in neonatal and infant survival in India.

Keywords: maternal dietary diversity, neonatal, survival

OP51

Implementation challenges of sexual violence prevention on children in Payakumbuh City

Sri Siswati, Yulia Hartati and Syafrawati

Public Health Faculty, Andalas University, Padang, 25129, Indonesia

Prevention of sexual violence in the industrial revolution 4.0 requires adjusting the way of thinking in overcoming it. Sexual violence in Payakumbuh City increased from year to year. The same cases also occurred in various regions in Indonesia. Protection and prevention of child from sexual abuse cases have been implemented by the Integrated Service Center for Women and Children (P2TP2A). The purpose of the research was to see the implementation challenges of sexual violence prevention on children in Payakumbuh City. This research was qualitative study that conducted in P2TP2A from 2017 to 2018. The data were collected through in-depth interviews, focus group discussion, observation and document review. Informants were P2TP2A officers, purposively selected. This study found that the officers was sufficient, funds and infrastructure facilities were still lacking. Primary prevention like giving education at junior and senior high school not conducted at all schools. Secondary prevention was not good yet, such as early detection of cases, counseling, and handling of victims of violence. A challenge in the field was the adoption of technology for prevention. Advancement of industrial revolution 4.0 is a challenge in the prevention of sexual violence. Less promotion needs expanded scope to cover all schools, all institutions, teachers and all parents. Innovation skill is needed in the expansion of goals and delivery techniques. Local governments require to make policies, provide adequate budgets, enhance the active role of relevant agencies including health institution.

Keywords: Challenge, Sexual violence in children, innovation, Future Mind Set

OP52

Information system model of community health surveillance in school-age children

Arief Hargono and Kurnia Dwi Artanti

Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

Contact among students in schools is potential for disease transmission. School becomes a strategic institution in terms of student outreach for diseases prevention. The aim of this study was to identify the variables needed for public health surveillance information systems development in school-age children. A qualitative study as the initial stage of an operational research was conducted in Surabaya, Indonesia. The informants were the staff of the District Health Office (DHO) and Education Office (EO). The research variables were types of data needed, sources, data collection and analysis, and epidemiological information. The system model was described using data flow diagrams. Data needed by the system were symptoms of a disease, immunization status, behavioral, attendance list of student and school environment data. Epidemiology information were symptoms of disease distribution, characteristics of sick students, immunization status, description of healthy behaviors and description of the school environment. The input entity of this system was schools and output entity were schools, public health center (PHC), DHO and EO. Data analysis was done at PHC then reported to DHO and EO. Several variables were identified to develop a public health information system in school-age children. This system can be used as cohort recording to monitor symptoms of a disease as early detection of infectious disease and potential outbreaks in school students.

Keywords: *information system, surveillance, public health, school children, epidemiology*

OP53

A cross sectional study of anemia status during pregnancy and maternal nutritional status with stunting among toddlers in Sukoharjo, Central Java

Rahmatika Nur A¹, Didik Gunawan T² and Diffah Hamin¹

¹ Human Nutrition Program, Sebelas Maret University, Surakarta, 57126, Indonesia

² Faculty of Medicine, Sebelas Maret University, Surakarta, 57126, Indonesia

Stunting is a description of chronic nutritional problems, from the condition of the mother during pregnancy, fetus, and toddlers. The aim of this study was to investigate the relationship between anemia during pregnancy and maternal nutritional status with toddler's growth. This cross-sectional study was conducted in three primary health centers, involving mother who had a toddler aged 12-24 months in Sukoharjo with non-eclampsia or pre-eclampsia criteria. The 129 subjects were recruited with purposive sampling. Anemia status, maternal nutritional status, and toddler's growth were obtained from the maternal and child health (KIA) book. Maternal nutritional status was determined by the average of three measurements of the upper arm circumference in each trimester (cm). Toddlers growth was obtained through a growth chart (weight for age) in KIA Book. Data were analyzed by using logistic regression. There were 129 mothers, 37.2% had anemia in the first trimester, 64.3% in the second trimester, 86.0% in the third trimester and 49.6% were underweight. Anemia in first trimester (POR=7.39; CI=2.86-19.09; p<0.001) and nutritional status of mothers during pregnancy (POR=9.66; CI=3.77-24.73; p<0.001) were significantly related to stunting. Anemia in the first trimester and nutritional status during pregnancy were related to toddler's growth. Further studies are needed to know that contribute of stunting. Pregnant women should maintain their nutritional status during pregnancy in order to prevent stunting.

Keywords: anemia, pregnancy, maternal, stunting

OP54

Improvement and challenges in maternal and newborn care: community intervention in hard to reach areas of Chin State, Myanmar

Myo-Myo Mon¹, Kyaw-Min Htut¹, Aung-Ye-Naung Win¹, Myo-Win Tin² and Khin Zaw²

¹ Department of Medical Research, Ministry of Health and Sports, Yangon 11191, Myanmar

² International Rescue Committee, Yangon, Myanmar

An intervention on maternal, newborn and child health (MNCH) care needs in remote areas was done by the collaborative efforts of the public health sector, local organizations and the International Rescue Committee. The current study was conducted to determine and compare the knowledge and practice of mothers on MNCH care after the community intervention with that of the baseline. A pre- and post-test, the mixed-methods study was done in hard to reach areas of two townships in Chin State in 2017. Face-to-face interviews with mothers of children under 2 years and depth interviews with responsible providers were conducted. Comparison of main outcome measures was done using Chi-square test or t-test as appropriate. Thematic analysis was applied for qualitative information. A total of 291 mothers participated in the assessment. Higher proportions of mothers from end-line than baseline received their first ante-natal care within 1st trimester (74% and 38%, $p<0.01$), received delivery with skilled birth attendants (85.5% and 50%, $p<0.01$), post-partum and newborn care services (74.2% and 14.1%, $p<0.01$). More children from the end-line (>80%) received immunization relevant to their age. Village health committees were strengthened and could help mothers for emergency referral, nutrition promotion, and emergency fundraising. Nearly 66% of mothers have received health education from the volunteers of the village health committee. Responsible township health officers acknowledged the improvement in immunization coverage and increased referral from the villages because of community intervention. Presence of restricted areas and communication difficulty were the major challenges. Area of major improvement included mothers' ante-natal, delivery and children's immunization practices. Community mobilization and strengthening of local capacity should be maintained.

Keywords: maternal, newborn, child, remote area

OP55

Increasing midwifery skill for pregnancy health care with *AMMUNTULI BIJA TIANANG NA BEJA-BEJA* model

Mustamin¹, Ridwan Amiruddin², Sukri Palutturi³, Stang Abdul Rahman⁴ and Risnah⁵

¹ Faculty of Public Health, Hasanuddin University, Makassar, 90245, Indonesia

² Department of Epidemiology, Faculty of Public Health, Hasanuddin University, Makassar, 90245, Indonesia

³ Department of Administration Health Policy, Faculty of Public Health, Hasanuddin University, Makassar, 90245, Indonesia

⁴ Department of Biostatistics, Faculty of Public Health, Hasanuddin University, Makassar, 90245, Indonesia

⁵ Department of Nursery, Faculty of Medicine and Health Sciences, Islamic State University of Alauddin, Makassar, 90245, Indonesia

The maternal mortality rate is the indicator of a country's public health status and welfare. In addition, high maternal mortality rates indicate poor maternal health care system. The study aimed to describe midwife skill for pregnancy health care in Jeneponto District. A qualitative study was conducted among 26 respondents, consisting subhead of District health office (DHO), midwife coordinator of DHO, the head office of primary health care (PHC), midwife coordinator of PHC, midwife, and the pregnant woman. Study result showed that midwifery skill in pregnancy health care was still low. Internal factors of a midwife were low knowledge level, not a good attitude, low motivation, and access obstacle to a workplace. External factors of the midwife were lack number of the midwife, lack number of health care facility, low knowledge level of the pregnant woman, a culture that not supporting pregnancy health care system, family's economy, and access to health care facility. Although, government's funding has been adequate and training for midwife has been implemented, but the implementation of these activities has not been able increased maternal health services and reduced maternal mortality rate. The coverage of maternal health services was still low and maternal mortality was still high. Pregnancy health care program in Jeneponto district has not been implemented optimally. It was influenced by low midwifery skill in pregnancy health care. The increasing number of midwives, improving the skill of midwife, and Ammuntuli bija tianang na beja-beja model is recommended to increase pregnancy health care.

Keywords: midwife, pregnancy, maternal health

OP56

Anthropometric indicators among schoolchildren of a tribal district in Jharkhand, India: analyzing using centiles and LMS method

Rishabh Kumar Rana, Devesh Kumar, Vidyasagar and Vivek Kashyap

Department of PSM, Rajendra Institute of Medical Sciences, Ranchi, Jharkhand, India

Prevalence of malnutrition has been on the rise in developing countries like ours, anthropometric data forms the backbone of assessment for ascertaining the extent of malnutrition. A cross-sectional observational study was done after choosing schools using a cluster sampling technique in the primary school going children of age 6-14. A random sample of 935 children was selected for the anthropometric measurement like age, sex, height, and weight. Age and Sex-Specific smooth percentile curves for Weight, Height, and BMI were created using Lambda, Mu, Sigma (LMS) method. Height, Weight and BMI Values of 3rd, 10th, 25th, 50th, 75th, and 90th percentiles along with Standard Deviation scores were compared with the available standard by Indian Academy of Pediatrics. It was observed that >95% of the centile scores obtained in our study population for both sexes were lesser than the centile scores given by Indian Academy of Pediatrics (IAP). 50th Percentile scores of both sexes for Height, Weight, and BMI showed a significant gap when compared with IAP centile scores. Presence of such low percentile values, when compared with the standard percentile scores for Indian children, point to the prevalent malnutrition among school children in the selected Tribal District of Latehar. Interventions focusing on improving nutrition among school children should be employed.

Keywords: anthropometric, schoolchildren, malnutrition, tribal

OP57

Breastfeeding as a protective factor against stunting among children aged 6-23 months in border area of West Kalimantan

Dini Suciyantj, Aisyah N. Dewi, Helda Khusun, Evy Ermayani, Daniel P. Sahanggamu and Indriya L. Pramesthi

Southeast Asian Ministers of Education Organization Regional Centre for Food and Nutrition (SEAMEO RECFON) / Pusat Kajian Gizi Regional (PKGR) Universitas Indonesia, Jakarta, Indonesia

Stunting is a key indicator of chronic undernutrition which reflects a failure to reach potential linear growth. Infant and young child feeding (IYCF) practices are one of the underlying factors associated with stunting. The aim of this study was to determine significant factors which contribute to stunting among children aged 6-23 months. The study design was a cross-sectional study in Sambas District, West Kalimantan. Probability proportional to size (PPS) was used to determine how many under two children from each village. There were 518 subjects enrolled in this study. The underlying factors of stunting were analyzed by using logistic regression test. The study results showed that the prevalence of stunting in Sambas District was 31.9% which considered as a high public health problem. Boys and low birth weight have the likelihood to be stunted 2 times higher than girls and normal birth weight ($p < 0.05$). Further analysis showed that breastfed children were 0.7 times likely to be stunted against non-breastfed children ($p > 0.05$) after adjusted by sex, wealth index, birth weight, diarrhea, immunization, and compliance toward posyandu (community-based integrated health post) service. Based on the findings, breastfeeding has a protective effect on stunting so IYCF practices should be taken into account by local government, stakeholder, and NGO to catch up an optimal growth and to reduce stunting among under two children. We would like to thank to local government in Sambas district. Financial support for this study was provided by The Ministry of Education and Culture through SEAMEO RECFON.

Keywords: *breastfeeding, child health, stunting*

OP58

Association of gestational hyperglycemia with adverse maternal outcomes: Results from the MAASTHI birth cohort in Bangalore, South India

Giridhara R Babu, Deepa R, Jatin Agarwal, Yamuna A, Prafulla S, Sanjay Kinra and GVS Murthy

Department Epidemiology, Public Health Foundation of India, Bengaluru, Karnataka, 560023, India

Earlier studies suggest that the prevalence of gestational diabetes mellitus (GDM) in India ranges from 0.6% to 27.3%. Despite the possibility of having a high prevalence, screening for GDM in pregnant women is ineffective in most of the public hospitals. Also, there is limited knowledge on adverse effects of GDM in mothers and neonates in India's public hospitals. A prospective cohort study was conducted in an antenatal clinic of a secondary level public hospital in Urban Bangalore. After assessment of eligibility criteria and obtaining informed voluntary consent, the research staff assessed the pregnant women for baseline characteristics. Also, we recorded blood pressure and anthropometric measurements. The pregnant women in the study population underwent a 75-gram oral glucose tolerance test (OGTT) after 24 weeks of gestational age. Also, the Edinburgh Postnatal Depression Scale (EPDS) was used to assess mental distress in mothers. Follow-up of mothers and neonates was done soon after delivery, wherein anthropometry and other health-related information was sought. We found that 15% of the pregnant women in the study population had GDM. The odds of having hypertension was nearly 1.6 times higher in women with GDM (OR: 2.63, 95% CI: 1.32-5.22) compared to women without GDM. The odds of having caesarian section was 80% higher (OR: 1.80, 95% CI: 1.11-2.93) in the women with GDM. Women with symptoms suggestive of mental distress (EPDS score >11) had 75% higher odds of having GDM (OR: 1.75, 95% CI: 1.14-2.67) compared to women without GDM, after adjusting for gravid, parity, age and family history. We found that women in public hospitals have a higher risk of having GDM. Also, our study indicates that women with GDM have higher odds of having gestational hypertension, caesarian section, and coexisting symptoms of mental distress. It is important to screen all the pregnant women attending public hospitals for GDM in public hospitals. This work was supported by the Wellcome Trust/DBT India Alliance Fellowship [grant number IA/CPHI/14/1/501499] awarded to Dr. Giridhara R Babu.

Keywords: gestational, diabetes, hyperglycemia, pregnancy

OP59

India: A vaccine hesitant or vaccine ignorant country

Nusrat Noor¹, Dewesh Kumar¹, Vivek Kashyap¹, Mahendra Singh², Neelesh Kappoor³ and Rishabh Kumar Rana¹

¹ Department of Preventive and Social Medicine, RIMS, Ranchi, India

² Department of Community Medicine and Family Medicine, AllMS, Rishikesh, India

³ National RMNCH+A Unit (NRU), IPE Global Ltd, India

The study attempts to assess the vaccine hesitancy regarding immunization in the rural areas of a tribal state in India considering the recent changes in immunization. This community based cross-sectional study was a part of ICMR project done in a predominant tribal block of the capital city of Jharkhand from April 2017 to September 2017. The sampling method used was cluster sampling in which one village cluster from seven randomly sampled sub-centre was selected each cluster, 30 households having children under seven years of age were recruited making a total sample size of 210 in our study. The study tool contained qualitative questions which were assessed on Likert scale. Only 51.43% females were aware of the vaccines which their child has to get but only 15 % of mothers were vaccine-hesitant. More than 85% of the parents were satisfied with the information provided by health workers about vaccination and approximately 95% trust the information which is a good sign for Indian public health system that the trust in immunization is more than satisfactory. From the findings of the study, it may be concluded that parents are more vaccine ignorant rather than vaccine-hesitant. On behalf of my research team, I express my sincere gratitude to my postgraduate students and senior residents of my department who assisted during our research study.

Keywords: vaccine, perspective, national policy

OP60

Social phenomena in breastfeeding on baby's health status

Andi Nurzakiah Amin¹, Andi Zulkifli², Nurhaedar³ and Suriah⁴

¹ Doctoral Program, Faculty of Public Health, Hassanudin University, Makassar 90245, Indonesia

² Epidemiology, Faculty of Public Health, Hassanudin University, Makassar 90245, Indonesia

³ Nutrition Science, Faculty of Public Health, Hassanudin University, Makassar 90245, Indonesia

⁴ Health Promotion and Behavioral Science, Faculty of Public Health, Hassanudin University, Makassar 90245, Indonesia

Breast milk has great benefits, but only a few mothers want to and ready to provide breast milk without giving extra foods or drinks to the baby. It was stated that the main problem in enhancing breastfeeding is social aspect. The objective of this study was to explore the social barrier of breast milk feeding among mothers in Makassar City. This research used a qualitative method with rationality approach. In-depth interviews and focus group discussions were conducted. The informants consisted of 4 midwives, 10 pairs of mothers and family members who accompanied them. The study showed that mothers in Makassar City tended to feed their babies with other foods and drinks earlier in order to leave the baby easily and for the baby not to cry. Therefore, it became an alternative for mothers even though they knew the importance of breast milk. Less support from midwives and families had an influence on the mothers' decision to stop giving breast milk earlier or feed their baby with foods or drinks earlier. Giving foods and drinks besides breast milk to the baby become habit for some mothers in Makassar City, the influence of health workers and families will affect the mother's decision on giving breast milk to her baby.

Keywords: *breastfeeding, social phenomena, child health*

OP61

Occupational factors associated with exclusive breastfeeding among working mothers in Manado

Diana V Doda^{1,2}, Herlina I S Wungouw¹, Nancy Malonda², Grace Kandow², Billy J Kepel¹, Damayanti Pangemanan¹, Joice Engka¹, Silvia R. Marunduh¹, Pemi M Wowor¹ and Marie Kaseke¹

¹ Faculty of Medicine, Sam Ratulangi University, Manado, 95115, Indonesia

² Faculty of Public Health, Sam Ratulangi University, Manado, 95115, Indonesia

Exclusive breastfeeding is one of the six WHO's Global nutrition targets to increase maternal and childhood nutrition. Studies found that mothers' occupation associated with breastfeeding, therefore it is necessary to study the factors in the workplace that were potentially related to exclusive breastfeeding. This study aims to identify the occupational factors associated with 6-months exclusive breastfeeding among working mothers. This cross-sectional study of 6-months exclusive breastfeeding was conducted among working mothers who have 6 to 12 months old baby. Participants were recruited from 4 Primary Healthcare Centers, that were cluster randomly selected in Manado. There were 277 working mothers participated in this study. This study utilized self-reported questionnaires comprise a demographic questionnaire, 6 months of exclusive breastfeeding, and occupational factors questionnaire. There were 88% of working mothers breastfeed their baby but only 33.6% exclusively breastfeed their baby until 6 months old. The bivariate analysis revealed that exclusive breastfeeding practice was associated with a younger mother's age ($p=0.007$), less working hour/day ($p=0.004$), low mental workload ($p=0.000$), physical workload ($p=0.000$), supervisor support ($p=0.012$), Flexible time to breastfeed ($p=0.002$), bigger company size ($p=0.024$), longer maternal leave ≥ 3 month ($p=0.02$) and older infant's age when the mother returns to work ($p=0.003$), lactation room in workplace ($p=0.001$), postnatal care ($p=0.000$). Multivariate analysis shows that younger mother's age, less working hour/day, low mental workload, physical workload, older infant's age when the mother returns to work, and lactation room at the workplace were significantly associated with exclusive breastfeeding. Occupational factors need to be considered when developing a breastfeeding program to increase the prevalence of exclusive breastfeeding practice of working mothers.

Keywords: Exclusive Breastfeeding, occupational factor, psychosocial

OP62

The relationship between anemia during pregnancy and exclusive breastfeeding with stunting among children under two years of age

Novianti T Dewi and Sri Sumarmi

Department of Nutrition, Faculty of Public Health, Airlangga University, Surabaya, 60115, Indonesia

Stunting is a nutritional problem that still occurs in Indonesia. Maternal anemia and exclusive breastfeeding affect the growth of the children. The aim of this study was to determine the relationship between exclusive breastfeeding and anemia during pregnancy with stunting among children under two years of age. The research was case-control involved 26 stunted children in the case group and 26 normal growth children in the control group using multistage random sampling. The study was conducted in June until July 2018. Maternal anemia was obtained from a maternal cohort in Integrated Community Health Services. Data collection of exclusive breastfeeding was carried out by structured questionnaire interviews. Data were analyzed by using chi-square test and Fisher's exact test for determining odds ratio. The results showed that anemia during pregnancy and exclusive breastfeeding had a significant relationship with stunting among children under two years of age (OR=7.667, 95% CI: 1.839-31.965) and (OR=0.13, 95% CI: 0.039-0.459), consecutively. Anemia during pregnancy and exclusive breastfeeding increased the risk of stunting among children under two years of age. Thus, an early improvement nutrition program for mothers with anemia during pregnancy and mothers to give exclusive breastfeeding should be done to prevent stunting. I would like to show my gratitude to Maron Public Health Center for provide me extensive professional guidance.

Keywords: *Stunting, Maternal Anemia, Exclusive Breastfeeding*

OP63

The comparison of knowledge level in antenatal care, early detection of pregnancy risks and interpersonal communication of midwives during pre and post ANC: RINI training module development in Tangerang District, Banten, Indonesia

Rini Kundaryanti¹, Nursyirwan Effendi², Masrul¹ and Asmawi²

¹ Faculty of Medicine, Andalas University, Padang, 25129, Indonesia

² Faculty of Social and Political Science, Andalas University, Padang, 25129, Indonesia

Antenatal care is an effort to reduce Maternal Mortality Rate (MMR). There were 43 maternal deaths in Tangerang district and 30% maternal deaths were caused by eclampsia, whereas it can be prevented if pregnant women get qualified antenatal care from midwives since 62.4% of antenatal care providers are midwives. Based on these data, midwives should increase their knowledge of antenatal care, early detection of pregnancy risks and interpersonal communication. ANC RINI Module was created to improve midwives knowledge about antenatal care, early detection of pregnancy risks and interpersonal communication. The study aimed to compare the knowledge level on antenatal care, early detection of pregnancy risks and midwives' interpersonal communication using ANC RINI training module. This research was quasi-experimental research with 12 midwives who met the inclusion criteria. The respondents took a pre-posttest by using questionnaire with multiple choice method which divided into 3 parts included 15 items for ANC, 24 items for early detection of pregnancy risk, and 10 items for interpersonal communication. Before taking post-test, the researcher implemented ANC RINI module to respondents. The statistical test used was paired t-test. The result showed that the knowledge of midwives on antenatal care, pre-test score was 49.39 and the post-test score was 86.63. In terms of the knowledge level of early detection of pregnancy risks, the pre-test score was 44.33 and the post-test score was 88.0. The pre-test score of was 40.00 and post-test was 80.83. Each variable has a p-value of 0.01 (< 0,05) were considered as statistically significant. The ANC RINI Module usage can help on improving midwife's knowledge.

Keywords: ANC Rini Module; Knowledge; Midwives

OP64

Secondhand smoke in pregnancy and fetal growth restriction

Mery Ramadani¹ and Budi Utomo²

¹ Reproductive Health Department, Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

² Faculty of Public Health, University of Indonesia, Depok, 16424, Indonesia

Cigarettes is a global public health problem and serious threats to the health of mothers and fetus. The increasing number of smokers both in men and women and a high percentage of cigarette exposure in households (85%) can be risky for pregnant women as secondhand smoke (SHS). Further, the risk of fetal growth restriction will be higher and bring adverse consequences to the pregnancy outcomes. This study aimed to assess maternal cigarette smoke exposure based on the examination of the umbilical cord blood nicotine levels that had an impact on fetal growth restriction. A total consecutive 132 women 3rd trimester pregnancy in Bengkulu city Indonesia were included in the study after excluding who reported active smoking during the current pregnancy. Women with multiple pregnancies were excluded. Fetal growth restriction was assessed by birth weight and length of birth. For maternal and fetal imaging data, the differences between all groups were tested by independent samples T-test with significance determined at $p < 0.05$. This study showed that 29.5% of mothers exposed to SHS. Mothers who exposed to SHS were younger, lower parity and lower vitamin C and fat intake than mother who unexposed SHS. The mean birth weight of infants of exposed mothers was significantly lower by 210.73 g (95% CI: (-336.42) - (-85.05) g), ($P = 0.001$) and the mean length was shorter by 0.375 cm (95% CI: (-1.08) - 0.33 cm), ($P = 0.296$) compared to the infants of unexposed mothers. We found younger, lower parity and lower vitamin C and fat intake on mother who exposed SHS. Exposure to secondhand smoke during pregnancy can reduce birth weight on newborn. We would like to acknowledge the mothers who participate on this study and enumerators who collect data in field. We also thank laboratory analyst for their support on blood examine.

Keywords: pregnancy, smoking, maternal

OP65

Outbreak investigation of hepatitis A in Hasanuddin Islamic Boarding School, Bajeng Sub-district, Gowa, South Sulawesi

Muammar¹, Ansariadi¹, Ni Wayan Deisy Arisanti¹, A. Jusmawati¹, Indra Dwinata¹ and Debsy Pattilima²

¹ Department Epidemiology, Hasanuddin University, Makassar, Indonesia

² South Sulawesi Provincial, Health Office, Makassar, Indonesia

In September 2017, Pabentengan Health Center in Gowa District reported 6 cases of Hepatitis A, suspected at Sultan Hasanuddin Islamic School, Bajeng Sub-district. This investigation aimed to identify the source of the outbreak, sources of transmission and suggest recommendation for control measures. A case-control study was employed in this investigation. Cases were all patients with clinical symptoms of Hepatitis A. Serological test, Ig-M and Ig-G were performed to confirm several suspects. Control was those who did not have hepatitis A symptoms selected from same school. Univariate and bivariate analysis with SPSS software was used to identify the significant risk factors. The school has 510 students and a total of 47 cases met the case definition (IR = 9.2%). A total of eleven cases were selected for further laboratory tests using IgG and IgM and all were confirmed positive. The first case occurred in the fifth week of July 2017, outbreak peak at the fifth week of September and end at the beginning of October 2017. Age twelve has the highest attack rate (24.4%) followed by age fourteen (AR=11.2%) and thirteen years (AR=9.5%). This study found that AR among female age twelve was higher than male. In contrast, at fourteen years of age, the attack rate among male was higher female. Hand washing without soap appeared as the most significant risk factor. Laboratory examination on drinking water facilities indicated the contamination of E. Coli which has a similar mode of transmission with Hepatitis A virus. This investigation reveals that the unhygienic practices and drinking water would be the source of hepatitis A outbreak. Hand washing practice has been suggested to reduce the risk of hepatitis A exposure. Chlorination and UV treatment of the source of drinking water needs to be done to reduce the contamination of E. Coli and Hepatitis A.

Keywords: hepatitis A, outbreak, child health

OP66

Investigation of rubella outbreak in Mananggu Subdistrict, Gorontalo Province 2018

Ni Wayan Deisy Arisanti¹, Ansariadi¹, Indra Dwinata¹ and Sri Vitrianti Lexi Noor²

¹ Department Epidemiology, Hasanuddin University, Makassar ,90245, Indonesia

² South Sulawesi Provincial Health Office, Makassar, 90224, Indonesia

Rubella, a vaccine-preventable disease, commonly occurs among children and young adults. From February to April 2018, local health center reported 26 cases number of suspected measles. This study aims to investigate rubella outbreaks in Gorontalo Province, Indonesia, and to suggest improvement in disease prevention program. This research used a case-control study design to know risk factor, source, and mode of transmission. Cases were people with clinical symptoms of heat and rash with one or more symptoms such as a cough, runny nose, conjunctivitis and shortness of breath. Controls were family, neighbors, or friends in a school of cases who had no symptoms. A total sample of 1: 2 case and control (26 cases and 53 controls) were involved. The investigation was conducted by interview and observation. Data were analyzed using Chi-Square test. The laboratory examination and confirmation obtained 9 positive cases of rubella. There were 26 cases with age ranged from 8 months to 39 years. They had symptoms like fever, rash accompanied by a cough, runny nose, and conjunctivitis. A total of 7.7% of cases has shortness of breath. The attack rate of rubella outbreak was 17.18/10,000. Half of the cases (50.0%) were 12-24 years and most of the cases were women (65.3%). Case fatality rate of the rubella outbreak was 3.84. Bivariate analysis showed a statistically significant correlation between immunization status and the incidence rubella OR = 2.7 (95% CI: 2.532-3.101) whereby people who were not immunized against rubella had 2.7 times higher risk compared to those who were immunized. Immunization status was associated with Rubella outbreak. It is recommended that the health officers conduct health promotion on rubella prevention and quarantine people who have clinical rubella symptoms for approximately 2 weeks.

Keywords: Rubella, Outbreak, Risk Factors, Gorontalo

OP67

Mapping of HIV-AIDS epidemic among pregnant women at Gresik Regency, East Java, Indonesia

Alinea D Elisanti^{1,2} and Efri T Ardianto²

¹ Delima Persada Midwifery Academy, Gresik, 61114, Indonesia

² State Polytechnic of Jember, Jember, 68121, Indonesia

Nationally, perinatal HIV transmission the third most common among HIV transmissions in Indonesia. HIV surveillance since 2004 reflects that Indonesia is entering concentrated epidemic typology, however, the basic data on HIV-AIDS cases in pregnant women is limited. The study aimed to describe HIV-AIDS mapping among pregnant women. This study was done in 18 sub-districts in Gresik Regency. Secondary data was taken from Ibnu Sina Regional General Hospital, Gresik from 2013 to 2018 using data collection sheet and interview sheet. Data were analyzed by using Arc-view GIS 3.3 and Open Geoda program. The study found 28 pregnant women with HIV-AIDS spread in 14 sub-districts (77.8%), most cases were clustered in border area with high population mobility (46.4%). Most HIV testing sites were in public health centers (73.3%). Most of cases were found at mother and child health polyclinic (64.3%). The epidemic and entry point of HIV-AIDS case finding were described in shape file map. HIV-AIDS among pregnant women in Gresik Regency is entering into concentrated epidemic typology. Thanks to Directorate of Research and Community Service Directorate General Strengthening Research and Development Ministry of Research, Technology and Higher Education Republic of Indonesia, The Director of Ibnu Sina General Hospital Gresik.

Keywords: HIV-AIDS, pregnant, woman

OP68

Factors associated with contraceptive use behavior among married women: a comparative analysis

Vivi Triana

Department of Epidemiology, Public Health Faculty, Andalas University, 25129, Indonesia

Contraceptive use coverage among fertile-age couples in Padang City has decreased from in 2016. The purpose of this study was to investigate the factors associated with contraceptive use in Padang City. A cross-sectional study was conducted in Padang City, West Sumatra Province. Multistage Random Sampling was done and involving 146 respondents. Interviews were conducted to women of childbearing age. The analysis was conducted to see the relationship between the independent variables of attitude, subjective norms and behavioral control with the dependent variable of contraceptive use. The study found that the distribution of negative attitude related to contraceptive use was 42.5% in the non-family planning group and 38% in the family planning group. 53.4% of respondents in non-family planning group did not have a good subjective norm and 21% was found in the family planning group. 34.8% of respondents in the non-family planning group did not have good behavior control and 15.1% was found in the family planning group. There were differences of subjective norms between family planning groups and non-family planning groups (p-value< 0.001, POR = 4.1,95% CI: 2-8.4), and behavioral control between family planning groups and non-family planning groups (p-value< 0.001, POR = 4.4, 95% CI: 2-9.7). The important behavioral variables including subjective norms and control of behavior need attention because related to the decline in the number of contraceptive users among women of childbearing age in Padang City. The author would like to thank DP3AP2KB and UPT in Padang City who has participated and helped in this research.

Keywords: *Contraceptive, subjective norms, behavioral control*

OP69

A family-based health communication comprehensive model on exclusive breastfeeding for infant's quality of life in health services: A Study Protocol

Insi Farisa Desy Arya^{1,2}, Elsa Pudji Setyawati², Dani Ferdian², Mira Suryani³, Nanan Sekarwana⁴ and Dida Ahmad Gurnida⁴

¹ Doctoral Program, Faculty of Medicine, Universitas Padjadjaran, Bandung, 45363, Indonesia

² Department of Public Health, Faculty of Medicine, Universitas Padjadjaran, Bandung, 45363, Indonesia

³ Department of Computer Science, Faculty of Mathematic and Natural Science, Universitas Padjadjaran, Bandung, 45363, Indonesia

⁴ Department of Pediatric, Faculty of Medicine, Universitas Padjadjaran, Bandung, 45363, Indonesia

WHO recommends 50% exclusive breastfeeding prevalence by 2025. Health research found that exclusive breastfeeding (EBF) in Indonesia reached 30.2%. Family involvement in breastfeeding education impacts breastfeeding outcomes. Communication intervention such as breastfeeding counseling can support and strengthened EBF practice. The aims of this study are to develop a family-based health communication comprehensive model on exclusive breastfeeding in health services for infant's quality of life. We will conduct a mix method using action research approach. First, we will do a qualitative study to explore the models of health communication platform through developing mobile health application for mothers and family, and also for the counselor in health services. Informants of focus group discussion are pregnant mothers, families and health care provider. In-depth interview will be done for breastfeeding counselor, IT expert and communication expert. Second, we will do the experimental study using health communication platform for about 8 months intervention. The sample will be the pregnant mothers and family in Bandung District, West Java Indonesia. The period of this study will take 2 years. The resulting plan for this study is a health communication platform that can be used by family and health provider to increase exclusive breastfeeding for infant's quality of life. This study will describe the comprehensive health communication model base of family. It will develop the mobile apps/ platform that tailors to mother, family and health care provider. Moreover, this model will support family and care provider for exclusive breastfed to improve infant and mother quality of life. The comprehensive model on EBF should be based on theory of health behavior, enhancing the interactivity of communication, and describe the impact on interpersonal connection.

Keywords: Health communication model, Exclusive breastfeeding, Infant QoL, health services

OP70

Autism spectrum disorder: characteristics of children and perceived risk factors in Mumbai, India

Rati Kapoor¹ and Manas Ranjan Pradhan²

¹ Asian Heart Institute, Mumbai, Maharashtra, 400051, India

² International Institute for Population Science, Mumbai, Maharashtra, 400088, India

Autism spectrum disorder (ASD) is a complex developmental disability which is fast growing in nature across the globe. There is limited empirical evidence on autism in India. The actual number of children with autism is unclear as many of the characteristics are similar to other neurological and mental disorder and not counted as ASD in India. This study aimed to describe the characteristics of children with ASD and its perceived risk factors in Mumbai, India. A qualitative approach using grounded theory was adopted to explore the characteristics and perceived risk factors associated with ASD. Twenty in-depth interviews were conducted with parents and teachers of children with ASD. Qualitative content analysis was carried out through NVivo software. The major features which have been observed in children with ASD are lack of social interaction and speech problem, i.e., they lack in eye contact, late response, and often express through repeating words. Both teachers and parents have observed these characteristics. Anxiety and phobia are also other characteristics found among these children. The perceived risk factors of ASD are mainly genetic, and stress during pregnancy and varies among teachers and parents. Lack of social interaction, speech difficulty, anxiety, and phobia are the characteristics of children with ASD. The perceived risk factor of ASD varies among teachers and parents. Results suggest the need for framing an appropriate policy for the betterment of children with ASD. Moreover, population-based surveys estimating ASD prevalence would provide a better picture of its magnitude.

Keywords: Autism Spectrum Disorders, Qualitative, Characteristics, Risk factors, India.

OP71

The knowledge on diarrheal disease among street children in Manado, North Sulawesi, Indonesia

Angela Kalesaran, Eva Mantjoro and Grace Kandou

Department of Epidemiology, Faculty of Public Health, Sam Ratulangi University, Manado, 95115, Indonesia

Street children are one of the most frequently forgotten groups in society with respect to their health status. Street children live in areas with poor sanitation and poor hygiene. The individualistic way of living with a lack of family or support system. Besides, lack of knowledge of health leads to their vulnerability to many infectious diseases, including diarrhea. The purpose of this study was to describe the knowledge of street children regarding diarrhea in Manado City. This was a cross-sectional study conducted in Manado City on June 2018. Samples were 31 children who live around Bersehati Market. A questionnaire with 20 questions on the definition, cause, means of transmission, signs and symptoms, warning signs, initial treatment and ways to prevent diarrhea was used. The study found that there were more than half (58.1%) of the street children had a low level of knowledge on diarrhea, despite some of them already or have attended school. Only 10 out of 31 children knew about the initial treatment for diarrhea, with more than half (61%) of the children did not know about the early warning signs of diarrhea. Only unboiled water and dirty food were widely known (75% and 83.8%, respectively) by street children as causes of diarrhea. Majority of the street children in Manado City had a low level of knowledge on diarrhea. There is a need for health education among street children to improve their knowledge on diarrheal disease.

Keywords: *behaviour, diarrhea, street children*

OP72

Relationship between infectious diseases and wasting among 6-11 months old infants in Padang, West Sumatera, Indonesia

Idral Purnakarya

Department of Nutrition, Faculty of Public Health, Andalas University, 25129, Padang, Indonesia

Wasting is a nutrition problem during childhood. Diarrhea and acute respiratory infection (ARI), the major acute childhood infection, are contributed to wasting in children. Therefore, this study aimed to know the relationship between infectious diseases and wasting in 6-11 months old infants. A cross-sectional study of 176 infants in Padang was conducted. Anthropometric data, infection disease, immunization, vitamin A supplementation and maternal knowledge of nutrition were collected. The risk of wasting due to diarrhea and ARI were estimated by using multiple regression models (95% CI). The prevalence of wasting was 11.4%. Prevalence of diarrhea and ARI were 5.1% and 34.1%, respectively. Subjects with diarrhea had a significantly higher risk of wasting after adjustment for maternal knowledge on nutrition (POR = 5.31; 95% CI: 1.19-23.74; p = 0.029), but ARI did not show significant association after adjustment for maternal knowledge on nutrition. Diarrhea was related with wasting in 6-11 months old infants. Preventing diarrhea and improving maternal knowledge on nutrition may reduce the prevalence of wasting among infants. Thank's to Andalas University for funding this study.

Keywords: *wasting, diarrhea, acute respiratory infection, infant*

OP73

Polymorphism of *tmprss6* gene and iron intake are both associated with iron status among under-two-years-old children in Lombok, Indonesia

Dewi Shinta^{1,2}, Asmarinah³, Chris Adhiyanto⁴, Min Kyaw Htet^{5,6} and Umi Fahmida¹

¹ Southeast Asian Minister of Education Organization Regional Center for Food and Nutrition (SEAMEO RECFON), Pusat Riset Pangan dan Gizi Universitas Indonesia, Jakarta, 16424, Indonesia

² Nutrition Program, Faculty of Medicine, Universitas Indonesia, Jakarta, 16424, Indonesia

³ Departments of Medical Biology, Faculty of Medicine, Universitas Indonesia, Jakarta, 16424, Indonesia

⁴ Faculty of Medicine and Health Sciences, Universitas Islam Negeri Syarif Hidayatullah, Jakarta, 16424, Indonesia

⁵ Center of Community Health and Population Studies, the Research Institute, Trisakti University, Jakarta, Indonesia

⁶ Sydney School of Public Health, Sydney Medical School, The University of Sydney, Sydney, Australia

Multiple common variants in transmembrane protease serrin 6 (TMPRSS6) were associated with plasma iron concentration in genome-wide association studies, but their effect in children under 2 old particularly where anemia and iron deficiency (ID) were prevalent has not been reported. Iron intake is also known to be associated iron status however limited studies have assessed the contribution of both iron intake and gene to iron status. This study aims to investigate association between TMPRSS6 SNPs (rs855791 and rs4820268) and iron intake with low iron and hemoglobin concentration. The study analyzed baseline of randomized trial (NUPICO, clinical-trials.gov NCT01504633) in Lombok, Indonesia. Children aged 6-17 months (n=121) were included in this study. Multiple linear regression showed that TMPRSS6 decreased SF by 4.50 g/L per copy minor allele (A) of rs855791 ($p = 0.08$) and by 5.00 μ g/L per copy minor allele (G) of rs4820268 ($p = 0.044$). There were no associations between rs855791 and rs4820268 with soluble transferrin receptor (sTfR) and haemoglobin (Hb) concentration (rs855791; $p = 0.37$ and $p = 0.13$, rs4820268; $p = 0.17$ and $p = 0.33$). Iron intake was also associated with SF and its significance is stronger as compared to TMPRSS6 genotype ($p = 0.007$ and $p = 0.009$). TMPRSS6 gene and iron intake are both associated with SF concentration of children in Lombok. The finding also suggests the need for further studies to explore if nutrient recommendations should be based on genetic characteristics particularly for children who have mutation in TMPRSS6. This study was funded by Ministry of Education of Indonesia (SEAMEO RECFON DIPA 2015), Scientific Program Indonesia Netherlands Academy of Arts and Sciences (SPIN-KNAW), LPDP-RI. The authors are grateful to Dr. Dwi Anita Suryandari, Dr. Luh Ade Wiradnyani, Putu Amrytha Sanjiwani and Ria for their cooperation.

Keywords: Iron status, TMPRSS6, iron intake, children, Indonesia

OP74

Health decision makers, parents' religiosity, and complete immunization status among 1-5 years children in Indonesia

Erni Astutik¹, Tika Dwi Tama², Ayik Mirayanti Mandagi³ and Atik Choirul Hidajah⁴

¹ Department of Epidemiology, Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

² Faculty of Sport Science, State University of Malang, Malang, 65145, Indonesia

³ Department of Epidemiology, Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

⁴ Department of Epidemiology, Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

Immunization coverage in many parts of the country still become problems. Religion issue often became an excuse by parents to avoid vaccination. In addition, people who had a major role in their family would also affect the decision for taking immunization. The objectives of this study were to analyze the association between health decision makers, parents' religiosity and complete immunization status controlled by age, gender, level of education, occupation, subjective wellbeing, residents, household size, religion, ethnicity, the health status of children, the age of children, sex of children. This study used cross-sectional design with a sample of 1,214 children aged one to 5 years in Indonesia. The data from The Indonesian Family Life Survey (IFLS) 5, conducted in late 2014 to early 2015. The statistical analysis used multiple regression logistic. Overall, there were 48.19% children had incomplete immunization. Among children with complete immunization, parents were the most health decision maker (65.73%) and most of them were religious (54.84%). After controlled by level of education, occupation, the health status of children, our study found that health decision maker and parent religiosity were not related to complete immunization status in children aged one to 5 years (p -value >0.05). Health decision maker and parent religiosity were not related to complete immunization status in children aged one to 5 years. It is necessary to consider other variables than religiosity and health decision makers in the family to promote immunization programs.

Keywords: religiosity, decision maker, immunization, ifls

OP75

Mapping analysis of low birth weight babies in Makassar Municipality, Indonesia

Muhammad N Bustan¹, Ayu Lestari Darti Akhsa² and Arman²

¹ *Department of Statistics, Faculty of Mathematics and Natural Science, Universitas Negeri Makassar, Makassar, 90222, Indonesia*

² *Department of Public Health, School of Public Health, Universitas Muslim Indonesia, Makassar, 90231, Indonesia*

Low birth weight (LBW) is an important indicator of the infant's health status associated with maternal and child health services. The research aimed to determine the risk factors of LBW and map the distribution of these risk factors. A case-control study design consisted of 254 mothers; 127 cases of mothers with LBW infants and 127 controls of maternal mothers in health centers of Makassar. The five major risk factors were antenatal visits, maternal anemia, pregnancy infection, number of children, and maternal nutritional status. Mapping analysis compared the distribution of these risk factors among eight health centers with the value of each risk factors at the national level. The bivariate analysis found that three factors were significantly related to LBW, namely antenatal visits, maternal anemia disorders, and infectious diseases. The mapping analysis showed that the proportion of anemia was greater than the national level (37.1%); antenatal visits were lower than national level (86.7%), and pregnancy infection was greater than national level (7.3%). Maternal anemia, antenatal care visit, and maternal infectious diseases were related to LBW. Therefore, midwives should motivate pregnant women to achieve full ANC visits, so they will prevent pregnancy anemia and infection.

Keywords: *low birth weight, mapping, maternal, neonatal*

ORAL PRESENTATION - THE EMERGING & RE-EMERGING DISEASE

OP76

Dengue cases treated in Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar in year 2016

Harpreet Kaur¹ and Shyam Lal Mahajan²

¹ Department of Community Medicine, Sri Guru Ram Das Institute of Medical Sciences and Research, Sri Amritsar (SGRDIMSAR), Punjab, 143501, India

² Department of Community Medicine Cum Nodal Officer, National Vector Borne Disease Control Program and Integrated Disease Surveillance Project, Sri Guru Ram Das Institute of Medical Sciences and Research (SGRDIMSAR), Punjab, 143501, India

Dengue is a viral infection mainly transmitted by female *Aedes aegypti* and *Ae. Albopictus* mosquitoes have spread globally in recent decades. *Aedes albopictus* has spread from Asia to North America and Europe. Severe dengue causes serious illness and deaths. The present study aims to describe the Epidemiological profile of confirmed cases of dengue admitted in the year 2016 to pediatric and medicine ward at Sri Guru Ram Das Institute of Medical Sciences & Research, Amritsar, Punjab, India. A cross-sectional study was done and data related to 198 confirmed dengue cases admitted in SGRDIMSAR, Amritsar in the year 2016 was collected; compiled; analyzed and valid conclusions were drawn. The study population included all the patients having their serum samples found confirmed for dengue by IgM Mac Elisa or NS-1 Ag test. In 2016, 198 cases were reported from August-November, maximum, 57 in 21-30 years, a higher number of males, urban and NS-1 Ag positive. Mean gap between admission and testing of cases was 5 ± 2.1 days. The average length of stay of cases in hospital was 6.1 ± 2 days. The present study showed that dengue was more common in males and economically productive age group. It had largely confined to urban areas and all the cases were reported during monsoon and post-monsoon season (August to November).

Keywords: dengue, patients' profile

OP77

Qualitative study: leverage and barrier factors of Mass Drug Administration (MDA) lymphatic filariasis elimination programs in Tangerang and Subang Regency

Mara Ipa¹, Endang P Astuti¹, Wawan Ridwan¹ and Ina Rachmalina²

¹ *National Institute Health Research and Development Ministry of Health Republic Indonesia, Pangdaran, 46396, Indonesia*

² *Center of Public Health Efforts, National Institute Health Research and Development Ministry of Health, Republic Indonesia*

Tangerang and Subang Regency had implemented a national effort to eliminate lymphatic filariasis by five rounds of MDA using diethylcarbamazine (DEC) and albendazole (ALB), pre TAS, TAS-1 (Subang Regency); and TAS-2 (Tangerang Regency). The aim of this study is to analyzed leverage and barrier factors of MDA lymphatic filariasis elimination program. The research was conducted by using qualitative approach through in-depth interview to obtain information on the implementation of MDA lymphatic filariasis elimination policy, resources and community empowerment in three levels of health sector leader (province, regency and district level), and cross-sector collaboration. Sampling was done purposively and analyzed with thematic analysis. The leverage factors of the implementation MDA for LF programs were local government's commitment, the existence of health volunteer for community empowerment. Barriers to implementation included the motivation of community drug distributors (CDDs) through incentives and training, inadequate information about MDA LF and a limited number of drug distributors to monitor adverse effects. Mass drug administration for lymphatic filariasis elimination programs should promote strategies and surveillance model in post-MDA based on specific contextual factors to improve implementation outcomes. We thank all researcher for field works, managers and teams of District Health Office for valuable support and collaboration. This research is supported by National Health Research Development (NIHRD), Ministry of Health Indonesia.

Keywords: *Leverage, Implementation, Lymphatic filariasis, Mass drug administration, Indonesia*

OP78

Tensely clustered outbreak of visceral leishmaniasis (kala-azar) in a setting of seasonal migration in a village of Bihar, India

Suman Saurabh¹, Sarosh Jamil², Vijay Kumar³ and Arvind Kumar⁴

¹ Zonal Coordinator - Neglected Tropical Diseases, WHO, Muzaffarpur, India

² State Coordinator - Integrated Health Information Platform, WHO, Raipur, India

³ Ex-Scientist E, Department of Vector Biology & Control, RMRIMS (ICMR), Patna, India

⁴ District Vector Borne Disease Control Officer, Health Department, Govt of Bihar, Sheikhpura, India

A kala-azar outbreak was reported at Kosra village situated in Sheikhpura district of Bihar state of India. The objective of this study was to investigate the outbreak and to demonstrate its feasibility under program conditions. Outbreak investigation with house-to-house search and rapid test of kala-azar suspects and contacts was carried out. A case-control study was conducted to determine the risk factors for kala-azar. Sandfly collection and cone bio-assay were done as part of an entomological study. A spatially and temporally clustered outbreak with 67 cases was found with the most recent case detected in October 2018. A delay of more than a year was found between diagnosis and treatment of the index case. A low ratio of asymptomatic to clinical kala-azar and all age groups being affected pointed to low population immunity against the *Leishmania* parasite. The hamlet with the socio-economically disadvantaged migrant population was several times more affected than the rest of the village (attack rate 18.1% vs 0.5%, respectively). Illiteracy, poverty, being a laborer, belonging to lower caste, migration, history of kala-azar in the family and unplastered walls of living rooms were found to be the risk factors for kala-azar. Gravid female *P. argentipes* sandflies collected post indoor residual spraying (IRS) and low mortality of sandflies on cone-bioassay indicated poor effectiveness of vector control. There is a need for special focus on areas with seasonal migration and those with low-endemicity due to waning population immunity. Kala-azar elimination program should consider implementing a routine framework for outbreak response and management. Ultrasonography at the district level for enhanced case-detection of febrile rapid-test positive patients without palpable spleen, effective vector control through good quality IRS especially with quality-compliant insecticide and plastering of unplastered walls should be implemented to achieve interruption of transmission in future kala-azar outbreaks. Firstly, we would like to acknowledge Dr Saurabh Jain for his technical guidance and motivation. He was national professional officer -Neglected Tropical Diseases (NTD) with WHO-India when the study was initiated and is currently with the WHO-HQ, Geneva. We would like to thank Dr Manoj Kumar Singh, Zonal Coordinator NTD, Jamshedpur, India for his help provided in data collection and entry and Dr Rajesh Pandey, State Coordinator NTD for his administrative support. Mr Vikas Kumar, block coordinator with Care India is acknowledged for the logistical support provided by him. Chief medical officer of Sheikhpura district Dr Mrigendra Prasad Singh and medical officer in charge of Sheikhpura Sadar primary health centre Dr Ashok Singh are acknowledged for their help. Dr R K Topono, Mr N.K. Sinha, Mr. Virendra Kumar, Mr. Kumar Abhijeet, Mr. Mukesh Kumar from RMRIMS, Patna, Bihar are acknowledged for their contribution in entomological study. We would like to acknowledge Mr Ritesh Kumar and Ms Rishemjit Kaur, Scientists with CSIO (CSIR), Chandigarh, India for their help provided in analysis of spatial clustering of cases. We would also like to thank the district magistrates Mr Dinesh Kumar and Mr Yogendra Singh for their administrative support. We thank field level health workers Ms Usha Sinha, Ms Dharamshila Devi, Ms Kavita Devi, Ms Saroj Manju, Ms Paramshila Devi, Ms Sita Devi and Ms Babita Kumari who participated in the data collection. We deeply acknowledge the cooperation of people of Kosra village for their participation in the study.

Keywords: Kala-azar, visceral leishmaniasis, outbreak, epidemic, migration, indoor residual spraying

OP79

Analysis of diphtheria in Padang City: A qualitative study

Masrizal, Fauziah Elytha, Fauriza Afifah and Randa Ilham

Department of Epidemiology and Biostatistic, Public Health Faculty, Andalas University, Padang, 25129, Indonesia

Diphtheria is one of vaccine preventable diseases that still occurred in Padang City. In 2017, suspect of diphtheria cases was increase. The purpose of this study is to analyze the contributing factors of diphtheria incidence in the health centers of Padang City. This qualitative research was conducted in 2018 in the working area of health centers of Padang City. Informant was selected by purposive sampling. Chosen informants consist of surveillance officers, health center's chief, and mother of suspected cases. Data were collected by using questionnaire through in-depth interview, document review, and observation. Data processing used triangulation of sources and methods. We found that most of surveillance officers were not epidemiologist. Health promotion had not reached the targets. The meeting and the implementation of diphtheria surveillance were done only when the cases existed. In vaccination section, the storage facility of the vaccine was appropriate, vaccine distribution still needed to well planned, vaccine temperature was recorded 2 times a day. There were officers who still keep the opened vaccine. Mother's knowledge, attitudes, and behavior still lack, especially how to prevent diphtheria, and their participation in vaccination program. There was some aspect that Padang City health office needed to improve. Strengthening human resources, evaluation in cold chain or vaccine program, and improving the participation of community for vaccination through adequate health promotion.

Keywords: *Diphtheria, Maternal Behavior, HR, Qualitative, Vaccines*

OP80

Determining the epidemiology of leptospirosis based on environment factor in Central Java Province, 2017

Chatarina U.W and Ahmad Zamzam Hariro

Epidemiology Post-Graduate Program, Faculty of Public Health, Universitas Airlangga, Surabaya, 60286, Indonesia

Central Java Province is one of the provinces with the highest incidence of leptospirosis in Indonesia. The incidence rate of leptospirosis in Central Java is never less than 1 per 100,000 population. The emergence of this disease is much influenced by environmental risk factors and the state of the region. However, other risk factors such as population density, farmer occupation, soil type, and presence of rats should be considered. The purpose of this study was to determine the epidemiology of leptospirosis based on socio-environmental factors in Central Java Province in 2017. This ecological study describes the relationship between socio-environmental factors and leptospirosis. District or city was the unit of analysis in Central Java Province. The total population of the study was 35 districts or cities. Secondary data published by government were analyzed by using multiple linear regression. The result showed that the influencing factors of the incidence rate of leptospirosis in Central Java were rainfall ($p=0.025$), flood ($p=0.031$), and altitude ($p=0.035$). The study found that temperature ($p=0.341$), population density ($p=0.944$) and working as a farmer ($p=0.247$) were not related to the incidence rate of leptospirosis. The socio-environmental factors of the incidence rate of leptospirosis were rainfall, flood, and altitude. It is suggested that the government need to prevent the outbreak of leptospirosis by considering the factors of rainfall, flood, and altitude.

Keywords: leptosiposis, environmental factors

OP81

Taenia solium infection in pig farming community of North India

Kashi N Prasad¹ and Chandra M Pandey²

¹ Department of Microbiology, Institute of Medical Sciences, Lucknow, 226014, India

² Department of Biostatistics and Health Informatics, Institute of Medical Sciences, Lucknow, 226014, India

Taenia solium infection is a major public health problem in developing countries. It manifests in humans into two major forms, taeniasis and neurocysticercosis (NCC). NCC is increasingly being reported from the developed world due to human migration from disease-endemic countries. However, systematic community-based studies on *Taenia solium* infection are lacking worldwide. We studied *Taenia solium* infection-related disease burden in the pig farming community of North India. A total of 294 families from 30 villages were chosen based on 30 cluster sampling approach as recommended by the World Health Organization. Demographic, clinical and epidemiological data were collected from study subjects. Stool samples from the study populations were collected and examined for taeniasis. Patients with active epilepsy were identified on door-to-door survey and such patients were subjected to neuroimaging of the brain for NCC. Taeniasis was identified in 18.5% (172/924) individuals. Abdominal pain, the passage of tapeworm segment in stool and consumption of undercooked pork were associated with taeniasis. During door-to-door survey, 5.8% (95/1640) subjects with active epilepsy were identified. Based on neuro-imaging, clinical and epidemiological criteria NCC-related active epilepsy was confirmed in 48.3% of patients with active epilepsy. The treatment gap among the epileptic patients was more than 95%. Factors associated with NCC-related epilepsy were the history of the passage of tapeworm segments in the stool, post-defecation hand wash with clay/water. The study shows that *Taenia* carrier (taeniasis) and NCC-related active epilepsy rates are alarmingly high in the pig farming community of North India. Possibly *T. solium* infection is grossly under-reported in India and other disease-endemic countries due to lack of population-based studies. Appropriate measures like health education, mass awareness, and better medical facilities, mass treatment of *Taenia* carriers, and screening and restriction on the sale of measy pork may help to reduce the disease burden. The study was supported by Indian Council of Medical Research.

Keywords: pig farm, taeniasis, zoonosis

OP82

Evaluating the implementation of filariasis elimination in Kotawaringin Barat District, Indonesia

Nita Rahayu, Sri Sulasmi and Yuniarti Suryatinah

National Agency on Health Reseach and Development, Tanah Bumbu, Indonesia

Filariasis is a chronic disease lead to disability. Mass treatment for prevention (POMP) has been carried out in 55 districts or cities for 5 consecutive years. The Ministry of Health has evaluated filariasis mass treatment. In 2016, an assessment was conducted in the districts/cities against the implementation of the pre-TAS (Transmission Assessment Survey) and TAS. Kotawaringin Barat is one of the regencies that passed TAS. Data shows that positive children are still identified. This study will identify the prevalence of microfilariae through finger blood survey in Kotawaringin Barat. This type of research is a descriptive study with a cross-sectional approach. This research was conducted in Kotawaringin Barat District which passed TAS-3. The study was conducted from February to November 2017. The sample locations were Dawak and Sungai Bakau Village as endemic areas of Brugia malayi. Finger blood survey (SDJ) was conducted on 620 respondents taken at night. Blood was taken as much as 60 µl for thick smear preparations, staining, and blood specimens were seen with a microscope. Then a cross-check was carried out between specimen inspectors. Community finger blood survey in the community in Sungai Bakau Village found one positive microfilaria from 310 respondents. In Dawak Village, 4 positive microfilariae were found out of 310 respondents. Among the respondents who were infected, it was found that there were respondents who had microfilaria per blood supply (60 µl) as many as 19 parasites and 17 parasites. Respondent with positive microfilariae of Brugia malayi still existed. Selective care and active supervision are needed. We would like to thank the head of the service and the staff of the Kotawaringin Barat Health Service. To the heads of the Dawak and Sungai Bakau village. To the head Kotawaringin Lama Community Health Center and staff. Thank you also to all teams and volunteers for successful research.

Keywords: Elimination, Filariasis, Brugia malayi

OP83

Accuracy of *dengue* rapid diagnostics test in hospital, Semarang City, Indonesia

Martini Martini¹, Soraya Hidayati¹, Retno Hestningsih¹, Sri Yuliawati¹, Atik Mawarni² and Indranilla Kustarini²

¹ *Epidemiology and Tropical Disease Department, Public Health Faculty, Diponegoro University, Semarang, 50275, Indonesia*

² *Biostatistics Department, Public Health Faculty, Diponegoro University, Semarang, 50275, Indonesia*

³ *Medical Faculty, Diponegoro University, Semarang, 50275, Indonesia*

The diagnosis of dengue virus infection is established through anamnesis and physical examination, followed by laboratory tests including thrombocyte and hematocrit level. RDT NS1 and RDT Ig-G / Ig-M are used to strengthen the diagnosis of dengue virus infection quickly and easily. This study aims to assess the accuracy of Rapid Diagnostic Test (RDT) for the detection of dengue virus infection among dengue suspect in Semarang City. This study used a diagnostic test method in 54 dengue suspect patients using cross-sectional study design in 2 hospitals and 7 public health centers in Semarang City. Descriptive statistic was employed in data analysis. The results showed patients with thrombocytopenia (79.6%), and hematocrit levels above normal (31.5%). Results of RDT Ig-G / Ig-M examination were compared with RT-PCR to obtain sensitivity (66.6%), specificity (77.3%), positive predictive value (28.6%), negative predictive value (94.4%), and accuracy (76%). Whilst, RDT NS1 had sensitivity (5%), specificity (97.6%), positive predictive value (50%), negative predictive value (68.3%), and accuracy (67%). Dengue virus strains found were DEN-1 and DEN-3. The conclusions of this study are that RDT NS1 and RDT Ig-G / Ig-M are not accurate for the diagnosis of dengue virus infection. We thank to Higher Educational Ministry of Indonesia for funding the research, and ITD Laboratory helping in detection virus of Dengue using PCR.

Keywords: dengue, diagnosis, rapid test

OP84

Digital surveillance system: the potential of Epicollect5 Data Collection as a tool for outbreaks epidemiological investigations in Bali Province, Indonesia

Ngakan Putu Anom Harjana

Faculty of Medicine, Udayana University, Bali, 80232, Indonesia

The process of data recording, analysis, and reporting of epidemiological investigations in Bali Province have several obstacles, such as late, incomplete reports, invalid data, and different in recording formats. This is caused by the system that has not been integrated due to the use of manual system, so it becomes ineffective and inefficient. Epicollect5 Data Collection application can be used as a solution to solve these problems. The aims of this study were to develop an outbreak surveillance information system using Epicollect5 Data Collection in Bali Province. The design of this study was participatory action research approach with the System Development Life Cycle model. The subject of the study was chosen by using purposive technique from surveillance officers in Bali. Data were analyzed through descriptive quantitative method. A field test using Technology Acceptance Model (TAM) Questionnaire involving 203 surveillance officers from nine cities in Bali Province showed that most of the officers supported this prototype. The prototype was evaluated based on aspects of timeliness, completeness, accuracy, accessibility, usability, and ease of use. The output of the prototype were tables, graphics, and case mapping which were useful for further epidemiological analysis regarding the outbreak. Outbreak surveillance information system using Epicollect5 Data Collection has a good potency as a tool to support diseases surveillance system in Bali Province. To implement this prototype into an information system, it is necessary to develop a system that capable in accommodating from input to output with multi-level user from primary health care level to Health Department of Bali Province. Acknowledgments are given to School of Public Health, Faculty of Medicine, Udayana University and Health Department of Bali Province who always provide support and encouragement in every research activity.

Keywords: *Prototype Development, Outbreaks Surveillance Information System, Epicollect5 Data Collection*

OP85

Ovitrap products with attractant rice straw to reduce larva density in dengue endemic areas in Bali

Sang G. Purnama, Pasek Kardiwinata and Santyayuniarsa

School of Public Health, Medicine Faculty, Udayana University, Bali, 80114, Indonesia

Dengue hemorrhagic fever (DHF) is still a public health problem in Indonesia. Especially in Bali as a tourist destination, efforts to control DHF need to be taken seriously. The government has implemented several programs in several regions including community empowerment programs, but dengue cases are still there and endemic in all regions. Even Bali Province has the highest incidence rate in Indonesia, which is 75.42 per 100,000 population. This study aims to investigate the effectiveness of using ovitrap products from rice straw. In this study, we conducted an experimental design by testing ovitrap products with attractant rice straw and control with ovitrap with mineral water. The stages of the study began with a larvae survey then installed ovitrap in 2 regions, namely Ubud, Gianyar and Kuta, Badung Regency. The survey was conducted on 200 households and a total of 240 ovitrap installed inside and outside the room. The results of this study indicate that there are significant differences between ovitrap products from rice straw with an ovitrap index of 86% and ovitrap with well water of 62.6%. These results indicate that ovitrap with attractant from rice straw is more effective than ovitrap without attractants.

Keywords: ovitrap, attractant, Bali

ORAL PRESENTATION - UNIVERSAL HEALTH COVERAGE

OP86

Information technology (IT)-enabled epidemiological applications for improving universal health coverage: a case study from North India

Dharamjeet Singh Faujdar¹, Sundeep Sahay², TarundeepSingh¹, PVM Lakshmi¹, Manmeet Kaur¹ and Rajesh Kumar¹

¹ Institute of Medical Education and Research, Chandigarh, India

² Department of Health Informatics, University of Oslo, Norway

Universal Health Coverage is difficult to achieve in slum populations because of the inherent problems related to migration, poor living condition, and inaccessibility to quality healthcare. The study objective was to assess the utility of Information Technology (IT) in providing quality integrated healthcare and improve public health service delivery in the slum population. Stakeholders were engaged to develop a patient-centric health information system for a health center providing healthcare to the slum population. The Integrated Health Information System (IHIS) was designed with a focus on households using electronic family folder. The system was devised to allow follow-up of family members with chronic conditions like hypertension, diabetes, tuberculosis etc. and those in need of health services under maternal and child healthcare. To improve public health service delivery, multipronged functionalities were developed to reach out patients in the community using SMS services for appointment reminders & targeted health education and generate automated work-plans for the healthcare providers to identify due services in the community. Dynamic indicators were created on the dashboard to keep real-time track of health profile in the community. The IHIS helped in determining the epidemiologic profile, monitoring health trends and identifying service gaps. Records of 4500 households and 20.000 individuals are being maintained in IHIS. The system is used to follow-up hypertensive (350), diabetic (250), and tuberculosis (40) patients on treatment. The system can effectively track antenatal (178), postnatal (50) cases and children (204) for due health services on monthly basis and also identify missed health services. Use of IHIS format can be an effective tool to epidemiological profiling, identify gaps in services and ensuring equitable access to healthcare in the slum population.

Keywords: health coverage, slum, technology

OP87

Distribution of social media facebook account content on “BPJS kesehatan” during November to December 2017: a descriptive study

Lelitasari¹

¹ Department of Occupational Health and Safety, Faculty of Public Health, University of Indonesia, 16424, Indonesia

BPJS Kesehatan as the organizer of Indonesian national health insurance is concerned to raise the health literacy level of its users as one of the efforts to reduce the health costs paid. In 2019, BPJS Kesehatan estimated suffered a loss of 9 trillion rupiahs. The level of literacy of BPJS Kesehatan service needs to be examined. Low levels of health literacy are associated with high health costs. The objective of this study is to find out the percentage of health information is posted by BPJS Kesehatan on its Facebook account. Data were collected about the number of posts on BPJS Kesehatan's Facebook accounts were carried out between 18 November - 18 December 2017. This study described the distribution of the content of BPJS Kesehatan's Facebook account. The posts were categorized into 5 categories based on the content. The five categories were ceremonial news, testimonials, comics, infographic health tips, and administrative information. We calculated shared postings per category and the number of likes to assess engagement with internet users. It was found that 68 posts were health information info (26.7%) and non-health information at 73.5%. On average, each post was liked by 89 people and distributed 41 times. The amount was much less than the number of BPJS Kesehatan members that reached 182 million people and 132.7 million internet users. The number of posts containing health information is less than non-health information. It is necessary to add health information content adjusted to the size of health cases claimed in BPJS Kesehatan to improve the health literacy of BPJS Kesehatan beneficiaries in Indonesia. To improve engagement with internet users, BPJS Kesehatan needs to manage their social media accounts better in order to interact and spread the content. The author would like to thank University of Indonesia.

Keywords: national health insurance, social media, survey

OP88

The efficiency of public health centres in Padang based on data envelopment analysis

Adila Kasni Astiena

Department of Public Health Administration and Policy, Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

One Output of Public Health Centers (PHC's) is the decrease in maternal mortality rate (MMR). Based on the achievement of MDGs in 2015, MMR did not achieve MDGs targets. In 2017, MMR cases were increase from 108 cases (in 2016) to 113 cases (in 2017) in West Sumatera, where Padang City was the second contributor, although it was located in the Provincial Capital. The purpose of this study was to analyze the performance of PHCs in Padang City based on Data Envelopment Analysis (DEA). The research design was a cross sectional study. The study was conducted from July to October 2017. The sample consisted of 22 PHCs in Padang (total sampling). The research studied 11 variables. Data were processed by using the DEA program. Results showed that there were 15 efficient PHCs and 7 inefficient PHCs. Inefficient PHCs had an average input of 2-11% less than efficient ones. Conversely, efficient PHCs had a performance output of 2 to 3 times higher than inefficient ones. There were 7 inefficient PHCs in conducting programs against MMR in Padang, namely Air Dingin, Air Tawar, Alai, Kuranji, Lapai, Nanggalo, and Seberang Padang. They need to improve their service performances based on efficiency targets on DEA. We thankful to the Dean of Public Health Faculty of Andalas University who had supported this research.

Keywords: PHC, Efficiency, DEA, Maternal Mortality Rate.

OP89

Related factors of contribution-based participation in national health insurance among Sakai tribe in, Bengkalis Regency, Indonesia

Ch Tuty Ernawati and Dhina Uswatul K

Department of Administration and Health Policy, Faculty of Public Health, Andalas University, Padang, Indonesia 25129

Participation of National Health Insurance (JKN) is mandatory for all Indonesian citizens and universal health coverage is targeted to be achieved in 2019. It is reported that JKN participation among Sakai community tribe is still 40% of the total population. This study aims to determine the relationship between contribution-based participation of JKN with income, knowledge, perception, access to health services and health belief among Sakai Tribe in Petani Village, Mandau Sub-district, Bengkalis Regency. This study was conducted by a quantitative approach using cross-sectional design. Seventy-two respondents enrolled in this study taken by systematic random sampling technique. The data were analyzed by univariate and bivariate analysis using statistical chi-square test. The study revealed that 51,4% respondents were not the contribution-based members of JKN. It was found that 37.5% of respondents had low knowledge, 43% had low income, 48.6% had bad perception, 50% respondent stated that health service access was hard to be accessed, and 39.8% had positive health belief. Data analysis showed that there was a significant relationship between not being contribution-based participants of JKN with knowledge, perception, income, and access to health service. Contribution-based participation of JKN had a significant relationship with knowledge, perception, income, and access to health service. Community education on the benefits of JKN is needed and Sakai Tribe access towards health services need to be improved.

Keywords: *Independent JKN, BPJS health, Sakai Tribe*

OP90

Exclusivism behavior from informal groups to the participation of national health insurance program

Firman¹ and Mubasysyir Hasanbasri²

¹ Faculty of Public Health, Universitas Ahmad Dahlan, Yogyakarta, 55166, Indonesia

² Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, 55281, Indonesia

In national health insurance (JKN) membership, the informal sector group was referred to a group of workers who conduct economic business independently. National Health Insurance Administration Organization Agency (BPJS) reported that in 2018, the participation of this group has only reached 11% of Indonesian population who works in the informal sector. This study aims to explore the low participation of informal groups in the JKN program. This study was qualitative research with a phenomenological approach. Informants were selected by snowball technique. A total of 12 informants selected from computer business associations that operated in Yogyakarta. Data were collected through in-depth interviews and used critical analysis to find the relationship pattern from the informant perspective. The results showed that the informant absence from the JKN program was due to exclusivism behavior because this was a government assistance program for the poor. They also considered that the quality services from JKN was not feasible and they prefer private insurance or pay directly. Therefore, these issues had never been discussed at any formal meeting of their community. The government needs a special approach to improve the literacy and involvement of informal sectors in the JKN program. Especially, the BPJS should improve the socialization and partnership with informal groups. Thus, it will encourage their participation on achieving universal health coverage.

Keywords: JKN, Informal Groups

OP91

Eating habits among hyperuricemia patients in Padang City

Cesar Welya Refdi¹, Rina Yenrina¹, Kesuma Sayuti¹ and Prima Yaumil Fajri²

¹ Agricultural Technology, Andalas University, Padang, 25163, Indonesia

² Agricultural Technology, Jambi University, Jambi, 36361

Hyperuricemia is a condition when uric acid level in the blood is higher than normal. High uric acid levels lead to several diseases like gout. The data from District Level Health Office of Padang in 2013-2015 showed that gout is included in the category of 10 most frequent diseases in Padang City. Hyperuricemia is caused by the excess consumption of high purine foods. Mostly, high-protein foods also contain high purine. The typical foods of West Sumatera contain high-protein, and this may correlate with the increase of the number of hyperuricemia patients in Padang City, West Sumatera. The aims of this study is to find out the eating habits of hyperuricemia patients in Padang City. This research method was explorative-descriptive study using a survey conducted among 37 respondents of hyperuricemia patients from June to August 2018. Respondents were selected randomly in health facilities in Padang City, West Sumatera. The results showed that hyperuricemia patients were aged under and above 40 years old. Animal-source foods stated by respondents that can increase uric acid were tunjang, cancang, and beef liver. Meanwhile, plant-source foods stated by respondents that can increase uric acid were legumes (melinjo/emping, tauco, and gado-gado/lotek/pical), green leaves (cassava leaf, spinach, and kale) and fruits (durian, jack fruit, and banana). There were no differences of eating habits among hyperuricemia patients before and after they got ill. Animal-source foods that can cause gout are generally not reduced by consumption, because the people of West Sumatera generally like animal products. Ginger, turmeric and *Orthosiphon aristatus* (kumis kucing) are believed by the respondents to reduce the gout. This research is paid by Research Cluster Grant Professor's Andalas University for fiscal year 2017/2018.

Keywords: hyperuricemia sufferers, eating habits, Padang city

ORAL PRESENTATION - PUBLIC HEALTH NUTRITION

OP92

Nutritional status of elementary school children in Manado City

Nelly Mayulu

Nutrition Science Department, Sam Ratulangi University, Manado, 95113, Indonesia

Undernutrition becomes a national developmental problem with various concomitant constraints. North Sulawesi has an increasing trend in stunting cases. The purpose of this study was to describe the nutritional status of elementary school children in Manado City. A school-based cross-sectional study was carried out in Manado City in 120 elementary schools, which was selected by using the multi-stage method with district-level cluster sampling. Children in 3rd grade to 5th grade were enrolled. Anthropometric measurements using standardized anthropometric tools were done to 935 children by trained enumerators. Anthropometric data including BMI, waist circumference, height for age and weight for age Z scores were calculated by using Anthroplus from WHO. Stunting was found at 5.7% of the children. The prevalence of underweight was 6.3%, overweight was 11.5%, and obesity was 7.3% respectively. This study confirms that undernutrition and over nutrition are still a shade of public health nutrition problems in Manado City.

Keywords : *Nutritional Status, Elementary School Children, Bodyweight for age, Body height for age, waist circumference*

OP93

Zinc supplementation increases taste acuity and body weight in malnourished children under five with normal albumin level

Siti Muslikhah, Rofida Lathifah, Nanda Aulya Ramadhan, Bambang Wirjatmadi and Merryana Adriani

Department of Public Health, Airlangga University, Surabaya, 60115, Indonesia

The prevalence of undernourished children under 5 years is still high. Undernourished children prone to be malnutrition which inhibited children growth and mental development, increased the risk of infectious disease and death. Zinc is a micronutrient affecting the sense of taste on the tongue to increase appetite and nutrient intake of children. This was an experimental double-blind study. Primary data was taken using a simple random sampling method. The sample was 24 children divided into control and intervention group equally. The intervention group was given zinc sulfate syrup 0.14% with dose 7 mg (1 teaspoon) once a night, taken before bed every day for two months. Taste acuity and body weight measured monthly for two months. There were significant differences in taste acuity and body weight before and after zinc supplementation in the intervention group compared to control both in the first month and second month of supplementation. There was a significant correlation between an increase in taste acuity with body weight ($p < 0.05$, $r = 0.852$). Zinc supplementation in malnourished children with normal albumin level increases the taste acuity and body weight.

Keywords: children, malnutrition, supplementation, zinc

OP94

Husband's support to optimize breastfeeding practice in Korong Gadang Village, Padang Municipality, West Sumatera

Denas Symond, Erwinda

Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

The achievement of exclusive breastfeeding in Padang Municipality, West Sumatera is still low (68%) which is lower than national target at 80%. Korong Gadang village as one of sub-district with the lowest achievement of exclusive breastfeeding coverage. Husbands have an important role in motivating nursing mothers. The purpose of this study was to analyze the influence of the mother's characteristics and determine the influence of the husband's support in enhancing exclusive breastfeeding practice. A cross-sectional design was used in this study, conducted from July to October 2016. Subjects were families with babies aged 0-6 months selected by using non-probability sampling with 50 respondents. The dependent variable was breastfeeding practices and the independent variable was the husband's support. Other variables included knowledge, attitude, mother's occupation, husband's working hours in a day. The data were collected by interview using questionnaire. The data were analyzed using univariable analysis and bivariable analysis with chi-square test. This study found out that 60% of mothers did not provide exclusive breastfeeding for their baby, 56.5% of husbands had low knowledge and 55.6% did support in breastfeeding. There was a significant association between the husband's support with exclusive breastfeeding practice ($p = 0.02$). Mother's education, occupation, and knowledge did not influence exclusive breastfeeding practice. The husband's support was important to enhance exclusive breastfeeding practice. Therefore, husbands should become the target groups of health education, motivate him to more active to seek information regarding breastfeeding. Thanks to the dean of Faculty of Public Health Andalas University with financial support for this study.

Keywords: Breastfeeding, Father support, Optimization.

OP95

Using the nutrition care process form to identify factors related obesity and obesity treatment among children in Padang, West Sumatera

Hafifatul A Rahmy, Mahdalena, Vinna Y Zulfikar, Astri Gita Jefsy and Monica Yuliasari

Department Nutrition, Public Health Andalas University, Padang, 25129, Indonesia

Childhood obesity is a public health problem in Indonesia and increases many chronic diseases. Implementation of balanced nutrition keys aimed to prevent and control obesity. The aim of this study is to identify the factors related obesity and obesity treatment among children in Padang. This was a descriptive cross-sectional study. The population was all children with obesity in SDN 33 Rawang Barat, an elementary school in Padang, West Sumatera, Indonesia. Participants were 31 children with obesity, chosen by purposive sampling. Respondents were the parents of the selected children. Data were collected with the Nutrition Care Process form included assessment, diagnosis, intervention and monitoring evaluation. The average energy intake obtained was 2539.0 Kcal, carbohydrate was 259.30 gram, the protein was 69.14 gram, fat was 83.54 gram. In addition, there was 51.6% energy intake exceeded the requirement. The average of the exercise was 30 minutes two times per week and sedentary activity was 150 minutes per day. The parents were required to supervise the children at home in both food choices and regular exercise. The application of balanced nutrition such as diverse meals, physical activity, personal hygiene, and regular weight monitoring can prevent and control obesity in children.

Keywords: Obesity, Childhood, NCP

OP96

The effect of balanced nutrition education on nutritional behavior and microcytic anemia adolescent girls

Sitti Patimah¹, Andi Imam Arundhana² and Ansar Mursaha³

¹ Nutrition Department, School of Public Health, University of Muslim Indonesia, Makassar, 90231, Indonesia

² Nutrition Department, School of Public Health, Hasanuddin University, Makassar, 90245, Indonesia

³ Nutrition Department, Health of Polytechnic of Palu, Palu, 94148, Indonesia

Female adolescents are the vulnerable group to suffer malnutrition. In Indonesia, one of the malnutrition problems suffered by many people in this group is anemia. This study aimed to assess the changes in nutritional behavior among female adolescents and microcytic anemia after getting balanced nutrition education by trained teachers. A quasi-experimental longitudinal study was conducted for three years (2015-2017) after receiving ethics approval from the Health Research Ethics Committee, Medical Faculty of Hasanuddin University (RN: UH15020073). All subjects signed informed consent after obtaining the explanation from the researcher. All school girls (n= 601) and trained teachers (n=12) from five senior high schools, divided to 4 intervention group and one control group, participated in this study. The knowledge, attitude, and practice regarding balanced nutrition were assessed using a questionnaire. The blood from subsamples (n=182) was taken through their Mediana Cubiti vein roughly three cubic centimeters (cc). The blood samples were used to assess the level of MCV and MCHC by using Flow cytometry, SLS-haemoglobin in laboratory. The teachers were trained for two days to share balanced nutrition materials for the students for ±6 months. Wilcoxon and U Mann-Whitney test was performed to analyze the changes in balanced nutrition behavior and anemia status between the intervention and control group. The score of knowledge, attitude, and practices of balanced nutrition have increased significantly in both intervention and control group ($p < 0.05$). There were no significant differences on knowledge ($p = 0.194$), attitude ($p = 0.862$) and practice ($p = 0.865$) between intervention and control groups. The incidence of microcytic anemia decreased significantly in the intervention group ($p < 0.001$). Balanced nutrition education through trained teacher affects positively to the behavior of balanced nutrition and microcytic anemia on the female adolescent. Therefore, government could develop this education model should to address the malnutrition problem on this vulnerable group. We want to acknowledge the role of the teachers and girl students on their support and corporate in this research. Thanks to the Ministry of Research, Technology and Higher Education, Republic Indonesia that providing funds to support all these research activities.

Keywords: balanced nutrition education, trained teacher, behavior, microcytic anemia

OP97

A cross sectional study of obesity among school children using WHO BMI - for- age charts in North East India

Rajesh Kunwar¹ and Sukhmeet Minhas²

¹ Department of Community Medicine, T S Misra Medical College & hospital, Lucknow-226002, India

² Station Health Organization, Bathinda, India

Reduction of premature mortality due to non-communicable diseases through prevention and control forms the core issue of Target 3.4 of Sustainable Development Goals. Childhood obesity is an important public health challenge today. The current study was carried out to find out the prevalence of obesity among school children using the World Health Organization (WHO) Body Mass Index (BMI) - for - age charts for boys and girls. This cross-sectional study included school children from 5th standard to 12th standard. The sample size was worked out to be 682. BMI in respect of all the students was computed and compared with the median of standard BMI hyphen for hyphen age chart of WHO. A total of 793 school children comprising of 328 (41.4%) girls and 465 (58.6%) boys between the age groups of 6 and 19 years were included. Prevalence of overweight and obesity among girls was 9.76% and 1.22%, and among boys, it was 10.97% and 3.23% respectively. Mean BMI for both the sexes was less than the WHO median BMI - for - age at all ages but the difference was not found to be statistically significant in most cases. Prevalence of overweight and obesity found in our study was less than that in many similar studies carried out in the country but was comparable to that of developed countries. Observed BMI - for - age indicated the tendency for the increase in the combined prevalence of overweight and obesity. It is high time to take proactive preventive measures and curb the onset of overweight and obesity in school children.

Keywords: obesity, children, ncd

OP98

The cadre involvement model in controlling to the fast food traders to reduce the foodborne diseases in Kendari City, Southeast Sulawesi

Tasnim¹ and Maria Inge Lusida²

¹ Public Health Department, STIKES Mandala Waluya, Kendari, 93232, Indonesia

² Institute of Tropical Disease, Airlangga University, Surabaya, 60113, Indonesia

Food safety remains a public health issue in Indonesia, including in Kendari City in Southeast Sulawesi Province. There are many insecure fast foods which are sold by temporary traders. Due to the limited health workers in Health Office and Food and Drug Control Agency, community participation is necessary. Hence, this study aimed to find out the model of community involvement in controlling temporary food traders in Kendari City. This study applied Quasi Experimental with one-group pre-test and post-test design. The study was conducted in 3 villages in Kendari City, Southeast Sulawesi, Indonesia. This study recruited 39 fast food traders and 17 cadres as people who controlled the food traders. Each cadre controlled more than two food traders for twice. This study assessed food trader's hygiene and sanitation behavior before and after cadre control on the traders. The process of this study was noted to build the model and was assessed with paired t-test and the relationship between the cadres' characteristics and the change in traders' hygiene and sanitation behavior was analyzed statistically with linear regression. This study has formulated the model of cadre involvement in fast food controlling. Cadres must be trained before controlling the fast food traders. Every village must have cadre coordinator to organize all cadres in the village and report the result to the primary health care officer. This study found that cadre's control changed the fast food traders' behavior related to hygiene and sanitation in managing the food (p-value = 0.005). The age of cadres was significantly associated with the change in traders' hygiene and sanitation behavior (p-value= 0.0001). Cadres who have under 45 years old tend to improve the trader's hygiene and sanitation behavior. Training and systematically organized controlling process by the cadre is important for the fast food control. Cadre selection should be also based on mobilization ability such as young cadres. Thanks for Ministry of Research, Technology and Higher Education of the Republic of Indonesia for financial support in this Post-doctoral Research.

Keywords: Fast Food, Control, Cadre, Foodborne Diseases

OP99

Nutritional status of underfive children - a community-based study in urban field practice area of a government medical college Aurangabad (Maharashtra) India

Mohan Doibale, Smita Andurkar and Sunayana Kumthekar

Department of Community Medicine, Government medical college, Aurangabad, India

Despite global efforts, malnutrition among children remains a significant problem in India. In Maharashtra prevalence of stunting, wasting & underweight in under five children are as 29.3%, 24.9% & 30.7% respectively (NFHS-4). For reducing the prevalence there is need to identify the factors influencing the nutritional status of under 5 children Therefore, the present study was conducted to assess the nutritional status and associated factors in under 5 children residing in the urban field practice area of a Government medical college Aurangabad (Maharashtra) India. The present cross-sectional community-based study was conducted in under five children residing in an urban field practice area, for more than 6 months, of a Government medical college Aurangabad (Maharashtra) India. The sample size was estimated to be 361 using the formula for proportion considering the prevalence of underweight as 37.8%. (NFHS-4) using OpenEpi, Version 3, open source calculator. Anthropometric measurements were taken using standardized equipment. The data were analyzed using MS Excel and WHO Anthro 3.2.2 version. To measure the deviation of weight-for-height, weight-for-age, length/height-for-age, BMI-for-age & arm circumference-for-age WHO Anthro was used and Z-score values were calculated. Under-five stunted children (Height-for-age) were 40.7%, wasted (Weight-for-height) were 11.3% & underweight (Weight-for-age) were 26.9%. Under-five children severely underweight (Weight-for-age) were 7.4%. Association of nutritional status and factors like age and sex of children was found statistically significant while other factors like type of family, religion, education, and occupation of parents found not significant. Severely malnourished children require immediate attention. Knowledge of associated risk factors leads to earlier diagnosis and help to reduce morbidity and mortality due to malnutrition.

Keywords: Nutritional status, under five children.

OP100

Summary of evidence for development of best practices for healthy school canteen: lessons learned from some selected primary schools in Jakarta

Eflita Meiyetriani, Judhiastuty Februhartanty, Dwi Nastiti Iswarawanti and Arienta Sudibya

Southeast Asian Ministers of Education Organization Regional Centre for Food and Nutrition (SEAMEO RECFON)/Pusat Kajian Gizi Regional (PKGR) Universitas Indonesia, Indonesia

School canteen plays a vital role in practicing good eating behaviors. The study aims to portray the condition of the school canteen and understand the challenges of the healthy school canteen implementation in some selected primary schools in Jakarta. The study was conducted in Senen Sub-district, Central Jakarta using a qualitative research approach. Eleven public primary schools agreed to participate in the study. The information was obtained through observation (checklist form) and an in-depth interview with 40 participants, consisting of the school principal, teachers, and food handlers. Based on the observation result, none of the school fulfilled the requirement for healthy school canteen in terms of location and building. The food providers mostly did not practice personal hygiene as recommended and had never joined any training on food hygiene and sanitation (91%). The foods sold mostly consisted of processed/instant foods such as instant noodles. In addition, from interview revealed some challenges in implementing healthy school canteen included limited facilities, students' preference which favor unhealthy foods, and lack of commitment from the school to provide policies and facilities for the healthy school canteen. Healthy school canteen is a concept that needs to be further translated into action which is dependent on school readiness and commitment. Provision of appropriate training, facility support, monitoring, and surveillance are key to the establishment of a sustainable healthy school canteen. The study was supported by SEAMEO RECFON. We are grateful to the participating schools and participants for their insights shared about the school canteen.

Keywords: healthy school, cafeteria, nutrition

OP101

Factors associating food intake of international students in Surabaya, Indonesia

Airin Levina¹ and Lailatul Muniroh²

¹ Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

² Department of Nutrition, Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

The number of international students increase in Surabaya, Indonesia. In order to fulfil nutritional requirements, it is necessary for international students to adapt with new environment. The purpose of this study was to analyze factors associating food intake among international students in Surabaya, Indonesia. A cross-sectional study with 30 respondents. Data were collected through questionnaire interview and Semi Quantitative Food Frequency Questionnaire from April - May 2018. Data were analyzed by chi-square and Pearson test. Strong factors associated with food intake were gender, food expenses, food access, residence, and roommate ($r>0.6$). Weak factors associated food intake among international students were age, income, and cooking frequency ($r<0.6$). The average energy intake was 1888.27 ± 378.67 kcal. International student who lives in campus dormitory tend to have lower food intake. A half of international students were found skipping meal time at least once in a day. Many factors associate with food intake which cause skipping meal and inadequate nutrient intake. International students should have regular meal time and choose eating balance food. The researchers expressed appreciation to International Student Fellowship in Surabaya.

Keywords: food intake, food access, international students

OP102

The exposure of infant formula advertisement on early complementary feeding practice in catchment Area of Tanjungsari public health center Surabaya, East Java

Dara Putri Puspitasari¹ and Sri Sumarmi¹

Department of Nutrition, Faculty of Public Health, Airlangga University, Surabaya, 60115, Indonesia

The advertisement of infant formula in mass media may affect mother to give early complementary feeding to her babies. The objective of the study was to analyze the relationship of exposure of infant formula advertisement in mass media on early complementary feeding practice. A cross-sectional study was conducted in the catchment area of Tanjungsari Public Health Center, Surabaya. This research was taken from May to July 2018. The sample of 45 mothers who have infants aged 0 to 6 months was selected in three areas of Tanjungsari Public Health Center. Exposure of infant formula advertisement was measured through an interview by using a structured questionnaire. Chi-square test ($\alpha = 0.05$) was used to analyze the relationship between exposure of infant formula advertisement in mass media with early complementary feeding practice. About 46.7% of respondents interested in infant formula advertisement. Mothers who interested in infant formula advertisement more likely to give early complementary feeding than mothers who didn't give early complementary feeding (90.5%). There was a significant relationship between the exposure of infant formula advertisement in mass media with early complementary feeding practice ($p=0.001$). Exposure to infant formula advertisement in mass media may have a significant effect on early breastfeeding practice among mothers who have infant age 0-6 months. I would like to express my gratitude to Tanjungsari Public Health Center and community health workers in Posyandu for their substantial support during this research.

Keywords: Advertisement, Infant Formula, Early Breastfeeding

OP103

Related factors of low carbohydrate intake among adult women In Indonesia

Firdaus¹ and Rimbawan²

¹ Departemen of Nutrition, Andalas University, Padang, 25129, Indonesia

² Departemen of Community Nutrition, Bogor Agricultural University (IPB), Bogor, 16680, Indonesia

Evidence suggested that carbohydrate consumption is associated with a greater risk of chronic disease. The aim of the study was to analyze the related factors of carbohydrate intake among adult women aged 19-49 years in Indonesia including Body Mass Index (BMI), ages, education level, type of occupation, household income and urban-rural settlement. The study used data from the Basic Health Research (Riskesdas) 2010 conducted by the Health Research and Development Agency of the Ministry of Health, with cross-sectional survey design. A total of 52,044 women aged 19-49 years were enrolled in this study. A multiple logistic regression was applied to analyze the related factors. The prevalence of carbohydrate intake lower than 60% of energy adequacy among woman was 31.6%. The study results showed that the significant factors of carbohydrate intake among adult women were low education level (OR=0.830, 95% CI: 0.776-0.887), low household income (OR=0.905, 95% CI: 0.870-0.942) and rural settlement (OR=0.564, 95% CI: 0.542-0.587). Normal BMI, high education level, working woman, high household income and urban settlement are protective factors of carbohydrate consumption. Data Supported by ministry of health from Basic Health Research survey held in 2010.

Keywords : *consumtion, carbohydrate, risk factor, woman*

OP104

Relationship between nutritional status and physical fitness among elementary school students in Bali Province in 2018

Cok Istri Dewiyani Cakrawati^{1,3}, A.A.S. Sawitri² and Cok Istri Sri Dharma Astiti³

¹ FETP of Public Health Universitas Udayana, Bali, 80114, Indonesia

² Public Health and Preventive Medicine Department Udayana University, Bali, 80114, Indonesia

³ Bali Province Health Office, Bali, Indonesia

Obesity and less physical activity may lead to low physical fitness. Identify correlation of nutritional status and physical fitness among elementary school students can provide a basis for early intervention. This study aims to investigate the relationship between nutritional status and physical fitness among elementary school students. A screening health program in Bali was conducted in 4 districts of Jembrana, Tabanan, Gianyar, and Bangli. A total of 404 elementary students of 10-12 years, in healthy condition and willing to take fitness test were participating. A single test method was performed to measure the physical fitness and nutritional status was determined by BMI. Data were analyzed descriptively and qualitatively. The fitness test showed that only 8.9% students had a good fitness. About 27.23% of students had fair, 26.49% had low and 36.14% had very low physical fitness. The nutritional status showed 35.39% of students were categorized as thin, 22.52% normal, 2.72% obese, and 34.90% overweight. Among the 141 overweight students, 79.43% were not fit. There was a significant association between sex, age and nutritional status with student's fitness ($p < 0.005$). Most students with abnormal nutritional status have less fitness. Further research is needed to find out the influence of other factors such as physical activity on student fitness. We thank to the Head of the UPT JKMB Bali Provincial Health Office.

Keywords: nutritional status, physical fitness level, elementary school students.

OP105

Food poisoning outbreak in Banjar Mudita Sukawati Village, Bali, Indonesia, 2018

Michelle Rampengan¹, Putu Suariyani¹ and Dewa Oka²

¹ Postgraduate Program of Public Health Science, Udayana University, Denpasar, Bali, 80114, Indonesia

² Public Health Office, Gianyar, Bali, 80511, Indonesia

On March 17th, 2018, food poisoning outbreak occurred in Banjar Mudita Sukawati Village. The case consumed a food package, consists of white rice, chicken meat, noodles, boiled eggs, tempeh, sambal, and mineral water. Symptoms included dizziness, nausea, vomiting, diarrhea, fever and abdominal pain. This investigation aimed to find out the causative of food poisoning outbreak. A case-control study and laboratory examination were done. The sample of this study were 206 people, 103 cases and 103 controls. The case defined as eating food package and experiencing symptoms of dizziness, nausea, vomiting, diarrhea, fever and abdominal pain. Control was those eating food package and not experiencing any symptoms and did not eat rice. The laboratory examination sample were water, food scraps, tool swabs, and rectal swabs. Data were analyzed by using bivariate and multivariate. Most significant risk factor based on food type was white rice with OR=128,587 (95% CI: 8,638-1,914,000). Laboratory results showed that water and chicken meat were contaminated by Escherichia coli. Food container used was contaminated by Escherichia coli and Salmonella. Food handler was the carrier of Salmonella. Food poisoning outbreak in Banjar Mudita Sukawati Village on March 17th, 2018 was caused by consuming rice package contaminated by pathogenic bacteria. Thank you to the supervising lecturers, Gianyar District Health Office and all parties involved in making this investigation report.

Keywords: Outbreaks, food poisoning, case-control study, Escherichia coli, Salmonella.

OP106

Effects of *dadih* and zinc supplementation during pregnancy on pregnancy outcome in West Sumatera, Indonesia

Helmizar¹, Andani Eka Putra² and Marlina³

¹ Department of Nutrition, Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

² Department of Microbiology, Faculty of Medicine, Andalas University, Padang, 25148, Indonesia

³ STIKes Yarsi Sumatera Barat, Bukittinggi, 26136, Indonesia

Dadih is a dairy product obtained from fermented buffalo milk in West Sumatera Indonesia. It contains various nutrients for human body, and the source of probiotics that beneficial for prenatal supplementation and pregnancy outcomes. This study aims to investigate effects of dadih and zinc supplementation during pregnancy on pregnancy outcome. A randomized control trial was conducted from September 2016 to June 2017 in two districts in West Sumatera, Indonesia. 138 subjects of 10 - 12 weeks expecting pregnant mothers calculated using sample size formula, randomly assigned into three groups, namely control, dadih, combination of dadih and zinc groups. 100 g of dadih, 20 g zinc sulfate tablet, and combination of dadih and zinc groups was supplemented to expecting mothers, respectively, six times a week for 6 months intervention study. Means of maternal weight gain on dadih group was 9.03±3.50 kilograms, group dadih zinc was 9.39±3.79 kilograms, the lowest found in the control group was 8.51±3.73 kilogram. There were 33.3% infants with normal birth weight (2500-3000 g) founded in dadih group and 24.4% in dadih zinc group while the lowest proportion 26.7 % founded in control group. The result was significant found that about 60% infants' birth weight above 3000 g from pregnant mother with body mass index (BMI) 18.5-25.5 and no infants born with low birth weight whose mothers were supplemented with dadih ($p < 0.05$). There were significant differences in terms of infants' growth among the three groups after adjusted of mother's BMI before pregnancy. Dadih is good in maintaining the total amount of IgA in the gastrointestinal tract over a longer period of time for both pregnant mothers and infants. We acknowledgments to Indonesia Danone Institute Foundation who have support funding.

Keywords: Dadih, zinc supplementation, pregnancy outcome, pregnant mothers, Indonesia

OP107

Characteristics of stunted children aged 24-36 months in Padang City

Azrimaidaliza¹, Dien GA Nursal², Hafifatul A. Rahmi¹ and Rozaliny Asri³

¹ Nutrition Department, Andalas University, Padang, 25129, Indonesia

² Reproductive Health Department, Andalas University, Padang, 25129, Indonesia

³ Nutrition Installation, Ibnu Sina Hospital, Padang, 25127, Indonesia.

Prevalence of stunting among children under five years old tends to increase in developing countries, including Indonesia. Nutritional status at birth is one of the factors that have a contribution to their nutritional and health status at a later age of life. The study aim is to analyze the characteristics of stunted children aged 24-36 months. A case-control study was used to conduct the study among children of aged 24-36 months in Padang City. Stunting was measured based on mass weighing by the health officer. A total of 103 cases and 103 controls were involved. An administered questionnaire was used to collect information on the characteristics of children by nutritionist enumerator. Respondents gave informed written consent upon collecting data. Stunted children of age 24-36 months had a higher percentage of low birth weight and short birth length than normal children. About 8.7% of stunted children had a short mother and 13.6% stunted children had a short father. Birth weight (OR=2.016; 95% CI=1.01-4.15), mother's height (OR=1.3; 95% CI=1.07-3.67) and father's height (OR=2.16; 95% CI=1.83-5.59) were associated with stunting among children of age 24-36 months in Padang City. Birth weight and parent's height were associated with stunting among children of aged 24-36 months. Prevention strategy by public nutrition promotion is needed to address stunting, focus on the first 1000 days of life. We would like to thank Andalas university for financial support. We grateful for data collectors for the time and commitment, especially for respondents who participated in this study.

Keywords: stunting, children, birth weight, mother's height, father's height

OP108

Risk behavior related to nutritional status among adolescents in Luwuk City, Central Sulawesi, Indonesia

Erni Y. Lalusu¹, Ramli¹, Fitrianty S. Lanyumba¹, Marselina Sattu¹ and Winnie T. Mutika²

¹ Public Health Faculty of Tompotika Luwuk University, Banggai Regency, Central Sulawesi, 94713, Indonesia

² Gunadarma University, Depok, 16424 Indonesia

Balanced nutrition for adolescents was needed to be healthy, grow optimally and avoid nutritional problems. This study aims to identify risk behaviors related to nutritional status among adolescents. This study used a cross-sectional design involving 385 adolescents aged from 15 to 18 years old in the fourth grade at senior high schools in Luwuk. The samples were divided into four schools and selected by accidental sampling. The nutrition-related risk behavior was assessed by using Indonesian global school-based student health survey (GSHS) Questionnaire. Data were analyzed descriptively. High school students who consume fruits less than once per day was 49.9%, eating vegetables less than once per day was 22.3%, consuming carbonated soft drinks in one or more times per day was 23.5%, eating fast food in one or more days in a week was 54.8%, never bring lunch was 58.2% and 18.7% of respondents had eating street snack habit. Healthy behavior among adolescents related to nutrition is still a problem, particularly on the bad habit of consuming fruits and fast food. There was a need to monitor nutritional problems among adolescents and related risk factors as well as behavioral determinants.

Keywords: adolescent, nutrition, health behavior, fruit and vegetables consumption, fast food

OP109

The effect of health education on knowledge and attitude for consuming fruit, vegetables and fish among state elementary school students in Semarang City, Indonesia

Eny Listiyarini¹, S.A. Nugraheni² and Farid Agushybana²

¹ Health Promotion, Diponegoro University, Semarang, 50275, Indonesia

² Diponegoro University, Semarang, 50275, Indonesia

Children aged over 10 years still consume less fruits, vegetables, and fish. However, habit of consuming fruits, vegetables and fish must be started early to help the children for maintaining their health on growth phase. The purpose of this study was to analyze the influence of health education through teacher's facilitation to knowledge and children attitudes on consuming fruit, vegetables and fish among state elementary school students in Semarang City. The type of research was quasi-experimental research using the pre-posttest with control group design model. The population was all fifth-grade students of state elementary schools in Semarang city. One hundred-fifty children consist of 50 children in each of the intervention group 1 (lecture method), intervention group 2 (video) and the control group were recruited by purposive sampling. Data were analyzed by using Kruskal-Wallis test. There are no differences on knowledge and attitudes between both groups before health education. After health education was given, there were differences on knowledge and attitudes ($p < 0.05$) of respondents related to consumption of fruit, vegetables and fish. Lecture method and video were effective on increasing knowledge and attitude about the consumption fruit, vegetables, and fish. One month after intervention, we found that lecture method was more effective than video for increasing the retention of knowledge and positive attitude of respondents about the consumption of fruit, vegetables, and fish. Health education through lecture methods and video can be used for health promotion strategy and innovation for increasing knowledge and attitudes on consumption of fruits, vegetables, and fish among children. Thanks to the parties involved in this research

Keywords: Health Education, Elementary Students, Consumption of Fruit, Vegetables and Fish

OP110

Low birth weight and children aged 6-8 month as risk factors of anemia among under two years old children in Sambas District, Indonesian borderland area

Ahmad Thohir Hidayat¹, Nurbaya^{1, 2}, Evi Ermayani¹, Indriya Laras Pramesthi¹, Daniel Paulus Sahanggamu¹ and Umi Fahmida¹

¹ SEAMEO RECFON University of Indonesia, Central Jakarta, 10410, Indonesia

² Poltekkes Kemenkes Mamuju, Mamuju, Indonesia

The prevalence of anemia among children 12-59 months was 28.1% in 2013. Anemia in the early stages of life has been linked to serious consequences on the growth and childhood development. Therefore, anemia prevalence monitoring is crucial. Unfortunately, there is no data about the prevalence of anemia among under two especially in borderland area of Indonesia, like Sambas district, West Kalimantan. The aim of this study is to investigate the relationship between low birth weight and children aged 6-8 months to anemia among under two years old children in Sambas District. A cross-sectional study was conducted from April 28th to May 12th, 2016. The sample size was calculated by using SSize 2.0 by WHO (1990). The data were collected from 30 random villages in Sambas District, then PPS (Probability Proportional to Size) method was used to find the number of representing children in each village. Finally, the children were randomly selected from register book, a master lists of midwives register. Children data, birth history, hemoglobin concentration, and anthropometric measurement among under two years old children were collected. Anemia status was determined by using hemoglobin level (<11.0 g/dl). Multivariable logistic regression analysis was performed to analyze the data. A total of 658 children were involved, 72.0% was anemia. Children with low birth weight history had 2.7 times higher risk of getting anemia (POR 2.779; 95% CI: 1.196- 6.456), and children aged 6-8 months had 3.1 times higher risk to get anemia (POR 3.134, 95% CI: 1.654-5.940). Anemia prevalence among under two years old children in Sambas district was classified as a severe public health problem. Multi-sector program is needed to address this problem. This study was supported by SEAMEO RECFON, author and team are grateful for the participant and all the party that supported this study.

Keywords: Low birth weight, 6-8 months age, Anemia, Under two years old, Samba

OP111

Risk factors of stunting among children aged 6-24 months at primary health center of Koya, Minahasa Regency, North Sulawesi Province

Nancy Malonda, Adisti Rumayar and Finny Warouw

Department of Public Health, Sam Ratulangi University, Manado, Sulawesi Utara, 95115, Indonesia

Insufficient nutritional intake during the first thousand days of life period influence the children growth. Indonesian Basic Health Research 2013 reported an increase in the prevalence of stunting in children under five compared to 2010 and 2007. The objective of the study was to investigate the influence of mother's education, mother's knowledge on nutrition and health, mother's age during pregnancy, family income, mother's height, father's height, exclusive breastfeeding, and low birth weight on stunting among children aged 6-24 months. The study was an observational analytical research with case-control study design. Subjects were children aged 6-24 months who met the inclusion criteria with a total of 30 stunted children (Height per age <-2 SD) and 60 normal children (Height per age ≥-2 SD). The sample size was calculated by using formulas for control case studies. Data collection was carried out by structured interviews with mothers and measurements of height. Data analysis was done in bivariate and multiple logistic regression. Bivariate test showed that exclusive breastfeeding (OR=18.027; 95% CI: 2.297-141.480; p = 0.001) and low birth weight (OR=3.348; 95% CI: 0.962-11.645; p = 0.048) had a significant effect on stunting. Maternal education, maternal knowledge about nutrition, maternal age during pregnancy, family income, maternal height, and paternal height were not significant factors (p> 0.05). Exclusive breastfeeding and low birth weight were influencing factors for stunting among children aged 6-24 months.

Keywords: *breastfeeding, low birth weight, stunting*

ORAL PRESENTATION - NCD AND RISK FACTORS

OP112

Prevalence of knee osteoarthritis and its impact on quality of life among elderly in rural Ballabgarh, Haryana

Abhishek Jaiswal¹, Harshal R Salve¹, Partha Halder¹, Kiran Goswami¹ and U Singh²

¹ Centre for community medicine, All India Institute of Medical Sciences, New Delhi, India

² Physical Medicine and Rehabilitation, All India Institute of Medical Sciences, New Delhi, India

Osteoarthritis (OA) is a common disease of aged population and one of the leading causes of disability. Prevalence of knee OA is increasing due to the increasing proportion of elderly. In this study, the prevalence of knee OA and its impact on quality of life (QOL) among rural elderly was estimated. The study included 500 randomly selected elderly from rural Ballabgarh. Trained investigator undertook structured face to face interviews that included screening question for knee pain, clinical examination of the knee using American College of Rheumatology (ACR) criteria and assessment of QOL using WHOQOL-BREF. Among 454 elderlies recruited, 292 (64.3%, 95% CI: 59.7-68.7) had knee OA (any knee) using ACR criteria (64.3%, 95% CI: 59.7-68.7). Elderly with knee OA had significantly lower QOL scores compared to those without (P -value <0.0001). Domain-wise scores were also significantly lower (P -value <0.0001) among the elderly with knee OA, maximum decrease being in physical and psychological domain. Linear regression model showed that age, sex, insurance status, family income, smoking status, knee OA status, and living condition were statistically significant (P -value <0.05) for QOL. The prevalence of knee OA was high among rural elderly of Ballabgarh. Elderly with knee OA had lower QOL. The psychological and physical domain was among the most affected.

Keywords : osteoarthritis, elderly, risk factors

OP113

Controlled hypertension: risk factor of non-communicable diseases in prospective cohort study in Bogor, 2011-2016

Pradono J¹, Riyadina W¹, Kristanti D¹ and Turana Y²

¹ Center for Public Health Research and Development, National Institute of Health and Research Development of Indonesia, Indonesia

² Department of Neurology, Faculty of Medicine and Health Science, Atma Jaya Catholic University of Indonesia, Indonesia

Hypertension is a risk factor of complications in non-communicable diseases. The Indonesian government has sought to reduce hypertension by Integrated Service Post of non-communicable diseases. This study is to measure controlled hypertension prevalence and determinants factors. The risk factors were determined on the samples recruited from a cohort study in 2011-2016. Blood pressure was measured using a digital sphygmomanometer, performed every three months for four years. The 8th JNC criterion was used for the diagnosis of controlled blood pressured. There were 1450 (25.5%) of 5690 cohort subjects with hypertension at baseline. After four years of observation, 1276 of subjects with hypertension were still with response and controlled hypertension was found in 304 subjects (23.8%). During this time, a trend toward increased controlled hypertension had been noted. Controlled hypertension was associated with those taking irregular antihypertensive medications (AOR =1.470, 95% CI: 1.258-1.717), lack of physical activity (AOR =1.343, 95% CI: 1.113-1.620), post prandial blood glucose ≥ 140 gr% (AOR =1.319, 95% CI: 1.154-1.509), natrium intake > 2 gr/day (AOR =1.300, 95% CI: 1.130-1.495), abdominal obesity (AOR =1.180, 95% CI: 1.019-1.366), and sugar intake >20 gr/day (AOR =1.170, 95% CI: 1.016-1.347). Controlled hypertension does not depend on regular antihypertensive drug only, but also requires awareness of subjects to take a regular measure of blood pressure, change of behavior. In addition, controlled blood sugar is the best way.

Keywords: hypertension, blood pressure, risk factors

OP114

Validation of clinical scores for identification of bacterial sore throat among pediatric outpatient attendees in North India

Raghavan Parthasarathy¹, Anita Saxena², Arti Kapil³, Sumit Malhotra¹ and Anand Krishnan¹

¹ Centre for Community Medicine, AIIMS, New Delhi, 110029, India

² Department of Cardiology, AIIMS, New Delhi, 110029, India

³ Department of Microbiology, AIIMS, New Delhi, 110029, India

Streptococcal sore throat leads to sequelae of Rheumatic Heart Disease (RHD) in children. One of the ways to prevent RHDs is primary prophylaxis by treating all bacterial sore throats by antibiotics, which raises the issue of avoidable antibiotic use. A clinical score would be an inexpensive and cost-effective alternative to bacterial culture in guiding bacterial sore throat management and in preventing RHD. The study was among pediatric (5-15 years old) outpatient attendees of a sub-district hospital, in North India in 2017. Children reporting with sore throats were identified and enrolled in the study and a full clinical examination was conducted and throat swab was taken. Five clinical scores (Centor, Mclsaac, Bakare, Breese and a new proposed score) were validated against bacterial culture. Receiver Operating Characteristic (ROC) curves were plotted for various clinical scores and Area Under the Curve (AUC) estimated. Sensitivity, specificity with 95%CI were estimated for most appropriate cut-offs of the score. The prevalence of bacterial sore throat among sore throat cases was 4.30% (95%CI: 2.94-6.05). Sensitivity was highest for Bakare (90.3%; 95%CI: 87.9-92.3%), and least for new score (74.2%; 95%CI: 70.8-77.3%). Specificity was highest for Mclsaac, 51.8% (95%CI: 48.1-55.5%), and least for Bakare (38.8%; 95%CI: 35.3-42.6%). AUC was best for the Bakare score (73%; 95%CI: 68-75%). Available clinical scores are useful and have high sensitivity but only modest specificity. Their application could help in the rationalization of antibiotic usage in the primary care settings and prevent streptococcal sequelae.

Keywords: bacterial sore, clinical scores, rheumatic heart disease

OP115

Prevalence of hypertension among adolescents in rural North India

Roy Arokiam Daniel, Partha Haladar, Shashi kant, Anand Krishnan, Rakesh Kumar and Sanjeev Kumar Gupta

Centre for Community Medicine, All India Institute of Medical Sciences, New Delhi, 110029, India

The origin of hypertension is in childhood and adolescent period, but it goes undetected unless specifically looked for. Hence, the present study was conducted to find out the prevalence and risk factors of hypertension among the adolescents of rural Ballabgarh, Haryana. A community-based cross-sectional study was conducted among 864 adolescents of 10-19 years in 2017 by adopting a simple random sampling technique. A pre-tested, semi-structured, interviewer-administered questionnaire was used to collect data on risk factors of hypertension. Anthropometry and Blood pressure were measured after getting informed consent/assent from the parents and participants. Hypertension was defined as Systolic Blood Pressure and/or Diastolic Blood Pressure exceeding the 95th percentile for age, gender, and height according to NHBPEP criteria. The multivariable logistic regression model was used, and odds ratios were reported with 95% confidence interval. Prevalence of adolescent hypertension was 19.9% (95% CI:17.2-22.6%). Mean systolic and diastolic blood pressure was 111.7 mmHg (95% CI:110.8-112.5 mmHg) and 72.5 mmHg (95% CI: 71.8-73.1 mmHg), respectively. In multivariable analysis, male (AOR=1.6, 95% CI:1.2-2.1) and overweight (AOR=1.7, 95% CI:1.1-2.9) was found to be significantly associated. There is an immediate need for policymakers and public health specialist to prevent high blood pressure in children and adolescents from becoming another public health burden. Early diagnosis of hypertension is an important strategy, which will be useful to prevent further complications.

Keywords: Adolescent, community, hypertension, urban, rural, India

OP116

Prevalence of smoking and its contributing factors among medical students of Kathmandu Valley

Sujan Babu Marahatta¹, Anupama Bhusal¹, Bipin Adhikari² and Durga Mishra¹

¹ Manmohan Memorial Institute of Health Sciences, Soalteemode, Kathmandu, Nepal

² Oxford University, United Kingdom

Smoking among health care personnel such as medical students is an important public health issue. Various factors play an important role in the use of tobacco among medical students. Future health care providers like medical students have an important role to play in prevention and control of tobacco-related burden like cardiovascular diseases, cancer, etc in the general population. This was a descriptive cross-sectional study carried out among third and fourth-year medical students within Kathmandu Valley. The total sample size was 398. A pre-tested structured questionnaire was used for data collection. Written consent was taken from participants. Analysis of data was done by using SPSS v20.0 software. The study revealed that the prevalence of ever smoking among medical students was 32.5% while the prevalence of current smoking was 22.8%. Socio-demographic factors, environmental factors, and motivational factors were assessed to identify the relation of smoking behavior of medical students with these factors. Among various factors sex ($p=0.00$), father's occupation ($p=0.027$) and smoking behavior of parents and friends ($p=0.00$) were found to be significant socio-demographic and environmental factors. Similarly, offered free cigarettes ($p=0.00$) and feeling comfortable to smoke at parties ($p=0.00$) are among the motivational factors that were found significant with smoking behavior. Programmatic factors like exposure to anti-smoking tobacco messages ($p=0.00$) and family discussion about its harmful effects ($p=0.007$) were found associated. Knowledge of current regulations to control tobacco products and knowledge on pictorial health warning is found abundant among medical students. The study revealed that the prevalence of current use of tobacco was 22.8%. Taking into consideration the socio-demographic factors to prevent smoking among youths is essential. However, knowledge and exposure to anti-smoking messages alone were inadequate to prevent such behaviors. Apart from regulatory policies within and outside the medical institutions, efforts involving their parents, teachers, and peer could be effective to minimize the prevailing behavioral problem among the youths.

Keywords: smoking, students, promotion

OP117

Influence of health promotion through instagram on improving knowledge and attitude Breast Self-Examination to student of Faculty of Public Health Andalas University

Ayulia Fardila Sari ZA and Hayatul Rahmi

Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

Probability of breast cancer patients to recover reached 98% when it is detected early and treated medically. Breast Self-Examination or "Sadari" can be promoted to increase knowledge and attitude of the community. This study aims to measure the influence of health promotion through social media Instagram on increasing knowledge and attitude "Sadari" to students of the Faculty of Public Health, Andalas University. The study design was quasi-experimental with one group pretest and posttest design. The research was conducted at the Faculty of Public Health, Andalas University from March to April 2018. The sample was 50 students using proportional random sampling technique. Promotion of "Sadari" was done for a week through instagram. Data analysis used univariate and bivariate with one sample group paired t-test. The average score of respondents' knowledges pretest was 15.70 ± 2.05 and the average post test score was 18.38 ± 1.12 . The average score of respondents' attitudes during pre test was 32.08 ± 2.86 and average post test score was 34.58 ± 2.38 . The result of statistical test showed that there was a significant increase of knowledge and attitude ($p < 0.05$) after the "Sadari" promotion using instagram. There is a significant increase of knowledge and attitude among students after "Sadari" promotion through instagram. We recommended to utilize social media such as instagram for health promotion.

Keywords: *Early Detection Breast Self-Examination, Instagram, Knowledge, Attitude, Sadari*

OP118

Obesity and lifestyle factors as determinants of Type 2 diabetes mellitus in Manado City

Grace D. Kandou¹, Budi T. Ratag¹, Angela F.C. Kalesaran¹ and Priscilla C. Kandou¹

Department of Epidemiology, Faculty of Public Health, Sam Ratulangi University, Manado, 95115, Indonesia

High prevalence of DM in a community is caused by various factors such as lifestyle changes and obesity. DM prevalence in urban areas tends to be higher than in rural areas. The aim of this study is to analyze obesity and lifestyle factors as determinants of the Type 2 DM (T2DM) in Manado City. Matched case-control study conducted in 5 public health centers (PHC) in Manado City during April-July 2018. The population was outpatients who visited 5 PHC. Cases were outpatients clinically diagnosed with T2DM by a doctor. Cases were matched to controls in a 1:1 ratio based on age and sex. Sampling used simple random sampling technique with a total of 128 respondents. The data were analyzed by the McNemar test and conditional logistic regression. The results showed that p-value of obesity was 0.000 (OR=7.75, 95% CI=2.73-21.95), smoking was 0.208 (OR=1.58, 95% CI=0.76-3.26), physical activity was 0.000 (OR=11.00, 95% CI=3.37-35.86) and family history of DM was 0.000 (OR=7.00, 95% CI= 2.45-19.95). Multivariate modeling showed physical activity had the highest risk to T2DM. The effect of physical activity on T2DM after controlling obesity, smoking, and family history equal to OR=7.89. Significant association were found between obesity, physical activity, and family history of DM with T2DM in people in Manado City where physical activity has the highest risk. Changes in daily lifestyle are highly recommended to prevent the increased risk of T2DM, particularly with frequent physical activity such as jogging, running, walking, or other aerobic exercises to increase insulin sensitivity.

Keywords: diabetes, lifestyle, obesity, physical activity

OP119

Analysis of sexual health education application in the family and relations with the incidence of sexual abuses at children in Dumai City 2018

Mellia Fransiska and Evi Susanti

STIKes Prima Nusantara, Bukittinggi, 26126, Indonesia

The number of sexual abuses among children in Dumai City during the last 3 years was increased. As many as 19 cases were reported in 2015, 2016 at 31 cases and in 2017 in 33 cases. The 2017 data mentioned that the forms of sexual abuse at children were the abuse, rape, and intercourse. The study was to analyze sexual health education in the family of victim children and its relationship with the incidence of sexual abuse among children. This study was a mixed-method research, concurrently embedded quantitative method as primary research and qualitative method as secondary. The samples in this study were 38, with 19 cases and 19 controls with a ratio of 1:1. Qualitative data were collected by in-depth interview to the informants selected purposively. Data were analyzed by univariate and bivariate with chi-square test (95% CI). The respondent with poor sexual health education in the family have a risk 11.556 times to experience sexually abused compare with respondent with good sexual education (95% CI: 2.441 - 55.392). There was a relationship between sexual health education in the family with sexual abuse among children ($p = 0.003$). Qualitative data found that victim children of sexual abuse did not get sexual health education in the family because parents thought that sexual health education was not important to talk in families and thought the children would know by themselves when the children growing adult. It can be concluded that the inadequate sexual health education in the family is the risk factor for sexual abuse at children and there was a significant relationship. Qualitative data also support the results of hypothesis testing. Acknowledgement are given to STIKes Prima Nusantara which always provide support and encouragement in every research activity.

Keywords: education, sexual abuse, children

OP120

Association of depression symptom in elderly hypertension patients with the usage of beta-blockers in Kuala Lumpur

Zulhabri Othman¹, Fatini Zahari¹, Syahirah Farhana Mohd Saleh¹, Noor Azimah Ahmad¹, Mohd Hazayri Jamaluddin², Glendon Lau³ and Anantha Raj Daniel³

¹ Department of Diagnostics & Allied Health Science, Faculty of Health & Life Science, Management & Science University, Shah Alam, Selangor, 40100, Malaysia

² Klinik Kesihatan Kuala Lumpur, Kuala Lumpur, 53200, Malaysia

³ Outpatient Department, Hospital Kuala Lumpur, Kuala Lumpur, 50586, Malaysia

Malaysia is facing a hypertension upsurge among the elderly. Beta-blockers as hypertension treatment is commonly used although earlier studies reported that beta-blockers cause depression symptoms in hypertension patients. Depression symptom in the elderly is often overlooked as society misinterprets depression symptoms as a part of the aging process. This study aims to investigate the association of beta-blockers usage and the depression symptoms in elderly hypertension patients in Hospital Kuala Lumpur. A cross-sectional study was conducted in Hospital Kuala Lumpur. A total of 211 elderly patients with hypertension were recruited for this study. Data was collected using questionnaire and depression symptoms were assessed using the Beck Depression Inventory (BDI). Analysis has shown a significant association of depression symptom and lipophilic beta-blockers in elderly patients with hypertension ($p=0.007$, $X^2=14.03$). There was no significant difference for depression symptoms in elderly patients above 60 years old compared to below 60 years old ($p=0.144$, $X^2=6.85$). However, a trend towards higher BDI score of 11-16 and 17-20 was more common in elderly patients with hypertension, which considered as mild mood disturbance (63.0%) and borderline depression (85.0%) respectively. This study suggests that the use of lipophilic beta-blockers may have depression effects on hypertensive patients. Elderly hypertensive patients were more affected with mild mood disturbance and borderline clinical depression. We would like to thank all Hospital Kuala Lumpur patients that take part in this study. Thanks to Hospital Kuala Lumpur and Management & Science University for the support given to this study.

Keywords: depression, elderly, mental health

OP121

Risk factors of dyslipidemia in adults: a cohort study

Sudikno and Julianti Pradono

Research and Development Center for Public Health Efforts, National Institute of Health and Research Development, Ministry of Health, Jakarta 10560, Indonesia

The prevalence of dyslipidemia in adults has increased over the last decade in urban areas in Indonesia. The objective of the study was to analyze risk factors of dyslipidemia in adults aged 25-65 years. The study used data from "Non-Communicable Disease Risk Factors (FRPTM)" study for two years, 2011-2013 and 2012-2014 periods conducted by the Center for Research and Development of Public Health Efforts, Ministry of Health. The study design was a prospective cohort. The population in this study was all household members aged 25-65 years in 5 sub-districts from 11 sub-districts in Bogor Tengah Sub-district, Bogor City. The subject was all household members aged 25-65 years with the criteria; remaining in the study area (permanent residents as evidenced by identity card / ID card), independent, non-physically disabled, non-pregnant women, having normal lipid profile levels at baseline study. The subject of a total of 2222 consists of male (n=578) and female (n=1684). The study showed that risk factors for dyslipidemia in adults aged 25-65 years are age, stress, and smoking habits. Smoking subjects had a hazard ratio of 2.01 (95% CI: 1.39-2.89) to be dyslipidemia versus non-smoking subjects after controlled by age and stress variables. Dyslipidemia is one of the reversible risk factors that can increase the incidence of non-communicable diseases. The results showed the risk factors for dyslipidemia in adults aged 25-65 years are age, stress, and smoking habits. The authors would like to thank to the National Institute of Health Research and Development, Ministry of Health.

Keywords: dyslipidemia, adults, ncd

OP122

Effects of physical activity, obesity and smoking on the risk of type 2 diabetes mellitus

Fauzie Rahman¹, Dian Rosadi² and Mulyadi¹

¹ Health Policy Management and Health Promotion Department, Public Health Study Program, Faculty of Medicine, Lambung Mangkurat University, Banjarbaru, 70124, Indonesia

² Epidemiology Department, Public Health Study Program, Faculty of Medicine, Lambung Mangkurat University, Banjarbaru 70124, Indonesia

Diabetes mellitus (DM) is a disease characterized by the occurrence of hyperglycemia and metabolism disorders associated with deficiencies of insulin secretion. DM disease is still a major health problem in developing countries including Indonesia. Based on Health Research (Riskesdas) 2013, the number of DM cases in Banjar District was the highest in South Kalimantan. This study aims to analyze the correlation of physical activity, obesity and smoking habits with type 2 DM incidence in the work area of Martapura Public Health Center. This study was quantitative research using case-control design. The population was people who were treated at Martapura Public Health Center on September until December 2017. The sample was 150 respondents, consisted of 75 type 2 DM cases and 75 control subjects. The sample was taken by purposive sampling technique. Data were analyzed by univariate by frequency distribution and bivariate chi-square test. The incidence of Type 2 Diabetes Mellitus occurs in people with less physical activity (64%), obesity (56%) and having smoking habits (33.3%). Chi-Square test showed the correlation between physical activity ($p=0.009$) obesity ($p=0.003$) and smoking status ($p=0.039$) and type 2 DM incidence. There was a correlation between physical activity, obesity, and smoking habit and type 2 DM incident. It is advisable to health workers to convey the importance of applying a healthy lifestyle to prevent the incidence of type 2 DM and the community to implement healthy live behavior.

Keywords: physical activity, obesity, smoking, type 2 DM

OP123

Pattern of extra-articular manifestations among rheumatoid arthritis patients: a hospital based cross-sectional study

Bhaskar Thakur¹, Prashanta Padhan² and Mona pathak³

¹ Department of Community Medicine, KIMS, Bhubaneswar, Orissa, 751024, India

² Department of Rheumatology, KIMS, Bhubaneswar, Orissa, 751024, India

³ Research Cell, KIMS, Bhubaneswar, Orissa, 751024, India

Rheumatoid Arthritis (RA) is a systemic disease involving joints inflammation, affecting 1-2% of the general population. Extra-articular disease is the single most important cause of morbidity and mortality in RA. It is identified by destructive poly-arthritis and involvement of extra-articular organ which includes renal, lung, eye, skin, gastrointestinal and nervous systems. Prevalence of such involvement differs from one country to another country. Accordingly, the pattern of extra-articular manifestations (EAM) was investigated in a tertiary care hospital in India. Under the hospital-based cross-sectional study, patients were diagnosed with rheumatoid arthritis using standard guidelines at Kalinga Institute of Medical Sciences, Orissa, India, and pattern of EAM was recorded. Out of 208 RA patients, anemia occurred in 110 (53%), kcs keratoconjunctivitis sicca in 28 (13.46%), Lymphadenopathy in 20 (9.6%), Interstitial lung disease in 17 (8.17%), Carpal tunnel syndrome in 14 (6.73%), RA skin nodules in 13 (6.25%). The frequency of other syndromes such as fever, thrombocytosis, coronary artery disease, mononeuritis multiplex were 3.4%, 2%, 1%, and 1% respectively. The frequency for rest of the other EAM organ such as scleromalacia, pleurisy pleural effusion, and valvular heart disease was found only in a single patient (0.5%). EAM was present substantially in our RA patients, which may further lead to a worse disease outcome. Anemia, followed by kcs keratoconjunctivitis sicca, lymphadenopathy, interstitial lung disease, Carpal tunnel syndrome and RA skin nodules were the commonest. Early recognition of EAM and further treatment may be more important to decrease the severe morbidity and mortality. We acknowledge Kalinga Institute of Medical Sciences, Bhubaneswar for providing resources to carry out this research.

Keywords: Rheumatoid Arthritis, extra-articular manifestations, prevalence

OP124

Determinants of hypertension among women in Talawaan, North Minahasa, Indonesia

Adisti Rumayar, Nancy Malonda and Ardiansa Tucunan

Department of Public Health, Sam Ratulangi University, Manado, 95115, Indonesia

Hypertension remains a public health concern in Indonesia. The decades-long intervention through the community health centers fails to substantially reduce the cases, particularly on areas where research on socio-demographic determinants is lacking. Of particular interest is adult women, a population that is frequently under-served in health programs but may be pivotal in hypertension control and prevention measures due to their roles within the family. The objective of this study is to investigate the determinants of hypertension among women in Talawaan, North Minahasa. This was a case-control study, whereby the control group was women visiting the health center without hypertension. Seventy women aged 20-45 were sampled evenly for the case and control groups. Variable selection for the multivariate analysis was conducted in a stepwise forward fashion using $p < 0.25$ as a cutoff point. The binary logistic regression was used to model the determinants of hypertension, defined as systolic blood pressure > 120 mmHg, among these females. Twenty-eight (28%) women who visited Talawaan health center had hypertension. After controlled by other factors, age > 40 years (OR 8.4, 95% CI 2.0 - 34.2, $p = 0.003$), family history (OR 8.1, 95% CI 2.1 - 30.6, $p = 0.002$), and body mass index (OR 1.2, 95% CI 1.0 - 1.3, $p = 0.019$) seemed to be related to hypertension. A relatively higher score of stress also marginally increased the odds of hypertension ($p = 0.071$). Age, family history, and body mass index appear to determine the existence of hypertension among studied women. Stress is also a potential factor, but further study is needed to confirm its contribution.

Keywords: hypertension, women, determinants, Indonesia

OP125

Risk factors of chikungunya outbreak at Kusamba Village Klungkung Regency, 2014

Putu Cintya Denny Yuliyatni¹ and I Wayan Pujana²

¹ *Public Health and Preventive Medicine Department, Faculty of Medicine, Udayana University, Bali, 80232, Indonesia*

² *Preventive and Disease Control Department, Bali Health Office*

On January 2014, it has been reported the increasing of suspect Chikungunya cases at Kusamba village Klungkung Regency. From 283 reported cases, 4 serums were examined and showed PCR positive. This study was conducted to investigate the risk factors of chikungunya outbreak in Kusamba village. This study used a case-control design, with a comparable number of case and control were 133 samples. The case was selected randomly from who were recorded having chikungunya symptoms (fever, joint pain, and one other symptom), while control was the neighbor of the case who did not suffer from chikungunya symptoms. The variables studied were demographic characteristics, knowledge, and behavior of eradication of mosquito nets. The data collection through interview and analyzed by using logistic regression. Based on the analysis, dense occupancy (OR=2.4; 95% CI=1.1-5.2), the presence of a family member who was ill (OR=10.5; 95% CI=4.7-23.2), did not use protectors when exiting the house (OR = 1.9; 95% CI = 1.01-3.7) and did not use mosquito net (OR=2.9; 95% CI=1.1-7.9) were found significantly as risk factors associated with chikungunya. Chikungunya outbreak can be prevented by more actively eradicating mosquito nests and preventing mosquito bites by using protection and mosquito nets at home.

Keywords: *Chikungunya, risk factors, case control*

OP126

Screening descendants Type 2 diabetes mellitus in Kulon Progo District, Indonesia

Fatma Nuraisyah, Solikhah Solikhah and Rochana Rullyandari

Faculty of Public Health, Universitas Ahmad Dahlan, Yogyakarta, 55166, Indonesia

Screening descendant of Type 2 Diabetes (T2DM) is rarely undertaken. Diabetes is a public health problem in Indonesia that has been increasing in recent decades. Screening for diabetes was usually done among pregnant women, adolescents, adults, children, older and obesity, while the investigation of descendant was not yet implemented. Therefore, this study aimed to know random level blood glucose of family Type 2 Diabetes Mellitus (T2DM) cases. A cross-sectional study was done. The target group for screening was people with family history in one of their descent of T2DM with age more than 20 years in Kulon Progo. We conducted a screening of random level blood glucose from a venous blood sample. High level of blood glucose was diagnosed when random blood glucose reaches ≥ 200 mg/dl. High level of blood glucose was found in 29.0% of respondents, while borderline blood glucose (≥ 110 -199 mg/dl) was revealed at 38.7%. The study found that 15.3% of respondents indicated a mother history of T2DM. Prevalence of high blood glucose level in the descendants of T2DM cases is substantial. They should be included as population target of screening program of high glucose level and reduce the serious complication.

Keywords: *diabetes mellitus, descendants, screening*

OP127

Cost effectiveness analysis of low back pain treatment at Teaching Hospital of University of Airlangga: comprehensive rehabilitation with medication versus pain intervention

Nanda A Ramadhan^{1,3}, Rofida Lathifah¹, Abdulloh Machin ² and Thinni N Rochmah¹

¹ Health and Policy Administration Department, Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

² Neurology Department, Teaching Hospital of Universitas Airlangga, Surabaya, 60115, Indonesia

³ Case-Mix and Costing Department, Teaching Hospital of Universitas Airlangga, Surabaya, 60115, Indonesia

Low back pain is a leading cause of disability and the most frequent reason for medical consultations. The common treatment nowadays is comprehensive rehabilitation combined with medication. However, pain intervention has been widely performed. The cost of both groups should be analyzed to determine which one is best in terms of cost-effectiveness. Cost-Effectiveness Analysis (CEA) was performed using total sampling during January - April 2018 involving 363 patients. Medical record and billing data were analyzed. Visual Analog Scale (VAS) was measured before and after treatment. The decrease of VAS in pain intervention group was greater than comprehensive rehabilitation with the medication group (7.83 Vs 3.63). Pain Intervention group has the smaller average of cost economic ratio results compared to comprehensive rehabilitation with medication (IDR 1,865,431 Vs IDR 2,279,499). Incremental Cost Economic Ratio calculations found that the cost incurred per extra VAS decrease in pain intervention was IDR 1,507,298. better than comprehensive rehabilitation with medication. Thus, patients should be prepared to pay more to get better VAS reduction in Pain Intervention treatment. Pain intervention has better CEA results than comprehensive rehabilitation with medication. This study suggests that pain intervention is more economically beneficial for patients with low back pain.

Keywords: Low Back Pain, Cost Economic Analysis, Rehabilitation, Medication, Pain Intervention

OP128

Spatial analysis of major NCD's risk factors in Indonesia

Ansariadi

Department of Epidemiology, Faculty of Public Health, Hasanuddin University, Makassar, 90245, Indonesia

Non-communicable diseases (NCD's) are major public health concern globally. These diseases are, however, preventable through effective intervention of the risk factors. Indonesia has several provinces, situated in different islands with different cultures and characteristics. The aim of this study is to explore the spatial patterns of major NCDs risk factors in Indonesia at the provincial level. This study used secondary data from the Indonesian National Health Survey (Riskesdas 2013). It was a cross-sectional household survey involving 294,959 households and 1,027,763 household members to be representative at national and provincial level. Five major risk factors in 33 provinces were included in the analysis. This study found that the prevalence of major NCDs risk factors at national level were smoking (31.19%), poor diet (93.3%), lack of physical activities (57.76%), obesity (24.94%), and hypertension (26.39%). A total of 51% of the provinces had smoking prevalence above the national average, 48.5% of provinces had obesity prevalence above national average, 57.6% of provinces were above national average for poor diet prevalence, 42.4% of provinces had hypertension prevalence above national level and 51.5% of provinces has prevalence of low physical activity above national level. A total of 54.5% of provinces had at least three risk factors prevalence above national level. There are spatial variations of major NCDs risk factors across provinces in Indonesia and eighteen provinces (54.5%) have been identified to have three or more risk factors' prevalence above national level which can be a further focus for intervention. Thanks to NIHRD, Ministry of Health Indonesia for sharing Riskesdas data.

Keywords: *Indonesia, NCDs, Provinces, Risk Factors, Riskesdas*

OP129

Risk factors of cognitive function score among post ischemic stroke patient at Hajj General Hospital Surabaya

Atik Choirul Hidajah¹, Wahid N Alfi¹ and Riky Hamdani²

¹ Department of Epidemiology, Faculty of Public Health, University of Airlangga, Surabaya, 60115, Indonesia

² Surabaya District Health Office, East Java Province, Indonesia

Stroke can cause motoric and cognitive function disorders. Post-stroke cognitive function disorder gets less attention because it is not prominent when compared with other neurological deficits. The cognitive function can be assessed based on the MMSE score. The purpose of this study was to analyze the risk factors of cognitive function score in post ischemic stroke patient. This was a cross-sectional study. A total of 33 ischemic stroke patients hospitalized on September-October 2017 at Hajj General Hospital Surabaya were involved. The inclusion criteria were the stroke patients who had passed a critical period, able to read and write, while the exclusion criteria were the stroke patients with brain disease other than stroke, aphasia, decreased consciousness and death. The independent variables were the history of hypertension and DM. Cognitive function is measured by MMSE. Scoring less than 24 was classified as having cognitive function disorder. To analyze the influencing factors of MMSE score, path analysis was used with LISREL. The factor had statistically significant when t value more than 1.96. Patients were between 38-85 years old. Most of the patients completed elementary school (48.5%). MMSE scores ranged from 10 to 29. There were 55% of cases had cognitive function disorder. The women were more likely to have cognitive function disorder than the man. MMSE scores were affected directly by the history of hypertension ($t=3.61$) and DM ($t=2$). Most of the post-stroke ischemic patients have cognitive function disorder. The history of hypertension and DM directly affect the MMSE score. A person with a family history of hypertension and/or DM and had if stroke attack, their MMSE scores should be assessed as earlier as possible in order to prevent the cognitive function disorder. The director of the Hajj General Hospital.

Keywords: cognitive function, post ischemic, stroke

OP130

Individual religiosity and smoking cessation among working-age population in Indonesia

Tika Dwi Tama¹ and Erni Astutik²

¹ Department of Public Health, Faculty of Sport Science, Universitas Negeri Malang, Malang, 65145, Indonesia

² Department of Epidemiology, Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

Tobacco use is one of the serious global public health problems causing high morbidity and mortality among active smokers and passive smokers. Having faith in religion could drive people to avoid bad behavior, such as smoking. This study was conducted to assess the role of individual religiosity on smoking cessation among the working-age population in Indonesia. This study used a cross-sectional design. Data were collected from the 5th Wave of the Indonesian Family Life Survey (IFLS 5) conducted between October 2014 and 2015. After excluding those respondents with missing data, 10,481 respondents at the working-age group (15-64 years old) were recruited in this study. Multiple logistic regression was performed to analyze the association between individual religiosity and smoking cessation. The proportion of smoking cessation among the working age population in Indonesia was only 11.4% and the average age of quitting smoking was 34.55 years old. After controlling for age, sex, religion, ethnicity, educational level, marital status, working status, and type of smoker, our study found that very religious people (aOR 1.986; 95% CI: 1.305 - 3.021), religious (aOR 1.827; 95% CI: 1.226 - 2.724), somewhat religious (aOR 1.329; 95% CI: 0.879 - 2.008) were more likely to quit smoking than not religious people. People who have higher levels of individual religiosity tend to stop smoking. Including religious views of tobacco use on health promotion program should be an alternative way for encouraging people to stop smoking.

Keywords: religiosity, smoking cessation, tobacco, tobacco control

OP131

Influence of social media and peer group on smoking among selected public & private university students in Urban Dhaka

Naym U Roby^{1,3,4}, M Tasdik Hasan^{2,3}, Kapil Ahmed^{3,4}, Fatema Ashraf^{3,4} and Ariful B Chowdhury¹

¹ Department of Public Health, North South University, Dhaka, Bangladesh.

² Department of Psychological Sciences, University of Liverpool, United Kingdom

³ Public Health Foundation of Bangladesh, Dhaka, Bangladesh

⁴ Tobacco Control Unit, Bangladesh Center for Communication Program, Mirpur, Dhaka, Bangladesh

⁵ Department of Gynecology, Shaheed Suhrawardy Medical College and Hospital, Sher-E-Bangla Nagar, Dhaka, Bangladesh

Smoking - a global public health concern is one of the major lifestyle risk factors for multiple adverse health conditions. It is increasing among university students worldwide where different social media sites are influencing their lifestyles. This study aims to determine the influence of social media on smoking among university students in a low-middle income country like Bangladesh. A cross-sectional study with a mixed method approach was conducted including 600 students from two public and two private universities in Dhaka, Bangladesh. Quantitative analysis was done by using SPSS 20.0 version. For the qualitative part, 12 in-depth interviews (IDIs) were taken and analyzed by thematic analysis. The mean age of the respondents was 21.7 years whilst most of the respondents were male (75.25%). The estimated prevalence of smoking was 33.5% where 38.8% smoked daily. 61.2% of respondents started smoking between the ages of 16-19 years. There was a significant effect of peer group on initiation (46%) of smoking. The results indicated that there was a strong association ($P<0.01$) between consumption of smoking and average hours spent with friends per day. The results revealed that about half of the students used at least one social media on regular basis including Facebook mostly (48%). The smokers significantly liked more of the postings on smoking rather than other issues such as profile picture, celebrity related post, social post and blog post than the non-smokers ($P<0.05$). By qualitative analysis, it was explored that smokers were constantly in touch with social media groups and posts (e.g. celebrity pictures and videos) promoting harmful smoking behavior. The study indicates the high prevalence of smoking cigarettes among university students in Bangladesh and there is clear evidence of the effect of social media and peer group on smoking.

Keywords: Social Media, Smoking, Influence, Health system, Bangladesh

OP132

The postponement of scheduled surgeries

Momia Yashpal¹, Talati Shweta¹, Bhagat Hemant², Koushal Vipin¹ and Kumar Ashok¹

¹ Department of Hospital Administration, PGIMER, Chandigarh, India

² Department of Anaesthesia & Intensive Care, PGIMER, Chandigarh, India

Postponement of elective scheduled operations results in inefficient use of operating room (OR) time on the day of surgery. Inconvenience to patients and families also caused by postponements. Moreover, the day of surgery (DOS) postponement creates logistic and financial burden associated with extended hospital stay and repetitions of pre-operative preparations to an extent of repetition of investigations in some cases causing escalated costs, wastage of time and reduced income. A cross-sectional study was done in the operation theaters of a tertiary care hospital in which total ten operation theaters of General Surgery, Urology, Orthopedics, Plastic surgery/ Dental, Gynecology and Obstetrics, Neurosurgery, ENT, EYE, Paeds Surgery, and Cardiac Surgery. Data of scheduled performed and postponed surgeries were collected from all the operation theaters with effect from 1st March to 30th September 2018. A questionnaire was developed to find out the reasons for the postponement for all hospital's stakeholders (Surgeons, Anesthetist, Nursing officer) and they were further evaluated. Postponement cause study for the scheduled surgeries was conducted in the operation theaters of PGIMER Chandigarh. Data from the operation theaters was collected from 1st March to 30 September 2017. During this period, there were total 174 working days and total ten surgical departments hence 1740 observations were recorded for scheduled performed and postponed surgeries from the 10 operation theaters. During this period 26,662 surgeries were scheduled 21,805 surgeries were performed and 4837 surgeries were postponed and postponement. The rate was 18.22%. In our study, as per perspective of stakeholders' postponement of 63.67% surgeries were avoidable and 36.33 % surgeries were unavoidable.

Keywords: schedule surgery, health care, delay

OP133

General obesity based on body mass index and abdominal obesity measured by waist circumference to pre-diabetes among adults in central Bogor

Nur R Ramadhani¹ and Nurhayati Adnan²

¹ Public Health Department, Sekolah Tinggi Ilmu Kesehatan Indonesia Maju, Jakarta, 12610, Indonesia

² Faculty of Public Health, Epidemiology Department, University of Indonesia, Depok, 16424, Indonesia

Pre-diabetes is a global public health issue. Prevalence of pre-diabetes is increasing worldwide. Generally, it is high among adults and as a high-risk state for DM. Obesity has an essential role in the pathophysiology of pre-diabetes. This study aimed to explore whether both general obesity and abdominal obesity related to pre-diabetes on age group 20-65 years in central Bogor, controlled by family history of DM, sex, age, smoking, hypertension, physical activity, and stress. This study used cross-sectional design with Cox-Regression for multivariable analysis. Data for this analysis were collected during the baseline stage of a cohort study of risk factors of non-communicable disease in 2011-2012. There were 3244 respondents, taken by random sampling. The study indicated that obesity was related to pre-diabetes. After adjusted by age; general obesity alone PR=1.56 (95% CI: 1.15-2.11), abdominal obesity alone PR=1.43 (95% CI: 1.09-1.85), general obesity and abdominal obesity jointly PR=1.93 (95% CI: 1.62-2.28). General obesity and abdominal obesity jointly contributed the most to the increasing prevalence of pre-diabetes. Awareness raising and screening of pre-diabetes among those at the high-risk group by assessing obesity by BMI and waist circumference are essential to be considered as part of efforts to control the epidemic of pre-diabetes in the community. Acknowledgements to the Agency for Research and Health Development of the Republic of Indonesia for providing granted permission to the database of the Cohort Study of Non-Communicable Risk Factors in 2011 and 2012.

Keywords: abdominal obesity, pre diabetes, obesity

OP134

Screening metabolic syndrome among Bangladeshi population using different recommendations

Manisha Das¹, Omar Faruque² and Zahid Hassan³

¹ Institute of Biological Sciences (IBSc), University of Rajshahi, Rajshahi, Bangladesh

² Department of Nutrition and Food Engineering, Daffodil International University, Dhaka, Bangladesh

³ Department of Physiology and Molecular Biology, Bangladesh University of Health Sciences, Mirpur, Dhaka, Bangladesh

Metabolic syndrome (MS) is an important public health issue in this century. Since people are unaware of MS, it silently progresses to full-blown disease and its complications. International and professional bodies have suggested recommendations to define MS, however, heterogeneity regarding phenotypic presentations exist regarding to ethno-geographic variations. The present study was aimed to find out the prevalence of MS using criteria by different bodies and chose the rational criteria for the Bangladeshi population. Under a cross-sectional observational design, 1529 [mean \pm SD of age, male (884) vs female (645), 43.1 ± 9.9 vs 41.8 ± 9.2] apparently healthy subjects (excluding subjects with any known disease) were recruited through open invitation. Anthropometric and Biochemical parameters were measured using standard methods. MS was defined using the criteria recommended by IDF, WHO, AHA and NCEP-ATPIII. Data were analyzed using Statistical Package for Social Program (SPSS) for Windows version 17. The prevalence of MS was 32.6% according to IDF; 37.5% WHO; 30.7% AHA and 31.4% NCEP-ATPIII. Of the total subjects, 44.5% and 76.1% had abnormal TG and HDL-c level. The prevalence of undiagnosed metabolic syndrome in Bangladeshi population was high. MS by different criteria shows variation because of the different cut-off recommendation.

Keywords: metabolic syndrome, screening, ncd

OP135

Risk factors of pre-hypertension among medical students in Sam Ratulangi University, Manado

Ribka Wowor

Department of Public Health, Sam Ratulangi University, Manado, 95115, Indonesia

Pre-hypertension is a precursor of clinical hypertension and cardiovascular disease in the future. Clinical and academic challenges of medical students may have an adverse effect on their lifestyle, predisposing vulnerable subjects to elevated blood pressure. This study aimed to identify the risk factors of pre-hypertension in medical students at Sam Ratulangi University, Manado. This was a cross-sectional study done in 111 medical students (undergraduate and postgraduate) aged between 20-30 years, of either sex. In study subjects, blood pressure, body weight, and waist circumferences were measured. A pre-tested questionnaire was used to elicit the details on physical activity, family history of hypertension, tobacco use, and dietary habits. According to JNC-7 guidelines, a systolic blood pressure (SBP) of 120 to 139 mmHg and/or diastolic blood pressure (DBP) of 80 to 89 mmHg was considered as pre-hypertension. Multivariate logistic regression was applied to identify the risk factors of pre-hypertension in medical students at Sam Ratulangi University, Manado. Prevalence of pre-hypertension was 22.5 % in this study. Multivariate logistic regression analysis revealed that central obesity (OR=25.07; 95% CI=8.046-78.118), BMI>25 (OR=10.437; 95% CI=3.757-28.993), dietary habits (OR=3.152; 95% CI=1.253-7.925), and soft drink consumption (OR=4.747; 95% CI=1.797- 12.539) were the risk factors of pre-hypertension. The incidence of pre-hypertension in this study was high (22.5%). Central obesity, high BMI, dietary habits, and soft drink consumption were the risk factors of pre-hypertension in medical students at Sam Ratulangi University, Manado.

Keywords: *pre hypertension, adolescents, risk factors*

OP136

Correlation between sleep duration and physical activity with central obesity among Indonesian adolescents

Lilik Sofiatius Solikhah¹, Dono Indarto^{1,2,3}, Adi Magna P. Nuhriwangsa^{1,4} and Grace Wangge³

¹ Nutrition Sciences, Universitas Sebelas Maret, Surakarta, 57126, Indonesia

² Department of Physiology, Faculty of Medicine, Universitas Sebelas Maret, Surakarta, 57126, Indonesia

³ South East Asian Ministers of Education Organization Regional Centre for Food and Nutrition (SEAMEO RECFON)/Pusat Kajian Gizi Regional, Universitas Indonesia, Depok, 16424, Indonesia

⁴ Animal Science Program, Faculty of Agriculture, Universitas Sebelas Maret, Surakarta, 57126, Indonesia

Central obesity is one of the main risk factors for non-communicable diseases. Previous studies have indicated that sleep duration and physical activity influence the incidence of central obesity. The aim of this study was to investigate the correlation between sleep duration and physical activity and central obesity among adolescents in Indonesian population. This cross-sectional study was conducted among healthy adolescents (senior high school students) in Yogyakarta who were non-athletes and had ≥ 2 SD BMI for age. The 286 subjects were recruited with stratified random sampling. Physical activity was analyzed with IPAQ-SF and sleep duration with PSQI. Central obesity was measured by waist circumference and Waist Height Ratio (WHtR). Prevalence of central obesity among adolescents in Yogyakarta was 24.5%. Subjects who had short sleep duration and low physical activity were 21% and 33.9% respectively. Sleep duration and physical activity were negative associated with central obesity ($r = -0.176$; $p = 0.003$ and $r = -0.264$; $p < 0.001$ respectively). Sleep duration and physical activity are negatively correlated with central obesity in adolescents in Yogyakarta, but the correlation was weak. Further study was required to identify whether this correlation also has a significant impact on the students learning abilities.

Keywords: obesity, physical activity, sleep duration

OP137

Social determinants of delay on medical consultation among women with breast cancer: a study in West Sumatera Province, Indonesia

Ade Suzana Eka Putri¹ and Ismeldi Syarief²

¹ Department of Epidemiology and Biostatistics, Faculty of Public Health, Andalas University, Padang 25129, West Sumatera Province, Indonesia

² Surgery Department, Achmad Moechtar General Hospital, Bukittinggi 26114, West Sumatera Province, Indonesia

More women died due to breast cancer in developing countries while higher prevalence of breast cancer is found in developed ones. Delayed diagnosis is considered as the reason of high mortality in developing countries since it has been proved that timely treatment leads to favorable prognosis and long-term survival. Studies in delayed breast cancer treatment in developing countries has been increasing, however lack of literatures exploring the role of social capital in prompt medical consultation among breast cancer patients. This study assessed the pattern of delayed medical consultation among breast cancer patients and looked at the influence of social factors. This study is a hospital-based applying cross-sectional design involving 198 respondents selected through simple random technique from patients attending three top referral hospitals in West Sumatera Province, Indonesia. Data was collected through face-to-face interview using a pre-tested questionnaire of respondent's characteristics, knowledge on breast cancer, breast cancer symptoms, health service utilization, and social capital. Logistic regression was employed for data analysis. One-third of breast cancer patients (30.3%) were found to have delayed medical consultation. Lower education level (aOR = 4.76, 95% CI: 1.37 - 16.62), inadequate knowledge on breast cancer (aOR = 2.28, 95% CI: 1.18 - 4.39) were related to the delayed medical consultation among breast cancer patients. Having higher social capital score would prevent delayed medical consultation (aOR = 0.89, 95% CI: 0.81 - 0.98). It was found that non-prompt medical consultation among breast cancer patients in West Sumatera Province was related to lower education level, inadequate knowledge on breast cancer and having low social capital. Public health intervention to increase community's knowledge regarding breast cancer and the importance of prompt medical consultation should be ensured to reach the whole level of community members especially low educated mothers. Thus, social capital building is needed to enter the message of early detection and early treatment of breast cancer for the community to share each other.

Keywords: consultation, delay, breast cancer

OP138

Socio-demography and quality of life associated with social interaction among the elderly insocial house of Tresna Werdha Ina-Kaka, Ambon

Ardiansa A.T. Tucunan and Adisti A. Rumayar

Department of Public Health, Sam Ratulangi University, Manado, 95115, Indonesia

By getting older, people probably tend to experience the problems of physical, mental, spiritual, economic and social. The elderly's quality of life continues to decline as getting older. The ability of the elderly to establish their social interaction is the key to maintain social status based on social skill. The increasing of elderly population, accompanied with an increase of the problems faced by the elderly impacting on reducing the quality of life of the elderly, such as decreased mental capacity, change of social role, senility, and depression. The aim of the study was to investigate the relationship of sociodemography and quality of life with social interaction among elderly in Ambon City. This study was conducted at the social house of Tresna Werda Ambon City using cross-sectional study. Elderly people those involved were 60-95 years old. Quality of life was measured by an instrument developed by the World Health Organization. Sociodemographic characteristic consisted of age, sex, religion, education. Chi-square test used to investigate the relationship between sociodemography characteristic and quality of life with social interaction. Age > 76 years (51.4%), women (51.4%), protestant (82.9%), elementary school attainment (54.3%) are most frequently appeared of socio-demographic characteristic than others. Statistically with chi-square test showed that gender with p value 0.047, religion ($p = 0.033$), education ($p = 0.029$), quality of life ($p = 0.001$) were among variables that related significantly to the social interaction, and only age ($p = 0.177$) was not related to social interaction. Sex, religion, education, quality of life are those variables which related to the social interaction among elderly people. Further study is needed to explain the correlation between these variables and why only age was not related to social interaction.

Keywords: elderly, social interaction, quality of life

ORAL PRESENTATION - PUBLIC HEALTH POLICY

OP139

Utilizing Tele-health to improve accessibility, optimize resources and cost in the era of national health insurance

Anthony P. Sunjaya¹ and Ernawati So²

¹ Faculty of Medicine, Tarumanagara University, Jakarta, 11440, Indonesia

² Department of Public Health and Community Medicine, Faculty of Medicine, Tarumanagara University, Jakarta, 11440, Indonesia

In 2014, Indonesia started its National Health Insurance (JKN) to tackle the issue of rising health costs and improve the distribution of services and achieving universal health coverage. However, Indonesia's health system remains unequipped to face the rising demand and costs of healthcare brought by JKN with deficits always reported till now. This article aims to evaluate the potential of tele-health in improving accessibility and optimizing health resources in Indonesia. The reviewed articles were obtained through the Ministry of Health, World Health Organization, Pubmed, Science Direct, Google Scholar, and Elsevier Clinical Key using the keywords "tele-health or synonyms" AND "health promotion or synonyms" written in English from January 1st, 2005, till date. Tele-health has been proven to bring greater accessibility, quality of care and efficiency as well as reduce complications and costs in previous studies. Indonesia currently houses the third largest smartphone user in Asia-Pacific with 100% internet coverage throughout the archipelago through 4G, fiber optic and satellite networks. Hence, tele-health can be implemented even in the most remote areas in eastern Indonesia region. The use of tele-health will also be able to address the current low doctor-population ratio in Indonesia as it allows doctors in urban areas to provide services for less desirable locations. A hub-and-spoke model has deemed the most effective and efficient system for tele-health in Indonesia. Patient self-empowering apps, especially with social media integration, are also important to further reduce the number of face-to-face visits. Barriers to implementation remain illiteracy and lack of a tele-health law in Indonesia. The technology and human resource required for the implementation of tele-health is already available in Indonesia. Its use is projected to be able to improve accessibility and empower patients hence optimize the use of Indonesia's limited health resources.

Keywords: national health insurance, telehealth, telemedicine, health promotion, preventive medicine

OP140

It is not too early to think of long-term care in Indonesia: lessons from experiences of other countries and challenges

Mika Ito^{1,2} and Purnawan Junadi¹

¹ Faculty of Public Health, University of Indonesia, Depok, 16411, Indonesia

² Care Environmental Laboratory Co., Ltd., Chofu, Tokyo, Japan

The worldwide demographic change in terms of the increasing number of people aged 65 and above particularly in developed countries has been accelerated in the past 2 decades. It is projected that many less-developed countries would face similar problems within the next 30 years. This paper seeks to review and evaluate existing public Long-Term Care (LTC) policies and to identify the current problematic issues and challenges. Health policy and system research design is used by conducting a literature search and review using relevant publications under keywords include population aging, long-term care, elderly care and quality of life. Despite many of developed countries introduced the LTC policies for elderly people as a solution to the increased medical expenditures, many of policies faced difficulties in sustaining its cost and quality of care due to the accelerated population aging. Countries with newly developed LTC policy such as Germany and Japan have experienced more challenges and had more frequent reforms to sustain the LTC system financially and qualitatively within a short period of time. However, countries such as the Netherlands where their LTC policies were initiated prior to the rapid population aging and reformed upon changes in social phenomenon seems more successful to maintain LTC system even under the population aging. Indonesia is projected to reach the aged society by the year 2050, and the shifting period from the aging to aged is projected in the next 25 years. Indonesia has a rapid growth of the aging population. Learning from LCT policy in developed countries, it is strongly recommended to begin considering and preparing LTC policy for the future in Indonesia. LTC policy is needed to be imposed and implemented before high demands and needs of LTC and aged society is reached.

Keywords: Population Ageing, Elderly Care, Long-Term Care

OP141

Implementation of exclusive breastfeeding policy on working mother in Padang City

Shelvy Haria Roza¹ and Wiya Elsa Fitri¹

¹ Public Health Department, Institute of Health Sciences Syedza Saintika, Padang, 25172, Indonesia

Coverage of exclusive breastfeeding in Padang City has not reached the national program target. The purpose of this study was to analyze the implementation of exclusive breastfeeding policy on working mother in Padang City. This study was descriptive qualitative research. It was conducted in government and private institution in Padang city. Informant of this study was 8 people determined by purposive sampling. Source of the data were from primary and secondary sources. The data collected by in-depth interview, observation, document review. The data analyzed using the content analysis method and a triangulation. In the input component, there were no staff and supervisor occupied, lack of fund allocation and facilitation in some government and private institution in Padang. In terms of process component, communication and attitude of implementers have not run well. The absence of a special standard of operational in the implementation of policy and no bureaucratic structure were seen in the working groups of the three agencies. It was proven that there was no teamwork existed and no good coordination. In terms of output component, it was found that no nursing room for mothers, and lack of support from the supervisor for those working mother to provide exclusive breastfeeding. The implementation of exclusive breastfeeding policy for working mothers currently have not achieved the maximal target from input, process, and output component. Thanks to all of the informants has given information during this research, and Ministry of research, technology, and higher education who have provided research grants.

Keywords: exclusive breastfeeding, maternal, policy

OP142

Implementation of health operational aid program: a case study in East Java Province

Ernawaty¹, Ratna Kartikasari², Hari B. Notobroto¹, Nuzulul K. Putri¹ and Nurhasmadiar Nandini³

¹ Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

² East Java Provincial Health Office, Surabaya, 60231, Indonesia

³ Faculty of Public Health, Diponegoro University, Semarang, 50239, Indonesia

Health operational aid program is kind of central government support towards local government as achieving national health prioritized program. In East Java, the financial realization of health operational aid program was under 85%. This study identified the knowledge of Public Health Centre (PHC) workers, socialization to PHC, technical guidelines availability of health operational aid program in East Java. This was descriptive observational research with cross-sectional design conducted from November 2016 to September 2017. Unit analysis of this research was District Health Office (DHO), with 38 respondents from DHO and 160 respondents from PHC chosen by purposive sampling. Data were collected by questionnaires. There was 60.5% respondent have average knowledge and 13.2% have poor knowledge of health operational aid program despite all of the DHO already done the socialization the guidelines of health operational aid program to all PHC. There was 47.4% district which did not have the district's technical guidelines of operational aid of health program which is important to support the implementation according to the financial regulation in each district. Several workers still have poor knowledge of health operational aid program. It is important that everyone involved in the program understand well about the program, especially the technical guidelines in order to achieve the program's objectives.

Keywords: operational aid, health program, health policy

OP143

Correlates of tobacco quit attempts and missed opportunity for tobacco cessation among adult population in India

Manas Ranjan Pradhan¹ and Surendra Kumar Patel¹

International Institute for Population Sciences, Mumbai, Maharashtra, 400088, India

Tobacco cessation is crucial to reduce tobacco-related diseases and premature deaths. Quitting efforts can be enhanced by brief routine intervention at the health facility because health care providers are highly trusted resulting in stronger adherence to their advice. This study used data from adults' age 15-49 years (n= 93,522) from the fourth round of the National Family Health Survey (NFHS) 2015-2016. Bivariate and multivariate analyses were carried out using STATA (version 13) to understand the socioeconomic and demographic correlates of tobacco quit attempt and advice to quit by health care providers. Nearly one-third of the tobacco users have attempted to quit tobacco. Education, mass media exposure, economic status, chronic disease are enablers; while alcohol use and social backwardness are the barriers to quit attempt. Quit advice from the health care provider is inadequate (51%) and vary significantly by the socio-economic and demographic profile of the users. Lower attempts to quit amongst the adolescents, less educated and users from poorest households may increase the burden of tobacco-attributable diseases; unless intervened in time. Sensitization of the health care providers about the value of cessation counseling is urgently required to enhance quitting and improved health.

Keywords: *Correlates, tobacco, cessation, adult, India*

OP144

Contributing factors in the allocation of village funds for health

Ida Ayu Regina Kosinta Putri^{1,2} and Ni Made Sri Nopiyani^{2,3}

¹ Community Health Center of Klungkung I, Klungkung, Bali, Indonesia

² School of Public Health, Faculty of Medicine, Udayana University, Bali, 80114, Indonesia

³ Department of Public Health and Preventive Medicine, Faculty of Medicine, Udayana University, Bali, 80114, Indonesia

Despite the potential of village funds for financing health development, the proportions of the funds allocated for health among villages in the areas of Community Health Center (Puskesmas) Klungkung I was varied from none to more than 10%. This study aims to identify the contributing factors in the allocation of village funds for health. This was qualitative research with case study approach. Fourteen informants were recruited from three villages with varied proportions of village funds for health. Informants consisted of village policymakers and Head of Puskesmas. Data were collected through in-depth interviews and analyzed using thematic analysis. This study indicates that supporting factors of the allocation of village funds for health are village policymaker's knowledge about the health situation, their understanding about the utilization of village funds, their commitment to health development, the existence of local regulation supporting funds allocation for health, and good coordination between village policymakers and Puskesmas. Meanwhile, the inhibiting factor is the lack of detailed technical guidance for the utilization of village funds for health. There are supporting and inhibiting factors that should be considered in the efforts to optimize the utilization of village funds for health development.

Keywords: village funds, health, supporting, inhibiting factors

OP145

Analysis of community leaders and public health center's role in community empowerment for non-communicable diseases prevention and control in Kampar, Indonesia

Tuti Retuastuti, Zahtamal, Fifia Chandra and Ridha Restila

Public Health Department, Faculty of Medicine, Riau University, Riau, 28113, Indonesia

Non-Communicable Disease (NCDs) tend to increase year by year. NCDs kill 41 million people each year. NCDs control model needs multi-sector and multi-program synergies. The aim of this study is to analyze the role of government and community leaders in NCD prevention and control. This study used a qualitative approach with in-depth interview, focus group discussion (FGD), and observation was conducted to collect information. The study was held in Kampar Kiri and Bangkinang City. This study involved 38 community leaders and 15 health workers from 7 local villages. All informants were purposively chosen. The majority of community leaders had known about NCDs. All villages had Posbindu PTM as a "product" of community empowerment that involves the participation of the community in conducting early detection and monitoring of the main NCDs risk factors. Support provided by community leaders were making a decree for health volunteers who manage the activities of Posbindu PTM. Most informants revealed that community participation was very low because of the unavailability of medicine in Posbindu PTM because they still assumed that every health activity must provide medicine. Only one village had allocated village funds to support Posbindu PTM and this greatly affects their activity. However, they were supported by government in terms of funding and guidance for NCDs prevention. In addition, the community's favorite health worker attracted the public interest in Posbindu PTM. Community participation in NCDs prevention was still low. Support from community leaders and health workers were very important.

Keywords : NCD, Posbindu PTM, Community Empowerment

OP146

Factors associated with hospital bed availability in Public Hospital of Surabaya: a cross sectional study

Nurul Jannatul Firdausi and Agus Aan Adriansyah

Public Health Department, Faculty of Health, University of Nahdlatul Ulama, Surabaya, 60237, Indonesia

Indonesia has applied National Health Insurance for more than 4 years. It makes a bigger opportunity for the public to access healthcare. Increasing utilization of inpatient care, imbalance bed capacity and inpatient flow trigger to rising some problem such as prolonged waiting times of hospital beds. The aim of this study is to analyze factors associated with hospital beds availability in public hospitals of Surabaya. The study was cross-sectional design. The study was conducted in RSUD dr. M. Soewandhie as type B public hospital, owned by Surabaya government. Data was taken on July 2018 involving 104 respondents from the 3rd class inpatient ward. Primary data were collected through real-time observation began from patient's discharge till room ready to be occupied. Variables consisted payment method, type of treatment, duration of patient discharge and room cleaning. Data were analyzed by statistical test using chi-square ($\alpha=0.005$). Majority of respondent were elderly (60.5%) and female (54.8%). More than half of the respondent used JKN-PBI card (subsidized national health insurance). The peak times of hospitalization were 08.00 to 09.00 am. Patient discharged increased from 10.00 am to 14.59 pm. Lead time for bed availability was 165 minutes (2 hours 45 minutes) meaning that bed availability times was longer than standard times. Factors associated with delayed bed availability included type of treatment ($p=0.037$), duration of a patient discharged ($p=0.001$), and duration of room cleaning ($p=0.005$). Duration of a patient discharge has positive associated and very strong (value coefficient = 0.64). Bed availability associated with patient's factor, discharge process and housekeeping role. The hospital management is required to consider the pace of inpatient flow chart, control adequate resources towards demand also making policy to managing minimum time for bed availability.

Keyword: *Bed Availability, Hospital, Delay, National Health Insurance*

OP147

The challenge to be health promoting school: the qualitative study in Surabaya, Indonesia

Muji Sulistyowati¹, Kuntoro², Oedojo Soedirham¹ and Budi Prasetyo³

¹ Department of Health Promotion and Behavior Sciences, Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

² Department of Biostatistics, Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

³ Department of Political Science, Faculty of Social and Political Sciences, Universitas Airlangga, Surabaya, 60115, Indonesia

Health promoting school (HPS) developed by WHO has effectively improved students' health status. However, most of Indonesian schools have not yet implemented this concept. This study aims to explore the challenges to be health promoting school in Surabaya. This was a qualitative study conducted in Kenjeran Sub-district, Surabaya. Three state elementary schools were selected as a unit analysis. In-depth interview was conducted to 16 informants consisted of parents, school principal and teachers and related officials. The informant knowledge on health concept and school health program was not good enough to optimally implement HPS. The teacher's workload, the leadership and management of principal at school were internal factors to optimally implement HPS, parent association, and environmental surroundings as well. Low knowledge on health concept and school health program became barriers in implementing HPS in Surabaya. An accompaniment is needed by school to raise understanding and optimize the implementation of health promoting school concept in Indonesia. Thanks to Indonesia Ministry of Technology and Higher Education for funding this research.

Keywords: health promotion, school, health education

OP148

Surveillance system capacity analysis in Padang City, West Sumatera Province - Indonesia: A pilot study

Yudi Pradipta¹, Defriman Djafri¹, Hafifah Nanda¹ and Nengsih Purnama Sari²

¹ Department of Epidemiology and biostatistics, Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

² Department of Administration and Health Policy, Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

Vaccine Preventable Diseases (VPDs) has become a major health issue in Padang City since diphtheria outbreak in 2015 and measles outbreak in 2016. Early detection and quick reporting were necessary to monitor the cases and minimize transmission among the population at risk. However, an adequate surveillance system was important in observing trend of disease and find the source of transmission in order to prevent an outbreak in the future. This study aims to investigate the capacity of surveillance system in Padang city. We used cross-sectional study in March-April 2018. All of surveillance officer in 22 Health Centers in Padang city were interviewed by using structured questionnaire to assess the capacity based on the human resources, facilities, completeness and accuracy of reporting. Data were analyzed by using independent samples t-test. There were 22 surveillance officers involved, majority were female (95.45%) aged 31-55 years old, nursing background (68.18%), diploma degree (59.09%), two-years experience (31.82%), had attended at least once EWARS or surveillance training (45.45%), had 2 or more workloads (72.73%), and still lack of facilities (77.27%). Half officers (50%) received the incentives as a reward for their work, and data reporting were 86.36% complete and accurate. Age, experience, training frequency, and workload were significantly related to completeness and accuracy of data reporting ($p < 0.05$). Younger, more experienced, more trained, and less workload surveillance officers reported the data more completely and accurate. We recommend Padang city health office to improve the capacity of officers through training and minimize the workload which not related to surveillance. Officer recruitment based on age and experience should be considered as long-term solutions. We would like to thanks to Department of Epidemiology and Biostatistics and Faculty of Public Health Andalas University for their support.

Keywords: capacity, evaluation, surveillance system

OP149

Challenges and opportunities for health information system strengthening for sustainable development: a primary health facility-level analysis in North Sulawesi, Indonesia

Rutler P. Masalamate¹, Aprisa Chrysantina² and Chreisy K.F. Mandagi³

¹ Department of Epidemiology, University of Sam Ratulangi, Manado, 95115, Indonesia

² Department of Informatics, University of Oslo, Oslo, 0316, Norway

³ Department of Administration and Health Policy, University of Sam Ratulangi, Manado, 95115, Indonesia

Improving national health status was the third goal in sustainable development, measured by health program data and information, with health care facilities as the spearhead for data collection and management. It is critical to understand current health information systems (HIS) practices and challenges, particularly in the lowest level that feed to higher levels. Through an assessment, we explored HIS situation of low-resource settings, then built recommendation and actions to improve local HIS as a building block in the health system. This was a quantitative cross-sectional study using a modified Health Metrics Network assessment tool and an observation checklist to guide the interview and direct observation, respectively. During March-July 2018, we conducted an assessment of 52 public health centers in 4 districts in North Sulawesi Province, namely Manado, Tomohon, Minahasa, and North Minahasa Districts. The purposive sampling method was used. All respondents had signed the informed consent before data collection. The assessment covered policy and planning, human resources, and budget; indicators and data sources, and information dissemination and use components of HIS. Both interview and observation revealed that Manado and Tomohon Districts demonstrated the strongest potentials, which include commitment and infrastructure. On the other hand, the indicators and data sources components of facilities are mostly similar due to the top-down regulations and policies from a higher level. The way facilities managing their data and information does not reflect the awareness of the importance of quality data for planning and decision making. This is the underlying cause of HIS challenges, such as absence and lack of HIS components such as regulations, budget, designated staff, data analysis competencies, etc. Thus, we recommend prioritizing improving awareness of data quality and management through structured capacity building, close assistance, and local regulation and policy development. This research was made possible by support from Manado, Tomohon, Minahasa, and North Minahasa District Health Offices; as well as our colleagues from Faculty of Public Health University of Sam Ratulangi, Manado, Indonesia.

Keywords: health information system, primary health care, capacity

OP150

Analysis of moral hazard prevention program for national health insurance providers in West Sumatera Hospital

Syafrawati

Department of Health Policy and Administration, Faculty of Public Health, Andalas University, Padang, 25129, Indonesia

Provider's moral hazard was occurred in National Health Insurance in Indonesia. Upcoding were found in 18.6% of medical records in district government hospital in West Sumatera Province. The purpose of this study was to analyze moral hazard prevention program for national health insurance providers in West Sumatera type C hospital. The study design was qualitative study. Study informants were two hospital directors, two BPJS Kesehatan (Indonesian NHI organizer agency) verification staff, six clinicians and six coders. Data obtained by indepth interview and focus group discussion. Study validation by controlled triangulation of data source, triangulation of method, and triangulation of observer. It is found that there was several provider's moral hazard in hospital, such as upcoding, cloning, phantom billing, inflated billing, repeat billing, unbundling, type of room charge, readmission, unnecessary admission and keystroke mistake. Provider's moral hazard were caused by dissatisfaction to INA-CBG Tariff, ignorance of the latest clinical coding rules from the Ministry of Health, inaccuracy of medical coding, lack of punishment, dissatisfaction with the rules for determining primary and secondary diagnoses and procedures. Weaknesses of moral hazard prevention were guidelines of coding technical instructions is still changing, there are no guidelines that can be guided about the upcoding criteria, too many teams have been formed to solve coding problems, there were no standards regarding technical guidelines for sanctions against moral hazard or hospital fraud/moral hazard, lack of emphasis on moral hazard prevention to doctors compared to coders. There are two main causes of moral hazard, namely dissatisfaction and ignorance. We recommend to the government to improve training for doctors, coders and hospital management on how to prevent moral hazard behavior, increase the INA-CBG tariff to fulfil the expectations of service providers to patients and develop final guidelines for coding technical instructions. The authors would like to thank Faculty of Public Health who has given fund to the author to conduct this research.

Keywords: Moral Hazard, Providers, Hospital National Health Insurance

OP151

A study on measurement, evaluation, and follow-up the quality indicators of health care facilities using web-based approach

Eva Tirtabayu Hasri, Novika Handayani and Hanevi Djasri

Center for Health Policy and Management, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, 55281, Indonesia

Center for Health Policy and Management developed a website for measurement, evaluation and follow-up quality indicators of health care facilities. It aimed to control quality of health care facilities in the era of national health insurance. The indicators for this study were developed using the existing indicators by Health care and Social Security Agency (Badan Penyelenggara Jaminan Sosial Kesehatan-BPJSK) and Ministry of Health. This study was an action research conducted from September to November 2017. This study involved 35 Primary Health Care (PHC) and 35 hospitals from seven provinces. Each health facility received a guidebook on measurement, evaluation and follow-up quality indicators, including the use of the website. There were 18 indicators for PHC and 14 indicators for hospitals. All steps were carried out by the representative so fetch health facility with remote assistance (including via teleconference) and followed by an evaluation afterwards. This study successfully developed a website (www.indikatorfaskes.mutupelayanan.kesehatan.net). Twenty-three PHC and 21 hospitals registered to website. Among them, there were 14 PHC and 11 hospitals that entered the data. Eight PHC and three hospitals completed all required at items (indicators measurement, analysis, and Plan of Action). The measurement results were presented in graphical form. Health facilities could compare their outcome to their health facilities outcome in the same province, and to the national standard. A website that has been developed can be implemented well by health care facilities. It helps the regulators and the relevant stakeholders in national level to control and and evaluate the quality of health care facilities. Most importantly, national quality indicators should be developed soon. This study was supported by BPJS Kesehatan, Indone

Keywords: *Quality Indicators, Healthcare, Website*

POSTER PRESENTATION

PP01

Identifying health system barriers using simplified WHO building blocks: a case study in Bandung City, West Java, Indonesia

Arya I.F Desy^{1,2,3}, Maharani F.^{1,3}, Prawiranegara R.^{1,3}, Setiawati E. Pudji^{1,2,3} and Sekarwana N.³

¹ PRISMA (Priority Setting Involving Stakeholders and using Multiple Criteria) Project Team, Universitas Padjadjaran, West Java, Indonesia

² Department of Public Health Faculty of Medicine Universitas Padjadjaran, West Java, Indonesia

³ Health System Working Group Faculty of Medicine Universitas Padjadjaran, West Java, Indonesia

HIV/AIDS epidemic in Indonesia is still growing. A situational analysis was needed in order to improve the effectiveness of program planning development. The aim of this study is to identify the health system barriers based on the WHO Health System Building Blocks (HSBB). We conducted qualitative research. Five FGD sessions were conducted, attended by nine NGOs, four community organizations, seven health services, and three government institution involved in HIV/AIDS control. The participant's response was categorized based on HSBB. Data were analyzed using thematic coding for every barrier, Recurrent barriers under similar blocks across the programs were identified and synthesized. From the HSBB we found Blocks, the barrier talks about: (1) coordination among stakeholder, comprehension, and confidentiality of the program. (2) Quality and quantity of the human resources, (3) availability and quality of the guidelines programs, (4) the basic information of the data, information system itself and standardize format, (5) specify allocation fund for HIV/AIDS programs and (6) lack of comprehension about the policy. To overcome the barriers, we need the collaboration of all stakeholder and we should have the priority program to make program effective and fit with the task among stakeholders.

Keywords: Barrier, Health System Building Blocks, HIV/AIDS Program, Stakeholders.

PP02

Predictor of coronary heart disease (CHD) incidence among adults: cohort study on risk factors of non-communicable disease

Sulistyowati Tuminah Darjoko¹, Tri Wahyuningsih¹ and Sudikno¹

¹ Indonesian Agency of Health Research Development, Ministry of Health, Jakarta, Indonesia

CHD placed the second position on hazard rate of major non-communicable diseases after Diabetes Mellitus based on the result of Cohort Study on Risk Factors of Non-Communicable Disease (RFNCD). This study aims to investigate the predictors of CHD incidence. A Cohort Study on RFNCD conducted to permanent residents aged ≥ 22 years old at five villages in Central Bogor District, Bogor City for six years of observation. Inclusion criteria were willing to follow all RFNCD cohort study activities. Exclusion criteria were subject with CHD diagnosis at baseline of the study. Data from 4840 subjects have been analyzed using cox regression. Subjects with carbohydrate intake $\geq 60\%$ rather than those $< 60\%$ from total energy had 2.8-fold higher for CHD risk (HR=2.790; 95% CI: 1.962–3.967; $p < 0.001$). Subjects aged ≥ 55 years old rather than those < 55 years old had 2.6-fold higher of CHD risk (HR=2.573; 95% CI: 1.803–3.671; $p < 0.001$). Subjects with blood total cholesterol ≥ 200 mg/dL rather than those < 200 mg/dL had 1.9-fold higher of CHD risk (HR=1.893; 95% CI: 1.319–2.715; $p = 0.001$). Predictors of CHD incidence were carbohydrate intake, age and blood total cholesterol level. Suggestion: An effort in controlling CHD risk factors is needed especially in consumption behavior through a family approach. I am particularly grateful for the assistance given by DR. Dra. Woro Riyadina, MKes. She gave insightful comments and suggestions.

Keywords: predictor, CHD, carbohydrate, age, cholesterol

PP03

Characteristics of hajj pilgrims from Surabaya Embarkation who died in 2015

Dwi Handayani and Wiwik Afridah

Department of Public Health, University of Nahdlatul Ulama Surabaya, Surabaya, East Java, Indonesia

Hajj is one of worship that is at risk of high morbidity and mortality rate. This has become a concern and challenge for Indonesia, which is predominantly Muslim. Data from 2014 to 2016 shows that the highest death rate of Indonesian pilgrims occurs in 2015. The purpose of this study is to describe characteristics of hajj pilgrims from Surabaya Embarkation who died in 2015. Type of this study is a descriptive study, by used secondary data from Port Health Office Surabaya. The research data collected on all hajj pilgrims from Surabaya Embarkation who died in 2015. The results of this study showed that out of 28.169 hajj pilgrims from Surabaya Embarkation in 2015, 129 pilgrims who died were analyzed. The result of the analysis showed that 91.5% of deaths in the age group 50 years and over. Causes of the deaths were due to illness (74.4%), Mina and Crane accident (20.2%) and when returning to Indonesia (5.4%). The type of diseases that most causes deaths were cardiovascular (38.8%), respiratory (38%) and circulatory diseases (4.7%). Most pilgrims died in Saudi Arabia (94.6%). Based on the location of deaths, most of the pilgrims died outside the health facilities (62%). The most location of deaths outside health facilities is in lodging (36.4%). The findings of this study may coach the hajj pilgrims long before departure by emphasizing promotive and preventive efforts, especially educational needs for the pilgrims, early diagnosis, controlling risk factors for non-communicable diseases and early oriented for physical activities.

Keywords: hajj pilgrims, mortality, morbidity, ncd

PP04

Woman has higher risk for having metabolic syndrome than man: a prospective cohort study during 6 years in Bogor, Indonesia

Srilaning Driyah, Ratih Oemiati, Rustika, Nova Sri Hartati, Sendy Agita and Indra Cans Yunina

National Institute for Health Research and Development, Ministry of Health, Jakarta, Indonesia

In Indonesia, metabolic syndrome was predicted rising up twice of risk to coronary disease and five times to diabetes mellitus type 2. The objective of study was to determine metabolic syndrome predictor for the 6-years follow up in Bogor city. The cohort study was conducted. Data from prospective 4,215 subjects aged 25 years and above who were metabolic syndrome-free was part of "Cohort Study of Non-Communicable Disease Risk Factors" in Bogor City. Data were collected by using interview method, physical measurement and laboratory examination every 2 years for 6 years follow up (2011-2017). The metabolic syndrome diagnosed based on NCEP/ATP III criteria. The other predictor variables include characteristics, biomedical status and risk behavior. Data were analyzed by chi square and cox regression. The incidence of metabolic syndrome was 56 per 10.000 population, for 6 years observation. After adjusting for age, the predictors for metabolic syndrome were women with HR=4.78 (95 % CI: 1.11 - 20.56) and carbohydrate intake with HR=2.99 (95 % CI: 1.28 - 6.98). Women and carbohydrate intake were predictors of metabolic syndrome among people aged 25 years and above. Therefore, women should control their carbohydrate intake to prevent NCDs in the future. The authors would like to thank the dr. Iwan Ariawan, MSPH and Dr. Dra. Woro Riyadina, MKes for analytical supporting in a working group team on a cohort study of Non-Communicable Disease Risk Factors.

Keywords: *metabolic syndrome, ncd, woman*

PP05

Influencing factors of voluntary counseling and testing implementation among pregnant women

Heri Sugiarto, Setyo Dwi Widyastuti, Muhamad Fauzi and Isna Oktaviana

Public Health Department, Indramayu College of Health Science, Indramayu, West Java, 45222, Indonesia

Voluntary Counseling and Testing (VCT) is an uninterrupted two-way coaching or dialogue between counselor and client in order to prevent HIV transmission, provide moral support, and information. This study aims to investigate influencing factors of VCT implementation among pregnant women. This research used qualitative method with case study approach. In-depth interview by using questionnaire was conducted to 8 informants. Informants were recruited from public health centers "X". The results showed that VCT officers at the public health center "X" have not implement the program based on the standards that have been set, and there were officers did not received training. Local midwives in the work area of public health center have not fully encouraged pregnant women to participate on VCT program. Fulfilling the standard and providing more training to human resources needed to increase the quality of VCT services. Collaborating among the sectors in promoting about VCT and motivating pregnant women to come into VCT by local midwives. Mobile VCT also important to reach pregnant women who do not visit the public health center in order to increase the coverage of VCT program. We thank to all those who have helped in this research. Hopefully this research can be useful for stakeholders related to HIV prevention program.

Keywords: counselling, pregnancy, vct

PP06

Decentralization and district health sector reform: civil servant's perception of the practice and anti-corruption commitment in local government health agencies in Indonesia

Faisal Mansur¹ and Mubasysyir Hasanbasri²

¹ Center for Health Policy and Management, Faculty of Medicine Public Health and Nursing, University of Gadjah Mada, Yogyakarta, 552284, Indonesia

² Department of Biostatistics Epidemiology and Population Health, Faculty of Medicine Public Health and Nursing, University of Gadjah Mada, Yogyakarta, 552284, Indonesia

Government officials including health sector become inseparable part of local politics. To be chosen as the head of government agency, government officials should serve as the political supporters for a politician who want to run for governor or mayor. This study seeks to find out whether corruption cases have become learning and the health institution has governance good spirit, as a result of the anti-corruption movement since 2002. The study used survey design. Respondents are public servants in local government health agencies who took the MPH program at the University of Gadjah Mada. The samples obtained are all certain students who filling out the email questionnaire. A total of 138 respondents provide feedback from district health authorities, hospitals, primary health care centers, MOH health training institutions, or other health related institutions. Data were analyzed descriptively. Findings are the conversely to what we expect. Corruption practices in high level is perceived 38% at the workplace. Institutions perceived to have a high commitment in fighting corruption is only 36%. Almost fifty percent have weak regulatory environment to put sanction to corruption practices and fifty percent also have a lack of monitoring. This study shows that anti-corruption is not yet the spirit of management and policies practices in local health institutions. This is odd because various forms of "reforms" through decentralization is meaningless. Health management appointment mechanisms should be seriously evaluated.

Keywords: health resources, corruption, policy

PP07

Relationship between school environment, media and family support to the risk of adolescent disorders among teenagers in Karo District, Indonesia

Alam B Keloko¹, Zulfendri² and Dhani S Bukit¹

¹ Health Education and Behavior Science Department, Sumatera Utara University, Medan, 20155, Indonesia

² Administration and Health Policy Department, Sumatera Utara University, Medan, 20155, Indonesia

Currently, one fifth of the population is teenagers who are likely to behave at risk without being aware of the long-term consequences of such behavior. All of juvenile delinquency can make a great risk to their health and safety. Modernization could be very harmful, especially the problem of advances in the field of information technology. The study aims to investigate the factors related to adolescent risk behavior in Karo District. This study used cross sectional design. Samples were 170 adolescents recruited by using simple random sampling technique, involving high school students aged between 15-19 years. The independent variable of study are school environment, media exposure, and family support. The dependent variable of study is adolescent risk behavior. Data were collected by using questionnaire through interview on Juni 2018. Data were analyzed by using chi-square test. There were 45.9% of teachers have explained about the dangers of smoking, drinking alcohol, and drugs to students. 86 of 170 students claimed that they got information about cigarettes from the internet/gadget/television. School environment and media exposure were related to adolescent risk behavior ($p < 0.05$). Meanwhile, family support was not related with adolescent risk behavior ($p > 0.05$). It is expected to parents' to always aware and monitor the adolescences activities outside the home. In addition, the school is also expected to provide knowledge and counseling to adolescence about the effect of adolescent risk behavior.

Keywords : Risk behavior, adolescence, juvenile delinquency

PP08

Health status of migrant workers attending primary care clinics in Malaysia

Nataman Miskam^{1,5}, Erwin Martinez Faller², Siti Zaharah³, Chan Chee Khoon⁴ and Adrian Pereira⁶

¹ Department of Diagnostic & Allied Health Science, Faculty of Health & Life Sciences, Management & Science University, Shah Alam, 40100, Selangor, Malaysia.

² School of Pharmacy, Management & Science University, Shah Alam, 40100, Selangor, Malaysia.

³ Jabatan Kesihatan Negeri Selangor, Seksyen 9 Shah Alam, Selangor, Malaysia

⁴ CRICE, University of Malaya, Jalan Universiti, Kuala Lumpur, Malaysia

⁵ Pejabat Kesihatan Daerah Klang, Klang, Selangor, Malaysia

⁶ North South Initiative, Petaling Jaya, Selangor, Malaysia

3 out of 100 migrant workers who underwent health screening in the clinic suffered from infectious diseases such as Tuberculosis (TB), Hepatitis B, HIV/AIDS etc. The study aims to determine the health status of migrant workers attending primary care clinics in Selangor, Malaysia from 2010 to 2017. A retrospective, quantitative, non-experimental study design was used to evaluate the health status of migrant workers from 2010 to 2017. Preliminary study on 350 migrant workers from Bangladesh, Nepal, Indonesia and Myanmar were purposively selected after passing the study's sampling criteria. Demographic data sheet was filled on the trend of diseases, initial diagnosis, provided care, amount paid during treatment in the clinic. Results revealed a prevailing increasing trend of communicable diseases (Tuberculosis, Hepatitis, HIV) and non-communicable diseases (Diabetes, Hypertension etc) in the country. Consultation of more than 100 migrant workers per day ranging from symptomatic to serious cases of occupational diseases. Provided care such as treatment, consultation, specialist referral was based on initial complains and indicative clinical symptoms of hypertension, diabetes, muscle pain, fever headache, etc. Results imply a higher burden of cost for migrant worker's health for the past 8 years. Migrant worker's health interventions focusing on preventive measures and occupational health and safety awareness is recommended. Further call for action in translating the study into a health policy in providing a sustainable agenda for migrant worker's health. The researcher would like to thank Management and Science University, Jabatan Kesihatan Negeri Selangor and Pejabat Kesihatan Daerah Klang for the support given to this study.

Keywords: Migrant Workers, Primary care clinic, communicable disease, non-communicable disease, Malaysia.

PP09

Association of common mental disorders and diabetes mellitus - evidence from case control study in Rural Ballabgarh, Haryana

Harshal R Salve, Bhushan Kamble, Anand Krishnan, Rajesh Sagar, Shashi Kant, Baridalyne Nongkynrih and V Sreenivas

Centre for Community Medicine, AIIMS, New Delhi

Diabetes mellitus and depression are major public health problem globally. Evidence of linkage of common mental disorders (CMDs) including depression and anxiety disorders with diabetes mellitus is sparsely reported from community-based settings. This study aims to investigate the association between CMDs and diabetes mellitus. A community-based case control study was conducted in Delhi (urban) and Ballabgarh (Rural). Cases (diabetes) were recruited from the community with at least one year of diabetes. Age and sex matched two neighborhood controls were selected from the community. Diabetic status was confirmed by using HbA1C. CMD such as depression and anxiety disorders were screened using PRIME MD Hindi version. Conditional logistic regression was used to study relationship between cases and controls. Total 211 cases (diabetic) and 273 controls (non-diabetic) were recruited in the study, which 173 cases and 175 controls were analyzed. Cases and controls were comparable with respect to age ($p=0.6$), sex ($p=0.5$) and socio-economic status ($p=0.3$). CMDs were found more among cases as compared to control (45.6% Vs 21.7%) ($p < 0.001$). CMDs were significantly higher among diabetes cases (OR = 3.2, 95% CI:1.9-5.2). Strong evidence association of CMDs and diabetes mellitus from this population-based study of necessities the need of integrated management of these two diseases in India.

Keywords: *mental disorder, diabetes mellitus*

PP10

Evaluation and implementation plan of risk factors surveillance for non-communicable diseases based on primary health facility, Gianyar District 2018

Venessa V.M Susanto¹, P.C Denny Yuliyatni^{1,2} and D Harimbawa^{1,3}

¹ FETP, Postgraduate of Public Health, Faculty of Medicine, University of Udayana, Bali, 80114, Indonesia

² Department of Public Health Preventive Medicine, Faculty of Medicine, University of Udayana, Bali, 80114, Indonesia

³ Gianyar District Health Office, Bali Province, Indonesia

This evaluation aimed to describe and evaluate risk factors surveillance for non-communicable diseases (NCDs) based on surveillance system attributes and develop risk factors surveillance of NCDs in Gianyar District. The recording and reporting of risk factors surveillance for NCDs based on primary health facilities is carried out by 13 public medical centers and 1 special posbindu (integrated health services and coaching for adults and elderly) in Gianyar District health office. This evaluation used several method, in-depth interviews and report analysis in both of online (SIS applications) and offline (monthly reports) reports. The evaluation aspects were the completeness and accuracy of data surveillance, timeliness of reporting, processing, and presentation of the data. The measurement of these aspects mostly used a questionnaire that was previously compiled by evaluators, and we also used qualitative analysis. The factors that caused the weakness of risk factors surveillance for NCDs from primary health facilities surveillance system were excessive workload (92%), online reporting system was not well understood (100%), accuracy and completeness of data in both of online and offline data (61.5% had been late send reports & 100% have not sent complete data online), as well as delivery of NCDs information was not comprehensive (only 77% said that they were informed about the increase in NCDs cases in Gianyar District). The implementation plan is to make data entry training through an SIS (online) application and notify other information needed by surveillance officers of NCDs in Gianyar District. The outreach of this intervention planning began with the Gianyar District health office to 13 health medical centers in Gianyar District work area.

Keywords: surveillance, non-communicable diseases, evaluation

PP11

Comparison of the lipid profile between routine blood donation and non-routine blood donation among subjects with central obesity

Frans Wantania

Medical Faculty, Sam Ratulangi University, Manado, Indonesia

Several studies showed that inflammation was associated with the dyslipidemia. Ferritin is one of the inflammation markers which its level influenced by blood donation. Central Obesity in young adults may have benefit by blood donation because of this mechanism. This study aims to compare the lipid profile between routine blood donation and non-routine blood donation subjects with central obesity. This cross-sectional study involved 41 apparently health male obese subjects. This study was conducted in Internal Medicine Department, Prof. Dr. R.D. Kandou Hospital, Manado from February until July 2018. Subjects were post graduate medical students in Internal Medicine, Sam Ratulangi University aged under 35 years old, and selected by consecutively sampling. A lipid profile level was evaluated in 21 routine blood donation male obese subjects, and the other 20 non-routine blood donation subjects as control group. We use t-test to analyze the differences of the mean level of total cholesterol, LDL, TG, and HDL. Mean level of Total Cholesterol in routine blood donation was lower than control group (198.2 Vs 224.52; $p=0.011$). The LDL level was lower in routine blood donation than non-routine group (130.10 Vs 153.76; $p=0.013$), while Triglycerides level was significantly lower in this group (97.75 Vs 137.38, $p=0.010$). In this study, the mean level of HDL was not significantly different between routine blood donation subjects as compare to control group (46.75 Vs 43.57; $p=0.276$). Cholesterol, LDL, and TG level in routine blood donation subjects were significantly lower than non-routine blood donation subjects. Blood donation should be considered as an adjuvant therapy to improve lipid profile in subjects with central obesity.

Keywords: *blood donation, lipid profile, obesity*

PP12

Stress and hypertension among housewives in Sidotopo, Surabaya

Fitria Nurrahmawati and Trias Mahmudiono

Nutrition Department, Faculty of Public Health, University of Airlangga, Surabaya, Indonesia

Hypertension is the leading causes of deaths among Non-Communicable Diseases (NCD). Prevalence of hypertension among women is higher than men. Stress is one of the risk factors of hypertension. Household activity can increase stress prevalence among housewives. This study aimed to analyze the association between stress level and hypertension among housewives. This cross-sectional study was conducted on May - July 2018. The sample was 46 housewives lived in Sidotopo Village, Semampir Subdistricts, Surabaya City which selected by using simple random sampling method. Data were analyzed using Pearson Correlation test with a significant level of 0.05. This study showed that stress significantly associated with increasing systolic blood pressure ($p < 0.001$) and diastolic blood pressure ($p = 0.028$). Thus, being emotional while watching television was related to increased stress level ($p = 0.010$) which was one of the risk factors of hypertension. Most of housewives chose watching television as a coping stress strategy. Housewives who were emotional while watching television had greater risk of being stress than others. The risk of hypertension increased with stress level. To prevent increasing hypertension prevalence among housewives, housewives need to choose coping stress strategy selectively, to decrease stress level and minimize the trigger of hypertension.

Keywords: housewife, blood pressure, stress