



BOOK OF ABSTRACTS

The 1st SEAMEO INTERNATIONAL
CONFERENCE ON FOOD AND NUTRITION

Virtual Conference on

Ensuring Quality Early Life
for Productive Human Resources
Post Covid-19 Pandemic:
Updates on Early Childhood Care,
Nutrition and Education Research
and Program Evaluations

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Jakarta, 9 - 11 September 2020

SEAMEO RECFON
2020



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Preface

This book contains the abstracts of the First SEAMEO International Conference on Food and Nutrition (ICFN) focused on the theme of “Ensuring Quality Early Life for Productive Human Resources post Covid-19 Pandemic: Updates on Early Childhood Care, Nutrition and Education Research and Program Evaluations” that was conducted virtually on 9-11 September 2020.

The First SEAMEO ICFN, organized by SEAMEO Regional Center for Food and Nutrition (RECFON), provided a venue to share perspectives and successes as well as assess gaps in current practices, research efforts, policies and opportunities associated with ensuring quality early life for productive human resources in Southeast Asia. It reinforced SEAMEO RECFON’s flagship program on Early Childhood Care, Nutrition and Education aimed at providing a model of integrated implementation of essential components of childcare and parenting to ensure the optimal psychomotor, cognitive and affective growth and development of a child. The conference was attended by 674 participants from 18 countries.

The First SEAMEO ICFN Book of Abstracts includes abstracts of the keynote speaker, 10 plenary session speakers, 28 parallel session paper presenters, six hangout session speakers, and 24 poster presenters. This book also contains the brief profiles of the speakers. We appreciate all the speakers who submitted their abstracts and brief profiles to be included in this book.

We are thankful to the Secretary General of the Ministry of Education and Culture of the Republic of Indonesia and the Office of the Vice Rector of Research and Innovation of the Universitas Indonesia for their institutional and financial support to the First SEAMEO ICFN including the publication of this book.

This publication could be accessed from SEAMEO RECFON website at www.seameo-recfon.org to enable as much stakeholders who were not able to attend the First SEAMEO ICFN to learn about the interesting topics discussed during the various sessions. We hope that this Book of Abstracts could provide ideas and spark actions from relevant sectors to ensure quality early life for productive human resources in Southeast Asia.

Muchtaruddin Mansyur, MD, PhD
Director of SEAMEO RECFON

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Introduction

The SEAMEO Regional Centre for Food and Nutrition (RECFON) is one of the 26 regional centres of excellence of the Southeast Asian Ministers of Education Organization (SEAMEO). SEAMEO is an intergovernmental organization established in 1965 among governments of Southeast Asian countries to promote regional cooperation in education, science and culture in the region.

SEAMEO RECFON was established in 1967 as a Regional Centre for Community Nutrition under the SEAMEO Regional Centre for Tropical Medicine (TROPMED) Network until it acquired its current name and status in 2011. The Centre carries out six mandates, namely: education, capacity building, research, information dissemination, community development, and partnership toward improving the quality of human resources in Southeast Asia in the area of food and nutrition. The Centre is hosted by the Government of the Republic of Indonesia through its Ministry of Education and Culture and is considered as a non-stock, non-profit regional organization. In addition, the Centre is located within the campus of Universitas Indonesia, and also serves as the University's research centre on nutrition under the name of *Pusat Kajian Gizi Regional Universitas Indonesia (PKGR UI)*.

The Centre's research program and activities are guided by its 5 research lines, namely 1) Best Practices in Nutritional Assessment, 2) Food Security & Food Safety, 3) Nutrigenomics & Nutrigenetics, 4) Nutritional-Related Diseases, 5) Nutrition Policy and Program. These are conducted either by the Centre's program staff or in collaboration with researchers from partner-institutions at national and regional levels.

SEAMEO RECFON is currently operating under its 2nd 5-Year Development Plan which focuses on "Pre-maternal and Child Nutrition with Emphasis on School Programs and Food-based Approach". Thus, the Centre implements two flagship programs called "Nutrition Goes to School (NGTS)" and "Early Childhood Care, Nutrition, and Education (ECCNE)". The NGTS Program aims to develop Active, Well-nourished, and Smart school children from primary to secondary schools. On the other hand, the ECCNE program aims to facilitate the provision of an integrated environment for the growth and development of pre-school children.

Vision

Be the Centre of excellence in human resource development in the area of food and nutrition in Southeast Asia.

Mission

To conduct education, capacity building, research and information dissemination in food and nutrition through partnership for sustainable human resources development.

Goals

1. Provision of trained and skilled professionals in the areas of food and nutrition
2. Established networks for resource sharing, information exchanges, research & development, and training in the areas of food and nutrition

3. Continuous provision of up-to-date, and evidence-based information in the areas of food and nutrition
4. Active role as policy advocate to address food and nutrition problems in Southeast Asian region

Core Values

- **R**espect Cultural Diversity
- **E**mpowerment
- **C**ommitment and Integrity
- **F**orward for Excellence
- **O**wnership by Partnership
- **N**utrition for All

Strategies

- Promote leadership and maximize partnerships, collaborations, and alumni network
- Review and align with global, regional, and national protocols and situations
- Support country-led efforts and relevant policies
- Generate and disseminate research findings using updated and appropriate science and technology
- Practice good governance and sound financial management
- Continuously enhance staff capacities

Capabilities

Experts in:

- Nutrition Training for nutrition and health related professionals:
 - Basic Nutrition
 - Public Health and Community Nutrition Systems Analysis
 - Health and Nutrition Project/ Program Planning & Management
 - Nutrition and Diseases
 - Nutritional Epidemiology and Surveillance
 - Nutritional Anthropology
 - Health Promotion in Nutrition Program
 - Best Practices Dietary Assessment
 - Food Economics and Food Security
 - Food Safety
 - Nutrition in Food Industry
 - Food and Nutrient Interventions
 - Survey Planning
 - How to Handle Survey Data
- Nutrition Leadership Training
- Food and Nutrition Research:
 - Best Practices in Nutritional Assessment: Validation studies for various tools to measure nutritional exposures and outcome

- Food Security & Food Safety: Food contaminant, food accessibility and entitlement & their relation to health and nutrition
- Nutrigenomics & Nutrigenetics: Role of nutrigenomics/ nutrigenetics on cognition and diseases, how diet modulate gene expression
- Nutritional-Related Diseases: Role of nutritional factors as risk factors for infectious diseases and chronic NCDs
- Nutrition Policy and Program: Development and evaluation of food and nutrition intervention
- Community Development on Nutrition (in both settings of School and Community)
- Nutrient and Body Composition Analyses (Laboratory services)

Core Competencies

- Nutrition Project/Program Management
- Food and Nutrition Research
- Nutrition Staff Development and Training
- Community Development
- Nutrition Laboratory Services
- Nutrition Leadership Training

Laboratory Services

- Biochemical Analyses: Beta carotene*, Vitamin A*, Zinc*, Vitamin E*, Vitamin D*, Iron, Folate, Food Additives
- Anthropometric Assessment
- Dietary Assessment
- Real-time PCR

*accredited by Indonesian Accredited Body "KAN" with ISO 17025

Publication

In the January 2018- July 2019, SEAMEO RECFON has published 21 scientific articles in international peer review journal, including Asia Pacific Journal of Clinical Nutrition, Food Quality and Preference, Nutrients, BMC Public Health, Maternal and Child Health Journal and British Food Journal.

Moreover, we had 21 papers presented in 4 International conferences and 1 paper at a National Level (Indonesia) conference.

Partners

Collaboration with qualified universities and research institutions at national, regional as well as international level has shaped knowledge and skill of the SEAMEO RECFON's researchers and thus maintain the good quality of the researches. Some of our partners are World Food Programme, Ministry of Health RI, Nutrition International, UNICEF, The Union, Taylor's University, National University of Singapore, and United Kingdom Research and Innovation.

As for the organizations had been and are having collaboration in research activities with SEAMEO RECFON in accordance with The Center's flagship programmes, such as:

- School-based Adolescent Nutrition

- World Food Programme for Provision of services on evaluation of study local food based school meals (LFBSM) programme in NTT & Papua and Mother and Child nutrition (MCN) Programme in NTT
- Nutrition International for Three Rounds of Annual Cross-Sectional Surveys for the Program on an Improved WIFA Supplementation Program for School Going Adolescent Girls in West Java and Banten Provinces in Indonesia
- UNICEF for Training, advocacy and monitoring for adolescent nutrition pilot in Klaten and Lombok Barat
- National University of Singapore for Evaluation of Multi-Component Behavioural Determinants of Health in Adolescents Using A Web-Based Application Across Three Countries in Southeast Asia
- Early Childhood Care Nutrition Education
 - World Food Programme for Provision of services on evaluation of study local food based school meals (LFBSM) programme in NTT & Papua and Mother and Child nutrition (MCN) Programme in NTT
 - Ministry of Health RI for Paket Intervensi Masalah Gizi dan Penerapan 1000 HPK di Beberapa Wilayah di Indonesia oleh Pusat Kajian Gizi Regional Universitas Indonesia (SEAMEO RECFON) tahun 2017
 - Nutrition International for Program monitoring using LC-LQAS (Large Country-Lot Quality Assurance Sampling) method for the scale up program on Iron and Folic Acid Supplementation in four provinces of Banten, West Java, West Nusa Tenggara and Riau provinces and the scale up program on Zinc and ORS for the treatment of childhood diarrhea in three provinces of West Nusa Tenggara, West Java and Banten provinces of Indonesia
 - Ministry of Health RI for Pengembangan Panduan Teknis dan Uji Efektifitas Pemulihan Gizi Anak Balita di Daerah Rawan Bencana: Studi Kasus di Lombok Timur
 - United Kingdom Research and Innovation for Multicenter Research on Action Against Stunting

FLAGSHIP PROGRAMME

Nutrition Goes to School

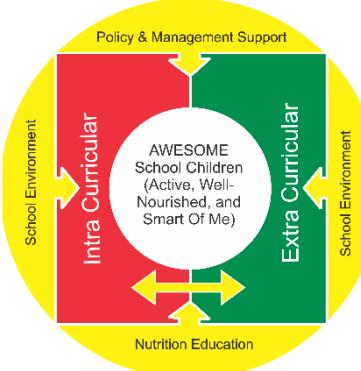
In 2014, to ensure the effectiveness of the administration, the Ministry of Education and Culture formerly coordinated education from preschool up to higher education, is being reformed. The respective ministry is now divided into two entities. One of them focuses on higher education and research which now is the Ministry of Higher Education and Research. Meanwhile the Ministry of Education and Culture is now in charge of coordinating basic education and culture. This structural reformation brings a positive change at SEAMEO RECFON as we continue serving our excellence in higher education for nutrition professionals; we now also cater our partners' mandates to contribute to contribute to the improvement of basic education from food and nutrition perspectives.

In this regard, a specific unit named "Community Development" at SEAMEO RECFON has been serving as think tank and administration body for the organization of school-based as well as community development projects. The United Nations defines community development as "*a process where community members come together to take collective action and generate solutions to common problems*". Due to gear shifting as mentioned above, since 2015 SEAMEO RECFON has aimed to document best practices of community development projects that take place at schools. This documentation has resulted in some project initiatives and research among school children at all levels since 2016 and branded as "Nutrition Goes to School – NGTS".

In August 2016, simultaneous visits to various Directorate Generals at Ministry of Education and Culture (MoEC) Republic of Indonesia were initiated by Director of SEAMEO Secretariat together with Centre Directors from SEAMEO BIOTROP, SEAMEO SEAMOLEC, SEAMEO RECFON, SEAMEO QITEP in Language, SEAMEO QITEP in Mathematics, and SEAMEO QITEP in Science. The meeting envisions the leadership role of the Minister of Education and Culture Republic of Indonesia as the SEAMEO Council President 2017-2019. The consultative meeting have resulted a proposed 3-year cooperation program with Directorate General of Teacher Education and Development, Directorate General of Early Childhood Care Education and Family Education, Directorate General of Primary and Secondary Education, and Directorate General of Culture. This document signifies an important milestone for the direction of NGTS program at SEAMEO RECFON.

Framework

For both our priority programs we have these framework as our guidance.



Nutrition Education within and outside the classroom brings about AWESOME School Children together with the proper policy & management support, and conducive school environment

Nutrition Education: refers to activities aimed at enhancing the knowledge and understanding of school teachers and students about balance nutrition concepts and principles by integrating them either in classroom subjects or in extra curricular activities

Policy & Management Support: refers to written documents, organizational set up, and human resource availability that support the promotion and practice of proper health, hygiene and nutrition among school constituents

School Environment: refers to the physical and sociocultural environment within the classroom, inside the school premises, and its immediate outside surroundings that could affect the promotion and practice of proper health, hygiene and nutrition among school constituents and the communities around it.

NGTS Components



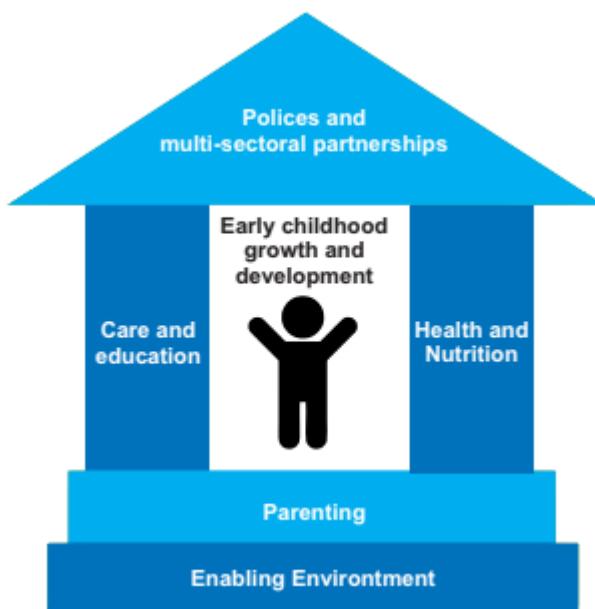
School Readiness Mapping for NGTS	School Canteen	School Garden	Nutrition Education (Local Food-based)	Hygiene and Sanitation at School	Physical Activity	Nutrition and Entrepreneurship (Vocational School)
School readiness survey related to NGTS activity	<ul style="list-style-type: none"> Training for food handler Healthy canteen development Food safety analysis 	<ul style="list-style-type: none"> Training on school garden development School garden for nutrition literacy 	<ul style="list-style-type: none"> Offline training for teacher Online training for teacher Nutrition education module development Nutrition education for parents Best practices promotion Breakfast and IFA supplementation promotion Behaviour Change Communication 	<ul style="list-style-type: none"> Hand washing practice promotion School base management Implementation of non smoking area Environmental health analysis Occupational health 	<ul style="list-style-type: none"> Promoting physical activity at school Student fitness monitoring 	<ul style="list-style-type: none"> Online training for teacher Online training for vocational student

Early Childhood Care, Nutrition and Education

At the Glance

Early Childhood Care and Nutrition Education (ECCNE) is a program initiated by SEAMEO Regional Centre for Food and Nutrition (RECFON) in 2017. This program aims to provide a model of integrated implementation of essential components to optimize child growth and development. These components include enabling environment, parenting, care and education, health and nutrition, and policy and multi-sectoral participation.

ECCNE Framework



The ECCNE Program framework puts together the five components that are necessary to achieve an integrated approach to childhood growth and development. These components are arranged in a form of a “house” which either represents a family, a household, a school, or a community where in these components could and should operate. A house is supposed to serve as a nurturing environment for a child to have optimal growth and development. A house also symbolizes protection and security needed by children. The Program framework recognizes the participation of relevant sectors as paramount also in providing and facilitating the delivery of services needed for an optimal child growth and development.

ECCNE Working Group

In 2018, SEAMEO RECFON initiated the establishment of Indonesia ECCNE Working Group (ECCNE-WG). ECCNE-WG members are the institutional partners from the government, academe, UN agencies, NGOs and professional organizations that have been involved in early childcare. This WG aims to share information and provide inputs regarding good practices in the application of the Holistic Integrative ECD model and PAUD mapping to optimize early childhood development in Indonesia.

ECCNE Component

Components	Stakeholders	Activities
Health and Nutrition	DOH, Women's Association	
Care and Education	DOE/PAUD DIKMAS, MoRA	
Protection and Welfare	Min Social Affairs	<ul style="list-style-type: none"> - Nation-wide ECE teacher's nutrition competency survey - Development of local FBR - Coaching the PMT/PGS-PL program to priority villages for stunting rehabilitation in Indonesia - Online training for ECE teachers and trainers - Master of Trainer for local stakeholders (District/City/Province) - ToT for program implementers - Capacity building for health professionals and ECE teacher trainers on parenting and monitoring - Enhancement of parenting topics for strengthening PAUD HI



**LIST OF SEAMEO RECFON'S RESEARCH
2018-2020**

No	Project Title
Best Practices in Nutritional Assessment	
1	Characterization of Micronutrients in Food and Nutritional Intake of Under Two Years Old Infants in Malnutrition Areas in East Nusa Tenggara
Food Security and Food Safety	
2	Food safety in School Canteen Campaign Through Exposition Texts Learning for Students of XI MIPA 1 SMA N 2 Pangkalpinang
3	Improving Food Literacy and Selective Attitudes of Food Consumption Through Reasurposing Learning Models (Reading, Analyzing, Survey, Posterizing, Practicing) on Food Digestive System Topic
4	Exposure and Contamination of Mercury and Other Heavy Metals in Fish Consumed by School Children in Sambas District, West Kalimantan
5	Food Safety Knowledge, Attitudes, and Behavior for Canteen Providers at the University of Indonesia
6	Validation of Healthy Canteen Assessment Instruments on Food Quality and Food Safety in Middle Schools in Malang City
Nutrigenomics/Nutrigenetics	
7	Relationship Between Protein, Calcium, and Milk Intake with MTOR Gene Expression and Growth of School-Age Children in Malang
8	MRNA Profile of FTO, IRS-1 and VDR Gene in Polycystic Ovary Syndrome (Sopk) Patients with Obesity and Nir-Obese: Studies Related to Metabolic System
Nutrition and Diseases	
9	Advocating Proper Nutrition in Special Education Schools for Children with ADHD and Down Syndrome in Southeast Asia
10	Awareness and Attitudes about Food Safety, Food Access and Healthy Diet in Response to the Covid-19 Pandemic in Indonesia
11	Evaluating current global awareness, attitudes, and adoption of preventive measures in response to the Covid-19 pandemic: How to optimise strategies to flatten the Covid-19 infection curve
12	Mapping of the degree of obesogenicity in primary schools at the district / city level in Jakarta and West Java using the Primary School Environmental Audit (PSEA) audit tool: Cluster Analysis
13	Action Against Stunting Hub
14	Evaluation of Multi-component Behavioural Determinants of Health in Adolescents using a Web-based Application across three countries in Southeast Asia
15	The Relationship between Fish Consumption, Breakfast and Sleep Quality with Prediabetes in High School Adolescents (SMA) in Yogyakarta City
Nutrition Policy and Program	
16	Action Research: "ECCNE Program - My Child is Healthy and Smart" to Optimize Early Childhood Growth and Development in Tanjung Jabung Timur Regency, Jambi
17	Double-Blind Cluster Randomised Controlled Trial of Chicken Liver and Eggshell Crackers in Pregnant and Lactating Mothers in a Disadvantaged Setting in Indonesia
18	Optimization of Local Food-Based Diet through Linear Programming Approach for Intervention Model Development for Non-Communicable Diseases Prevention in Oil and Gas Company Workers

No	Project Title
19	Parenting Education Model and Play Therapy Stimulation on Early Childhood Growth and Development
20	Evaluation of the Nutritious and Cheap School Packed Meals Program (Bekal Anak Sekolah Bergizi Enak dan Murah - Beas Beureum) as Balanced Nutrition Education in Elementary Schools in Bandung City
21	Evaluation of Policy Implementation and Development of Innovation in Nutrition Sensitive Intervention Acceleration Program in National Stunting Priority Villages, Langkat Regency, North Sumatra Province
22	Design and Implementation of Monitoring Information Systems for the Nutrition Goes To School (NGTS) Program
23	Improving Knowledge on Balanced Nutritional by Portion Visualization Using "My Plate-Isi Piringku" through Learning Graphs in Trigonometric Functions in Class X IPS 4 SMA Negeri 1 Fakfak, West Papua
24	Increasing Awareness of the Dangers of Cigarettes and Drugs and the Indonesian Language Learning Achievement through the "Jimpitan" Learning Method for Class VIIIB Students of SMP Negeri 3 Kertek.
25	The Use of Bogem Kaget as an Effort to Increase Knowledge on Anti-Gadget addiction through Learning Economic Activities in Class VII Students of AlKausar Internat Middle School, Sukabumi Regency
26	Improving Student Competence in Balanced Nutrition Practices using Project-Based School Environment Utilization and (Rare) Local Food Sources Processing, Environmental Care Attitudes, and Biodiversity Conservation in SMA N 1 Batipuh.
27	Tobacco tax allocation for nutritional program on resolving stunting in Indonesia
28	Development of Healthy Village and Identification of Health Impacts on Outer Areas of Indonesia: Romang Island, Southwest Maluku, Maluku, Indonesia
29	Capacity Building in Using Optifood Linar Programming to Create Specific Local Food-Based Recommendations for Stunting and Anemia Prevention in Under Two Years Old Children in the Context of Strengthening Nutrition Supplementation Interventions in Collaboration with Universities and Colleges
30	Development of Technical Guidelines and Efficacy Test of Nutrition Recovery for under Five Children in Disaster Prone Areas: A Case Study in East Lombok
31	Utilization of Social Networks to Improve Maternal and Child Nutrition Practices in East Java: An Exploratory Study on Positive Deviants and Negative Deviants
32	Training, advocacy and monitoring for adolescent nutrition pilot in Klaten and Lombok Barat
33	Development of Modules, Lesson Plan and Materials on Adolescent Nutrition Behavioural Change Communication
34	Endline Study of the Nutrition Goes to School Program Action Research to Improve Nutritional and Health Status, Physical Endurance, and Cognitive Function in Adolescents in Malang Regency, East Java
35	Three Rounds of Annual Cross-Sectional Surveys for the Program on an Improved WIFA Supplementation Program for School Going Adolescent Girls in West Java and Banten Provinces in Indonesia

No	Project Title
36	The Usage of Systematic Review and Audit Tools in Developing School-Based Nutrition Program Interventions: Policy-Based Policy Guidance
37	Community Empowerment and Participation Models in Improving Food Safety in Schools (Intervention Model at SDN1 Sukaluyu, Bogor
38	Development of Early Childhood Care and Education Tools and Activities for Working Mothers
39	Smoking Habits and Adolescent Nutritional Status, Data Analysis of Indonesian Basic Health Research 2019
40	Cultural and Economic Drivers of Protein Transition in SE Asia : Focus on Malaysia and Indonesia
41	The Effectiveness of the Nutrition Education Module on Nutrition Knowledge of Preschool Children in Public Kindergartens in 3 Cities / Regencies of Riau Province
42	Intervention Promotion of MPASI Optimization Accompanied by Multi Micronutrient Fortification (Taburia) with Linear Programming Approach Prevents Decrease in Anthropometric Index Z-Score and Micronutrient Status (Fe and Zn), and Improves Digestive Health of Under 5 Children
43	Development of School Readiness Score to Receive Innovation Balanced Nutrition Intervention 5-8 (Inogis 5-8)
44	Food-Based Recommendation (FBR) Intervention and Its Effectiveness Against Fatigue, and Work Productivity of Female Night Shift Workers in the "X" Factory
45	The Effectiveness of the Comic Nutrition Education Program Based on the Main Nutritional Problems According to Linear Programming on Improving Diet, Main Nutrient Intake Problem and Hemoglobin Levels of Anemic Adolescent Girls in Islamic Boarding Schools in Malang City
46	Development of a Smartphone Application-based Obesity Intervention Model for Adolescents Based on the Level of Behavior Change Readiness
47	Action Research: "Nutrition Goes to School Program" to Improve Nutritional and Health Status, Food Security and Cognitive Function in Adolescents in Malang District, East Java
48	Program monitoring using LC-LQAS (Large Country-Lot Quality Assurance Sampling) method for the scale up program on Iron and Folic Acid Supplementation in four provinces of Banten, West Java, West Nusa Tenggara and Riau provinces and the scale up program on Zinc and ORS for the treatment of childhood diarrhea in three provinces of West Nusa Tenggara, West Java and Banten provinces of Indonesia
49	Capacity building and effectiveness study on local specific food-based recommendations to reduce maternal anemia among pregnant women in Indonesia
50	Evaluation of School Feeding Program to Student's Nutrition Knowledge, Balanced Diet Practices, Nutritional Status, Fitness and School Attendance_2018 (Baseline&Penyusunan Modul Penguatan Edukasi Progas 2018)/PROGAS

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**KEYNOTE SPEECH AND
CONFERENCE OPENING REMARKS**

**Ensuring Quality Early Life for Productive
Human Resources: The Importance of Early
Childhood Care, Nutrition and Education,
Pre and Post Pandemic**



Ensuring Quality Early Life for Productive Human Resources: The Importance of Early Childhood Care, Nutrition and Education, Pre and Post Pandemic.

Prof. Ainun Na'im, Ph.D

Secretary General Ministry of Education and Culture Republic of Indonesia

The quality of human resources has become the main indicator in measuring and defining the progress of a nation. In that basis, every country has put development of human resources as major issues, programs and strategies. Early childhood is a golden period that plays a significant role in the whole process of a child development. Integrative Holistic Early Childhood Development Program in Indonesia has been set as an effort to develop early childhood to meet the essential needs of children who are diverse and interrelated simultaneously, systematically, and integrated. Holistic stimulation services are essential, including education, health, nutrition, care, protection and welfare services.

SEAMEO RECFON's role in scaling up Early Childhood Development in SEA region, including in Indonesia underpins the sustainability of the work on early childhood development. The Center supports the government by conducting research, training, and capacity building to children, parent, and teacher on early childhood care, nutrition, and education.

The Covid-19 pandemic has led the world struggling, and children, without exception, are greatly affected. Understanding the importance of early childhood education and the challenges during the Covid-19 pandemic, the Government of Indonesia has been implementing education policy with particular concern on early childhood education. The Ministry of Education and Culture has also been facilitating early childhood education teachers in the implementation of Learning from Home during the pandemic.

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PLENARY SESSION 1

**Key Lecture : A Whole Child Approach: The
Importance of Early Life Adversity on Child
Biology and Cognition**

Moderator : Dr. Umi Fahmida



Key Lecture : A Whole Child Approach: The Importance of Early Life Adversity on Child Biology and Cognition

Prof. Paul Haggarty

Deputy Director of the Rowett Institute of Nutrition and Health,
University of Aberdeen

A Whole Child Approach: The Importance of Early Life Adversity in Child Biology and Cognition
Prof. Paul Haggarty (Deputy Director of the Rowett Institute of Nutrition and Health, University of Aberdeen)

Stunting and wasting, and their long-term consequences, have proved thus far to be intractable and persistent problems. Attempts to reverse or ameliorate stunting in particular, and improve outcomes related to it, have met with limited success. Nutritional strategies designed to address the problem of stunting that make perfect sense in high income settings can even result in adverse outcomes when implemented in low income settings. We need to have a better understand the biology of this phenomenon in the context of the economic, environmental, social, and cultural setting in which it arises if we are to develop effective strategies to avoid, reverse, or ameliorate stunting.

Stature is just one manifestation of the biology of stunting and we have developed the concept of functional stunting that we define as "a change in biology in response to early insult that has adverse long-term consequences associated with, but not limited to, reduced stature". Cognitive ability in particular is a key outcome related to stunting. Cognitive ability and educational attainment in general, are key to the success of individuals, societies, and countries but we do not have a good understanding of the effect of stunting or the potential to improve cognitive outcomes after stunting has occurred.

One of the methodologies highlighted as promising in relation to functional stunting is epigenetics. This field is of particular interest to policy makers searching for explanations for complex epidemiological observations and conceptual models on which to base interventions. Stunting is characterised by a nexus of disadvantage in both the socioeconomic and biological realms that appear to be self-perpetuating and self-reinforcing. In order to develop effective strategies to break this cycle it is necessary to understand the nature of the feedback loops between biology and the physical and social environment. The epigenetic paradigm allows for such cross-talk. Epigenetics refers to the information in the genome over and above the purely genetic information contained in the DNA base sequence and there is a growing body of evidence demonstrating effects of the environment on epigenetic states that set the physical and cognitive trajectory across the life-course. We believe that these epigenetic states are key to understanding the persistence of the problem of stunting and its corollaries such as poor cognitive development. Epigenetic information offers the potential to generate early predictors of future stunting, stratification of types of stunting, and identification of subtypes responsive to intervention.

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PLENARY SESSION 2

**The Impact of COVID-19 Pandemic on
Stunting Alleviation Program in Southeast
Asia and Its Adverse Effects on Child Biology
and Cognition**

Moderator : dr. Grace Wangge MSc PhD



Indonesia Experience

Dr. Hera Nurlita, S.SiT, M.Kes

Directorate of Public Health Nutrition - MOH
Indonesia

Indonesia has made significant progress in terms of reduction nutrition problems. However, 27.9% Stunting prevalence is still in categorical community health problem, with large regional disparities. According to Basic Health Survey Data, the prevalence of maternal anemia and adulthood obesity increased between 2013 and 2018. Realized the importance of proper nutrition for the future health and well-being. The Government of Indonesia assign stunting as a prioritize in the 2020-2024 Medium-Term National Development Plan. Stunting prevention and reduction do through multiple intervention and multisectoral approach.

The pandemic COVID-19 has debilitated economy, accessibility and affordability of food and health services. Since then, several modification programs were provided and designed for obtaining national target of reduction stunting 14% in 2024 is in going. Nutrition service conduct through innovative/digital delivery systems and complying with protocols of health and regional policies. Its service protocols have been prepared according to target groups based on the life cycle

Some new approaches to existing activities have been developed such as; Leverage digital systems to increase the capacity of health workers, counseling and education. "**GIZI BERSERI**" is one of nutrition information serial for public, health services, nutritionist and influencers. The event was moderated by Directorate of public health nutrition, followed by 2000 participants, 5.553 subscriber in every series, and viewers and views increase continuously. Keep doing home visiting services for sick children, wasting and stunting according to the modified protocol, provision food supplementation, Increase the utilization of Mother and Child Health Handbook as a tool for growth monitoring, continuously record and report all activities through electronic reporting. In terms to overcome nutritional problems in remote areas, borders and islands throughout Indonesia, distribution Health workers go through "**Nusantara Sehat**" programs in locus stunting, remote areas, borders country and islands.

However, all these efforts must be carried out continuously by strengthening the surveillance system and monitoring, involved of local wisdom to be able to support the achievement of the expected targets. Kept thinking positively, one must see this as a feasible challenge to further improve the innovative nutrition programme design to be more efficient and effective in the implementation nationwide.



Laos Experience

Dr. Chandavone Phoxay

Deputy Permanent Secretary of Cabinet
Ministry of Health Lao P.D.R

Key Measures toward Reduction of stunting rate CU5 from 44%-33% in over 5 year (2012-2017) in Lao P.D.R, are attribute to a high level of political will, mainstreaming budgeting the national plan of action on nutrition, effective multi-sectoral coordination and community participation. However high stunting rate and triple burden (high undernutrition, high anemia and increasing over-nutrition) are challenge. Malnutrition have been exacerbated by COVID 19 outbreak in 2020. As its result, routine essential health and nutrition services are disrupted. Coverage of the 1st 1000 day of life services including Antenatal Care, Daily and weekly IFA for pregnant and Reproductive women, Vit A, Deworming for CU5, EPI and child well-being services are dropped. These impacts caused by limitation resources, shortage of MCH nutrition commodities and mother reluctant to visit to health facilities. Maternal and child nutrition have been aggravated by COVID 19 outbreak

Ministry of health and stakeholders made efforts for adjustment on nutrition Programs to avert the long lasting impact of the pandemic. Boost implementation with prioritization of intervention and focus on geographical areas with low coverage the so-called “Zone 2-3” and hard to reach in

provision integrated MCH Nutrition services. Providing health education, social behavioral change communication on nutrition cross nation and advocacy public private partnership

In summary, the Ministry of health make crisis of COVID 19 outbreak turn to opportunity of strengthening health care system in particular put nutrition services in the center of response approach.



Myanmar Experience

Dr. Lwin Mar Hlaing

Acting Director of National Nutrition Centre (NNC), Department of Public Health, Ministry of Health and Sports, Myanmar

Background

Myanmar has a total population of 54,475,912 with annual growth rate of 0.88%. Only about a third (29%) of population live in urban while the rest stay in rural side. Average household size is 4.6 and Myanmar has under-five mortality of 37.7/1,000 live births and infant mortality rate is 30.9/1,000 live births. In Myanmar, undernutrition among children under five years of age has declined between 2009 and 2018 with stunting from 35.1% to 26.7%; underweight from 22.6% to 19.1%; and wasting 7.9% to 6.7% respectively. However, it was found that all these nutrition problems are still in the stage of public health significance and one third of under-five

children in Myanmar are suffering from anemia.

Multi-sectoral National Plan of Action on Nutrition (MS-NPAN)

On January 2017, the first Cross-Ministry Coordination meeting on National Nutrition Strategy was organized led by The State Counselor Aung San Su Kyi bring all nutrition related ministries including Ministries of Health and Sports (MoHS); Agriculture, Livestock and Irrigation (MoALI); Education (MoE); Social Welfare, Relief and Resettlement (MoSWRR) together with development partners (DP). The State Counselor Guidance highlighted that nutrition is the foundation for a country's development and provided instructions to collaborate and contribute from concerned ministries and development partners to efforts from MoHS in country's nutrition activities. Following these instructions, MoHS has established multi-sectoral coordination bodies on nutrition not only at the union level but also at the sub-national levels. Moreover, in coordination with all concerned ministries and developed partners, MoHS has developed a Multi-sectoral National Plan of Action on Nutrition (MS-NPAN). Overall goal of MS-NPAN is to reduce all forms of malnutrition in mothers, children and adolescent girls in Myanmar. MS-NPAN was developed at national level and sub-national level plans have been developed in some states/regions with high malnutrition rates.

COVID-19 and MS-NPAN

As of 5th September 2020, Myanmar found 1,253 confirmed cases of COVID-19 and 7 deaths. The conceptual model for "Malnutrition in the time of COVID-19" is extremely helpful in highlighting specific areas

of the MS-NPAN which are most vulnerable to the adverse impact of the COVID -19 pandemic. Response activities to COVID -19 require a multi-sectoral approach and therefore, leveraging the existing MS-NPAN to respond COVID-19 will provide a potential contribution. MS-NPAN is an effective delivery platform and mechanism for response to prevent the adverse impact of COVID-19 on food insecurity and nutrition. MS-NPAN prioritizes main risk factors, vulnerable communities and geographic areas which are likely to be more affected by COVID-19. COVID-19 Economic Relief Plan (CERP) is a platform that aligns the contributions of different sectors with a specific focus on incentivizing investment by the private sector. Short-, medium- and long-term responses have been identified by each sector under MS-NPAN in response to COVID-19 to minimize its impact on food security and nutrition.

Way Forward

Sub-national MS-NPAN plans will be adjusted in adaptation to COVID-19 context, interventions under MS-NPAN will be implemented following preventive measures for COVID-19 and best practices, case studies and lessons learned will be documented.

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PLENARY SESSION 3

Food System and Food Security Post COVID-19 Pandemic in the ASEAN Region

Moderator: Dr. Helda Khusun, PhD



Food System and Nutrition During The COVID-19 Pandemic

Assistant Professor Dr. Kitti Sranacharoenpong

Head of Community Nutrition Department at Institute of Nutrition, Mahidol University, (INMU) Thailand

The coronavirus disease 2019 (COVID-19) pandemic is a health crisis threatening the food and nutrition security among millions people worldwide. More than hundreds of millions of people were already suffering from hunger and malnutrition. The COVID-19 also has affected nearly 70% of children and teenagers around the world due to school closure policies. School closure is implemented widely in order to prevent the viral transmission and its impact on the broader community, based on preliminary recommendations and evidence from influenza. However, there is debate with regard to the effectiveness of school closures in preventing COVID-19 in childhood. It is questionable if school closures disrupt transmission or silent spread from, or to, children in a household. This question is important as a majority of children in low- and middle-income countries depend on free school meals and unexpected long-term school closure may adversely impact on food security, nutrition and educational outcomes. Food insecurity is expected to be higher during the pandemic. In this viewpoint, we argue for a more thorough exploration of potential adverse impacts of school closures in low- and middle-income countries and recommend actions to ensure that the health and learning

needs of vulnerable populations are met in this time of crisis. We suggest the short, intermediate and long term approaches to relieve the food insecurity problem in the crisis that are; 1) using the empty space of the communities growing fruits and vegetables, 2) apply the community participatory approaches to ensure food security in long term.



ASEAN and Food Security

Dr. Aladdin D. Rillo

Deputy Secretary-General for ASEAN Economic Community

In the aftermath of the 2007/2008 food price crisis, the 2009 ASEAN Summit pledged to embrace food security as a permanent and high policy priority in the region. Since then, ASEAN has made remarkable progress in the fight against food insecurity. A number of documents have been issued to ensure food security and nutrition. Notably, the ASEAN Integrated Food Security Framework was adopted to ensure long-term food security and nutrition and improve the livelihoods of farmers in the ASEAN region. However, ASEAN is facing many challenges to ensure food security such as climate change, transboundary diseases, food contamination and food shortages during calamity. The presentation will highlight food security in ASEAN context, key issues on food security, regional cooperation on food security and food security amid the COVID-19 pandemic.

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PLENARY SESSION 4
Strengthening Early Childhood Care and
Education in Southeast Asian Countries Post
Pandemic

Moderator : Dr. Jess C. Fernandez



Early Childhood Care and Education Competency Framework for Southeast Asia

Dr. Ethel Agnes P Valenzuela

Director of SEAMEO Secretariat

To contribute to Sustainable Development Goals Goal 4 in promoting quality education and lifelong learning for all, SEAMEO will ensure that all girls and boys have access to Early Childhood Development (ECD). In SEAMEO Education Agenda 2015-2035, Early Childhood Care and Education (ECCE) becomes the first priority. There are still many 3-5 years old children that could not go to school and do not have access to ECD, whereas quality ECCE learning experiences is the bedrock of lifelong learning and development.

Quality of children's ECCE learning experiences depends on the quality of work by the ECCE teachers/practitioners: the competency, capacity, and motivation. There is urgent need to strive for a qualitative leap through professionalization and capacity development of ECCE teachers/practitioners. Therefore, SEAMEO has put an effort to achieve the goal by developing ECCE Competency Framework and translated it into several languages. The framework has 4 domains: content knowledge, pedagogic practice, and assessment; learning environment; engagement and collaboration; and professional development.



Scoping Study on Early Childhood Care and Education and Parenting in Southeast Asia

Dr. Dwi Priyono

Director of SEAMEO Centre for Early Childhood Care Education and Parenting (CECCEP)

In recent decades, ECCE and parenting have gained more attention from many stakeholders, including research communities, civil society, and intergovernmental organizations which furthered understanding of its holistic and multi-sectoral nature. SEAMEO CECCEP conducted study through literature review and questionnaire to document the multifaceted development benefits of ECCE for health, education, social and emotional well-being, social equity and cohesion, economy, employment and earning.

Almost all countries in Southeast Asia region have the ECCE students at the age of under 6 years old. In some countries, more than one ministries are in charge in the ECCE. Private organization becomes the majority of ECCE provider in the region. ECCE has been considered as formal education with clear curriculum and educational delivery in several countries. In regards to the parenting program, almost all countries have established parenting programs and services which are supported by the relevant ministries who focus on early childhood and family. The

parenting program ensures that families have sufficient knowledge and skills to carry out the programs at home.

In the implementation of ECCE and parenting programs in Southeast Asia, some issues and challenges were found, such as providing better access on ECCE and parenting program especially for rural areas and marginalized community; enhancing quality of the programs to ensure holistic development of the children; improving ECCE teachers' skills and competencies; elaborating coordination between ministries; and leveraging the fund for the programs.

Day 3

PLENARY SESSION 4.3



Country Experience: WASH in ECCE

Dr. Maria Corazon C. Dumlaо

Chief Health Program Officer Bureau of
Learner Support Services - School Health
Division

The Philippine WASH in ECCD and Schools have been forged and had been founded through years of putting in policy and implementation. This has been a continuous process through engaging support of the national government, local government units, and other stakeholders and partners from different sectors.

WASH in ECCD and Schools improves health and learning performance of children and their families, keeps the school environment

and community healthy, clean and safe and inhibits the transmission of diseases and illnesses, and develops good life skills among children. It involves the need to provide for sufficient budget, resources and facilities. It is not sufficient to have policies in place. Appropriate implementation must be coupled with developmentally appropriate nudges, as well as integration in learning and routines and consistency at home and in school as they are prepared to transition from child development centers to formal schools. Understanding that integrating WASH behaviors, routines and advocacies in early childhood in Child Development Centers and schools covering early childhood is important. This involves developmentally appropriate and wholistic approaches, and engaging multiple sectors in national, local and community stakeholders.

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SAFEGUARDING SESSION



Safeguarding Ethical and Safety for Subjects of Community Intervention

Muchtaruddin Mansyur, MD, PhD

Director of SEAMEO RECFON

The inherited skepticism of disregard and contempt for human rights from the past has left powerful influences, making autonomy, justice and safety the citadels for current ethical research practices including community intervention study. Presently due to disparate factors, there is neither uniformity nor equitable standards in the understanding and grading of risks globally for these populations with relevance to extent of acceptability and evaluation of quantum of risks to establish consistent safeguards in biomedical, health and nutrition research aiding stakeholders.

Investigators require factual guidance from regulatory with reference to practical difficulties confronted during conduct of the community intervention. The need of the day is responsible, experienced, sensitive researchers guiding conscientious teams to treat vulnerable communities with concern, patience, respect, equitably, allowing free will, ruling out any form of inducement, enticements, insensitivity or prejudice. Awareness through continued education of stakeholders including media and public would result in better attitudes and approach to this form of sensitive research.

Good science with responsible research provides an authentic groundwork to heighten best practices in research management of vulnerable populations. Nevertheless, health and nutritional research is metamorphosing and escalating in complexity, blurring the line between potential risks and benefits encumbering the development of comprehensive robust monitoring systems.

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HANGOUT SESSIONS

HANGOUT 1A



GAIN Emo Demo

**Ardhiani Dyah
Priamsari**
Program Manager, GAIN

Robust evidence has shown that adequate nutrition during pregnancy and the first two years of life is critical for survival, health, growth, and development. In Indonesia, many caregivers are neither aware of nor practicing good nutrition behaviors. Changing behaviours is complex and evidence shows that knowledge transfer alone is often insufficient to motivate such changes. Therefore, we develop a strategy called Emo-Demos. The approach was developed based on LSHTM Behaviour Centred Design theory.

Emo-Demos are interactive activities which intentionally avoid teaching about health. They operate by creating a moment of surprise or re-evaluation and by heightening or changing the emotion associated with behaviour. Parenthood is life-changing and can be an opportunity for behaviour change. Most people know what is best for their child but still do not practice these behaviours. Demonstrations are useful because people are often more influenced by what they see, what they do, and what they see others do. Integrated, innovative, and behavior-centred programmes have strong potential to contribute to ending hunger and malnutrition.

HANGOUT 1B



Coping with Current Challenge of Zoom Fatigue Among Office Workers During COVID-19 Pandemic

Dr. dr. Ray W Basrowi, MKK

Founder and Chairman of Health Collaborative Center

Current pandemic of COVID-19 required us to be adaptable. Digital tools have been no longer optional as we are moving into new norm living. Lock down and big scale of social limitation restricts face-to-face meeting, this also applies among office workers, who have shifted to work from home and required to be more adept to utilize various of digital tools, such as video-conferencing applications. It was recorded that numbers of people used Zoom had increased exponentially from 10 million by end of 2019 to 300 million by April 2020. Massive use of videoconferencing tools brought people to tiredness, anxiety, or worry which commonly identified as "zoom fatigue". The scientific explanation is that technology could disrupt normal intricate human communication methods that have been finely tuned for over centuries to help human to survive. One of the issues is in face to face communication we take in signals from others' whole bodies to understand what they say, however in video conferencing communication, we only capture others' faces without their whole bodies' gestures, thus dismissing non-verbal cues, which make more

difficult to tell whether the other persons pay attention or get what you said. Recent surveys revealed that prolonged videoconference, meetings and webinars contributed in reduction of working productivity, as the level of attention, information assimilation, and process in our brain is higher compared to conventional face-to-face meetings. In order to prevent "zoom fatigue", it is important to limit the use of videoconferencing technology or use it in moderation, as well as to avoid doing multi tasks during the calls.

HANGOUT 1C



DOMAIN as a Method of Instilling Character and Improve Intelligences Compound in Lil'bee

Early Childhood Bekasi City, West Java, Indonesia.

Reny Nurlela, M.Pd

Founder Taman Domain Lil'bee

The study of this paper, the authors designed a creative learning methods namely DOMAIN (Dongeng, Musik dan Permainan) mean, fairytale, Music dan Games. As an effort to plant the character and development of multiple intelligences in early childhood in Sekolah Lil'bee Jatiasih Bekasi City West Java Province. The formulation of the problem. How this DOMAIN learning methods can be effective learning method and fun to instill character and development of multiple intelligence in early childhood. The authors also describe how the planning process , the implementation process, and the result that

they got on the research method of learning this DOMAIN. There are several benefit can be taken in this learning method, both theoretically and practically. The methods use in this study is a qualitative approach, through techniques of data collection, observation, interviews, documentation and literature studies. As for who is the subject of the research is several young children who attend early childhood education in Sekolah Lil'bee in district Jatiasih, Bekasi City, West Java Indonesia. In this study included also the result of changes in the character and improvement of early childhood intelligence compound in Sekolah Lil'bee who have followed the process of creative learning and fun with DOMAIN method. In this case, the authors limit at age 4-6 years old, at Sekolah Lil'bee. Conclusions drawn from the study that the early childhood, which has followed the learning process fun and creative with DOMAIN method showed changes are quite good, both in term of the character changes and the increase of Multiple Intelligences early childhood. Otherwise it looks at the result of this study that with the changes in teaching methods, from conventional teaching methods towards learning fun and creative changes in the level of presence of younger children in the lil'bee school. They are from previously not really like to come to school and was always late for school at this time does not happen again and the attendance rate of early childhood reaches 95% everyday, also from a previous talk is not good of courteous become accustomed to well spoken, polite, and courteous. From style abusive speech turned into a way of speaking that use bahasa was good and right and from two to three accustomed intelligences in learning in early childhood.

Keyword : Learning Methods, stories, Music, Games, Character, Multiple Intelligences, Stories References, Musical References, Games References.

HANGOUT 2A



Homemade Local Food Based for Infant and Young Children

A.A.S Indriani Oka, M. Gizi

Community Development and Partnership Unit Officer at SEAMEO RECFON

Background:

Iron, zinc, and calcium are the key problem nutrients for young children in Indonesia (Fahmida et al, FNB 2014 ; Fahmida et al, 2015; Fahmida et al, 2020). Disaster will increase the risk of malnutrition because:

- Disaster response concentrate on infrastructure, security, food supplies for adults
- Lack of awareness on food for under-five children (susceptible for stunting and other nutrition issues)

Food for young children should meet the requirement as complementary food including texture and nutrient density, and should be able to be reproduced by everyone, regardless of the resources limitation. Chicken liver and anchovy are rich in iron, zinc, and calcium, and if it served in powder form will have denser nutrient than the fresh from (because it's dried).

This hangout session will introduce how to prepare the chicken liver and anchovy into powder at home and why is it powerful to answer the nutrient problem

HANGOUT 2B



Handling Rejection on Your Manuscript

Dr. Ir. Judhiastuty Februhartanty, MSc

Manager of Training Unit at SEAMEO RECFON

"Publish or perish" is a well-known expression describing the pressure to publish academic work in order to succeed in an academic career. But publishing an academic work is not just about for a career. In the era of borderless world now, sharing means caring. Thus, it is our responsibility to share the results of our work to others and scientific publication is just one of the so-many approaches.

However, a long and sometimes, painful process of publishing a manuscript in a reputable scientific journal often suppress the motivation, and thus the productivity of young scientists (even the old-generation of academic community) in writing up and finalizing the work for publication. And, a decision to the manuscript that says "reject", "decline", or "will not pursue further peer review of your manuscript" does hurt. So, what to do if you face this situation?

This session will discuss responses to handle an article rejection that are not counter-productive. The session will start off with a 5-minute video from ACS Author University. The follow-up from the video will involve an online interactive session about the participants' own experience with handling an article rejection. Some key elements of "better" responses will be highlighted to produce better consequences for the follow-up revision of the article.



The Double Impact When Nutrition Researchers and Academicians also A Health Influencers

Seala Septiani, S.Gz., M.Gizi

The use of online communication platforms such as WhatsApp® and social media application (Facebook®, Instagram®, Twitter®) is increasing rapidly in the past several years. As a result, people are looking and trusting numerous of information come through those platforms. However, the information which is broadly and easily comes to our phone / gadgets are not verified or valid. But today, information become viral and followed not based on how valid or how well the study was conducted—it is based on the popularity of the broadcasters or sometimes, how sensational is the news. Nutrition and health, is one of the topics which is mostly broadcasted through those platforms. This is a challenge and at the same time, an opportunity for nutritionist especially those who are actively conducting studies, to disseminate their findings, knowledge, not only as a scientific paper intended for scientific colleagues, but also to directly popularize it to the public through available potential platforms.

The 1st
SEAMEO INTERNATIONAL CONFERENCE
ON FOOD AND NUTRITION

ORAL
(PARALLEL SESSIONS)

Compliance of High School Female Students with Iron-Folic Acid Intake and Improved Haemoglobin

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Objective: This study aims to analyze the differences in the level of high-school girls' adherence to consume IFAS in Depok and their impact on Hemoglobin levels after intervention in the sample schools.

Method: Using a quasi-experimental design with 460 high-school girl from 6 sample schools and 5 control schools selected by purposive sampling technique. Eating pattern food sources containing iron inhibitors and enhancer were carried out using the food frequency question method. Analysis of the effectiveness of interventions on improving compliance and Hemoglobin levels of

highschool students girl were measured using the Difference in Difference Technique.

Result: After intervention there was a significant difference in highschool girl's adherence to consume WIFAS and haemoglobin level between subject school and control school ($x_S = 4.31 \pm 1.45$, $x_C = 3.92 \pm 1.51$, $p = 0.008$), ($X_S = 12.45 \pm 1.72$, $X_C = 11.89 \pm 1.66$, $p=0.001$).Interventions in the form of training and the formation of anti-anemia squad increased adherence to highschool students girl by 9 .3% and improved their Hb levels by 5.97% in subject school students compared to control schools

Conclusion: Training and the formation of anti-anemic squad can improve highschool girl'scompliance and improve their Hb levels.

Key words: anaemia, adolescent girl, adherence, iron folic acid

The Effect of Synbiotic Fermented Milk with Double Fortification (Fe-Zn) on Fecal Microbiota: An Effort to Address Stunting Among Children Under Five in Yogyakarta, Indonesia

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Abstract

Background: Previous studies found that gut microbiota imbalance, or dysbiosis, is associated with stunting among children under five years old. This study aimed to identify the effects of synbiotic fermented milk with double fortification (Fe-Zn) administration on the number of fecal Lactobacilli and Enterobacteriaceae of the children.

Methods: This study used a double-blind randomized controlled trial on 58 children under five in Seyegan District, Yogyakarta Province, Indonesia. Subjects were randomized and categorized as 1) intervention group (IG) and 2) control group (CG). Subjects in IG group were given synbiotic fermented milk with double fortification (Fe-Zn) while in CG group were given synbiotic fermented milk without fortification. All groups were administered the milk for twelve weeks, each 100 mL per day and six times per week. Quantification of fecal Lactobacilli and Enterobacteriaceae was carried out by quantitative real-time PCR pre- and post-intervention.

Results: There were 27 children in the IG group and 31 children in the CG group who followed this study. Lactobacilli was in the normal range, 7 log cell/g. The number of Lactobacilli tend to increase and Enterobacteriaceae to decrease in the IG group. However, there was no significant

difference in the number of those fecal bacteria between the two groups ($p>0.05$).

Conclusions: There is no significant difference in the number of fecal Lactobacilli and Enterobacteriaceae after given synbiotic fermented milk with or without double fortification (Fe-Zn). Further research is needed by considering the length of intervention and the participation of non-stunting subjects.

Keywords: synbiotic, double fortification, Lactobacillus, Enterobacteriaceae, qPCR.

Parallel Session I.1.3 | Food and Nutrition in Early Childhood: Intervention Studies

Maternal Biomarker in Pregnancy are Influenced by Supplementation and Associated with Child's Biomarker and BMI Z-Score

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Objective

Maternal nutritional status during pregnancy influences fetal development and further risk for adult non-communicable diseases. However, the underlying mechanisms remain inconclusive. We examined whether

biomarkers during pregnancy were associated with child biomarkers and health.

Method

Archived specimens from a total of 132 plasma of mother (baseline and post-supplementation) and child at age 9-12 years dyads from the Supplementation with Multiple Micronutrients Intervention Trial in Lombok, Indonesia were employed. Multiplex immunoassays were used to quantify vitamin D-binding protein, adiponectin, retinol-binding protein 4, C-reactive protein, and leptin.

Results

Principal component analysis revealed distinct variance patterns of principal components for baseline pregnancy, post-supplementation, and children. We found that maternal MUAC was associated with baseline biomarker pattern. Multiple micronutrient (MMN) supplementation led to an association of baseline with post-supplementation pattern, which was associated with child biomarker pattern and BMI z-score (BMIZ). Further analyses revealed an association between maternal post-supplementation and child's BMIZ.

Conclusion

Biomarkers during pregnancy may influence biomarkers in children. Furthermore, MMN supplementation may affect the relationship between biomarkers and then might influence child's BMIZ. Improving maternal nutritional status may improve child health, not only at birth, but also in childhood and adulthood.

Keywords: biomarkers, supplementation, pregnancy, BMI z-score

Effect of Local Specific Complementary Feeding Recommendations on Nutrient Intakes, Anemia and Stunting: Experience from Sambas, West Kalimantan and Malang, East Java, Indonesia

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Iswarawanti¹, Dian Kusumadewi², Martinus
Ginting³, Imam Jaladri³, Irwanda⁴, Sugeng
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Background: Optimized local specific complementary feeding recommendations (CFRs) developed to improve problem nutrients specific to the area can increase

nutrient intakes and expectedly nutritional outcomes particularly anemia and growth.

Objective: The aim was to evaluate the effect of promoting optimized CFRs on dietary diversity score (DDS), nutrient intake, nutrient density, anemia and growth outcomes, in two areas in Indonesia which represent the typical rural district and remote district.

Methods: A cluster-randomized, non-blinded evaluation amongst 12-16mo children was conducted in Malang (East Java) and Sambas (West Kalimantan) which represent the typical rural and remote districts in Indonesia. The CFRs, developed using linear programming approach in Optifood, were promoted through nutritionists at Public Health Center for six months through monthly sessions with caregivers in the CFR groups (CFR, n=233 Malang, 215 Sambas) while in Non-CFR group (Non-CFR, n=237 Malang, 238 Sambas) mothers received regular CFR promotion via monthly growth monitoring session (Posyandu). DDS, nutrient intakes and nutrient density, hemoglobin, weight and length were assessed at baseline and endline.

Results: DDS was significantly higher at endline in CFR than Non-CFR groups, both in Malang and Sambas. While nutrient intakes were not significantly different between groups, median nutrient densities were significantly higher in the CFR group than non-CFR group for folate and iron in Malang and for thiamin, calcium and iron in Sambas. In CFR group at endline, servings per week for animal:plant protein foods were 9:10 in Malang and 11:3 in Sambas. At the end of the intervention, anemia and stunting prevalence was significantly lower among CFR than non-CFR group in Sambas, but not in Malang.

Conclusions: Optimized CFRs improved DDS and nutrient density. However, effect on anemia and stunting is affected more by ratio

of animal:plant protein. Further investigation on phytate to iron, zinc, calcium molar ratios and their bioavailability is recommended.

Keywords: complementary feeding recommendation, local specific CFR, cluster randomized trial, effectiveness, linear programming, Optifood, Indonesia

Parallel Session I.2.1 |
Nutrigenomics/Nutrigenetics for Early
Childhood Nutrition

Linking Maternal Nutrition and Child Cognition Through Epigenetic Mechanism

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ABSTRACT

Maternal nutrition is an important factor that plays a critical role in the developmental programming of the brain. The periconceptional period is a critical development stage for the developing fetus. This period is characterized by the developmental plasticity and sensitivity to various environmental factors including maternal diet. These changes persist in the offspring and can determine their long-term

development. Child growth and cognition are shaped by the four inter-linked 'environments' of the whole child from the physical, home and educational to the wider food environment. Linking these drivers and outcomes will be an assessment of change at the level of the genome. The genome is fundamental to human growth; how it uses available energy and nutrients and the epigenetic processes that govern its control. Epigenetics is the study of how the expression of DNA can be changed without changing the structure of DNA itself. It involves factors that influence how and when a gene is expressed. Environmental influences leave a unique epigenetic signature on the genes. These signatures can be temporary or permanent and both types affect how easily the genes are switched on or off. In view of this, the current review will discuss the role of maternal nutrition in influencing child brain development and cognition through epigenetic modifications.

Keywords: maternal nutrition, DNA methylation, epigenetics, neurodevelopment, child cognition

Parallel Session I.2.2 |
Nutrigenomics/Nutrigenetics for Early
Childhood Nutrition

Mitochondrial DNA Copy Number is Associated with Low Birth Weight and Stabilized by Multiple Micronutrient Supplementation in Pregnant Women in Lombok, Indonesia

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Objective

Mitochondria play important role during pregnancy by providing maternal metabolic energy for fetal growth. We examined maternal mitochondrial DNA copy number (mtDNA-CN), surrogate for mitochondrial function, in association with birth weight. We also investigated the effects of maternal supplementation during pregnancy on mtDNA-CN.

Method

We used archived venous blood specimens from 528 randomly selected pregnant women enrolled in the Supplementation with Multiple Micronutrients Intervention Trial (SUMMIT) in Lombok, Indonesia, along with 108 sets of paired baseline and post-supplementation samples (MMN=54 and IFA=54). Maternal mtDNA-CN was determined by real-time quantitative polymerase chain reaction.

Results

Maternal mtDNA-CN was inversely associated with low birth weight (LBW). Maternal mtDNA-CN at post-supplementation was significantly elevated as compared with baseline, which was stabilized by MMN, but not IFA. The stabilizing effect was observed in less than 33 days after supplementation.

Conclusion

Maternal mtDNA-CN during pregnancy is associated with birth weight, which might be used as biomarker for LBW. Maternal MMN

supplementation rapidly stabilizes mtDNA-CN in pregnant women, demonstrating an improved mitochondrial efficiency, thus providing a mechanistic basis for the beneficial effects of MMN on fetal growth.

Keywords

mtDNA copy number, pregnancy, birth weight, supplementation

Parallel Session I.2.3 |
Nutrigenomics/Nutrigenetics for Early
Childhood Nutrition

Iron and PUFA Supplementation for Under-Two Children in Lombok: Is The Effect on Cognitive Outcomes Modified by Genotypes of TMPRSS6 and FADS Genes?

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Objective

Cross-sectional studies have shown that TMPRSS6 and FADS genotypes influence levels of iron and polyunsaturated fatty acids (PUFAs) biomarkers and cognition. There is less evidence on the influence of those genotypes in intervention study. This study

aims to assess if children with different genotypes in TMPRSS6 and FADS genes responded differently to iron and EPA/DHA supplementation with respect to related biomarkers and cognition.

Method

Children (12-17 months) who received iron (16mg/day) and PUFA (100mg/day as EPA+DHA) supplementation for 24 weeks (ClinicalTrials.gov NCT01504633) were assessed for their biomarkers of iron (hemoglobin, serum ferritin, transferrin receptor, body iron store), PUFAs and cognitive outcome i.e. mental development index (MDI) of the Bayley Scale of Infant Development II both before and after the intervention. Serum ferritin was adjusted by sub-clinical inflammation using the Thurnham method. Linear regression analyses were conducted with iron, PUFA indicators and MDI as dependent variables; iron and EPA/DHA supplementations, baseline level, genotypes of TMPRSS6 and FADS as independent variables, controlling for iron intake or psychosocial stimulation (HOME score).

Results

Distribution of wildtype homozygote, heterozygote and mutant homozygote in TMPRSS6 rs855791 (G/A), TMPRSS6 rs4820268 (A/G) and FADS rs174468 (G/A) were 10/43/68, 12/45/64 and 188/20/0, respectively. Iron indicators were positively influenced by iron supplementation but not genotype. PUFA indicators were neither influenced by EPA/DHA supplementation nor FADS genotype. MDI was not influenced by both iron or EPA/DHA supplementation but was significantly influenced by the TMPRSS6 genotype i.e. higher MDI at end of the intervention in mutant homozygotes.

Conclusion

Under iron supplementation, mutant allele of TMPRSS6 genes although associated with

lower iron status indicators was more responsive on cognitive outcome. Further study is needed to explore mechanism of response in biomarker and functional outcome by the genotype of iron and PUFA metabolism genes.

Keywords: cognitive outcome, FADS genotypes, iron supplementation, EPA/DHA supplementation, PUFA, TMPRSS6 genotypes, under-two children

**Parallel Session I.3.1 | Stunting and
Malnutrition Reduction Programming**

**Non-Government Organizations
Played A Role in Reducing Stunting
in East Nusa Tenggara**

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The purpose of this study is to explore the role of non-government organizations (NGO) in reducing stunting in East Nusa Tenggara (Nusa Tenggara Timur/NTT) province. We searched the websites for current activities by NGOs, CSOs (Civil Society Organizations), and United Nations (UN) agencies related to nutrition-specific and -sensitive interventions to reduce stunting and compare them to the programs carried out by the government. The information were tabulated, organized into a spreadsheet, and filtered by theme. From eight organizations implementing activities in NTT since 2012, five were NGOs and another three

were UN agencies. The average length of implementation is 5 years, with two institutions have been continuingly supporting the area for more than 10 years. Two institutions implement activities around the country as well. All institutions implement activities that address nutrition sensitive intervention, while half of the agencies address both nutrition-specific and -sensitive interventions. Most institutions implement multiple types of activities. Children's and women's health are touched through Village Health Posts (Posyandu) and Health Centers (Puskesmas). Examples of activities that are related to nutrition sensitive intervention include improving access to clean water and sanitation, education on caring practices and nutrition, supporting social protection for the poor, and improving food security. Various attempts to improve the economy, such as market access, community-based enterprise, savings, loans, and policy support were implemented as well. The provincial stunting prevalence was 58% in 2010, 52% in 2013, and 43% in 2018. The contribution of non-government institutions to the reduction of stunting should not be underestimated.

Key words: Stunting, Malnutrition, Non-Government Organization, Civil Society Organization, UN agencies

**Parallel Session I.3.2 | Stunting and
Malnutrition Reduction Programming**

**Stunting Risk Factor Index of
Toddlers**

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Objective

Stunting in infants is a result of multiple causes, both *prenatal* and *postnatal*. Stunting risk factors need to be classified according to the risk factors for stunting. This is important to facilitate stunting prevention and prevention programs. This research reviews the risk factor articles stunting in various journals. *The review* aims to obtain an OR / RR value for all stunting risk factors. Next will be used to the Stunting Risk Factor Index (SRFI).

Method

Journal article criteria are available in full text related to risk factors or determinants of stunting, including the value of odd ratio (OR) or relative risk (RR). The Stunting Risk Factor Index (SRFI) is calculated using the mean OR / RR value converted to a maximum index value of 100. The Stunting Risk Factor Index (SRFI) is divided into two namely prenatal and postnatal SRFI. 36 articles were collected, with 17 articles from 6 international journals (Q1) and 19 articles from 11 national accredited SINTA 2-3 journals.

Results

This research succeeded in identifying 37 risk factors for stunting. Prenatal risk factors are 18 and postnatal 29, including 10 of them are pre-postnatal risk factors. The Stunting Risk Factor Index (SRFI) has a maximum score of 100 with a score range of 0.6-9.3 per factor. Parenting has the highest IFRS of 9.3. The total number of prenatal IFRS scores is 45.6 and postnatal 54.4. Toddlers are categorized as having a "High" stunting risk if they have a score exceeding the total median score of 50.

Conclusions

Prenatal SRFI is useful for preventive measures for the birth of a stunting toddler, whereas postnatal SRFI can be used for stunting toddler management activities. The results of the study can be used by the public health office and public health center to screen toddlers for the risk of stunting in individuals in their working area. Stunting prevention activities become earlier and more focused.

Keywords

Toddler, Index, Journal Review, Risk, Stunting.

Parallel Session I.3.3 | Stunting and Malnutrition Reduction Programming

Maternal Height as Dominant Factor Related to Stunting in Children Under Two Years

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Objective : Stunting is a nutritional problem that affects the quality of human resources. The prevalence of stunting in children under two years is still quite high in all parts of Indonesia. Children under two years is a window of opportunity period in growth and the development of children needs to be improved nutrition for optimal catch up growth. This research aimed to determine the

most dominant factor related to stunting in children under two years.

Method : Research design used cross sectional study. The population was mother having children under two years with sample amounted 111 respondent taken by simple random sampling. Data analysis used chi-square test (bivariate) and multiple logistic regression (multivariate).

Results : The results showed that maternal height (p -value = 0.002) and immunization (p -value = 0.046) related to stunting in children under two years. Multivariate analysis showed maternal height as the dominant factor associated with stunting ($OR = 21.2$; 95% CI: 2,294-196,904).

Conclusions : The factors related to stunting are not only the child's factors but also the mother's factors, so it is necessary to consider patterns of growth and development in all aspects throughout the first 1000 days of life.

Keywords : maternal height, dominant factor, stunting, children under 2 years

Parallel Session I.3.4 | Stunting and
Malnutrition Reduction Programming

Predictive Model of Stunting Children (0-59 months) in Indonesia

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Abstract

Introduction: Stunting prevalence of children in Indonesia is more than the minimum target set by WHO (37%). Malnutrition of mothers and children is an important problem, especially in low and middle income countries. The aim of this study was to develop a predictive model of stunting in children 0-59 months.

Method: This study is cross-section data was obtained from the Indonesian Basic Health Survey in 2007, 2013, and 2018. Multivariable multilevel logistic regression model was used at 5% level of significance to determine the individual and community-level factors associated with stunting in children under 5 years of age in Indonesia.

Result: This study found that predicting the incidence of stunting in children in Indonesia, children (0-59 months) have a great chance of experiencing stunting if the children are: living in the countryside, district/cities with low UHH, regencies/cities with a short average length of school, districts/ cities with low IPKM scores, and regencies/cities with a high percentage of poor people, male, 24-59 months old, has a history of suffering from ARI, pulmonary TB, and asthma, BCG immunization is not given, living with the

female head of the household, born of a young mother's age, has a mother with a low education level, a short mother, a mother whose body mass index (BMI) is thin, a mother whose stomach circumference is below normal, a father with a low education level, a short father, a father whose Body Mass Index (BMI) is thin, a father whose girth is below normal, living in a family with a large number of household members, lives in a family whose Ownership Index includes quintiles 1 and 2, a family that does not have SPAL or direct waste water disposal into a drain/river, and a family that does not have a garbage bin (organic).

Conclusion: . Therefore, improvement of children's nutritional status requires multi-factorial interventions such as improving child nutrition and personal hygiene as the child's age increases, reducing poverty and ensuring household food security, especially in areas where the percentage of the poor is higher. Increased health efforts from government programs in areas that have a low IPKM value. Priority of nutrition and health interventions in the pre-conception stage in couples who have short stature.

Keyword: *stunting, predictive model, multilevel, children, multi-factorial intervention.*

Parallel Session I.3.5 | Stunting and Malnutrition Reduction Programming

Evaluating The Readiness of Early Childhood Education (ECE) Teachers in The Nutritional and Health Competency

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Abstract

Background:

Competence is the ability of someone to interact effectively with his environment and effectiveness in carrying out goals of achieving career success. The readiness of early childhood education (ECE) teachers in the nutritional and health competency needs to be understood. The aim of this study is to analyze the data of online survey collected by the SEAMEO RECFON during 2018 to gain deep understanding of the survey questionnaires and to evaluate the nutritional and health competency of the ECE teachers.

Methods:

The survey data collected from 78,711 ECE teachers were cleaned using the Phyton software, SPSS and JMetrik to ensure the reliable database management system. The quality of survey questionnaires was classically evaluated by the analysis of difficulty index, discrimination index and distractor efficiency and then by the modern testing theory using the Rasch model. The reliability of survey questions was analyzed using the Kuder-Richardson 21 (K-R21). The Univariate analysis was used to evaluate the nutritional and health competency of the respondents.

Results:

The results of the classical analysis show that the survey questionnaires consisting of 3, 8 and 29 items could respectively be not acceptable, acceptable with improvement, really acceptable for use in evaluating the nutritional and health competency of ECE teachers. The analysis of using the Rasch model shows that the survey questionnaires statistically fit into a set of observations and have a good variation in the difficulty level of the survey questions. The KR21 coefficient of 0.742 indicates that the reliability of the survey questions is acceptable. By setting the cutoff score at 70 percent, the overall nutrition and health competency of ECE teachers is still low to be at 33.6%. The percentage of the ECE teachers' competency increases with increasing of both the educational level from elementary school level to master degree and the teaching experience. The competency of the ECE teachers domiciled in urban, rural and remote areas may increase from eastern to middle and then to western region of Indonesia. The involvement of the ECE teachers in professional training and Posyandu cadre can increase the nutrition and health competency.

Conclusions:

The survey questionnaires provided by the SEAMEO RECFON and the nutritional and health competency of the ECE teachers are verified to contribute to the improvement of educational regulations issued by the local and central government in the future.

Key words: classical item analysis; early childhood education teacher; health - nutrition competency; online survey questionnaire; Rasch model; reliability analysis.

Parallel Session I.4.1 | Stunting and Malnutrition Reduction Programming

Perception and Experience of Support Persons Towards Induced Lactation Practice in Malaysia: A Descriptive Qualitative Study

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Objective: This study aims to explore the support of persons' perceptions and experiences towards induced lactation practice in Malaysia.

Methods: A qualitative case study approach using an in-depth interview as data collection method was conducted among support persons of induced lactation women from five regions in Malaysia, i.e. [South (Johor), Central (Selangor), North (Penang), East (Kelantan) and East Malaysia (Sabah)]. The interviews consented, audio-recorded then transcribed verbatim, followed by identification of emerging themes. Data saturation was

achieved after a total of 23 support persons were interviewed.

Results: Data synthesized using thematic analysis revealed that support persons' perceptions were positive and in favour towards induced lactation process. We recognized that to achieve successful adoptive breastfeeding, support persons' active engagement, and proactive involvement in meetings with health professionals and integrating treatment plans into daily schedules were essential.

Conclusions: Family members, especially husbands, do influence the mothers of adoptive breastfeeding decisions and treatment outcome. It is vital for health care providers to acknowledge and encourage husbands or family members of adoptive breastfeeding women to engage them in learning and supporting the adoptive women.

Keywords: Induced lactation process, adoptive breastfeeding, qualitative study, support person, Malaysia

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Objective: Nutrition education during pregnancy has been shown to support mothers in their attainment of a healthy dietary intake, which in turn, supports the health of both mothers and offspring. This study aimed to investigate women's views on nutrition during pregnancy and their experience of receiving pregnancy nutrition information from health professionals.

Method: Using a qualitative design, individual face-to-face semi-structured interviews were conducted with 23 pregnant women in Malang, Indonesia. Data were analysed utilising thematic analyses.

Results: Four themes were identified: (1) *Women's views on nutrition.* Most women understood the importance of nutrition for pregnancy; however, some women avoided certain foods due to cultural beliefs. (2) *Implementation of nutrition education.* A few women revealed that they could not translate nutrition advice into daily healthy eating due to lack of nutrition understanding and family support. (3) *The adequacy of antenatal nutrition education.* More than half of women reported not receiving adequate nutrition education from health professionals or health services. (4) *Women's expectations of nutrition advice.* Women wanted more detail and practical nutritional advice and expected information to be delivered via multiple

Parallel Session I.4.2 | Innovation in Nutrition Education During Early Childhood
(including Innovative Approach for Improving IYCF Practice and Food Safety)

Pregnant Women's Views of Antenatal Nutrition Education in Malang, Indonesia

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channels such as delivered by health professionals, community health volunteers (cadres), digital delivery or delivery through community meetings.

Conclusions: This study identified key aspects of nutrition education and service delivery in Indonesia, which women view as important. Nutrition education planning based on the principles of adult learning and food literacy is needed to enhance the acceptability and implementation of nutritional advice across coordinated multiple community channels.

Keywords: nutrition education, pregnancy, adult learning, food literacy, digital technology, community-based program

Parallel Session I.4.3 | Innovation in Nutrition Education During Early Childhood
(including Innovative Approach for Improving IYCF Practice and Food Safety)

Pre-school Teachers are a Superb Change Agent of 'Balance Nutrition' and 'My Plate' Messages to Students and Parents

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Objective: The purpose of this study is to explore the continuation of delivery 'Balance Nutrition' and 'My Plate' messages to

preschoolers under 'free-willing' condition to teach.

Method: A Teacher training on Balanced Nutrition and My Plate was delivered to 95 pre-school teachers, representing 10 pre-schools in February 2018 and 64 pre-schools in November 2019. The study was conducted in Subang district, West Java, which has 41% stunting rate of children under the age of five years in 2013. An evaluation through Whatsapp messaging service to the teachers was conducted in May 2020.

Results: Forty percent (30 preschools) responded to the evaluation, 7 of the 2018 and 23 of the 2019 preschools. All 30 preschools implemented a continuation of bringing balance nutrition lunch box. This practice is carried out daily by 11 schools and once to twice weekly by 16 schools and monthly by 3 preschools. Most (70%) schools had continued implement parenting session. Positive output by parents included improved awareness of healthy school meals and the importance of fruits and vegetables for their children, as well as the practice of providing healthy school meals to their children.

Conclusions: Balance Nutrition messages are still disseminated by teachers two years after training. Preschool teachers are an excellent 'change agent' of Balance Nutrition messages to students and parents, which will contribute to the reduction of stunting.

Key words: Balance Diet, My Plate, Early Child Nutrition, Pre-schools, Stunting

Contributing to the Early Childhood Development through an investment on the teachers: Lessons learned from an Online Training targeting Indonesian Early Childhood Education Teachers

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Aisyah Nurcita Dewi, Judhiastuty
Februhartanty, Umi Fahmida**

A nation-wide online survey on nutrition competencies of Indonesian ECE teachers in 2018 ($n=78,711$) found that 78.3% never received a training on health and nutrition. This urges SEAMEO RECFON and partners to conduct a training among Indonesian ECE teachers. In year 2020, we launched the first batch of online training on "Early Childhood Care, Nutrition and Education (ECCNE): Implementation of holistic and integrated early childhood development (ECD) via parenting session" in collaboration with Indonesian Ministry of Education and Culture and Ministry of Religious Affairs targeting ECE teachers under both ministries. The training objective was to improve the knowledge and skills of ECE teachers in applying the holistic and integrated ECD concept through parenting sessions including nutrition and health messages for parents and young children.

The training used the existing ECCNE serial modules developed by SEAMEO RECFON and partners. The training syllabus consisted of 9

modules, 7 quizzes, 3 assignments and 1 final assignment by developing a post-training action plan. The training applied a combined concept of self-paced and facilitator-led. The courseware was offered through an established Learning Management System for the learners to access at their convenience (self-paced). In addition, a group of trained nutritionists (named as facilitators) guided the learners throughout the training period (facilitator-led). As complementary, 3 synchronous sessions were conducted, and online communication groups were formed among subgroup of learners guided by the assigned facilitator.

From 808 enrolled participants, almost 40% of them reported not yet receiving basic training of ECE teachers. The dynamic of the learners' participation throughout the training period was documented following the set criteria of active participation and completion. Eventually, 65% of enrolled participants passed the training. They were mostly female (95%), aged 30-39 years old (38%), and had a bachelor degree (78%). Participants reported to have a better understanding on how to implement the concept of holistic and integrated ECD and increased e-learning literacy. They also suggested the improvement of training modules and delivery mode to be more interactive and engaging. Additionally, the facilitators reported participants' high enthusiasm and improved skill in sharing proper messages during the final assignment. A similar quality performance was also shown by participants from areas with limited resources.

The lessons learned from this training program include several aspects: 1) partnership with relevant ministries and

organizations for recruitment of the training participants enhances the coverage of the training, 2) facilitators have a pivotal role to engage the participants throughout the training period, and 3) partnership with local governments and stakeholders is instrumental for assisting ECE centers in the implementation of holistic and integrated ECD.

Parallel Session II.5.1 | Food and Nutrition in Early Childhood: Determinant Studies

Impact of Dietary Diversity on Nutritional Status of Preschool Children in Indian Sub-Continent – A Systematic Review

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Abstract

Objective: To comprehensively evaluate the impact of dietary diversity on the nutritional status of preschool children in Indian sub-continent.

Method: An electronic search was performed using five databases i.e. Science Direct, PubMed, SCOPUS, EBSCO and Web of Science from January 2010 to March 2020. Two researchers had independently followed the double-blind process to screen the research articles using set inclusion and exclusion criteria developed on the basis of PICOS. The

methodological quality of the included research articles was scored using the STROBE-M tool. Data extraction was narratively synthesized by identifying the factors contributing to poor nutritional status of preschool children in the Indian sub-continent (i.e. Bhutan, Bangladesh, India, Maldives, Nepal, Pakistan, and Sri Lanka)

Result: Of the total 1911 primary studies initially identified, we found 15 research articles that assessed the dietary diversity and food insecurity in the children. All included research articles were majorly from Bangladesh (n=1), India (n=10), Nepal (n=3) and Sri Lanka (n=1). No research articles were found from Bhutan, Maldives and Pakistan. The cross-sectional studies included for systematic review had a good methodological quality score. The factors identified from the review are socioeconomic status, sanitation and hygiene practices, parental literacy, farm production, improved environmental factors influence the dietary diversity and eventually the nutritional status of preschool children.

Conclusion: Dietary diversity positively impacts the nutritional status of preschool children.

Keywords: Preschool Children, Dietary Diversity, Undernutrition, Nutritional Status, Food Security

Parallel Session II.5.2 | Food and Nutrition in Early Childhood: Determinant Studies

Examining the Obesogenic Environment Among Primary Schools in Jakarta

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Objective: This study aimed to assess the obesogenic factors in primary school environment in Indonesia.

Design: We used a qualitative cross-sectional design in which interviews with school staff, food sellers, and students were conducted among six schools in Jakarta. We adopted an audit tool of primary school environment assessment and validated in Indonesian version.

Setting: We selected six primary schools in Jakarta purposively based on their socioeconomic status and geographical area.

Participants: In each school, we interviewed the school principal, physical education teacher, canteen staff, street food vendors, and students.

Results: Among six schools, two were private and the rest were public schools. Unhealthy foods, e.g. fried foods, sweet drinks, were the most popular snack consumed by students. Students had easier access to unhealthy foods and less variation of healthy foods in the canteen. In addition, limited school policies had been implemented, other than education on nutrition and physical activities through the existing curriculum.

Conclusions: This study has demonstrated the use of primary school environment assessment in identifying obesogenic factors for Indonesian school communities. Further study to include wider communities should be done to capture the geographical and culture variation of Indonesia.

Double Burden of Malnutrition in Indonesia: Are There Disparities Across Socioeconomic Factors?

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Abstract

Objective

The aim of this study is to describe the double burden of malnutrition, stunting and overweight, in Indonesia by socioeconomic factors.

Method

This study analyzed the 5th wave of Indonesian Family Life Surveys (IFLS), a study conducted in 13 provinces in Indonesia. Data from 4,070 children aged 0-60 months were analyzed. Stunting was defined as height for age zscore < -2, while overweight was defined as bmi by age zscore >2. STATA was used to obtain prevalence of stunting and overweight across level of socioeconomic factors.

Results

There were rural/urban differences for malnutrition prevalence in Indonesia. Stunting was more prevalent in rural areas (31.3%) compared to urban areas (22.3%). The prevalence of overweight was higher in urban

areas (6.8%), compared to urban areas (5.2%), while underweight/wasting was slightly lower in urban areas 4.3% in urban and 4.5% ($p <0.001$). When analyzed by economic factor, children from poor families have higher prevalence of stunting and underweight/wasting (33.3% and 5.4% respectively), compared to children coming from the richer families (23.9% and 5.1%). However, there were less overweight children from the poor families (7.4%) compared to richer families (9.3%).

Conclusions

This study found persisting differences by areas and economic status. Children from the less advantaged families or living in rural areas were more prone to undernutrition (stunting, underweight/wasting), whereas children from the more advantaged families and those living in urban areas were more likely to be overweight. Specific intervention by socioeconomic factors are needed, to address the different problem.

Keywords

Overweight, stunting, wasting, socioeconomic

Parallel Session II.5.4 | Food and Nutrition in Early Childhood: Determinant Studies

Determinants of Birth Weight in an Urban Resettlement Colony of New Delhi, India

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Objective

To determine factors affecting birth weight.

Methods

A prospective longitudinal cohort with mix-method approach was conducted in an urban resettlement colony in New Delhi, 318 pregnant women were recruited. Information on the socio-demographic profile, obstetric history, diet and nutrition intake, stress, depression, anxiety, weight, and height were recorded. Birth weight of the newborn was recorded within 48 hours of birth. Focus Group Interviews (FGIs) were conducted with pregnant women and mothers-in-law to map their perceptions on factors affecting birth weight.

Results

The prevalence of low birth weight (LBW) was 32.2%. Logistic regression analysis revealed that low maternal education, and low IFA consumption were the significant predictors of LBW (OR = 0.55 & 0.99 respectively). The prevalence of high-levels of anxiety, depression, and stress was 42.1 %, 20.7 %, and 18.2 % respectively. Depression during pregnancy increased the likelihood of LBW by 1.1 times ($p=0.00$). In the FGIs, dietary intake during pregnancy emerged as a significant factor affecting birth weight, however, 54.4 % of the respondents reported skipping meals frequently.

Conclusion

Both, physical and mental health of the mother affects the weight of the child at birth. Birth weight is a significant predictor of health

during early childhood. Mitigating factors leading to LBW can improve health indicators during early childhood.

Keywords

Low Birth Weight, Maternal Health, Pregnancy, Mental health

Logistic regression was used to assess determinants of stunting including socioecodemographic status, morbidity, history of deworming and household food security status (based on last month experience using HFIAS).

Results

A total of 196 children under 5 years included; where 56.6% of them were boys. As much as 74% of households were food insecure. The prevalence of stunting was 29.9% in this population (79.3% and 20.7% in food insecure and food secure households, respectively). From 100 children that were examined, 19 % had worm infestation. Children age of 36-59 months (OR 2.306; 95% CI 1.131 – 4.700), source of non improved drinking water (OR 2.066; 95% CI 0.953 – 4.479) and whether the children household has more than four members (OR 2.959; 95% CI 1.157 – 7.565) were significant independent risk factors of stunting after adjusted by monthly expenses, morbidity, history of deworming, and household food security status.

Conclusion

Stunting in one of rural area of East Nusa Tenggara is strongly associated with social determinants, wash, sanitation and hygiene access of the children. Multisectoral collaboration is needed to solve the issue of stunting in this area.

Objective

This study aimed to identify risk factors of stunting in Nangapanda, a subdistrict in East Nusa Tenggara, Indonesia.

Methods

The study design was cross-sectional study located in rural area, Nangapanda Subdistrict, Ende, East Nusa Tenggara, Indonesia as a part of PINTERMIDI UI project. Data collection was conducted in October 2019 using structured interview and anthropometry assessment.

Keywords: Indonesia, Risk factors, Stunting, Underfive Children.

Assessing Awareness, Knowledge, Attitude of Food Safety and Associated Factors Toward Food Safety Practice During COVID-19 Pandemic in Indonesia

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Objective: The study aims to assess the determinant factors of food safety practice during COVID-19 pandemic among consumers.

Method: Online survey with purposive sampling was conducted in May 2020 using LimeSurvey, which involved 462 participants, 20-62 years old who lived ≥6 months in Indonesia. A structured and validated questionnaire was used to assess a score of food safety awareness, attitude, and practice before and during pandemic. The score used were 5-point Likert scale, meanwhile food

safety knowledge was scored based on the true or false questions. Multivariate analysis was used to determine the determinant factors.

Result: Most of the respondents were female (81.8%) with median age of 26 years old. There were strong correlations between food safety awareness to attitude, practice before and practice during pandemic ($r=0.786$; $r=0.388$; $r=0.407$, respectively). Weak correlations were found between knowledge to attitude, practice before and practice during pandemic. A strong correlation ($r=0.775$) was between food safety practices before and practices during pandemic. Food safety practice before pandemic (CI 95% 0.566–0.668), food safety attitude (CI 95% 0.095–0.275) and gender [CI 95% -1.713–(-0.214)] were the determinant factors of food safety practice during pandemic ($R^2=0.651$).

Conclusion: Increment score of food safety awareness were followed by an increment score of food safety attitude but not on knowledge and practice. People who had higher score of food safety practice before pandemic more likely had higher score of food safety practice during pandemic. As 65.1% of food safety during pandemic can be explained by food safety before pandemic, food safety attitude and gender.

Keyword: Food safety, awareness, knowledge, attitude, practice, COVID-19

Availability of Food is The Determinant Factor for Healthy Diet Practices During COVID-19 Pandemic Among Adults in Indonesia

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ABSTRACT

Objective: To examine factors of healthy diet practices among adults during COVID-19 pandemic, to provide effective strategies to promote community adoption of a healthy diet during COVID-19 pandemic.

Method: A cross sectional study using an online self-administered questionnaire was conducted among adults in Indonesia during May 2020. 435 subjects were obtained using snowball sampling. χ^2 test was used to compare each variable by healthy diet practices during COVID-19 pandemic. Multiple logistic regression tests used to determine the dominant factors of healthy diet practices.

Result: Most of the subjects were female (81.8%), high education level (92.4%), aged 20-29 years old (72.4%), lived in Java (74.9%), and had a poor diet (89.4%). There were significant associations between awareness (OR=3.0; 95%CI [1.436–6.163]), knowledge (OR=2.3; 95%CI [1.254–4.310]), and attitude towards healthy diet (OR=1.1; 95%CI [1.091–1.171]), nutrition information topics (OR=3.1; 95%CI [1.468–6.653]), media exposure of nutrition information (OR=3.2; 95%CI [1.213–8.187]), and availability of healthy food (OR=4.7; 95%CI [2.127–10.284]). After adjusting other variables, a factor that dominantly associated with healthy diet practices during COVID-19 pandemic was availability of healthy food. Subjects with less availability of healthy food had a 3.5 times higher proportion of poor healthy diet practices during COVID-19 pandemic than subjects with more availability of healthy food at their homes (AdjOR=3.5; 95%CI [1.606–8.029]).

Conclusion: We observed that healthy diet practices during COVID-19 pandemic in Indonesia was strongly influenced by the availability of healthy food.

Keyword: Attitude, awareness, COVID-19 pandemic, food accessibility, food availability, healthy diet, knowledge

Coping Strategies Among East Java Communities During Covid-19 Pandemic

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Objective: This study aims to identify the coping strategies taken by the communities in East Java Province during Convid19 pandemic.

Method: This study is a descriptive with cross sectional approach. A structured, self-administered online questionnaire survey and indepth interviews were constructed and administered from April 22 until Mei 5, 2020. From 722 respondents aged 19 – 60 years old, 191 met the coping strategy criteria to be further analyzed in term of coping type, food pattern change, age group food priority and the reasons as well. Quantitative and qualitative approaches were employed to analyze the data.

Result: There are 8 types of coping strategies, three top of which are selling the luxurious things they have, borrowing money, and living economically. Reducing food frequency is the food pattern change they did beside reducing the portion and variation of food. Children under five is the group to be prioritized most during food lacking in the household level. Having no money to buy, difficulties to earn money, and high rocketing price of basic food are the main reasons for doing the coping strategies.

Conclusion: Various coping strategies were done by communities which affect further food pattern and food priority. Food supply

intervention and stabilized prices of basic needs is the main recommendation proposed.

Keywords: Coping Strategy, Covid-19, food pattern, food priority

Parallel Session II.6.4 | Food and Nutrition System Adaptation in Emergency Situastion and Pandemic

Food Accessibility and Its Influencing Factors During COVID-19 Pandemic in Indonesia

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ABSTRACT

Objective: The study aims to assess the food accessibility among adults in Indonesia and its influencing factors during COVID-19.

Method: The cross-sectional study conducted using online questionnaires and snowball convenience sampling. Structured

questionnaire was used to assess the socio-demographic characteristic, food access, physical access, financial access, social support, and coping strategy. Bivariate analysis and multivariate analysis was performed.

Result: Our respondents are 439 adults age 20-62 years old and able to access food (90.1%, n=439). Significant relationship was found between access difficulties (OR = 4.85; CI: 2.305 - 10.227; p<0.001), social support (OR = 2.533; CI: 1.310 - 4.898; p = 0.008) and number of adopted coping strategy (p<0.001) with food accessibility. No significant relationship was found between change in income and food expenditure with food accessibility. After adjusting, we found that physical access difficulties (aOR = 3.945; CI: 1.652 - 9.421; p = 0.002), unemployment status (aOR = 3.104; CI: 1.436 - 6.712; p = 0.004), and lower education level (aOR = 2.819; CI: 1.036 - 7.672; p = 0.042) are increasing the inability to access food. Meanwhile, coping strategies (aOR = 0.634; CI: 0.536 - 0.750; p<0.001) are protective to inability to access food ($R^2 = 0.298$).

Conclusion: We found that physical access difficulties, unemployment status, and lower education level are related to increase the inability to access food. Meanwhile, coping strategies are protective to inability to access food.

Keywords : Food accessibility, COVID-19, Adults, Indonesia

Parallel Session II.6.5 | Food and Nutrition System Adaptation in Emergency Situation and Pandemic

Personal Hygiene for Children as Prevention of COVID-19: How Do Parents Facilitate?

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ABSTRACT

Since the beginning of March 2020, COVID-19 cases have been detected in Indonesia. Day by day, the cases have increased, so Ministry of Education and Culture suggested all of educational institution including Early Childhood Education to implement the "school from home" policy. Parents role during "school from home" determined the success of children life skill. The purpose of this study was to describe how the role of parents in teaching personal hygiene in children aged 4 to 6 during COVID-19 pandemic. The study design was descriptive survey. It was conducted towards 167 parents in Indonesia. The data obtained from questionnaires (20 items) including 4 aspects (washing hands, taking a bath, brushing teeth, and cough ethics). Data analysis was done by using precentage and cross tabulation techniques. The results showed that: (1) 84% of parents stated that it was very important to teach children about personal hygiene during the COVID-19 pandemic and 57% of parents used the discussion method; 2) more than 55% of

parents have taught the steps and when to wash hands; 3) more than 55% of respondents also reminded children more often to take a bath, 4) less than 50% of parents taught the right way to brush their teeth; 5) more than 50% of respondents teach cough ethics to children, and 6) the method often used to teach these aspects was discussion. Further recommendations were there should be ongoing socialization to parents about the importance of maintaining children's personal hygiene during the COVID-19 pandemic and the need to support electronic learning resources that are easily accessible to parents and children.

Keywords: COVID-19; children; personal hygiene, parents

Parallel Session II.7.1 | The Use of Technology for Improving Health and Nutrition Practices during Early Childhood

JV-Edu (Jamboard Virtual Education) for Long Distance Espionage Health and Nutrition During Early Childhood for Parent and Teacher Collaboration

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The purpose of this study is to describe the quality and quality of the JV-Edu as an alternative method of distance teaching for parents and teachers during Pandemi Covid-19 and to develop the care of parents and teachers about the Creative model taught to

early childhood for understanding health and nutrition information.

This research is an experimental study conducted on the collaboration of teachers or early childhood education tutors with parents during a pandemic as an alternative to creative learning during Learn From Home that is recommended so as to minimize the interaction of gathering in the learning place and effectively use it and stimulate motor development behavior and create closeness between people parents and children, the material is done online and uses Virtual Jamboard with different material in each session.

The results showed that the control group was very effective and carried out so that there was intimacy between tutors or teachers with parents and children which was comprehensive and not boring, resulting in interactive two-way communication and the emergence of new ideas for subjective nutrition and health care and willingness itself, whereas in groups that do not want to use the JV-Edu it means manually and come walk in to the counseling place or a place of learning focus between children, parents and tutors or teachers only listen there is no response or response so tutors tend to be monologues in communicating communication nutrition and health materials during this pandemic and overall focus is disrupted by uncomfortable health protocols such as the use of non-medical masks, face shields, and physical distancing that require more space so that the material delivered is blocked and inefficient.

Keywords : Jamboard, Virtual, Education, Health, Nutrition

Parallel Session II.7.2 | The Use of Technology for Improving Health and Nutrition Practices during Early Childhood

Mentoring for Breastfeeding Mothers with E-Booklet on Duration of Exclusive Breastfeeding

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ABSTRACT

In Indonesia, Infant Mortality Rate (IMR) are highest in 2013. One of prevention efforts to reduce infant mortality rate is Exclusive Breastfeeding. Lack of Exclusive Breastfeeding is one of the problems in Indonesia. Malang has nutrition problem of Complementary feeding practice before six month old. Nutrition education about Exclusive Breastfeeding should be carried out to support Exclusive Breastfeeding practice. E-booklet is modification from booklet with a easily language punctuated by images and has visual messages in cellular mobile phone expected to increase Exclusive Breastfeeding practice. This study aims to Analyze the Effects of Mentoring on Duration of Exclusive Breastfeeding Implementation. This research design uses Quasi Experiment with Posttest Only Control Group Design. This research was conducted in the working area of Puskesmas Kepanjen Malang Regency. The number of samples of this study were 42 pregnant women who would give birth in April - June 2017, divided in to control and treatment

groups. Mann-Whitney statistical results showed that there was difference in duration of Exclusive Breastfeeding ($p=0,000$) in the control and treatment group. The conclusion of this research is that Mentoring with E-Booklet gives positive effect to duration of Exclusive Breastfeeding.

Keywords: Mentoring, E-booklet, Exclusive Breastfeeding

Parallel Session II.7.3 | The Use of Technology for Improving Health and Nutrition Practices during Early Childhood

Diagnostic of Zinc Using Paper Analytical Device Based on Alizarin Red S Complex

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Zinc deficiency (Zn) due to lack of zinc intake into the body can impact the obstructed of potential growth and development of optimal physical and psychomotor which related to the decline of intelligence and productivity. Paper analytical device (PAD) has been reported as an attractive tool for field analysis with good sensitivity, easy to use for metal and nutrient detection. This technique uses Whatmann paper as a sensitive, selective device dripped by samples and reagents. This research used

Alizarin Red S reagent as chelating agent with Zn(II) metal to produce orange red color on paper. The intensity of the color which be photographed through the android camera then colorimetry analyzed using Image J program. The intensity data is converted into absorbance by using the Lambert-Beer equation. The result of this research is that the optimum concentration of alizarin red s is 750 ppm, with the kind of acid is HCl at pH 5. The time optimization of the measurement is 20 minutes, the linear concentration range Zn (II) is 1-50 ppm

Key words: paper, analysis, zinc, alizarin red s, complex

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ON FOOD AND NUTRITION

POSTER

Nutrition Exposure Using Color Book Media to Improve Knowledge About My Science Content in Elementary School Children in Suryodiningrat 1 State Elementary School

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Abstract

Background: Most of >5 ages Indonesian people less consume fruit and vegetables. In Yogyakarta City-special region Yogyakarta, only 6.56% people match the requirement daily intake fruit and vegetables. A vary education method was important for children on nutrition knowledge.

Objective: to compare the effectivity of drawing and leaflet educational to increase children knowledge of fruits and vegetables.

Method: This research type is quasy experimental with pre and post test research design using a control group which was conducted on 58 elementary school children in Yogyakarta City in 2020. Subjects were divided into 2 intervention groups (coloring and leaflets). The intervention was held 2 times, the second meeting was held after one

week. The pre-test knowledge questionnaire was filled in by direct participants. Data were analyzed using independent sample t test in SPSS.

Results: Nutrition education using coloring books can increase the average score of children by 42.2 ($p = 0.0001$), while nutrition education with leaflets only increases the average score of 1.8 ($P = 0.096$). The mean score of children's knowledge in the coloring group was significantly higher than in the leaflet group ($p = 0.000$).

Conclusion: Nutrition education using coloring book media is more effective to increase children's knowledge compared to nutrition education using leaflet media.

Keywords: Fruit, Vegetables, Knowledge, Children

The Effects of Catfish Wet Noodles on Energy-Protein Intake and Weight Gain for Elementary School Student in Pekanbaru

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ABSTRACT

Wet noodles generally contain carbohydrates but lack of other nutrients. The strategy to

increase the protein level of wet noodle is by adding catfish (Pangasius hypophthalmus) and using high-protein wheat flour. The purpose of the study was to evaluate the effect of catfish (Pangasius hypophthalmus) wet noodles on energy-protein intake and weight gain for students of SDN 147 students in Air Putih Village, Pekanbaru. This is an experimental study with one group pre test-post test design with 30 students as the subject for 10 days intervention. Data on energy-protein intake were collected using a 24-hour food recall form and weight gain were collected using weight scale. Data were analyzed using paired t-test and Wilcoxon t-test. The results showed a significant difference in protein intake ($p = 0.02$) and student body weight ($p = 0.001$) but not significantly in energy intake ($p = 0.142$).

Keywords: catfish wet noodles; energy intake; protein intake; weight gain

Day 1

POSTER 4

Comparing The Effect of Educational Roulette and Leaflet on The Children Knowledge: Experimental Study

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Background: Nutrition education was very important for school children. The media was determines factor for the effectiveness of education. **Objective:** To compare the effectiveness of educational roulette and leaflet

on the children. **Method:** This research was a quasi-experimental with pre-test post test with control group design, conducted in Yogyakarta City on January-February 2020. The intervention was education balanced nutrition using roulette, while the control using leaflet. Children knowledge and attitude on pre and post intervention measured by questionnaire. Subjects were two homogen fifth grade public elementary school children selected randomly, as many as 28 children each grup. Data were analyzed by independent sample t-test.

Results: Education using roulette and leaflet increased knowledge by 2.4 ($p = 0.000$) and 1.0 ($p=0.009$) respectively. While children attitude increased by 6.1 ($p=0.000$) for roulette group and 2.5 ($p = 0.031$) for leaflet group. The roulette increased knowledge and attitudes higher than leaflet by 1.4 ($p=0.003$) and 3.6 ($p=0.030$) respectively. **Conclusion:** Roulette was more effective than leaflet to increase children knowledge and attitude on balanced nutrition.

Keywords: balanced nutrition, roulette, leaflet, knowledge, attitude

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Day 1

POSTER 5

Empowering Aspects for Healthy Food: Mother's Experiences to Combat Stunting in Rural Community

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Background: Women's empowerment for healthy food was a strategy to combat stunting children. Objective: To determine the effect of empowering mothers on aspect knowledge, attitude, and skill of healthy food to prevent stunting children. Method: This was an experimental study with pre-post test design to know the increasing of knowledge and attitude, also one-shot case study to know the mother's skill. Empowerment was provided by three days of education on how to manage healthy food. Knowledge and attitude were full filled with a structure questionnaire pre and post-intervention, while the skill was observed by checklist post-intervention. Subjects were 30 mothers in rural locus stunting in KulonProgo Regency. The results were analyzed by wilcoxon test. Results: The empowering mothers increase score mean of knowledge and attitude as many as 9.7 and 14.3 ($p=0.0001$) respectively. Also, 80% of them had excellent skills after an intervention. Conclusion: Empowerment increased knowledge and attitudes mother's on aspect healthy food, most of them had an excellent skill.

Keywords: stunting, empowerment, mother, healthy food

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Day 1

POSTER 6

Implementation of Practical Guidelines Feeding Baby 6-12 Months on Toddlers Mother

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Objective

Providing appropriate complementary feeding (MP-ASI) the quantity and quality of nutrition is an important factor in overcoming nutritional problems. Giving MP-ASI aged 6-12 months is an important step in determining the character and eating habits of children to adulthood. Nutrition problems (malnutrition), are greatly influenced by the quality and quantity of MP-ASI. However, there is still a lack of knowledge about mothers and inadequate MP-ASI practices. Efforts and strategies are needed to increase the knowledge and behavior of mothers in preparing quality MP-ASI. This study aims to determine the effect of implementation with practical guidance on the knowledge and practice of providing MP-ASI.

Method

Experimental research with one *group pre and post-test design*. The treatment is in the form of implementation using a Practical Guide to Feeding Infants 6-12 Months. The study involved 46 respondents under five mothers in the Argasunya Village, Cirebon City. Assistance was carried out four times a month by nutrition students and cadres who had been trained.

Results

The results showed that implementation activities by cadres and students with practical guidelines could significantly increase subject knowledge by 22.5 points. The level of subject knowledge increased by 41%. The practice of giving MP-ASI with a good category average for all parameters (texture/shape, frequency, number /portion and type), increased by 24.4% with the highest increase in the type of application parameters reaching 38.5%.

Conclusions

Mother's response to the implementation activities using practical guidelines, showed a very good response. This practical guide to feeding babies 6-12 months, needs to be implemented in community nutrition development considering that there are still many mothers who have less knowledge about complementary feeding and inadequate practice in giving complementary feeding to their babies.

Keywords

baby, MP-ASI, knowledge, practice, practical guidance

Day 1

POSTER 7

The Relationship Between Food Availability And Nutrients Consumption with Anemia Status of Female Vocational High School Students in Tabanan District, Tabanan Regency

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Objective

Anemia is one of the health problems throughout the world especially in the developing countries, in which it is estimated that 30% of the world's population suffer from anemia. The purpose of this research was to examine the relationship between food availability and nutrients consumption with anemia status of female vocational high school students in Tabanan District, Tabanan Regency.

Method

This research was an observational study with cross-sectional approach at SMK Negeri 1 Tabanan in January - March, 2020. The population were female X grade students of SMK Negeri 1 Tabanan and the samples were 83 people. The data of anemia status from the sample were collected by measuring the hemoglobin levels with Hb meter, the data of food availability were obtained by using a form food record, and the data of nutrients consumption were obtained through interview by using 1x24 hours form recall. The data were analyzed descriptively and analytically by using Pearson and Spearman Correlation test.

Result

96.4% samples were not anemia, 77.1% samples has food availability in 'available' category, 54.2% has a low level of energy consumption, 32.5% has a low level of protein consumption, 88.0% has very low level of iron consumption, 96.4% has a very low level of folic acid consumption, and 78.3% has a very low level of vitamin B12 consumption.

Conclusions

Based on the analysis, it is known that the variables of food availability and nutrients

consumption that affect anemia status of the sample had p value $> \alpha$ ($p > 0.05$), which means there is no relationship between food availability with nutrients consumption and there is no relationship between nutrients consumption with anemia status.

Keywords

food availability, nutrients consumption, anemia status, teenager and female

Day 1

POSTER 8

Diet Quality and Nutritional Status of *Orang Asli* (Aboriginal) Children in Cameron Highlands' Resettlement Villages, Malaysia

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Objective: Orang Asli have higher susceptibility towards inadequate food intake due to high poverty rate. This will lead to poor diet quality which is closely associated to poor nutritional status mainly among the children. Although government have embarked resettlement schemes to improve their current condition status but little is known about its repercussion. Therefore, this cross-sectional study was

conducted among 120 Orang Asli children in resettlement villages in Cameron Highlands, Malaysia aged 6 to 9 years in determining their diet quality and nutritional status.

Method: The children were selected on the basis of availability and willingness to respond and were interviewed for socio-demographic information, dietary intake and nutritional status assessment. Dietary recall was obtained from 2 days 24-hours dietary recall form and diet quality was assessed through Healthy Eating Index-1995 (HEI) whereas nutritional status was determined through BMI-for-age.

Results: Orang Asli children were found to have adequate energy and macronutrients intake but insufficient micronutrients intake. Mean overall HEI-score was 58.9 indicating that improvement was needed for their dietary intake. About 68.3% of the children fall in normal BMI-for-age category with a mean z-score of -0.1. This study shows that there was no significant relationship between diet quality and nutritional status ($r=-0.102$, $p=0.267$).

Conclusions: The contribution of this study has been to confirm that these children are not concerned with food adequacy, but rather with the issue of diet quality. This information can be used to develop targeted interventions aimed at improving their diet quality.

Keywords: Orang Asli children, diet quality, nutritional status, resettlement villages, Malaysia

Nutritional Practices, Chronic Energy Deficiency and Anemia in Pregnant Women; A Formative Study in Aceh Besar District, Aceh Indonesia

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Objective: Malnutrition during pregnancy will negatively impact pregnancy outcomes. This study aimed to analyze the prevalence of chronic energy deficiency (CED), anemia, and determinant factors.

Methods: A cross-sectional design was used in 189 pregnant women in Aceh Besar District in November 2019. Maternal nutritional status before pregnancy and chronic energy deficiency (CED) obtained using anthropometric methods, anemia was collected by hemoglobin levels using the Hemo-Cue method. Nutrition practices, food frequency, and socio-demographic of pregnant women were collected by the interview method. Energy and nutrients intakes were collected by a 24-hour food recall method. Data analysis was performed univariately and multivariately at a 95% confidence level.

Results: The results of the study were 14.5% malnourished before pregnancy, 12.7% suffered from CED, and 35.7% anemia. Nearly one third (29.1%) had never taken iron tablets, more than a third had never taken a multivitamin and 39.2% had not used iodized salt, 80.4% energy, 49.7% protein, 91.5% iron, 88.9% zinc and 86.8% calcium intake still low, multivariate analysis showed mothers who were thin before becoming pregnant are at risk of developing chronic energy deficiency during pregnancy (OR 13.44, 95%CI: 4.377-41.303, p=0,001)

Conclusion: Chronic energy deficiency and anemia in pregnant women is high-rise along with the nutritional practices and nutrient intake is still low. Moreover, nutritional status of mothers before pregnant determines factor of CED during pregnancy, so nutrition services provided and nutrition education on a regular and structured basis for pregnant women is need to be improved.

Keywords: Nutritional status, anemia, chronic energy deficiency, pregnant women

Overweight, Obesity and Associated Factors Among Adolescents Aged 15 to 19 Years Old in Phonhong District, Vientiane Province, Laos.

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Objective: The study aimed to explore the prevalence of overweight and obesity and their associated factors among adolescents aged 15 to 19 years old.

Method: A cross-sectional study was conducted in Phanhong district in 2019 using a cluster sampling method. Interview face to face with 403 adolescents aged 15-19 was conducted. Overweight and obesity were determined based on BMI for age was 23.0 - 24.9 kg/m² and ≥ 25 kg/m², respectively. Univariate and multivariate logistic regressions analysis were used.

Results: The prevalence of overweight and obesity were 13% and 11%, respectively. High monthly family income (aOR = 4.9, *p*-value < 0.001) and family eating outside the home/eating fast food (aOR = 2.3, *p*-value = 0.013) were significantly associated with overweight among adolescents. Male adolescents were more positively correlated with obesity than female adolescents (aOR = 5.2, *p*-value < 0.001), while high family

monthly income (aOR = 9.1, *p*-value < 0.001) and a higher number of obese persons in the family (aOR = 3.2, *p*-value = 0.004) were significantly associated with adolescents' obesity.

Conclusion: Overweight and obesity in adolescents is alarming in Phanhong District. Gender, family monthly income, number of obese persons in the family, eating outside the home and eating fast food were important risk factors for overweight and obesity. Raising awareness on proper dietary behaviors and healthy lifestyles among adolescents and community is necessary.

Keywords: overweight, obesity, adolescents, associated factors, community, Phanhong District, Vientiane Province

Day 2

POSTER 4

Pre-Lacteal Feeding Practices Among Cesarean Born Babies in Private Hospitals in East District, Yangon, Myanmar

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Objective: Despite the colostrum as the best immune booster for every new-born, Pre-lacteal feeding practice prior the breastfeeding initiation seemed to be high prevalent among cesarean newborns. *This cross-sectional study explored pre-lacteal feeding practice and its associated factors in East District, Yangon, Myanmar from July 2018 to Aug 2018.*

Methods: This study was conducted to (201) mothers by consecutive sampling from randomly selected (5) private hospitals in East Yangon District. By using SPSS version 16, all statistical analysis including cross-tabulations and chi-square tests were carried out to identify pre lacteal feeding practice and its associated factors.

Results: In this study, total 158 (78.6%) newborns were delivered by elective cesarean section with the top indications of being primigravida and having previous one scar. While the proportion of pre-lacteal feeding practice was 106 (52.7%), the major pre lacteal feed was formula milk 102 (96.2%) followed by plain water 4 (3.8%) and honey 3 (2.8%). Child and Maternal factors, frequency and place of AN visits could not determine *pre-lacteal feeding practice*. The major reason for providing lacteal feed was insufficient breastmilk 83 (78.3 %). Our study highlighted that early initiation of breastfeeding was the most significant protective factor for Pre-lacteal feeding (OR - 0.44; CI 0.25-0.79, $p < 0.005$).

Conclusion: Nutrition education about proper breastfeeding practice should be promoted to all pregnant women during antenatal visits and early initiation breastfeeding practice

should be implemented immediately after cesarean delivery in private hospitals.

Keywords: Pre-lacteal feeding, Cesarean born babies, Private hospitals, Myanmar

Background and Justification:

- Pre lacteal feeding is meant giving something other than breast milk during the first 3 days of life.
- Despite threads of pre lacteal feeding for newborns, this malpractice has been deeply rooted especially in developing countries.
- Many studies highlighted that place and type of delivery, mother's characteristics and knowledge, attitude and experiences, AN practice and family and social supports could mainly determine mother's choice of pre lacteal feeding or early initiation of breastfeeding practice. Pre-lacteal feeding practice prior the breastfeeding initiation seemed to be high prevalent among cesarean newborns.
- In Myanmar MDHS 2015 mentioned the percentage of early breastfeeding initiation (66.8%) and pre lacteal feeds (20.4%) nationally.
- Yangon had the highest breastfeeding initiation (83.6%) and the lowest pre lacteal feeding percentage (7.6%).

Objective:

- Our study was aimed to explore the pre lacteal feeding practice and its associated factors among mothers of caesarean newborns attending private hospitals in East Yangon District.

Materials and methods



Study design → cross sectional study
Data collection → June to August, 2018
Study Area → East Yangon District
Study Location → (5) private hospitals
Study Population → (201) post-partum mothers
Sampling → consecutive sampling

Material;

Face to face interview by Structured questionnaires and IYCF questionnaires

Data Analysis

By using SPSS version 16, all statistical analysis including cross-tabulations and chi-square tests were carried out to identify pre lacteal feeding practice and its associated factors.

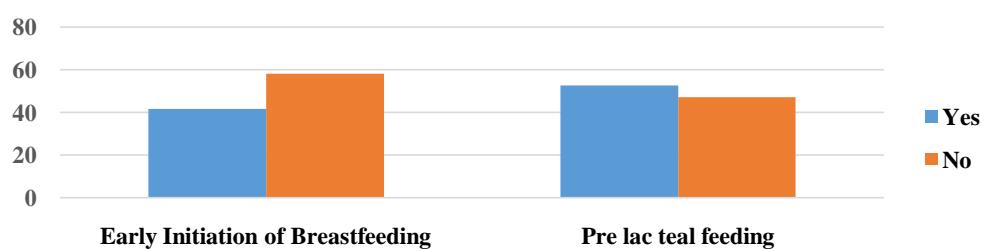
Ethical consideration

The ethical approval (Ethics/ DMR/ 2018/ 040) was obtained from Ethics Review Committee of Department of Medical Research and written informed consent were received from all mothers.

Face to face interview



Early Initiation of Breastfeeding Vs Pre lacteal feeding



Results

- Our study found that proportion of early initiation of breastfeeding (41.8%) was half lower than Yangon (83.6%) while pre lacteal feeding (52.7%) was 7 times higher than (7.6%). (MDHS survey; 2015-16).
- The unique nature of our study population pointed that homogenous characteristics of mothers; mean age of post-partum mothers; 31.7 ± 0.4 years, mostly were nulliparous (60.9%), educated (85%) and working mothers (60.7%).
- The mean gestational week of first AN visit was 9.4 ± 0.5 weeks when 171 (78.4%) mothers had taken 120 (60.9%) more than 10 visits and 58 (78.6%) were delivered by elective cesarean with the top indications of being prim gravida and having previous one scar.
- Despite half of our mothers had received health messages during their AN visit, one fourth of them had breastfeeding message. Related to their knowledge, 125 (62.2%) mothers knew the right timing of breastfeeding initiation, 184 (91.5%) the age of exclusive breastfeeding.
- The gestational week of newborn children was 38.3 ± 0.5 weeks, the mean birth weight was 6.68 ± 0.07 pounds, 103 (54.5%) were boys and 86 (42.8%) were girls.
- Despite all of our mothers 214 (99.1%) gave colostrum, the major pre lacteal feed was formula milk 102 (96.2%) followed by plain water 4 (3.8%) and honey 3 (2.8%).
- The major reason for providing formula milk was insufficient breast milk expression 73 (36 %) followed by weak sucking 22 (10.8%) and inadequate breast milk 14 (6.9%) immediately after child birth.

Conclusion

- Our study elicited that early initiation of breastfeeding was the most significant protective factor for Pre-lacteal feeding (OR - 0.44; CI 0.25-0.79, p < 0.005).
- Although knowledge and other determinants were satisfactory, their belief, perception and practice about pre lacteal feeding practice were still major barriers for successful exclusive breastfeeding.

Recommendation

- Nutrition on-job training focusing on proper breastfeeding practice should be implemented to private health care providers.
- All pregnant women should be encouraged to build their trust the early initiation of breastfeeding benefits and threads of pre lacteal feeding since their antenatal visits.
- All individual, private hospitals environment and family should be friendly and supportive to follow the exclusive feeding practice.

Acknowledgement

We would like to acknowledge to all post-partum women who participated in this study. We also would like to thank Regional director from the Yangon Regional Health Department, all private health care providers for contributing in the whole data collection process. We also would like to acknowledge to director general and all directors from Department of Medical Research for their valuable support during research proposal and ethics review period and research funding.

Effectiveness of Green Bean Porridge and Biscuit Supplementary Food in Reducing Anemia for School Children in Rural Brebes-Indonesia

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Objective

Anemia is a nutritional disorder and major public health problems in developing countries. It is mainly caused by iron deficiency. School children are more vulnerable for anemia. This study was to investigate the effect of green bean porridge and biscuit supplementary feeding on reducing anemia among school children.

Method

The study used one-group pretest-posttest experimental design. A school-based interventional study was conducted that enrolled 30 anemic school children who were followed for 1 months. The intervention students received green bean porridge and biscuit three times in a week for 1 months. Changes on mean hemoglobin (Hb) concentration and anemia prevalence were compared between pre and post intervention using paired-samples t test and proportional test where appropriate.

Results

At baseline, the mean Hb concentration of students was 10.9 g/dl (SD = 0.50). After 1 months, anemia prevalence decreased 73,4 %

and mean Hb concentration was 12.34 g/dl (SD = 0.66). Mean difference of Hb concentrtaion between pre and post intervention was -1.40 g/dl (SD=0.42)(95 % CI -1.56 – (-1.25); p =0.000).

Conclusions

Increasing amount of green bean porridge and biscuit supplementation resulted to significant increasing in Hb Concentration and reducing anemia cases, therefore can be used as complementary feeding program solution in addressing anemia among school children.

Keywords

Anemia, school children, green bean porridge, biscuit, supplementation

Increasing Children's Consumption of Local Fruits Through Fruit-Based Snacks

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Objective

The objective of this research was to determine whether snacks made of local fruits could encourage children to take more fruits particularly local fruits. It was found that children tend to perceive the local fruits as tasteless and less appealing.

Method

The subjects were 13 children and 6 staff members of a nursery located in Keningau. The staff members were required to answer questionnaire while the children's responses were obtained through an observation

checklist. The children were served with snacks made from mangoes, bananas and maize.

Result

The results of the data analysis showed several main findings:

- The children claimed that they enjoyed the snack
- The children became more familiar of the local fruits
- The children learnt about the benefits of the local fruits
- The nursery expressed their approval on serving fruit-based snacks

Conclusion

This implied that nurseries should serve more fruit-based snacks as a way of familiarizing children with fruits especially fruits that are native to our nation.

Key word

Fruits, nursery, early childhood education



Corn-flavoured meat ball



Banana-flavoured pancake

Encouraging Nursery Children to Consume More Fruits Through the Introduction of Fruit Juice

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Objective

The objective of this research was to encourage children at a nursery in Keningau to drink fruit juice. The children's daily intake of fruit was considerably low. Hence, this project introduced two types of juice, papaya and watermelon beverages, in order to encourage children to drink fruit juice and to consume more fruit in their daily diet.

Methodology

The subjects were 12 children and six staff members from a local nursery. The staff members were the owner, the supervisor, the manager, its two teachers and one cook. They were all required to answer a questionnaire and complete a checklist individually.

Results

There were four major findings from the questionnaire and the checklist:

- The children showed great interest in drinking both types of juice
- The children's intake of fruits increased after the fruit beverages were introduced
- The staff members agreed on the benefits of fruit juice in children's growth & health
- The staff members of the nursery expressed their approval on the inclusion of the fruit juice in the children's daily meals.

Conclusion

This implied that nurseries should offer more alternatives in the type of beverages that students can drink including a variety of fruit juices.

Key word

Fruit juice, nursery, early childhood education



Watermelon Juice and Papaya Juice

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Objective. The study aims to stimulate the potentials of Public-Private Partnership (PPP) in West Papua, which ranks 33rd on the Indonesian Food and Nutrition Security Index and where stunting is a public health challenge.

Methods. The authors analyzed the potentials using FAO food access and UNICEF nutrition frameworks, as well as utilize the results of discussions with the stakeholders. Two group discussions were organized with the government, NGO, and academia. Two Focus Group Discussions were conducted with mothers of small children in two different districts. All FGDs were implemented in 2019.

Results. We propose to focus interventions on: provision of continued access to food at the household level, adequacy of food for children below six months, improve knowledge of mothers and other household members on food and nutrition, access to clean water and latrine, and access to preventive and health care services. A multi-stakeholder effort should be put in place, leads by the provincial government, consisting of representatives from offices of public works, health, education, social affairs. The network should involve the 26 medium and large companies based in the area. The food company could assist in improving knowledge and nutritional status of the undernourished children. Educational materials could be multiplied by the printing companies and distributed by the logging and the mining companies. An action of one nutritionist per village could be initiated.

Day 2

POSTER 8

Potential Role of Public-Private Partnership in Improving Food and Nutrition Security of Children in West Papua, Indonesia

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Conclusions. The government of West Papua should add nutrition concern and widen its existing PPP activities. A strong leadership and high commitment will support the initiative.

Keywords: Public-Private Partnership (PPP), Food, Nutrition, Food Nutrition Security, West Papua.

Day 3

POSTER 2

Food and Nutrition Adaptive Systems for Students in Indonesia

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The COVID-19 pandemic makes SDGs Indonesia experience challenges, especially at SDGS number 1: no poverty, number 2: zero hunger, number: 3 good health and well being, and number 4: quality education. The Indonesian government, both central and local, provides a social safety net in the form of direct food package assistance to ease the burden on citizens affected by the economy. A weakened economy causes family food spending to decrease while the younger generation, especially students, desperately need nutritious food to maintain their quality in learning despite the Covid-19 pandemic. Many stakeholders are involved in direct food package assistance programs. However, there is no integrated information system that helps the government monitor and track the amount

of food, its nutritional content, and others in real-time, easy to access, and accurate. Using Soft Systems Methodology, complicated problems can be solved. Therefore, this research very important contributes to solving problems. This research aims to propose a conceptual model of food and nutrition adaptive systems for students in Indonesia.

Keywords: food adaptive systems, SDGs, safety net program, covid-19 pandemic, soft systems methodology

Day 3

POSTER 3

Formulation of A Biscuit for Toddler as an Emergency Food with Energy Protein and Vitamin A Sources from Purple Sweet Potato Flour Green Beans and Moringa Leaves

Febiani Riskika

Statement :

This study aims to find the formulation of toddler biscuits as emergency food sources of protein and vitamin A energy from purple sweet potato flour, green beans and moringa leaves, because in post-disaster conditions, one of the vulnerable groups of disaster victims is toddlers who are at high risk of experiencing infectious diseases and weight loss that shows the lack of protein energy as well as vitamin A deficiency which aggravates the condition of toddlers. The solution to this problem can be optimized by developing a supplementary food formula in the form of biscuits that has fulfilled the essential characteristics of ready-to-eat emergency

food. Biscuits are made from local food ingredients, namely purple sweet potatoes, green beans and Moringa leaves. Purple sweet potato has an energy content equivalent to wheat flour so that it can be a substitute for wheat flour in making biscuits. Mung bean flour is used as an additive to increase protein value. Moringa leaf flour contains provitamin A in the form of beta carotene which is high so it is added to biscuits to increase its nutritional value. The design of this research is completely randomized design (CRD) with three treatments and two repetitions in the formulation with a ratio of purple sweet potato flour and wheat flour F1 80:20, F2 70:30, and F3 60:40. The statistical test used was Kruskall Wallis to see the effect of biscuit formulation on the hedonic test ($p < 0.05$) and if there was, it will continued with the Mann Whitney Real Difference test. Nutritional content was tested using a paired sample t test. The results showed that in the hedonic test, color, taste and texture had differences between formulations. The selected formulation was determined based on the Bayes method, which is the F3 biscuit which was then chemically analyzed using the control biscuit (F0) as a comparison. F3 biscuits contain 482.28kcal of energy nutrition, 9.35gr protein, 23.11 g of fat, 59.35 g of carbohydrates, 3.75% moisture content and 2.7% ash content, and 513.3 mcg Vitamin A.

Day 3

POSTER 4

Effect of Complementary Feeding Recommendations and Micronutrient Powder on Proportion of *Lactobacillus* and *Bifidobacterium spp.*

Kadek Tresna Adhi^{1,3*}, Ketut Suastika ¹, I Dewa Nyoman Wirawan ¹, I Gusti Lanang Sidiartha ¹, I Gusti Kamasan Nyoman Arijana¹, I Desak Ketut Dewi Satiawati Kurnianingsih², and Umi Fahmida³

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Objective: The low quality and quantity of complementary foods, especially for children aged 6-24 months in Indonesia, is the rationale for providing micronutrient fortification in complementary foods. Several studies have shown a decrease in the population of bacteria in the digestive tract after supplementation with micronutrients. Based on this, a study was conducted to compare the proportion of *Lactobacillus* and *Bifidobacterium spp.* in the group of children who were given micronutrient powder (MNP) with the group that was not given MNP.

Methods: This study was posttest control group design which was conducted on 89 children aged 12-24 months in Susut District, Bangli Regency, Bali Indonesia. The children were randomly allocated into experimental and comparison (control) group. To ensure similarity between groups, we compared characteristic of group by Kruskal-Wallis test ($p>0.05$). The experimental group consisted of three groups receiving complementary feeding

recommendation (CFR) with MNP (n=22), CFR only (n=22) and MNP only (n=22), whereas the control group (n=23) received health promotion from primary health care. The bacterial DNA from faeces was isolated by using PureLink Microbiome DNA Purification kit (Invitrogen, USA) according manufacture protocol. The DNA was amplified using real time PCR (RT-PCR) for Lactobacillus and Bifidobacterium quantification. Data were analyzed by STATA.

Results: The mean difference compare to control group as reference in Lactobacillus ($p = 0.992$) and Bifidobacterium ($p = 0.712$) were not significantly different between the intervention groups ($p > 0.05$). The highest average Bifidocaterium spp. was in the CFR intervention group (0.56), while the highest average Lactobacillus was in the MNP intervention group (0.66).

Conclusion: Provision of CFR and MNP intervention in all groups of respondents was not significantly associated with the mean Lactobacillus and Bifidobacterium spp. in the digestive tract of children. Study with bigger sample size is needed to confirm this finding.

Keywords: Complementary Feeding Recommendation, Micronutrient, Gut Microbiota

Day 3

POSTER 5

The Effect of the Wheat Substitution With Shorgum Flour And Milkfish Fortification On Protein And Omega-3 Content of Weaning Food

Eli Rosidah, Ibnu Malkan, Bakhrul Ilmi, Luh Desi Puspareni, Nanang Nasrulloh

Statement:

This study aims to determine the nutritional content of selected weaning food biscuits modified by utilizing Indonesian local food. The modifications can be minimize by using of wheat flour as a base ingredient in weaning food and to increase the nutritional value, especially for protein and omega-3 for baby's growth and development. We realize the nutritional needs at the age of 0-24 months will affect a healthy life in the future. One of the nutrients is supporting the growth of tissues and organs, weight and height, head circumference is supported by optimal protein intake, and the contribution to the development of baby brain cells also supported by omega-3 intake. The modifications were made from wheat substitution with sorghum flour and milkfish fortification. Sorghum was chosen because it has a protein nutritional content that is almost the same as wheat flour and milkfish was chosen to complement micronutrients as omega-3. The results of this study showed that the nutritional content of selected weaning food wheat substitution with shorgum and milkfish fortification have a higher nutritional value when compared to the nutritional content without sorghum substitution and milkfish fortification, especially for protein and omega-3 content. The weaning food of biscuits has contents 8,7% of moisture, 1,4% of ash content, 13,2% of protein, 21,57% of fat 21.57%, 55,1% of carbohydrate, and 0,14% of omega-3. The serving size of biscuit sorghum flour substitution and milkfish fortification can be consumed as much as 26g or equivalent to 2 pieces, because the nutritional content for

the sufficiency of babies based on the AKG 2018 to fulfill of 10-15% daily snacks.

Day 3

POSTER 6

Green Behaviour: The Safety of Young Children's Street Food Consumption During Covid-19

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Street food consumption is known as an alternative source of nutrition and energy for children. However, during this pandemic situation, there is a protocol for every parent and children to follow regarding the consumption of processed food sold at food stores, cafeteria, restaurant, and traditional food stalls. This research aimed at identifying how Covid-19 pandemic issue affected young children's street food consumption. 40 parents and 40 children were involved in this study to determine street food consumption behaviour during this Covid-19. Questionnaire to collect data about behaviour as well as knowledge about the food safety and nutrition were distributed through the use of Google form and WhatsApp Group. Member check was done to ensure data accuracy through interview using WhatsApp calls. Analysis using statistical descriptive and inferential to see whether parents' and children's knowledge

regarding the protocol of food consumption and food nutrition during Covid-19 affected their children's behaviour of consuming street food. Results indicated that there is a strong relationship between parents' and children's knowledge regarding the protocol of food consumption and food nutrition during Covid-19 affected their children's behaviour of consuming street food.

Keywords: Children, street food consumption behaviour, Covid 19

Day 3

POSTER 7

Internet Access Behavior of Young Parents about Nutrition for Early Childhood

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Background: a research from APJII (Asosiasi Penyedia Jasa Internet Indonesia/ Indonesian Internet Service Providers Association) in 2017 showed that 49,52% internet user in

Indonesia is people between 19-34 years. They access information about their life including nutrition and health for themselves and their family from the internet because it is fast, cheap, and easy.

Objective: to know relationship between internet access behavior of young parents and level of knowledge about nutrition for early childhood.

Method: it is an experimental study using pre-posttest control group design to know the differences between two groups. First group is young parents who get information about nutrition for early childhood from e-booklet as a control group. Second group is young parents who get information about nutrition for early childhood from website as a treatment group. Researchers measure level of knowledge from young parents before education, one week and three weeks after education.

Results: 79,4% of young parents use internet as first choice to get information about nutrition and health and usually spend time around 5-9 hours/day using internet. Based on statistical analysis, online education for young parents using website improves level of knowledge in one and three weeks after education ($p = 0,008$ and $p = 0,021$) than e-booklet education. However, there is no significant differences between two groups in posttest score after one week and three weeks education ($p = 0,917$ and $p = 0,364$).

Conclusions: online education using website improves level of knowledge of young parents about nutrition for early childhood. However, there is no significant difference of posttest score compare with control group.

Keywords: nutrition education, online platform, internet, early childhood, young parents.

Day 3

POSTER 8

Review of Food System Adaptation and Food Security in The Era of COVID-19

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Abstract

Background : COVID-19 is a type of coronavirus recently discovered in December 2019 in Wuhan and became a pandemic in 2020. COVID-19 has changed the lifestyle of every person in the world. Not only thinking about individual health problems, but COVID-19 also changes the pattern of life and food systems adaptation. The purpose of this study overviews the situation of several countries because COVID-19 compared to Indonesia.

Methods : The research method uses a systematic literature review based on journals and the data by using a specific searching method.

Results : COVID-19 caused chaos in various countries and lockdown has elicited a panic buying of food, creating a loss of employment and income experiencing reduced economic access to food, especially fresh food. COVID-19 is changing the food system because global food supplies are preventing many unfulfilled foods and soaring food prices. Domestic food

production is disrupted by lockdown to reduce the impact of the spread of COVID-19, causing many foods to be damaged due to prolonged shipping access, so individuals have not many food choices for consumption and cause a health problem.

Conclusions: There has been a change in consumption patterns and food systems in various countries but Indonesia still needs more scientific studies to see the impact of COVID-19 on food systems and food security.

Keyword: Food System, Food Security, Food Safety, Health Problem, COVID-19.

BIOGRAPHIES OF SPEAKERS

Muchtaruddin Mansyur, MD, PhD

Education

1983 Medical Doctor, Universitas Indonesia

1992 Magister of Occupational Health and Safety, Universitas Indonesia

2005 Doctor of Philosophy in Health and Community Care, Leeds Becket University

Organization

Chair of the Indonesian College of Occupational Medicine

Director of SEAMEO RECFON

Lecturer at the Department of Community Medicine, Faculty of Medicine Universitas Indonesia

Prof. Ainun Na'im, Ph.D

EDUCATION:

1996: PhD, Business Administration, Temple University, Philadelphia, USA

2010: Professor of Accounting, Universitas Gadjah Mada

EXPERIENCE:

- 2000 – 2003 : Director of Finance, PT PERTAMINA(an Indonesian state-owned company that carry out integrated business in oil gas, renewable and new energy)
- 2004 – 2007 : Dean, the Faculty of Economics and Business, UGM
- 2007 – 2011 : Senior Vice Rector UGM
- 2010 – now : Council member of the Indonesian Association of Accountants (IAI)
- 2011 – 2015 : Sekretaris Jenderal Kementerian Pendidikan dan Kebudayaan
- 2015 – 2019 : Sekretaris Jenderal Kementerian Riset, Teknologi dan Pendidikan Tinggi
- 2019 – now : Sekretaris Jenderal Kementerian Pendidikan dan Kebudayaan

Prof. Paul Haggarty

Prof. Paul Haggarty is the Deputy Director for Research at The Rowett Institute, University of Aberdeen. He has over 30 years research experience in the field of human health. In the course of his career He has worked with research groups in the UK and internationally (India, Mexico, Malaysia, Norway), including as a Fulbright Senior Research Scholar in the USA at Cornell University. Most of his research has focused on human nutrition, epigenetics and genetics. His overall aim is to provide new knowledge leading to practical applications with a beneficial effect on health, quality of life, society and the economy. His work is published in journals such as Lancet, Nature, American Journal of Clinical Nutrition, and Annual Review of Nutrition. His research is acknowledged as internationally important, it is cited in national reports and policy statements, and it is used directly by policy makers. He has served on various scientific advisory committees including; the UK Scientific Advisory Committee on Nutrition; Swedish Medical Research Council International Evaluation Panel

on Ageing and Health; the Scientific Advisory Board of Breast Cancer Campaign; the Advisory Committee on Novel Foods and Processes; and He recently joined the BBSRC Bioscience for Health Strategy Advisory Panel.

Dr. Hera Nurlita, S.SiT, M.Kes

Dr. Hera is a Nutritionist in MOH Republic of Indonesia, and a lecture in private University, a member of the Dietitian Association in Indonesia. She holds a PhD from Faculty of Medicine Universitas Indonesia. Her activity focuses programming action on policy nutrition, to prevent and reduce malnutrition, overweight and obesity

Dr. Chandavone Phoxay

In the past:

- 8 years - Serve as a Pediatrician at Children Intensive Care Unit, Mahosot Hospital (the biggest national hospital)
- 3 year – An assistant professor in OSAKA University, International Collaboration Department, Graduate school of Human Sciences
- 4 years - A Director of Health System Strengthening Project funded by the Global Fund fighting against HIV/AIDS, Tuberculosis, Malaria,
- 5 years - A Secretary to Minister of Health,
- 5 years- A Deputy Director General of Hygiene Health Promotion Department leading on Nutrition, health promotion, Behavioral Change Communication, Primary Health Care programs,
- Researcher on MCH, Health System, Primary Health Care and Nutrition and lecturer at University of Health Science and with Lao American Nutrition Institute Project, Vientiane.
- 2013 up to now Secretariat of National Nutrition Committee, A SUN Lao Country Focal Point
- 2017 to March 2020 a Director National Nutrition Center
- March 2020 up to now a Deputy Permanent Secretary, Cabinet Ministry of Health, Lao PDR.

Dr. Lwin Mar Hlaing

Dr. Lwin Mar Hlaing is Acting Director of National Nutrition Centre (NNC), Department of Public Health, Ministry of Health and Sports, Myanmar. Dr. Hlaing attained PhD (Nutrition) in 2014 from Southeast Asian Ministers of Education Organization Regional Center for Food and Nutrition (SEAMEO RECFON), University of Indonesia. She has involved in nation-wide Nutrition surveys in Myanmar and led the first ever nation-wide Myanmar Micronutrient and Food Consumption Survey (MMFCS 2017-2018). As in charge of NNC, she is leading the national nutrition programs, nutrition surveillance system and nutrition laboratory for nutrient content analysis of foods to update Myanmar food composition database. In close collaboration with relevant ministries (Agriculture, Livestock and Irrigation; Social welfare, Relief and Resettlement; Education; Planning and Finance; etc) and development partners, Dr. Hlaing is

leading the development and implementation of Multi-sectoral National Plan of Action on Nutrition (MS-NPAN).

Asst. Prof. Kitti Sranacharoenpong

Professor Sranacharoenpong has worked at the Institute of Nutrition, Mahidol University in Thailand since 1998. His Bachelor's and Master's Degrees were in Nutrition Science from Mahidol University. He graduated PhD. in Applied Health Sciences from the School of Public Health and Health Systems at the University of Waterloo in Canada in 2009. He also had been training the postdoctoral fellow in Environmental Nutrition at Loma Linda University in California, USA in 2009-2011. His research interests are focusing on public health nutrition and health promotion. He was the key person who developed the Thai Food Based Dietary Guidelines (Thai-FBDGs). It also extended his previous research in developing and implementing Thai national food based dietary guidelines. He also has conducted school lunch program for Thai children to link aspects of Thai-FBDGs and food system for sustainability. He also will support Lao Ministry of Health to develop their own FBDGs based on Lao National Consumption Data.

Dr. Aladdin D. Rillo

Dr. Aladdin D. Rillo is the Deputy Secretary-General for ASEAN Economic Community. He supports the Secretary-General of ASEAN by providing leadership in the implementation of the AEC Blueprint 2025 and leads the AEC Department of the ASEAN Secretariat. He also provides strategic advice to support ASEAN's economic integration agenda

Before assuming this role, Dr.. Rillo was a Senior Economist with the Asian Development Bank Institute in Tokyo where he designed and administered capacity building training and policy dialogue on development issues.

Prior to that Dr. Rillo worked at the ASEAN Secretariat for more than ten years where he served in various positions; the latest as Director and Chief Economist of the ASEAN Integration Monitoring Office (2010-2013), during which he spearheaded the implementation of regional economic surveillance and integration monitoring in ASEAN as well as provided high level policy and recommendation to support ASEAN economic integration initiatives.

Dr. Rillo holds PhD and MA degrees in economics from the University of Hawaii, and an AB in economics from the Ateneo de Manila University. He has also held various lecturing and senior economist positions in the region and beyond.

Dr. Rillo has written and published extensively on the ASEAN economy and on the broader economic and finance issues.

Dr. Ethel Agnes P. Valenzuela

Dr ETHEL AGNES PASCUA-VALENZUELA Director Southeast Asian Ministers of Education Organization (SEAMEO) Secretariat Bangkok, Thailand

Dr Ethel Agnes Pascua-Valenzuela is presently the Director of the Southeast Asian Ministers of Education Organization (SEAMEO) Secretariat, the first female Director since SEAMEO was organized in 1965. She served as the first female Deputy Director for Programme and Development of SEAMEO Secretariat from July 2015 to March 2019 and led the Educational Research and Innovation Office of SEAMEO INNOTECH, from 2006 to June 2015.

Prior to joining SEAMEO, she was and Director IV of the Office of Student Services and Director III at the International Affairs Services in the Commission on Higher Education Philippines (1995-2006) and was responsible for foreign and local scholarship programs, academic mobility and transnational education. She has also served as Vice Chairperson of the UNESCO National Commission Education Commissioner (2000-2010). She is a Professorial lecturer at the University of the Philippines and De la Salle University in Manila.

Dr Valenzuela's expertise is on internationalization of higher education and transnational education, teacher education, alternative learning and secondary education. She has published international and local articles, journals, technical reports and guidelines for some SEAMEO and other international organizations such as UNESCO, UNICEF, CHED and DepEd. Among her well-noted research work were: Philippine Higher Education Guide (CHED), K to 12 Toolkit; Quality Assurance, Mutual Recognition in Higher Education (UNESCO Paris); Toolkit for the Recognition of Higher Education Qualifications (UNESCO BKK); Toolkit for National Information Centers (UNESCO Bangkok), ESD Toolkit for Secondary Schools; Internationalization of Philippine Higher Education (UNESCO Natcom) and Reform and Development in Philippine Higher Education; The Southeast Asian Teaching Standards; Multigrade Quality Indicators in Southeast Asia; K to 12 Regional Comparison in Southeast Asia and published at the International Encyclopedia of Education under Elsevier London to name a few.

Dr Valenzuela holds Doctor of Education in Educational Management at De La Salle University, MA in Science Education at the Philippine Normal University and Bachelor's degree in Secondary Education major in English and General Science. She is a Career Executive Service Officer (CESO IV) in the Philippine Government and a member of various international professional and academic organizations including the Phi Lambda Theta Honor Society of Women Leaders in Education and the Phi Delta Kappa. She was awarded as Philippine Normal University's Blue Ribbon Award for Distinguished Alumni in 2013, and a World Bank Fellow in Multilingual Education.

Dr. Dwi Priyono

Director of SEAMEO CECCEP who has been appointed to deal with ECCE and Parenting in the South East Asia Region. In 2010 - 2015, he was appointed in handling Education for All, a program of UNESCO and MoEC of the Republic of Indonesia. He is also a lecturer with educational leadership & management expertise.

Maria Corazon C. Dumlao, MD, MPHm DBI

Elementary : 1973-1978 - Holy Spirit Academy

Secondary : 1978-1982 - Ilocos Norte College of Arts and Trades (Journalist of the Year
Orator of the Year)

Tertiary and Post-Graduate:

- 1982-1986 - Mariano Marcos State University, BS Biology (Student Leader Student Writer Student Orator)
- 1987-1991 - St. Louis University, Medicine
- 1998-1999 - College of Public Health, University of the Philippines, Master of Public Health (University Scholar, 2nd Semester)
- 2001-2003 - Carlos Lanting College, BS Nursing

Ardhiani Dyah Priamsari

- Global Alliance for Improved Nutrition (GAIN) – as East Jawa Programme Manager, january 2018- Now
- Global Alliance for Improved Nutrition (GAIN) – as Behaviour Change Implementation Specialist, Mei 2015- Januari 2018
- Helen Keller International. Homestead Food Production Program – NTT – as Project Coordinator, August 2013 – Mei 2015
- Lecture for Public Health division of Community Health Faculty, Respati University Yogyakarta . January 2011 – July 2012
- Action Contre La Faim - Emergency and Post Emergency of Merapi Eruption Project –
- Yogyakarta - as Deputy Program Manager / Acting Head of Base - Nutrition and Mental Health, April – July 2011
- Action Contre La Faim – Integrated food security, WASH, Nutrition and care practices program - TTS district – East Nusa Tenggara Office- as Deputy Program Manager – Nutrition and Care Practices Program, January 2009 - September2010
- World Food Programme- Mother Child- Nutrition and School Feeding Program-- Country Office – Jakarta, as Senior Program Assistant .September 2008 – December 2008
- Save The Children- Post Emergency Program- Yogyakarta – as Senior Nutritionist Officer . January 2007 – July 2008

- Catholic Relief Services – Kupang - Atambua , East Nusa Tenggara Office
- Health Officer for Integrated Health-Nutrition - Food security, August 2005 – December 2006

Dr. dr. Ray W Basrowi, MKK

Dr Ray adalah praktisi kesehatan kerja dan industry nutrisi yang memperoleh gelar Magister Kedokteran Kerja serta Doktor Bidang Ilmu Kedokteran dari Fakultas Kedokteran Universitas Indonesia (FKUI). Dr. Ray memiliki ketertarikan yang sangat tinggi dalam bidang nutrisi terutama intervensi dan edukasi nutrisi pada kelompok pekerja, ibu hamil, menyusui, anak dan juga manajemen kesehatan kerja. Selain telah mengerjakan beberapa penelitian di bidang *infant and toddler nutrition*, disertasi Dr. Ray tentang laktasi dan edukasi nutrisi pada populasi pekerja telah menghasilkan banyak publikasi ilmiah nasional dan internasional. Dr. Ray memiliki pengalaman 15 tahun sebagai praktisi di bidang industri nutrisi dan K3 manajemen perkantoran, dan telah berkarir di beberapa perusahaan produk pangan dan nutrisi. Di tahun 2019 Dr. Ray mendirikan ***Health Collaborative Center (HCC)*** yang merupakan suatu wadah edukasi dan advokasi kesehatan masyarakat di bidang nutrisi, kesehatan kerja, laktasi dan kesehatan komunitas, dan saat ini sebagai ***Founder & Chairman*** dari HCC.

Reny Nurlela, M.Pd

- Founder Sekolah Lil'bee
- Founder TBM Lil'Racy Lil'Bee
- Founder TAMAN DOMAIN Lil'Bee
- Teacher and Manager at Sekolah Lil'Bee
- Consultant and Headmaster of PAUD Sahabat Semut in Indonesia Ministry of Labor
- Storyteller
- Interviewees at several trainings
- Head of education of training PP HIMPAUDI
- Committee of FTBM Indonesia
- Volunteer at several education events
- Consultant of PAUD at several schools
- Softskills Instructur at BBPPLKLN CEVEST in Indonesia Ministry of Labor

A.A.S Indriani Oka, M. Gizi

I am known for my interpersonal communication skills and have participated in some research projects, mainly involved with the national and local government stakeholders. Working at Regional Centre of Food and Nutrition helped to shape my experience for conducting research, implementing the theory into community development activities, and disseminating the result as a trainer in the capacity building activity for health professionals.

Dr. Ir. Judhiastuty Februhartanty, MSc

- April 2019 – ongoing: Development of tools for assessing feeding problems of young children (Team for a Doctoral Student at Universitas Indonesia, Jakarta)
- April 2019 – ongoing: Development of personalized apps for healthy eating tutorial for mothers of young children (Team for a Doctoral Student at Universitas Indonesia, Jakarta)
- April 2018 – ongoing: Development of nutritious cookbook from local ingredients and its impact on cooking behavior among mothers of children aged 2-5 years old in Southeast Sulawesi (Team for a Doctoral Student at Universitas Indonesia, Jakarta)
- April 2017 – 2020: Development of model for anemia alleviation at secondary school in Lampung (Co-promotor of a Doctoral Student at University of Andalas, Padang)
- Feb 2012 – June 2015: Exploring child dietary diversity practice among working mothers and its implication to stunting: A mixed methods study to enhance secondary data analyses of multiple nationwide surveys 2002-2012 (Co-promotor of a Doctoral Student at Faculty of Medicine Universitas Indonesia)
- December 2010 – April 2013: Empowerment in the care of patients with diabetes in the Indonesian context (Local supervisor for a doctoral student from School of Health Sciences, the University of Melbourne)
- March 2010 – December 2011: Development of training model for traditional birth attendants (TBAs) as agents of change in the implementation of immediate breastfeeding initiation in Bogor District (Technical advisor for a doctoral student from Faculty of Public Health, Universitas Indonesia)

Seala Septiani, S.Gz., M.Gizi

- 2018 - 2020 : Supervisor (Freelancer Worker)
SEAMEO RECFON
- September 2016 – now : Co-Principle Investigator (Co-PI)
Pusat Kajian Gizi & Kesehatan (PKGK) Universitas Indonesia
- January 2017 – now : Academic Staff
Nutrition Department, Faculty of Public Health Universitas Indonesia
- Aug 2016 – Feb 2017 : Project Leader
Human Nutrition Research Cluster, FMUI
- July – September 2012 : Health and Nutrition Science Executive
PT. Nutrifood Indonesia
- September 2012 – April 2014 : Brand Executive (Tropicana Slim)
PT. Nutrifood Indonesia
- December 2013 – April 2014 : Education Executive (Nutrafood Research Center)
PT. Nutrifood Indonesia
- May 2014 – July 2014 : Research Management Assistant
Pusat Kajian Gizi & Kesehatan (PKGK) Universitas Indonesia



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