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GRAND THEME

**Advancing HEALTH Care
Through
Multidisciplinary Research**

College of Medicine and Health Sciences

MIZAN TEPI UNIVERSITY

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Mizan Tepi University

College of Medicine and Health Sciences

13th Annual Research Conference

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THEMATIC AREAS

- Reproductive, sexual, maternal, newborn and child health
- Nutrition, Food safety and policy
- Infectious disease, drug resistance and global health
- Non-Communicable disease, Mental health and rehabilitative health service
- Environmental and occupational health
- Pharmaceutical sciences
- Health care service delivery, equity, quality and Financing

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1. INTIMATE PARTNER VIOLENCE AMONG HIV-POSITIVE WOMEN AND ITS ASSOCIATED FACTORS IN EAST AFRICA: A SYSTEMATIC REVIEW AND META-ANALYSIS

Gossa Fetene Abebe, Mizan Tepi University

Abstract

Background: Intimate partner violence (IPV) is a widespread yet often unrecognized problem that affects millions of women worldwide. It is prevalent among marginalized individuals, such as women affected by HIV. However, there is a dearth of available evidence concerning this matter among HIV-positive women in East Africa.

Objective: To systematically review and conduct meta-analysis to determine the pooled prevalence of IPV and its associated factors among HIV-positive women in East Africa.

Methods: All primary cross-sectional studies published before 20th June/2024 were included. PubMed, HINARI, Web of Science, African Online, ScienceDirect, and Google Scholar have been searched. The Joanna Briggs Institute critical appraisal checklist was used to assess the quality of the included studies. We used the I² test to determine the heterogeneity of the included studies. Publication bias was assessed using funnel plot and Egger's test. IPV among HIV-positive women and its associated factors were presented using pooled proportion and odds ratio with a 95% confidence interval.

Results: The pooled prevalence of IPV among HIV-positive women in East Africa was 54.6% (95% CI, 44.1%-65.1%). Factors associated with increased odds of IPV included low monthly income (OR: 2.96, 95% CI: 1.32–6.68), partners who consume alcohol (OR: 2.24, 95% CI: 1.54–3.28), having multiple sexual partners (OR: 2.29, 95% CI: 1.52–3.43), experiences of controlling behavior from an intimate partner (OR: 4.65, 95% CI: 2.79–7.73), and favorable attitudes towards wife-beating (OR: 2.56, 95% CI: 1.87–3.51).

Conclusion and recommendations: In East Africa, prevalence of IPV among women living with HIV was found to be high. As a result, it is crucial to implement focused and targeted interventions that promote behavioral change. Also, the findings emphasize the need of establishing and organizing support networks to address IPV among HIV-positive women.

Keywords: IPV; HIV-Positive Women; East Africa

2. EFFECT OF PHARMACIST FACILITATED ANTIMICROBIAL STEWARDSHIP INTERVENTION ON ANTIMICROBIAL USE AND PATIENT OUTCOMES IN NIGIST ELLENI MOHAMMED MEMORIAL REFERRAL HOSPITAL. QUASI EXPERIMENTAL STUDY

Mengistu Girma , Wachamo University

Abstract

Background: Antimicrobial resistance (AMR) poses a major threat to human health globally. Even though pharmacists are an integral part in antimicrobial stewardship (AMS) in tackling AMR which is threat to human health, there is limited data on their impact in the low resource healthcare settings. The study aimed to assess the impact of pharmacist facilitated AMS on antimicrobial use, and patient outcomes in Nigist Eleni Mohammed Memorial Referral Hospital (NEMMRH), Southern Ethiopia.

Method: A Quasi-experimental interventional study was conducted from September 2022 to November 2023 at NEMMRH. Descriptive statistics and multivariable logistic regressions were performed using SPSS version 26 to present and assess factors associated with all causes of mortality, respectively. Statistical significance was declared at $p\text{-value} < 0.05$.

Results: A total of 128 (44.4%) cases of antibiotic prescriptions that need intervention were recognized and intervened by the AMS team during the intervention period. 71(24.7%) of antibiotic prescriptions were recommended to discontinue and 42(14.6%) to change the antibiotics. The most commonly prescribed antibiotics before and during intervention phase were Ceftriaxone 175(60.8% vs 211(73.3), followed by Vancomycin 91(31.6% vs 161(55.9) respectively. Average duration of antibiotic treatment decreased significantly, from 10.02 ± 3.30 before intervention to 6.29 ± 2.58 during the intervention period. The DOT/1000 patient days decreased from 660 ± 139.2 to 539 ± 114.6 during the 6 months intervention periods. The average number of antibiotics per patient decreased from 2.53 ± 1.12 during preintervention period to 1.93 ± 0.53 during intervention period ($p < 0.000$). Known prior comorbidities were associated with increased risk of death (AOR 2.60, 95% CI: 1.35, 5.0).

Conclusion: The study indicated that pharmacist facilitated AMS intervention reduced inappropriate antimicrobial use and improved clinical outcomes. Prospective implementation of such programs could enhance patient care and combat antimicrobial resistance.

Key words: Antibiotics, Antimicrobial resistance, antimicrobial stewardship, audit and feedback and pharmacist

3. DISCLOSURE STATUS OF HIV POSITIVE CHILDREN IN SUB-SAHARAN AFRICAN COUNTRIES: SYSTEMATIC REVIEW AND META-ANALYSIS.

Desalegn Girma , Mizan Tepi University

Abstract

Background: Disclosure of HIV to infected children is crucial to maintain treatment adherence and prevent HIV. In Sub-Saharan Africa, though there are several fragmented studies on the rate of HIV status disclosure, the pooled rate of HIV status disclosure among children has not been estimated. Therefore, this systematic review and meta-analysis aimed to estimate the pooled rate of HIV status disclosure among children in Sub-Saharan African countries and identify its associated factors.

Method: We performed a comprehensive search on PubMed, HINARI, Science Direct, Google Scholar, and African Journals Online to retrieve studies related to HIV status disclosure. Two authors autonomously checked the quality of included studies using the Joanna Briggs Institute checklist. We examined the heterogeneity of studies using I-square statistics. We conducted Egger's tests analysis to evaluate any publication bias. The random effect model was fitted to estimate the pooled rate of HIV status disclosure among children.

Result: The pooled rate of HIV status disclosure among children was found to be 36.23% with (95% CI 0.3189, 0.4117). Duration on ART (OR; 4.2, 95% CI: 2.89, 6.09), secondary educational level of caregivers (OR: 3.1, 95% CI: 1.95, 4.9), child queries about their health (OR: 2.75, 95 % CI: 1.53, 4.94), caregivers discussion with a healthcare professional (OR: 7.03, 95% CI: 3.73, 13.26) and social support (OR: 4.46, 95% CI: 1.81, 10.97) were factors associated with HIV status disclosure.

Conclusion: HIV status disclosure among children is low in Sub-Saharan African countries. Therefore, to increase the level of HIV status disclosure, countries should endorse guidelines on the childhood HIV status disclosure process, and training should be provided for healthcare professionals.

Keywords: HIV status disclosure, Children: systematic review, Meta-analysis, Sub-Saharan Africa.

4. PREVALENCE AND FACTORS ASSOCIATED WITH DEVELOPMENTAL DELAY AMONG UNDER-FIVE CHILDREN IN PUBLIC HOSPITALS OF BENCH-SHEKO ZONE, SOUTHWEST ETHIOPIA, 2023.; A CROSS-SECTIONAL STUDY

Lidiya Gutema Lemu, Mizan Tepi University

Abstract

Background: Developmental delay occurs when a child fails to reach the age-appropriate anticipated milestones. Despite the importance of evidence to tackle the problem, few conducted researches only focused on the effect of nutritional status on developmental delay. However, development can be affected by a combination of socioeconomic, environmental, nutritional, and social factors during pregnancy and the first years of life.

Objective: This study aims to assess the prevalence and factors associated with developmental delay in under five children in public hospitals of Bench-Sheko Zone, southwest Ethiopia, 2023.

Methods and Materials: An institution-based cross-sectional study was conducted from February 25 to May 24, 2023. A systematic random sampling technique was employed to select 423 mothers with their under-five children. Age and stage questionnaire (ASQ-3) was used for Child development assessment. Height and weight were measured and converted the WHO Anthro version 3.2.2 software was used to convert nutritional data indices. Data were entered into Epi Data Version 4.6 and exported to SPSS version 22 for further analysis. Binary and multivariate logistic regression analysis was done. The presence and strength of association were determined using AOR with its 95% CI. Variables with a P value less than 0.05 were considered statistically significant.

Results: The prevalence of developmental delay was 37.5%. Being stunted (AOR 3.63, 95% CI; 1.820-7.255), being wasted (AOR 3.53, 95% CI; 1.87-6.768), having no learning material at home (AOR 2.54, 95% CI; 1.32- 4.86), suffering from infectious diseases within the past six months (AOR 3.19, 95% CI; 1.447- 7.046) and has no need of resuscitation at time of birth (AOR 0.446, 95% CI; 0.235-0.835) were found to be significantly associated with a developmental delay.

Conclusion: The prevalence of developmental delay was found to be high in the study. Preventive measures against under nutrition, infectious disease, and birth asphyxia are required. Furthermore, the availability of learning material at home also needs to be improved.

Keywords: Developmental Delay, Under- five children, Factors, Southwest Ethiopia

5. UTILIZATION OF INFORMATION COMMUNICATION TECHNOLOGY AND ITS ASSOCIATED FACTORS AMONG HEALTHCARE PROFESSIONALS IN ETHIOPIA: SYSTEMATIC REVIEW AND META-ANALYSIS.

Admasu, Mattu University

Abstract

Introduction: The idea of "information and communication technologies" refers to a wide range of digital and electronic devices, that enable health information and knowledge sharing, processing, transmission, and communication.

Methods: searching of the literature was conducted using databases such as Google Scholar, HINARI, PubMed, Scopus, EMBASE, Web of Science, African Journal Online, and Global Health, Search engines were used to locate studies that adhered to the PRISMA Protocols. STATA version 11 was used for analysis, with heterogeneity assessed using Cochrane Q test, p-values, and I^2 statistics. The meta-analysis showed no significant heterogeneity for pooled information and communication technologies utilization prevalence, prompting the use of a fixed-effect model. However, moderate heterogeneity in pooled associations led to using a random-effects model. Heterogeneity was assessed using forest plots, and Funnel plot asymmetry and the Egger regression test were used to evaluate publication bias.

Results: Out of 18,924 publications reviewed, 10 studies with 4,171 health workers met the inclusion criteria for the systematic review and meta-analysis. information and communication technologies utilization prevalence were found 41.92% (95% CI: 33.47, 50.37). Knowledge of ICT 4.47 times (AOR = 4.47, 95% CI: 2.69, 7.42), ICT training 3.43 times (AOR = 3.43, 95% CI: 2.11, 5.57), educational status 2.84 times (AOR = 2.84, 95% CI: 1.80, 4.47), basic computer skills 2.99 times (AOR = 2.99, 95% CI: 2.89, 17.11), attitudes 7.07 times (AOR = 7.07, 95% CI: 2.89, 17.11), computer access 7.15 times (AOR = 7.15, 95% CI: 4.66, 10.97), and urban residents 10 times (AOR = 10.00, 0.29, 347.80) were found to be associated with Information and communication technologies utilization.

Conclusion: Information and communication technologies utilization in Ethiopia is low, emphasizing the need for government investment in information and communication technologies utilization training.

Keywords: Utilization, information, communication, technologies, Healthcare professional, Ethiopia

6. CLINICAL AND SOCIODEMOGRAPHIC PREDICTORS OF DIABETES MELLITUS AMONG PEOPLE LIVING WITH HIV IN ETHIOPIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

Melsew Setegn Alie, Mizan Tepi University

Abstract

Background: Chronic comorbidities such as diabetes mellitus are a growing concern for people living with HIV, particularly in low and middle-income countries where it is also highly prevalent. However, there is lack-synthesized evidence on predictors of diabetes among PLHIV in Ethiopia. Therefore, this study aims to determine the clinical and sociodemographic predictors of diabetes mellitus among peoples living with HIV.

Methods: A comprehensive search was conducted from Scopus, PubMed/MEDLINE, Web of Science, Science Direct, and African Journal Online. This search adhered to the PRISMA 2020 guideline and was conducted as of July 18, 2024. The quality of included articles was assessed using the Newcastle-Ottawa scale. The R software with the Meta package was utilized for meta-analysis. The pooled estimations were performed using a random effects model. The pooled estimates with their corresponding 95% confidence intervals were presented using a forest plot.

Results: Results from 12 studies indicated that the pooled prevalence of diabetes among people living with HIV was 8.0% (95% CI: 7.0, 9.0). Various factors were identified as predictors of diabetes in this population. Older age, higher education level, BMI>25kg/m², longer duration of antiretroviral therapy (ART), hypertension, high levels of low-density lipoprotein (LDL) cholesterol, obesity, and high levels of triglycerides were significant predictors of diabetes mellitus.

Conclusion: The pooled prevalence of diabetes among PLHIV is higher than the national prevalence. Older age, higher education level, BMI>25kg/m², longer duration on ART, hypertension, LDL cholesterol, obesity, and high levels of triglycerides were predictors of diabetes. Interventions should prioritize older individuals and those with higher education levels who also have hypertension. By focusing on these specific groups, we can improve the management and prevention of diabetes among people living with HIV.

7. EFFECTS OF COUPLE-BASED VIOLENCE PREVENTION EDUCATION ON MALE PARTNERS' KNOWLEDGE, ATTITUDES AND CONTROLLING BEHAVIOR RELATED TO INTIMATE PARTNER VIOLENCE IN RURAL ETHIOPIA: A CLUSTER RANDOMIZED CONTROLLED TRIAL.

Zelege Dutamo Agde, Jimma University

Abstract

Background: Supportive attitudes towards wife-beating and the experience of controlling behavior from husbands have been known to increase the risks of intimate partner violence (IPV). The aim of this study was to determine the effects of couple-based violence prevention education in addressing IPV-related knowledge, attitudes, and controlling behavior among male partners in rural Ethiopia.

Method: A cluster randomized controlled trial was conducted using a two-arm parallel group design. The 16 clusters were randomly allocated into 8 intervention groups and 8 control groups. A total of 432 couples (432 male partners and 432 pregnant wives) participated in the trial. Couple-based violence prevention education (CBVPE) was provided to the participants in the intervention group, while the control group received routine or standard care. Difference-in-difference analysis and the Generalized Estimating Equation (GEE) model were used to assess the effectiveness of the intervention.

Result: At the endline, 94.4% of male partners in the intervention group and 94.9% in the control group were available for the intention-to-treat analysis. Male partners in the intervention group were 3.7 times more likely to have good knowledge about IPV compared to male partners in the control group (AOR = 3.7; 95% CI 2.6-5.4). Male partners in the intervention group were 67.6% less likely to report supportive attitudes towards wife-beating compared to those in the control group (AOR = 0.324; 95% CI 0.229-0.459). Also, the proportion of controlling behavior exhibited by male partners in the intervention group was 56.4% less compared to the control group (AOR = 0.436; 95% CI 0.317-0.600).

Conclusion: The intervention proved effective in enhancing knowledge about IPV, reducing supportive attitudes towards wife-beating, and curbing controlling behaviors among male partners in the study setting. This approach holds promise for scaling up and adapting to similar contexts in Ethiopia. The trial was registered on ClinicalTrials.gov with the identifier NCT05856214 on May 4, 2023.

Keywords: attitude; knowledge; intimate partner violence; male partners; rural Ethiopia

8. PREVALENCE OF INFERTILITY, ASSOCIATED FACTORS AND TREATMENT SEEKING AMONG REPRODUCTIVE AGE COUPLES IN MERHABETE WOREDA , NORTH SHEWA ETHIOPIA 2023.

Hailegiworgis Geleta , Mizan Tepi University

Abstract

Background: Infertility is a unique public health problem that affects 10-15% of both men and women with equal frequency, but women may bear the sole blame and have a lower social status. This is the socially acceptable basis for divorce worldwide. However, the prevalence of infertility varies greatly between nations, and a change in certain factors is associated with a change in the prevalence of infertility even within the same community. Despite the negative consequences and availability of medical treatment, there is little studies in this area that determine the factors and prevalence of infertile couples who seek medical help for infertility treatment.

Objective: To assess the prevalence of infertility associated factors, and treatment seeking among couples of reproductive age, in Merhabete woreda Northshewa, Ethiopia, 2023.

Methods: A community-based cross-sectional study was conducted from April 1, 2023, to May 30, 2023, among 846 couples in Merhabete Woreda. Multistage sampling was carried out, and data were collected using a semi-structured interviewer-administered questionnaire, weight and height measuring scales. The data were entered into the Epi-data version 4.6. Data were analyzed using the statistical package for social science, version 26. Bivariable and multivariable logistic regression were performed, and variables with a p-value <0.05 were considered significant.

Results: The prevalence of infertility was 23.4% (95% CI: 20.4–26.5), and 53.5 percent of infertile couples never sought medical help. Females aged 40–49 years old (AOR:7.3, 95% CI: 2.97–17.9), with no formal education (AOR:3.92, 95% CI: 1.88–12.89), couples with a history of sexually transmitted infections (AOR:3.82, 95% CI: 2.18–9.78), high stress (AOR:3.97, 95% CI: 3.44–15.38), overweight (AOR:2.73, 95% CI: 1.14-6.52), and obese (AOR:3.12, 95% CI:1.77-8.2) were significantly associated factors of infertility.

Conclusions and Recommendations: Based on global estimates, the prevalence of infertility was higher in this study. More than half of infertile couples did not seek medical help for infertility. Female age, male education, sexually transmitted infections, stress, and female body mass index were significant factors. Therefore, active intervention is helpful for reducing infertility.

Keywords: Associated factors, Ethiopia, Infertility, treatment seeking

9. CHALLENGES FOR SUSTAINABLE HEALTHCARE WASTE MANAGEMENT IN ETHIOPIA: A QUALITATIVE INVESTIGATION OF GAPS IN POLICY AND REGULATORY FRAMEWORK

Abel Afework. Addis Ababa University

Abstract

Sustainable healthcare waste management systems can only be achieved with a comprehensive policy and regulatory landscape within a nation. In Ethiopia, different studies suggested that there was a policy and regulatory gap in healthcare waste management. However, there is a paucity of evidence establishing the exact policy and regulatory framework gaps. Therefore, this study aims to assess policy and regulatory framework gaps affecting the implementing of sustainable healthcare waste management in Ethiopia. The study utilized a qualitative approach using key informant interview techniques and a policy and regulatory document review. The study participants were purposively selected from the relevant ministries. The data was analyzed thematically. The findings of the study revealed that there was a policy and regulatory framework for healthcare waste management. However, there are gaps in the policy and regulatory framework including, coverage gaps in the policy and regulatory document which can be explained by fragmented documents and the unavailability of legislations. Furthermore, there was a revision gap with many outdated policy and regulatory documents and the absence of a policy monitoring and evaluation system. These gaps were attributed to the three thematically categorized challenges. The organizational and structural challenges were manifested in fragmented structure and poor coordination. The second theme was resource constraint, which was explained by a shortage of professional expertise, budget shortage, and the absence of equipped laboratories. The third one was stakeholder engagement and communication challenges with the subthemes of poor involvement of stakeholders and poor communication. The study emphasized that there is a critical policy and regulatory framework gap in the healthcare waste management system of the country and the factors played for the gap were systemic challenges, where addressing them requires a multifaceted approach involving the relevant stakeholders.

Key words: Healthcare waste, Sustainable waste management, Regulatory gap, Policy gap, Ethiopia

10. ANTENATAL PHYSICAL EXERCISE COUNSELING PRACTICE AND ASSOCIATED FACTORS AMONG HEALTH CARE PROVIDERS IN SOUTHWEST ETHIOPIA.

Dereje Zeleke Belachew, Mizan Tepi University

Abstract

Background: Scientific evidence has sufficiently proved that antenatal physical exercise participation is beneficial for the mother, fetuses, and child in health maintenance, prevention, and treatment of disease. The World Health Organization strongly recommends that healthcare providers prescribe antenatal physical exercise; despite this, most pregnant women haven't received any exercise recommendations from their healthcare providers. Also, there is a lack of synthesized evidence on the provision of antenatal physical exercise counseling by healthcare providers. Therefore, this study aimed to assess the practice level of antenatal physical exercise counseling and its associated factors among healthcare providers who work at Bench Sheko, Southwest Ethiopia.

Methods: An institution-based cross-sectional study design was employed, and 384 study participants were interviewed consecutively from January 25, 2023, to March 25, 2023. Data entry was made using Epi-Data software version 4.6 and exported to SPSS version 25 for analysis. A bivariate logistic regression was used to assess the association of each independent variable with the outcome variable, and variables with a p-value < 0.25 were candidates for the multivariable logistic regression. Finally, variables with a p-value of < 0.05 were declared as statistically significant and reported with their Adjusted Odds Ratio (AOR) and 95% Confidence Interval (CI)

Result: In this study, only 36.5% of healthcare providers had an adequate antenatal physical exercise counseling practice. An adequate antenatal exercise counseling practice is more likely to occur in health care providers who are exposed to mass media (AOR: 3.51, 95% CI: 1.90, 6.48), have an MSc and above educational level (AOR 2.74, 95% CI, 1.15, 6.56), have an adequate level of knowledge (AOR 6.62, 95% CI: 3.40, 12.78), have a good level of attitude (AOR 3.64, 95% CI: 1.85, 7.16), and work in an urban area of a health facility (AOR: 3.23, 95% CI: 1.50, 6.94).

Conclusion: We found that healthcare providers' adequate antenatal physical exercise counseling practice, meeting the minimum World Health Organization exercise recommendation is low compared to other similar studies. Therefore, it shall be beneficial if the zonal health office works towards advancing health care providers education level, provide exercise training services to enhance their knowledge and attitude level and broadcasting antenatal physical exercise information by using different media channels and outlets to the health facility.

11. PREVALENCE OF DEPRESSION AND ASSOCIATED FACTORS AMONG HIV/AIDS-INFECTED PATIENTS ON HAART IN OKUGU REFUGEE CAMP, GAMBELLA, SOUTHERN ETHIOPIA

Adane Assefa, Mizan Tepi University

Abstract

Background: Depression is a common mental health problem in people living in refugee camps under stressful conditions, where HIV/AIDS prevalence is also high. Moreover, depression is very common among people with comorbid conditions such as HIV/AIDS. When both conditions occur together in an already overwhelmed population living in deprived situations, they lead to severe health outcomes and make patients care more complicated. This study aimed to assess the prevalence and factors associated with depression among HIV/AIDS patients living in the Okugu refugee camp in southwest Ethiopia.

Methods: A health facility based cross sectional study was done among sample of 382 adults. Data were collected using structured interviewer administered questionnaire and medical chart review using standard checklist. Descriptive statistics, bivariate and multivariable binary logistic regression analysis were done to identify factors associated with depression. A p-value less than 0.05 was used to declare statistical significance.

Results: A total of 380 study participants took part in the study with a response rate of 99.4%. The prevalence of depression among the South Sudanese displaced population living with HIV/AIDS in the Okugu refugee camp in Ethiopia was 56.8% (95% CI: 51.8%–61.9%). Being female (AOR = 2.6: 95% CI; 1.24, 6.28), having opportunistic infections (AOR = 3.00: 95% CI; 1.75, 7.06), a CD4 count < 200 cell/mm³ (AOR = 2.40: 95% CI: 1.78, 8.23) and having poor social support (AOR = 4.70: 95% CI; 1.98, 9.79) were significantly associated with depression among the refugees.

Conclusions: The magnitude of depression among refugees living HIV/AIDS was significantly high. Thus, regular screening of PLHIV for depression through integration of mental health services with routine ART services, and equipping health care providers with essential supplies to deal with the problems of refugees very essential.

12. MAGNITUDE OF SELECTED HEMATOLOGICAL ABNORMALITIES AND ASSOCIATED FACTORS AMONG ADULT TYPE 2 DIABETIC PATIENTS AT MIZAN TEPI UNIVERSITY TEACHING HOSPITAL, SOUTH WEST ETHIOPIA, 2023 GC.

Samuel Sahile, Mizan Tepi University

Abstract

Background: The hematological abnormalities such as anemia, Leukocytopenia, leukocytosis, and neutrophilia are commonly affecting individuals with type 2 DM with varied severity and magnitude which covers from 0.5 % (eosinophilia) to 30% (neutrophilia).

Objective: -The study mainly aimed to determine the magnitude and associated factors of hematological abnormality among Type 2 Diabetic adult patients at Mizan Tepi university teaching hospital, south west Ethiopia.

Methods: - An institution-based cross-sectional study was conducted on 356 Type 2 Diabetic adult patients at Mizan Tepi University Teaching Hospital from September to December 2023. Data for socio-demographic, dietary, and clinical data were collected by structured pre-tested questionnaires. About 5 ml of venous blood was drawn from each participant into an EDTA test tube and analyzed by Symiens ADVIA hematology analyzer for leukocytes, and erythrocytes. Blood film and stool examination were performed. Data was entered into Epi-data version 4.6 and analyzed by STATA statistical software version 14. Descriptive statistics and measures of association were computed for associated factors by multivariable logistic regression. The association was interpreted as p-value <0.05 to measure association.

Result: The overall magnitude of anemia, leukocytosis, and neutrophilia respectively were 40.35%, 57.7%, and 48.66%. Determinant factors that showed significant association with anemia, and leukocytosis were duration of DM greater than five years (2.14(95 % CI, 1.85, 2.27), Malaria infection (4.5(95 % CI, 4.30, 4.72)), birth interval greater than two years (1.45 (95 % CI, 1.25, 1.64)), third trimester gestational age (1.73 (95 % CI, 1.18, 2.31)), being overweight (3.0 (95 % CI, 2.52, 3.49)).

Conclusion and recommendation

Hematological abnormalities especially anemia, and leukocytosis, were the major public health problems among DM patients and showed significant association, duration of DM greater than five years, malaria infection, birth interval greater than two years, third trimester gestational age, and being underweight. So we recommend that DM patients should be checked their hematological parameters with continuous nutritional and lifestyle modification, contraceptives to increase birth interval, and use a vegetable-based diet.

Key words: Type 2 DM, anemia, neutrophilia, leukocytosis

13. PLASMODIUM FALCIPARUM HISTIDINE RICH PROTEIN 2/3 GENE DELETIONS STATUS BY A HIGHLY SENSITIVE AND NOVEL DIGITAL POLYMERASE CHAIN REACTION AMONG FEBRILE PATIENTS AT DILLA ZURIA WOREDA HEALTH FACILITY, SOUTH ETHIOPIA

Alayu Bogale, Dilla University

Abstract

Plasmodium falciparum parasites carrying deletions of the *hrp2* gene result in false-negative rapid diagnostic tests (RDTs), and thus pose a severe threat to the accurate clinical diagnosis of febrile patients. Widespread distribution of parasites with deletion of *hrp2*, presents an important new challenge for malaria control and elimination efforts. To determine the prevalence of *Plasmodium falciparum* Histidine Rich Protein 2/3 gene deletions among febrile patients at Dilla zuria woreda health facility, South Ethiopia. A health facility-based cross-sectional study was conducted from September to December 2024 in 384 malaria suspected febrile study subjects at Dilla zuria woreda health facility, South Ethiopia. Finger-prick blood samples were collected for malaria diagnosis using microscopy, RDT and Quantitative Polymerase Chain Reaction (qPCR). Digital Polymerase Chain Reaction (dPCR) was used to detect *Plasmodium falciparum* HRP 2/3 gene deletion status. The prevalence of malaria among febrile patients was 69.3%, 42.2% and 71.4% by microscopy, SD Bioline RDT and qPCR, respectively. Out of 99 SD Bioline RDT negative samples, Pfh_{hrp2} and Pfh_{hrp3} exon 2 gene deletions were observed in 23.2% (46/198) and 27.7% (55/198) of the PCR-positive samples, respectively. Double deletions in pfhrp2 and pfhrp3 were detected in 13.1% (26/198) of the PCR positive samples. The prevalence of Pfh_{hrp2/3} gene deletion in Dilla zuria woreda health facility exceed the 5% threshold, thus making the HRP2/3 based rapid diagnostic tests not completely reliable for malaria diagnosis in the study area. This study confirms the presence of 13.1% of pfhrp2/3 gene deletions So, we should consider alternative diagnostic tool like Pf-pLDH in the study area. Further nationwide survey on the prevalence of *hrp 2/3* gene deletion is crucial.

Key words: *Plasmodium falciparum*, Histidine Rich Protein 2/3, dPCR, Ethiopia

14. BACTERIAL PROFILE, ANTIMICROBIAL SUSCEPTIBILITY AND BIOFILM FORMATION OF BACTERIAL ISOLATES FROM MEDICAL EQUIPMENT'S AND INANIMATE HOSPITAL ENVIRONMENTS IN OPERATION ROOMS OF JIMMA MEDICAL CENTER, SOUTHWEST ETHIOPIA

Surafel Fikadu, Mizan Tepi University

Abstract

Background: Microbial contamination in hospitals, especially operating theatres, increases nosocomial infections and post-operative complications. This study assessed bacterial colonization of inanimate environments at Jimma Medical Center (JMC), Southwest Ethiopia.

Objectives: To determine the prevalence of potentially pathogenic bacteria colonizing surfaces and air within JMC.

Methods: A cross-sectional study was conducted at JMC (April-August 2022). 239 environmental samples (159 surface, 80 air) were collected using convenient sampling. Settle plates and swabs were used for air and surface sampling. Standard bacterial culture and biochemical tests identified isolates. Antimicrobial susceptibility was determined using Kirby-Bauer method. ESBL production was confirmed by combination disk method, carbapenemase production screened by Modified Carbapenem Inactivation Method, and MRSA detected using ceftiofur discs. Biofilm formation was assessed using a microtiter plate assay. Data were analyzed using descriptive statistics in SPSS 25.

Result: Of the 239 samples processed, 159 were collected from surfaces and 80 from air. Among these, 85.8% had bacterial growth. This resulted in isolation of 243 bacterial strains, with 89.7% (n=218) Gram-positive and 10.3% (n=25) Gram-negative. CONS (39.5%) and *S. aureus* (31.3%), were dominant isolates. The bacterial load on surfaces and in air exceeded standard limits, and antimicrobial susceptibility analysis revealed 25.9% of isolates were resistant to three or more antibiotics. Additionally, 25% of *S. aureus* and 18.8% of CONS were methicillin-resistant. Of the 25 Gram-negative bacteria, 24% were carbapenemase-producing, and 30% ESBL-PE were identified. The biofilm formation assay revealed 72.3% (34/47) were biofilm producers.

Conclusions: JMC's inanimate surfaces harbor pathogenic and resistant bacteria, posing a significant risk of post-operative infections.

Recommendations: Continuous environmental monitoring, strict infection control, antibiotic stewardship, and regular disinfectant evaluation are crucial for patient safety.

Keywords: Microbial contamination, operating theatre, antimicrobial resistance, Nosocomial infection, biofilm formation, Jimma.

15.DETERMINANTS OF HEAD AND NECK CANCER AMONG PATIENTS ATTENDING JIMMA MEDICAL CENTER, JIMMA, SOUTHWEST ETHIOPIA: AN UNMATCHED CASE-CONTROL STUDY

Abebe, Jimma University

Abstract

Background: Head and neck cancer ranks as the seventh most common cancer worldwide. The burden of this cancer is high in low- and middle-income countries like Ethiopia. Despite the distinct sociodemographic and habitual characteristics of people in Jimma, there is a lack of data on the specific risk factors for this disease. Thus, this study aims to identify the determinants of head and neck cancer among patients attending Jimma Medical Center.

Methods: An unmatched case-control study was conducted at Jimma Medical Center from April 24 to July 10, 2024. A double-population proportion formula with a 1:2 case-control ratio was used to calculate the sample size. The final sample included 315 participants, comprising 105 cases and 210 controls. A consecutive sampling technique was used to select cases and controls, and the data were collected with a structured questionnaire via the Kobo Collection tool then exported to SPSS 26 for analysis. A bivariate logistic regression was done for each independent variable, and then followed by multivariable binary logistic regression analysis for those variables with a p-value less than 0.25. An adjusted odds ratio and their 95% confidence interval were used to assess the strength and significance of the association. The variables with a p-value < 0.05 were considered statistically significant.

Results: The study had a 100% response rate, including a total of 315 participants, with 105 cases and 210 controls. Age (AOR=1.11), body mass index (AOR = 0.75), cigarette smoking (AOR= 5.92), alcohol drinking (AOR= 5.82), khat chewing (AOR= 2.99), a high intake of meat (AOR=2.95), and tooth brushing habit (AOR== 0.27) were the factors that showed statistically significant association with head and neck cancer.

Conclusion: This study revealed that aging, a lower body mass index and modifiable factors such as cigarette smoking, khat chewing, alcohol drinking, and regular meat consumption as key contributors to head and neck cancer. In contrast, maintaining a habit of tooth brushing was found to be protective.

Keywords: Determinants, Head and Neck Cancer, Jimma, Ethiopia.

16. LOW ITN UTILIZATION AMONG HOUSEHOLDS IN SWEPR ETHIOPIA: CHALLENGE FOR MALARIA ELIMINATION, A MIXED DESIGN APPROACH

Wondowesen Nigussie , Mizan Tepi University

Abstract

Objectives: this study aimed to assess the utilization of ITN and associated factors among households in SWEPR, 2023.

Methods: Community-based mixed study designs were applied in the present study. The study participants were reached by using multi-stage stratified sampling techniques. Data was collected by using structured and pre-tested tools through an electronic data collection software, data was analyzed by using STATA version 14. A binary Logistic Regression model was fitted to identify the associated factors. In the multivariable analysis, an adjusted odds ratio (AOR) with a corresponding 95% confidence interval (CI) was used to measure the strength of the association and the statistically significant association was declared at a P-value less than 5%. Focus group discussion (FGD) and in-depth interviews (IDI) were employed for the qualitative study and analyzed using Quirkos. The findings of qualitative data were presented in thematic analysis.

Results: In this study, a total of 1,552 households participated. In all households, the ownership of at least one mosquito net per household was found to be 89% (95%: CI: 87.62-90.72%) whereas the proper use of ITNs was found to be 20.38% (95%: CI: 18.25-22.50%) in the region. From the multivariable logistic regression analysis, the urban residents, NGO employees, having a corrugated iron sheet house type, having good knowledge toward malaria, having good knowledge toward ITNs, having a favorable attitude towards malaria and having a favorable attitude towards ITNs had higher odds of the proper utilization of ITNs. In addition to these, misconceptions, unfair distribution of ITNs, lack of health education, community resistance, and improper use were explored barriers to ITNs use from the qualitative data.

Conclusions: This study showed relatively a high coverage of ITNS, but low proper ITN utilization among the households.

17. ASSESSMENT ON THE OUTCOMES OF PROMOTION OF NUTRITION EDUCATION ON DIETARY DIVERSITY AMONG WOMEN'S OF REPRODUCTIVE AGE (15-49 YEARS) AND CHILDREN AGED 6-36 MONTH IN TIGRAY REGIONAL STATE SELECTED RURAL KEBELES

Fetene Nega Belachew, Arsi University

Abstract

Poor nutrition disproportionately affects women and children in rural areas of low and middle income countries. This is linked with 45 % of child death. Mothers/caregivers inadequate knowledge of Infant and Young Child Feeding (IYCF) practices and poor cultural beliefs increases the risk of nutrition disorders. Integrating nutrition education with food preference and nutrition-sensitive agriculture has the potential to improve diets, but rigorous evaluations of this approach are limited. Therefore, the present study investigated the outcomes of promotion of nutrition education in the presence and absence of nutrition-sensitive agriculture interventions on WRA and their children dietary intake in the rural farming community.

Quasi-experimental study with two arms 1) NSA+BCC and 2) BCC alone was conducted from February-May 2018. The study was designed to include 200 mother-child pairs and samplings were directed by using simple random sampling technique to select the study participants. Women and children dietary intake have been measured using qualitative open 24-hrs dietary recall technique adopted from FAO and WHO.

In the baseline assessment, proportion of minimum DD was extremely low (4.9% women and 4.1% children) in the BCC group. At the endline, 20.8% of women and 32.5% children from the NSA+BCC group has met the recommended minimum DD. NSA+BCC significantly improved the proportion of women and children meeting minimum DD, when compared to BCC alone ($P<0.05$). BCC alone had also shown positive trend in dietary diversity between baseline and endline values.

Although both BCC and NSA+BCC improve dietary diversity, the increase in the proportion of children and women meeting the minimum DD was significantly higher when BCC and NSA were combined. Therefore, in rural farming communities integrating BCC that is informed by food preference along with NSA is recommended to improve diets of women and children.

Keywords: BCC; Dietary diversity, Infant and Young Child Feeding, Nutrition education, Nutrition-sensitive agriculture, Tigray.

18. THE BURDEN OF ASYMPTOMATIC MALARIA INFECTION IN CHILDREN IN SUB-SAHARAN AFRICA: A SYSTEMATIC REVIEW AND META-ANALYSIS EXPLORING BARRIERS TO ELIMINATION AND PREVENTION

Daniel Asmelash , Mizan Tepi University

Abstract

Background: Malaria remains a major public health problem that continues to cause death in under-five children nearly every minute. The purpose of this systematic review and meta-analysis was to determine the pooled prevalence and predictors of asymptomatic malaria in children in Sub-Saharan Africa.

Methods: Relevant studies were retrieved from Web of Science, Cochrane Library, PubMed, Google Scholar, Gray Literature, Embase, and African Online Journal databases published between 2014 and 2024. Data quality was assessed by a tool developed by Hoy and colleagues and classified as low, moderate, or high risk of bias. We performed a random effects model and sub-group analysis by age group, region, and diagnostic methods. The protocol was registered in the PROSPERO (CRD42024584354).

Results: A total of 24 cross-sectional studies with 19,169 participants from 10 Sub-Saharan Africa countries were included in the analyses under the age of 15 years. The overall prevalence of asymptomatic malaria was 25% (95% CI: 20–30%) and showed no evidence of publication bias. Utilization of insecticide-treated nets was significantly associated with asymptomatic malaria. In addition, the overall prevalence of anemia in asymptomatic *Plasmodium*-infected children under the age of 15 was found to be 35% (95% CI: 24–46%). Subgroup analysis showed significant regional and diagnostic tool differences in asymptomatic *Plasmodium* infection.

Conclusion: The findings of this study revealed a high prevalence of asymptomatic *plasmodium* infection in children with significant regional variations. There was a significant association with anemia and the utilization of insecticide-treated nets.

Keywords: Asymptomatic Malaria, Children, Prevalence, Sub-Saharan Africa, Systematic Review and Meta-Analysis

19. ADHERENCE OF HEALTHCARE WORKERS TO THE NATIONAL MALARIA TREATMENT GUIDELINE IN PUBLIC HEALTH FACILITIES, SOUTH WEST ETHIOPIA: A CONCURRENT TRIANGULATION DESIGN

Mathewos Alemu Gebremichael, Bonga University

Abstract

Background: Malaria case management is a vital component of strategies to ensure malaria elimination program. Despite continuous preventive strategies in place, malaria remains a major public health problem in resource-limited countries particularly in Ethiopia due to treatment-related problems. Hence, this study aimed to determine the adherence of healthcare providers to the current malaria diagnosis and treatment guidelines in the Southwest Ethiopian Peoples Regional State(SWEPRS).

Methods: A facility-based cross-sectional study triangulated with qualitative inquiry was applied. A multi-stage stratified and purposive sampling technique was used for the quantitative and qualitative study, respectively. Data were collected by the records review, Focus Group Discussion (FGD), and In-depth Interview (IDI). The adherence of healthcare providers was evaluated according to recommendations of the current malaria diagnosis and treatment guidelines. The findings in the qualitative analysis were presented in the thematic analysis and triangulated with the quantitative findings.

Results: The overall adherence of healthcare providers to the updated malaria treatment standards was 36.99% (95%CI: 33.93-38.52%) and the majority, 982 (58.31%) were diagnosed with Plasmodium falciparum followed by vivax, and mixed. Shortage of anti-malaria drugs was reported as the foremost barrier followed by lack of training on the updated malaria case management guideline, shortage of health professionals, and lack of laboratory materials. In addition, shortage of electric supply, shortage of computers, shortage of outpatient department (OPD) rooms, lack of transport, distance from a health facility, community resistance, improper use of prescribed anti-malarial drugs, perceived inefficacy of drugs, inability to afford the anti-malaria drugs, lack of new malaria case management guideline, lack of private pharmacy, language barriers, and poor quality of Giemsa stain were identified barriers.

Conclusions: The adherence level of healthcare providers was found to be low. Hence, ensuring the availability of all nationally recommended antimalarial drugs and supplies, qualified health professionals, providing continuous training, strengthening continuous follow-up and supervision in the public health facilities are recommended to improve the adherence level of health professionals to national malaria treatment guideline.

Keywords: Adherence, Malaria, Guideline, Public Health, Southwest, Ethiopia

20. INCIDENCE AND PREDICTORS OF MORTALITY AMONG CHILDREN WITH SEVERE ACUTE MALNUTRITION ADMITTED TO THERAPEUTIC FEEDING UNITS IN ETHIOPIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

Amanuel Adugna, Mizan Tepi University

Abstract

Background: Severe acute malnutrition (SAM) remains a critical public health issue and a leading cause of mortality among children in resource-limited countries, including Ethiopia. This study aimed to estimate the mortality rate and identify predictors of mortality among under-five children with SAM admitted to therapeutic feeding units (TFUs) in Ethiopia.

Methods: We searched PubMed, HINARI, Science Direct, Google Scholar, and the African Journals Online database from March 1 to May 30, 2024. The Joanna Briggs Institute checklist was used to critically appraise the selected studies. R software version 4.3.2 was utilized for the meta-analysis. Heterogeneity was identified using I-square statistics. Funnel plots and Egger's tests were used to determine publication bias.

Results: Out of 1,085 studies, 15 were included in this analysis. The pooled mortality rate among under five children with SAM admitted to TFUs was 8.32 per 1,000 person-days of observation (95% CI: 6.25–11.06). HIV infection (HR: 2.84; 95% CI: 1.25–6.42), tuberculosis (HR: 1.86; 95% CI: 1.35–2.56), intravenous fluid infusion (HR: 3.37; 95% CI: 2.39–4.75) altered body temperature (HR: 4.47; 95% CI: 1.90–10.51), impaired consciousness (HR: 2.91, 95% CI: 1.94–4.37), not supplementing F-100 (HR: 4.51, 95% CI: 3.25–6.26), shock (HR: 4.20, 95% CI: 2.92–6.04), and nasogastric tube feeding (HR: 2.02, 95% CI: 1.67–2.44) were predictors of mortality.

Conclusion: The mortality rate among under-five children with SAM in TFUs remains high in Ethiopia. Preventing and managing risks such as HIV, tuberculosis, altered body temperature, impaired consciousness, and shock, along with optimizing F-100 feeding and minimizing reliance on intravenous fluids and nasogastric tube feeding, are crucial to reducing mortality.

Registration: registered in PROSPERO with ID: CRD42024555014

Keywords: Children, Ethiopia, Incidence, Meta-analysis, Mortality, Systemic Review, Severe Acute Malnutrition, Therapeutic Feeding Units.