



7TH INTERNATIONAL CONFERENCE ON PUBLIC HEALTH 2021

“DRIVING INNOVATIONS IN HEALTHCARE, STRENGTHENING HEALTH SYSTEMS: ADDRESSING COVID 19 PANDEMIC”



04TH- 05TH AUGUST 2021

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(ICOPH 2021)

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Edited by Prof. Dr. Hematram Yadav, Prof. Dr. Rusli Bin Nordin and Dr. Alene H. Gelbard

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MESSAGE FROM THE CONFERENCE CO-CHAIR ICOPH 2021



It is indeed a great pleasure to say a few words regarding the 7th International Conference on Public Health Conference (ICOPH) organised by TIIKM in August 2021. Let me welcome all of you and thank you for taking part in the conference. This conference has come a long way since we first started in 2015. This conference is not only designed to enhance the knowledge of public health among health professionals, but more importantly to exchange information and discover new solutions to the public health issues. Since the inception of this conference, I had witnessed many participants who have participated annually in the conference.

In the last two years the corona virus (COVID-19) pandemic has created worldwide panic and it has taken limelight away from all other public health issues. It is one of the largest pandemic the world has ever seen and World Health Organization (WHO) is struggling to contain this global pandemic. Although many countries are seeing some light at the end of the tunnel, others in Asia and South America are still struggling to cope with the pandemic. This disease is highly contagious and it leads to severe pneumonia, acute respiratory distress syndrome, and mortality in some cases. Higher morbidity and mortality rate are reported in some high-risk groups such as the elderly and especially those with co-morbidity, especially with the new variants of the virus. The health care systems in many countries are unable to cope with the number of cases especially those patients who require ICU beds. Doctors and nurses in the frontline are unable to cope and are resigning from their jobs, and many others have contracted the disease and died.

Basic health prevention methods such as hand washing, physical distancing and wearing of mask are still applicable. Some countries are on virtual lockdown and this has created economic slowdown, with businesses closed and many of the workers left jobless. Although

immunisation has started in most of the countries, it does not seem to be a silver bullet to slowdown the diseases. Although there are several papers regarding the COVID 19 in this conference, there are also wide range of topics related to health at all levels of care. I also hope that there will be collaboration and open dialogue between participants to improve research, education, healthcare, and policy outcomes. Participants will deliver their latest research in many of the areas and hope that we can share and discuss our research findings.

This pandemic has not only highlighted the importance of public health and the role of public health specialist, but also the weaknesses of the health care systems. I encourage the delegates to work together to achieve better health outcomes by establishing a unique public health networks using this conference as a platform. This is one the premier conference in public health and it is hoped that the delegates will take full advantage of making new networks to do better research and address the challenges of the new era.

Besides the normal speakers, this conference also has several excellent plenary speakers who will provide the latest information in their specific areas of research. I am sure all the participants will enjoy the variety of speakers in the conference and you will take back a wealth of information. It is my earnest wish that you will not only make the best use of the conference not only enjoy and meet some of your old friends as well. Let me also thank the organising committee for all the hard work in getting the conference organised. Hope you will enjoy the conference and have good time.

Thank You.

Prof. Dr. Hematram Yadav
Sr. Public Health Consultant
Kuala Lumpur, Malaysia

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SPECIAL FEATURE

THE IMPACT OF COVID-19 ON NON-COMMUNICABLE DISEASE SCREENING

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ABSTRACT

As the COVID-19 pandemic continues to have a huge impact on the health and well-being of individuals around the world, the extent to which the virus has disrupted preventive care, including cancer screening, is not fully understood. There is evidence from several countries that excess deaths (increases in mortality over that which would normally have been expected in absence of the pandemic) is not insignificant. Clinics and hospitals stopped providing cancer screening and delaying or even postponing treatment, jeopardizing patient outcomes. This workshop will explore the impact of suspension of screening programmes for prevalent diseases such as diabetes, heart disease, and cancer. The workshop will discuss ways to provide screening and treatment, including self-testing in the privacy of one's home and telemedicine. Focus will be on low- and middle-income countries and participants are encouraged to share ideas and examples of how to continue disease screening and treatment during COVID-19.

Keywords: COVID-19, non-communicable disease screening, self-test screening

ORAL PRESENTATIONS

[01]

**ASSESSMENT OF BREAST AND CERVICAL CANCER LITERACY LEVEL
AMONG ARAB AMERICAN UNIVERSITY FEMALE STUDENTS: A CROSS
SECTIONAL STUDY FROM PALESTINE**

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Breast and cervical cancer burden are increasing alarmingly with the majority being diagnosed at late stages. Fortunately, sufficient cancer literacy level is truly an established correlate to cancer preventive screening programs especially in young adults and adolescents. This is the first study in Palestine that introduces the Concept “cancer literacy”. To assess literacy level of breast and cervical cancer among young female students in terms of awareness, knowledge and screening, and prevention and control, and compare literacy level by cancer type then examine correlation with different demographics. A cross sectional observational analytic design was adopted. The validated Arabic version of both Breast and Cervical Cancer Literacy Assessment Tools with a reliability index of 0.73 was employed to elicit information from 546 female students recruited randomly from health and non-health faculties at Arab American University in Palestine. Collected data were analyzed using SPSS (25), both descriptive and inferential statistics including; percentage, frequencies, mean, ANOVA, T-test, and Pearson correlation were conducted. The mean score of breast and cervical cancer literacy level were 65.7 (SD 12.52) and 66.24 (SD 14.24) respectively. Using success percentage of 75%, both breast and cervical cancer literacy scores were insufficient to low sitting at 64% and 51.2%, sequentially. Age, faculty type, having a family member suffering from cancer had all affected cancer literacy scores, while only marital status showed significant relation with breast cancer literacy score at $p < 0.05$. This study supports other international studies that indicate low cancer literacy level among young adults and students which require public health efforts to increase literacy level hence changing future behavior towards cancer screening programs.

Keywords: breast cancer, cervical cancer, literacy, students

[02]

SNACKING BEHAVIORS AMONG UNIVERSITY STUDENTS IN MALANG, INDONESIA

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ABSTRACT

Consumption of snacks has been regarded as a risk factor for lifestyle-related disorders and may have long-term consequences among young adults. Snacks are identical to foods high in fat, sugar, and salt. The aim of the study was to identify snacking behavior and its determinants among university students in Malang, Indonesia. A cross-sectional survey involved 236 university students in Universitas Brawijaya, Malang. Demographic characteristics (gender, place of living, BMI), reasons for eating snacks, frequency of eating snacks, and type of snack preference were measured using a questionnaire. Responses of the frequency of snacking were always/frequent (eating snacks at least 4-6 days/week) and sometimes/rarely (1-3 days/week or less). Preference of snacks is divided into fried and non-fried snacks. Data analysis was completed using a chi-square test and logistic regression. More than half of the respondents (66%) reported that they frequently consumed snacks almost daily. The most frequent snacks consumed were fried type (57.2%), and only 8% of respondents chose to consume fruit as their snacks. Female students were more frequent eating snacks than males ($p < 0.001$, $OR = 3.1$ | 95% CI 1.74-5.56). The appearance of the snacks, access to buy, easy preparation, price, and friends influence are significantly associated with snacking frequency. Promoting healthy snacking is essential for university students by increasing their access to healthier snack options.

Keywords: snacks, behavior, university students

[03]

**THE RELATIONSHIP BETWEEN COVID-19 PREVENTION BEHAVIOR BASED
ON GOOGLE TRENDS ANALYSIS AND THE NUMBER OF COVID-19 CASES IN
INDONESIA**

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COVID-19, a novel coronavirus, has now been discovered in at least 211 countries throughout the world. In light of the pandemic crisis, effective behavior changes strategy, particularly in afflicted nations, is critical. Keyword search activities related to Covid on Google Trends (GT) shopping can be an indicator of awareness and changes in people's behavior. As a result, the purpose of this study was to see if GT could be used to track public behavior about COVID-19 infection in Indonesia. We retrieved GT data for the each province in Indonesia and nationwide using Indonesian defined search terms related to the coronavirus, covid-19, masker, faceshield, hand sanitizer, and desinfektan. Meanwhile, information on the number of weekly cases was collected from the government's official website. From March to September 2020, GT weekly statistics and case count were collected. The collected data were analyzed by correlation test with provincial and national units of analysis. Comparison of correlation test results for each keyword was carried out for lag 2 weeks, lag 1 week, week 0, post 1 week, and post 2 weeks. Searches related to coronavirus, covid-19, hand sanitizer, and desinfektan had negative relationships for all time categories. Meanwhile, the masker keyword has a negative relationship in post 1 week and post 2 weeks. For the keyword faceshield has a positive relationship in all time categories. A negative relationship shows that an increase in keyword searches is associated with a decrease in the number of cases, and vice versa. It can be concluded that coronavirus, Covid 19, desinfektan, hand sanitizers, and masker are effective keywords in the COVID risk communication strategy in the community.

Keywords: Google trends, prevention behavior, COVID-19

[04]

**IMPACT PROGRAM "WARDHA" ON HIV-AIDS KNOWLEDGE AMONG MA
DARUL HUDA HIGH SCHOOL STUDENTS IN VILLAGE KLEPU, SUB DISTRICT
SUMBERMANJING WETAN, REGENCY OF MALANG**

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ABSTRACT

Based on data Indonesian Ministry of Health, the number of HIV- AIDS cases from April to June 2019 reached 11,519 people. The highest percentage of infections were in the age group 25-49 years (71.1%), followed by the age group 20-24 years (14.4%), and the highest percentage of AIDS was in the age group 20-29 years (32.1%). According to the Malang Regency Health Office, from 1991 to 2018 a total of 2509 HIV-AIDS cases were reported. Therefore, it needed interventions that involve empowering students to overcome these problems. The activity was carried out in February-March 2020 among 44 MA Darul Huda high schools in Klepu Village, Sumbermanjing Wetan District, Malang Regency. The WARDHA (HIV / AIDS Awareness Student) program was formulated to plan outreach interventions and provide knowledge about HIV / AIDS, reproductive health, and effective communication at the MA Darul Huda. These activities consisted of health counseling and education, a talk show with HIV / AIDS patients as speakers, and advocacy for school equipment to activate "Usaha Kesehatan Sekolah / UKS" (school health program). The evaluation found that the activity was attended by 44 students. The pre-test showed that 64% of students present scored below 60. While the results of the post-test, 97% of students scored 80 or more. Therefore, there was an increase in students' knowledge about HIV / AIDS. From the results of advocacy, an agreement was reached between MA Darul Huda schools and "Puskesmas" / Primary health care Sumbermanjing Wetan to support and continue the UKS (HIV / AIDS prevention). These efforts require commitment and participation from all the school member, "Puskesmas", and local government to make it sustainable.

Keywords: education, HIV / AIDS, knowledge, student

[05]

**ADOLESCENTS HEALTH LITERACY (A STUDY ON VOCATIONAL HIGH
SCHOOLS STUDENTS IN BANDUNG CITY, INDONESIA)**

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Adolescence is an important period in life, where a person begins to learn to make decisions independently. Health literacy skills are very important for adolescents to make them able in making healthy decisions. This study aimed to identify the health literacy skills of Vocational High School students in Bandung City using the HELMA instrument. This study used a cross sectional design that conducted in three Vocational High Schools Bandung City, West Java Province, Indonesia. Number of respondents were 120 students that were chosen accidentally. The questionnaire was adopted from the HELMA instrument that consisted aspects of health literacy; that were access, reading, understanding, appraisal, use, communication, self-efficacy and numeracy. Data analysis was performed univariate by calculating each aspect or total score, then ranking them into four categories: inadequate = 0-50; problematic = 50.1-66; sufficient = 66.1-84 and excellent = 84.1-100. Among the 120 respondents, 49,2% were 17 years old, 74,2% were girls. Most of them studied at Culinary Department (33,3%) and Chemical Analyst Department (33,3%). Results of this study showed that 35,8% self-efficacy of respondents were problematic, 31,7% access of respondents were inadequate, 40,8% reading of respondents were problematic, 34,2% understanding of respondents were problematic, 38,3% appraisal of respondents were inadequate, 37,5% use of respondents were inadequate, 37,5% communication of respondents were problematic and 90,8% numeracy of respondents were inadequate. For all aspects of the health literacy, 61,7% of respondents were in problematic category. Finding of this study concluded that most of the adolescents had poor in all aspects of health literacy.

Keywords: Health literacy, adolescents, HELMA instrument

[06]

SELF-EFFICACY, COMMUNICATION, EMPATHY, AND PATIENT-CENTERED CARE ATTITUDES AMONG MEDICAL STUDENTS

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ABSTRACT

Patient-centered care (PCC) attitudes represent a whole person approach, emphasizing tailored and respectful care, which considers patients' values, preferences, and needs. PCC attitudes are essential for practicing PCC behavior; however, research on the factors contributing to PCC attitudes is rare. The purpose of the present study was to test a new model, examining whether the association between self-efficacy and PCC attitudes is mediated by communication and empathy attitudes. This cross-sectional study included 653 medical students ($M_{age}=27.49$, $SD=3.60$) who completed self-reported questionnaires. Analyses were performed using Pearson's correlations for direct effects and PROCESS macro for indirect effects. Results demonstrated that communication self-efficacy, communication attitudes, and empathy attitudes were positively associated with PCC attitudes. Moreover, the association between communication self-efficacy and PCC attitudes was completely mediated by communication and empathy attitudes. These results highlight the need to focus on learners' affective matter (what students feel and think) about their competencies and attitudes regarding communication and empathy. Developing educational interventions, which improve understanding of the benefits of applying good communication skills, learning the importance of empathy and its relevance to patient care, and strengthening medical students' confidence in applying these skills, is essential for enhancing students' belief in PCC.

Keywords: patient-centered care, self-efficacy, communication, empathy, medical students

[07]

THE EFFECT OF BODY MASS INDEX ON BODY IMAGE AND BODY APPRECIATION IN YOUNG ADULT INDIVIDUALS

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ABSTRACT

Body image expresses perceptions, ideas and feelings about his own body. Body Mass Index, one of the important indicators of body weight, is closely related to body image. On the other hand, body appreciation is that a person has positive views about their own body. The aim of the study is to examine the effect of BMI levels on body perception and body appreciation. The study was conducted with 307 individuals (135 males and 172 females) aged 20-25 years. Sociodemographic characteristics, body weight, height measurements, Stunkard Body Image Scale and Body Appreciation Scale were included in the questionnaire. The data were evaluated using appropriate statistical methods. Participants median age is 22.0 ± 2.0 years. 25.2% of men and 15.7% of women are overweight and obese ($p < 0.05$). 29.3% of individuals with normal body weight appraise themselves overweight/obese according to the Stunkard scale; 31.1% of overweight and obese individuals see themselves in normal body weight ($p < 0.05$). The body appreciation score of individuals who assess themselves as thin and normal body weight according to the Stunkard is 40.0 ± 11 , while those who see themselves as overweight and obese are 36.0 ± 13 ($p < 0.05$). Individuals with weak/normal BMI and those who perceive themselves as weak/normal body weight according to Stunkard have the same body appreciation scale (40 ± 11), compared to overweight/obese individuals (BMI: 38 ± 17 , Stunkard: 36 ± 13) higher. When people who have a overweight/obese BMI evaluate, according to Stunkard those who consider themselves weak/normal body appreciation score higher than those who consider themselves overweight/obese (42 ± 16 ; 33 ± 17). Body image is effective in people's body appreciation of their body. However, it is believed that BMI, which reflects actual body weight, is within normal limits, which is important for maintaining overall health.

Keywords: Body mass index, Body image, Body appreciation

[08]

OBESITY AS DETERMINATION FOR HEALTH-RELATED QUALITY OF LIFE IN ADOLESCENTS

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ABSTRACT

Obesity becomes crucial issue in adolescents in the past decade giving some thoughts regarding the impact to their quality in cognitive, social and emotion function. This study was to obtain the association between obesity and Health-Related Quality of Life (HRQoL) in an adolescents' Health Services in West Jakarta, Indonesia. A cross-sectional analysis was conducted using 77 patients in the age 10-19 years old who came to the one of the district adolescents' Health services in West Jakarta to evaluate the obesity and the HRQoL. Obesity was at BMI more than 25 and measured directly assisted by the nurses. Four dimensions of health-related quality of life were measured: physical health (absence or presence of functional limitations and illness symptoms), emotional health (the Center for Epidemiologic Studies Depression Scale and Rosenberg's self-esteem scale), and a school and social functioning scale. Health related quality of life showed high prevalence of good quality in physical health (29.3%), emotional health (31.7%), social health (34.1%) and school health (39%), However obesity was the high prevalence (58.5%) among the respondents. We found a statistically significant relationship between BMI and physical health as well with emotional health. Adolescents who were obesity had significantly worse in physical health ($P < 0.05$) and they were also more likely to have a limitation in emotional health. In conclusions this study was provided the data that obesity in adolescence is linked with poor quality of life in physical and emotional dimensions. This finding was crucial to enhance better understanding for the health-related quality of life in adolescents.

Keywords: HRQoL, quality of life, obesity, adolescents

[09]

**ABSENCE OF SMART CONTACT TRACING SOLUTION IN PREVENTING
HUMAN-TO-HUMAN COVID-19 INFECTION FOR THE FRONT LINERS – CASE
STUDY OF MALAYSIA**

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ABSTRACT

The world has ingresses into Smart Healthcare era in which, it is a construct under the context of Smart City, towards making solutions in healthcare to be smart. Even with extensive advancement in Smart Healthcare solutions, the world especially Malaysia were caught unprepared for smart contact tracing solutions in facing COVID-19 pandemic. Although four main contact tracing solutions were developed by Malaysia and implemented nationwide, there is still no solution yet to made available for the front liners in preventing asymptomatic human-to-human cCOVID-19 infection. Thus, this study will dissect the gap between Malaysia's current contact tracing solutions with respect to the front liners. It should be noted that Malaysia will be used as a case study while the problem is proven to be ubiquitous. Results gained from this study indicates that the absence of smart contact tracing solution for the front liners is a global issue and a critical gap that needs to be addressed as soon as possible. Not just that, this study also proves that mobile-based solution is not a viable option for the front liners due to nature of their working environment.

Keywords: Smart Healthcare, Contact Tracing, COVID-19

[10]

**RISK PERCEPTION AND PREVENTIVE BEHAVIOURAL RESPONSES OF
MIDWIVES TO COVID-19**

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ABSTRACT

Research question: How is risk perception of the COVID-19 and preventive measures among midwives? Background: As the novel Coronavirus disease 2019 (COVID-19) is highly contagious, application of preventive methods such as Personal Protective Equipment (PPE) usage and hand-washing is crucial to preventing the spread. Evidence suggests that preventive behavioural response to COVID-19 might be affected by risk perception. As midwives who are at the forefront of providing maternal and child care services during the COVID-19 pandemic are at high risks of getting infected. Purpose: This study aimed to assess risk perceptions and preventive behaviour among midwives and its association. Methods: In September 2020, a cross-sectional survey was conducted in Indonesia on 473 midwives, who are students, midwife practitioners, and lecturers. The Spearman's correlation test was used to identify the factors associated with risk perception and preventive behavior. Results: Our study discovered that midwives have a high risk perception of the COVID-19 infection. However,

approximately 26% of midwives did not always adhere to PPE usage, and around 56% did not always wash their hands. A significant association was found between perception of risk severity and PPE usage ($p < 0.05$). Perception of risk susceptibility was significantly associated with level of education, health status, having chronic disease/s and prior COVID-19 while perception of risk severity was significantly associated with occupation, residence, and having chronic disease/s. Some factors were associated with PPE and hand-hygiene, including age, occupation, and current health status. Conclusion: Although midwives have a high risk perception of the COVID-19, it is necessary to improve their adherence to the preventive measures.

Keywords: COVID-19, risk perception, hand-washing, mask usage, preventive behaviour, midwife

[11]

INCIDENCE OF COVID-19 IN PREGNANT WOMEN AND DEMOGRAPHIC CHARACTERISTICS BALI 2020

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ABSTRACT

Recent studies have shown that pregnant women may be particularly vulnerable to Covid-19 infection. According to data from the Centers for Disease Control and Prevention (CDC), confirmed COVID-19 cases of pregnant women in the United States on August 25, 2020 reached 19,235 cases and 41 of it was died. The purpose of this study was to determine the magnitude of the incidence of pregnant women with COVID-19 in Bali Province and its socio-demographic characteristics. This research method was cross-sectional. It used secondary data from the Bali Provincial Health Office in 2020. A total of 16,463 residents of Bali are infected with COVID 19. The data were analyzed descriptively. The results of the study found that 41 (0.024%) pregnant women are infected with the COVID-19. The average age of pregnant women is 28 years, with the lowest age is 20 years and the highest age is 53 years. Most of the pregnant women are housewives, as many as 15 people (36.6%). They came from all regencies in Bali, most of them from Jembrana district with 19 people (46.3%). The source of the risk of transmission is mostly from the household or family amount 31.7%. The symptoms are fever (4.9%), cold cough (22%) and difficulty breathing (2.4%). Pregnant women are a vulnerable population because of changing in physiological, immunological disorders, so they need to maintain health in good way for their health and also the baby.

Keywords: COVID-19, pregnant women, socio-demography, symptoms

[12]

**TECHNOLOGY-ENHANCED ENGLISH FOR MEDICAL PURPOSES (EMP)
DURING THE COVID-19 PANDEMIC: INDONESIAN MEDICAL STUDENTS'
PERSPECTIVES**

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A drastic shift in the implementation of teaching and learning activities currently occurs in relation to the school closures due to the spread of Coronavirus (COVID 19). The traditional face-to-face classroom has to be transformed into distance learning as both teachers and students should stay at home to slow the spread of the virus. The present study involved 355 medical students who were taught English for Medical Purposes (EMP) in their first semester. The data were collected through an adapted questionnaire which encompassed quantitative and qualitative questions. It explored their choices of tools for learning English and how they valued English learning in the virtual setting. The current research reveals that the students have different choices of learning tools. Although the challenges exist, the qualitative findings show that the use of video conferencing services, like Zoom Meeting and Google Meet, are the most favorable for holding the English class as they allow students to gain communicative experiences and opportunities in developing specialized English remotely to support their medical study. Drawing on these findings, conditions for online learning tool selections which potentially give advantages for students learning medical-based English are discussed in this article.

Keywords: COVID-19, English for Medical Purposes, online learning, technology

[13]

**A META-ANALYSIS ON THE CORRELATION OF COVID-19 AND SEVERITY
BASED ON AGE RANGE**

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ABSTRACT

Among the several risk factors of COVID-19, age has been identified as a main indicator that may exacerbate the severity of the virus. This study aims to investigate the correlation between COVID-19 fatality rates and age across several countries. The circumstance of age is analyzed to evaluate mortality rates from the disease, comparing the severity of COVID-19 between age groups. Meta-analysis was performed by extracting data from multiple sources to find the correlation between age and fatality of COVID-19, comparing the age groups by establishing a search protocol with keywords including “COVID-19”, “fatality”, “age” and “severity”. Sources that included clinical records and statistics based on these search keywords were incorporated into the study. Databases including JSTOR, NCBI and Google Scholar were reviewed. Papers recognized as high quality were processed and went through extraction of data, as information such as percentage of certain age groups affected, average age of COVID-19 deaths, ICU admissions and ratio of patients discharged to deaths were extracted. Through this meta-analysis, a definite correlation between age and severity of COVID-19 was identified. As age groups increased, they were 2.7 times more likely to experience severe conditions of COVID-19.

Keywords: COVID-19, age, severity

[14]

PATTERN OF PATIENTS ATTENDING COVID 19 SCREENING CLINIC: SWOT ANALYSIS OF A SALUTOGENIC ENDEAVOUR IN NORTH BENGAL MEDICAL COLLEGE, DARJEELING DISTRICT, WEST BENGALGhosh N^{1*}, Bandyopadhyay D², Tirke L² and Samajdar K³¹*Department of Community Medicine and Family Medicine, AIIMS Guwahati, Assam, India*²*Department of Medicine North Bengal Medical College, West Bengal, India*³*Raiganj Medical College, West Bengal, India**drnilanjanaghosh@rediffmail.com**ABSTRACT**

COVID-19 pandemic is an unique public health challenge causing unprecedented disruptions in normalcy. Low-and-middle-income countries need more context-relevant approaches since majority of world population live here. Pandemic response in India was graded and routine healthcare came to a screeching halt. COVID 19 Screening clinic was initiated with intent to screen suspects and provide needful care after required consultation. It imparted preventive health education and addressed relevant queries, alleviating stress in the process. Salutogenesis is a process where more emphasis is given in healing than disease pathogenesis. It has been observed that Sense of coherence is determining factor for healing and people with high SOC have high healing power. SOC depends on manageability, comprehensiveness of the situation and reinforcing salutogenesis will aid in faster healing given similar other conditions of a patient that treating pathogenesis. To determine pattern of patients attending, to conduct SWOT analysis for an insight in clinic functioning and to generate a database for further simulation were the primary objectives. Descriptive cross-sectional hospital based secondary data analysis was conducted in NBMCH for 3 months with help of preformed proforma, interview guide and available records. Exit interview was conducted. Willing participants were enrolled. Verbal consent and Institutional IEC were taken. SWOT Analysis was carried out by the primary investigator among select group of patients, among health care workers posted in the clinic and also with hierarchy to elicit a clear insight in to the functioning of the clinic. It was done with help of preformed pretested interview guide and analysed using methods of qualitative content analysis. An induction program was held every two months by Department of Medicine, NBMCH. Clinic recorded 60427 cases from 23rd March 2020 to 28th February 2021. Majority were males, Hindus and from rural areas of Darjeeling district. 60.4% were symptomatic. Total cases quarantined, tested and admitted were 39.8%, 74.9% and 34.7% respectively. However unlike before from September 80.1% cases were symptomatic and majority came only for testing as national lockdown had ceased. SWOT Analysis revealed Strength as being able to operate 24*7 with coordination among all tiers of health care workers. Select seniors helped in its smooth conduction. Weakness identified was clinic location beside the emergency creating confusion. Notwithstanding limitations COVID 19 Screening clinic emerged as lifeline for suspects and cases of variegated epidemiological profile and socio-political sensibilities. Despite functioning round the clock, at a time when routine health care got suddenly stalled there was no refusal or complaint. Core activities like testing, counselling, managing, referring was performed along with providing preventive health behaviours. Positive role of salutogenesis and supportive supervision was reinforced. A funded multi-centric study is recommended.

Keywords: screening clinic, core functioning, preventive behaviour awareness, supportive supervision

[15]

CHARACTERISTICS OF CONFIRMED COVID-19 INFECTED CHILDREN AND ADOLESCENTS UNDER 18 YEARS OF AGE IN THE BALI PROVINCE

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ABSTRACT

The prevalence of COVID-19 cases in children and adolescents is lower than cases in adults and the elderly. However, data regarding characteristics of the infected children and adolescents are required to assess the related symptoms and potential determinants in order to assist COVID-19 prevention and control program, especially for the youngsters. A cross-sectional study with quantitative descriptive analysis was used in this study. Secondary data on molecularly confirmed COVID-19 cases in patients under 18 years old were obtained from 44,671 of the total cases collected in the Bali Provincial Health Office from March 2020 to April 2021. A total of 3,952 (8.8%) COVID-19 infected sufferers aged under 18 years old in Bali Province with the proportion based on the age group of toddlers was 23.6%, children 31.8%, and adolescents 44.6% with a proportion of 98% of the cases recovered. Most of them were male (52.3%), residing in Denpasar City (34.9%), and having contact with former confirmed COVID-19 patients (96%). The highest proportion of transmission history was originating from household cluster (53%). The proportion of COVID-19 cases in patients under 18 years old with comorbidities was quite low (3%), although the majority of them showing the clinical symptoms of fever (19.4%), cough and cold (21.8%), complaints of pain when swallowing (5.3%), and breathing difficulty (3.7%). Most of these patients had a history of isolation in subdistrict level health centers, hospitals, or hotels (62.7%). Confirmed cases of COVID-19 in patients under 18 years old in Bali are quite low, showing mild symptoms and a fairly high recovery rate. However, cases in these young people still require attention and appropriate treatment management especially during the isolation.

Keywords: Bali, characteristics, COVID-19, under 18 years old

[16]

**ASSESSING THE EFFICACY OF THE PHILIPPINE GOVERNMENT'S COVID-19
RESPONSE**

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Abstract: This research assessed the efficacy of the Philippine government's COVID-19 response by comparing the effective reproduction number (R_t) before and after the implementation of various government policies. The effects of stringency on transmissibility was determined by comparing the values of the Government Stringency Index (OxCGRT) for the Philippines between January 24, 2020 and March 3, 2021. The Pandemic Intervals Framework (PIF) was used to define pandemic phases, which were used to compare the efficacy of policies that were repeated in different phases; this was quantified by comparing the change in R_t after these were implemented. The effects of the country's vaccine policy have been isolated through the use of a separate data sample between March 4, 2021 to June 30, 2021, with the rate of change of transmissibility used as a projection for its long-term effect. This study is relevant because the Philippine government's response to COVID-19 is known to be one of the longest and most stringent approaches to the pandemic, and a quantitative measure of the efficacy of the government's policies can help determine whether these approaches can mitigate the impact of outbreaks in the future. The implementation of government policies has lowered transmissibility by percentages ranging from 3.0% to 12.0%, and furthermore, there seems to be no strong correlation between the stringency of a policy and the decrease in transmissibility. The country's vaccine policy, however, has been projected to reduce transmissibility by percentages ranging from 25.0% to 26.2%, as long as the rate of change of R_t between March 2021 and June 2021 is sustained

Keywords: effective reproduction number, stringency, transmissibility

[17]

NUTRITIONAL THERAPY FOR DIABETIC DYSLIPIDEMIA IN POST COVID-19 PATIENT: A CASE REPORT

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ABSTRACT

COVID-19 is an infectious disease caused by SARS-CoV-2 and was declared a pandemic by WHO on March 11, 2020. People with diabetes are susceptible to infection due to hyperglycemia, vascular complications and comorbidities such as hypertension, dyslipidemia, and cardiovascular disease. Management of dyslipidemia consists of lifestyle changes including smoking cessation, optimization of nutrition, and regular exercise. The purpose of this article is to provide information regarding the management of nutritional therapy for diabetic dyslipidemia in post-COVID-19 patients. Case Report: a 44-year-old female patient was transferred from Infection Center of Rumah Sakit Wahidin Sudirohusodo with diagnosis of Mild ARDS (improvement) + Pneumonia Improvement + DM Type II non-obese + Coronary Artery Disease + Hypertension grade I + Dyslipidemia. The patient's nutritional diagnosis was made based on the SGA with a score of B, namely Moderate Protein Energy Malnutrition - unspecified type. On physical examination, loss of subcutaneous fat and muscle wasting were present in all four extremities. Based on supporting examinations, there were bilateral pneumonia improvement, hyperglycemia (Blood Glucose : 316, FBG: 221), hypoalbuminemia (Albumin : 2.9), and hyponatremia (Natrium : 130) found. Nutrition therapy was given at 70% KET 1700-2000 kcal based on the Harris-Benedict formula, with a protein composition of 1.5-1.7 grams/kgBBI/day (15%), 50% carbohydrates, 32-35% fat. Zinc, Vit.B1, Vit.B6, Vit C 500mg, Vitamin D 133 IU + Calcium 500 mg, Curcuma 200mg/8 hours, Snakehead fish extract capsules, L-Bio were also given as supplement. As a conclusion, nutritional therapy for diabetic dyslipidemia in post-COVID-19 patients gives better outcome, given in line with other medical therapies.

Keywords: Diabetic Dyslipidemia, COVID-19, Moderate Malnutrition

[18]

THE RELATIONSHIP BETWEEN COUNTRIES' GROSS DOMESTIC PRODUCT PER CAPITA AND THEIR COVID-19 VACCINATIONS RATE

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ABSTRACT

Since an effective antiviral drug has not yet been developed since the beginning of the COVID-19 pandemic, the need to vaccinate the entire population is urgent and vaccination will be the most effective way to control the pandemic. In this study, we aimed to evaluate the relationship between countries' gross domestic product per capita (GDP) and their vaccination rate. The data used in this study are obtained from the "Our World in Data" website for free. 169 countries where COVID-19 vaccination continues as of 22.04.2021 were included in this study. The relationship between the data was evaluated using the Spearman correlation test. It was found that there is a statistically significant and strong relationship between the GDP levels of the countries and the percentage of people who received at least one dose of vaccine ($r = 0.664$; $p < 0.001$), the percentage of fully vaccinated people ($r = 0.653$; $p < 0.001$) and the dose of COVID-19 vaccine administered per hundred people ($r = 0.647$; $p < 0.001$). It was also noteworthy that as the GDP level of the countries increased, the total number of vaccines administered increased ($r = 0.314$; $p < 0.001$). Results are similar to the development levels of the countries, as the percentage of people vaccinated with at least 1 dose ($r = 0.599$; $p < 0.001$), the percentage of fully vaccinated ($r = 0.456$; $p < 0.001$), the COVID 19 vaccine dose administered per 100 people ($r = 0.515$; $p < 0.001$) and the total number of vaccines administered ($r = 0.438$; $p < 0.001$) are statistically related. Our study provides valuable insight into the association of GDP per capita and rates of the COVID-19 vaccination in the country.

Keywords: COVID-19, health economics, vaccination, GDP

[19]

THE PALESTINIAN DISTANCE E-LEARNING EXPERIENCE DURING THE COVID-19 PANDEMIC

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ABSTRACT

With the COVID-19 pandemic, schools around the world shifted to e-learning to continue education while educational institutions were physically closed. This sudden shift in the educational process from traditional to e-learning in Palestine resulted in unanticipated consequences whose impact on the Palestinian students, teachers, and educational institutions is still unknown. In this research, we utilize a qualitative research method to explore the e-learning experience in a Palestinian school in the Ramallah governorate from the perspectives of students, parents, and teachers. A total of 12 participants being 4 students, 3 parents, and 5 teachers from the Ramallah governorate were individually interviewed using a semi-structured interviewing protocol. Zoom meetings and phone calls were used, and interviews were saved using audio recordings after obtaining verbal informed consent. Analysis of interviews derived several themes, which includes the factors affecting e-learning capacity, quality of education, effects on various participants, and perspectives on E-learning. Results showed that more enhancement is needed to improve the internet and electricity services in Palestine to meet the requirement of optimum e-learning experience. the Palestine experience was less than ideal regarding the instruments, methods, teacher engagement, and student interactions comparing to what expected. E-learning promoted positive social adherence and family bonds, yet it also increased the parents' duties towards learning. There is a huge difference in the e-learning experience between private schools on one side and governmental and UNRWA schools on the other side. Using mixed methods in teaching is suggested to be superior. In conclusion, private school experience could be utilized as a model in the future to improve the e-learning experience in governmental and UNRWA schools in Palestine.

Keywords: E-learning, Palestine

[20]

VIRTUAL DIABETIC FOOT CLINIC DURING COVID TIME

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ABSTRACT

General practitioner, District nurses and podiatrists are responsible for continuing care of diabetic foot patients outside the hospitals. Patient with diabetic feet need regular assessment in the community clinic to assess their state and prevent deterioration. COVID-19 has impaired this service and there was a need to initiate alternatives to provide this level of service. The fear is that diabetic feet patient will have been lost and complicated by sepsis or end up with major amputations. The aim of this presentation is to highlight the effectiveness of virtual clinic in follow up diabetic patients and preventing unwanted outcomes. The diabetic team started to use smart networks and initiate virtual clinic to assess patients and provide clinical care for diabetic feet patients during COVID restrictions. Over 12 months, 50 patients were followed to assess their satisfaction and outcomes after using the virtual clinic. 98% of them were satisfied with the clinic and were happy to continue using it. 87% of them has good outcomes. Virtual diabetic clinic is a successful alternative in managing diabetic feet patients. Patients review and outcomes showed that it can be a good alternative to face-to-face clinics.

Keywords: virtual clinic, diabetic feet, review

[21]

SUSTAINABILITY OF A PUBLIC HEALTH PROJECT FOR PUPILS DURING COVID-19 PANDEMIC

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ABSTRACT

A public health project titled ‘An additional class for health’ launched in November 2018 in a small city (Amasya) in Turkey. This project aimed to raise awareness of pupils on physical activity, diabetes and celiac. Within the scope of this project, trainings were conducted by physiotherapist and dietitian targeting students from primary to high school level. It was managed by collaboration between Local Health Authority and Provincial Directorate for National Education in Amasya. The research question is to what extent does the public health project sustainable during COVID-19 pandemic?. This study evaluated the data recorded by Amasya Local Health Authority between 2018 and 2021. The data included number of schools and, trained students and teachers. The study results showed that; in 2018, these trainings reached 26 schools with 131 teachers and 2114 students; in 2019, 23 schools with 106 teachers and 1460 students; and in 2020, 20 schools with 157 teachers and 1811 students. The project has been suspended since early March 2020 when the education converted to distance learning. A steady decrease was observed in the number of accessed schools within this period. Whilst there was a decrease in the number of students between 2018 and 2019, an increase was reported from 2019 to 2020. Although a good number of students was reached in a small city, it has not been proceeded during COVID-19 pandemic. This may be because of the increased workload of the Local Health Authority related to COVID-19 cases or the project’s failure to adapt distance learning environment. This result highlights the importance of digital transformation of these kinds of trainings which may prevent the negative impacts of unhealthy eating and sedentary lifestyle during lockdowns.

Keywords: public health, COVID-19, pupil training, physical activity, diabetes

[22]

**THE EFFECTIVENESS OF TIMED COVID-19 SWAB TESTING FOR ELECTIVE
AND EMERGENCY VASCULAR OPERATIONS**

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COVID 19 has affected the hospital by overburden the staff, reduce number of the elective procedures, and increase inpatients mortality. The aim of this study is to assess the effectiveness of timed pre-operative COVID test to reduce the risk of inpatient COVID infection, aiming to reduce mortality. It is a Prospective study from 2nd June – 29th October 2020. 147 patients were included in the study (123 were emergency cases and 24 were elective cases). The patients were all vascular cases who have been admitted for having elective and emergency operations. The data was included patients' biometrics, date of admissions and operations, Dates of first and subsequent swabs and the out-comes. All the elective cases were swabbed. 92% of the emergency cases were swabbed within 72 hours. Only 6 patients developed COVID while being admitted in the hospital. Only 3 were RIP unfortunately. The mortality is being reduced to less than 30% compared to April COVID wave. We find that following the Royal college and the national health guidelines of pre-operative testing will reduce the mortality in post-operative patients. All patients that need operations need to be swabbed 72 hours before their admissions for having operations. Subsequent swab is important for follow up post-operative patient and to isolate the positive cases aiming protection of the non-COVID ones.

Keywords: COVID swap, death, procedures

[23]

COVID-19 INFECTION IN NEPAL: EPIDEMIOLOGICAL ANALYSIS FROM APRIL 2020 TO MARCH 2021

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ABSTRACT

Before April 1, 2020, there were only five confirmed COVID-19 cases in Nepal. Like many countries around the world, the COVID-19 situation quickly escalated in Nepal. The purpose of this study was to determine the trends in COVID-19 cases and deaths in Nepal from April 2020 to March 2021. We utilized epidemiological data from daily Situation Reports published by the Ministry of Health and Population (MOHP) of Nepal. Between April 1, 2020 to March 31, 2021, there were 277,304 cases. October 2020 had the highest monthly cases with 92,926 cases. During the one-year study period, the infection rate was 915 cases per 100,000 people. The largest single-day new cases was October 21, 2020 with 5,743 cases, which is calculated to 19 cases per 100,000 people. There were a total of 3,030 deaths. The largest daily new deaths was November 4, 2020 with 43 cases. June 10, 2020 had the highest number of people in quarantine with 172,266 people. October 23, 2020 had the highest number of active cases with 46,329 cases. By March 31, 2021, the percent of mortality was 1.1%, active infection was 0.5%, and recovery was 98.4%. Nepal had lower COVID-19 infection and case-fatality rates compared to other countries most affected by the pandemic. This was due to early implementation of strict lockdown measures and closing of international borders on March 24, 2020 after the second confirmed COVID-19 case. As lockdown restrictions were lifted on July 7, 2020, COVID-19 cases and deaths in Nepal rose rapidly. As vaccination begun on January 27, 2021, cases started to slow down until the most recent outbreak coinciding with the second wave in its neighboring country, India.

Keywords: COVID-19, coronavirus, epidemiology, Nepal, pandemic

[24]

USING GIS TO SET PUBLIC HEALTH PRIORITIES: AN EXAMPLE FROM KARNATAKA, INDIA

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ABSTRACT

The Indian public health system faces several on-going challenges, including insufficient financing, shortages of critical human and other resources, and a lack of adequate infrastructure. A key issue is how to allocate scarce health resources to improve health outcomes, particularly for the most vulnerable and marginalized. A major challenge is that policy-makers and administrators are often unable to engage meaningfully with evidence generated by academics and researchers. Thus, available health data fails to effectively guide decision-making. In this context, the adoption of geographic information system approaches (GIS) for disease surveillance and spatial epidemiology, as well as to track implementation of health programs, has great potential. Our research tracks one particularly persistent problem in India: the poor nutritional outcomes for children <6 years of age, as well as underweight and anemia among adolescent girls. Despite marginal improvements over time, undernutrition in terms of stunting, wasting and underweight among young children is still unacceptably high and has been termed a 'national shame'. Using data disaggregated to the district-level from two rounds of the National Family Health Survey (NFHS-4, 2015-16; and NFHS-5, 2019-20), we use data tools available through Geographic Information Systems (GIS) to present information in innovative visual ways, and thereby make the data more easily accessible and engaging for health sector decision-makers. In addition, we use GIS mapping of the spatial pattern of undernutrition status to create district-level 'Report Cards', showcasing each district's performance vis-à-vis the state and national average and suggesting specific priority actions that need to be taken by the district administration. Our research argues that such tools are a valuable method for translating health data and evidence into guides for action.

Keywords: GIS, India, spatial epidemiology

[25]

**LAYPERSON'S WILLINGNESS TO PERFORM BYSTANDER
CARDIOPULMONARY RESUSCITATION DURING COVID-19 PANDEMIC AND
ASSOCIATED FACTORS: A CROSS-SECTIONAL ONLINE STUDY**

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ABSTRACT

Layperson's bystander cardiopulmonary resuscitation (CPR) can reduce mortality from out-of-hospital cardiac arrest. Greater willingness to perform bystander compression-only CPR (W-CPR) improves survival rate, relating to their experience, training, techniques, and bystander-victim relationship. During the COVID-19 pandemic, CPR eases to spread of COVID-19 with negatively affect the decision. The objectives were to study the layperson's W-CPR during the COVID-19 pandemic along with the associated factors. This prospective descriptive study was conducted between August-November 2020 in the Thai population. A structured questionnaire was designed and developed by the author team based on previous studies in the Thai context (content validity index 0.95, Cronbach's alpha 0.86). All participants were approached using an online survey (email, social media platforms). The questionnaire consisted of participants' characteristics; W-CPR for family members, acquaintances, strangers during non-pandemic periods and the pandemic periods. We included 419 participants which 73.8% were female, mean of age was 40 years, once heard of CPR was 65.4%, previously trained was 45.6%, good CPR knowledge was 14.1%, and confidence in performing was 13.6%. W-CPR during the pandemic was less than non-pandemic for an acquaintance (43.4% vs. 51.1%, $p<0.05$) and strangers (32.9% vs. 44.4%, $p<0.05$). However, this did not apply to family members (46.1% vs. 48.9%, $p>0.05$). During the pandemic, W-CPR for family members and acquaintances were comparative (different in proportion (95%CI) 2.7 (-4.0-9.4)). However, those were more than strangers (13.2 (6.6-19.8), 10.5 (3.9-17.10), respectively). W-CPR was associated with knowledge (OR (95%CI) 2.32 (1.59-3.39)) and confidence in performing (1.96 (1.24-3.09)). We concluded that the COVID-19 pandemic decreased W-CPR for acquaintances and strangers but did not decrease family members. Knowledge and confidence in performing were related to higher W-CPR during the COVID-19 pandemic.

Keywords: basic cardiac life support, cardiopulmonary resuscitation, COVID-19 pandemic, life support care, survey, willingness

[26]

**DETERMINANT OF HEALTH INSURANCE ENROLLMENT FOR THE
INFORMAL SECTOR: A SYSTEMATIC REVIEW**

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ABSTRACT

The health insurance schemes are launched to achieve universal coverage through covering medical expenses that emerge due to an illness. This study was a systematic review to identify and analyze factors associated with health insurance enrollment for the informal sector that dominates the workforce in most developing countries. Six databases, namely: Scopus, Pubmed, Science Direct, Taylor and Francis Online, JStor, Google Scholar were systematically traced in September-October 2020 to identify English-language research that analyzed the determinants of health insurance enrollment for the informal sector and published in the period 2010- 2020. A total of 15 articles both quantitative and mix-methods analysis were included after final assessment. Most of the studies was conducted in Africa and Asia and only one article was conducted in Latin America. All studies demonstrated several factors associated to health insurance registration including: sociodemographic characteristics, knowledge of health insurance, trust in health insurance schemes, willingness to pay, family and social support, provided information about insurance, access to health services, availability of health facilities (consultations, doctors, hospitals, and medicines), insurance premiums, administrative matters related to registration, availability of government subsidies and benefit packages. Findings from this systematic review can be encourage for policy-makers interested in expansion of health insurance membership for informal workers especially in developing countries.

Keywords: determinant, enrollment, health insurance, informal sector

[27]

SELF-MEDICATION PRACTICE OF ANTIBIOTICS AND ASSOCIATED FACTORS IN THE COMMUNITY IN INDONESIA

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ABSTRACT

Self-medication of antibiotics accelerates the development of antibiotic resistance (ABR), especially in the community setting. This study aimed to assess the practice of self-medication of antibiotics and the factors that affect the behavior of self-medication in the community. A validated questionnaire applying the cluster sampling method was used in this cross-sectional study for data collection from the community members. The ability of reading and writing, age more than 18 years, and having no health educational background were the inclusion criteria of the respondents. Multivariate logistic regression analysis was employed to determine factors related to self-medication behavior. This study found that only 16% of participants (n = 961) practiced self-medication of antibiotics. The sources of antibiotics for self-medication were pharmacy- buying antibiotics without a doctor's prescription (46.8%), shop or stall (26.0%), leftover (16.9%), and friends or relatives (10.3%). Self-medication of antibiotics was encouraged due to the personal experience (28.9%), long queues when visiting the doctor (26.2%), and saving money (19.3%). Common symptoms like flu, fever, diarrhea, cough, and toothache that usually do not require antibiotics were frequently self-treated. The antibiotics often used were amoxicillin (50.0%) and Supertetra® (33.0%). Age, marital status, employment, and knowledge of antibiotics were significantly related to the practice of self-medication of antibiotics (p <0.05). Even though only 16% of respondents practiced self-medication of antibiotics, their contribution to ABR development might severely impact the community settings and would be widely spread to other places. Therefore, educating the community about the rational use of antibiotics and the adverse effect of self-medication of antibiotics is important to contain ABR development and spreading ABR from community to community.

Keywords: self-medication, antibiotic, antibiotic resistance, community

[28]

TRADITIONAL BONE SETTER IN INDONESIA: PREVENTION STRATEGIES FOR UNDESIRABLE IMPACT

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ABSTRACT

Complications of fracture such as osteomyelitis, joint stiffness, malunion, gangrene, tissue necrosis, and death are associated with early mismanagement of fracture. Traditional bone setting is commonly patronize in developing country as the first option of fracture treatment. However, traditional practitioners have no formal training on fractures and wound management. This review aims to investigate the current literatures regarding the practice of traditional bone setting and to identify several aspects that might be improved in the practice of traditional bone setting in order to prevent the undesirable complication. A systematic searching was performed on online databases including Pubmed, Ebsco, Scopus, ScienceDirect and Cochrane. The inclusion criterias were primary research, literature review, and case report about traditional bone setting services. Practice of traditional bone setting, individual aspects, determinants, patients protection and problems were reviewed. There were thirty-three articles about traditional bone setting curated for the review. The procedures of traditional bone setting vary, including massage, reposition, fixation of fracture, and application of topical lotion or topical herbal medicine. Several factors such as education, economic, and trusts influence the patients to choose traditional bone setting over modern medical services. Complications were commonly reported and studies showed that the complications were able to be prevented with earlier diagnosis and immediate treatment. A scientific-based training modules that still respect the traditional wisdom is encouraged to be implemented in order to enhance the knowledge of basic fracture management and early identification of emergency signs among traditional bone setters. A bridge between traditional and modern medical services should be built meticulously. Therefore, serious complication can be prevented and traditional bone setting can be possibly integrated in health care system in Indonesia.

Keywords: traditional bone setter, fracture, training, health care system

[29]

THE BURDEN OF UNPAID HEALTHCARE COST AMONG FOREIGN TRAVELERS IN THAILAND

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ABSTRACT

Tourism has served as a major source of national income in Thailand for many years. Nonetheless, one of the overlooked drawbacks of tourism is healthcare cost that unexpectedly emerged during traveling and the inability to pay from the affected foreign travelers that places a burden on the host country. This study aimed to estimate the burden of unpaid healthcare cost among foreign travelers utilizing services at public healthcare facilities across country from 2014 – 2020 in Thailand. This study used secondary data from Health Data Center of Thailand's Ministry of Public Health. The system archived data of inbound foreign travelers who utilized either outpatient or inpatient medical services at public healthcare facilities in all of 12 public health regions in Thailand. We included data from January 2014 to December 2020 consisting of travelers' nationalities, department utilization, total and unpaid healthcare cost. The descriptive analysis was done to show unpaid cost burden each year. The annual unpaid healthcare cost from foreign travelers was increasing significantly during 7-year period between 2014 – 2020 from \$12,870 in 2014 to \$663,403 in 2020. Between 2014 – 2020 an average of 78.2% of the total cost was unpaid and the main service driven the burden was outpatient department contributing 55.4% of the unpaid burden. Travelers from Myanmar, Cambodia and Laos were among the top 3 countries contributed 66.3% of total unpaid healthcare cost during 2014 – 2020. Increasing unpaid healthcare cost by foreign travelers underlines the need for measures to prevent the expenditure which could be travel insurance and prevention of preventable threats such as intentional injury.

Keywords: healthcare financing, health insurance, healthcare cost, travelers, Thailand

[30]

HEALTH PROMOTION PROGRAM VIA SOCIAL MEDIA FOR HYPERTENSION AND DIABETES MELLITUS PATIENTS

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ABSTRACT

Currently, hypertension and diabetes mellitus are serious health problems because people transform lifestyles of consumerism due to advance technology especially mobile smartphone. Social media is very popular now, so health promotion program via social media is interesting. The aims of this study were to synthesize and analyze the results of health promotion program via social media. The research was divided into two phases; phase 1) the qualitative research for developing program consisted of literature reviewing and in-depth interviewing. phase 2) quasi-experimental research (one group, pre-test and post-test). The 31 volunteers were included in this program with 5 days by face to face meetings and further 28 days via social media. The self-care behaviors before and after program implementation of respondents were analyzed. The program comprised of disoriented dilemma, critical reflection by dialog on content to set goal, process to design own way and premise reflection to empower destiny and discover successful for changing self-care behaviors. The volunteers' functional, interaction, self-care behaviors were improved significantly by sign test (p-value < 0.01).

Keywords: health promotion, social media, Hypertension, Diabetes Mellitus

[31]

A SUPERHUMAN EFFORT REVIEWED: DEVELOPMENT OF VACCINES AND VACCINATION ROLLOUT STRATEGIES DURING COVID-19 PANDEMIC

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ABSTRACT

Subsequent to the declaration of COVID-19 pandemic by the WHO caused by the virus SARS-CoV-2, the entire world saw scientists across the world working at an unprecedented pace utilizing the advances in biotechnology and genetic engineering to execute a herculean task of vaccine development in less than a year. The development of vaccine is a complex process often lasting 10-15 years. For COVID-19, not only viral antigens including the spike and membrane glycoprotein have been identified, significant strides have also been made in the vaccine landscape till date, with 184 candidates in pre-clinical and 100 in the clinical development phase across a whooping number and diversity of 10 different platforms like protein subunit, viral vector, RNA, DNA, virus-like particle etc. The vaccination rollout has also been one of its kinds, with a total of 1,264,164,553 vaccine doses administered. The prioritization strategies are unique to different countries, like the ‘first dose first’ approach in the UK, or giving two doses to a selective share of the population in others, alongwith controls being exercised at different stages. Further, variation in the acceptance of vaccines in different countries by different groups of individuals like adults, health-care workers, parents, pregnant females etc. are also uniquely based upon the sociological perceptions and the reported adverse side effects. An attempt has been made to identify and collate information from the biomedical literature and data available on diverse authentic public domain platforms to review the development process of vaccines with a special focus on vaccines that have been listed in the emergency use listing by the WHO and also the determinants leading up to the different vaccination strategies implemented across the globe.

Keywords: COVID-19, SARS-CoV-2, vaccine, vaccination, Spike glycoprotein, variant

[32]

USING THE BALDRIGE EXCELLENCE FRAMEWORK TO DESIGN QUALITY MANAGEMENT SYSTEMS: THE CASE OF A BRAZILIAN PHILANTHROPIC HOSPITAL

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ABSTRACT

Effective Quality Management Systems (QMS) aim to ensure that organizations are continuously searching to achieve excellence and to satisfy demands from all stake holders. This study attempts to assess the feasibility of using the Baldrige Excellence Framework for designing Quality Management Systems ad hoc to the needs of a specific organization and for providing guidelines for their continuous improvement. The Baldrige Excellence Framework for Health Care was used to assess the current status of the QMS of a Brazilian philanthropic hospital. The information was collected through semi-structured interviews using the questionnaire proposed by said framework. Theoretical sampling was used to select a sample of employees from the hospital to be interviewed. Administrative data was also collected. Grounded Theory was used to analyze the data. The complete assessment of the QMS of the selected hospital is presented. Additionally, we provide a list of steps to replicate this procedure for other hospitals based on our findings, as well as a prioritization model to rank improvement projects required to gradually advance towards excellence, according to certain critical variables, such as impact and implementation cost of the proposed projects. Finally, we also propose a set of indicators to monitor the effectiveness of the QMS over time. Identifying strengths, opportunities for improvement and recommendations according to the structure proposed by the Baldrige Excellence Framework enabled us to design the QMS for the selected hospital and to propose improvement projects that are relevant to the hospital's situation. The use of both the prioritization model for improvement projects and the proposed set of indicators to monitor the effectiveness of the QMS maximizes the likelihood of persistently improving the quality provided by hospitals.

Keywords: Philanthropic Hospitals, Quality Management System, Health Administration, Baldrige Excellence Framework

[33]

QUALITY AND SAFETY PROBLEMS IN CHILEAN HOSPITALS

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ABSTRACT

Public and private efforts have consistently targeted clinical quality and safety problems for more than 20 years; however, medical errors are still one of the leading causes of death in the world. Even though there is extensive scientific and empirical evidence of such problems worldwide; Latin America, and particularly Chile, show a lack of studies on this topic. The aim of this paper is to prioritize clinical quality and safety problems according to their severity, frequency and detectability in Chilean hospitals. An exploratory study was conducted using an online survey to identify the severity, frequency and detectability of the main clinical quality and safety problems in Chilean hospitals. The risk priority number was computed to rank these problems. This survey was completed by quality directors from 94 hospitals. Based on the results of this survey, a focus group was conducted to find the root causes of the clinical quality and safety problem with the highest risk priority number of the sample. In Chile, the three highest priorities for hospitals in terms of risk were: (1) ineffective interprofessional communication, (2) lack of leadership in addressing frequently recurring safety issues, and (3) antimicrobial resistance due to inappropriate use of antibiotics. For the communication problem, the focus group showed two main categories for the root causes- those related to professionals and those related to hospitals. Hospitals can systematically use this approach to categorize their main clinical quality and safety problems, analyse their causes and then design solutions for continuous improvement. In this paper, a methodology to prioritize interventions in order to address clinical quality and safety problems ad hoc to the hospitals' environments is proposed.

Keywords: adverse events, continuous quality improvement, human error, patient safety, risk management

[34]

HEALTHCARE SERVICES ARCHITECTURE USING AGILE PATTERNS FOR PATIENT FLOW MANAGEMENT

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ABSTRACT

The care in health services product of COVID 19, has changed from a model focused on availability to one based on capacity and flexibility with the capacity to serve to intermittent demands due to recurring outbreaks, new and future demands for aftermath avoiding congestion in health services. As a clinical management instrument, for a decade, the concept of Patient Flow Analysis (PFA) has been developed, which is the use of tools to safely decide the best actions that lead to maintaining the care capacity of a health service in which there involves administrative activities and clinical decisions. When this flow varies, is delayed or interrupted, patients are accumulated at various touch points, giving rise to delays, overcrowding, risks and disagreement in care. This flow can be efficiently managed in order to avoid these drawbacks, combining quantitative and qualitative measurement and prediction techniques, setup strategies, preparation, unlocking, derivation and proper use of resources. This research is part of a doctoral project, in which it was used the Business Process Modeling, Lean thinking and simulation tools, and presents the synthesis of four years of work in which they were modeled under the concept of " Model Services Pattern" 57 models applied in emergency services, hospitalization, diagnostic support, therapeutic complement, surgical and outpatient consultation, that can be adaptable to different types of hospitals in order to manage the flow of patients efficiently and 11 operational management tools were designed to guide hospital work teams towards their effective implementation, generating self-management behaviors in the participants defining an operational management framework for the flow of patients that can be used by any entity that allows consolidating a culture of continuous improvement in work teams that develop self-management and decision skills based on structures and data.

Keywords: (from DeCs) organization of work, health services, information systems, workflow, patient-hospital relationships

[35]

DESIGN OF A PROGRAM TO IMPROVE HEALTH CARE ACCESS IN THE CHILEAN SYSTEM

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ABSTRACT

This study aims to decrease inequities in access to health care services by designing a prioritized health care access program in Chile. To establish priorities two surveys were conducted, one to identify the main barriers faced by the Chilean population, and the other one to define priorities to overcome those barriers. The methodology considers the answers from the second survey and can be summarized in three stages. First, we prioritized six health care programs that help to overcome the barriers identified by the population in the first survey. Second, we designed a plan to carry out the program that received the first priority, which was to increase the number of doctors/specialists in the country and to improve patient-doctor communication. For planning purposes, we started by defining the problem, analyzing the characteristics of the population affected, the availability of public policies, and other factors that influence this problem. Then, we define the objectives of the program, based also on the evidence from other countries that have been looking for solutions to similar issues. Later, we prepared a workplan including methods, resources, deadlines and responsibilities. Finally, we built sets of indicators to monitor the implementation and performance of the program. The final design considers ten years to complete the implementation of a series of improvements, which include incentives for doctors and specialists, massification of telemedicine and training for students of medicine and doctors, among others. The set of indicators contains operational and strategic indicators to monitor its implementation and accomplishments. This study is a contribution to promote public policies with the participation of the people, and it can be replicated in other contexts, considering relevant adaptations.

Keywords: access, healthcare programs, doctors, specialist, patient-doctor communication

[36]

THE RELATIONSHIP OF EDUCATIONAL VIDEO WITH KNOWLEDGE AND SELF-EFFICACY RELATED TO SEDENTARY LIFESTYLE ON FACULTY OF MEDICINE UNIVERSITAS BRAWIJAYA STUDENTS DURING THE COVID-19 PANDEMIC

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ABSTRACT

Hypertension is the highest cause of death in the world and can occur in old and young people, including students. With the online learning system during the COVID-19 pandemic, the risk of hypertension in medical students is getting higher because medical students live a sedentary lifestyle. This study aims to know the risk factors that most influence the knowledge of hypertension risk factors and self-efficacy aspect from the students in the Faculty of Medicine, Universitas Brawijaya. This research is an experimental study with a preliminary survey conducted before intervention. After the preliminary survey data were obtained, the 118 respondents were intervened with an online pre-test, educational videos, and post-test about sedentary lifestyle. The respondents are students of the Medical Profession Study Program, Faculty of Medicine, Universitas Brawijaya batch of 2015 who underwent an online learning system during the pandemic. The pre-test and post-test value data were processed and analyzed using the Kolmogorov-Smirnov normality test and Wilcoxon test to see the significance of the intervention effect with the level of respondent's knowledge. The results showed that there was an improvement in the average score from 45.4 in the pre-test to 85.6 in the post-test. In addition, there is an increase in respondents self-efficacy results to avoid sedentary lifestyle. In the Wilcoxon test, $p < 0.05$ was obtained which indicated a significant difference between pre-test and post-test after intervened by educational video.

Keywords: hypertension, medical students, sedentary lifestyle, self-efficacy

[37]

A REVIEW OF PROPENSITY SCORE MATCHING AND THEIR USE IN EXCLUSIVE BREASTFEEDING RESEARCH

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ABSTRACT

Randomized Control Trial are considered as gold standard for estimating treatment effect but it may not always feasible or ethical and such problem might be in breastfeeding research. Observational studies provide sufficient evidence for estimating treatment effect but results in confounding bias where baseline characteristics differ systematically between two groups. In such a situation, propensity score matching (PSM) ensures the even distribution of observed baseline covariates similar to RCTs and treatment effects can be estimated. Propensity score is the conditional probability of assignment to a particular treatment given a vector of observed covariates. The purpose of the review was to provide a general key concept of propensity score matching with worked examples using secondary datasets related to exclusive breastfeeding research to illustrate how the analytical strategies might be applied. We also summarized a method of PSM used in leading journals. A step-by-step R statistical code to perform propensity score matching was provided. Further, we recommend to use PSM technique in following breastfeeding research where researches face ethical issues.

Keywords: confounding bias, exclusive breastfeeding, observational study, propensity score, matching

[38]

THE PATIENT EXPERIENTIAL QUALITY MODEL: SCALE DEVELOPMENT AND VALIDATION

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ABSTRACT

Patient Experiential Quality is an important dimension in the quality of care in hospitals because poor quality may cause additional visible and invisible cost. With this respect, the present study aims at identifying the dimensions of patient experiential quality and examining the interrelationships among patient experiential quality, patient satisfaction, patient trust, revisit intention, and word of mouth. It also examines the scale's ability to forecast experiential quality outcomes. The data are collected through mixed method studies from three different field studies of healthcare patients in two different health care contexts, namely maternity and pediatric clinics. Patient experiential quality is found to conform to the structure of the hierarchical model in all three samples. This study identifies five primary dimensions, perceived service quality, interpersonal quality, technical quality, environment quality and administrative quality, which in turn are found to drive experiential quality perceptions. The findings also support that patient experiential quality has a significant impact on revisit intention and word of mouth and that experiential quality mediates the relationship between patient satisfaction and trust. In addition, the results indicate that outcome quality is identified as the most primary dimension of patient experiential quality perceived by maternity and pediatric clinics.

Keywords: patient experiential quality, satisfaction, trust, revisit intention and word of mouth

[39]

THE EFFECTS OF EXPERIENTIAL MARKETING TOWARDS THE SATISFACTION, REPEAT VISITATION, AND POSITIVE WORD OF MOUTH OF HOSPITALIZATION PATIENTS AT WONOLANGAN GENERAL HOSPITAL

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ABSTRACT

The decrease in hospitalization patient's satisfaction saw the decline in patient retention and the surge of negative comments on the Wonolangan General Hospital Google Reviews page. This observation aims to understand the effects of hospitalization patients' experience variables. Hospitals must be able to provide a good customer experience that could increase repeat visitation and positive review intentions. Hospitals need to maintain customer loyalty that is integrated within the marketing strategy to stay in business. This observation explores patients' perception by experiential marketing strategy towards satisfaction, repeat visitation and positive word of mouth (WOM) intention at Wonolangan General Hospital. This observation was conducted by a cross-sectional quantitative method involving 107 hospitalization patients of Wonolangan General Hospital from mid-April to mid-May 2020. Respondent perceptions towards experiential marketing, repeat visit intention, positive word of mouth, and satisfaction were collected by questionnaire. The resulting data was then analyzed by using SEM-PLS. Significant positive effects of experiential marketing towards satisfaction repeat visitation, and positive WOM intention was observed. Providing good stimulus to build a positive experience for customers is detrimental for experiential marketing strategy.

Keywords: experiential marketing, satisfaction, repeat visitation, word of mouth

[40]

EXPERIENTIAL MARKETING: A ROBUST OPTIMIZATION MODEL FOR INCREASING HOSPITAL VISITS

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ABSTRACT

The growth of the elderly population around the world is very fast compared to other age groups. Efforts to maintain health that can be done include self-medication or treatment at a health facility such as a hospital. This study aims to reveal the experience of the elderly patient when getting outpatient services at the hospital. We took data by conducting in-depth interviews with five patients. The study was conducted from February to April 2019 at RS Teja Husada. We used a qualitative research design with a phenomenological interpretation approach. Data were then analyzed using Interpretive Phenomenology Analysis (IPA). From the results of the analysis, it was found that patients are satisfied with the service at Teja Husada hospital because the doctor and nurse services are friendly and pleasant. Satisfaction with hospital services will motivate them to tend to choose the same hospital and increase customer loyalty. This shows the need for experiential marketing in hospitals to be able to retain loyal customers and attract new customers.

Keywords: experiential marketing, experience, geriatrics, phenomenology

[41]

CALCULATION AND USAGE OF TOTAL ANALYTICAL ERROR OF SOME BIOCHEMICAL TESTS IN A PUBLIC HEALTH LABORATORY

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ABSTRACT

The allowable total error (ATE) limits of some biochemical tests have been determined by the Ministry of Health in Turkey. This study shows how a public health laboratory assessed its own performance within these limits and how the total analytical error (TAE) ratio can be used to interpret the test results. TAE ratios of fifteen biochemical tests studied in Kayseri Public Health Laboratory (KPHL) were calculated according to CLSI EP 21A guideline using internal quality control results and external quality control reports, and the compliance of the tests to the ATE limits of the Ministry of Health was evaluated. TAE ratios found were included in panic value limits and clinical decision limits determined by the Ministry of Health, and this interval was defined as gray zone. The TAE ratios of KPHL were found below the target ATE limits of the Ministry of Health for all tests. Among the fifteen tests, gray zone values were calculated for panic value limit of four tests (creatinin, potassium, glucose, sodium) and medical decision limit of two tests (glucose and total cholesterol). Working with appropriate TAE values according to ATE limits is an objective evidence for the performance of a medical laboratory. Gray zones to be determined by including the calculated TAE values in panic value limits and clinical decision limits can be shared with family doctors who want the test and become useful and usable for diagnosis and treatment in primary health care units.

Keywords: total analytical error, allowable total error, panic values, medical decision limits, biochemical tests, public health laboratory

[42]

THE ROLE OF FAMILY SUPPORT ON SELF-EFFICACY RECOVERY PREGNANT WOMEN CONFIRMED WITH COVID-19

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ABSTRACT

As much as 4.9% of COVID-19 sufferers are pregnant women. This shows that pregnant women are a vulnerable target group. One of the factors that affect the self-efficacy of recovery pregnant women with COVID-19 is family support. Family support is an important factor for the recovery of pregnant women. Pregnant women who have high self-efficacy will be more confident so they can withstand stress and anxiety which can affect the health of pregnant women and the fetus. The aim of this study was to determine the role of family support in the self-efficacy of recovery pregnant women confirmed by COVID 19. The subjects of this study were 32 pregnant women who were confirmed COVID-19 and their family members who lived in one house spread across the islands of Java and Kalimantan. Data were collected using a scale of perceptions of family support (30 items, $\alpha = 0.806$) and a self-efficacy scale (20 items, $\alpha = 0.832$) which were tested on 18 covid-19 sufferers. Regression analysis was used to evaluate the data. The results show that there is $r_{xy} = 0.565$ with $p = 0.000$ ($p < 0.05$) which indicates a positive and significant relationship between family support and the self-efficacy of recovery pregnant women confirmed by COVID-19. Conclusion: there is a significant relationship between family support in terms of emotional support, appreciation or assessment, informative and instrumental to the recovery of COVID-19 patients.

Keywords: family support, self efficacy, recovery, women pregnant, COVID-19

[43]

INNOVATIVE APPROACHES FOR IMPROVING ANTENATAL CARE UTILIZATION AMONG PREGNANT WOMEN IN THE KINGDOM OF ESWATINI

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ABSTRACT

The TaiwanICDF collaborates with the Ministry of Health in Eswatini to improve the accessibility of antenatal care (ANC) by implementing the Maternal and Infant Health Care Improvement Project (2019-2023). In the first two years, we sent 21 seed instructors from Eswatini to Chia-Yi Christian Hospital and Hualien Tzu-chi Hospital in Taiwan to receive training on ANC and health promotion skills. These instructors have trained 369 rural health motivators (RHMs) and 133 nurse-midwives from clinics across the country. Significant improvements in knowledge were observed in the evaluation results before and after both types of training [mean scores (sd) in pre- and post-test were 77.1 (11.1) vs 84.9 (10.6), RHM; 60.5 (13.1) vs 92.4 (8.8), nurse-midwife]. Further analysis found that higher age and more work experience were inversely correlated with improvement in the evaluation results. Apart from the capacity building, weekly health talks were given on national radio and monthly health articles were published in the newspaper to raise knowledge and awareness regarding ANC among pregnant women in the community. We additionally utilized WhatsApp as a platform to provide consultations to the public and create people-centred health promotion content. At present, 1,576 active users have raised 2,731 questions, mainly concerning health issues during pregnancy (31.29%), followed by family planning (20.97%) and postnatal care (18.34%). Consequently, the percentage of women that attended 4+ ANC visits in Eswatini significantly increased from 29.6% (7,037/23,790) at baseline (2018) to 35.9% (8,266/23,053) in the first year (2019) of intervention ($p < .00001$, proportion test). These results suggest that the Training of Trainers (ToT) approach and multiple health promotions have effectively empowered health workers and mobilized pregnant women to attend more ANC visits during pregnancy.

Keywords: antenatal care, health promotion, training, nurse-midwife, community health volunteers, Eswatini

[44]

**MESSAGES TESTING ON MOBILE APPLICATION TO IMPROVE
BREASTFEEDING SUPPORT IN SUBURBAN AREA**

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World Health Organization (WHO) is targeting a minimum of 50% of infants who receive exclusive breastfeeding for 6 months. Health communication interventions that are integrated with health promotion in primary care becomes important. One strategy for holistic service that can be implemented in primary services, is to use communication technology. This study aims to assess health communication campaign design on the mobile application to improve breastfeeding (BF) support in suburban. The questions were arranged based on previous research which was adapted and the internal validity test was carried out. This research uses a quantitative descriptive study using the g-form link distributed to 206 respondents, via social media, respondents were asked quantitative items and asked for feedback on the effectiveness of messages in the form of articles that support BF. From the results of this study is found that respondent consists of BF counselor (1.94%), midwives (24.73%), community health (22.82%), family members of BF mothers (31.07%), and BF mothers (18.45%). The findings indicated respondents understood, believed, appeals, professional quality, improve to support breastfeeding, increase the faith that BF is part of worship, confident to support BF and realize that BF is a natural process. The study concludes message testing provides health promoters to get input from mobile application users to ensure they understand, are motivated, and convinced by the messages that are packaged in the form of articles, resulting in effective messages as a form of health communication campaigns to support BF for all mobile application users.

Keywords: message testing, mobile-application, breastfeeding

[45]

CAESAREAN SECTION: WHAT INDICATIONS BRING PATIENTS TO THE OPERATING TABLE?

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ABSTRACT

The high rate of Caesarean section (C-section) is a global problem, various countries report C-section population rates that exceed the WHO standard rate of 10-15%. Reports at XX Hospital in 2017 stated that the C-section rate was 48.6%, far exceeding the standard set. This study aims to determine the indication of C-section on XX Hospital patients. This research was a retrospective descriptive study. Data of 1285 C-section patients in January 2017-June 2018 was obtained from medical record. Norwitz's criteria were used to classify patient diagnosis into absolute and relative indications of the mother, uteroplacental, and fetus. From 1285 samples, 220 samples (17, 21%) were excluded due to lack of diagnosis. Most of the patients were aged 31-35 years (27.79%), came to XX Hospital without referral (59.81%), and were BPJS user (70.71%). The C-section were mainly emergency section (58.68%). The proportion difference of absolute indications and relative indications was insignificant (absolute 45.26% vs relative 41.88%). The C-section indication was predominantly because of health problems found on the mother side. This study also found that the diagnosis of 12,86% C-section patients did not fall under Norwitz indication for C-section. Reducing the number of sections requires a thorough effort that involves various parties. The effort includes patient education, programs to increase the knowledge and motivation of health workers for good labor management, and hospital policies that support good labor management.

Keywords: caesarean section, C-section, absolute indication, relative indication, Norwitz criteria

[46]

A QUALITATIVE STUDY: REPRODUCTIVE HEALTH AMONG DEAFNESS AND THE EXISTENCE IN BENGKALA COMMUNITY, BALISuariyani NLP^{1*}, Pratomo H², Kurniati DPY¹, Listyowati R¹, Mangunsong F³ and Harahap RM⁴¹*School of Public Health, Faculty of Medicine, Universitas Udayana, Indonesia*²*Faculty of Public Health, Universitas Indonesia, Indonesia*³*Faculty of Psychology, Universitas Indonesia, Indonesia*⁴*Sehjira Foundation, Indonesia*[*putu_suariyani@unud.ac.id](mailto:putu_suariyani@unud.ac.id)**ABSTRACT**

Bengkala is one of unique village in Bali which as deaf community that integrating into the village. The history of deafness in Bengkala spans many generations in the village. Deafness is mostly caused by genetic and environmental circumstances. The high incidence of congenital deafness in certain areas is related to high rates of marriage between deaf people. This study aims to learn and to explore reproductive health and the existence of the deafness community in this village. This studied using a qualitative design, and carried out 22 hearing adolescents, five deaf adolescents and community leaders served as the study's informants. The instrument of this study was semi-structure interview. The data were analyzed using thematic. The analysis showed that adolescents' acceptance and knowledge of the causes and prevention of deafness are lacking. Its shows there are sexual violence faced by the deafness. The deaf adolescents were more comfortable interacting and building relationships with other deaf people. The deafness in the village prepares to marriage with other deafness, therefore deaf community always in the community. Hence, health education programs and premarital genetic counseling are needed to reduce the genetically deaf population in Bengkala Village. It will improve the health education especially reproductive health for the deafness.

Keywords: reproductive health, deafness, Bengkala, acceptance, genetic

[47]

COMMUNITY-CENTERED REPRODUCTIVE HEALTH EDUCATION FOR MOTHERS IN RURAL KENYA

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ABSTRACT

In Kilifi County, a coastal region of Kenya, one in five teenage girls have begun childbearing (22%), and this is the highest teen pregnancy rate in Kenya (Kenya Demographic and Health Survey, 2014; UNFPA, 2021). Kilifi region has a low enrollment rate to secondary school, high unemployment among young adults, and cultural clashes between local indigenous residents in rural areas and affluent western tourists and investors in the urban/coastal area. Since 2017, Mtree, a non-profit organization registered in both the U.S. and Kenya, has conducted multi-year field research in Maya village in Kilifi with 1,400 residents, whose primary source of income is fishery with limited access to electricity, water, and general education. In partnership with Pwani University in Kilifi, Mtree conducted community-based ethnographic research to design reproductive health assessment tools and family planning and teen pregnancy prevention programs specifically for this community. Home visits and focus group interviews of mothers revealed that primary challenges for Maya women were lack of job opportunity and menstruation as sanitary pads are not always affordable. The primary concern about their teen girls was early and/or unwanted pregnancy, leading to adverse consequences, such as withdrawal from school, early marriage, poverty, and sexually transmitted disease. Mothers reported that the core factors that lead to unwanted early pregnancy included lack of knowledge, sexual abuse, peer pressure, and poverty. The findings of this field research and reproductive health assessment showed mother's values and concerns, which were integrated into the mother's family planning and teen pregnancy prevention program. The future plans include expansion of the program in the village and evaluation of the program outcome in both qualitative and qualitative ways.

Keywords: community-based research, maternal health, reproductive health, health education

[48]

RAPE SERVICES INTEGRATION: A POLICY CHALLENGE FOR ADVANCING HUMAN RIGHTS PRINCIPLES IN HEALTHCARE

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ABSTRACT

Rape victims/survivors continue to face exceptional policy-level barriers that block their access to services, in violation of human rights imperatives. This is a qualitative policy study where rape services integration as a policy challenge for advancing human rights principles in healthcare was examined. Expert opinion was solicited through semi-structured interviews with selected stakeholders totalling 22 key informants. No policy framework for clinical management of rape (CMR) exists anywhere. Interviewed experts were expressively cognizant of the lack of a uniformed approach or Standard Operating Procedures (SOP) about sexual violence including CMR survivors in Palestine, and asserted that clinicians handle rape cases at a very narrow scale. Key informants confirmed that virginity examination is still the most commonly sought rape-related service, and expressed their reservations about the inherent human right violations. Respondents agreed that rape survivors seek rape related services in facilities located outside their population catchment area to; avoid encountering people who might know them, keep secrecy of the rape occurrence, minimize social visibility, keep family honour intact in order to evade “honour killing”. This is another human rights challenge policy-makers need to address. Respondents particularly noted the futility of the medical report rape victims receive in CMR facilities. Many male physicians are unable to empathize with the raped, while some are clinically incompetent and/or fearful of the perpetrator’s revenge. Sensitization about the National Referral System for Women survivors of violence emphasizing the chapters on rape provisions and the enshrined human right principles; building evidence by collection and use of data on rape and CMR, and ongoing public awareness and campaigning are all crucial in guiding policy processes and decisions for CMR.

Keywords: health policy, sexual violence, rape, human rights

[49]

**PREVENTIVE ORAL HEALTH CARE FOR HIGH CARIES RISK COMMUNITY
DURING COVID-19 EPIDEMIC IN COLOMBO MUNICIPAL AREA OF SRI
LANKA**

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Background: COVID-19 pandemic denotes an unprecedented public health emergency impacting on health care systems, economies and people across the globe. Health care systems have been grappling with rising burden of COVID-19 that transformed prioritization of treatment services for triaging and emergency treatment provision. Sri Lanka is a lower-middle-income developing country with a strong public health infrastructure still to win the battle against COVID-19. Nevertheless, ensuring availability and accessibility to preventive oral health care services to high risk communities in the Colombo Municipal area is an uphill task as CMC area had the highest COVID -19 density. Objective: The present paper explores challenges encountered and benefits obtained by the public health unit of the National Dental Hospital (Teaching) Sri Lanka in the peak of COVID-19 lockdown period. Methodology: A cross sectional descriptive study in the CMC area for a period of one month using available records at POHU. Results: Most of the patients had dental caries and toothache; the most common treatments were health education and pain relieving. Discussion: Due to the novelty of the problem, guidelines and instructions were not sufficient to overcome the situation. Frequent discussions within the team and with the administrators helped to ease out the problems, to identify the roles and responsibilities and to express new ideas and concerns. Positive attitude of the staff was one key feature highlighted during the period. Conclusion: Relieving pain and providing emergency management was a great service to the public. Team work and collective approach was significant to address a new challenge. Availability of buffer stocks would facilitate an uninterrupted patient care service.

Keywords: COVID-19, high-risk communities, collective approach

[50]

STRENGTHENING THE PROVISIONING OF DENTAL HEALTH SERVICES IN RURAL MASVINGO, ZIMBABWE: CHALLENGES AND SUCCESSES

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ABSTRACT

In Zimbabwe, oral health is an important yet neglected component of health, as there are many competing interests in healthcare. Non-Communicable Diseases have been on the rise, and receive more attention since recent years, though not yet with matching health budgets. Oral health however still does not receive much attention, even though it is a crucial part of human health, affecting our health and well-being negatively if not well taken care of. In Zimbabwe the last oral health survey was conducted in 1995, which revealed up to 77% of the total population being affected by dental caries, and a general lack of knowledge on oral health issues among participants. In 2020, SolidarMed, an organization in health working alongside Ministry of Health and Child Care, embarked on a project to improve oral health services in the Masvingo Province of Zimbabwe. SolidarMed's OraZim project has successfully strengthened existing structures, reviving previously established hospital dental clinics through the provision of dental equipment and supplies in three rural districts. None of these dental clinics have a dentist on staff. Clinics now provide screening services and host outreach dental clinics provided by the OraZim dentist. Between May2020-June2021, over 1350 patients were attended to at the previously non-functional dental clinics. Dental outreach was also done at the Ngomahuru Psychiatric Hospital, and two prisons. A total of 560 patients were attended to, with an overall increase of oral health awareness and practices among target groups, identified as having in general poor oral hygiene and a high burden of dental disease. We present data on screening, procedures performed, general barriers to access and provision of oral health services, as well as lessons learned.

Keywords: oral health services, dental clinic, rural, Africa

[51]

**KNOWLEDGE AND ATTITUDE ON DENTAL RADIOGRAPHY AMONG
PARENTS OF CHILDREN ATTENDING THE RADIOLOGY UNIT OF NATIONAL
DENTAL HOSPITAL COLOMBO**

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Background: Radiographs play a prominent role in diagnostic purposes as an integral component in the field of modern dentistry. Radiographs are clinician's main diagnostic tool. Dental X-rays are with high energy electromagnetic radiations with the ability to penetrate human tissues. Different radiological techniques are available for dentists ranging from intraoral periapical radiography to cone beam computed tomography. Objectives: To assess knowledge of risks and benefits of dental radiography among users in National Dental Hospital Sri Lanka (NHDSL). Methodology: A hospital-based descriptive cross-sectional study design was adopted. The study population was the patients attending the radiology department NDHSL and the parents of the children below 18 years. The calculated sample size included 404 patients which was done by using a formula with parameters of; 95% confidence interval, a precision of 0.05 and an assumed non-response rate of 5%. Interviewer-administered questionnaire was used as the instrument to collect information. Participants' knowledge was assessed by the answers given to the questions in the questionnaire. Ethical clearance for the study was obtained from Ethical Review Committee of National Hospital Sri Lanka. Results: Commonest type of radiograph was "peri apical" (65%), with "occlusal" being the second commonest. Ortho panthamogrammes (OPG) and lateral cephalogrammes were mostly ordered by the orthodontic unit (65%). Most of the patients had high knowledge on the benefits of the radiographs. However, they lack the knowledge on risks of radiographs other than the mere response that repeated radiographs are harmful. Conclusion: Planned hospital-based, cross-sectional descriptive studies can assess the levels of knowledge towards dental radiography in Sri Lankan context. Based on the findings, corrective measures will be taken to improve the levels of knowledge of patients on dental radiography.

Keywords: dental radiography, risk, benefit

[52]

**ESTABLISHMENT OF HISTOPATHOLOGICAL SERVICES IN THE PREMIER
MULTISPECIALTY TERTIARY CARE PUBLIC DENTAL HOSPITAL IN SRI
LANKA**

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Background: The National Dental Hospital is aspired for advancing maxillofacial and oral health care through excellence in patient-centered services, research and innovation. Oral cancer poses a major public health challenge as the most common cancer among males in Sri Lanka. There was a glaring gap in availability of oral pathological diagnostic services for Dental Hospital. Aim: To establish a fully-fledged Oral Histopathological Services for the National Dental Hospital (Teaching) Sri Lanka. Methods: Project setting was the National Dental Hospital (Teaching) Sri Lanka. Director General of Health Services and other main stake holders were identified. Formal stakeholder meetings were organized and they were convinced on this vital timely need. The accomplished activities comprised of identification of space, designing the lab plan, appointment of Procurement committee, appointment of Technical Evaluation committee, procurement of laboratory equipment, cadre creations and ordering of chemicals. Results: Human resource comprised of 2 Oral Pathologists, a Medical Laboratory Technologist and a Dental Surgeon. All essential lab equipment and facilities were established. 1200 incisional & excisional biopsy reporting were performed in 2018, including 4 Oral & maxillofacial Units and 8 hospitals from other geographical areas. Of which, 12.1% were oral cancer cases and the data were fed to the national cancer registry. The mean durations for reporting of an excisional biopsy and an incisional biopsy were 10 days and 6 days respectively in 2018 recording a 3-fold rapidity and a 78.3% increase in the histopathological diagnoses performed compared to the period prior to establishment of oral pathology lab. Conclusions: Establishing the oral pathological diagnostic service for the National Dental Hospital deemed a successful project. Such centralized pathological diagnostic services could be recommended for expanded clustered care for a network of peripheral hospitals.

Keywords: Histopathology, health economics, non-communicable disease

[53]

THE EFFECT OF EDUCATIONAL VIDEO INTERVENTIONS ON IMPROVING KNOWLEDGE OF GOOD SITTING POSTURE IN NON-MEDICAL COMMUNITIES

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ABSTRACT

Low back pain is one of the increasing health problems in the era of the COVID-19 pandemic that occurs in the community, due to work from home policies and online learning activities. Previous studies have shown that the factors that significantly influence the occurrence of low back pain are sitting duration of more than 7 hours per day and improper sitting posture. This study aims to determine the level of knowledge about the correct sitting posture before and after the intervention of educational videos in the non-medical productive age community, as well as the factors that can affect the level of knowledge. The research population is a non-medical community, with a sample of 163 respondents, using purposive sampling. The research design was pre-experimental one group pre-post-test with intervention media in the form of educational videos. Value data from the pre-test and post-test were processed and analyzed using the Wilcoxon test. In addition, the Mann-Whitney comparative test analysis was also carried out to see the relationship between knowledge of correct sitting posture in the demographic group of respondents. A total of 31.9% of respondents had received information about the correct sitting posture. Of this number, 53.8% of respondents got the information from social media. From the results of the Wilcoxon test, there was a significant difference between the level of knowledge before and after the educational video intervention ($p < 0.001$). The results of the Mann-Whitney comparison test showed a significant relationship between knowledge of correct sitting posture with age ($p = 0.027$) and education level ($p < 0.001$). Giving an intervention in the form of an educational video, can increase the knowledge of the non-medical community about the correct sitting posture.

Keywords: sitting posture, non-medical community, knowledge, demographic, social media

[54]

AN EXPLORATION OF ROAD CRASHES IN MANIPAL, INDIA: TRENDS, PATTERNS, CAUSES, AND TIME SERIES ANALYSIS PREDICTIONSumit K^{1*}, Ross V², Ruiter RAC³, Polders E², Wets G² and Brijs K²*¹Prasanna School of Public Health, Manipal Academy of Higher Education, India & UHasselt, Belgium**²UHasselt, School of Transportation Sciences, Agoralaan, 3590 Diepenbeek, Belgium**³Maastricht University, Department of Work & Social Psychology, Maastricht University, 6200 MD, Maastricht, the Netherlands**sumitsharma315@gmail.com**ABSTRACT**

Road crashes are the sixth leading cause of death in India. It causes immense socio-economic losses, especially among the young population. Over the last four decades, India has witnessed a fourfold increase in the number of road traffic crashes and a road fatality increase of 9.8 times the number of traffic deaths of forty years ago. Manipal, belonging to the state of Karnataka in India and an international university town, is one of the fastest-growing cities in India. With an unprecedented increase in road traffic volume over the last five years and minimal growth of the infrastructure associated with it, the roads of Manipal are now more vulnerable to crashes like never before. The Manipal city police reports recorded 787 fatal crashes in the first half of 2015, among which 41 schools and college-going students who lost their lives due to crashes. This study's objective is to identify trends, patterns, and causes of road crashes through the analysis of first information reports (FIR). Furthermore, based on aggregated crash data from 2008 to 2018, crash predictions for 2019-2022 are proposed, by means of time series analysis forecasting using the holt winters method. The majority of fatal crashes in the last ten years happened due to exceeding the lawful speed limit. Majority of reported crashes were in the age group of 25-34 years. Analysis of the FIR data revealed that speeding, reckless driving, and mobile phone use while driving were the leading causes of crashes in recent years. The time series analysis predicted an increase of road crashes by 3% for the upcoming years in the district. The current study is a valuable contribution to the existing literature on the use of crash data in understanding trends, patterns, and causes of road crashes in countries with limited crash data availability and accessibility such as India. The results provide essential leads for the initiation of specific intervention programs targeting the causes of crashes and sensitizing local authorities for priority-based actions.

Keywords: First Information Reports, road traffic crashes, Manipal, time series analysis

[55]

ROOT CAUSE ANALYSIS OF SOLID WASTE MANAGEMENT SYSTEM CASE STUDY ON THE MARKET IN CITY Y YEAR 2019

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ABSTRACT

Market waste is the second source of municipal waste in Indonesia. This study aims to identify the root of the problem in the solid waste management system in market in City Y in 2019. This study uses a type of qualitative research by observation using a checklist and document review. To determine the root of the problem the researchers used a fishbone diagram which was analyzed based on four aspects, consist of organizational aspects, technical aspects, environmental aspects, and socio-cultural aspects. The results showed the root of the problem of the solid waste management system in market based on the analysis of fishbone diagrams and scoring calculations was the environmental aspect, with 0 implementation. The conclusion of this research, to solve the problem on environmental aspects, stakeholder analysis is needed, and it is necessary to increase the role of market managers that can be built with appropriate fit and proper test. In addition, it is important to assess the needs of waste management infrastructure based on wide of market area. For supporting the research founding, we developed road-map or work-plan for waste management in Traditional Market.

Keywords: fishbone diagram, solid waste, market, problem analysis

[56]

MATERNAL EXPOSURE TO AIR POLLUTION AND ADVERSE NEONATAL OUTCOMES. A SCOPING REVIEW

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ABSTRACT

Literature from China and Australia reported neonatal mortality, low birth weight, impaired lung function and alterations in immune system associated to maternal exposure to air pollutants (ME) during the gestation period. The frequency of these neonatal outcomes, the nature, or type of evidence in the rest of the world has not been yet reported. We aimed to describe available literature related to ME and the report of adverse neonatal outcomes. Systematic literature review following a scoping review methodology was conducted searching MEDLINE, EMBASE, Scopus, Virtual Health Library PAHO & Google Scholar. Nor language or time limited the search during May to August 2019. Protocol was registered previously https://osf.io/mq325/?view_only=f9486095fa32465e83161c5c438f1abd. Articles that described maternal exposure to air pollutants and reported adverse neonatal outcomes were included. We eliminate duplicates and the researchers CM, ML, SG, LL, MO, SN, IH, SD, CR screened titles and abstracts supported by Rayyan software. DB and AB solved conflicts. All researchers extracted data in full-text reviews. 431 articles were analyzed which informed more than one pollutant and more than one outcome: particulate matter (n=280), greenhouse gases (n=394), dioxins and furans (n =3) and other pollutants (n=19). Epidemiological designs included systematic reviews with meta-analysis (n=20), systematic reviews (n=59), descriptive cohorts (n=220), analytical cohorts (n=156), cases and controls (n=124), cross-sectional studies (n=81), ecological studies (n=22), narrative reviews (n=20), case reports (n=2), and case series (n=4). Alteration in anthropometric measurements (n=484), obstetric outcomes (n=309), newborn pathologies (n=164) and mortality (n=24) were the outcomes. Asia (n=106) and North America (n=104) reported more articles. We found an important number of articles around the world that describe maternal exposure to air pollution and adverse neonatal outcomes.

Keywords: air pollution, maternal exposure, neonatal outcomes, systematic literature review

[57]

CHARACTERISTICS OF CONFIRMED COVID-19 INFECTED CHILDREN AND ADOLESCENTS UNDER 18 YEARS OF AGE IN THE BALI PROVINCE

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ABSTRACT

The prevalence of COVID-19 cases in children and adolescents is lower than cases in adults and the elderly. However, data regarding characteristics of the infected children and adolescents are required to assess the related symptoms and potential determinants in order to assist COVID-19 prevention and control program, especially for the youngsters. A cross-sectional study with quantitative descriptive analysis was used in this study. Secondary data on molecularly confirmed COVID-19 cases in patients under 18 years old were obtained from 44,671 of the total cases collected in the Bali Provincial Health Office from March 2020 to April 2021. A total of 3,952 (8.8%) COVID-19 infected sufferers aged under 18 years old in Bali Province with the proportion based on the age group of toddlers was 23.6%, children 31.8%, and adolescents 44.6% with a proportion of 98% of the cases recovered. Most of them were male (52.3%), residing in Denpasar City (34.9%), and having contact with former confirmed COVID-19 patients (96%). The highest proportion of transmission history was originating from household cluster (53%). The proportion of COVID-19 cases in patients under 18 years old with comorbidities was quite low (3%), although the majority of them showing the clinical symptoms of fever (19.4%), cough and cold (21.8%), complaints of pain when swallowing (5.3%), and breathing difficulty (3.7%). Most of these patients had a history of isolation in subdistrict level health centers, hospitals, or hotels (62.7%). Confirmed cases of COVID-19 in patients under 18 years old in Bali are quite low, showing mild symptoms and a fairly high recovery rate. However, cases in these young people still require attention and appropriate treatment management especially during the isolation.

Keywords: Bali, characteristics, COVID-19, under 18 years old

[58]

DETERMINING ANXIETY DISORDER IN HEALTH WORKERS WHO HAVE RECEIVED COVID-19 VACCINES AT PUBLIC HEALTH CENTERS IN TEGAL DISTRICT, INDONESIA

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ABSTRACT

The COVID-19 pandemic has a major impact on health workers' mental health. Health workers in Indonesia have received COVID-19 vaccines. It hoped that they will get protection against COVID-19 infection and reduce anxiety while on duty. This study aims to determine anxiety disorders in health workers at public health centers who have received COVID-19 vaccines. A cross sectional study was conducted at 6 public health centers in Tegal district, Indonesia. Data was collected using questionnaire that given to health workers who had vaccinated COVID-19. Anxiety disorder were determined with generalized anxiety disorder-7 (GAD-7) questionnaire. There were 137 samples who participated in this study, consisted of 83.2% women and 16.8% men. The majority of the samples were 30-39 years old (41.6%), married (93.4%) and nurse (28.5%). There were 6.6% samples with mild anxiety and most of them did not experience anxiety disorders (93.4%). There were no samples with moderate and severe anxiety. The results of this study indicate that COVID-19 vaccination program for medical workers can reduce anxiety when providing health services. However, assistance is still needed for health workers who experience mild anxiety disorders to prevent the prolonged symptoms and more severe.

Keywords: COVID-19 vaccines, anxiety disorder, health workers, GAD-7

[59]

HIGH ORDER LINGUISTIC PROCESSING DYSFUNCTION - A RELEVANT DIAGNOSTIC MARKER FOR SCHIZOPHRENIA

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ABSTRACT

In order to detect subtle linguistic performance deficits, a hallmark in patients with schizophrenia, we attempted to develop a test battery for its early detection, in hindi vernacular language. Total 68 participants namely 34 patients with schizophrenia and 34 controls, were recruited into study by using Clinical Global Impression (CGI-1) Scale and General Health Questionnaire-12 (GHQ-12) respectively. The patients with Schizophrenia (17 males and 17 females) were evaluated by using PANSS (positive and negative symptoms scale for schizophrenia) and HLFT(Hindi Linguistic Function Test) battery for their symptoms and linguistic performance respectively. HLFT battery was designed containing three blocks by using Antonyms, synonyms, homonyms, hyperonyms, hyponyms, distractors and adages. Patients with Schizophrenia scored significantly lower than the healthy controls in hyponym plus distractor combinations ($p=0.001$). At hyponym plus distractor combination score of 2.5, the sensitivity and specificity for using it as a cut off to screen for schizophrenia are 79 % and 56 % respectively. Taxonomia representation such as hypo-/hyperonomia, synonomia and also adages might be significantly impaired in patients with schizophrenia and, developing a pen and paper screening test and these high level linguistic features seem worth looking at.

Keywords: Schizophrenia, semantic deficit, language impairment, PANSS, HLFT, CGI, GHQ

[60]

WHAT ARE THE DOMAINS OF LIFE AFFECTED BY LEPROSY-RELATED STIGMA IN INDONESIA AND WHAT WOULD BE THE DRIVERS, MANIFESTATIONS, AND CONSEQUENCES?: A QUALITATIVE SYSTEMATIC REVIEW

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ABSTRACT

Indonesia is still in the third place for leprosy cases worldwide. Leprosy is highly stigmatized. The international literature discussed leprosy and stigma in the setting of Indonesia are found to be lacking. This review aims to identify the domains of stigma outcomes, its manifestations, causes, and impacts in life of leprosy-affected people in Indonesia. Qualitative studies retrieved through multi-electronic databases: PubMed, CINAHL, Taylor & Francis, ProQuest, and Google Scholar. The search encompassed studies published in English and Indonesia language during 2000-2020. Literature was quality assessed and thematic synthesis was applied. Seven themes on stigma outcomes in Indonesia were identified across the 37 selected studies. Three outcomes in private domain: (1) trouble in having life partner; (2) devaluation of social roles and control over own body in the family; and (3) the difficulty to create relationship within the society. Four outcomes were identified in public domain: (1) challenges in healthcare seeking, access, and quality; (2) a declining chance and desire to be productive economically; (3) constraints in accessing education and developing self; and (4) 'distance' to public facilities and resources important in life. Internalized, perceived, and enacted stigma manifestations were occurred in most domains, yet the enacted type was mainly noticed. Manifestations were still least explored in educational and public means important in life. Internalized and perceived stigma beyond physical disfigurement need to be explored more. The causes of stigma were ranging from the negative and positive concepts linked with the condition up to customs not relatable to the disease process. Attention to the broad causes of stigma need to be taken to related program and intervention. More qualitative studies are needed especially in areas outside Java Island.

Keywords: leprosy, stigma, outcome, manifestation, consequence, Indonesia

[61]

**FEELINGS AND UNMET NEEDS OF INDIVIDUALS WITH SCHIZOPHRENIA
WHILE PERFORMING SPIRITUAL ACTIVITIES (SALAT AND DZIKR) IN A
MENTAL HEALTH HOSPITAL**

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ABSTRACT

Research supports the relationship between spirituality and improved health outcomes such as finding meanings and quality of life. In Indonesia, individuals with schizophrenia are not required to salat. However, they still need proper spiritual well-being. This study investigated their feelings and unmet needs of spiritual activity in a mental health hospital. This study enrolled 6 participants of individuals with schizophrenia. We collected the qualitative data by 6 themes including frequency, thoughts and feelings, effect, barriers, complaints, and state of mind during spiritual activity with a semi-structured in-depth interview. We used triangulation to test the validity of the data. Individuals with schizophrenia do not perform salat and dhikr at salat times. They only perform salat and dhikr while they feel uncomfortable or anxious. Lacking prayer rooms and physical illness impede their spiritual activity. Performing salat and dhikr have a positive effect on physical and mental status. Spiritual activities have a positive effect on the physical and mental status of individuals with schizophrenia. The mental health hospitals should provide a proper environment and arrange the regular time of spiritual activities for them.

Keywords: Salat, Dhikr, schizophrenia, mental health hospital, spiritual activity

[62]

**PERCEPTION OF PATIENTS AND CAREGIVERS TOWARDS RELAPSE IN
FIRST-EPISODE SCHIZOPHRENIA: A QUALITATIVE STUDY IN
NORTHEASTERN THAILAND**

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ABSTRACT

Schizophrenia is a common public health problem in Thailand. Antipsychotic drugs are effective in patients diagnosed with first-episode schizophrenia. However, during the first year, patient have a high chance of relapse. This relapse can impair mental functions, imposing poor quality of life, and a burden on family and society. Factors related to relapse are multifactorial and divergent from one culture to another. Identifying the right factors would help prevent the relapse. This present qualitative research study was aimed to identify factors related to relapse in first-episode schizophrenia from perspectives of patients and caregivers. Participants were ten of first-episode schizophrenia patients from a tertiary psychiatric hospital of northeastern Thailand, who had been diagnosed with schizophrenia within two years; and ten of their primary caregivers. Data were collected by in-depth interviews and audio records using a semi-structured interview schedule. Content analyses were used to identify family perceptions of factors that put patients at risk of relapse. Data analyses demonstrated that risk factors for relapse in first episode schizophrenia were drug adherence, substance abuse, family factor/psychosocial stress, family supports, and natural course of disease. Protective factors were drug adherence, and family supports. To conclude, the main factors affecting relapse in first episode schizophrenia were issues related to affecting patients and caregivers. The respondents suggested that health professionals should continuously monitor medication compliance, boost self-care competencies and encourage family support.

Keywords: first-episode schizophrenia, relapse, drug adherence, substance abuse, caregivers

[63]

HOW DO LOCKDOWNS DUE TO COVID-19 AFFECT OUR MENTAL HEALTH?

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The COVID-19 pandemic has been an external shock exerting detrimental effects on wellbeing through several channels, including the individual's exposure to risk of contagion and to the policy measures to fight the pandemic. We exploit the differential timing of the effect of the pandemic across European countries, and the different stringency of lockdown measures over anxiety and depression. We use publicly available for 22 European countries from an online survey conducted globally between March 20th and April 6th and also include information from the level of restrictions in daily life (measured by the COVID-19 Government Response Stringency Index) and of the epidemiological risk exposure effects (current and delayed) on anxiety and depression. We draw in an event study, and both a difference in differences and a regression discontinuity design to obtain reliable estimates of the effect. We document that although lockdown increases the average symptoms of depression and anxiety in 4.12% and 6.27%, if it takes place once the pandemic has reached a category five (according to the Pandemic Category Index), there is a strong mitigating effect on wellbeing (captured by symptoms of depression and anxiety). That is, although the increase in mortality to category 5 increases depressive and anxiety symptoms by 5.57% and 14.04% respectively, if this circumstance coincides with the obligation of home confinement, the increase in the level of depression is reduced to 1.01%, and anxiety drops to 10.30%. However, there is great heterogeneity in the cumulative effect of confinement in a situation of high mortality. Taking into account the household income, the level of depression (anxiety) increases by 7.843% (4.021%) in the lowest income quartile as compared to the highest one.

Keywords: mental health, COVID-19, pandemic, subjective wellbeing, Stringency Index

[64]

**MENTAL HEALTH AND COVID-19: FACTORS ASSOCIATED WITH
DEPRESSION, ANXIETY, AND STRESS AMONG GERMAN UNIVERSITY
STUDENTS DURING THE COVID-19 PANDEMIC**

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ABSTRACT

In three preregistered studies, we assessed the mental health status of students at a small German university during the COVID-19 pandemic: N1 = 392 students during the summer semester 2020; N2 = 1072 at the beginning and N3 = 751 students at the end of the winter semester 2020/21 (study 2 and 3: within design). Moderate to extremely severe scores of anxiety, depression, and stress were reported by 31.9% (study 2: 24.6%, study 3: 25.2%), 40.1% (study 2: 42.8%, study 3: 47.0%), and 44.9% (study 2: 31.9%, study 3: 37.0%) of the participants. We performed hierarchical linear regression analyses to predict psychological distress, including socio-demographics (step 1), assumed stressors for mental health (step 2), and resilience [step 3, study 1: $R^2 = .673$ (adjusted $R^2 = .660$); study 2: $R^2 = .438$ (adjusted $R^2 = .424$)]. Higher psychological distress was significantly related to feeling higher COVID-19-risk, perceiving changes in the university routine, being burdened financially, perceiving worries related to the COVID-19 crisis, and being less resilient (in study 1 additionally to being female, having children, being younger). Neither relationship status, perceived social background, housing situation, employment, probability of infection nor reactance contributed significantly to the model. Further, we asked with an open answer format whether the pandemic impacts one's health. Participants mainly stated a negative impact on their mental health, including having more stress, feeling depressed, in a bad mood, lethargic, unmotivated, and lonely. In conclusion, university students are especially impacted by the restrictions and changes due to the COVID-19 pandemic. Nevertheless, students also perceived positive impacts of the pandemic on their health and studies, like improvements in digital teaching, and temporal and spatial flexibility.

Keywords: anxiety, stress, depression, psychological impact, university students, COVID-19 pandemic

[65]

MEDICAL STUDENTS' MORAL COURAGE EFFICACY: THE CONTRIBUTION OF PERCEIVED STRESS AND ACADEMIC BURNOUT

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ABSTRACT

Medical students, especially during their clinical studies, are often exposed to physicians' inappropriate behaviors and various breaches of safety and professionalism. Furthermore, students find themselves performing or participating in these unsuitable activities. These situations contradict students' own personal and professional values, exposing them to a dilemma in which they need to choose if and how to act. Acting requires moral courage, i.e., the ability to overcome fear and take action to maintain one's core values, educational and professional obligations. It is the willingness to speak up and do 'the right thing' despite stressors and risks, such as embarrassment, social ostracizing, or even loss of employment. The present study elaborated the existing limited knowledge regarding moral courage efficacy by proposing a new model, examining whether the association between perceived stress and moral courage efficacy is mediated by academic burnout. This cross-sectional study included 239 medical students who completed self-reported questionnaires measuring perceived stress, academic burnout (exhaustion, cynicism, professional efficacy), and moral courage efficacy (towards others' actions, towards self-actions). Analyses were performed using Pearson's correlations for direct effects and PROCESS macro for indirect effects. The results demonstrated that the association between perceived stress and moral courage efficacy towards the others was mediated by professional efficacy. The association between perceived stress and moral courage efficacy toward the self was mediated by exhaustion and professional efficacy. These results emphasize the importance of promoting students' well-being, i.e., feelings of low perceived stress and low levels of academic burnout, to enhance their moral courage efficacy. Medical-educational interventions should focus on improving students' perceptions of professional efficacy since it affects their moral courage efficacy towards others and self-actions.

Keywords: moral courage, stress, academic burnout, medical students

[66]

DEPRESSION, ANXIETY AND STRESS DURING COVID-19 IN PORTUGALVilhena E^{1*}, Castro C² and Keating J³¹*Ai-School of Technology, IPCA, Portugal*²*Centre of Mathematics, University of Minho, Portugal*³*Psychology School, University of Minho, Portugal**evilhena@ipca.pt**ABSTRACT**

The COVID-19 is an emerging pandemic that has led to changes to our lives, with profound consequences in physical and mental health. As in the world, the Portuguese population also have feeling the physical cost of this disease, manifesting itself through higher levels of anxiety, stress, and depression. The distance, quarantine, constant stay at home, as well as the financial and social issue have contributed to these levels. This study aims to investigate anxiety, stress, and depression during the pandemic in second phase of confinement in Portugal, in two healthy people groups: COVID-19, with those who have been infected, and non-COVID-19. Study comprises 193 participants: 28.5% COVID-19 (mean age: 34.16±15.67; 67.3% females) vs 71.5% non- COVID-19 (mean age: 27.14±11.64; 64.5% females); Anxiety, depression, and stress scale were assessed using DASS-21. Other measures include optimism, social support, socio-demographic and behavioral variables. Data were analyzed using binary logistic generalized models and general linear models. Results showed that in both groups most participants had experienced a normal level of anxiety (90.0% vs 89.9%), stress (92.7% vs 95.7%) and depression (87.3% vs 82.6%). Have children aged between 12 and 18 years old, asthma, living in rural areas and present high levels of exhaustion (perceived), significantly increases the odds to be in COVID-19 group. Lower social support contribute for higher levels of anxiety, depression, and stress in COVID-19 group. For non-COVID-19, poor food and not having a terrace are predictors for anxiety, depression, and stress. This study contributed to the understanding and improve the processes related with physical and mental health, consequence of COVID-19, which is relevant for health care providers.

Keywords: anxiety, depression, stress, COVID-19

[67]

**RELATIONSHIP BETWEEN EARLY ADVERSITY AND MENTAL HEALTH
AMONG PEOPLE LIVING WITH HIV: EXPLORING THE MEDIATING ROLE OF
COPING STRATEGIES AND PHYSICAL HEALTH**

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ABSTRACT

People living with HIV (PLWH) experience additional stressors associated with HIV status that may contribute to poor mental health outcomes. Adverse childhood experiences (ACES) may be one such stressor. An elevated prevalence of ACES has been reported among PLWH. PLWH may develop maladaptive coping (MC) strategies as a response to ACES, further aggravating mental health outcomes. While this mediating role of coping strategies has been examined among adults without HIV, no studies have examined this relationship among PLWH. Moreover, these studies have not considered the impact of physical health on the mediating role of coping strategies. Hence, the objective of this paper is to examine the mediating role of MC strategies and physical health between the ACES and mental health relationship. An ongoing cohort of New Orleans Alcohol Use in HIV (NOAH) study (NIAAA P60AA009803) was leveraged for the study., with survey waves at baseline, 10-month, 20-month, and 30-month follow-up waves utilized. 201 PLHIV that completed the 30-month follow-up were included in the analysis. A serial mediation model with MC strategies and perceived physical health as mediators between ACES→depression relationship was tested in MPLUS. Perceived physical health was seen to mediate the ACES→depression relationship (Natural indirect effect=0.131, p =0.004). While a mediating role of MC in the ACES→depression was not identified, a unit increase in MC was associated with a 0.11-point increase in the depression score (p=0.01). Similarly, a unit increase in ACES was associated with a 0.33-point increase in MC score (p=0.01). Findings suggest that interventions targeting psychosocial factors like MC strategies and health-related perceptions are required along with clinical management to improve mental health outcomes among PLWH who have experienced ACES.

Keywords: Adverse childhood experiences (ACES), depression, maladaptive coping, perceived physical health, serial mediation

[68]

DATA-SOVEREIGNTY AND CLINICAL-RESEARCH, A CASE OF MENTAL HEALTH RESEARCH WITH DATA-HANDLING AND REPOSITORY IN ZIMBABWE

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ABSTRACT

Often, Western-based universities manage clinical research taking place in the Global South. In the process, research data is stored on servers in the North. Southern researchers are relegated to collecting and sending empirical data to the West. Reports on research where data remains under national, Southern jurisdiction, stored and managed in situ are rare. The Friendship Bench (FB) mental health intervention, emerging from Zimbabwe, was proven in urban environments only. SolidarMed in Zimbabwe, together with scientists at Bern University in Switzerland engaged in clinical trial research on the FB method in rural Zimbabwe. This paper presents an extended case study of ongoing research in mental health in Zimbabwe. It addresses the questions: (1) what means data-sovereignty in the South, (2) what is a good research practice with data and access control in the South (3) how do collaborators access research data? Zimbabwean IT experts installed a REDCap platform on a local server. The services were designed, implemented, managed, and controlled from African agency and capacity. During online meetings, researchers and technicians discussed technical functionalities and reached agreements. Potential barriers as skepticism of technical capabilities, apprehension about systems integrity, security, and downtime were raised and addressed. The result is engaged cooperation, respectful interaction, and reciprocal learning. Growing self-realization in the South fuels demands for data-sovereignty. The location of data-repositories in international research requires scrutiny. Anticipating data sovereignty measures raises awareness of the issues involved and facilitate the ‘future-proofing’ of international research. This case study of research in mental health indicates the feasibility of moving-the-center of its data repository while showing the importance of committed and holistic leadership, a willingness to ‘stand in the gap’, and to ‘provide space for local talent to develop’.

Keywords: data sovereignty, mental health

[69]

THE INFLUENCE OF THE COVID-19 PANDEMIC ON WORK AND QUALITY OF LIFE OF PSYCHIATRISTS: AN EXPLORATORY STUDY

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ABSTRACT

Health care professionals exposed to coronavirus disease 2019 (COVID-19) face a high-stress level. However, little research has been done on the effects of the viral outbreak on fatigue among non-front-line health care workers, such as psychiatrists, during the COVID-19 pandemic. This study aimed to explore the influence and quality of life of psychiatrists during the COVID-19 pandemic. This study was a qualitative study with an interpretive phenomenology approach. Participants in this study were ten psychiatrists selected using a purposive sampling technique. The inclusion criteria were psychiatrists who served in clinical service during the COVID-19 pandemic and were members of the Indonesian Psychiatric Association Malang branch. This study was conducted in November 2020 at the Indonesian Psychiatric Association Malang branch. The method used in this study was in-depth interviews using semi-structured and open-ended questions. The results found two themes related to the work characteristics and three themes related to the quality of life of psychiatrists who served in clinical service during the COVID-19 pandemic. The work characteristics of psychiatrists who served in clinical service during the COVID-19 pandemic were uneasy and affected their quality of life. A considerable responsibility must be embraced besides being health care providers and their own safety.

Keywords: psychiatrist, COVID-19, quality of life, work

[70]

THE IMPACT OF EDUCATIONAL VIDEOS ON ANXIETY MANAGEMENT IN MEDICAL STUDENTS DURING THE COVID-19 PANDEMIC

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ABSTRACT

The COVID-19 pandemic affects various aspects of life, including learning methods for medical profession students undergoing clinical clerkships. The learning method that should be carried out offline in-network hospitals has been shifted to an online process and causes various problems ranging from the unfulfillment of clinical competence to mental health issues by students. The research was conducted in a quasi-experimental way and used pre-intervention research instruments in the form of questionnaires and pretest and post-intervention questions in the form of posttest questions via Google Form (online). A pre-intervention survey was conducted regarding anxiety levels in young doctors of the batch 2016 who underwent online clinical rotation. The variable consists of Generalized Anxiety Disorder-7 (GAD-7) score and independent variables (types of anxiety), gender, clinical course, and student's satisfaction related to the fulfillment of clinical competence. The pre-intervention questionnaire aims to identify existing problems and prioritize appropriate intervention programs based on the needs of respondents. There was a significant effect ($p < 0.005$) related to the provision of educational videos with increased knowledge about anxiety and management of young doctors from the Faculty of Medicine, Brawijaya University, Batch 1 of 2016 who were undergoing online testing. This study involved 63 respondents with male (43%) and female (57%) gender characteristics spread across various stations of clinical rotation and had different GAD-7 scores. In this study, educational videos can significantly increase knowledge about anxiety and management of young doctors of the Faculty of Medicine, Brawijaya University, Batch 2016, who are undertaking online learning.

Keyword: The COVID-19, pandemic, Anxiety management, medical students, educational video

[71]

SPIRITUAL PRACTICE CAN HELP PREVENT SUICIDE

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According to the WHO, every year nearly 800,000 people die by suicide, which is one person every 40 seconds. Suicide is the second leading cause of death among 15 to 29-year-olds globally. The most common situations or life-events that might cause suicidal thoughts are financial problems/unemployment, rejections, relationship breakups, sexual/substance abuse and mental illnesses. Mental/psychological weakness caused due to defects in one's personality is one of the main reasons why people feel they cannot cope in such situations and contemplate suicide. A WHO Mental Health Action Plan 2013–2020 lists a 4-point strategy to enhance mental health by 'implementing strategies for promotion and prevention in mental health'. With 40 years of spiritual research background, the team at the Maharshi University of Spirituality has studied the spiritual root causes that can significantly affect one's mental health and the solutions to improve it. According to spiritual science, the time and nature of death are mostly due to spiritual reasons. A person would mostly contemplate and attempt suicide when he is spiritually most vulnerable. Spiritual practice as per universal principles helps in protecting a person spiritually and prevents him from getting such thoughts of self-harm or acting upon them by controlling such impulses. The University has had much success in helping people to overcome the defects in their personalities, including those with suicidal thoughts, through spiritual practices such as chanting the Name of God and the Personality Defect Removal (PDR) process developed by the Author. If such techniques were taught in educational institutions, they could be simple yet effective self-help tools to prevent thoughts of suicide and enhance mental health and well-being.

Keywords: suicide, mental health, abuse, suicide prevention, Personality Defect Removal

[72]

THE RELATIONSHIP AMONG SENSE OF COHERENCE, HEALTH-RELATED BEHAVIOR AND BODY MASS INDEX IN ADOLESCENTS

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ABSTRACT

Adolescents are in a condition known as the period of storm and stress. This can have an impact on unhealthy behavior and obesity that determines the occurrence of degenerative diseases in later life. SOC is the global orientation to view life situations as comprehensible, manageable, and meaningful. Several previous studies have tried to connect the sense of coherence (SOC), as a stress coping resources measurement, with the health behavior and nutritional status in adolescents. They gave mixed results regarding the relation SOC/BMI but showed the real potential of SOC in the field of health promotion. The aim of this paper was to evaluate the sense of coherence (SOC) score of adolescents in Malang city Indonesia and to investigate its eventual connections with the weight status evaluated by the body mass index, and health-related behavior. a cross-sectional study investigating by means of correlation tests links of the sense of coherence score with BMI and self-evaluated health-related behavior. The SOC score has taken using the Indonesian version of the SOC-13 questionnaire that had been tested for validity and reliability. The results showed that most respondents have a strong SOC (83.8%) and moderate intensity of health-related behavior (67.57%). There were 16.2% in the overweight and obese categories. SOC score was significantly associated with BMI ($p= 0,019$) and health-related behavior ($p = 0,001$). The SOC score has close relations with BMI, a higher score of SOC leads to a smaller BMI.

Keywords: sense of coherence, health-related behavior, Body Mass Index, adolescents

[73]

**THE RARITY OF LARGE NEEDLE PERCUTANEOUS BIOPSY PROCEDURE FOR
BREAST CANCER IN INDONESIA: PATIENTS' OR PROVIDERS'
RELUCTANCE? A PRELIMINARY STUDY**

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ABSTRACT

Ultrasound-guided core needle biopsy (US-guided CNB) is a world-known procedure to detect breast cancer malignancy. However, it is rarely used in Indonesia, and this has not been investigated before. This preliminary study aims to ascertain this phenomenon through double approaches towards both health care providers and the general public in Indonesia. A week-long cross-sectional study was done in early December 2020, through two different electronic surveys, one for health care providers (general surgeons and surgical oncologists) and another for the public (breast cancer survivors and non-survivors). Consecutive sampling was done through electronic invitations. Differences between the groups were statistically analyzed. A total of 61 and 34 participants participated in the public and provider surveys respectively. In the public survey, 44% of participants underwent CNB as a breast biopsy method with the other majority still undergone surgical biopsy (44%). Breast CNB procedure was mostly known by breast cancer survivors as compared to non-survivors (78% vs. 30%, $p = 0.001$). After being provided with written descriptions of other biopsy methods, some survivors still chose FNAB (3%) and surgical biopsy (22%) if they had to go through it again. In the provider survey, 82.3% of providers opined US-guided CNB as the most ideal breast cancer diagnostic procedure; however, surgical oncologists rarely performed it and general surgeons have never performed it (38.9% vs. 0%, $p = 0.008$). The reasons provided were lack of competency (73.5%) and facilities (64.7%). This study demonstrates that US-guided CNB is rarely performed in Indonesia mostly due to hindrance encountered by providers. A national-scaled study with a larger sample size and inclusivity is required to determine the complexity of this phenomenon.

Keywords: core needle biopsy, breast cancer, surgeons, cancer survivors

[74]

USING ELECTRONIC AWARENESS MATERIAL TO IMPROVE MEDICATION ADHERENCE AMONG CHRONIC PATIENTS IN SAUDI ARABIA

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ABSTRACT

Poor adherence to medication among patient with chronic conditions is often a major risk factor for poor clinical outcomes. As global healthcare systems were disrupted due to COVID-19 pandemic quarantine protocols, healthcare educators strive to ensure continuity of awareness and medication adherence through disseminating electronic awareness (e-awareness) material. This study aimed to describe medication adherence among chronic patients and to assess the role of receiving e-awareness material in improving medication adherence during COVID-19 quarantine in Saudi Arabia. A cross-sectional questionnaire-based study was designed to assess medication adherence using the Morisky Medication Adherence Scale (MMAS-8), and distributed online via social media platforms and WhatsApp groups. The questionnaire included items to ask if e-awareness material was received during quarantine, in addition to demographic factors that might had potential impact on adherence. In total, 217 patients responded to the survey, where 88 (40.5%) were on prescribed medication during quarantine. Among those, 54.2% had low adherence level (MMAS score ≤ 5), 35.4% had medium level (MMAS score 6–7), and 10.4% had high level (MMAS score ≥ 8). Of those who were on a prescribed medication, only 37% received e-awareness material. Positive association to medication adherence was found in univariate analysis for those who received e-awareness material ($P=0.02$), those with higher education levels, ($P=0.03$), and those who were not employed ($P=0.01$). Overall, suboptimal adherence to medication was found, perhaps due to the conditions of pandemic quarantine. Although factors influencing adherence may help to identify patients at risk for non-adherence, the limited reach of e-awareness material to chronic patients revealed the need for effective strategies to disseminate e-awareness material to achieve adequate adherence rate.

Keywords: chronic, awareness, medication, adherence, Saudi Arabia

[75]

IMPACT OF CEREBROVASCULAR AND CARDIOVASCULAR DISEASES ON MORTALITY AND SEVERITY OF COVID-19: A SYSTEMATIC REVIEW

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ABSTRACT

Whether cardiovascular and cerebrovascular disease predict severe Corona Virus disease 2019 (COVID 19) is uncertain. We performed a systematic review of studies that explored pre-existing cardiovascular and cerebrovascular diseases as risk factors of severe COVID 19 (defined as death, acute respiratory distress syndrome, mechanical ventilation or intensive care admission). We searched PubMed, Cochrane Central Register, Web of Science, Online Willey library, and ScienceDirect websites for articles published until December 2020 by using appropriate keywords. Of the 762 publications identified, 30 papers met our inclusion criteria involving 17,053 COVID 19 patients. Results were stratified according to the type of disease (cardiovascular or cerebrovascular). Results revealed that cardio-cerebrovascular diseases were associated with 3 and 5.5 times more severe COVID-19 complications and mortality rate compared to patients without the disease respectively. Also, COVID-19 patients with cerebrovascular disorders had more severe complications and a higher mortality rate compared to cardiovascular patients. Patients with cardiovascular disorders were associated with a 37.6% increased risk of STEMI and myocardial injury as evidenced by increased amounts of cardiac troponins and D dimer proteins. In patients with STEMI after COVID 19, a mean increase of 4.6 minutes on Door to Balloon time was observed as compared to STEMI patients without COVID 19. To conclude, higher mortality rates and severe COVID 19 outcomes were observed in patients with cardiovascular and cerebrovascular diseases. COVID 19 patients are at an increased risk of severe STEMI and myocardial damage. Increased cardiac troponins and D-dimer proteins lend evidence to this observation. These findings pave a strong way for prophylactic therapy. Mechanisms of increased risk due to cerebrovascular disease are not well understood and are an avenue for future research.

Keywords: Cardiovascular disease, Cerebrovascular disease, COVID 19, mortality, severity, systematic review

[76]

EVALUATION OF DAYAK ONION (*Eleutherine bulbosa* MILL. URB) INFUSION AS ANALGESIC ALTERNATIVE IN MICE (*Mus musculus* LINNAEUS, 1758)

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Changes in attitude of going back to nature as it is currently causing various impacts, one of which is the application to several medicinal plants. One of the medicinal plants still used by certain people until now is dayak onion. Dayak onion has many bioactive compounds such as flavonoids, polyphenols, tannins, steroids, alkaloids, saponins, quinones, steroids, and monoterpenoids. The purpose of this study was to analyze differences in effect of dayak onion infusion in mice and to know the effective concentration of dayak onion infusion as an analgesic. This study used a writhing test that injected 2 ml of 0.6% acetic acid because it can cause writhings effect in mice. In addition, this study used four treatments, namely dayak onion infusion 0.08 g/ml; 0.16 g/ml; 0.24 g/ml; and distilled water as a control. Each treatment was repeated three times. The number of mice writhing was counted after injected of acetic acid. The mice writhings were statistically tested using One Way Anova test and DMRT follow-up test. The results showed that each treatment was significantly different ($P < 0.05$). The percentage of analgesic protection of the dayak onion infusion was also calculated, and the result showed that the highest analgesic protection percentage of dayak onion infusion was 84.51% in 0,16 g/ml concentration. The conclusion of this study was to present dayak onion infusion 0.08 g/ml; 0.16 g/ml; and 0.24 g/ml had an analgesic effect that could decrease the number of writhing compared to the control treatment when acetic acid was injected. The effective infusion as an analgesic in this study was dayak onion infusion of 0.16 g/ml.

Keywords: Analgesic, Dayak onion infusion, Writhing

[77]

THE INFLUENCE OF HOME PHARMACY CARE TO INCREASE PATIENTS' LEVEL OF KNOWLEDGE AND ADHERENCE TO HYPERTENSION THERAPY

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ABSTRACT

Hypertension is a chronic disease that requires long-term therapy. Failure in the treatment could lead to complications in the heart, brain, eyes, blood vessels, and kidney. Patients needed to have a better understanding of drug use to improve adherence, thus reducing complication risk from unused drugs. This study aimed to determine the influence of home pharmacy care on the level of knowledge and adherence to hypertension therapy in patients from Malang City pharmacies. It was a quasi-experimental study using one group pre-test – post-test. There were 40 respondents from 8 pharmacies in Malang City that were selected using convenience sampling according to inclusion criteria, included age ≥ 18 years old, living with family, using single or combination anti-hypertensive drugs, and able to communicate both oral and written. The duration of home pharmacy care was 6 months. Patients' level of knowledge was tested by using a modified questionnaire, while the change in average blood pressure was measured to determine patients' adherence to therapy. Paired t-test analysis showed that there was a significant increase in the level of knowledge ($p=0.00$), but higher average blood pressure after 6 months' intervention. A further study is needed to examine the factors affecting patients' level of knowledge and adherence to hypertension therapy.

Keywords: home pharmacy care, hypertension, knowledge, adherence

[78]

DETERMINANTS OF STUNTING INCIDENCE WITH GENETIC PROGRAMMING APPROACH

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ABSTRACT

Stunting is a condition of failure to thrive in children under 5 years of age, especially in the first 1000 days of life due to chronic nutrition suffered by the mother before pregnancy until the mother is breastfeeding and the condition of the child at birth. Indonesia is the 4th highest country in the world with children suffering from stunting. The study was conducted on 650 newborns, mothers, families, and the environment in East Java, Indonesia. This study used the dependent variable on the incidence of stunting in newborns and 26 independent variables: maternal disease and condition before pregnancy, father's disease and condition, economic factors, environment, a maternal condition during pregnancy, and maternal consumption during pregnancy. The effect of the determinants on stunting cases was analyzed by symbolic regression. The best model for predicting stunting cases was determined based on the value of R^2 , F1 Score, Accuracy, and several other performance measures. The analysis process was carried out using SPSS software and HeuristicLab 3.3. Based on statistical analysis, it is shown that the symbolic regression model has a very good performance, $R^2 = 0.951$ (from training data) and $R^2 = 0.999$ (testing data). The prediction accuracy of stunting in the symbolic regression model reached 99.17% (training data) and 100% (testing data). Judging from the coefficients of other classification performance measures, it is also shown that the symbolic regression model has high accuracy. Independent variables that have a high contribution to the incidence of stunting are the history of father's respiratory disease (X6), father smoker (X8), mother's BMI (X15), maternal Hb level during pregnancy (X18), Fe consumption (X21), consumption of vegetable protein (X22), Consumption of Animal Protein (X23), and Consumption of Milk. The variable that most dominantly affects the incidence of stunting is the consumption of animal protein (X23), where the higher and sufficient consumption of animal protein, the smaller the chance of stunting in newborns.

Keywords: newborn, prediction, stunting, symbolic regression

[79]

THE POTENTIAL OF ANTI-DIABETES WITHIN KOMBUCHA TEA MADE FROM SEA GRAPES (*Caulerpa racemosa*) RICH IN ANTIOXIDANT AND POLYPHENOL TOTAL

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ABSTRACT

Sea grapes (*Ceulerpa racemosa*) are algae spread widely in Indonesian waters, yet the use of sea grapes is rare-economic or health products. This study aims to process seagrapes to fermentation tea or kombucha tea and determine highest levels of antioxidants and total polyphenols. Methods: Fresh seagrapes are drained at room temperature for about 5 hours. Next, the drained seagrapes are crushed using a blender. The basic formulation for all samples of Kombucha tea is 25 grams of sea grapes, 50 mL of water, and 10 grams of *Symbiotic Culture of Bacteria and Yeast* gel, with a diameter of 16 cm. There are 6 samples with different treatments or additions (S1=100 grams cane sugar, S2=100 grams *Trigona sapiens* honey, S3=100 grams brown sugar, S4=100 grams Stevia powder, S5=100 grams rock sugar, and S6=control. Each sample treatments also has variations in the concentration of v/v SCOBY starter solution, which are V1:10%, V2:15%, and V3:20%. All samples are put in 1000-mL bottles and anaerobic condition 20-25° C for 12 days. The testing of each sample treatments with variations in the concentration of v/v SCOBY starter solution is done in triplicates. The formula with the highest of antioxidant activity and polyphenol total is then tested for the alcohol and pH levels. Results: Sea grapes are possible to be processed as a probiotic beverage, high antioxidant, and polyphenol, also potential anti-diabetic (by looking at its antioxidant and polyphenol in terms of improving lipid profiles and blood sugar fluctuation. Formulation of Kombucha tea is optimum in S2V3 (highest antioxidant activity and polyphenol total) with the safe concentration of alcohol and pH as the requirements to be judged as probiotic.

Keywords: functional food, probiotic beverage, antioxidant, Polyphenol total, Kombucha tea

[80]

**ESTABLISHING NCD-CLINICS IN RURAL DISTRICTS WITHIN MASVINGO
PROVINCE, ZIMBABWE: A PROGRAMMATIC REVIEW OF
IMPLEMENTATION**

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ABSTRACT

The disease burden of non-communicable diseases (NCDs) is rapidly increasing in Africa. In Zimbabwe, although NCDs are amongst the leading causes of death accounting for more than 33% of deaths per year, little resources are directed towards improving NCD care. People in the rural areas are generally poor and cannot afford out-of-pocket expenses to pay for NCD care and facilities are not equipped to offer quality service to the rural population. In partnership with the Ministry of Health, SolidarMed -an organization in health- targets NCD-care at hospital level since 2018, implementing a nurse-led, patient-centred care model. The essential NCD service package targets Hypertension and Diabetes, focussing on health education, diagnosis, disease management, and secondary prevention of complications. By 2020, using a co-development approach, six hospital NCD-clinics were implemented within Masvingo Province, including five district-level hospitals and one provincial hospital, registering close to 2'000 patients. The NCD-clinics attract patients from inside and outside the hospital's catchment areas. Clients undergo baseline investigations and routine monitoring augmented with comprehensive health education. HbA1c testing for diabetes monitoring was newly introduced, all sustained through consistent and targeted training and mentorship of healthcare workers. Zimbabwe's context harbours many challenges. Resource-availability is depressed, with extensive electricity blackouts, fuel, and money shortages, affecting staff attitude, health-service delivery, and accessibility. SolidarMed implements rigorous monitoring and evaluation to learn how continuous quality improvement of NCD-care can be realized under such circumstances. Decentralisation of the NCD interventions to primary health care facilities started in 2020, which will improve access to care, bringing quality services closer to the community. A focus on prevention and screening in high-risk population groups is to be added in 2021.

Keywords: NCD-clinics, Diabetes, Hypertension, Rural, Africa

[81]

EPIDEMIOLOGICAL PROFILE OF PRIMARY HEADACHE DISORDERS IN KASHMIR VALLEY- A PROSPECTIVE PREVALENCE STUDY FROM NORTH INDIA

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ABSTRACT

Objective: A prospective prevalence study was conducted in Hazratbal block of Kashmir Valley in Northern India. **Materials and Methods:** A door-to-door screening of 7524 subjects older than 7 years of age was conducted to look for the prevalence of primary headache disorders. A pretested, structured questionnaire was used to diagnose different headache types. The questionnaire was based on the criteria as laid down by the International Headache Society (IHS) 2018. All the participants were subjected to detailed relevant history and neurological examination before enrolment **Result:** 516 (6.87%) subjects fulfilled the criteria for primary headache disorders as laid down by the International Headache Society (IHS), thereby yielding a total prevalence of 68.7/1000 primary headache disorders. Amongst the primary headache disorders, tension-type headache (TTH) and migraine was present in 305(59.1 %) and 211 (40.9%) subjects respectively. Mean age of onset was 31.5 years for migraine type headaches and 32.1 years for tension type headache disorders. All forms of primary headaches showed a female preponderance **Conclusion:** The overall prevalence of primary headache disorders among the general population (> 7 years of age) was 68.7/1000. The prevalence of primary headache disorder was highest in the fifth decade of life (14.1% prevalence) and lowest in second decade of life (2.86%), thereby showing an increasing trend with age. The prevalence of primary headache disorder was found to be statistically significantly higher in the female gender.

Keywords: primary headache, tension type headache, migraine, prevalence, International Headache Society

[82]

**CARDIOVASCULAR OUTCOMES AND RISK FACTORS IN TRANSGENDER
ADULTS RECEIVING CROSS-SEX HORMONE THERAPY: A SYSTEMATIC
REVIEW AND META-ANALYSIS**

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ABSTRACT

Cross-sex hormone therapy (CSHT) usage is increasing, however, what is known about associated cardiovascular outcomes and risk factors (CORF) from ≥ 1 year of being on CSHT is limited. Therefore, we aimed to assess long-term relationships between CSHT and CORF in transgender adults. We searched MEDLINE (Pubmed), Cochrane Central Register of Controlled Trials, and Scopus from database inception to February 5, 2021. We included studies comparing outcomes of transgender adults on CSHT for ≥ 1 year to those not on CSHT. We followed Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines and independently extracted and assessed for risk of bias. We pooled data with a random-effects model. Our outcomes included lipid profile, BP (systolic and diastolic), BMI, and incidence of MI, TIA, VTE, and stroke. In total, we included 3,255 female-to-males (FTMs) and 5,450 male-to-females (MTFs) in this study. MTFs experienced increased incidences of VTE, MI, and stroke compared to FTMs, but experienced fewer deaths. FTMs experienced increases in mean LDL (0.42, 95% CI: 0.21 to 0.63), TC (0.11, 95% CI: 0.07 to 0.57), and TG (0.39, 95% CI: 0.14 to 0.63); a decrease in mean HDL (-0.67, 95% CI: -0.88 to -0.47), and an insignificant change in BMI. MTFs experienced nonsignificant differences amongst all outcomes. In conclusion, clinicians need to share current data about CORF associated with CSHT, and they can use this evidence to guide transgender patients' treatment plans for improved outcomes, facilitate transparency, and improve shared-decision making.

Keywords: Transgender, Cardiovascular Outcomes, Cross-Sex Hormone Therapy

[83]

**AWARENESS OF LIFE STYLE RELATED DISEASES AND THEIR RISK
FACTORS AMONG DIABETES MELLITUS AND HYPERTENSION PATIENT
VISITING SECONDARY HOSPITALS IN QASSIM REGION**

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ABSTRACT

Background: Hypertension and diabetes are silent killers globally, and they're a big risk factor for other diseases including cardiovascular disease and kidney diseases. Purpose: To determine the level of awareness of life style related diseases and their risk factors among diabetes mellitus and hypertension patients visiting secondary hospitals in Qassim region. Methods: cross-sectional, questionnaire based survey conducted in 320 diabetes and hypertension patients in Qassim region, Saudi Arabia. Data were collected using a structured self-administered questionnaire. Data entry, cleaning, and analysis used the Statistical Package for Social Sciences (SPSS). Results: Majority of the participants fell in the age group of 61-70 years (27.5% in hypertensive group and 39.4% in diabetic group). Educational level was graduate (26.8%) in hypertensive group and primary school (28.1%) in diabetic group. Most of them had a family history. The participant's knowledge was assessed based on their understanding toward DM, and hypertension which included the meaning and monitoring of dietary habits, obesity, physical exercise and diseases' complications. (138) of the hypertensive participants correctly answered that hypertension is a disease, (142) knew that high blood pressure affects the heart, (136) knew that diet rich in salt is a major cause of hypertension. In diabetic group, (112) correctly answered that diabetes is a condition in which body contains, (118) knew that diabetes can be cured by diet and exercise, (143) knew the accurate method of monitoring diabetes. Conclusions: both groups have acceptable understanding and awareness on HTN and DM, in addition to the risk factors, obesity, dietary changes, physical activity, and comorbidities. Both groups stated that exercise and healthy diet are important for hypertensive as well as diabetic patients. Education was found to have a great role in awareness. The implementation of a family physician program could help in achieving these goals.

Keywords: hypertension (HTN), diabetes mellitus (DM), Knowledge, awareness Qassim region; Saudi Arabia

[84]

DOES HUMAN BEHAVIOUR PLAYS A PART IN *Plasmodium knowlesi* INFECTION AMONG HUMAN ?- A SYSTEMATIC REVIEW

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ABSTRACT

Plasmodium knowlesi infection is a zoonotic disease transmitted by the female Anopheles mosquitoes harbouring the *Plasmodium* parasite. Since 2004, the incidence of *P.knowlesi* infection among human has been increasing. The complexity of the infection are contributed by the host, macaque, parasite, environment and others. Despite the presence of effective anti-malarial measures, it is unclear why the cases are not decreasing. It is believed, to sustain any interventive measures, the understanding of human behavior is equally important as epidemiologic, entomology and ecology study. This review aims to explore the human behaviour which has contributed to the positive *P.knowlesi* cases. This review followed the Preferred reporting of Systematic Review and Meta-analysis guidelines. The search was performed at PubMed, Science Direct and Web of Science, and backward citation of all eligible studies. We have included studies on *P.knowlesi* affecting human, with data on human behaviour, activities or exposure. All studies were evaluated using quality assessment tools for risk of bias. Our results have identified 587 studies so far, and ten studies are eligible according to this systematic review inclusion and exclusion criteria. Among the ten articles, all used quantitative study to collect the behaviour data, and only one study added an observation method. Almost 50% of the studies were done in Sabah, Malaysia. In general, forest-related activities, occupation-related, and did not comply to bednet usage contributed to the *P.knowlesi* cases. There is a difference in methods and data which were collected by the studies. More qualitative studies evaluating and assessing the human malaria preventive behaviour is needed.

Keywords: *Plasmodium knowlesi*, zoonotic malaria, human behaviour, exposure, human activity

[85]

FEV1 / FEV6 MICROSPIROMETRY – AS A SCREENING TOOL FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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ABSTRACT

Aim: To determine the accuracy of FEV1/FEV6 (Forced expiratory volume ratio at one and six seconds) microspirometry using a hand-held microspirometer (Piko-6®, nSpire health, Inc. Longmont, CO, USA) to screen for chronic obstructive pulmonary disease (COPD) in an outpatient setting. **Method:** A cross-sectional study in which patients with respiratory symptoms and exposure to risk-factors for COPD, were subjected to pre-bronchodilator (BD) FEV1/FEV6 microspirometry and post-BD FEV1/FVC (Forced vital capacity) full spirometry. A pre-BD FEV1/FEV6 value < 0.88 as measured with the Piko-6® microspirometer was compared with a post-BD FEV1/FVC < 0.70 from diagnostic spirometry. **Result:** 133 subjects were analysed. Majority of our study participants (52.6%) were having COPD, while 47.4% didn't have the condition. The area under the ROC curve of the FEV1/FEV6 microspirometry for COPD screening was 0.806 (95% confidence interval {CI}, 0.731-0.880). The highest negative predictive value from microspirometry for airflow obstruction based on fixed cut-off point was 76.7% and corresponding values of the FEV1/FEV6 ratio, the sensitivity and the specificity of the test were 0.88, 85.7% and 52.4% respectively. In all, 33.3% of positive microspirometry results were not confirmed by a post-BD FEV1/FVC < 0.70 criteria for airflow obstruction. **Conclusion:** The FEV1/FEV6 microspirometry is a valid tool for COPD screening in nonspecialized healthcare settings. However, use of microspirometry alone would result in overestimation of airflow obstruction and should not replace regular spirometry when diagnosing COPD.

Keywords: COPD, Underdiagnosis, Bronchodilation

[86]

NASOPHARYNGEAL CARRIAGE OF *Streptococcus pneumoniae* IN CHILDREN WITH ACUTE RESPIRATORY INFECTIONS IN MANADO, NORTH SULAWESI, INDONESIA

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ABSTRACT

Streptococcus pneumoniae is Gram-positive bacteria that lives as normal flora in the upper respiratory tract, however in susceptible individuals such as children under 5 years of age or people with impaired immunity, it can spread to other parts of the body and cause disease such as acute respiratory infections (ARI). Currently, epidemiological data on *S. pneumoniae* carriage and invasive disease is limited for the Indonesian population, therefore this research aimed to determine the prevalence, serogroup/serotype distribution, and antibiotic resistance of *S. pneumoniae* in the nasopharynx of children diagnosed with ARI. A cross-sectional study was conducted in May 2019–April 2020 in two community health centers and one public hospital in Manado, North Sulawesi, Indonesia. Nasopharyngeal swab samples were taken from both outpatients and inpatients with ARI by using flocculated swabs, then collected in cryotubes containing 1 ml of STGG. Specimens were inoculated onto sheep blood agar plate. Optochin sensitivity was performed on pure isolates to identify *S. pneumoniae*, and then serotyped with sequential multiplex PCR. Antibiotic susceptibility test was performed using the disc diffusion method. Nasopharyngeal swab specimens were collected from 47 male and 30 female patients ranging in age from 1 month to 16 years (mean 4.2). The majority of patient's symptoms besides fever were cough (95%), runny nose (92%), nasal congestion (74%), malaise (52%), shortness of breath (36%), headache (23%), and sore throat (22%). Twenty-eight pneumococcal isolates were identified, with a prevalence of 36%, which included serogroups/serotypes 1, 19A, 19 F, 23F, 14, 31, and 16F. In conclusion, this study provides baseline information on the epidemiology of *S. pneumoniae* carriers in patients with acute respiratory infections in Manado, North Sulawesi.

Keywords: *Streptococcus pneumoniae*, acute respiratory infections, Manado

[87]

THE INCREASED CASES OF DENGUE FEVER IN THE EARLY PHASE OF COVID-19 PANDEMIC IN DENPASAR

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ABSTRACT

At the beginning of the COVID-19 pandemic in Denpasar, restrictions on community activities have been imposed on March 2020. On Restrictions community activities, there also have been a spike in cases of dengue fever. Dengue fever showed an increase in January 2020 by 59 cases to 110 cases in February 2020 and 142 cases on first week of March 2020. The purpose of the study was to find out the relationship between restrictions on community activities and dengue fever cases in Denpasar. This research uses qualitative method by conducting interviews to 11 dengue fever program holders in Public Health Center and 46 mosquito larva monitor officers in each village who are designated as key informants and secondary data analysis through dengue fever case reports. Based on Mosquito Larvae Free Figures's data in the Denpasar has been classified very well with 97.13 score. This shows if the people of Denpasar have good knowledge and behavior in the management of dengue fever disease with in their home environment. But if we reviewed from mosquito larva monitor officers, the Water Reservoir due to the COVID-19 pandemic, it can be known if the community is more often self-quarantined at home, and tend not to carry out mutual assistance in the environment which is clean the places that are likely to be breeding grounds for *Aedes aegypti* mosquitoes. So it can be concluded, even it was restriction activities in the community cause of COVID-19, the incidence of dengue fever still high. Therefore, it need to focus on the environment which is the breeding places of *Aedes aegypti*.

Keywords: dengue fever, water resevoir, mosquito larvae

[88]

TUBERCULOSIS RISK SCORE FOR SMOKER IN KELANTAN: A VALIDATION STUDY

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ABSTRACT

Tuberculosis (TB) remains a significant public health issue. One of the known risk factors for tuberculosis is smoking. However, the number of smokers screened for tuberculosis remain low. Therefore, a validated screening system needs to be developed to increase the number of smokers screened for TB. This study aims to develop and validate Tuberculosis Risk Score for Smoker (TBRSS) in Bachok district, Kelantan, Malaysia. Total of 159 patients were interviewed based on a proforma (39 items within five domains) from January until July 2020. Simple and multiple logistic regression was applied to determine the variables included in the risk score. The cut-off point to determine the score indicating the risk for TB disease was obtained based on the receiver operating characteristics (ROC) curve. The research team members interviewed eight experts among public health physicians, respiratory physicians, family medicine specialists, and medical officers in-charge for TB patients in the health clinics to measure each variable's relevancy to TBRSS. Twenty staff in health clinics were interviewed to evaluate TBRSS in terms of the understanding of instructions given, understanding of the sentences, easiness to mark the score, type and size of the font used, and appropriateness of the arrangement in the score. Seven variables were obtained to be included in the risk score. The cut-off point of 16 out of 43 score was obtained, which had a sensitivity of 91% and a specificity of 78%. The scale-level content validity index, averaging method scored from the experts for TBRSS was 0.83. The face validation for each element was ranging between 0.85 and 1.00. Therefore, the TBRSS is a validated screening tool to screen smokers in Bachok for TB disease.

Keywords: tuberculosis, screening, validation, smoking, risk score

[89]

UNRAVELING THE INFECTIOUS DISEASE OUTBREAK INVESTIGATION PROCESS FOR YOUTH EPIDEMIOLOGICAL PEDAGOGY

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ABSTRACT

The COVID-19 pandemic has laid bare existing health inequities in society, namely misinformation and personal health responsibility. These social challenges are exacerbated by a populace vulnerable to misinformation due to a lack of access to comprehensible epidemiology principles. Previous research has suggested that population-level epidemiological instruction promotes critical thinking among high school students and immunizes students against potential misinformation exacerbated by the increasing ease of access to online information. In this research, a pedagogical strategy of a hypothetical infectious disease outbreak scenario is introduced. By tracing through the four main steps of an infectious disease outbreak investigation—background information, data collection, data analysis, and implementing prevention and control measures—students are provided the opportunity to experience an epidemiologist’s role while learning basic epidemiological concepts that prove useful in solving the outbreak scenario. This lesson was administered to grade 9 biology students at a public high school in Katy, Texas. After administration, students were asked a series of questions designed to assess their understanding of public health and epidemiology. Findings indicate that with this interactive lesson design, students learn epidemiology as it relates to the greater society and employ skills in critical thinking, problem-solving, concept-based learning, and problem-based learning. Notable findings include large majorities of students who are better motivated to protect their health, debunk misinformation, follow public safety protocols, and prefer a problem-based approach for their epidemiological instruction.

Keywords: pedagogy, outbreak, epidemiology

[90]

**THE LONG SHADOW OF COLONIALISM: A REVIEW OF AUTHORSHIP FOR
HERPES SIMPLEX VIRUS TYPE 2 RESEARCH CONDUCTED IN LOW AND
MIDDLE-INCOME COUNTRIES BETWEEN 2000 AND 2020**

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ABSTRACT

Significant inequities are thought to occur in the awarding of authorship positions in health research that has been conducted in low and middle-income countries (LMICs). First and last author positions have the greatest value. This study's purpose was to examine whether this imbalance extended to the authorship of research in the priority areas set by the 2001 World Health Organisation (WHO) workshop for herpes simplex virus type 2 (HSV-2). Databases CINAHL, MEDLINE, Global Health, and The Cochrane Library were systematically searched. Studies in English addressing HSV-2 in LMICs in the five areas prioritised by the workshop and published 2000-2020 were included. Data on author country, gender, and authorship position were extracted and analysed using IBM SPSS. In total, 297 eligible papers were identified. First and last author positions were held by an LMIC researcher in 143 (48%) and 123 (42%) studies, respectively. Studies funded by an LMIC source were more than twice as likely to include a first or last author from an LMIC compared to those funded by a HIC (RR 2.36, 95% CI, 1.93- 2.89). Female first and last author positions were present in 136 (46%) and 106 (36%) studies respectively. Despite location of the research itself in LMIC settings, only a minority of first and last authorship positions were held by researchers from LMICs. Inequity was greater for last author position and among female authors. For reasons of social justice, achieving equitable inclusion of LMIC researchers and women in the authorship of global health research should be a priority. Addressing current and historical gender and geographical power disparities in global health research and how it is funded may be key to this.

Keywords: HSV-2, LMIC's

[91]

**BARRIERS TO PARTICIPATION IN RESEARCH AS PERCEIVED BY
UNDERGRADUATE MEDICAL STUDENTS: A CROSS-SECTIONAL STUDY
FROM QASSIM**

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ABSTRACT

It is vital for healthcare practitioners to have the necessary skills to review and critically appraise research evidence. However, medical students` engagement in research activities continues to be below the expectation. In this study we aimed to investigate students` views about research, and to identify the barriers preventing them from participation. A cross-sectional study was carried out in the College of Medicine in Qassim University. A total of 230 students were included. Data were collected through questionnaire .The perceptions of students were assessed using a 16-item questionnaire. The mean scores of these four subscales were compared between students using Mann-Whitney test. Factors associated with students` perception of research barriers were analyzed using four separate logistic regression models. The response rate was 89.4%. A substantial number of participants reported their willingness to take part in any research-related task (77.0%). However, the participants highly agreed that lack of time (70.4%), lack of supervision and guidance (72.6%), lack of research training and support (73.9%), and lack of research exposure and opportunities (75.2%) were major barriers to their participation in research We found that students having lower Cumulative Grade Point Average (CGPA) ranks are almost three times more likely to indicate lack of time as a challenge. Overall, female students were more likely to report concerns about research training and availability of research opportunities, while male students were more likely to indicate lack of time and lack of supervision as research barriers. The addressed barriers are highly demotivating for students, and negatively affect their participation in research. Efforts should be invested to achieve an effective research training for undergraduate students.

Keywords: medical students, research barriers, Saudi Arabia

[92]

**PATTERN OF OCULAR DISEASES AMONG ADULT PATIENTS VISITING
OPHTHALMIC CLINICS IN QASSIM UNIVERSITY, SAUDI ARABIA 2021**Alswaina N¹, Alammar A^{2*}, Alresaini I², Alsaeed A², Alawaji Z² and Alajlan A²¹*M.D, Department of ophthalmology, College of Medicine, Qassim University, KSA*²*Medical Intern, College of Medicine, Qassim University, KSA**dhoom0100@gmail.com**ABSTRACT**

The World Health Organization (WHO) confirmed the importance of obtaining information about the pattern of ocular diseases in the population as this is helpful to provide appropriate management and application of programs based on the priorities of the population. This study aimed to determine the most prevalent patterns of ocular diseases and to compare the patterns of ocular diseases among different age groups and genders in patients visiting ophthalmic clinics in Qassim Region, Saudi Arabia. This study was retrospective and cross-sectional in nature, and the data were collected from ophthalmic clinics in Qassim University, Qassim region, Saudi Arabia from January 1 2020 to January 1, 2021. The data collection form consisted of basic demographic characteristics and diagnosed ocular disease. Data were tabulated in MS Excel, and all statistical analyses were performed using SPSS version 26. A total of 384 patients were included. The most common age group was > 50 years old (35.4%) with slightly more males (53.4%) than females (46.6%). The most common anatomical region of eye abnormality was the cornea (26.8%), and its prevalence was statistically significantly higher in age group 16 –30 years ($p < 0.001$). Refractive errors were the commonly detected corneal disease (17.7%) while cataracts (9.9%) and presbyopia (8.6%) were the most common lens diseases. Likewise, blepharitis was the most common diseases for the eyelid (7.8%), and strabismus was the common disorder of ocular motility (7.3%). The prevalence of refractive errors and strabismus was more common among young patients, while the prevalence of cataracts and glaucoma was more common among older patients.

Keywords: ocular disease, ophthalmic clinic, patients, pattern

[93]

THE SOCIAL PARTICIPATION AND RISK OF DEMENTIA: A SYSTEMATIC REVIEW OF LONGITUDINAL COHORT STUDIES

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ABSTRACT

Social participation is important for health and well-being. Several prior systematic reviews and meta-analyses have suggested that social participation is associated with a decreased risk of dementia, but the association between participation in group activities and the risk of dementia remains unclear. This systematic review aimed to assess the association between social participation and the risk of dementia based on longitudinal cohort studies. We included articles related to participation in group activities as social participation. We searched the electronic database PubMed for relevant studies in English published up to 13 April 2021. Of the 1,881 identified studies, seven were included in the current systematic review. Five of these seven studies indicated that social participation was significantly associated with a decreased risk of dementia. Our search also revealed the following three points: 1) four studies evaluated the association between the specific type of social participation and the risk of dementia, 2) one study evaluated the association between the frequency of social participation and the risk of dementia, and 3) one study investigated the effects of changes in the state of social participation on the risk of dementia. To clarify the association between social participation and the risk of dementia, future studies should: 1) evaluate the association between the specific type and frequency of social participation and risk of dementia, and 2) investigate the effects of changes in the states of social participation on the risk of dementia.

Keywords: Dementia, Social participation, Systematic review, Cohort studies

[94]

THE EFFECT OF THE PATIENT PROTECTION AND AFFORDABLE CARE ACT ON GLIOBLASTOMA MULTIFORME CANCER CARE AND OUTCOMES

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ABSTRACT

Glioblastoma multiforme (GBM) is the most invasive and aggressive brain tumor type affecting more than 60% of all adult metastatic brain tumors with an abysmal prognosis. This study's objectives were to evaluate if the Patient Protection and Affordable Care Act (PPACA) achieved the intended benefits of higher treatment rates, increased survival, and reduced mortality through early detection and access to care for GBM. Secondary objectives included incidence and survival by race or ethnicity. We used data from the Surveillance, Epidemiology and End Results linked with Medicare data. We compared GBM cases diagnosed from 2010-2015 to those of 2000-2009 in terms of surgery rates and survival. We used the 2000-2009 data to build a predictive model for five-month mortality, used it to predict rates of 2010-2015, and compared them to observed values. Generalized linear models were used for analysis. We found that after the PPACA, the percentage of those who underwent surgery significantly increased compared to before. At the same time, overall survival increased by one month (six months vs. five months, $p < 0.0001$, Hazard Ratio: 0.82, 95% CI: 0.78-0.86). Within five months of diagnosis, the mortality rate was significantly less in 2010-2015 than in 2000-2009 (42% vs. 48% respectively, $p < 0.0001$), although the trend was within the range of annual predicted mortality. The percentage of surgically treated rates and survival for White, Black, and Other race patients significantly increased post-PPACA; however, five-month mortality significantly decreased only for Whites. Although the PPACA has gone through turmoil and the constant threat of replacement, the results show that PPACA achieved the expected benefits in the specific cases of GBM tumors.

Keywords: Glioblastoma Multiforme, Affordable Care Act, Cancer outcomes

[95]

THE USE OF REFLEXIVE MAPPING EXERCISES TO INTEGRATE HEALTH AND SOCIAL CARE SERVICES FOR THE HOMELESS

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ABSTRACT

The Scottish Oral Health and Psycho-social well-being program, Smile4life, identified there is a lack of knowledge of the health and social services available, including referral pathways, for those who are homeless or at risk of becoming homeless. The Public Bodies (Joint Working) (Scotland) Act, 2014 aims to integrate health and social care in Scotland to meet the needs of vulnerable populations. However, there is still a clear need to create coordinated access to information and services for users and healthcare professionals. The Reflective Mapping Exercise (RME) aims to increase the communication and integration of services, practitioners and service users by providing a framework to map services. This project is part of platform to map services in four cities regarding geographic distribution and types of support that has been offered. The first RME was carried out in Dundee and Aberdeen and it is now being replicated in Edinburgh, and Glasgow. The methodology is participatory including online search, telephone calls, informal visits and event consultations. The mapping is a visual and descriptive publication which includes all the services, and referral pathways, available to the homeless population. The completed mappings have shown a lack of services allocated in the most deprived areas and the majority seeking to address crisis periods with little aimed towards early intervention/prevention and sustainable tenancy. The mapping process identified the need to create a more equitable distribution of services which take a prophylactic approach to care. The RME helps to provide a framework which simplifies communication and integration of health and social care services amongst practitioners and vulnerable services users. Going forward it will help to plan the strategic delivery of homeless services in Scotland.

Keywords: homeless, public health, mapping, integration, communication

[96]

**THE FACTORS OF THE POPULATION THAT INFLUENCE THE UTILIZATION
OF PREVENTIVE SCREENINGS USING CROSS-SECTIONAL SURVEY DATA IN
THE UNITED STATES**

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Preventive health screenings are very effective in providing insights about early disease risk so you can take proactive steps with your doctor to prevent chronic illnesses. These checkups help in detecting the health and disease conditions early and help in providing the appropriate treatment early and efficiently reducing the burden caused by illness. They also reduce the associated treatment costs. This improves the quality of health as well as quality and type of treatment options. The National Health Interview Survey (NHIS) is one of the major cross-sectional data collection programs of the Centers for Disease Control and Prevention (CDC). NHIS collects data from people if they ever had preventive screen tests including blood pressure check, cholesterol check, blood sugar test, Sigmoidoscopy, colonography/virtual colonoscopy, Cologuard, PSA test, cervical cancer screening test and mammogram. We will examine the disparities in the demographic characters such as age, gender, race, region, and disparities in the socio-economic characters such as income status, marital status, education, insurance in performing these preventive tests using the latest available NHIS data. Also, we will examine behavioral factors such as obesity, smoking status in relation to taking screening tests. Understanding the population by studying its associated factors that might affect the utilization of preventive screening tests will help us understand the gaps for those who do not, so we can fill these gaps.

Keywords: preventive healthcare, preventive screening, survey analysis, National Health Interview Survey (NHIS), Centers for Disease Control and Prevention (CDC), Outcomes Research, Real World Data, Statistical Analysis Software (SAS).

[97]

**MEDICAL NUTRITIONAL THERAPY FOR POST EXPLORATORY
LAPAROTOMY DUE TO ILEAL PERFORATION WITH MODERATE
MALNUTRITION: A CASE REPORT**

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ABSTRACT

Ileal perforation is a penetration of the small intestinal wall as a result of intestinal content leakage into the abdominal cavity. Patients with ileal perforation are vulnerable to malnutrition which can worsen clinical outcome. The purpose of nutritional therapy in these patients is to ensure nutritional intake based on macronutrient and micronutrient needs, improve metabolic status, prevent deterioration of nutritional status. We present a case of 60-years old woman, was admitted to the hospital with complaints of severe abdominal pain and diagnosed with generalized peritonitis due to ileal perforation with moderate malnutrition, anemia (11.6 g dL⁻¹), leukocytosis (15,010 μ L⁻¹), severe hypoalbuminemia (2.2 g dL⁻¹) and prolonged coagulation period (prothrombin time 15.2 sec). Exploratory laparotomy with primary closure was performed. Nutritional intervention is given gradually with target energy requirements 1300 - 1800 kcal, consisted of 1.5 gram per kilogram ideal body weight of protein per day (16.8% - 23.3%) through oral, enteral and parenteral nutrition. Supplementations administered are zinc, vitamin B complex, vitamin A, vitamin C and snakehead fish extract with high protein albumin content. After 20 days of nutritional intervention, the clinical and metabolic conditions improved with hemoglobin (11.6 to 11.7 g dL⁻¹), leukocyte (15,010 to 10,810 μ L⁻¹), albumin (2.2 to 3.4 g dL⁻¹) and prothrombin time (15.2 to 12.6 sec). In conclusion, nutritional therapy in post exploratory laparotomy due to ileal perforation with the fulfillment of macronutrient and micronutrient nutritional needs is very important for wound healing and improvement in nutritional and metabolic status.

Keywords: ileal perforation, hypoalbuminemia, malnutrition

[98]

**MEDICAL NUTRITION THERAPY OF TYPE 2 DIABETES MELLITUS IN NON
OBES AND POSTERIOR TRUNCUS REGION ABSCESS WITH MODERATE
MALNUTRITION: A CASE REPORT**

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ABSTRACT

Diabetes mellitus is a serious public health problem in Indonesia. Non obese type 2 Diabetes Mellitus are very susceptible to abscesses. Onset of complication was triggered by infection with *Staphylococcus aureus* and the neglected hyperglycemic state. Nutritional intake of Olive Oil (OO), a major component of the Mediterranean diet has provided the prevention and management of many T2D. The objective of the paper to explain Medical Nutrition Therapy of Type 2 Diabetes Mellitus in Non Obese and Posterior Truncus region Abscess with Moderate Malnutrition. This case reported a male patient, aged 58 years was hospitalized with a diagnosis of non-obese type 2 diabetes mellitus and posterior truncus abscess and moderate malnutrition, hyperglycemia (302 g dL⁻¹), disorders of carbohydrate metabolism (11.3 g dL⁻¹), leukocytosis (14140 mm⁻³), moderate depletion of immune system (1061,2). Nutritional therapy is given based on Harris Benedict with a basal energy requirement of 1448.7 kcal and a total energy requirement of 2300 kcal (a.f 1.2: s.f 1.3), with a macronutrient composition, protein of 1.5 g per kgIBW per day, 50% and 33,8 % calory form carbohydrates and fat, respectively. Distribution of energy and carbohydrates was carried out by dividing them: breakfast 20%, lunch 35%, dinner 25%, morning and afternoon snack 10%, respectively. Supplementation was given multivitamin (B,C, and A), zinc, curcuma. After 12 days of treatment, clinical and metabolic improvements were observed in patients with blood glucose (302 to 146 g d⁻¹), leukocytes (14140 to 8400 ml), depletion of the immune system (1061.2 to 2200.8). In conclusion , nutritional therapy with adequate macro and micronutrients and olive oil can help keep blood sugar levels under control and improve clininical condition of the patient.

Keywords: Diabetes Mellitus, Malnutrition, Olive Oil, Truncus Abscess

[99]

**MEDICAL NUTRITIONAL THERAPY IN PATIENTS EROSIIVE GASTRITIS,
ESOPHAGITIS, DUODENITIS WITH DIABETES MELLITUS AND MODERATE
MALNUTRITION : A CASE REPORT**

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ABSTRACT

Erosive gastritis is gastric mucosal erosion caused by gastric superficial mucosal barrier damage without penetrating the muscular mucosal layer, characterized by abdominal pain and gastric bleeding associated with alcohol intake, several types of nonsteroidal anti-inflammatory drugs, smoking and caffeine, which can cause disturbances in gastrointestinal tract, decreased oral intake and malnutrition. Case report ; 46-year-old man, was admitted to hospital with abdominal pain and vomiting frequently, filled with water and leftovers, sometimes blackish color. History of blackish defecated 2 days ago. There were history of hypertension, diabetes mellitus and consumed Chinese herbal medicine. Laboratory results were blood glucose 158 mg dL⁻¹, fasting blood glucose 145 mg dL⁻¹, HbA1C 6.5% and potassium level 3.1 mmol L⁻¹. The Upper Gastrointestinal Endoscopy/UGIE results were erosive gastritis, esophagitis and duodenitis. The main initial management were stop the consumption of erosive causes (medications), administration of symptomatic drugs, dietary to improve intake and prevent deterioration of the patient's nutritional status due to gastrointestinal disorders. Medical nutritional therapy was given based on patient digest tract's condition, starting with 40% of daily needs, 840 kilo calories, 1.5 grams per ideal body weight per day of protein, 45-50% carbohydrates and 30% fat, with full liquid and parenteral nutrition. Supplementation were zinc, vitamin B complex and potassium preparations. The patient was discharged after treated 14 days, there was an improvement in clinical conditions with adequate nutritional intake, and improvement laboratory results including potassium levels 3,5mmolL⁻¹, blood glucose and fasting blood glucose were 142 mg dL⁻¹, and 123 mg dL⁻¹. In conclusion, adequate diet and proper nutrition can reduce symptoms, increase daily intake and improve nutritional status and generally improve condition of patients with erosive gastritis.

Keywords: erosive gastritis, esophagitis, duodenitis, malnutrition

[100]

MEDICAL NUTRITION THERAPY IN STAGE IV LARYNGEAL CANCER WITH SEVERE MALNUTRITION AND IMBALANCE ELECTROLYTE: A CASE REPORT

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ABSTRACT

Laryngeal cancer represents one-third of head and neck cancers. One of complications that commonly happen in laryngeal cancer is electrolyte disturbance which can be caused by the effects of cancer, paraneoplastic syndrome, syndrome of inappropriate antidiuresis (SIADH), anti-cancer therapy, clinical conditions and other medications that occur simultaneously. Laryngeal cancer with severe malnutrition needed specific nutritional therapy, based on their nutritional status and clinical condition. The objective of the paper is to explore the clinical nutrition therapy in stage IV laryngeal cancer patient with severe malnutrition and imbalance electrolyte. This case reported a 43 year old male, admitted to hospital due to general weakness, impairment of functional capacity and neck tumor that burst out around stoma, with a diagnosis laryngeal carcinoma suspected lung metastasis and severe malnutrition, anemia (11,4 g dL⁻¹), leukocytosis (18.900 ml⁻³), thrombocytosis (516.000 ml⁻³), hypoalbuminemia (2,7 g dL⁻¹), hyponatremia (131 mmol L⁻¹), hypokalemia (2,2 mmol L⁻¹), hypomagnesemia (1,28 mg dL⁻¹). Nutritional therapy was given based on management of high risk refeeding syndrome: start from 10 kcal per kg body weight and gradually increased to 30 kcal per kg body weight, protein 20%, carbohydrates 50% and fat 30%. Supplementations were vitamin B complex, B1, C, Zinc, and snakehead fish extract high content protein albumin (Pujimin®c 2 capsules per 8 hours). After 9 days nutrition intervention, there were clinical and metabolic improvement in anemia (11,4 to 12,2 g dL⁻¹), hypoalbuminemia (2,7 to 2,8 g dL⁻¹), hypokalemia (2,2 to 2,3 mmol L⁻¹), hypomagnesemia (1,28 to 1,56 mg dL⁻¹). In conclusion, nutritional therapy with adequate macronutrients and micronutrients can improve nutritional status and functional capacity in terminal state of laryngeal cancer.

Keywords: laryngeal cancer, malnutrition, refeeding syndrome, nutritional therapy

[101]

**NUTRITIONAL THERAPY IN POST LAPARATOMY EKSPLORATION AND
OMENTAL FLAP DUE TO GASTRIC PERFORATION WITH NASODUODENAL
TUBE: A CASE REPORT**

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ABSTRACT

Gastric perforation is a full thickness injury to the gastric wall. All forms of perforation in the gastrointestinal are surgical emergency cases. Perforation complications that occur in patients with gastric ulcers. The objective of this case study is to explain the support of nutritional therapy in patients with post laparotomy eksplorasi and omental flap due to gastric perforation with nasoduodenal tube. Case report; A 71-year -old male patient with moderate malnutrition was admitted to an Ear Nose Throat ward. Physical examination reveals loss of subcutaneous fat, muscle wasting, nasogastric tube for the decompression and nasoduodenal tube for nutrient intake, there was postoperative wound on stomach. Blood test shows anemia (8,3 g dL⁻¹), Leukocytosis (11.500 ml⁻³), hypoalbuminemia (2,4 g dL⁻¹), and moderate depletion immune system (1173 ul⁻¹). Nutrition therapy was given with a total calorie of 1800 kcal via nasoduodenal tube , protein 1.5-1,7 g per IBW per day, using low fiber blenderized food, a special Oral Nutrition Supplements (hydrolized formula). An additional supplementation in the form of zinc, multivitamins, curcuma, and snakehead fish extract capsules. After 12 days of nutritional treatment, the patient was discharged with adequate oral nutrition. Postoperative wound healed. Improved blood test results such as hemoglobin (8,3 to 11,4 g dL⁻¹), leukocytes (11.500 to 8.800 ml⁻³, the immune status (1173 to 1628 ul⁻¹), albumin (2,4 to 3,2 g dL⁻¹). In conclusion, a special nutritional therapy improved nutritional status and clinical outcome in post laparotomy eksplorasi with omental flap due to gastric perforation patient.

Keywords: Gastric Perforation, Nutritional Therapy, Nasoduodenal tube

[102]

NUTRITIONAL THERAPY IN WOUND HEALING AFTER FISTULAS REPAIR IN PATIENT WITH SEVERE PROTEIN ENERGY MALNUTRITION: A CASE REPORT

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ABSTRACT

Enterocutaneous fistulas (ECF) remain a difficult problem to handle. It can cause dehydration and electrolyte imbalance due to fluid loss, sepsis and malnutrition. Pre-existing malnutrition can aggravate clinical outcomes in ECF patients. Nutritional support might be beneficial in management of fistulas and wound healing for fistulas closure. This case study aimed to observe the role of medical nutritional therapy in severely malnourished patient (Body Mass Index: 13.24 kg m⁻²) with enterocutaneous, enterovesica, and urethrocutaneus fistula developed after bowel surgery. A case of 25-year-old man, admitted to hospital for fistulas management complicated with severe hypoalbuminemia (2.4 g dL⁻¹), lymphopenia (830 μL⁻¹), and anemia (10.6 g dL⁻¹). After fistulas repair this condition worsen to severe hypoalbuminemia (1.1 g dL⁻¹), lymphopenia (410 μL⁻¹), hypokalemia (2.6 mmol L⁻¹) and anemia (8.7 g dL⁻¹). Nutritional therapy was given gradually with calorie target 1600 kcal of energy consisted of 22% of protein, 55% of carbohydrate, and 23% of fat, through oral dan parenteral nutrition as indicated. Intravenous lipid emulsion based on olive and fish oil was administered. Supplementation prescribed were zinc, fish extract with high content of protein albumin, curcumin, vitamin A, B1, B6, B12 and vitamin C to allow proper tissue healing. After 38 days of treatment, the clinical, functional and metabolic condition was improved. Surgical wound healed properly without infection, abscess formation and fistulas recurrence during follow-up period. In conclusion, nutritional therapy with adequate macronutrients and micronutrients fulfillment, as a part of collaborative treatment, help to improved clinical outcomes and promotes proper wound healing after surgery.

Keyword: fistulas, malnutrition, wound healing

[103]

**CORRELATION BETWEEN FOLIC ACID AND HOMOCYSTEINE WITH
EJECTION FRACTION IN MALE SUBJECTS WITH CHRONIC HEART FAILURE**

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Background: Chronic heart failure is one of the most frequent cardiovascular disease with high mortality and morbidity. Prevalence ratio of chronic heart failure in male compare to female is 2,7% and 1,8%. Homocysteine has been known as a factor related to cardiovascular system. Homocysteine is a normal amino acid circulating in our body and its original from diet. Increase homocysteine can induce change in heart, such as endothelial dysfunction, collagen metabolism, and myocardial hypertrophy that interfere cardiac contraction which shows by decrease ejection fraction. Homocysteine metabolism correlate with folic acid before eliminate into cysteine from body. For instance, there is correlation between folic acid, homocysteine, and ejection fraction in chronic heart failure. Aim: To determine the correlation between folic acid, homocysteine, and ejection fraction in male chronic heart failure. Methods: This was an observational-analytic study with cross-sectional design. There were 24 male subjects with chronic heart failure. Folic acid, homocysteine, and ejection fraction were examined among these subjects. Results: There were negative, non significant, correlation between folic acid and homocysteine ($r = -0,174$, $p = 0,415$). There was positive, non significant, correlation between folic acid and ejection fraction ($r = 0,074$, $p = 0,732$). There was negative, non significant, correlation between homocysteine and ejection fraction ($r = -0,102$, $p = 0,637$). Conclusion: There was negative non significant correlation between folic acid with homocysteine. There was positive non significant correlation between folic acid with ejection fraction. There was negative non significant correlation between homocysteine with ejection fraction.

Keywords: Folic acid, Homocysteine, ejection fraction, chronic heart failure

[104]

**MEDICAL NUTRITION THERAPY IN COVID-19 WITH ACUTE MYELOID
LEUKEMIA: A CASE REPORT**Istiqomah YL^{1*} and Taslim NA²

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ABSTRACT

COVID-19 has been designated by WHO as a pandemic. The emergence of coronavirus disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) has brought forth new challenges in the management of serious diseases including hematological malignancies. Acute myeloid leukemia (AML) is a malignancy in the bone marrow characterized by immature white blood cell proliferation which can develop rapidly if not treated and fatal in a few months. The objective of this paper is to describe the importance of medical nutrition therapy in COVID 19 with acute myeloid leukemia and malnutrition. This case reported a 55-year-old woman who admitted to hospital diagnosed with COVID 19 and acute myeloid leukemia. The patient has short of breath, diarrhea and gum bleeding. In order to correct malnutrition, oral nutrition were administered. Improvement MUAC, thrombocyte, leukocyte dan hemoglobin were presented 13 days after admission. Medical nutritional therapy was determined with a calorie target of 1600 Kcal; protein 1.5 gram per kilogram ideal body weight per day; 50% and 31.7% calorie from carbohydrates and fat, respectively. Supplementation was given B1, B6, C, D, Curcuma, Snakehead fish extract. The patient was discharged after being treated for 13 days and recovered from shortness of breath. Hematology status continued to improve gradually and RT- PCR SARS-COV-2 was negatif within 17 days. She received medical nutritional therapy when her condition was stable, and her anthropometric parameters improved gradually improved. In Conclusion, Optimal treatment of the underlying disease and adequate nutritional therapy could improve nutritional status and immunity of COVID-19 patient with Acute Myeloid Leukemia.

Keywords: COVID-19, Acute Myeloid Leukemia, Moderate Malnutrition

[105]

ROLE OF OMEGA-3 FATTY ACID AS THROMBOLYTIC IN PATIENT WITH SEVERE PROTEIN ENERGY MALNUTRITION, OVARIAN CYSTIC NEOPLASM, PLEURAL EFFUSION, AND COAGULOPATHY ASSOCIATED COVID-19: A CASE REPORT

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ABSTRACT

The world is facing a global pandemic of severe acute respiratory syndrome caused by the new 2019 coronavirus (SARS-CoV-2). A number of reports have found the incidence of coagulopathy in COVID-19 patients, both in the form of arterial and venous thrombosis. Omega-3 fatty acids, which can help improve SARS-CoV-2 treatment and recovery in infected patients by reducing inflammatory responses and impaired coagulation. Case report; a 48-years-old female patient with severe protein energy malnutrition, pleural effusion, ovarian cystic neoplasm and coagulopathy associated COVID-19. Physical examination revealed loss of subcutaneous fat and performed water seal drainage (WSD) in left hemithorax. Blood test showed anemia (10,6 g dL⁻¹), leukopenia (1.800 ml⁻¹), hypoalbuminemia (2,6 g dl⁻¹), severe immune depletion (640 mL⁻¹), and coagulopathy (D-Dimer 10,92 ug ml⁻¹). Nutritional therapy was given via oral due to total energy requirement 1800 kcal and protein was given 1.5-2.0 g per kilogram body weight per day. Additional supplementations in the form of Eicosapentaenoic Acid (EPA) 1200-1500 mg, zinc, multivitamins, curcuma, and snakehead fish extract. After 9 days, patient was discharged from COVID-19 isolation room with adequate oral nutrition and WSD was removed. Improved blood test results such as immune status (640 to 2670 mL⁻¹), albumin (2,6 to 2,8 g dl⁻¹), and D-Dimer (10,92 to 6,06 ug ml⁻¹). In conclusion, nutritional therapy supported by omega-3 fatty acid, improved nutritional status and clinical outcome in patient with coagulopathy associated COVID-19.

Keywords: Omega-3 fatty acid, malnutrition, coagulopathy, COVID-19

[106]

**MEDICAL NUTRITIONAL THERAPY FOR WOUND DEHISCENCE AFTER
ABDOMINOPERINEAL RESECTION FOR RECTAL CANCER WITH SEVERE
MALNUTRITION : A CASE REPORT**

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ABSTRACT

Wound dehiscence is one of the most serious postoperative complications with high mortality and morbidity. Wound dehiscence patients with rectal cancer make many potential nutritional and metabolic problems. This study aimed to observe the role of medical nutritional therapy for wound healing. Case Report: 60-years old man with severe malnutrition (SGA score C, mid upper arm circumference 19 centimeters), admitted to hospital with abdominal pain and was diagnosed with wound dehiscence after abdominoperineal resection for rectal cancer. The wound seen redness with pus. Laboratory findings were anemia (10.3 g dL⁻¹), leukocytosis (14,600 mm⁻³), lymphopenia (197.8 μL⁻¹), thrombocytosis (487,000 mm⁻³), severe hypoalbuminemia (2.0 g dL⁻¹), mild hyponatremia (131 mmol L⁻¹) and decreased kidney function (ureum 66 mg dL⁻¹, creatinine 1.2 mg dL⁻¹). The methods in this study were nutritional therapy given gradually by providing energy 2000 kcal, protein 1.5 g per Ideal Body Weight per day by both oral and parenteral route. Supplementations administered were zinc, vitamin B complex, vitamin C, vitamin A, curcuma and snakehead fish extract with high albumin protein content. After 14 days, there was clinical and metabolic improvement. The wounds showed tissue granulation and absence of pus, increased hemoglobin level (10.3 to 11.8 g dL⁻¹), albumin (2.0 to 2.6 mg dL⁻¹), sodium (131 to 132 mmol L⁻¹), decreased leukocytes (14,600 to 8000 mm⁻³), platelets (487,000 to 253,000 mm⁻³), improvement kidney function (urea 66 to 49 mg dL⁻¹ and creatinine 1.2 to 0.80 mg dL⁻¹). In conclusion, nutritional therapy as a collaborative treatment in wound dehiscence after abdominoperineal resection for rectal cancer improves nutritional status and repairs wound healing.

Keywords: wound dehiscence, hypoalbuminemia, malnutrition, rectal cancer

[107]

MEDICAL NUTRITIONAL THERAPY IN COLORECTAL CANCER PATIENT AFTER HARTMANN PROCEDURE WITH SEVERE MALNUTRITION: A CASE REPORT

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ABSTRACT

Hartmann's procedure is a surgical procedure performed by resection of the sigmoid colon or rectum due to an abnormality or tumor in the sigmoid and rectum. Resection and anastomosis is often done in malnourished patients and in severe cases, known to improved post-operative morbidity. Nutritional support plays an important role in postoperative recovery, accelerates wound healing, minimizes metabolic imbalances and improves immune function. We present a case report of a 60-years old man with severe malnutrition (Subjective Global Assessment C), admitted to hospital with abdominal pain and was diagnosed with colorectal cancer post Hartmann procedure due to ileus obstruction. The laboratory results were anemia, severe immune depletion, severe hypoalbuminemia, moderate hyponatremia and decreased kidney function. Nutritional therapy was given by providing energy 1700 kcal, protein 1.4 to 1.7 gram per kilogram ideal body weight per day. Supplementations administered were zinc, vitamin B complex, vitamin C, vitamin A, curcuma and snakehead fish extract with high albumin protein content. Both parenteral and enteral nutrition were administered to obtain target nutrition requirement. After 15 days of nutritional therapy, he achieved 100% energy target with improvement of Mid Upper Arm Circumference (19.2 to 19.6 cm), increased Hemoglobin (9.6 to 10.2 g dL⁻¹), total lymphocyte count (772.2 to 1113 mL⁻¹), albumin (2.2 to 2.6 mg dL⁻¹), sodium (127 to 130 mmol L⁻¹) and Improvement of kidney function (urea 95 to 35 mg dL⁻¹), creatinine (1.11 to 0.50 mg dL⁻¹). In conclusion, medical nutritional therapy can help reduce inflammation, improve metabolic status and optimize postoperative patient clinical outcomes.

Keywords: colon, rectum, Hartmann procedure, medical nutritional therapy, malnutrition

[108]

MEDICAL NUTRITIONAL THERAPY IN PATIENTS TUBERCULOUS PLEURAL EFFUSION WITH HYPOALBUMINEMIA AND MODERATE MALNUTRITION : A CASE REPORT

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ABSTRACT

Tuberculous pleural effusion (TPE) results from Mycobacterium tuberculosis infection of the pleura and is characterized by an intense chronic accumulation of fluid and inflammatory cells in pleural space. Altered immune response because of malnutrition in tuberculosis infection could also occur. Malnutrition can lead to immunodeficiency that increases the host's susceptibility to infection, revealed to be associated with a prolonged length of hospital stay (LOS). Case Report; A 48-year-old female presented with dyspnea, cough, and decreased of appetite since the last one month. Physical examination revealed decreased vesicular sound in the right chest, there was rhonchi and muscle wasting. Blood tests showed anemia, leukocytosis, depletion of the immune system, hyponatremia, and hypoalbuminemia. From chest X-ray showed massive right pleural effusion, pleural fluid analysis showed an exudates, and cytological examination showed inflammatory lesions. She had underwent pleural fluid drainage through Water Seal Drainage (WSD) and treated with antibiotics, analgesics. In patients with tuberculosis, leads to reduction in appetite, nutrient malabsorption, and altered metabolism leading to wasting. Nutritional therapy was initiated from 900 kcal and increased gradually with total energy expenditure target 1900 kcal, 1.5-1.7 grams per ideal body weight per day of protein, 50% carbohydrates and 33.5% fat, with oral nutrition. Supplementations were administered; which were zinc, vitamin B complex, vitamin C, curcuma extract, fish oil, and extra snakehead fish albumin capsule. After 17 days of treatment, the patient experienced an improvement in appetite, and improvement of the blood test result (hemoglobin, white blood cells, immune status, blood sodium, and albumin). In conclusion, holistic treatment include medical nutritional therapy can improve clinical outcome of patient with tuberculous pleural effusion

Keywords: tuberculous, pleural effusion, malnutrition, nutritional therapy

[109]

NUTRITIONAL THERAPY IN DERMATITIS HERPETIFORMIS: A CASE REPORTMusyayyadah^{1*}, As'ad S² and Virani D²

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ABSTRACT

Dermatitis herpetiformis (DH) is an inflammatory cutaneous disease associated with an often asymptomatic gluten sensitive enteropathy characterized by chronic relapsing course, pruritic polymorphic lesions, and typical histopathological and immunopathological findings. According to several evidences, DH is considered the specific cutaneous manifestation of celiac disease. The skin lesions usually clear with gluten withdrawal but not in all adults. The aim of nutritional therapy was to fulfill macronutrients and micronutrients, reduce inflammation, improve nutritional status. Case reports; a woman 27 years old, admitted to hospital with pruritic lesions all over the body, hyperpigmented plaques, erosions, excoriations, squama in the facial region, extremity region superior et inferior dextra et sinistra, truncus anterior et posterior region and itching. The patient was diagnosed with dermatitis herpetiformis. Nutritional medical therapy with a gluten-free diet was given with a total energy of 2000 kcal, protein 1.5-2 gram per ideal body weight per day, carbohydrates 55% and fat 29.72%. with additional supplementation zinc, Vitamin B Complex, Vitamin C, Vitamin A and snake head fish extract high content protein albumin (Pujimin®). After 31 days of treatment there was clinical improvement in skin lesions and metabolic changes in leukocytosis (21500 to 16600 ul⁻¹), thrombocytosis (434000 to 307000 mm⁻³), albumin (3.2 to 4 g dL⁻¹). In conclusion, nutritional therapy in dermatitis herpetiformis with the adequate nutritional therapy with gluten free diet with macronutrients and micronutrients can improve nutritional status and clinical outcome.

Keywords: nutritional therapy, dermatitis herpetiformis, gluten free

[110]

**MEDICAL NUTRITIONAL THERAPY FOR ILEOSTOMY DUE TO
ADENOCARCINOMA OF ILEUM WITH SEVERE MALNUTRITION: A CASE
REPORT**

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ABSTRACT

An ileostomy is a condition in which the entire colon, rectum and anus are not used temporarily for wound healing before reuse. This procedure decreased absorption of fats, fatty acids, bile acids and vitamin B12 and loss of electrolyte. Nutritional management aims to prevent stoma blockage, improve wound healing and minimize unpleasant gastrointestinal disorders. We present a case report of a 59-years old female patients, with Post Surgical Resection and Ileostomy due to Ileal Tumor with Severe Protein Energy Malnutrition (Subjective Global Assessment C). She was diagnosed with ileus and intestinal obstruction at admission. On laboratory findings, she had normocytic normochromic anemia with hemoglobin 9.4 g dL⁻¹, leukocytosis 20,700 mm⁻³, thrombocytosis 488,000 mm⁻³, hypoalbuminemia 2.4 g dL⁻¹, and hyponatremia 133 mmol L⁻³. The patient experienced postoperative complications with a high output stoma and thought occurred due to inflammation and excessive fluid intake. Nutritional therapy is given a total energy of 1550 kcal to 1900 kcal, combine oral and parenteral nutrition with protein composition of 1.2-1.7 gram per ideal body weight per day. Supplementations were administrated; which were Zinc, Vitamin B-complex, Vitamin A, Vitamin C, Curcuma and Snakehead Fish Extract with high protein albumin content. After 8 days of treatment, the patient was discharged with improvement in clinical and functional capacity (by a handgrip from 3.3 to 13.5 kg). Laboratory improvement was found, hemoglobin 10.3 g dL⁻¹, leukocytes 11,700 mm⁻³ and albumin 3.1 g dL⁻¹. In conclusion, nutritional therapy with adequate macronutrients and micronutrients can improve nutritional status and quality of life to treat postoperative complications the surgical resection and ileostomy due to ileal tumor.

Keywords: Adenocarcinoma of ileum, ileostomy, medical nutritional therapy, severe malnutrition

[111]

**MEDICAL NUTRITION THERAPY IN TYPE II DIABETES MELLITUS WITH
SPLENORENAL ABSCESS, PLEURAL EFFUSION, AND SEVERE
MALNUTRITION: A CASE REPORT**

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ABSTRACT

Uncontrolled diabetes mellitus can cause malnutrition, immune dysfunction, and poor clinical outcomes. Diabetes mellitus is a risk factor for splenic abscess. Splenic abscess is a rare case, but it can cause mortality of more than 70%. This study aimed to observe the role of medical nutrition therapy as one of the pillars in managing type 2 diabetes mellitus. A case report of 49 years old man, hospitalized with severe upper left abdominal pain, shortness of breath, and unintentional weight loss. Patients were diagnosed with splenorenal abscess, left pleural effusion, type 2 diabetes mellitus, severe malnutrition (SGA score C; BMI 18,75 kg m⁻²; MUAC 21.2 cm), and underwent emergency laparotomy surgery with hyperglycemia, leukocytosis (16.700 g dl⁻¹), immune depletion (total lymphocyte count 1116 µL⁻¹), and increased neutrophil to lymphocytes ratio (9.8). The methods in this study were nutritional therapy given gradually with 2100 kcal target of energy, protein 15-18%, carbohydrates 45-50%, fat 30-32%, through oral, enteral, and parenteral nutrition. Supplementations of zinc, vitamin B complex, C, A, D, folic acid, eicosapentaenoic acid, and snakehead fish extract were given. Results of nutritional therapy after 20 days treatment in hospital, the patient was discharged with improvement in clinical condition, immune status (leukocyte 8700 g dL⁻¹, TLC 2871 µL⁻¹, NLR 2,8), and controlled blood sugar. After 6 months of nutritional therapy at home, the patient showed improvement in nutritional status (BMI 23,4 kg m⁻²; MUAC 28 cm), functional capacity (handgrip strength 6.3 kg to 23.6 kg), and also awareness. In conclusion, medical nutrition therapy plays an important role in the managing of type 2 diabetes mellitus to optimize glycemic control, improve nutritional status, immune function, and clinical outcomes.

Keywords: abscess splenic, diabetes mellitus, malnutrition

[112]

**NUTRITION THERAPY IN CEREBRAL MALARIA, VEGETATIVE STATE,
HOSPITAL-ACQUIRED PNEUMONIA, SEVERE MALNUTRITION**Asmawaty Y^{1*} and Taslim NA²

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ABSTRACT

Cerebral malaria (CM) is one of the most common complications of Plasmodium falciparum infection. Nutrition and infection are related to each other in several aspects. Nutritional status affects the immune system and the occurrence of infectious diseases. Vegetative state (VS) is a consciousness disorder in which patients with serious brain damage. Almost all of the patients with a VS cannot eat and drink orally, thus affecting the nutritional intake which has an impact on the patient's nutritional status, so that adequate nutritional therapy is needed. Case Report; A 30-year-old male patient with severe malnutrition diagnosed with CM, VS, Hospital-Acquired Pneumonia, decubitus ulcer was admitted to an internal medicine ward Wahidin Hospital. Nutritional intake was given via a nasogastric tube but was inadequate. Physical examination reveals loss of subcutaneous fat, pneumonia, rhonchi, and muscle wasting. Blood test shows anemia, hypokalemia, hypoalbuminemia, elevated transaminase enzymes, depletion of the immune system. Medical nutrition therapy was given with a total calorie of 1900 kcal and increased gradually to 2500 kcal, protein 1.5-2 g per IBW per day using normal food, oral nutritional supplements and an additional supplementation in the form of zinc, multivitamins, curcuma, folic acid and snakehead fish extract capsules. After 37 days of nutritional treatment, the patient was discharged from the hospital without shortness of breath and adequate nutritional intake as assessed by an increase in upper arm circumference. Decubitus ulcer wound healed. Improved blood test results (hemoglobin, immune status, albumin, potassium, SGOT, SGPT). Conclusion, special nutritional therapy CM and VS can reduce inflammation or hypermetabolic and complications due to underlying disease, proper monitoring and nutritional education to the patient's family gives good results for the patient.

Keywords: Cerebral malaria, vegetative state, nutritional therapy, malnutrition

[113]

NUTRITIONAL THERAPY FOR HUMAN IMMUNODEFICIENCY VIRUS INFECTION AND COVID-19: A CASE REPORT

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ABSTRACT

Human Immunodeficiency Virus (HIV) infection decreased immune system within the body. In advanced stage, People Living with HIV AIDS (PLWHA) are vulnerable to many infectious disease. Coronavirus Disease (COVID 19) is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and vulnerably infecting the PLWHA. These two diseases can result in severe symptoms and even death. PLWHA with infection are risk to malnutrition due to high demand of energy intake and with COVID-19 need nutritional therapy by fulfilling macro and micronutrient, energy, fluid and other nutrient that can acts as an immunomodulator, anti-inflammation, and anti-oxidant. Case report: A 30-year-old man had shortness of breath, cough, fever, dysphagia and appetite loss and worsened since the last 3 weeks. HIV antibody was tested and a positive result was obtained. The patient also underwent nasopharyngeal swab for SARS-CoV-2 RT-PCR examination and got positive. In laboratory examination tests, he had hyponatremia, hypokalemia, hypoalbuminemia, and increased quantitative C-Reactive Protein (CRP). The nutritional intervention target given is 2800 kcal consisting of 13.5-18% of protein which contains high protein and immunomodulatory oral nutrition support. Multivitamins, especially vitamins C and D as well as zinc and selenium were given as anti-inflammatory and anti-oxidants. After 12 days of treatment, the patient experienced an improvement in appetite and laboratory parameters such as electrolytes, albumin and CRP. The patient was discharged with clinical and laboratory parameters improvement. Conclusion: nutritional therapy is essential collaborative treatment in infectious diseases in HIV and COVID-19 infections.

Keywords: COVID 19, HIV infection, malnutrition, Nutritional Therapy

[114]

**NUTRITIONAL THERAPY FOR COVID 19 AND CHRONIC KIDNEY DISEASE: A
CASE REPORT**

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Indonesia**nevi2111@gmail.com**ABSTRACT**

Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2. In the Oxford Royal College of General Practitioners Research and Surveillance Centre found that individuals with Chronic Kidney Disease (CKD) were more likely to test positive for COVID-19 32.9% with CKD vs 14.4% without CKD. Chronic kidney disease is simultaneously associated with immune activation characterized by systemic inflammation and immune deficiency, making it susceptible to infection. The goals of nutritional therapy in CKD with COVID 19 are to improve kidney function and clinical conditions, to fulfill macro and micronutrient needs, to accelerate the healing process and to improve the immune system and nutritional status. A 28-year-old male was diagnosed with COVID 19 and chronic kidney disease, moderate protein energy malnutrition (Subjective Global Assessment Score B), anemia (8 g dL⁻¹), leukopenia (3300 µl), immune system depletion (Total Lymphocyte Count / TLC 897 µl), prolonged coagulation period (APTT 36 seconds), decreased renal function (urea 161 mg dL⁻¹, creatinine 21.57 mg dL⁻¹) and hypermagnesemia (3.33 mg dL⁻¹). Nutritional therapy was given with total energy expenditure 1800 kcal and increased gradually to 2100 kcal, protein 1-1.4 g per kg IBW per day, carbohydrates 50-55%, fat 31.8-33.8%. Supplementation was zinc, vitamin B1, vitamin B6, vitamin B12, folic acid, vitamin C, vitamin D, curcuma, and probiotics. The patient was discharged after 33 days with clinical and laboratory improvement (Hb 9 g dL⁻¹, leucocyte 5100 µl, TLC 990 µl, creatinine 17.7 mg dL⁻¹, magnesium 2.9 mg dL⁻¹). In conclusion, adequate nutritional therapy with macronutrients and micronutrients can improve nutritional status and improve kidney function.

Keywords: COVID 19, chronic kidney disease, nutritional therapy

[115]

**NUTRITIONAL THERAPY IN SUBDURAL HEMATOM PATIENTS WITH
MALNUTRITION, DECUBITUS ULCER GRADE IV, HYPOALBUMINEMIA AND
DEPLETION OF THE IMMUNE SYSTEM : A CASE REPORT**

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ABSTRACT

Subdural hematoma is a bleeding that occurs between layer of duramater and arachnoid caused by rupture of bridging vein within subarachnoid or cerebral cortex which passes subdural space into dural venous sinuses due to head trauma. More aggressive neurosurgical management of intractably elevated intracranial pressure has resulted in increased survival of severely brain injured patients, many of whom are transferred for inpatient rehabilitation status post craniectomy. Decubitus ulcers remain a common and recurring problem amongst overly ill patients, especially those who are bed-bound post intervention after elective craniotomy. A 71-year-old female was diagnosed decreased awareness caused by chronic subdural hematoma post traumatic brain injury with low food intake since 17 days ago, she has required NGT feeding for over 15 days ago. Decreased awareness (E4M4Vx), wasting and weakness was found. Mid-arm circumference (MAC) was 21,5cm. Laboratory results were normochromic normocytic anemia, severe depleted immune system, hypoalbuminemia, hyponatremia, hypokalemia, and hyperglycemia. Medical nutritional therapy was determined with a total energy expenditure was 1550-2200 kcal, consisting of 19-22,78% of protein, carbohydrates 50%, and fat 29,3%. We provided supplementation in the form of zinc, vitamin B complex, vitamin A, vitamin C, curcuma, glutamine, and extra snakehead fish albumin capsule. Nutritional therapy aims to improve nutritional status, metabolic status and support the wound healing process. Patient hospitalized for 31 days then discharged with clinical and laboratory improvement conditions.

Keywords: subdural hematoma, decubitus ulcer, malnutrition, nutritional therapy

[116]

FACTORS LINKED WITH PATIENTS BYPASSING PRIMARY HEALTHCARE CENTERS IN A CENTRAL REGION OF SAUDI ARABIAAlqossayir FM¹, Rasheed Z¹, Alkhawailed MS², Alsaeed A^{3*}, Alamri YY³ and Alammar A³

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ABSTRACT

Background: Patients bypassing primary healthcare centers (PHCs) is an indication of either significant problems in the healthcare system or significantly better care at the alternative care sources. This study was undertaken to investigate the reasons why patients with common illnesses bypass the local PHCs facilities in Qassim, Saudi Arabia. Purpose: This study was undertaken to investigate the reasons why patients with common illnesses bypass the local PHCs facilities in Qassim, Saudi Arabia. Methods: A cross-sectional study performed on 266 patients, attended the Emergency departments in public hospitals in Qassim Region. Patients were randomly selected and were categorized as Level Five Patients (LFPs) using the Canadian System Acuity Triage for patient characterization. Statistical Package for Social Sciences (SPSS) was used for data entry, cleaning and analysis. Results: Out of 266 patients, 85.7% were experienced with PHCs facilities. The majority of the patients were not satisfied with their treatment at PHCs. About 52.9% patients reported that the working hours of PHCs were not sufficient, 38.1% patients reported the lack of experienced staff, 31.7% patients believed that PHCs were insufficient for diagnostic measurements, whereas 13.8% patients reported the unavailability of prescribed medicines. Importantly, 17.7% patients reported that they never bypassed PHCs and were availing their facilities. Interestingly, data also demonstrated that the patient's gender, employment, marital status have no significant role in skipping PHCs to the emergency departments ($p>0.05$). Conclusions: Patients bypassing PHCs without a referral form is a serious concern that will affect the healthcare systems particularly emergency departments. If bypassing continues, it will surely increase the burden on the emergency departments, which further adversely affect the healthcare services for the general population.

Keywords: healthcare systems, PHCs, bypassing, emergency departments, Qassim, Saudi Arabia

[117]

**NEW NORMAL COUNSELING FOR THE CIVITAS OF THE FACULTY OF
AGRICULTURE, UNIVERSITAS BRAWIJAYA**Rahmah SN^{1*} and Holipah²*¹Hospital Management Masters Degree Program, Faculty of Medicine, Universitas
Brawijaya, Indonesia**²Hospital Management Masters Degree Program, Faculty of Medicine, Universitas
Brawijaya, Indonesia**shofinurrahmah@ub.ac.id**ABSTRACT**

COVID-19 has infected a lot of people and caused a lot of death. New normal is an effort to ensure that community activities are going well by implementing health protocols. The low level of adherence of Malang City residents to health protocols causes an increase in COVID-19 cases in Malang City and at Brawijaya University. Knowledge has an influence on the level of compliance. This study aims to determine differences in the level of knowledge of the target group based on the online intervention method, a two-way intervention by using online counseling. Activities are carried out through discussions and development of educational programs for the Civitas of Faculty of Agriculture, Universitas Brawijaya. The study used a pre-experimental research design with a one shot case study design, data collection (post-test) was carried out after the counseling. The research subjects are lecturers and education staff of the Faculty of Agriculture, Universitas Brawijaya. It was found that from the 24 subjects who filled out the intervention post test, 88.9% of lecturers and 66.7% of education staff already had a good level of knowledge. The results of this community service activity show that the level of knowledge of the Academic Community of the Faculty of Agriculture, Universitas Brawijaya is quite good in dealing with the COVID-19 pandemic. Health protocols, especially in the workplace, it must be carried out and improved to break the chain of spread of COVID-19.

Keywords: COVID-19, health protocol, civitas of Universitas Brawijaya, Faculty of Agriculture

[118]

CAN THE UNITED KINGDOM'S HEALTHCARE ECONOMY BECOME COMPLETELY CIRCULAR IN THE FUTURE?

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ABSTRACT

We are going through resource consumption at a rate faster than the rate at which we can replenish them, as supported by the Global Footprint's Network's data on the number of worlds we are consuming through our 'business as usual' activities. With the increase in concern over sustainability in the 21st century, many corporations, including hospitals, have moved towards more 'green' operations. A circular economy aims to pursue "holistic sustainability goals through a culture of no waste" (De los Rios *et al.*, 2016). This project aimed to evaluate the feasibility of a future circular UK healthcare economy, with special regards to maximising value extraction and re-investment of healthcare waste. This was assessed through the research question: "Can the United Kingdom's healthcare economy become completely circular in the future?". Primary research was undertaken, with specialists in the field of waste and medical equipment management working in a major London hospital being interviewed. This was supplemented with secondary research through literature searches of databases such as PubMed. Evidence was found of successes both in the UK and abroad where improvements in waste management allowed hospitals to run smoother on the healthcare side of operations. From this study, we were able to produce recommendations for how hospitals within the UK can push towards a 'circular healthcare economy'. These recommendations include implementing a lean methodology, pushing towards higher recycling rates and attempting to recuperate the initial investments made towards equipment. In conclusion, we believe that hospitals within the UK can make a bigger push for circularity in their healthcare economy, with the recommendations made providing a potential stepping-stone towards this.

Keywords: circular economy, healthcare, waste, sustainability

[119]

**PREVALENCE OF LOW BACK PAIN AMONG SAUDI TEACHERS, QASSIM,
SAUDI ARABIA**Alsaeed A¹, Alresaini I², Alsaeed A^{2*}, Alawaji Z², Alammam A² and Alajlan A²

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ABSTRACT

Background: Low back pain (LBP) is broadly recognized as significant health and socio-economic problem, and school teachers have a high risk for developing low back pain. Factors that contribute to an increased risk of LBP among teachers include prolonged sitting and standing, long hours working at a computer. Purpose: This study investigates the prevalence of LBP among Saudi teachers in Qassim region, compares prevalence between male and female teachers, and determines its associated risk factors. Methods: This was a cross-sectional study among Saudi teachers working in primary, intermediate, and secondary schools in Buraydah, Qassim Region, Saudi Arabia. We enrolled 369 teachers using a simple random technique. Data were collected using a structured self-administered questionnaire. Data entry, cleaning, and analysis used the Statistical Package for Social Sciences (SPSS). Results: The prevalence of LBP among school teachers was 79.8% with no significant difference between males and females (P value 0.2798); 76.1% of have a minimal disability, 19.7% have moderate disability, 3.4% have a severe disability, and 0.9% were crippled. Factors that showed a significant relationship were the number of classes per week (P value 0.0018) and sleeping hours per day (P value 0.0091). Conclusions: This study reveals a high prevalence of LBP among schoolteachers in Qassim, Saudi Arabia, and comparable to the prevalence rates documented in other countries. LBP risk factors were sleeping per hour and the number of classes per week.

Keywords: low back pain, Orthopedic department, teachers, Qassim region, Saudi Arabia

[120]

HUMANS OF COVID-19: SHARING EMOTIVE INTERVIEWS FROM THE FRONT-LINE ON SOCIAL MEDIA LEADS TO POSITIVE HEALTH BEHAVIOURAL CHANGE

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ABSTRACT

Lack of adherence to government guidelines has caused viral spread during the COVID-19 pandemic. Emotions drive health behaviours and can be an effective motivational tool (Rader *et al.*, 2021; West *et al.*, 2020). [3][4] Consequently, a novel form of public health project was developed, using social media to share emotive stories from the front-line and the impact was measured Strömmer *et al.*, 2020; Ferrer, *et al.*, 2016). A 'Humans of COVID-19' page was created on Instagram and Facebook in April 2020. Phone interviews of front-line workers from around the world were conducted and excerpts were posted with their photograph. In February 2021, anonymous follower data were collected via the pages' insight function. Followers were surveyed via a Facebook post and Instagram's story function. Followers were asked: 'Has this page made you more likely to follow the COVID-19 guidance?' and 'In what way have these stories changed your behaviour?'. All followers were eligible, and all responses were included in the analysis. Ethical principles were adhered to. The written responses were analysed using thematic analysis. In February 2021 there were 37,459 followers from 43 countries. 81.5% were from the United Kingdom. 85.7% were women and 60.6% of followers were between the ages of 25-44. 202 interviews were posted. Four posts 'went viral', reaching over 600,000 people. One post reached 2.8 million people and featured in newspapers globally. Of the 1041 followers that responded, 86.7% reported increased likelihood to follow the guidance as a direct result of the project. 181 left comments, the majority of which attributed their behavioural change to increased empathy for front-line workers. Sharing emotive stories from the front-line on social media successfully encouraged adherence to the COVID-19 guidance. This methodology could be replicated to drive other positive health behaviours.

Keywords: social media, COVID-19, interviews, empathy, health behaviours

[121]

**DIRECT ACTING ORAL ANTICOAGULANTS (DOACS) FOLLOWING
GASTROINTESTINAL TRACT RESECTION OR BYPASS**Hakeam HA¹, AlKhani MA², Yahya ZA³, Alawaji Z^{4*}, Ofori S⁵

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ABSTRACT

Background: Direct-acting oral anticoagulants (DOACs) vary in bioavailability and sites of absorption in the gastrointestinal tract (GIT). Data on DOAC use after major GIT surgery are limited. The aim of this case series was to report the impact of surgical resection or bypass of the GIT on rivaroxaban and apixaban peak plasma levels. **Purpose:** The aim of this case series was to report the impact of surgical resection or bypass of the GIT on rivaroxaban and apixaban peak plasma levels. **Methods:** A single-center, retrospective, case series of patients who received either rivaroxaban or apixaban after GIT resection or bypass, during the period of July 1, 2019, to December 31, 2020. Peak plasma levels of rivaroxaban and apixaban were assessed for the effective levels. **Results:** Of 27 patients, 18 (66.7%) received rivaroxaban, and 9 (33.3%) received apixaban. After rivaroxaban therapy, 4 of 5 patients (80%) who underwent gastrectomy, and 3 of 3 patients (100%) who underwent duodenum and proximal jejunum exclusion had peak plasma levels of rivaroxaban lower than the effective range, whereas 11 of 11 patients (100%) who underwent distal bowel or ileostomy had peak rivaroxaban plasma within the effective range. After apixaban therapy, 5 of 6 patients (83.3%) who underwent total or partial gastrectomy achieved effective peak levels. All the patients who underwent proximal and distal bowel resection or bypass had peak levels of apixaban within the effective range. **Conclusions:** Surgical resection or bypass of the upper GIT could affect DOAC absorption and subsequently peak plasma levels. This effect was more observed among rivaroxaban recipients. An injectable anticoagulant or vitamin K antagonist may be preferred if DOAC levels cannot be measured after GIT surgery.

Keywords: Direct acting oral anticoagulant, DOAC, rivaroxaban, apixaban, surgery, bowel resection, gastrointestinal tract surgery

[122]

**TRIAGING OF RESPIRATORY PROTECTIVE EQUIPMENT ON THE ASSUMED
RISK OF SARS-COV-2 AEROSOL EXPOSURE IN PATIENT-FACING
HEALTHCARE WORKERS DELIVERING SECONDARY CARE: A RAPID
REVIEW**

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ABSTRACT

Objectives In patient-facing healthcare workers delivering secondary care, what is the evidence behind UK Government personal protective equipment (PPE) guidance on surgical masks versus respirators for SARS-CoV-2 protection? **Design** Two independent reviewers performed a rapid review. Appraisal was performed using Critical Appraisal Skills Programme checklists and Grading of Recommendations, Assessment, Development and Evaluations methodology. Results were synthesised by comparison of findings and appraisals. Data sources MEDLINE, Google Scholar, UK Government COVID-19 website and grey literature. **Eligibility criteria** Studies published on any date containing primary data comparing surgical facemasks and respirators specific to SARS-CoV-2, and studies underpinning UK Government PPE guidance, were included. **Results** Of 30 identified, only 3 laboratory studies of 14 different respirators and 12 surgical facemasks were found. In all three, respirators were significantly more effective than facemasks when comparing protection factors, reduction factors, filter penetrations, total inspiratory leakages at differing particle sizes, mean inspiratory flows and breathing rates. Tests included live viruses and inert particles on dummies and humans. In the six clinical studies (6502 participants) included the only statistically significant result found continuous use of respirators more effective in clinical respiratory illness compared with targeted use or surgical facemasks. There was no consistent definition of ‘exposure’ to determine the efficacy of respiratory protective equipment (RPE). It is difficult to define ‘safe’. **Conclusions** There is a paucity of evidence on the comparison of facemasks and respirators specific to SARS-CoV-2, and poor-quality evidence in other contexts. The use of surrogates results in extrapolation of non-SARS-CoV-2 specific data to guide UK Government PPE guidance. The appropriateness of this is unknown given the uncertainty over the transmission of SARS-CoV-2. This means that the evidence base for UK Government PPE guidelines is not based on SARS-CoV-2 and requires generalisation from low-quality evidence of other pathogens/particles. There is a paucity of high-quality evidence regarding the efficacy of RPE specific to SARS-CoV-2. UK Government PPE guidelines are underpinned by the assumption of droplet transmission of SARS-CoV-2. These factors suggest that the triaging of filtering face piece class 3 respirators might increase the risk of COVID-19 faced by some.

Keywords: COVID-19, PPE, FFP3, FRSM, Evidence-based medicine

[123]

THE IMPACT OF ONLINE CLASSES ON PHYSICAL HEALTH: A CASE STUDY

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ABSTRACT

The fact that people have been asked to stay in their homes for months poses a significant challenge to their health, because of prolonged inactivity including bed rest, and reduction of steps (Narici, 2020). A sedentary lifestyle is sufficient to cause muscle loss, insulin resistance, decreased aerobic capacity, fat deposition. Regular physical activity and a proper diet are highly recommended for maintaining muscle strength, preventing nerve damage, lowering insulin resistance, improving your quality of lifestyle(Narici,2020; Rodriguez,2020; Baker,2018, Biolo,2005)When you are inactive, there are changes in your body's ability to regulate hormones and blood sugar levels(Kirwan, 2020). This is based on a series of 12 weeks of lectures that occurred online where the mentor was located in the United States and the students participated from many countries. Previously, studies have only focused on one aspect of our system. But this paper would be based on considering the adverse effect of prolonged sitting. Students need to get a break between classes, for correct posture.

Keywords: online classes, pandemic, posture, physical health

[124]

**SYSTEM DESIGN OF OCCUPATIONAL HEALTH SERVICES FOR
MANAGEMENT OF COVID-19: A CASE STUDY OF PUBLIC HOSPITAL OF
NGANJUK, INDONESIA**

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ABSTRACT

With the rapid transmission of Coronavirus Disease (COVID-19), health workers as the backbone of health systems are impacted greatly. Increased workloads, high risk of contracting infection, fatigue, also psychosocial stress. Some researches resulted that mobile health development can help to monitor and manage these issues. This research aims to address these problems by designing a system of occupational health service for the management of COVID-19 cases which is designed for the health workforces to be easily accessed and informed. The system design is made with the prototyping method and gathering the information from the potential users using in-depth interviews and focus group discussions, consist of 10 (ten) medical workers and 10 (ten) non-medical workers from the Public Hospital of Nganjuk, Indonesia. The results were that most of the non-medical staff, (such as staff from the laundry, corpse handling, also cleaning service installations), said that the development of this system would help them to get the information and doing self-monitor about the right procedure using Personal Protective Equipment. Meanwhile, the medical staff needed the system which would be developed to be integrated with the hospital protocols of self-isolation and safe return to work for infected health workers. In conclusion, this system can be helpful for health workers in general and support from the managerial and the local government is needed.

Keywords: occupational health services, hospital, COVID-19, health workers

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**ANALYSIS OF FACTORS AFFECTING THE HORMONAL CONTRACEPTIVE
METHOD SELECTION FOR FAMILY PLANNING ACCEPTORS IN
PHARMACIES IN MALANG, INDONESIA**

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ABSTRACT

The Indonesian government is aiming to lower the population through the family planning (KB) program. To achieve this goal, steps have been made to regulate pregnancy through hormonal and non-hormonal contraception. The number of contraceptive users in Indonesia is still relatively low, that is 1.10% and 3.87% in the city and regency of Malang, respectively. It can be caused by barrier factors for acceptors to obtain KB services. Pharmacists can play a part in selecting the appropriate hormonal contraceptive method for KB acceptors. This study aims to identify factors that can influence the selection of hormonal contraceptive methods for KB acceptors in pharmacies in Malang. This research is analytic observational. The sampling method used was the purposive sampling technique and obtained a sample of 200 KB acceptors. Data were collected by direct interviews using a research instrument in the form of questionnaires. The chi-square test results show the four factors that significantly influence the choice of hormonal contraceptive methods, i.e. income ($p = 0.035$), costs for obtaining KB services ($p < 0.001$), the degree of severity of side effects ($p < 0.001$), and duration of experiencing effects side ($p < 0.001$). Meanwhile, the logistic regression results show the influencing factors that are the cost of obtaining KB services (OR = 1.38; 95% CI = 1.11-1.76; $p = 0.011$) and the degree of side effect severity (OR = 36.54; 95% CI = 7.48-178.66; $p < 0.001$). Based on the results of this study, the two factors that substantially influence KB acceptors in choosing hormonal contraception are the cost of obtaining KB services and the degree of severity of side effects.

Keywords: family planning (KB), hormonal contraception, KB acceptors, pharmacies

[126]

**ASSOCIATION OF BIOMECHANICAL RISK FACTORS AND
MUSCULOSKELETAL DISORDERS IN THE ADMINISTRATIVE POPULATION
OF COLOMBIA**

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ABSTRACT

Musculoskeletal disorders (MSDs) are one of the most common occupational diseases worldwide and occur due to sociodemographic conditions such as age or sex; also by exposure to biomechanical risk. Biomechanical risk is associated with those postures or movements that generate tissue damage such as prolonged postures, repetitive movements and physical exertion. MSDs affect the health, productivity and development of workers' daily activities; on the other hand, for organizations, high costs are generated for work disabilities and therapeutic treatments. The purpose of this article is to determine the relationship between the symptomatology of MSD with age, gender, and biomechanical risk factors such as repetitive movements, manual lifting of loads, and maintained, prolonged, and uncomfortable postures. For the development of the research, a Nordic questionnaire was conducted with 208 workers who perform office work in the city of Bogotá, Colombia. Each worker was asked about their sociodemographic characteristics, working conditions and whether there was pain in the body segments: neck, shoulders, arms, hands and wrists. Statistical analysis was performed with binary logistic regression testing. A statistically significant relationship between gender and MSD was determined in the neck ($p=0.005$), left shoulder ($p=0.006$) and right arm ($p=0.010$). Age was related to the symptomatology of MSD in right man ($p=0.037$). Prolonged postures were associated with MSD in the neck ($p=0.003$) and right hand-wrist ($p=0.017$). The uncomfortable postures showed correlation with MSD in the right man ($p=0.018$) and with the left hand-wrist ($p=0.021$). In conclusion, MSDs in the administrative population are determined mainly by gender and by the position demanded at work.

Keywords: musculoskeletal disorder, biomechanical risk, office worker, ergonomic risk

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**IMPROVING PRIMARY CARE THROUGH COLLECTIVE AND ACCOUNTABLE
LEADERSHIP IN A POST-PANDEMIC PARADIGM: A PRELIMINARY CASE
STUDY FROM SAUDI ARABIA**

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ABSTRACT

The leadership of healthcare in the Kingdom of Saudi Arabia (KSA) is undergoing a 10-year transformational programme introducing the most significant change in the history of its healthcare. The scope is considerable, constituting a large-scale transformation. Healthcare is one of six strands of the reform programme aiming to offer a fulfilling and healthy life for its population. The implementation of enhanced primary care services and team-based care is a major element of this transformation. It provides a unique opportunity to evaluate the impact of transformational change in improving public health on a longitudinal basis. The current COVID-19 pandemic presents both challenges and opportunities. This paper will focus on a discourse analysis, using realist evaluation, of conversations that took place during an event for senior leaders at national level, hosted by the KSA Healthcare Leadership Academy (HLA) in December 2020. The event focused on exploring lessons learnt from the immediate response to the pandemic and how these can be applied to improve a post-pandemic health system. The evaluation's findings are considered within the context of the HLA vision and mission: 'To unleash individual and collective leadership potential to achieve better health and care through accountable leadership.' There is a dearth of research that combines collective and accountable leadership. This paper will explore the concept of an Accountability Imperative Framework as part of a collective leadership approach. This practical focus will enhance understanding of how to improve primary care through integrated services based on evidence-based understanding of population health needs and accountabilities. The methodological approach to evaluating this on a longitudinal basis will be outlined.

Keywords: COVID-19, Reform, primary-care, leadership, accountability

[128]

**PATIENT EXPERIENCE WITH TELEMEDICINE IN PRIMARY CARE DURING
THE COVID PANDEMIC: A QUALITATIVE STUDY**

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Institute of Public Health and Medical Law, Charles University, Prague, Czechia*elena.tulupova@lf1.cuni.cz**ABSTRACT**

The Czech Republic is one of the countries with the low rate of digitization of health care processes, and the current legislation provides only isolated elements of electronic health care. Due to the COVID-19 pandemic, Czech general practitioners (GPs), as in other countries, had to rapidly switch to telemedicine visits. Information on patient perspectives about these visits is lacking. Our study aims to understand patients' perceptions about telemedicine visits at GPs during COVID-19, and to identify barriers and benefits of telemedicine in primary care. A qualitative approach was applied: 40 semi-structured interviews were conducted (25 patients who had telemedicine visits with a GP, 15 representatives of patients' organisations). Data was analysed using a thematic analysis. As result, it has been shown that telemedicine visits took place mainly through telephone and email communication, without using the full potential of telemedicine. The absence of legal regulation and guidelines for telemedicine and the implementation of telemedicine in primary care without prior adaptation generates a number of problems in the patient-physician relationship. The unregulated use of telemedicine leads to inequalities in access to healthcare. Persistent medical paternalism has also been shown to significantly affect telemedicine visits in primary care. The results of our research will be used for the proposal of legislative changes in the field of distance care. Telemedicine guidelines as well as an educational program for patients on the improvement of their digital health literacy and on communication in healthcare using digital technologies will be created. The project TL04000105 "Digital literacy in primary health care: COVID-19 as a challenge for the development of information communication technologies" was funded by the Technology Agency of the Czech Republic.

Keywords: digital health, primary care, COVID-19, patient

[129]

**HEALTH PROGRAM EVALUATION ON VIOLENCE AGAINST WOMEN
MANAGEMENT IN PRIMARY CARE HEALTH SERVICES (PUSKESMAS) IN
KOTA MALANG**

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ABSTRACT

Health services are a crucial factor needed by women who have undergone mostly physical violence. But unfortunately, the high incidence of violence against women in the community was not coexisting with its quality of health services. Many health providers did not recognize, lack confidence, and do not know what to do in handling VAW cases in their clinics. Therefore, the exploration regarding factors influencing the VAW health service quality is needed. This study was qualitative research using a grounded theory approach to construct the logic model evaluation of VAW management in the Puskesmas. Data were obtained through focused group discussion followed by an in-depth interview with the program manager in the Puskesmas. A desk review was also conducted to complete the finding. Six main components cause the services of VAW cases cannot be optimal, which are: physician (shortage of physician, physician lack of VAW knowledge, physician lack of counseling skill), infrastructure (private room unavailable), Standard Operational Procedure (no standardized SOP, SOP are not well known by Puskesmas staff), Visum et Repertum (VR only allowed in provincial hospital and expensive), Budgeting (lack of program budget) and lack of coordination. Improvements to VAW case management in health services require various approaches following the findings of this study. Some activities which can be planned are advocacy to the local Government to increase budget allocation for strengthening the capacity of the health providers and also to meet the infrastructure needs as well as coordination among stakeholders.

Keywords: Violence against Women, Primary Health Care Services, Puskesmas, Health Program Evaluation, Logic Model

POSTER PRESENTATIONS

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CRIMES AGAINST CHILDREN: VIOLENCE AT SCHOOL

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ABSTRACT

Child maltreatment is a worldwide phenomenon, that can affect children of different ages, genders, and socioeconomic groups. It can be associated with physical, sexual, or emotional abuse, and often a combination of those subtypes. The study described the medico-legal characteristics of child physical maltreatment at school, by materials of the Department of Forensic Medicine and Deontology, Sofia, Bulgaria for a period of two years. A retrospective study was conducted, the results from which showed that a total of 40 cases with injured children at school were reported. They were thoroughly examined, and the results were divided into different groups according to the victim's age and gender, the gender of the perpetrator, the type of used weapon, and the sustained injuries. The traumas vary from superficial abrasions and bruises to lacerations and fractures of the bones and teeth with different health consequences. Children are the most vulnerable members of our society, and they need constant supervision and protection. The emotional and psychological consequences of the different forms of child abuse last longer than the healing of the sustained mechanical injuries.

Keywords: school violence, child abuse, child maltreatment

[131]

**CHARACTERISTICS OF E-CIGARETTE USERS AMONG YOUTH IN INDONESIA
(INTEGRATED DATA OF RISKESDAS DAN SUSENAS 2018)**

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Based on Basic Health Research (RISKESDAS) in 2018 there was an increase the prevalence of cigarette users aged 10-18 years from 7.2% (2013) to 9.1% (2018). Along with the increasing prevalence of youth smokers, now there have been new alternative products circulating in the community called e-cigarettes. Aims is to describe the characteristics of e-cigarette users among youth in Indonesia. A cross-sectional study design with a quantitative approach by analyzing secondary data from the RISKESDAS results and the 2018 National Socio-Economic Survey (SUSENAS). The research sample was 40,008 people aged 10-25 years who consumed cigarettes in Indonesia in 2018. E-cigarettes prevalence were 7.15% where the proportion of women was 11.8% and men were 7.8%. 10.8% are students, live in urban areas (10.6%) and have a history of consuming alcohol (9.9%). 11.4% are at the socioeconomic level of families with the very rich category (quintile 5) and 6.6% have family members who smoke. The prevalence of e-cigarette users among youth should be a concern, as it increases the risk of being a continuous smoker and the risk of non-communicable diseases incidence. Therefore, increasing knowledge about the dangers of e-cigarettes smoking should be intensified from a young age.

Keywords: e-cigarette, characteristics, youth, secondary data

[132]

DEVELOPMENT OF A REHABILITATION PROTOCOL FOR INTENSIVE CARE PATIENTS AFFECTED BY COVID-19Carvalho AC^{1*}, Moreira J², Cubelo P², Cantista P³, Aguiar-Branco C^{2,4} and Guimarães B^{2,5,6,7}*¹Public Health Unit - Porto Oriental, ACES Grande Porto VI. Porto, Portugal**²Department of Physical and Rehabilitation Medicine - Centro Hospitalar de Entre o Douro e Vouga. Santa Maria da Feira, Portugal**³Department of Physical and Rehabilitation Medicine - Centro Hospitalar Universitário do Porto. Porto, Portugal**⁴Department of PRM/ Integrated Clinic, Faculty of Dental Medicine, University of Porto. Porto, Portugal**⁵Department of Public Health, Forensic Sciences and Medical Education, Faculty of Medicine, University of Porto. Porto, Portugal**⁶Department of Surgery and Physiology, Faculty of Medicine, University of Porto. Porto, Portugal**⁷Cardiovascular Research Center. Faculty of Medicine, University of Porto. Porto, Portugal**cristinapbcarvalho@gmail.com**ABSTRACT**

COVID-19 has led to an increasing number of patients in the intensive care units (ICU) around the world, resulting in many patients vulnerable to post-intensive care syndrome. The implementation of rehabilitation programs that begin in the ICU may play a role in reducing these harmful consequences. We developed a protocol for a randomized, controlled, double-blind, double-arm clinical trial with the primary objective of analyze the respiratory and functional effects of a rehabilitation program in patients affected by the COVID-19 hospitalized in ICU, in comparison with the group subjected to standard of care, at discharge endpoint. The clinical trial will be conducted in Centro Hospitalar Entre Douro e Vouga, Santa Maria da Feira, Portugal. Patients who fulfil the eligible criteria will be recruited and randomized to one of two groups: standard of care and intervention group. The intervention group will receive a functional and respiratory rehabilitation protocol. Functional and respiratory capacities will be evaluated using the following scales: Glasgow Coma Scale, Richmond Agitation Sedation Scale, Chelsea Critical Care Physical Assessment, 5 standardized questions for cooperation, Medical Research Council sumscore, Handgrip strength test, Medical Research Council dyspnea scale and Borg Rating of Perceived Exertion. The primary outcome measure evaluated at discharge, 4-week and 12-week of follow-up, is functional capacity using the 6-Minute Walk Test. The health related quality of life will be evaluated at 12-week mark after discharge, using the 12-Item Short Form Survey. We expect the intervention group to achieve better functional and respiratory outcomes, less days of hospitalization and an improvement in health related quality of life, comparing to the standard of care group.

Keywords: COVID-19, Randomized controlled trial, protocol, rehabilitation

[133]

**ASSOCIATION BETWEEN HEALTH LITERACY AND CURRENT SMOKING
AMONG MIDDLE-AGED JAPANESE EVER-SMOKERS**

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Previous studies suggested that low health literacy was associated with current smoking. However, there are no studies to assess the association between health literacy and current smoking in Japan. Therefore, we assessed the association between health literacy and current smoking among middle-aged Japanese ever-smokers. This mail survey using a self-administered questionnaire was conducted in 2020, and included 33,902 community residents with National Health Insurance aged 40–64 years in five cities in Osaka Prefecture, Japan. Of these, 12,446 (36.7%) community residents agreed to participate in the mail survey. We excluded non-smokers and those with missing data. A total of 4,751 ever-smokers (2,389 current smokers and 2,362 ex-smokers) were included in the analysis. Health literacy was measured using the Japanese Communicative and Critical Health Literacy (CCHL) scale. Study participants were classified into three groups (low, medium and high score groups) by the tertiles of CCHL scale score. The study protocol was approved by the Institutional Review Boards of Osaka Prefecture University (approval no. 2020–28). In this study, after adjusting for age, sex, education level, occupation, economic status, regular exercise, subjective physical health and mental health, multivariable-adjusted ORs (95% CIs) for current smoking were 1.11 (0.97-1.28) in the medium score groups and 1.40 (1.20-1.64) in the low score groups, compared with the high score groups. Low health literacy was associated with current smoking among middle-aged Japanese ever-smokers.

Keywords: health literacy, current smoking, middle-aged, ever-smokers, Japan

[134]

**ASSOCIATION BETWEEN KNOWLEDGE OF POSTMENOPAUSAL SYMPTOMS
AND PARTICIPATION IN HEALTH CHECKUPS AMONG MIDDLE-AGED
WOMEN WITH NATIONAL HEALTH INSURANCE**

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ABSTRACT

Previous studies suggested that participation in health checkups was associated with lower mortality. However, the participation rate in health checkups is low, especially among middle-aged community residents with National Health Insurance (NHI), and clarifying the factors associated with participation in health checkups among them is an important issue. Therefore, we assessed the association between knowledge of postmenopausal symptoms and participation in health checkups among middle-aged Japanese women with NHI. This mail survey using a self-administered questionnaire was conducted in 2020, and included 33,902 community residents with NHI aged 40–64 years in five cities in Osaka Prefecture, Japan. Of these, 12,446 (36.7%) community residents agreed to participate in the mail survey. We included women and those without missing data. A total of 6,359 women were included in the analysis. Women who selected “I have a specific health checkup every year” were classified as a participation group. The study protocol was approved by the Institutional Review Boards of Osaka Prefecture University (approval no. 2020–28). The proportions of the participation group were 31.0% in women without knowledge of postmenopausal symptoms and 37.2% in women with knowledge of postmenopausal symptoms ($p < 0.001$). After adjusting for confounding factors, multivariable-adjusted ORs (95% CIs) for participation in health checkups was 1.13 (1.002–1.28) in women with knowledge of postmenopausal symptoms, compared with women without.

Keywords: Middle-aged women, Participation in health checkups, Knowledge of postmenopausal symptoms

[135]

ASSOCIATION BETWEEN ENCOURAGEMENT FROM PRIMARY CARE PHYSICIANS AND PARTICIPATION IN HEALTH CHECKUPS AMONG MIDDLE-AGED COMMUNITY RESIDENTS WITH NATIONAL HEALTH INSURANCE

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ABSTRACT

Previous studies suggested that participation in health checkups was associated with lower mortality. However, the participation rate in health checkups is low, especially among middle-aged community residents with National Health Insurance (NHI), and clarifying the factors associated with participation in health checkups among them is an important issue. Therefore, we assessed the association between encouragement from primary care physicians and participation in health checkups among middle-aged Japanese community residents with NHI. This mail survey using a self-administered questionnaire was conducted in 2020, and included 33,902 community residents with NHI aged 40–64 years in five cities in Osaka Prefecture, Japan. Of these, 12,446 (36.7%) community residents agreed to participate in the mail survey. We excluded those with missing data. A total of 10,207 community residents were included in the analysis. Those who selected “I had a specific health checkup in the past year” were classified as a participation group. The study protocol was approved by the Institutional Review Boards of Osaka Prefecture University (approval no. 2020–28). In men, adjusted ORs (95% CIs) for participation in health checkups was 3.35 (2.79–4.01) in those with encouragement from primary care physicians to participate in health checkups, compared with those without. In women, adjusted ORs (95% CIs) for participation in health checkups was 2.71 (2.34–3.14) in those with encouragement from primary care physicians, compared with those without. Encouragement from primary care physicians is important to promote participation in health checkups among middle-aged Japanese community residents.

Keywords: middle-aged community residents, participation in health checkups, encouragement from primary care physicians

[136]

**ASSOCIATION BETWEEN LIFESTYLE FACTORS AND PARTICIPATION IN
HEALTH CHECKUPS AMONG MIDDLE-AGED COMMUNITY RESIDENTS
WITH NATIONAL HEALTH INSURANCE**

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ABSTRACT

Previous studies suggested that participation in health checkups was associated with lower mortality. However, the participation rate in health checkups is low, especially among middle-aged community residents with National Health Insurance (NHI), and clarifying the factors associated with participation in health checkups among them is an important issue. Therefore, we assessed the association between lifestyle factors and participation in health checkups among middle-aged Japanese community residents with NHI. This mail survey using a self-administered questionnaire was conducted in 2020, and included 33,902 community residents with NHI aged 40–64 years in five cities in Osaka Prefecture, Japan. Of these, 12,446 (36.7%) community residents agreed to participate in the mail survey. We excluded those with missing data. A total of 10,207 community residents were included in the analysis. Those who did not select “I have a specific health checkup every year” were classified as a non-participation group. The study protocol was approved by the Institutional Review Boards of Osaka Prefecture University (approval no. 2020–28). In both men and women, current smokers, those without regular exercise, and those with obesity were at significantly higher risk for non-participation in health checkups among middle-aged Japanese community residents. It is important for them to promote participation in health checkups in order to improve their lifestyles.

Keywords: middle-aged community residents, participation in health checkups, lifestyle factors

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**ASSOCIATION BETWEEN HEALTH LITERACY AND PARTICIPATION IN
HEALTH CHECKUPS AMONG MIDDLE-AGED COMMUNITY RESIDENTS
WITH NATIONAL HEALTH INSURANCE**

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ABSTRACT

Previous studies suggested that participation in health checkups was associated with lower mortality. However, the participation rate in health checkups is low, especially among middle-aged community residents with National Health Insurance (NHI), and clarifying the factors associated with participation in health checkups among them is an important issue. Therefore, we assessed the association between health literacy and participation in health checkups among middle-aged Japanese community residents with NHI. This mail survey using a self-administered questionnaire was conducted in 2020, and included 33,902 community residents with NHI aged 40–64 years in five cities in Osaka Prefecture, Japan. Of these, 12,446 (36.7%) community residents agreed to participate in the mail survey. We excluded those with missing data. A total of 10,207 community residents were included in the analysis. Those who selected “I have a specific health checkup every year” were classified as a participation group. Health literacy was measured by the Communicative and Critical Health Literacy scale. The study protocol was approved by the Institutional Review Boards of Osaka Prefecture University (approval no. 2020–28). In men, adjusted ORs (95% CIs) for participation in health checkups was 1.46 (1.25–1.70) in those with high health literacy, compared with those with low health literacy. In women, adjusted ORs (95% CIs) for participation in health checkups was 1.29 (1.13–1.47) in those with high health literacy, compared with those with low health literacy. High health literacy was positively associated with participation in health checkups among middle-aged Japanese community residents.

Keywords: health literacy, middle-aged community residents, participation in health checkups

[138]

**RELATIONSHIP BETWEEN RAINFALL AND RAINY DAYS WITH DENGUE
HEMORRHAGIC FEVER INCIDENCE IN MANADO CITY, NORTH SULAWESI,
INDONESIA**

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ABSTRACT

Dengue hemorrhagic fever (DHF) is an endemic disease in Manado City, North Sulawesi Province. DHF is an infectious disease caused by dengue virus and transmitted through the bite of mosquitoes especially *Aedes aegypti* and *Aedes albopictus*. Rain events, generally, can create breeding habitats for juvenile *Aedes* mosquitoes and subsequently lead to increasing mosquito abundance. The potential impact of rain can lead to the occurrence of water puddles that become a place of mosquito breeding. This study aimed to analyze the relationship between rainfall and rainy days with DHF incidence in Manado City. The study design used analytical descriptive with a cross-sectional survey approach. The study data was taken from January to December 2019. Secondary data on rainfall and rainy days were obtained from the Manado City Meteorological Station and DHF incidence was obtained from the Manado City Health Office. Data were analyzed using the Spearman Rank Test. The result showed that the mean of rainfall was 192.7mm, SD 175.1mm, range 10-544mm. The mean of rainy days was 15 days, SD 7.7 days, range 2-29 days. The mean of DHF incidence was 49.3 cases, SD 115.7 cases, range 5-409 cases. There was a significant and strong positive correlation ($p = 0.029$ and $r = 0.626$) between rainfall and the incidence of DHF. There was a significant and moderate positive correlation ($p = 0.044$ and $r = 0.588$) between rainy days and the incidence of DHF. It was concluded that the higher the rainfall, the higher the incidence of DHF. The higher the rainy days, the higher the incidence of DHF. Further study is needed to analyze other factors related with the incidence of DHF.

Keywords: rainfall, rainy days, DHF

[139]

**KNOWLEDGE, VACCINATION STATUS, AND REASONS FOR AVOIDING
VACCINATIONS OF HEPATITIS B IN DEVELOPING COUNTRIES: A
SYSTEMATIC REVIEW**

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ABSTRACT

The World Health Organization reports that the coverage of hepatitis B (hep B) vaccination remains low in developing countries. Although different factors, such as lack of hep B knowledge, have been found to be associated with not getting vaccinated, the rationale behind the low vaccination coverage has been found inconclusive. This systematic review thus analyses the determinants of people's knowledge and vaccination status as well as the reasons why people in developing countries chose not to receive the hepatitis B vaccination. We searched four databases (MEDLINE, Embase, Web of Science and CINAHL) to identify all studies from developing countries published within the past 10 years. Both, the low-risk and high-risk populations aged older than 15 years old were eligible for the study. Quality of studies was assessed by the Newcastle-Ottawa Scale assessment performed by two independent reviewers. This study identified 2443 articles published between 2010 and 2019, 89 of which were included in the analyses. Monthly income, occupational status, and profession of health care worker were the strongest predictive factors for both, knowledge of hepatitis B and vaccination status. In addition, strong predictor variables of hep B knowledge were knowing an infected person and level of education, while health insurance, management's protection at work place, infection training, and experience of hepatitis B exposure were strong influencing factors for vaccine uptake. The main reasons for not getting vaccinated were lack of information, lack of motivation, and lack of money. This systematic review highlights that exposure to information, support from institutions, and financial support related to vaccination cost has positive impact on increasing the knowledge about hepatitis B infection and vaccination coverage.

Keywords: developing countries, Hepatitis B, knowledge, vaccination status, risk population

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**ASSESSING RELIABILITY AND VALIDITY OF AN INSTRUMENT FOR
MEASURING PATIENT USE OF TELEMEDICINE IN LIGHT OF THE
TECHNOLOGY ACCEPTANCE MODEL**

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Telemedicine been used as a supportive service to assure healthcare services been revised in high quality with sufficient time. Its uses, especially e-consultations is rising to increase patient access to care especially during pandemics or emergencies. However, a valid and reliable tool is needed to measure their use. This study aims to evaluate the reliability and validity of Patient Acceptance of Telemedical utilizing the dimensions of TAM. The researcher designed an instrument based on TAM dimensions/principles. The instrument was distributed among 244 participants via an online link though social media such as Twitter and WhatsApp from August 2020 to December 2020. Content validity, exploratory, and confirmatory factor analysis were used to examine the construct validity, and Cronbach alpha test was employed to examine the reliability of the instrument. A total of 244 participant in the study, 22 items or questions have a loading factor above. The assessment suggests 6 factors to explain the variation of the participant responses with 75% of variation been explained by the factors. The confirmatory analysis agreed with the explanatory factors suggested number of items and latent factors with CMIN/DF equal to 3.021 and RMSEA (0.095), with 90%CI (0.105 -0.086). The results of the study suggest that the measure shows acceptable validity and reliability.

Keywords: telemedicine, acceptance, survey, validity, patient

[141]

**COMMUNICATION & HEALTH: AN INDISPENSABLE LINK TO HEALTH
PROMOTION**

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ABSTRACT

Health Promotion is conceived as a fundamental strategy to protect and improve the health of the human population. It should be based on a political, educational and social process that increases public awareness about health, seeking to develop participative strategies and dynamics that allow the individual to increase control over the determinants of their health and therefore strengthen it. Based on the above, this work has as its sole aim to propose from a theoretical framework, the inescapable relationship that may exist between Communication and Health with a view to promoting individual and collective health. In this context, it is necessary to affirm that communication is a process that guides its actions from the dialogue and citizens participation; generating strategies that help people to achieve a power that allows them to actively participate in solving their needs. From the other hand is health, which is defined as a state of complete physical, mental, and social well-being, and not merely the absence of illness or disease. There are multiple definition, complex and relative, however, it is a process that tries to cover the dimensions related to social development. To conclude, communication and health contemplate theories and models developed in recent years. To do this, starting from a theoretical and documentary review of both, we will try to review from the approaches of Beleno and Schiavo; how health and communication as processes that can be seen independently, —since both has its theoretical postulates— also has in common points of meeting that, through communication in and for health, improve promotion actions.

Keywords: communication, health, health promotion

[142]

INTRODUCING DIGITALLY BASED INTERACTIVE PUBLIC HEALTH CURRICULUM TO SPREAD HEALTH LITERACY AND PROMOTE HEALTHY BEHAVIORS AMONG SOCIOECONOMICALLY DISADVANTAGED YOUTH

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The city of Santa Ana, California consists of a disproportionate percentage of households who fall below the federal poverty line. A majority of adults in Santa Ana lack a high school education; as such, students primarily rely on schools to provide them with reliable health information. However, since 2019, the Santa Ana Unified School District has opted out of the Health Education Curriculum Framework for California Public Schools, and schools district-wide now lack a systematic public health curriculum. As a result, youth in Santa Ana have reported consistent poor health outcomes compared to the rest of the state. The onset of the COVID-19 pandemic has perpetuated the spread of misinformation and exacerbated existing health disparities in society, further highlighting the need for a comprehensive public health education for the younger generation. In this research, a digitally based interactive public health curriculum was introduced to 1,000 students from 15 different Title I elementary schools in Santa Ana. This curriculum features public health topics (i.e. gaming disorder, sleep deprivation, and vaccines) carefully selected to be the most relevant and applicable to school-aged students, as well as supplemental activities to enhance student understanding and promote critical thinking. After engaging with the curriculum, students were surveyed using Likert scales to assess their learning gains. Findings indicate that 96.1% of students gained more knowledge about public health and 89.1% expressed continued interest in learning more about public health. With continued use of this innovative curriculum, students will learn to embrace their health and practice healthy habits starting from a young age, as well as share these learnings to benefit their greater community.

Keywords: curriculum, health literacy, elementary school

[143]

HEALTH TECH ENTREPRENEURS' PERSPECTIVE ON THE DIGITAL HEALTH ECOSYSTEM IN NIGERIA

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ABSTRACT

Digital health or health technology represents the use of disruptive technologies to monitor, improve and empower patients in the management of their health and wellbeing. The new trend propelling the growth of the health space in Nigeria is the rise of technology startups building digital health solutions across various domains like EMR, Telemedicine, Genomics. The gaps in Nigeria's healthcare system presents a huge market for entrepreneurs to provide innovative solutions, however, some limitations hinder their growth. To give insights into the struggles of digital health entrepreneurs in Nigeria, a semi-structured interview was conducted with 10 industry experts of both active and inactive startups. Specifically, the health tech entrepreneurs were asked questions about the current state of the health technology ecosystem, the support received and their overall experiences building a digital health company in an African country. From the thematically analyzed result, it was discovered that addressing issues of: access to funding especially local funds; poor adoption due to resistance to change; enabling environment; finding the right workforce; government support and partnerships are keys to scaling the ecosystem. Important lessons highlighted from the examination of a now failed or inactive health tech startup are emphasis on building slowly, having patience and enacting boldness, which are needed for young entrants to thrive in the space. Our findings also suggest the need to understand the industry domain before venturing into a space that is termed "complex" when compared with other Nigerian technology space.

Keywords: digital health, entrepreneurs, ecosystem, Nigeria, disruptive technologies

[144]

MINIMISING HOW THE TERMINAL CLEANS PROCESS DELAYS PATIENT FLOW: A QUALITY IMPROVEMENT PROJECT

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ABSTRACT

Terminal cleans in hospital reduce the risk of transmitting Healthcare-associated infections. They have a significant impact on patient flow throughout clinical environments. The COVID-19 pandemic has contributed to a significant increase in requests and has triggered a review of the terminal clean process. This project investigates the process of requesting and completing a terminal clean across the hospital, with the aim to reduce the overall time taken by 10%, by December 1st, 2020. Increasing the overall efficacy of a terminal clean and eliminating delay in patient flow. This quality improvement project evaluated the terminal cleaning process. Baseline data was collected and identified two areas for change and piloted these for a week. A new central storage location for the Curtains was sourced. Also, an App was developed to request and document the completion of a clean. The effect of the implemented changes were monitored via the App data. The new storage location for the Curtains resulted in an improvement of 60%, and the App resulted in an improvement of 65%. Overall, the pilot resulted in a reduction of 24 minutes in the time taken to request and complete a terminal clean. By updating the curtain storage and introducing an App for requesting terminal cleans the process was made more efficient. This increased efficacy will not only reduce the financial burden but also increase patient flow. Recommendations such as trust-wide rollout of the App and a terminal cleans priority system should be considered in future.

Keywords: terminal cleans, patient flow, COVID – 19, quality improvement

[145]

EFFICIENCY OF AMBULANCE SERVICES FOR PUBLIC HEALTHCARE FACILITIES IN MALAYSIA

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ABSTRACT

Ambulance services in particular is important for managing patients at the hospital or primary care level. Providing an efficient ambulance service indirectly reflects how good the country's healthcare service delivery is. This study aims to measure the efficiency of ambulance services among hospitals and clinics in urban and rural areas for Malaysia public healthcare sector. Data on all resources for ambulance services in 2019 were collected primarily from a total of 14 public hospitals and 62 health clinics. Costs incurred were estimated through a mixed top-down and Activity Based Costing (ABC) approach. Data Envelopment Analysis (DEA) was adopted to measure the level of technical efficiency of the ambulance services. Four Decision Making Unit (DMU) were compared, namely Urban Clinic, Rural Clinic, Urban Hospital and Rural Hospital. The analysis is built based on the cost of providing the ambulance services as input, and number of patients transferred, distance coverage and hours usage as outputs. The results showed that Rural Clinics were the most efficient in providing ambulance services among the four DMUs. Meanwhile, the rural hospitals were found to be the least efficient of all the four DMUs, in delivering the ambulance services for public healthcare sector, with efficiency level of 65.7%. In conclusion, efficiency measure of ambulance services differs between type of facility and the geographical areas. The results of this study will be able to assist the policy makers in planning for distribution and provision of the ambulance services based on the facility types and the geographical areas.

Keywords: ambulance, efficiency, healthcare, DEA,

[146]

EVALUATION OF ACUTE FLACCID PARALYSIS (AFP) SURVEILLANCE SYSTEM AT PUBLIC HEALTH CENTER IN DENPASAR

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ABSTRACT

Background: Polio is a disease that can be prevented by immunization and has the potential to cause an outbreak. AFP surveillance is the gold standard for detecting cases of polio. In 2015, 2017, 2019, and 2020 the AFP case detection rate in Denpasar City was still below the indicator, namely 2 per 100.000 population under 15 years of age per year. Objective: To assess the AFP surveillance system at the public health center in Denpasar City. Methods: An interviews and observations were performed through 7 surveillance officers at the public health centers in Denpasar City. We examined the the approaches of the surveillance system with input, process, and output framework. Data was analyzed descriptively. Result: We found the human resources to do surveillance has less capacity. Only two surveillance officers have good knowledge of AFP surveillance, while four of them have been trained in term of surveillance. In addition, identification of AFP cases in the community were relied on mosquito larva observer , while they were not received any information about the AFP clinical symptoms. Surveillance was passive, none public health centers do not have surveillance networks such as playgroups, kindergarten, elementary school, etc. Even if no AFP cases have been seen, surveillance officers at all public health centers are required to send weekly zero reports. Conclusion: Low case finding of AFP in Denpasar was due to ineffective detection in the field. Training is needed to improve the knowledge of the officers. Strengthening surveillance networks is also needed to increase the AFP case detection rate in the community.

Keywords: surveillance, AFP, evaluation

[147]

**THE INCIDENCE OF HOSPITAL-ACQUIRED PNEUMONIA AMONG PATIENTS
ADMITTED TO THE INTENSIVE CARE UNITS OF A TERTIARY HOSPITAL,
EGYPT**

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ABSTRACT

Hospital-Acquired Pneumonia (HAP) shows a big concern for an intensivist. Detailed Information about Non-Ventilated Hospital-Acquired Pneumonia (NV-HAP) and Ventilated-Acquired Pneumonia (VAP) is vital for prevention. Hence, our objectives were to quantify the incidence of HAP, determine the predictors of HAP, calculate HAP-related mortality risk ratio as well as identify the different risk factors contributing to mortality. A prospective longitudinal study was conducted at a governmental hospital's general ICUs over 12 months. We included adult patients admitted for at least 72 hours before signs appear. We utilized a logistic regression model for mortality outcome and cox proportional hazard model for HAP outcome. Statistical analyses were performed using SPSS® version 23. Of 356 patients, 133 patients developed VAP, 76 patients with NV-HAP, and 147 patients did not develop HAP. HAP showed a high incidence of 28 cases of HAP per 1000 person-days, and the mortality rate was 74 per 100 days, while the Attributable Risk Percentage (ARP) was 85%. The high mortality rate was explained by independent predictors as reintubation (OR=8.99, P<0.001), duration in ICU \geq 5 days (OR=7.29, P=0.02), HAP outcome (OR=6.49, P=0.001), diabetes mellitus (OR= 2.98, P=0.004), APACHE II \geq 17 (OR=2.76, P=0.004), and neurological diseases (OR=2.20, P=0.03). The most common independent predictors for HAP were *Pseudomonas aeruginosa* (HR=2.27, P<0.001), *Klebsiella pneumoniae* (HR=1.81, P=0.003), tracheostomy (HR=1.72, P=0.04), and APACHE II \geq 17 (HR=1.54, P=0.04). High incidence rate of HAP was linked with *P. aeruginosa*, *K. pneumoniae*, tracheostomy, and APACHE II \geq 17. Also, high mortality rate was strongly correlated with reintubation, duration in ICU \geq 5 days, HAP outcome, diabetes mellitus, APACHE II \geq 17, and neurological diseases.

Keywords: Hospital-Acquired Pneumonia, mortality, incidence, Risk Factors, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*

[148]

**OVER THE COUNTER PRODUCTS OR PHYSICIAN PRESCRIPTION
FOR ACNE TREATMENT OPTIONS**

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ABSTRACT

Acne is still a major problem in a series of skin diseases experienced by most of the population. The incidence of acne is influenced by many factors, so treatment consideration must be appropriate. Currently, acne skin care and treatment options are readily available everywhere that can be selected individually. Treatment of acne should be carried out by doctor or dermatologist under continuous supervision in order to have good results or cured. The aim of this study was to asses the tendency of people with acne to choose their acne treatment. We conducted a survey on 50 respondents aged 19-30 years with acne vulgaris in Manado, Indonesia, in 2021. They were asked to fill out a questionnaire. From a total of 50 respondents, 31 (62%) chose to directly buy over the counter acne skin care and therapy, 11 (22%) respondents chose to consult a doctor or dermatologist to treat their acne and 8 (16%) people admitted to doing both. Many acne patients choose to do acne skin care and treatment by themselves by using over the counter (OTC) products. More information and education on acne disease and treatment need to be done in the community to increase knowledge and awareness. Treatment of acne should be done in consultation with a doctor or dermatologist to avoid side effects and to achieve better results or succesful treatments.

Keywords: acne, treatment, OTC, prescription, physician, consultation

[149]

FACTORS THAT INFLUENCE THE PREFERENCE FOR HOME AS THE LOCATION FOR LONG-TERM CARE IN THE JAPANESE POPULATIONUkawa S^{1*}, Kato Y², Yonggeun L³, Ohara K⁴ and Mori K¹¹*Osaka City University Graduate School of Human Life Science, Japan*²*Kinjo Gakuin University College of Human Life and Environment, Japan*³*The University of Tokyo Graduate School of Engineering, Japan*⁴*Yokohama National University Faculty of Urban Innovation, Japan**ukawa@osaka-cu.ac.jp**ABSTRACT**

Aim: In this study, we aimed to investigate the factors for preferring home as the location to receive long-term care in community-dwelling populations. **Methods:** In this cross-sectional study, 4,113 individuals (1,733 men and 2,380 women) from four areas in Japan were examined. We obtained all information by questionnaire in 2019. To calculate the prevalence ratios (PRs) and 95% confidence intervals (CIs) for the preference of long-term home care in relation to factors, we used a sex-specific Poisson regression model with adjustment for areas. **Results:** The prevalence of preferring home as the location for receiving long-term care was 74.1% for men and 72.8% for women, respectively. Living with family or others (PR: 1.37; 95% CI: 1.08–1.58), being employed (PR: 1.08; 95% CI: 1.00–1.15), easy to access to community facilities (PR: 1.06; 95% CI: 1.00–1.15), and presence of close friends in the community (PR: 1.12; 95% CI: 1.04–1.20) for men, and satisfaction with natural surroundings in the community (PR: 1.23; 95% CI: 1.06–1.44) and sense of attachment to the community (PR: 1.07; 95% CI: 1.02–1.13) for women were significantly associated with the preference for long-term home care. **Conclusion:** The factors that influenced the preference for home as the location for receiving long-term care differed between the sexes.

Keywords: aging, housing, relocation, long-term care, social environment, physical environment

[150]

ADULT WOMEN'S OPINIONS ON HEALTH CLAIMS ABOUT FUNCTIONAL FOODSYardimci H^{1*}, Köktürk SN² and Ersoy N¹

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ABSTRACT

Thanks to nutrition for prolonging aging period, people are more sensitive to health effects of foods. Hereof, significant developments in functional foods have led to increase in their consumption. The aim of this research is to determine the opinions of women regarding the health claims about functional foods. This study conducted with 582 women who aged 20-64 years old. A questionnaire form that includes 16 statements about health claims about functional foods and how these claims affect food choices were applied to the participants. The average age of women is 30.6 ± 8.9 years. The rate of those who use functional foods in their daily diet was 39.7% and those who use such foods 1-2 times a week (45.5%) were the highest. When the effect of the statements regarding to the health claims about functional foods, on the food choices are questioned: "strongly agree" option (54.3%) is the highest for the 3rd statement while "agree" was the most selected option (43.1%) for 6th and 11th statements. In addition, the highest rate of "neutral" (29.9%) and "disagree" (8.4%) options belong to 7th statement. For the 13th statement, "strongly disagree" option was the lowest (1.9%). The majority of women consume functional foods 1-2 times a week and they believe that functional foods improve health. In order to benefit from the positive effects of functional foods on health, it's important to consume it with an adequate and balanced diet containing various nutrients. Otherwise, various problems may occur related to nutrition.

Keyword: women, functional foods, food preference

[151]

**THE GAME-BASED THERAPY MITIGATES DEPRESSION SYMPTOMS AMONG
OUTSIDE REGION STUDENTS**Irawati K¹, Rifandi OH², Wardaningsih S³ and Shih Y^{4*}¹ *Department of Healthcare Administration, Asia University, Taichung, Taiwan*² *Faculty of Medicine and Health Science, Universitas Muhammadiyah Yogyakarta,
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Yogyakarta, Indonesia*⁴ *Department of Health Care Administration, Asia University, Taichung, Taiwan*[*evashih@gm.asia.edu.tw](mailto:evashih@gm.asia.edu.tw)**ABSTRACT**

Depression is a mental health problem that decreases one's productivity and affects the environment and society. Numerous studies revealed international students are more likely to experience moderate to severe depression due to culture shock. Treating depression has diverse strategies using pharmacotherapy or non-pharmacotherapy. This study investigated whether game-based therapy (Gobak Sodor) mitigates depression symptoms of students from outside region of Yogyakarta. This was a pre-experimental study with one group of 31 students from outside region of Yogyakarta who has moderate to severe depression. The depression scores were collected using Beck's Depression Inventory questionnaire before and after a game intervention. The scores before and after intervention were compared and analyzed using Fisher's exact test. Eleven students (35.3%) were in moderate depression and 20 students (64.5%) were in major depression before the intervention. Twenty-four students (77.4%) were in mild depression, 5 students (16.5%) were in moderate depression and 2 students (6.5%) were in severe depression after the intervention. The moderate and severe depression students were significant reduced after the intervention ($p < 0.001$). Game-based therapy has a positive effect on mental health to outside the region of Yogyakarta students.

Keywords: game-based therapy, depression, outside the region students

[152]

EVALUATION OF CHANGES IN PHYSICAL ACTIVITY IN PRIMARY SCHOOL CHILDREN IN THE BLACK COUNTRY AS A RESULT OF THE COVID-19 PANDEMIC

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ABSTRACT

This pandemic has inevitably had an effect on physical activity levels in children. In the UK, as well as other countries globally, there have been lockdowns causing many schools to be closed. The change to children learning at home, the new measures put into place for safe physical education lessons and closure of clubs is likely to change how and why children exercise. Our objective is to understand children's perceptions and experience of exercise during the pandemic. We have collected qualitative data by conducting focus groups in school children aged 10-11 years, across the Black Country region. We then used Braun and Clarke's thematic framework to analyse the data. Our results show a varying response to the pandemic with some children exercising less but the majority exercising more. The response has depended on whether the child has access to online resources (virtual exercise classes and YouTube videos), companionship (siblings or parents exercising at home), barriers (lack of space, equipment and motivation) and their perception of how important exercise is to their own health (both physical and mental). With these findings, we suggest how to improve physical activity levels in children in the future.

Keywords: children, physical activity, COVID-19, lockdown

[153]

CHILD LABOR AND CHILDREN HEALTH IMPACT: A SCOPING REVIEW

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ABSTRACT

Child labor (CL) is the work that causes mental, physical, social or moral harm to children and interferes with their schooling. CL is more frequent in low and middle incomes countries, due to poverty, displacement, lack of opportunities and cultural factors. Close to 150 million of children aged 5 to 17 in the world are affected, out of them, 73 million were involved in hazardous work. We attempt to map available literature related to CL exposure and health impact including any epidemiological design and informing any health outcome associated, searching PUBMED, EMBASE, LILACS, EPISTEMONIKOS, TRIPDATABASE, REDALYC, PSICODOC, BESCO, SCOPUS, OECD iLibrary, BioMed Central, ECONLIT, APA Databases, CSIC, Google Scholar, Proquest, Prospero, NIH report, CenterWatch, Web of Science, Cochrane Library, NIOSH, Biblioteca virtual de salud en Colombia, ILO, TESTEO. No language or time limited search. Protocol were registered https://osf.io/y5zg3/?view_only=3106f13abf7b4abea455f01968504cb1. Two independent reviewers screened titles and abstracts. AM or DB solved conflicts. Narrative analysis was used and tables to summarize. We analyzed more than 200 articles. More frequent articles came from Brazil, USA and India. Traumatic injuries, musculoskeletal pain and nutritional problems were mainly reported. Main epidemiological design used were cross sectional, followed by systematic literature review and case reports, amosn others. Literature related to CL and health is increasing over time. This kind of research will collaborate with the knowledge regarding fulfilment of eliminate child labor by 2025 as declared by Sustainable Developing Goals (SDG).

Keywords: child labor, health, work, systematic review, children



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