

Fourth Joint International Annual Research Conference (JIARC-2025)

Thursday 4 December 2025 - Friday 5 December 2025

Bahir Dar, Ethiopia



Book of Abstracts

Acknowledgements

The following institutions or organizations and committee members are highly acknowledged for their contribution and support in the 4th Joint International Annual Research Conference (JIARC 2025)

- Amhara Public Health Institute
- Forum for Higher Education Institutions in the Amhara Region
- Amhara National Regional State Health Bureau
- Executive Committee Members
- Scientific Committee Members
- Fund Raising and Resource Mobilization Committee Members
- Publication and Communication Committee Members
- Scientific Abstract Reviewers
- Health Research Development Directorate teams
- Strategic Scientific Advisory Council (SSAC) members

Moreover, the institute extending special acknowledgement for our funding organizations

- Fenot Harvard
- Emory University
- Project HOPE
- Carter Centre-Ethiopia
- Eyu-Ethiopia
- Amhara Public Health Institute
- Forum for Higher Education Institutions in the Amhara Region

Conference Committee Members

I. Executive Committee

Name	Affiliation
Belay Bezabih (MPH)	Director General, APHI
Tafere Melaku (PhD)	Secretariat, Forum for Higher Education Institutions in the Amhara Region
Simeneh Ayalew	Deputy Director General, APHI
Adane Nigusie (PhD)	Health Research Development Directorate Director and Senior Researcher, APHI
Nurilign Abebe (PhD)	Health Research Development Directorate Senior Researcher, APHI
Eyader Melese	Internal Audit Directorate Director, APHI
Fikremariam Yosef	Public Relation Directorate Director, APHI
Edmealem Admasu	Health Financing Specialist, APHI

II. Scientific Committee

Name	Affiliation
Adane Nigusie (PhD)	Health Research Development Directorate Director, APHI
Nurilign Abebe (PhD)	Health Research Development Directorate Senior Researcher, APHI
Prof. Mezgebu Yitayal	Health Research Development Directorate Senior Research Adviser, APHI and Bahir Dar University
Taye Zeru	Health Research Development Directorate Researcher, APHI

Desalew Salew	Health Research Development Directorate Researcher, APHI
Mastewal Worku	Public Health Emergency Management Directorate Expert, APHI
Mohammed Hussein (PhD)	Health System analyst, Health Research Development Directorate, APHI
Demeke Endalew	Diagnostic Laboratory Services, APHI
Melashu Balew	Health Research Development Directorate Researcher, APHI
Alemayehu Abate (PhD)	Health Research Development Directorate Researcher, APHI
Girum Meseret	Health Research Development Directorate Researcher, APHI
Gizew Dessie	Health Research Development Directorate Researcher, APHI
Negese Sewagegn	Health Research Development Directorate Researcher, APHI
Andualem Ayalew	Regional Data Management Centre Back End Web Developer, APHI

III. Fundraising and Resource Mobilization Committee

Name	Affiliation
Eyader Melese	Internal Audit Directorate Director, APHI
Edmealem Admasu	Health Financing Specialist, APHI
Dr. Jejaw Demamu	Forum for Higher Education Institutions in the Amhara region
Yohannes Alemu	Finance Directorate Director, APHI
Girum Meseret	Health Research Development Directorate Researcher, APHI
Tazeb Molla	Laboratory Diagnostic service Directorate Director, APHI
Ambahun Cherinet	Carter Centre-Ethiopia
Amare Atalay	Finance Directorate Expert, APHI
Birhanu Desta	Project HOPE
Mastewal Worku	Public Health Emergency Management Directorate Expert, APHI
Etsegenet Kindie	Regional Data Management Centre Directorate Director, APHI
Banchu	Laboratory Diagnostic service Directorate Expert, APHI
Addisu Gasheneit	Project HOPE

IV. Publication and Communication Committee

Name	Affiliation
Fikremariam Yosef	Public Relation Directorate Director, APHI
Habtamu Temesgen	Public Relation Directorate Expert, APHI
Addisu Sintie	Regional Data Management Centre directorate Expert, APHI
Negese Sewagegn	Health Research Development Directorate Researcher, APHI
Andualem Ayalew	Regional Data Management Center (RDMC) Back End Web Developer, APHI
Bizunesh Birhanu	Public Relation Directorate Expert, APHI
Desalew Salew	Health Research Development Directorate Researcher, APHI
Dr. Jejaw Demamu	Forum for Higher Education Institutions in the Amhara region
Hermella Misganaw	Regional Data Management Centre directorate Expert, APHI
Abeje Molla	Finance Directorate Expert, APHI

V. Conference Proceedings Writer Committee

Name	Affiliation
Prof. Mezgebu Yitayal	Health Research Development Directorate Senior Research Adviser, APHI and Bahir Dar University
Adane Nigusie (PhD)	Health Research Development Directorate Director, APHI
Nurilign Abebe (PhD)	Health Research Development Directorate Senior Researcher, APHI
Taye Zeru	Health Research Development Directorate Researcher, APHI
Desalew Salew	Health Research Development Directorate Researcher, APHI

Alemayehu Abate (PhD)	Health Research Development Directorate Researcher, APHI
Girum Meseret	Health Research Development Directorate Researcher, APHI
Gizew Dessie	Health Research Development Directorate Researcher, APHI
Negese Sewagegn	Health Research Development Directorate Researcher, APHI
Melashu Balew	Health Research Development Directorate Researcher, APHI

Abstract Reviewers

S/N	List of Abstract reviewers	Email address	Affiliation
1.	Dr. Mulat Yimer	yimermulat37@gmail.com	Bahir Dar University
2.	Dr. Bayeh Abera	bayeabera15@gmail.com	Bahir Dar University
3.	Dr. Melkamu Tiruneh	mtiruneh089@gmail.com	
4.	Mickeal Getie	mgetachew286@gmail.com	Amhara Public Health Institute
5.	Dr. Yihalem Abebe	yih2000ho@gmail.com	Debre Markos University
6.	Minala Tarekegn	minale23@gmail.com	Bahir Dar University
7.	Dr. Destaw Fetene	destaw.fetene@gmail.com	University of Gondar
8.	Dr. Marelign Tilahun	marikum74@gmail.com	Debre Tabor University
9.	Senait Tadesse	tadesenait21@gmail.com	Bahir Dar University
10.	Dr. Ashagire Mola	ashagremolla@yahoo.com	Bahir Dar University
11.	Ashenafi Worku	ashuw2007@gmail.com	University of Gondar
12.	Dr. Alemtsehay Mekonnen	alemtsehay21@yahoo.com	Bahir Dar University
13.	Melaku Tadege	melakutadege@yahoo.com	Amhara Public Health Institute
14.	Dr. Achenef Motbayinor	motbainor2@gmail.com	Bahir Dar University
15.	Dr. Nestanet Worku	netsanet32000@yahoo.com	University of Gondar
16.	Amare Workie	amityw12@gmail.com	Wollo University
17.	Dr. Wubet Birhan	aeestifa@gmail.com	University of Gondar
18.	Dr. Abay Sisay	abusis27@gmail.com	Addis Ababa University
19.	Toyeb Yasin	toyeb96@gmail.com	Wollo University
20.	Dr. Mohamed Hussien	muhamedun@gmail.com	Bahir Dar University
21.	Dr. Gizachew Yismaw	gygiz62@gmail.com	Amhara Public Health Institute
22.	Dr. Tadesse Hailu	tadessehailu89@gmail.com	Bahir Dar University
23.	Dr. Dereje Birhanu	derejefrae2014@gmail.com	Bahir Dar University
24.	Dr. Gedefaw Abeje	abejegedefaw@gmail.com	Bahir Dar University
25.	Dr. Awuraris Hailu	awrarishailu@gmail.com	Debre Birhan University
26.	Dr. Lemma Getacher	lemmagetacher@gmail.com	Debre Birhan University
27.	Dr. Mulusew Andualem	muler.hi@gmail.com	Bahir Dar University
28.	Habitu Alganah	habtamu.alganah@yahoo.com	Bahir Dar University
29.	Dr. Solomon HaileMeskel	solomonhailemeskel9@gmail.com	Debre Birhan University
30.	Dr. Eleni Admasu	eleniam16@gmail.com	Bahir Dar University
31.	Dr. Arya Mesfin	hitd2005@gmail.com	University of Gondar
32.	Dr. Lemma Derseh	lemmagezie@gmail.com	University of Gondar
33.	Dr. Gebremariam Getaneh	getanehgebremariam@gmail.com	Bahir Dar University
34.	Prof Minalshiwa Alebachew	atminale2004@gmail.com	Debre Birhan University
35.	Dr. Worku Animaw	workimaw@gmail.com	Bahir Dar University
36.	Haile Amha	haileleul19@gmail.com	Debre Markos University
37.	Abesha Kassie	abeshakassie@gmail.com	Debre Markos University
38.	Yinager Workneh	workieyenie@gmail.com	Bahir Dar University

39.	Dr. Asrat Agalu	asruphar@gmail.com	Bahir Dar University
40.	Dr. Amha Adimassie	yetsionamha@gmail.com	Bahir Dar University
41.	Amilaku Nigusie	amlakunigusie1616@gmail.com	University of Gondar
42.	Minwyelet Maru	minwuyeletmaru@gmail.com	Amhara Public Health Institute
43.	Prof Mulugeta Kibret	mulugetanig@gmail.com	Bahir Dar University
44.	Ayingda Adamu	aynisha5@gmail.com	Bahir Dar University
45.	Dr. Tadele Amare	tadeleamare14@gmail.com	University of Gondar
46.	Asmamaw Getnet	assmamaw11@gmail.com	Debre Markos University
47.	Getinet Gedif	get4ged@gmail.com	Debre Markos University
48.	Betelihem Belete	bettybelete3@gmail.com	Amhara Public Health Institute
49.	Genet Gedamu	geni_31280@yahoo.com	Bahir Dar University
50.	Gizachew Tadesse	leulgzat@gmail.com	Bahir Dar University
51.	Getasew Mulat	getasewmulat@gmail.com	Amhara Public Health Institute
52.	Dr. Nurilign Abebe	nure113@gmail.com	Amhara Public Health Institute
53.	Dr. Adane Nigusie	Adane2009ec@gmail.com	Amhara Public Health Institute
54.	Gizew Dessie	gizew.dessie@gmail.com	Amhara Public Health Institute
55.	Girum Meseret	girum.m21@gmail.com	Amhara Public Health Institute
56.	Taye Zeru	zerutaye@gmail.com	Amhara Public Health Institute
57.	Negesse Sewagegn	negese2004@gmail.com	Amhara Public Health Institute
58.	Dessalew Salew	desalew131@gmail.com	Amhara Public Health Institute
59.	Melashu Balew	bmelashu@gmail.com	Amhara Public Health Institute
60.	Dr. Alemayehu Abate	alexu2love@gmail.com	Amhara Public Health Institute

Contents

Track 1: Community Engagement and Local Ownership in Crisis Response . . .	1
Uptake and preferences of differentiated service delivery models for HIV treatment in Sub-Saharan Africa: a systematic review and meta-analysis 70	1
Emergency Medical Services (EMS) Utilization in Northwest Ethiopia: A mixed sequential explanatory study of practice, barriers, and community-led perceived solutions. 10 . .	2
Community Perspectives and Local Ownership in Preventing Kidnapping and Extortion in Ethiopia's Amhara Region 84	3
Track 2: Health System Strengthening and Service Access in Crisis Settings . . .	4
Perceived leadership practices among primary healthcare providers working at conflict-affected settings in northeastern Amhara, Ethiopia. 51	4
Breakthrough hepatitis B virus infection and its associated factors among vaccinated children in Northwest Ethiopia 6	5
Determinants of Eye Health Service Utilisation in Central Sidama Zone, Ethiopia 144 . .	6
Escalating Burden of Malaria in Pregnancy in the Amhara Region, Ethiopia: Spatiotemporal Patterns, Early-Warning Insights and Predictors (2018-2024) 118	7
Development of a Mortality Risk Prediction Model for Patients on Antiretroviral Therapy at Felege Hiwot Comprehensive Specialized Hospital: A Retrospective Cohort Study 5	8
Advancing Health Services in Ethiopia: Person-Centered Care and Its Predictors - A Systematic Review and Meta-analysis 44	9
Epidemiology: Temporal and Spatial Patterns of Measles in Amhara Region, Ethiopia, 2019-2024: Implications for Targeted Intervention 145	10
Magnitude of gender-based violence and its associated factors among women and girls in Africa: an umbrella review 136	11
Prehospital Care Utilization and Associated Factors Among Trauma Patients in West Amhara Referral Hospitals During Armed Conflict: A Mixed-Methods Study 22	12
Spatial Distribution and Vaccination Status of Measles Cases in Ethiopia: A Systematic Review and Meta-Analysis 47	13
Trends in burden of maternal abortion and miscarriage in sub-Saharan African from 1990-2021: a systematic analysis for the Global Burden of Disease 2021 Study 80	14

A scoping review of person-centered maternity care service in humanitarian and fragile settings. 13	15
Barriers and Facilitators of the SAFE Strategy to Eliminate Trachoma as a Public Health Problem in Hyper-Endemic Settings of Wagehimera Zone, Amhara Region, Ethiopia. 126	16
Health system responsiveness and its associated factors for intrapartum care in conflict affected areas in Amhara region, Ethiopia: a cross-sectional study 15	17
Validation of a predictive nomogram for mortality among neonates with necrotizing enterocolitis in tertiary care hospitals at Bahir Dar city, Bahir Dar, Northwest Ethiopia 8	18
Development and Validation of Prediction Model of Mortality among Adults Living with HIV/AIDS in Chagni Health Center, Awi Zone, Ethiopia 143	19
CD4+ T-cell count and hematological parameters in patients with cutaneous leishmaniasis, Northwest Ethiopia: a case-control study 152	20
Exploring health system challenges and gaps for crisis response in Ethiopia: A scoping review of publications and reports from 2020-2024. 81	21
Severity of Wasting Among Children Aged 6–59 Months in East Africa: A Multilevel Proportional Odds Analysis of DHS Data from 2012-2022 49	22
Evaluating the quality of effective vaccine management practices at public hospitals in South Wollo Zone, Northeast Ethiopia: a mixed method study 85	23
Bacterial Neonatal Sepsis, Antimicrobial Resistance and Risk factors among neonates in Ethiopia: Systematic review and Meta-analysis 32	24
Track 3: Implementation Research and Scaling Lessons	25
Thriving despite Adversities: Building Resilience of Children through School-Based Mental Health Intervention in War Situations 104	25
Effect of ADHERE eHealth intervention on adherence to quality improvement tools in intrapartum care: Implementation research in Ethiopia 120	26
KEBELE ELIMINATION OF TRACHOMA FOR OCULAR HEALTH (KETFO) TRIAL UPDATE 123	27
Barriers and facilitators to Benzathine Penicillin G adherence in Tikur Anbessa Specialized Hospital: A mixed methods study of Rheumatic Heart Disease patients using the COM-B model 27	28
Effects of a peer-led educational intervention based on theory of planned behavior on reducing khat use intention and behavior among secondary school students in Northeast Ethiopia 65	29
Track 4: Innovation and technology during multiple crisis	30
Intention to use smartphone pregnancy apps and predictors among pregnant women attending ANC service in Dessie city and Kombolcha town public health facilities, north-east Ethiopia, 2024. An extended Unified Theory of Acceptance and Use of Technology	

model-based framework 17	30
Can Ethiopia achieve national and international targets for reducing neonatal mortality? Application of classical techniques and deep-learning models for time-series forecasting 18	31
Diagnostic performance of Biomeme and Loop-Mediated Isothermal Amplification with Abbott Real-time PCR as gold standard for ocular chlamydia trachomatis in Trachoma hyper endemic settings of Amhara region, Ethiopia. 131	32
Predicting household sanitation service using a machine learning approach in urban Health and Demographic Surveillance System sites of northwest Ethiopia 40	33
Predicting Malnutrition in PLWHIV Using Machine Learning in Gondar, Ethiopia 89	34
Track 5: Mental Health and Psychosocial Support in Emergencies	35
Help-Seeking Behavior and Quality of life among Women with Stress, Anxiety, and De- pression in Northwest Ethiopia: A community-based study 109	35
Depression and Its Determinants among Internally Displaced Persons in Sub-Saharan Africa: A Systematic Review and Meta-Analysis to Inform Psychosocial Reintegration Strate- gies 77	36
Global Prevalence and Determinant Factors of Pain, Depression, and Anxiety Among Can- cer Survivors: An Umbrella Review of Systematic Reviews and Meta-Analyses 25	37
Direct and Indirect Factors Associated with Depression among PLHIV on Second-Line ART in Northeast Ethiopia of conflict affected areas: A Structural Equation Modeling Ap- proach 53	38
A Community-Based Cross-Sectional Study on Developmental Delay and Related Factors in Children Aged 6–36 Months in Assosa City, Western Ethiopia. 21	39
Exploring the Lived Experiences and Coping Strategies of Mental Health Caregivers in Ethiopia: Implications for Supportive Interventions 108	40
Assessment of suicidal acts and perception among clients attending emergency outpatient departments in public hospitals of Amhara Region, Ethiopia (2023–2024) 127	41
Prevalence of depression and its associated factors among HIV-positive youths taking an- tiretroviral therapy at selected hospitals in Amara region, North West Ethiopia. Multi- ple crises focused. 130	42
Mental Health Problem and Mental Health Services in Primary Health Care Setting in Oro- mia Region, Ethiopia 33	43
Post-Traumatic Stress Disorders among Sexual Gender Based Violence survivors in war affected zones in Ethiopia 66	44
Post-traumatic stress disorder and associated factors among people who experienced trau- matic events in Dessie town, Ethiopia. A community-based study 67	45

Track 1: Community Engagement and Local Ownership in Crisis Response

Community Engagement and Local Ownership in Crisis Response / 70

Uptake and preferences of differentiated service delivery models for HIV treatment in Sub-Saharan Africa: a systematic review and meta-analysis

Authors: Abebe Nega^{None}; Mulusew Andualem^{None}; Mezgebu Yitayal^{None}; Fentie Ambaw^{None}

Corresponding Author: abede9907@gmail.com

Background: HIV remains a global public health issue, and people from sub-Saharan Africa are highly affected by the disease. Fundamental achievements were made in HIV care, and one of the major advances was the implementation of the Differentiated Service Delivery Models (DSDM) along with the universal test and treat strategy. DSDM has been recommended since 2016 to accommodate the growing number of people living with HIV (PLHIV), and several countries in Sub-Saharan Africa have implemented DSDM as part of their national policy. However, there is no conclusive evidence about the level of uptake and the preferences of PLHIV towards DSDM.

Objective: To estimate the pooled uptake of DSDM by PLHIV and to synthesis their DSDM preferences in Sub-Saharan Africa.

Methods: A comprehensive search was conducted using PubMed, Scopus, Embase, Hinari, and Google Scholar. In this study, cross-sectional, cohort, case-control, discrete choice experiments, and qualitative studies were included. The quality of the included studies was assessed using the Joanna Briggs Institute critical appraisal checklist. STATA V.17 was used to estimate the pooled uptake of the DSDM. Heterogeneity across the studies was assessed using forest plot, I² and Cochran's Q test.

Results: In this review, 57 studies were included, and about 69% of the studies were published recently, since 2022. Among the studies, 12 studies were reported from South Africa, and 20 were retrospective cohort studies. In this study, the pooled uptake of DSDM among stable PLHIV was 46% (proportion=0.46, 95% CI: 0.36-0.55). Moreover, the facility-based individual models were identified as the most preferred model by stable PLHIV in sub-Saharan Africa.

****Conclusion and recommendations:** ** Our study showed that the uptake of DSDM among stable PLHIV was moderate in sub-Saharan Africa. The facility-based models, particularly the multi-month drug refill and the less-frequent clinical consultation models, were the most preferred models. Thus, countries in sub-Saharan Africa shall strengthen their policies to scale up the implementation of DSDM. Increasing the availability of facility-based individual models in particular is important in SSA. Moreover, health workers shall identify the gaps and enhance the awareness of patients towards the DSDM.

Community Engagement and Local Ownership in Crisis Response / 10

Emergency Medical Services (EMS) Utilization in Northwest Ethiopia: A mixed sequential explanatory study of practice, barriers, and community-led perceived solutions.

Authors: Mengistu Abebe Messelu¹; Baye Tsegaye Amlak¹; Bekele Getenet Tiruneh¹; Getinet Nibret¹; Temesgen Ayenew¹

¹ Debre Markos University

Corresponding Author: abebemengistu7@gmail.com

Background: Despite growing government concerns in Ethiopia over the recent years to improve utilization of Emergency Medical Services (EMS), it is still unmet need of the community. Moreover, there is a scarcity of research that has been conducted to assess its utilization in Ethiopia.

Objective: This study is aimed at assessing the practice, barriers, community-led perceived solutions, and factors associated with EMS utilization among patients attending to the emergency departments in public hospitals of East Gojjam zone.

Methods: A multi-center, institutional-based, cross-sectional study design using a mixed sequential explanatory approach was conducted. Systematic random and purposive sampling techniques were used to select the study participants. Interviewer-administered questionnaires, in-depth interviews, and key-informant interviews were used to collect the data. Data were collected using KoboCollect software and then exported to STATA version 17 for analysis. A binary and multivariable logistic regression models were used. The audio records of qualitative data were transcribed, translated, coded, and analyzed using thematic analysis. Finally, the result of qualitative data was summarized with narration.

Results: A total of 428 study participants were included in this study. More than half (54.7%) of the study participants were males and about 187 (43.7%) had no formal education. This study found that only 16.6 % of the study participants used an emergency medical services. Factors positively associated with utilization were knowing the ambulance call (AOR=2.68; 95% CI: 1.05, 6.82), presenting at the emergency department during the night (AOR=6.60; 95% CI: 3.15, 13.83), having a triage score >7 (AOR=9.76; 95% CI: 4.07, 23.44), and having prior experience of ambulance use (AOR=2.99; 95% CI: 1.28, 6.99). The presence of armed conflicts, unavailability of road infrastructure, delayed responses from ambulance drivers, and a lack of ambulance vehicles in kebele were the major barriers for ambulance utilization. The participants suggested that improving community awareness, deploying ambulances at health facilities, and resolving of the current conflict were the perceived solutions.

****Conclusion and recommendations:** ** The utilization of emergency medical services in the East Gojjam Zone was low. Thus, resolving the armed conflicts, improving community awareness, and coordination of available resources are essential to improve EMS utilizations.

Community Engagement and Local Ownership in Crisis Response / 84

Community Perspectives and Local Ownership in Preventing Kidnapping and Extortion in Ethiopia's Amhara Region

Authors: Adane Nigusie Weldeab¹; Girum Meseret Ayenew²; Abraham Amsalu³; Tilahun Belete⁴; Bayeh Abera⁴; Yemisrach Alemu Alemu⁵; Matewos Ejigsemahu⁶; Mezgebu Yitayal⁴; Belay Bezabih⁷

¹ *Lead Researcher, Amhara Public Health Institute*

² *Health Research Development Directorate, Amhara Public Health Institute*

³ *Public Health Emergency Management Directorate, Amhara Public Health Institute*

⁴ *Bahir Dar University*

⁵ *Laboratories Capacity Building Directorate, Amhara Public Health Institute*

⁶ *World Health Organization*

⁷ *Amhara Public Health Institute*

Corresponding Author: adane2009ec@gmail.com

Introduction: In Ethiopia's Amhara region, kidnapping, abduction, and extortion have become serious public security issues affecting individuals, families, and communities. This study explored community perceptions, lived experiences, and local responses to these crimes to identify pathways for effective prevention and community-led safety strategies.

Methods: Guided by Interpretive Description (ID), a qualitative descriptive study was conducted. Purposively selected officials and community members participated in twenty in-depth key informant interviews. Inductive coding was used to thematically analyze the data and extract key insights.

Results: Seven main themes emerged: economic disruption, psychological and social effects, political aspects, inadequate law enforcement, community coping mechanisms, fear and insecurity, and prevention suggestions. Participants described widespread trauma, financial strains, institutional mistrust, and community-driven protective measures, highlighting the role of local engagement in safety.

Conclusion: Beyond individual harm, these crimes threaten justice, governance, and community well-being. Addressing them requires strengthened law enforcement, political neutrality, public education, and support for community-based safety systems. Strengthening local ownership and engagement is critical for sustainable prevention and crisis response.

Track 2: Health System Strengthening and Service Access in Crisis Settings

Health System Strengthening and Service Access in Crisis Settings / 51

Perceived leadership practices among primary healthcare providers working at conflict-affected settings in northeastern Amhara, Ethiopia.

Authors: Endalkachew Dellie¹; Wubshet Debebe Negash¹; Adane Kebede¹; Asmamaw Atnafu¹

¹ *University of Gondar*

Corresponding Author: endalkd.07@gmail.com

Introduction: Leadership is a key component of the Ethiopian Health Sector Transformation Plan (HSTP) and is crucial for the successful implementation of health sector reforms. The Ethiopian health system requires effective leadership to mobilize resources and rebuild the healthcare infrastructure that was destroyed during the armed conflict. Therefore, this study aims to assess the perceived healthcare leadership practices in conflict-affected primary healthcare systems in the north-east Amhara regional state.

Methods: A facility-based cross-sectional study was conducted among 593 randomly selected healthcare providers working in public health facilities. We assessed their perceived leadership practices (PLPs) using eighteen-item five-point Likert scale questionnaire. Finally, we fitted a linear regression analysis to identify the factors that affect healthcare providers PLPs. Unstandardized β -coefficient with a 95% CI and a p-value of less than 0.05 were used for declaring the statistical significance.

Results: The mean score percentage of healthcare providers perceived leadership practices was found to be 48.6% (95% CI: 44.5, 52.6) in conflict-affected healthcare systems. Healthcare providers who received training on leadership, good inter-departmental communication, and good financial management in their health facilities were identified to be positively associated with PLPs. Besides, healthcare providers who had job autonomy and optimism enhanced healthcare providers PLPs.

Conclusion: The healthcare providers' perception on leadership practices in conflict-affected primary healthcare systems is inadequate. To address this issue and restore basic health services, it is imperative for healthcare managers and stakeholders to design training programs focused on healthcare leadership for primary healthcare providers. Furthermore, interventions aimed at improving interdepartmental communication, fostering optimism, and promoting job autonomy are crucial for enhancing the healthcare provider perception on leadership practices in these settings.

Health System Strengthening and Service Access in Crisis Settings / 6

Breakthrough hepatitis B virus infection and its associated factors among vaccinated children in Northwest Ethiopia**Authors:** Mekuanint Geta¹; Asrat Hailu²; Yimtubezinash WoldeAmanuel³¹ CDT-Africa, College of Health Sciences, Addis Ababa University, Ethiopia and Department of Medical Microbiology, School of Biomedical and Laboratory Sciences, College of Medicine and Health Sciences, University of Gondar, Ethiopia² Center for Innovative Drug Development and Therapeutic Trials for Africa (CDT-Africa), College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia and Department of Medical Microbiology, Parasitology and Immunology, School of Biomedicine and Laboratory Sciences, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia.³ Center for Innovative Drug Development and Therapeutic Trials for Africa (CDT-Africa), College of Health Sciences, Addis Ababa University, Ethiopia and Department of Medical Microbiology, Parasitology and Immunology, School of Biomedicine and Laboratory Sciences, College of Health Sciences, Addis Ababa University, Ethiopia**Corresponding Author:** yageta23@gmail.com**Background:** Despite the availability of an effective vaccine, the global prevalence of chronic hepatitis B (CHB) in children was estimated to range from 1.3 to 3.4%. In Ethiopia, the estimated seroprevalence of CHB in children under five years old was 2.21%.**Objective:** This study aimed to assess the prevalence of breakthrough hepatitis B virus (HBV) infection and its associated factors in northwest Ethiopia.**Methods:** A cross-sectional study was conducted in northwest Ethiopia from December 2023 to June 2024. Children aged 1–14 years who visited pediatric clinics for various medical reasons were enrolled. Hepatitis B surface antigen (HBsAg) was tested using an enzyme-linked immunosorbent assay (ELISA). Data were analyzed using SPSS version 23.0. Chi-square tests and logistic regression analyses were employed to identify predictors of breakthrough HBV infection, with statistical significance set at $p < 0.05$.**Results:** Among 325 vaccinated children under 15 years of age, the prevalence of breakthrough HBV infection was 2.5% (95% CI: 0.9–4.3%). The age of the children and a history of contact with individuals with CHB were significantly associated with breakthrough infection. Children aged 5–9 years were 10.7 times (OR = 10.7; 95% CI: 1.1–99.6), and those aged 10–14 years were 20.7 times more likely to be infected with HBV (OR = 20.7; 95% CI: 2.0–215.8), compared to children aged 1–4 years. Additionally, children with a history of contact with CHB individuals were six times more likely to be infected with HBV (OR = 6.1; 95% CI: 1.4–27.6).**Conclusion and Recommendations:** This study found an intermediate prevalence of HBV infection among vaccinated children, which raises significant public health concerns. Age and contact with individuals with CHB were found to be significant factors associated with breakthrough HBV infection. These findings highlight the need for regular evaluation of the effectiveness of vaccination programs and the implementation of targeted preventive strategies to reduce transmission.

Health System Strengthening and Service Access in Crisis Settings / 144

Determinants of Eye Health Service Utilisation in Central Sidama Zone, Ethiopia

Authors: Melese Kitu¹; Zelalem Mehari^{None}; Thomas Tusa^{None}; Belayneh Bekele^{None}; Addisu Worku^{None}; Aklog Getnet^{None}; Samson Tesfaye^{None}; Dawit Seyum^{None}; Alemayehu Sisay^{None}; Aklilu Haile^{None}; Ageru Kebede^{None}; Kebede Deribe^{None}; David Macleod^{None}; Andrew Bastawrous^{None}; Jacqueline Ramke^{None}; Matthew Burton^{None}; Esmail Habtamu^{None}

¹ Eyu-Ethiopia

Corresponding Author: melesekitu0@gmail.com

Background: The magnitude and distribution of ocular morbidities as well as the success of mainstreaming primary eye care (PEC) into primary health care (PHC) are strongly influenced by community services utilisation, yet evidence in this area remains limited.

Objectives: Identify determinants of eye health service utilisation in Central Sidama zone, Ethiopia using the Andersen Behavioural Model of Health Service Use as a guiding framework.

Methods: A community-based cross-sectional study was conducted (March 23 - April 09, 2025), nested within a broader all-age population survey. A two-stage cluster random sampling method was employed and all adults aged ≥ 18 years were included. Data were collected through face-to-face interviews using a pretested questionnaire. A Generalized Linear Mixed Model (GLMM), adjusted for household level clustering, was employed to identify factors that determine eye health service utilisation.

Results: Data were obtained from 3,221/3456 (93.20%) adults. Median age was 35 years (interquartile range (IQR) 25–45); 1,731 (53.74%) were females. Only 66 (2.05%) and 414 (12.85%) utilised eye health and general healthcare services respectively in the preceding year. Among participants with current eye care need (1,576, 48.93%), only 58 (3.68%) sought care. Predisposing factors that predicted service use included older household head age (AOR=1.02; 95% CI: 1.00–1.04), employment (AOR=2.17; 95% CI: 1.00–4.69), being married (AOR=4.18; 95% CI: 1.40–12.52), and positive belief toward eye health (AOR=4.29; 95% CI: 2.33–7.91). Enabling factors were higher household dependency ratio (AOR=1.22; 95% CI: 1.01–1.47), and health insurance membership (AOR=2.07; 95% CI: 1.15–3.75). Need factors that necessitated service use were presence of non-vision impairing ocular morbidity (AOR=1.78; 95% CI: 1.02–3.11) and self-reported eye problems (AOR=7.58; 95% CI: 3.77–15.25).

Conclusion: Eye health service utilisation was low despite substantial unmet need. Demographic and attitudinal (predisposing), health insurance enrolment (enabling), and perceived and clinical (need) factors influenced eye health service use.

Recommendations: establishing equitably accessible PEC fully integrated within PHC, with efforts to improve awareness, reduce access barriers, and expand health insurance coverage, is crucial.

Health System Strengthening and Service Access in Crisis Settings / 118

Escalating Burden of Malaria in Pregnancy in the Amhara Region, Ethiopia: Spatiotemporal Patterns, Early-Warning Insights and Predictors (2018-2024)

Authors: Hailemariam Awoke Engedaw¹; Kassahun Alemu Gelaye²; Kassawmar Angaw Bogale³; Kindie Muchie¹; Muluken Azage Yenesew¹; Mulusew Andualem Asemahagn¹

¹ *Bahir Dar university*

² *University of Gondar*

³ *Bahir Dar university, Ethiopia*

Corresponding Author: kassawmarangaw@gmail.com

Background: Malaria in pregnancy (MiP) remains a major contributor to maternal morbidity, adverse birth outcomes, and neonatal mortality in sub-Saharan Africa. Despite ongoing control efforts in Ethiopia, limited evidence exists on the spatiotemporal distribution of MiP and its predictors remains limited.

Objective: This study assessed the spatiotemporal pattern, clustering, and predictors of malaria in pregnancy in the Amhara region from 2018 to 2024.

Methods: We analyzed routine health facility data on laboratory-confirmed MiP cases, linked with antenatal care (ANC) coverage and district-level environmental covariates. Annual incidence trends were calculated, purely temporal and spatiotemporal clusters were detected using SaTScan, and predictors were identified through ARMAX (1,0,4) time-series modeling. Model fit was assessed using AIC, BIC, and residual diagnostics.

Results: A total of 63,354 MiP cases were reported across the study period, with an overall mean incidence of 9.2 (SD = 3.38). A temporal escalation occurred from 2022 to 2024, when incidence increased nearly ten-fold compared to 2018. One significant temporal cluster (2022–2024) was identified (RR = 3.74; $p < 0.001$), accounting for a 70% excess burden. Spatiotemporal analysis revealed seven clusters (2018–2020) were localized, while later clusters expanded to cover North western and central Amhara, with pregnant women facing up to seven-fold higher risk. MiP incidence will remain elevated through 2025, with seasonal peaks. ARMAX results identified malaria transmission intensity, average temperature, and relative humidity as significant positive predictors, while soil moisture and elevation reduced MiP risk.

Conclusion: MiP incidence in Amhara has escalated in recent years with spatiotemporal clustering. Climatic factors—including temperature, relative humidity, soil moisture and elevation—along with underlying transmission intensity were strongly associated with incidence trends with indicating a sustained risk of recurrent upsurges. These findings underscore the urgent need for climate-informed interventions, early-warning systems, and strengthened ANC-based prevention to curb the growing burden.

Health System Strengthening and Service Access in Crisis Settings / 5

Development of a Mortality Risk Prediction Model for Patients on Antiretroviral Therapy at Felege Hiwot Comprehensive Specialized Hospital: A Retrospective Cohort Study

Authors: endalamaw Tesfa^{None}; kebadnew Mihretie^{None}

Corresponding Authors: endalamaw2009@gmail.com, kebadmulatu@gmail.com

Background: Despite substantial advancements in antiretroviral therapy (ART), HIV-related mortality remains a pressing challenge, particularly in resource-limited settings. In countries like Ethiopia, there is a critical gap in tools to predict mortality risk among patients receiving ART, which limits timely clinical decision-making and intervention. Addressing this gap, the present study aimed to develop a validated mortality risk prediction model for adult HIV patients receiving ART at Felege Hiwot Comprehensive Specialized Hospital (FHCSH).

Methods: A retrospective cohort study was conducted among 777 HIV-positive adults receiving ART at FHCSH. Participants were selected using the “rule of thumb” for predictive modeling. Secondary clinical data were extracted, cleaned, and analyzed using Epi Info and R software. Logistic regression was employed to identify significant prognostic determinants of mortality. Model performance was evaluated using the area under the receiver operating characteristic curve (AUC) and calibration plots. A nomogram was developed to visualize risk estimates. Internal validation was performed using the bootstrap method, and decision curve analysis (DCA) was conducted to assess clinical utility.

Results: The overall incidence of mortality among ART patients was 12.6% (95% CI: 10.2%–15.1%). Six key prognostic factors—WHO clinical stage, functional status, baseline ART regimen, duration of treatment, adherence level, and presence of comorbidities—were incorporated into the final prediction model. The nomogram model demonstrated excellent discriminative ability, with an AUC of 0.968 (95% CI: 0.951–0.983) for the original model and 0.967 (95% CI: 0.947–0.987) for the reduced model. At the optimal cut-off point (0.1667), the model achieved 93.3% accuracy, 87.8% sensitivity, and 94.1% specificity. DCA indicated strong net clinical benefit across a wide range of threshold probabilities (0.1–0.8).

Conclusion: This study developed a robust and well-performing mortality risk prediction model for HIV patients on ART, incorporating six easily obtainable clinical indicators. The model, presented as a nomogram, showed excellent discrimination and calibration, providing a practical tool for frontline clinicians to stratify mortality risk and tailor interventions. However, external validation through large-scale, multicenter prospective studies is recommended before routine clinical application.

Health System Strengthening and Service Access in Crisis Settings / 44

Advancing Health Services in Ethiopia: Person-Centered Care and Its Predictors - A Systematic Review and Meta-analysis**Author:** Ayenew Takele Alemu¹¹ *Department of Public Health, College of Medicine and Health Sciences, Injibara University, Injibara, Ethiopia***Corresponding Author:** ayetake21@gmail.com

Introduction: In this day, healthcare systems have become focused on delivering person-centered care, not diseases-focused. Person-centered care encounters about exchanging information, seeing patients as person, taking mutual responsibility, agreeing on treatment alternatives, and seeing healthcare providers as person. Person-centred care in Ethiopia is an emerging concept in the healthcare system. However, there is no nationally pooled evidence on this topic. Therefore, this systematic review and meta-analysis was done to estimate pooled level of person-centered care and associated factors for health services in Ethiopia.

Methods: We adhered to the Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) guidelines. Electronic databases: Pub-Med, CINAHL, Web of Science and Google-Scholar were searched to retrieve the eligible articles. The included articles that fulfilled the inclusion criteria were further evaluated for quality. Data were extracted from the included studies using a pre-piloted Excel spreadsheet for windows. Statistical software, STATA version 17, was used to estimate effect sizes using random-effects model. Results were displayed using forest plots.

Results: Out of 912 records found, 16 articles with 9,279 participants were included in our systematic review and meta-analysis. Meta-analysis using random-effects model resulted the pooled level of person-centered care to be 58.33% (95% CI: 54.52%-62.15%, I²=93%). Private facility type (OR=0.30, 95% CI: 0.15-0.62), intimation with healthcare providers (OR=0.31, 95% CI: 0.19-0.50), ease to service access (OR=3.24, 95% CI: 2.4-4.38), facility attractiveness (OR=1.90, 95% CI: 1.35-2.67), privacy protection (OR=4.67, 95% CI: 1.7-12.85), and medication information (OR=2.27, 95% CI: 1.95-3.78) were pooled as statistically significant predictors of person-centered care.

Conclusion: In Ethiopia, health services have a moderately low pooled level of person-centred care. It was evidenced that studies with smaller sample sizes had a larger effect size for overall person-centred care. Our meta-analysis also showed that maternal health services have a higher person-centered care than treatment (curative) health services. Private facility type, intimation with healthcare providers, ease access to services, perceived attractiveness, privacy protection, and medication information are significant predictors for the level of person-centered care. Strengthening the collaborative approach is necessary to achieve mutual understanding regarding the person-centeredness concept in healthcare.

Health System Strengthening and Service Access in Crisis Settings / 145

Epidemiology: Temporal and Spatial Patterns of Measles in Amhara Region, Ethiopia, 2019-2024: Implications for Targeted Intervention

Authors: Demeke Endalamaw Alamneh¹; Endalkachew Nibret²; Abayneh Munshea²; Feleke Mekonnen²; Senait Tadesse²; Taye Zeru¹; Mesfin Tefera³; Gizachew Yismaw¹; Tsigiereda Amsalu¹; Abraham Amsalu¹; Kindye Endaylalu¹; Endalamaw Tesfa²

¹ Amhara Public Health Institute

² Bahir Dar University

³ Ethiopian Public Health Institute

Corresponding Author: demekeendalamaw@gmail.com

Background: Measles is a highly contagious, vaccine-preventable disease remained as major public health concern in low-income. Despite ongoing vaccination efforts, outbreaks continue to occur. In this regard, data on the recent epidemiological patterns, temporal trends, and spatial distribution of measles cases in the region are limited. Therefore, this study was conducted to assess the incidence, temporal trends, and spatial clustering of measles cases in Amhara region from 2019-2024.

Methods: A retrospective analysis of regional measles surveillance data from 2019-2024 was conducted in Amhara region. Descriptive statistics and trend analysis was conducted using SPSS version 26. Spatial analysis to determine the spatial distribution, case distribution pattern, and hot spot analysis was performed through ArcGIS tool. SatScan statistics tool was used to identify the significant primary and secondary clusters.

Results: Out of a total of 18,468 reported measles suspected cases, 61% were classified as clinically compatible, 20% were epide-linked, 10% were discarded cases, and 9% were laboratory-confirmed. The highest proportion of cases (36.5%) occurred among children aged 5-14 years, followed by adults aged ≥ 15 years (26%). Males accounted for the majority of cases (54%). Geographically, the highest number of cases were reported from Waghimra Zone (16.6%), followed by Central Gondar (12.4%), Oromo Special Zone (9.6%), and East Gojjam (9%). The crude incidence rate per 100,000 population increased from 0.53 to 2.13, peaking in 2023. Measles cases showed clear seasonal trends, with peaks occurring during the spring and autumn (September-November) seasons. Spatial autocorrelation analysis indicated clustering of measles cases. Hotspots were identified at the woreda level in Waghimra, Oromo Special Zone, South Gondar, and North Shoa zones. Significant primary clusters were also detected in the same zones.

Conclusion: Measles transmission persists in Amhara Regional State, with increasing incidence and distinct spatial and temporal patterns. Immunity gaps in older children and geographically clustered outbreaks highlight the need for enhanced vaccination strategies. Strengthening measles surveillance, prioritizing catch-up vaccination for older children, and implementing targeted immunization campaigns in hotspot areas during peak transmission seasons are recommended.

Health System Strengthening and Service Access in Crisis Settings / 136

Magnitude of gender-based violence and its associated factors among women and girls in Africa: an umbrella review**Author:** Gebrye Getu¹¹ *Department of Epidemiology and Biostatistics, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia.***Corresponding Author:** gebryegetu27@gmail.com

Background: Gender-based violence (GBV) is a pervasive global public health and human rights issue that negatively affects the physical, psychological, sexual, and reproductive health of millions of women and girls. Even if numerous studies have reported a high prevalence of GBV and identified various determinants, there is a lack of consolidated evidence on the issue.

Objective: This umbrella review aimed to synthesize the current evidence from systematic reviews and meta-analyses (SRMA) on the prevalence and determinants of GBV among women and girls in Africa, 2025.

Methods: This review followed PRISMA 2020 guidelines and was registered with PROSPERO. The major databases searched were PubMed/MEDLINE, Google Scholar, ScienceDirect, PsycINFO, Embase, Scopus, Hinari, and others for grey literature. Studies of SRMA on GBV in Africa, regardless of the publication year, were included. The methodological quality of the included studies was examined using the Assessment of Multiple Systematic Reviews-2 tool. Data were extracted using Microsoft Excel and analyzed with STATA 17 software. Heterogeneity was assessed using the I^2 statistic, and publication bias was evaluated using funnel plots and Egger's test. Associations were reported as pooled odds ratios along with their confidence intervals (CIs), with significance set at $p < 0.05$.

Results: This umbrella review pooled effect estimates from 23 eligible SRMA studies comprising 682,280 participants. The overall lifetime and twelve-month prevalence of GBV among women and girls in Africa were found to be 38.74% (95% CI: 33.49, 43.99) and 36.12% (95% CI: 35.32, 36.91), respectively. Additionally, the pooled prevalence rates of sexual, physical, and psychological violence were 31.80% (95% CI: 26.99, 36.60), 29.42% (95% CI: 23.49, 35.42), and 32.69% (95% CI: 26.47, 38.91), respectively. Both victim-related factors, like residence, level of education, and use of alcohol or khat, and perpetrator-related factors, such as education, alcohol usage, and decision-making capacity, were significantly associated with GBV.

Conclusion and recommendations: The overall prevalence of GBV, including all forms (physical, sexual, and psychological), was high. Besides, both victim- and perpetrator-related factors were significantly associated with GBV. Therefore, available interventions should be implemented to reduce GBV, and multi-level approaches should be adopted to address its associated factors.

Health System Strengthening and Service Access in Crisis Settings / 22

Prehospital Care Utilization and Associated Factors Among Trauma Patients in West Amhara Referral Hospitals During Armed Conflict: A Mixed-Methods Study

Authors: Temesgen Ayenew¹; Mengistu Abebe Messelu¹; Mamaru Getie Fetene¹; Fentahun Minwuyelet Yitayew¹; Bekele Getenet Tiruneh¹

¹ Debre Markos University

Corresponding Author: teme31722@gmail.com

Background: Prehospital care is vital for reducing mortality from traumatic injuries, especially in low- and middle-income countries. This study determined prehospital care utilization and associated factors among trauma patients in referral hospitals in West Amhara, Ethiopia.

Methods: A concurrent triangulation mixed-methods design was employed from March–August 2024 in Debre Markos, Tibebe Ghion, and Felege Hiwot hospitals. Quantitative data were collected from 518 trauma patients via questionnaire, with proportional allocation based on patient flow, and analyzed using logistic regression to identify factors associated with prehospital care use. Qualitative data were collected through semi-structured interviews with healthcare professionals and trauma patients, reported in line with the Consolidated criteria for reporting qualitative research (COREQ) checklist. Reflexive Thematic Analysis guided by the WHO Emergency Care System Framework was used, integrating quantitative and qualitative findings while maintaining reflexivity to understand prehospital care utilization.

Results: The prehospital care utilization rate was 49.8%. The majority of patients (84.2%) arrived at hospitals via taxi or on foot, reflecting reliance on non-Emergency Medical Service (EMS) transport. Rural residence (AOR = 4.80), lower education (AOR = 0.54), violence/quarrel-related injuries (AOR = 2.60), Motor Vehicle Accidents (AOR = 2.00), gunshot injuries (AOR = 8.61), and penetrating injuries (AOR = 0.34) were significantly associated with prehospital care use.

Qualitative findings revealed challenges across four themes: (1) limited awareness and lack of emergency communication systems during Initial Contact and Dispatch (Scene), (2) scarce ambulances, long response times, and reliance on non-EMS transport in Prehospital Treatment and Transportation (Transport), (3) resource and personnel shortages that indirectly affect prehospital response within Facility-Based Emergency Care linkages (Facility), and (4) the need for Advocacy and Public Education

Conclusion: Prehospital care utilization is sub-optimal, influenced by sociodemographic and injury-related factors. Qualitative insights reveal systemic and community challenges that warrant further investigation through larger, more representative studies.

Health System Strengthening and Service Access in Crisis Settings / 47

Spatial Distribution and Vaccination Status of Measles Cases in Ethiopia: A Systematic Review and Meta-Analysis**Authors:** Mengistie Kassahun Tariku¹; Mulusew Andualem²¹ *Debre Markos University*² *Department of Health Systems Management and Health Economics, School of Public Health, College of Medicine and Health Sciences, Bahir Dar University, Bahir Dar, Ethiopia***Corresponding Author:** mengesh2009@gmail.com

Background: Measles remains a significant public health problem contributing to elevated morbidity and mortality among children, especially in sub-Saharan Africa. Outbreaks and vaccination gaps persist in Ethiopia despite campaigns. There is minimal countrywide data documenting the geographic spread of measles cases and vaccination.

Objective: This study aimed to assess the geographical distribution of the number of measles cases across regions and estimate the pooled proportions of vaccination status in Ethiopia.

Methods: A systematic review and meta-analysis were performed according to PRISMA 2020 guidelines. PubMed, Science Direct, African Journals Online, and Google Scholar were searched from January 1 to April 30, 2025 by without restricting publication year. Data were independently extracted by two reviewers using Excel and resolved through discussion in case of disagreement. ArcGIS 10.8 and STATA 17 were used in geospatial mapping and meta-analysis, respectively. The Joanna Briggs Institute checklist was used to assess the quality of studies. Random-effects model was applied to estimate pooled proportions, and heterogeneity was assessed with I^2 statistic. Subgroup analysis by region, study design, and type of investigation was performed. Publication bias was assessed with funnel plots and Egger's test.

Results: A total of 43 studies with 31,731 cases of measles were reported. The highest reporting cases were from Oromia (39.2%) and Amhara (34.6%), while Benishangul Gumuz, Dire Dawa, Gambella, and Harari did not submit any data. The pooled proportion of vaccinated was 29.9% (95% CI: 25.1–34.7%; $I^2 = 99.2\%$), unvaccinated was 54.2% (95% CI: 48.2–60.2%; $I^2 = 99.5\%$), unknown 24.7% (95% CI: 14.7–34.7%), and ineligible 8.9% (95% CI: 7.0–10.8%). The highest proportion of unvaccinated cases was in the Somali region (74.3%), and the highest unknown vaccination status was from Addis Ababa (53.7%).

Conclusion and Recommendation: There is significant spatial concentration of measles cases in Ethiopia, with the greatest majority being reported from Oromia and Amhara. These high levels of unvaccinated and unknown vaccination status cases point to persistent immunization and surveillance gaps. Strengthening routine immunization, improving surveillance data quality, and focusing on low-coverage areas are central to measles control and eventual elimination in Ethiopia.

Health System Strengthening and Service Access in Crisis Settings / 80

Trends in burden of maternal abortion and miscarriage in sub-Saharan African from 1990-2021: a systematic analysis for the Global Burden of Disease 2021 Study**Author:** Simachew Animen Bante¹¹ *College of medicine and health science, Bahir Dar University***Corresponding Author:** animensimachew@gmail.com

Background: Unsafe abortion remains a major public health concern in sub-Saharan Africa, contributing significantly to maternal mortality and morbidity. Despite various initiatives to reduce abortion-related deaths, the problem persists in the region.

Objective: To estimate trends in maternal abortion and miscarriage incidence, deaths, and disability-adjusted life years (DALYs) in sub-Saharan Africa from 1990 to 2021.

Methods: The burden of maternal abortion and miscarriage was analyzed using age-standardized incidence, death, and DALY rates by sub-region and country. Annual and total percentage changes were calculated to assess trends, and line graphs and tables were used for regional comparisons.

Results: The age-standardized incidence rate declined from 2,414.9 per 100,000 in 1990 to 1,695.3 per 100,000 in 2021, a 29% reduction (95% UI: -0.32, -0.28). Deaths fell from 8.55 (95% UI: 6.9–10.22) to 1.94 per 100,000 (95% UI: 1.56–2.45), while DALYs decreased from 476.9 (95% UI: 388.6–566.2) to 109.4 per 100,000 (95% UI: 89.2–136.6). Eastern Africa showed the greatest decline in deaths (APC -5.76%) and DALYs (APC -5.67%), while Southern Africa recorded the smallest reduction in incidence (APC -0.27%).

Conclusion and recommendations: The incidence, death, and DALYs from maternal abortion and miscarriage in sub-Saharan Africa decreased from 1990 to 2021. The largest reduction in mortality and DALYs was observed in Eastern Sub-Saharan Africa, while the greatest decline in incidence occurred in Central Sub-Saharan Africa. Although all regions show improvement, Eastern Sub-Saharan Africa had the highest incidence rates in both 1990 and 2021, indicating persistent challenges. There is a need for targeted interventions in regions with slower progress, especially Eastern and Western Sub-Saharan Africa.

Health System Strengthening and Service Access in Crisis Settings / 13

A scoping review of person-centered maternity care service in humanitarian and fragile settings.

Authors: Wubshet Debebe Negash¹; Asmamaw Atnafu¹; Robera Olana²; Kamalini Lokunge²

¹ *University of Gondar*

² *Australian National University*

Corresponding Author: wubshetdn@gmail.com

Background: Women who live in crisis settings are three times more likely to die than those who live in peaceful environments. Person-centered maternity care (PCMC) is a fundamental human right for every woman, yet it is often overlooked in conflict contexts.

Objective: This scoping review aims to summarize person-centered maternity healthcare in fragile and conflict settings.

Methods: A scoping review of quantitative and/or qualitative approach was conducted to assess person-centered maternity care in humanitarian settings. Research that assessed dimensions of PCMC such as autonomy, dignity, privacy, communication, confidentiality, and supportive care were included. Electronic database searches of PubMed, MEDLINE, EMBASE, PsycINFO, Scopus and generic web searches (Google Scholar) were used to search for available evidence. We used the Preferred Reporting Items for Systematic Review and Meta Analyses criteria for scoping review (PRISMA-ScR) statement. The data from the final selected articles was extracted into an Excel spreadsheet. Finally, we described the study characteristics and summarized the concept of person-centered care.

Results: A total of 889 articles were identified. After exclusion by title and abstract, 71 articles were eligible for full text review, and finally 16 articles were eligible for data extraction. Our finding revealed low respect and supportive care, poor communication and autonomy, and breach of privacy. Resource constraints, protracted insecurity, cultural and language barriers were attributed to poor person-centered sexual and reproductive health. The review identified several implemented interventions, including training for healthcare providers, access to language translators, social and cultural support programs, free healthcare services, and community engagement initiatives.

Conclusion and recommendations: There are significantly more reports of negative experiences of maternity healthcare services than positive ones. Prioritizing culturally appropriate approach, simulation-based training for healthcare providers on person-centered care, community engagement, and the integration of PCMC domains into existing health services are essential to improve service delivery.

Health System Strengthening and Service Access in Crisis Settings / 126

Barriers and Facilitators of the SAFE Strategy to Eliminate Trachoma as a Public Health Problem in Hyper-Endemic Settings of Wagehimera Zone, Amhara Region, Ethiopia.

Authors: D Keenan Jeremy¹; Getu Degu²; Solomon Aragie³; Taye Zeru⁴

¹ *University of California San Francisco*

² *Bahir Dar University college of medicine and Health sciences*

³ *Addis Ababa University*

⁴ *Amhara Public Health Institute*

Corresponding Author: zerutaye@gmail.com

Background: Trachoma is a targeted disease to be eliminated as a public health problem 2030 through SAFE strategy (Surgery to correct TT, Antibiotics to reduce bacterial infection, Facial Cleanliness, and Environmental Improvement to reduce transmission). Despite 15 years of strategy implementation, there are 95 persistent and 13 recrudescing districts in the region. In addition, it has an estimated 75,929 cases waiting for Trachomatous trichiasis surgery. The barriers and facilitators of the SAFE strategy implementation was not well explored and we aimed to explore the barriers and facilitators of SAFE strategy in hyper endemic settings of Wagehimira zone in 2025.

Methods: a programmatic study design was conducted from January to February 2025. Program experts who were health extension workers, Neglected Tropical Diseases officers from districts health offices and zonal health departments, and non-governmental organization participated from Wagehimira. Thirteen key informants and nine focus group discussions were conducted. Open Cod 4.03 software was used and Thematic analysis was done.

Results: Four major themes and thirteen subthemes were identified. The awareness of Trachomatous trichiasis symptoms and confidence in surgical treatment improved, while geographic inaccessibility, fear, and insufficient post-operative follow-up continued to limit service uptake. The Mass Drug Administration was widely accepted and effective, though shortages of pediatric syrup persisted. There were slight improvements in sanitation, but open defecation, poor latrine quality, and inadequate waste management was common. Moreover, cultural norms and water scarcity made difficult to consistent hygiene practice. All of these results showed significant advancements, but they also highlighted ongoing deficiencies in hygiene infrastructure, community involvement, and service delivery to eliminate trachoma.

Conclusions and recommendations: Awareness and acceptance of Trachomatous trichiasis surgery and Mass drug administrations have improved, major challenges including limited surgical access, fear, pediatric drug shortages, and poor sanitation. Hence, strengthening logistical support for patients who had trachomatous trichiasis surgery and enhancing the capacity of integrated eye care workers are crucial. Strengthen Mass drug administration delivery, better water access, and culturally adaptable hygiene promotion and waste management should also be strengthened.

Health System Strengthening and Service Access in Crisis Settings / 15

Health system responsiveness and its associated factors for intrapartum care in conflict affected areas in Amhara region, Ethiopia: a cross-sectional study

Authors: Asmamaw Atnaful¹; Endalkachew Dellie¹; Adane Kebede¹; Samrawit Mihret Fetene¹; Tsegaye Haile¹; Melaku Birhanu¹; Jinha Park^{None}; Selamawit Tefera^{None}; Birhutesfa Mouhabew^{None}; Wubshet Debebe Negash¹

¹ *University of Gondar*

Corresponding Author: wubshetdn@gmail.com

Background: Ethiopia has been in conflict complicating the delivery of essential services in the region. The health system responsiveness (HSR) of the healthcare facilities in conflict-affected areas remains unclear. Therefore, we assessed the health system responsiveness for intrapartum care in three conflict-affected districts of Amhara region, Ethiopia.

Methods: Community-based cross-sectional study among four hundred nineteen women who delivered recently were randomly selected from Wadla, Meket and Gynt districts. We used the eight domains of health system responsiveness to identify 30 measurement items for intrapartum care responsiveness; dignity (4), autonomy (4), confidentiality (2), communication (5), prompt attention (5), social support (3), choice (3), and basic amenities (4). A multiple linear regression model was fitted and in the final model, an unstandardized β coefficient with 95% Confidence Interval and a P-value of < 0.05 was used to declare significantly associated factors with health system responsiveness.

Results: The findings of our study revealed that the overall proportion of health system responsiveness in intrapartum care was 45.11% (95% CI: 40.38 - 49.92). The performance of responsiveness was the lowest in the autonomy, choice, and prompt attention domains at 35.5%, 49.4%, and 52.0%, respectively. Mothers living in urban areas ($\beta=4.28$; 95% CI: 2.06, 6.50), government employees ($\beta=4.99$; 95% CI: 0.51, 9.48), those mothers stayed at the health facilities before delivery/during conflict ($\beta= 0.22$; 95% CI: 0.09, 0.35), those who were satisfied with the health care service ($\beta=0.69$; 95% CI: 0.08, 1.30), and those who perceived the quality of health care favorable ($\beta=0.96$; 95% CI: 0.72, 1.19) were more likely to rate health system responsiveness positively. On the other hand, joint decision-making for health ($\beta= -2.46$; 95% CI: -4.81, -0.10), and hospital delivery ($\beta= -3.62$; 95% CI: -5.60, -1.63) were found out to be negatively associated with health system responsiveness.

Conclusion and recommendations: In the Amhara region of Ethiopia, over 50% of mothers living in areas affected by conflict reported that health systems were not responsive with respect to intrapartum care. Therefore, it is crucial for all stakeholders to work together to ensure that intrapartum care is responsive to conflict-affected areas, with a focus on providing women autonomy and choice.

Health System Strengthening and Service Access in Crisis Settings / 8

Validation of a predictive nomogram for mortality among neonates with necrotizing enterocolitis in tertiary care hospitals at Bahir Dar city, Bahir Dar, Northwest Ethiopia

Authors: Belaynew Zemed¹; Zelalem Anteneh²

¹ *Bahir Dar University, college of Medicine and health Sciences, 1Departments of pediatrics and child health*

² *Bahir Dar University, college of Medicine and health Sciences, Departments of Epidemiology and Biostatistics*

Corresponding Author: kzolam@gmail.com

Background: Necrotizing Enterocolitis (NEC) is a serious gastrointestinal disease primarily affecting preterm neonates. Despite improvements in neonatal care, NEC continues to contribute significantly to neonatal mortality, particularly in low-resource settings. In Ethiopia, reported NEC-related mortality rates vary widely, from 45% to 89%, reflecting both the severity of the disease and inconsistencies in existing evidence. Moreover, little is known about the predictors of NEC-related mortality in the local context. This underscores the need for a locally derived predictive model to support early risk stratification and guide clinical decision-making, with the ultimate goal of improving survival outcomes among affected neonates.

Methods: A prospective cohort study was conducted among 251 neonates hospitalized with Necrotizing Enterocolitis at Felege-Hiwot Comprehensive Specialized Hospital (FHCSH) and Tibebe Ghion comprehensive Specialized Hospital (TGSH). Data were analyzed using R version 4.4.2 software. A multivariable analysis was performed to identify predictors of mortality, and a simplified nomogram was developed to enhance clinical applicability. Model performance was evaluated using the area under the receiver operating characteristic curve (AUC) and calibration plot. Bootstrapping was used to validate all accuracy measures. A decision curve analysis was used to evaluate the clinical and public health utility of our model.

Results: NEC mortality rate was 51% (95% CI: 45.00-57.34). outborn delivery, lower gestational age, disease onset ≤ 3 days, delayed first feeding beyond 48 hours of postnatal age, abdominal wall erythema, stage III NEC, severe thrombocytopenia, clinical deterioration within 48 hours of diagnosis, and hospital-acquired infection were Key predictors remained in the reduced model. The AUC of the original model was 0.965 (95% CI: 0.943, 0.982), whereas the nomogram model produced prediction accuracy of an AUC of 0.959 (95% CI: 0.942, 0.982). Our decision curve analysis for the model provides a higher net benefit across ranges of threshold probabilities.

Conclusions: Our model has excellent discrimination and calibration performance. Similarly, the nomogram model has excellent discrimination and calibration ability with an insignificant loss of accuracy from the original. The models can have the potential to improve care and treatment outcomes in the clinical settings.

Health System Strengthening and Service Access in Crisis Settings / 143

Development and Validation of Prediction Model of Mortality among Adults Living with HIV/AIDS in Chagni Health Center, Awi Zone, Ethiopia

Author: Mekuanent M^{None}

Corresponding Author: mekuanent710@gmail.com

Background: Human Immunodeficiency Virus (HIV) remains a major public health problem. In Ethiopia, particularly the Chagni Town is a development corridor area with main road to the Ethiopian great renaissance dam rout and with more than two years of ongoing conflict may aggravate HIV burden. However, predicting model on death among HIV adult patients is yet not documented.

Objective: To develop and validate prediction model of mortality among adults living with HIV/AIDS in Chagni health enter in Chagni Town, Awi Zone, Amhara Region, Ethiopia.

Methods: A retrospective follow-up study was conducted among 337 HIV infected adults on ART in Chagni health center. Data were accessed from February 28, 2025 to March 19, 2025 from patient records. STATA Version 17 was used for statistical analysis. Discriminative ability and predictive accuracy were determined using area under receiver operating characteristic and model calibration respectively. Youden index value was used to fix the threshold for risk classification. Internal validation of the model was evaluated by bootstrapping technique.

Results: Participants had a mean age of 40.32 years (SD ± 11.13); 61.4% were females. Mortality incidence was 1.98 (95% CI: 1.47 - 2.65) per 100-persons years of observation. The determinants were having no history of treatment regimen change (AOR: 5.60; 95% CI: 2.14-14.62), CD4 count below 450cells/ul (AOR: 5.17; 95% CI: 1.88-14.24), no tuberculosis preventive therapy (TPT) (AOR: 14.44; 95% CI: 5.69-36.64), and underweight (AOR: 2.87; 95% CI: 1.20-6.86). The optimal risk threshold was 0.0860; yielding 90.9% sensitivity and 72.7% specificity. Using this cut point, 120(35.6%) patients were classified high risk, among whom 40(33.3%) died. The discriminative probability of the model (AUROC) was 0.92 (95% CI: 0.88- 0.95) and showed good calibration (Hosmer-Lemeshow: p value = 0.3299). After bootstrapping, AUROC was 89.9% (95% CI: 84.7% - 93.7%).

Conclusions: The incidence of mortality was high. The model had strong discrimination and calibration to determine risk of mortality. Lack of TB preventive therapy, absence of regimen change, having low CD4 count and underweight were determinants. External validation needs to be carried out before using the developed model.

Health System Strengthening and Service Access in Crisis Settings / 152**CD4+ T-cell count and hematological parameters in patients with cutaneous leishmaniasis, Northwest Ethiopia: a case-control study****Authors:** Bizuayehu Gashaw¹; Endalew Yizengaw²; Endalkachew Nibret³¹ *aDepartment of Biology, College of Science, Bahir Dar University, P.O.BOX 79 Bahir Dar, Ethiopia;*² *bDepartment of Medical Laboratory Science, College of Medicine and Health Sciences, Bahir Dar University, P.O.BOX 79 Bahir Dar, Ethiopia*³ *Division of Health Biotechnology, aDepartment of Biology, College of Science, Bahir Dar University, P.O.BOX 79 Bahir Dar, Ethiopia; Institute of Biotechnology, Bahir Dar University, P.O.BOX79 Bahir Dar, Ethiopia***Corresponding Author:** itisbizuayehu@gmail.com

Background: Hematological parameters and CD4+ T-cell count are used as indicators of disease severity and treatment response. Ethiopia is one of the cutaneous leishmaniasis (CL)-endemic countries. There is a scarcity of data on the hematological and CD4+ T-cell profiles of patients with CL in Ethiopia.

Objective: To evaluate the change in T-cell and other cellular population of CL cases, compared from controls

Methods: A case control study was conducted from April to July 2022 G.C. This study was conducted at Nefas-Mewcha Hospital Leishmaniasis Treatment Centre. Patients with different clinical presentations of CL were recruited. The controls were from a non-CL endemic area and had neither symptoms nor history of CL. Demographic data were collected by a standardized questionnaire. Complete blood cell and CD4+ T-cell counts were determined by a MicroCC-20 Plus automated hematology analyzer and BD FACS Presto, respectively.

The data were analyzed using SPSS-23 and Graph pad Prism 9.4.1. Statistical difference was considered at $p < 0.05$.

Results: A total of 48 adult patients (41.7% female; median age: 28[18–45] year) with CL and 31 controls were recruited. Most patients (62.5%) had localised CL. Whole blood levels, hematological parameters and CD4+ T cell count were significantly lower in patients than controls. The median value of CD4+ counts was 734.5/mm³ in CL Vs 867.0/mm³ in controls. There was no significant difference in all parameters between patients with different clinical forms.

Conclusions: Patients with CL had significantly lower levels of hematological parameters and CD4+ T-cell count. This deficiency might lead to exposure to disease development.

Recommendation: A controlled experimental study is required to recommend for Health care facilities and treatment centers, that helps to understand the cause for having the disease versus protection in relation to cutaneous leishmaniasis; so that a treatment plan need to be shaped in a way that fill host level deficit

Health System Strengthening and Service Access in Crisis Settings / 81

Exploring health system challenges and gaps for crisis response in Ethiopia: A scoping review of publications and reports from 2020-2024.**Authors:** Asmamaw Getahun¹; Getachew Teshale¹; Endalkachew Dellie Getahun¹; Young Su Park²¹ *University of Gondar*² *Seoul National University***Corresponding Author:** endalkd.07@gmail.com

Background: Ethiopia's health system has faced significant challenges due to COVID-19, natural disasters, and conflicts, disrupting healthcare delivery. This scoping review examined health system gaps and responses during crises, aiming to recommend strategies for resilience.

Method: We followed a systematic scoping review approach using the five-step methodology: defining the research question, identifying relevant literature, selecting studies, charting the data, and summarizing/analyzing results. The review was guided by PRISMA-ScR and used the Population, Concept, and Context (PCC) framework. We included all English-language studies published between January 2000 and December 2024 addressing challenges or responses of the Ethiopian health system during crises, regardless of study design. PubMed, SCOPUS, Google Scholar, and Google were searched using MeSH terms/keywords. After title, abstract, and full-text screening, 44 articles were included for final analysis. Data were synthesized using descriptive analytical methods and narrative synthesis to summarize and interpret findings.

Results: Findings revealed crises severely impacted health services due to shortages of medical supplies, workforce, and infrastructure. Demand surges, transport restrictions, border closures, and financial constraints exacerbated these gaps. Additional challenges included poor data availability, high staff turnover, lack of emergency communication plans, and insufficient funding.

Conclusion and recommendations: The COVID-19 pandemic and the northern Ethiopian conflict notably disrupted routine services, infrastructure, and health information systems.

To build resilience, the study recommends: (1) developing scalable emergency plans for essential services, (2) strengthening primary healthcare and community-based systems, (3) maintaining medical stockpiles, and (4) providing crisis-specific training for health workers. These measures aim to enhance preparedness and sustainability in Ethiopia's health system amid future shocks.

Health System Strengthening and Service Access in Crisis Settings / 49

Severity of Wasting Among Children Aged 6–59 Months in East Africa: A Multilevel Proportional Odds Analysis of DHS Data from 2012-2022**Author:** Masrie Getnet Abate¹¹ *Epidemiology and Biostatistics department, Faculty of Public health, Jimma University & Public health and primary care, Ghent University, Belgium.***Corresponding Author:** masrie.getnet@ugent.be

Background: Despite efforts to mitigate malnutrition, wasting remains a prominent public health challenge for children aged 6-59 months in East Africa. It is a critical predictor of impaired growth and cognitive development, and is strongly associated with child morbidity and mortality. However, there is still a lack of comprehensive and up-to-date information on severity of wasting among children in the region.

Objective: The primary objective of this study is to assess the severity level of wasting and identify key contributing factors at both the individual- and community-levels among children aged 6-59 months in East Africa.

Methods: The study used available data from a standard Demographic and Health Survey (DHS) collected between 2012-2022 across East African countries. A total of 42, 413 children aged from 6-59 months were included in this study. A multilevel proportional odds model was employed for analysis, after checking its assumption. In the final model, adjusted odds ratios with 95% confidence intervals were reported to highlight statistically significant associations ($p < 0.05$) between the severity of wasting and its contributing factors at both the individual- and community-level. Sampling weights were applied to ensure the representativeness at regional and national levels.

Results: Overall, in East Africa, 7.2% of children aged 6-59 months are affected by wasting. Among them, 5.7% experience moderate wasting (MAM), while 1.5% are affected by severe wasting (SAM). Within the region a higher prevalence of wasting was recorded in Ethiopia (11.7%), followed closely by Comoros (10.8%), and Madagascar (7.7%). In contrast, Rwanda reported a notably low wasting prevalence of 1.1%, followed by Uganda with a prevalence of 3.5%. The higher severity of wasting was linked with several individual-level factors such as children whose mother had not visited health facility in the past 12 months, mother who were not currently employed, mothers who were underweight, small size of child during birth, child who had recent fever, larger number of under-five children in the households, improved toilet facility in the households and children coming from poor households. At the community level, higher severity was associated with low maternal education at the community-level. In contrast, lower severity of wasting was connected to individual factors like child being female, overweight mother, as well as the community factor of living in rural areas.

Conclusion: The study underscores the multifaceted and interconnected nature of individual and community-level factors contributing to the severity of wasting among children in East Africa. Interventions aiming to combat wasting on maternal empowerment through education, enhancing maternal and child health services, promoting the health and nutrition programs regionally and nationally, especially in resource-limited and conflict-affected settings, is essential to reduce inter-generational effect of malnutrition and ensuring the survival and development of children across East Africa.

Health System Strengthening and Service Access in Crisis Settings / 85

Evaluating the quality of effective vaccine management practices at public hospitals in South Wollo Zone, Northeast Ethiopia: a mixed method study**Authors:** Endalkachew Mesfin¹; Lakew Asmare²; Fekade Demeke³¹ *Department of Health System Management, School of Public Health, College of Medicine and Health Sciences, Wollo University, Dessie, Ethiopia*² *Department of Epidemiology and Biostatistics, School of Public Health, College of Medicine and Health Sciences, University of Gondar*³ *Department of Epidemiology and Biostatistics, School of Public Health, College of Medicine and Health Sciences, Wollo University***Corresponding Author:** endalkmes12@gmail.com

Background: Vaccination has saved millions of lives and prevented countless childhood illnesses. However, maintaining vaccine potency through effective cold chain management is essential before administration. In Ethiopia, only 27.5% of facilities demonstrate good vaccine cold chain practices, with knowledge gaps and lack of on-the-job training identified as key barriers. This evaluation explored the implementation status and challenges of Effective Vaccine Management (EVM) in public hospitals of South Wollo Zone.

Objective: To evaluate the quality of EVM practices in public hospitals of South Wollo Zone, Northeast Ethiopia, in 2025.

Methods: A convergent parallel mixed-methods case study was conducted from March 03 to April 19, 2025. The evaluation assessed three dimensions: Availability (input), Compliance (process), and Satisfaction (outcome), using 39 indicators weighted at 35%, 40%, and 25%, respectively. Quantitative data were collected through resource inventory, document review, 20 non-participatory observations, and structured interviews with 738 caregivers. Additionally, eight key informant interviews were conducted with program implementers to explore barriers and enablers. Quantitative data were analyzed using SPSS v25, and qualitative data were thematically analyzed.

Results: Availability of EVM resources was rated very good (87.89%). All hospitals had functional vaccine refrigerators, carriers, ice packs, and trained technicians. However, only 66.7% had functional vaccine freezers, and just 33.3% had temperature-controlled units. Compliance also scored very good (88.33%), with strong adherence to national cold chain protocols. Yet, only 51.1% of providers checked vaccine temperature upon receipt, and hand hygiene was observed in just over half of the cases. Satisfaction was moderate (61.7%), influenced by caregiver age, marital status, education, waiting time, income, and provider behavior.

Conclusion and Recommendation: The EVM program in South Wollo Zone shows strong performance in resource availability and provider compliance but moderate caregiver satisfaction. Gaps in temperature checks, hygiene practices, and client experience highlight the need for targeted improvements. Strengthening pre-service and in-service training, ensuring consistent resource allocation, and enhancing service delivery quality are recommended to sustain vaccine integrity and build public trust in immunization services.

Health System Strengthening and Service Access in Crisis Settings / 32

Bacterial Neonatal Sepsis, Antimicrobial Resistance and Risk factors among neonates in Ethiopia: Systematic review and Meta-analysis

Authors: Habtamu Belew¹; Yonatan Kindie^{None}; Adane Tilahun^{None}; Mastewal Yechale^{None}; Zigale Teffera^{None}; Adane Adugna^{None}; Bantayehu Tegegne^{None}; Gshaw Azanaw^{None}; Desalegn Abebaw^{None}; Mekuriaw Belayneh^{None}; Mamaru Getinet^{None}

¹ *Department of Medical Laboratory Science, College of Medicine and Health Sciences, Debre Markos University, Debre Markos, 269, Ethiopia*

Corresponding Author: merahabtamu29@gmail.com

Background: Antimicrobial resistance and bacterial neonatal sepsis are major threats causing high morbidity and mortality among neonates in developing countries, especially Ethiopia. Due to limited data, this meta-analysis aims to assess the prevalence, antimicrobial resistance patterns, and risk factors of neonatal sepsis in Ethiopian neonates.

Methods: PRISMA was used to screen the identified studies. We searched various data bases including PubMed/MEDLINE, Cochrane Library, African Journals Online, Web of Science, and Google Scholar. The data were extracted in Microsoft Excel using a standardized data extraction format, and the analysis was carried out with STATA version 17. To detect heterogeneity across studies, the I² and the Cochrane Q test statistics were computed. To determine the overall pooled prevalence, a random effect meta-analysis model was used and registered in PROSPERO CRD1133703.

Results: Of 8,688 retrieved articles, 20 studies containing 11,754 neonates with a total of 3,168 bacterial isolates (837 Gram-positive, 2,328 Gram-negative). The predominant bacteria identified were; *K. pneumoniae* (1,343), *E. coli* (854), *S. aureus* (356), other *Klebsiella* spp (234), CoNS (192), *Acinetobacter* species (172), GBS (164). The overall pooled prevalence of bacterial neonatal sepsis and MDR were 29.92% (25.79- 34.05) and 66.20 (55.43-76.97). The isolated bacteria were more resistance to penicillin groups, cephalosporin's and aminoglycosides. The most important risk factors identified with their AoR and 95%CI; preterm birth 8.2(1.12-15.77), PROM 4.8 (3.17-12.77), history of UTIs at ANC 33.21(3.2-63.21) and low birth weight 13.73(4.48-3195) significantly associated with bacterial neonatal sepsis.

Conclusion: Bacterial neonatal sepsis has frighteningly increased by both gram-positive and Gram-negative bacteria. Death rates have escalated largely driven by MDR and AMR bacteria in Ethiopia. Premature rupture of membranes, history of urinary tract infection at antenatal care, low birth weight and preterm birth were significantly associated. Consolidation of AMR surveillance and reporting is essential to guide region-specific empirical antimicrobial use in neonates to decrease the burden of mortality.

Track 3: Implementation Research and Scaling Lessons

Implementation Research and Scaling Lessons / 104

Thriving despite Adversities: Building Resilience of Children through School-Based Mental Health Intervention in War Situations

Author: Simegn Sendek Yizengaw¹

¹ *University of Gondar*

Corresponding Author: simsen1973@gmail.com

Mental health problem among children is increasingly a global concern in the current days. Children living in war and conflict settings are affected by a constellation of stressors that threaten their mental health. Thus, promotion and prevention interventions targeting to children affected such crisis are helpful to enhance positive aspects of mental health and psychosocial functioning. Taking this in to account, the main intention of this project was to conduct interventional research primarily aiming to enhance the resilience of elementary school children in Gondar City so that they can thrive despite the current adversities of war and conflict situations. The research followed quantitative research approach with cluster randomized controlled trial design and data were collected from primary school children using questionnaire. After securing the quality of the data through proper screening and inspection, both descriptive (mean, standard deviation) and inferential statistics (one-sample t-test and independent samples t-test) were used to analyze the data. The findings revealed that children scored half of the total score on depression, anxiety and stress mental health measurement components. As regards gender difference, female children scored statistically significant high mean difference than male counterparts only on anxiety. The intervention results revealed that the experimental group scored statistically significant higher mean score than control group. Based on these findings, it is recommended that schools, professionals, education offices and organizations working on children should design strategies to strengthen school-based interventions aiming to reduce the mental health problems of children by enhancing their psychological resilience.

Implementation Research and Scaling Lessons / 120

Effect of ADHERE eHealth intervention on adherence to quality improvement tools in intrapartum care: Implementation research in Ethiopia

Authors: Dabere Nigatu¹; Muluken Azage¹; Eyaya Misgan¹; Daniel Enquobahrie²; Tegegn Kebebew¹; Enyew Abate¹; Esubalew Alemneh¹; Mirkuzie Woldie³; Tsinel Girma⁴

¹ *Bahir Dar University*

² *University of Washington*

³ *Jimma University*

⁴ *Harvard University*

Corresponding Author: dabenigatu@gmail.com

Background: The partograph and safe childbirth checklist (SCC) are quality improvement (QI) tools in intrapartum care that have long been recommended for use. Poor-quality intrapartum care remains a significant barrier to improving health outcomes in countries like Ethiopia, largely due to total non-use or poor adherence to these QI tools. eHealth-based interventions present promising strategies to enhance healthcare quality. We conducted implementation research to examine the effect of ADHERE, an innovative eHealth system with a clinical decision support element, on adherence to QI tools during intrapartum care in health facilities in Ethiopia.

Methods: A quasi-experimental study was conducted in 3 hospitals and 6 health centers (5 intervention and 4 control) in Ethiopia, guided by the Implementation Research Logic Model. Data were collected from labor and delivery charts by trained data collectors. A total of 2,190 charts (1,076 baseline and 1,114 end-line) were included in the analysis. Difference-in-difference (DiD) analysis was used to estimate the effect of the intervention. The partograph adherence score and SCC completion rates were compared between the two arms. Statistically significant differences were determined using a p-value < 0.05 cutoff.

Results: Baseline mean partograph scores in the control and intervention arms were 4.11 and 4.23, respectively. Baseline SCC adherence rates at admission, before-birth, after-birth, and discharge were 25.8%, 24.9%, 24.9%, and 24.3% in the control arm, respectively, and 49.6%, 47.8%, 45.9%, and 45.5% in the intervention arm, respectively. The ADHERE intervention increased partograph adherence score by 4.27 units (DiD = 4.27, 95%CI [1.80, 5.09]). The ADHERE intervention increased SCC adherence by 9.3 percentage-points (DiD = 0.093, 95%CI [0.036, 0.151]) at admission, 22.3 percentage-points (DiD = 0.223, 95%CI [0.121, 0.325]) before-birth, and 15.2 percentage-points (DiD = 0.152, 95%CI [0.072, 0.231]) after-birth. Conversely, the ADHERE intervention did not significantly change SCC adherence at discharge (DiD = -0.025, 95%CI [-0.071, 0.021]).

Conclusion: The ADHERE intervention significantly improved adherence to partograph and SCC at admission, before-birth, and immediately after-birth during intrapartum care. Therefore, ADHERE-assisted implementation of QI tools can potentially prevent adverse birth outcomes related to low-quality intrapartum care and could be considered for scale up across health facilities in Ethiopia.

Implementation Research and Scaling Lessons / 123

KEBELE ELIMINATION OF TRACHOMA FOR OCULAR HEALTH (KETFO) TRIAL UPDATE

Authors: Esmael Habtamu¹; Yeshigeta Gelaw²; Awraris Hailu³; Belay Bezabih⁴; Aemero Abateneh²; Addisu Abebe⁵; Scott D. Nash⁶; Hadley Burroughs⁷; Catherine E. Oldenburg⁷; Thomas M. Lietman⁷

¹ *International Centre for Eye Health, London School of Hygiene and Tropical Medicine, London, UK Eyu-Ethiopia, Bahir Dar, Ethiopia Bahir Dar University, Bahir Dar, Ethiopia*

² *Bahir Dar University, Bahir Dar, Ethiopia*

³ *Debre Berhan University, Eyu-Ethiopia*

⁴ *Amhara Public Health Institute, Bahir Dar, Ethiopia*

⁵ *Amhara Regional Health Bureau, Bahir Dar, Ethiopia*

⁶ *The Carter Center, Atlanta, GA, USA*

⁷ *Francis I. Proctor Foundation for Research in Ophthalmology, San Francisco, California, USA*

Corresponding Author: awrarishailu@gmail.com

Background: Azithromycin Mass Drug Administration (MDA) has been highly effective in eliminating trachoma as a public health problem in many settings. However, trachoma persists in most parts of Ethiopia, regardless of more than 10 rounds of Azithromycin in some districts, which is at least two-fold higher than the WHO recommended rounds of MDA. We hypothesize, an intensive Azithromycin MDA strategy aimed at a core group of children could achieve faster trachoma elimination.

Objective: Determine whether an intensive, targeted azithromycin distribution strategy to core group of children is effective for elimination of trachoma at the kebele level compared to the WHO recommendation of annual azithromycin distribution.

Methods: A four-arm cluster-randomized control trial is being conducted in Merhabete District, North Shewa Zone, Amhara Region, Ethiopia since February 2022. Eighty Gotts were randomized (20 per arm) in 1:1:1:1 ratio to 1) the WHO-recommended annual azithromycin MDA to all residents (control arm), and three additional treatments to 2) all children aged 2-9 years, 3) children with chlamydia infection, and 4) children with clinical sign of trachomatous inflammation—intense. Clinical data on trachoma, conjunctival swabs to detect infection, and dried blood spots to determine transmission through serology were collected at baseline prior to randomization and intervention, and every 12-month for 3 years. The primary outcome is the community level ocular chlamydia prevalence at 36-month. Secondary outcomes include active trachoma prevalence, chlamydia bacterial load, seroconversion rate, and pneumococcal macrolide resistance.

Discussion: A baseline assessment, three annual community wide and nine targeted treatments, and a 12 and 36 -months follow-up assessment have been conducted. The trial is expected to provide evidence for alternative core-group based treatment strategies for trachoma control in hyperendemic areas where infection has persisted despite many years of treatment. The 12-month examination result showed promising finding.

Implementation Research and Scaling Lessons / 27

Barriers and facilitators to Benzathine Penicillin G adherence in Tikur Anbessa Specialized Hospital: A mixed methods study of Rheumatic Heart Disease patients using the COM-B model

Authors: Henok Tadele¹; Habtamu Areri¹; Sale Workneh²; Abebe Gebremariam³; Senbeta Guteta⁴; Saria Hassan⁵; C.M Johnson Leslie⁶; Elizabeth C. Rhodes⁵; Rebecca Gary⁷

¹ AAU

² School of Public Health, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia

³ Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta, GA, USA.

⁴ Department of internal medicine, School of Medicine, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia

⁵ Hubert Department of Global Health, Rollins School of Public Health, Emory University, Atlanta, GA, USA

⁶ School of medicine, Emory University, Atlanta, GA, USA

⁷ Emory University

Corresponding Author: habtamu.abera@aau.edu.et

Background: Benzathine Penicillin (BPG) injections stop the progression of Rheumatic Heart Disease (RHD). Factors associated with BPG implementation and adherences have not been comprehensively assessed using the Behavior Change Model such as Capability, Opportunity and Motivation of Behavior (COM-B) and the Behavioral Change Wheel (BCW) framework.

Objective: The purpose of this mixed methods study was to assess the barriers and facilitators of BPG adherence among RHD patients at Tikur Anbessa Specialized Hospital using a COM-B model/BCW framework.

Methods: A concurrent mixed-methods study design was utilized. BPG adherence was considered optimal when RHD patients took 80% or more injections annually. All data collection and analysis were guided by the COM-B model and BCW framework. Quantitative data were collected through patient surveys and electronic medical records review. Qualitative data were collected using in-depth interviews RHD patients guided by COM-B model. Quantitative data were analyzed using descriptive statistics and predictors were assessed using binary logistic regression models. Data management and thematic analysis were carried out using Braun and Clark's approach for qualitative data. Data integration was jointly displayed for the key findings from both quantitative and qualitative methods.

Results: The quantitative study included 346 RHD patients, while 21 RHD patients completed in-depth interviews. BPG adherence was 72%. Shorter distances from BPG injection centers and beneficial BPG prophylaxis perception facilitated BPG adherence among RHD patients using a quantitative method. The in-depth qualitative interviews revealed that family support, closer residence to BPG injection centers, health insurance coverage, and perception of BPG effectiveness facilitated BPG adherence. Data integration showed that shorter distances to BPG injection centers and beneficial BPG prophylaxis perceptions facilitated adherence among RHD patients.

Conclusions and recommendations: BPG adherence was suboptimal to reverse or slow RHD progression. Since shorter distances to BPG injection centers was associated with greater adherence, decentralized injection centers may be beneficial. Improving community education on the importance of BPG injections in RHD control may address the BPG prophylaxis perception gap. Evidence-based implementation strategies are needed in Ethiopia especially in areas where accesses to BPG injection sites are limited to improve patient outcomes.

Implementation Research and Scaling Lessons / 65**Effects of a peer-led educational intervention based on theory of planned behavior on reducing khat use intention and behavior among secondary school students in Northeast Ethiopia**

Authors: Yitbarek Wasihun¹; Morankar Sudhakar²; Eshetu Girma³

¹ *School of Public Health, College of Medicine and Health Sciences, Tertiary Care Campus, Wollo University, Dessie, Ethiopia*

² *Department of Health, Behavior and Society, Faculty of Public Health, Institute of Health, Jimma University, Jimma, Ethiopia*

³ *African Population and Health Research Center, Nairobi, Kenya*

Corresponding Author: yitbarek2003@gmail.com

This study assessed the effect of a peer-led educational intervention based on the Theory of Planned Behavior (TPB) on reducing khat use intention and behavior among secondary school students in Northeast Ethiopia. A quasi-experimental pretest–posttest control group design was conducted in four public high schools in Dessie and Kombolcha, with 1,496 students aged 15–24 years allocated to intervention and control groups. The intervention consisted of four 60-minute peer-led sessions targeting knowledge and TPB constructs. Outcomes were measured at baseline and 3 months post-intervention.

At 3 months, the intervention group showed significant improvements: increased knowledge, decreased positive attitudes toward khat, decreased perceived social approval, enhanced perceived behavioral control, reduced intention to use khat, and decreased current khat use (OR = 0.74; 95% CI: 0.51–0.97; $p < 0.001$). All effects remained significant after adjusting for confounders.

These findings indicate that TPB-based, peer-led interventions can effectively improve knowledge, psychosocial determinants, and reduce khat use intention and behavior among adolescents. Schools may consider integrating such theory-driven peer education programs into substance use prevention strategies.

Track 4: Innovation and technology during multiple crisis

Innovation and technology during multiple crisis / 17

Intention to use smartphone pregnancy apps and predictors among pregnant women attending ANC service in Dessie city and Kombolcha town public health facilities, north-east Ethiopia, 2024. An extended Unified Theory of Acceptance and Use of Technology model-based framework

Authors: Ermias Bekele Enyew¹; Mandefro Asfaw Geremew¹; Shimels Derso Kebede¹; Yawkal Tsega¹

¹ Wollo University

Corresponding Author: shime4d@gmail.com

Background: These days latest generation of smartphones allows the development of new applications in healthcare and pregnant women frequently use the Internet and smartphone applications as a source of information throughout their pregnancy. Even though mobile technologies are exponentially growing and have proved to be effective for pregnancy care, little is known about the intention to use smartphone apps and predictors during pregnancy in Ethiopia.

Objective: The study aimed to assess the magnitude of intention to use smartphone pregnancy apps and its predictors among pregnant women attending ANC service in Dessie and Kombolcha public health facilities.

Methods: A cross-sectional study was conducted from January to March 2024 among 924 pregnant women attending ANC service in the study area. Data was collected, cleaned, and descriptive statistics were analysed. The extent of the relationship between variables were analysed using structural equation modelling (SEM). The model's assumptions were checked and overall goodness of fit was assessed based on standards. T-test and standardized path coefficient computed to measure the association between dependent and independent variables, with 95% confidence intervals, and corresponding p-value to evaluate statistical significance (p-value<0.05).

Results: The study found a 46.1% (95% CI: 42.8% - 49.3%) prevalence of intention to use smartphone pregnancy apps. The structural equation model, which exhibited excellent fit (CFI=0.99, RMSEA=0.01) and high explanatory power ($R^2 = 0.87$), identified several significant predictors. Effort Expectancy ($\beta=0.59$, $p=0.001$), Social Influence ($\beta=0.46$, $p=0.01$), and Facilitating Conditions ($\beta=0.30$, $p=0.02$) had significant positive effects on intention. Conversely, Performance Expectancy ($\beta=-0.53$, $p=0.03$) and Price Value ($\beta=-0.66$, $p<0.001$) had significant negative effects. Hedonic Motivation and Habit were not significant predictors. Furthermore, the multi-group analysis revealed that neither age nor experience significantly moderated these relationships.

Conclusion and recommendations: The intention to adopt smartphone pregnancy apps in this setting is moderate and is driven by a unique set of factors. While ease of use and social support are key enablers, the strong negative impact of cost and negative effect of performance expectancy are the most critical findings. This suggests that in contexts with strong traditional health practices, high-performance claims may generate distrust. Therefore, successful implementation requires culturally sensitive strategies that position apps as affordable and easy-to-use.

Innovation and technology during multiple crisis / 18

Can Ethiopia achieve national and international targets for reducing neonatal mortality? Application of classical techniques and deep-learning models for time-series forecasting

Author: Shimels Derso Kebede¹

¹ *Wollo University*

Corresponding Author: shime4d@gmail.com

Introduction: Neonatal disease and its outcomes are important indicators for responsive health care system. Ethiopia is working to achieve the SDG target for the reduction of 12 or less per 1000 birth by 2030 and 21 per 1000 livebirths by 2025 as part of second Ethiopian Health Sector Transformation Plan.

Objective: This study aimed to compare the performance of classical time-series models with that of deep learning models and to forecast the neonatal mortality rate in Ethiopia to verify whether Ethiopia will achieve national and international targets.

Methods: Data were extracted from the official World Bank database. Classical time-series models, such as autoregressive integrated moving average (ARIMA) and double exponential smoothing, and neural network-based models, such as MLP, CNN, and LSTM, have been applied to forecast neonatal mortality rates from 2021 to 2030 in Ethiopia. During model building, data from 1990 to 2010 used for training, and the remaining 10 years of data were used to test model performance. Commonly applicable measures were used to evaluate the predictive performance of forecasting methods. Finally, the best model was used to forecast the neonatal mortality rate from 2021 to 2030, with a 95% prediction interval.

Results: The results showed that the double exponential smoothing model was the best, with a maximum R2 of 99.94% and minimum MAPE and RMSE of 0.0015 and 0.0748, respectively. The worst performing among the five models was the CNN, with an R2 of 93.71% and a maximum RMSE of 0.7903. Neonatal mortality in Ethiopia is forecasted to be 23.2 (PI: 22.2, 24.4) per 1000 live births in 2025 and 19.8 (PI: 17.1, 22.8) per 1000 live births in 2030.

Conclusion and recommendations: This study revealed that national and international targets for neonatal mortality cannot be realised if the current trend continues. This study revealed that national and international targets for neonatal mortality reduction cannot be achieved if the current trend persists, highlighting the urgent need for targeted interventions. Strengthening maternal and newborn healthcare services, particularly in underserved areas, is crucial, with a focus on expanding access to quality antenatal, intrapartum, and postnatal care, ensuring skilled birth attendance, and improving emergency neonatal care.

Innovation and technology during multiple crisis / 131

Diagnostic performance of Biomeme and Loop-Mediated Isothermal Amplification with Abbott Real-time PCR as gold standard for ocular chlamydia trachomatis in Trachoma hyper endemic settings of Amhara region, Ethiopia.

Authors: Aragie Aragie¹; Dionna wittberg²; Getu Degu³; Jeremy D keenan²; Taye Zeru⁴

¹ Addis Ababa University

² University of California San Francisco

³ Bahir Dar University college of Medicine and Health sciences

⁴ Amhara Public Health Institute

Corresponding Author: zerutaye@gmail.com

Background: Trachoma is the leading infectious cause of blindness globally and the second in Ethiopia. The disease is caused by Chlamydia trachomatis. Although the World Health Organization set a target to eliminate trachoma by 2030 through the SAFE strategy, the current surveillance relies on clinical grading of trachoma which poorly correlate with ocular Chlamydia trachomatis infection after mass drug administration. Therefore, it is important to avail reliable and affordable diagnostic tools to monitor infection dynamics in trachoma endemic areas. Therefore, this study aimed to evaluate the diagnostic performance of Biomeme and Loop-Mediated Isothermal Amplification assays for detection of ocular Chlamydia trachomatis infection using Abbott RealTime PCR as the reference standard.

Methods: A total of 252 pooled ocular swabs were tested from January to March 2025 in Amhara Public Health Institute molecular trachoma laboratory. Pooled samples were tested using Abbott RealTime PCR, Biomeme, and LAMP assays. Diagnostic performance indicators including sensitivity, specificity, positive and negative predictive values, likelihood ratios, and area under the receiver operating characteristic curves were calculated.

Results: Abbott real time PCR identified 171 (67.9%) positive samples. The Biomeme assay demonstrated 100% sensitivity (95% CI: 97.9–100.0) but very low specificity (4.9%, 95% CI: 1.4–12.2), with an AUC of 0.525, indicating poor discrimination. Conversely, the LAMP assay achieved a sensitivity of 71.4% (95% CI: 63.9–78.0) and a specificity of 98.8% (95% CI: 93.3–99.9), with an AUC of 0.851 (95% CI: 0.80–0.89), reflecting very good diagnostic performance. The positive likelihood ratio (+LR) was 57.8, and the negative likelihood ratio (–LR) was 0.29, indicating robust diagnostic utility. Pairwise ROC comparison showed LAMP significantly outperformed than Biomeme (AUC = 0.326; $p < 0.0001$).

Conclusion and recommendations: The LAMP assay demonstrated high diagnostic accuracy, very good agreement with the Abbott RealTime PCR, and practical applicability for field-based trachoma surveillance. In contrast, the Biomeme assay showed poor specificity and limited diagnostic value. LAMP offers a rapid, affordable, and field-feasible alternative for detecting ocular Chlamydia trachomatis infection in resource-limited trachoma-endemic settings, supporting WHO-endorsed monitoring efforts toward trachoma elimination.

Innovation and technology during multiple crisis / 40

Predicting household sanitation service using a machine learning approach in urban Health and Demographic Surveillance System sites of northwest Ethiopia

Authors: ASMAMAW MALEDE TAREKEGN¹; Asmare Adane Andualem¹; Ayenew Molla Lakew²; Tadesse Guadu Delele³; Yohannes Ayanaw Habitu⁴; Aysheshim Kassahun Belew⁵; Tadesse Belayneh Melkie⁶; Ashenafi Fentahun⁷; Wubet Birhan Yigzaw¹; Tesfahun Melese Yilma⁷; Bikes Destaw Bitew¹

¹ University of Gondar

² Department of Epidemiology and Biostatistics, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia

³ Department of Environmental and Occupational Health and Safety, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia

⁴ Department of Reproductive Health, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia

⁵ Department of Human Nutrition, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia

⁶ Department of Anesthesia, School of Medicine, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia

⁷ Department of Health Informatics, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia

Corresponding Authors: asmamawmalede12@gmail.com, asmareadane9@gmail.com

Background: Access to safely managed sanitation services is credited with improving the health and well-being of all. However, millions of people, many in low- and middle-income countries, still have no basic sanitation facilities. This study aimed to estimate the proportion of households having safely managed sanitation service and identify its important predictors.

Methods: A cross-sectional survey was conducted in 12,400 households in Gondar City and Gorgora town Health and Demographic Surveillance System sites in northwest Ethiopia. Sociodemographic, housing, and household characteristics were collected. Data quality was assured by pretesting, training, and supervision. A multivariable binary logistic regression was fitted. Nine supervised classification machine-learning algorithms (Support Vector Machine, Random Forest, Gradient Boosting, AdaBoost, Bagging, XGBoost, LightGBM, K-Nearest Neighbors, and MLPClassifier) were trained to build a suitable model. Accuracy, precision, recall, F1 score, and the ROC curve were used to evaluate model performance.

Results: The proportion of safely managed sanitation services in households of the urban sites was 29.9% (95% CI: 29.1-30.7). Male, young, married, illiterate heads and those engaged in agricultural investment; small family households; non-poorest households; households not a member of health insurance; and houses that have good structures were more likely to have a safely managed sanitation service. The LightGBM algorithm was the best classifier (accuracy = 81.6%, precision = 81.1%, recall = 81.6%, F1 score = 81.3%) in predicting household sanitation services. Wall-building, flooring materials, wealth, occupation, education, and age were the top six important predictors of household sanitation service identified by the random forest model.

Conclusion and recommendations: The coverage of safely managed household sanitation service in urban areas of northwest Ethiopia was higher than the national average. Poor housing structure and certain household and sociodemographic characteristics were factors associated with safely managed sanitation service. Criterion-based sanitation technologies should be promoted for poor HHs, large families, and CBHI member HHs. Households that have poor housing should be consulted to construct house-friendly and low-cost basic sanitation facilities. Results from machine learning could have a significant impact on the delivery of interventions by prioritizing problems in accessing safely managed sanitation services.

Innovation and technology during multiple crisis / 89**Predicting Malnutrition in PLWHIV Using Machine Learning in Gondar, Ethiopia**

Authors: Abraham Mengistu¹; Agmasie Walle²; Andualem Enyew Gedefaw³; Meron Alemayehu⁴; Nebebe Baykemagn³; Tadele Maru³; Tirualem Yehuala³

¹ Department of Health Informatics, College of Medicine Health Science, Debre Markos University, Debre Markos, Ethiopia.

² Department of Health Informatics, School of Public Health, Asrat Woldeyes Health Science Campus, Debre Berhan University, Debre Birhan, Ethiopia

³ Department of Health Informatics, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia

⁴ Department of Epidemiology and Biostatistics, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia

Corresponding Author: andualemenyew@gmail.com

Background: Human Immunodeficiency Virus (HIV) continues to be a major global public health challenge, affecting 39.9 million people globally by the end of 2023. Sub-Saharan Africa bears a significant burden, contributing to 67% of cases. Malnutrition is prevalent among people living with HIV, exacerbating immunosuppression and accelerating disease progression.

Objective: This study explored the application of machine learning (ML) to assess the nutritional status of PLWHIV and predict the risk of malnutrition.

Methods: A quantitative cross-sectional study design was employed. Data were collected from the University of Gondar Comprehensive and Specialized Hospital in Ethiopia. The study population included PLWHIV who attended ART clinics. The variables included demographic, clinical, hematological, immunological, and treatment-related factors of the patients. Data preprocessing involves imputation, encoding, and dimensionality reduction. The ML models were trained using an 80:20 train-test split and evaluated in terms of accuracy, precision, recall, F1 score, and AUC.

Results: The study included data from 4,152 respondents, with the majority aged 48-57 years (32.9%), female (59.5%), and living in urban areas (76.5%). Nutritional status assessment revealed that 62.8% of the participants had a normal Body Mass Index, 17.6% were overweight, 15.2% were underweight, and 4.4% were obese.

Machine learning models were evaluated for their ability to predict the risk of malnutrition in PLWHIV. The results showed that applying the Synthetic Minority Oversampling Technique (SMOTE) markedly enhanced model performance by improving minority class recall. A support vector machine (SVM) achieved the highest performance, with an accuracy of 80.1%, precision of 80.4%, recall of 80.1%, F1 score of 79.4%, and an AUC of 0.92. Key predictors of nutritional status included antiretroviral therapy duration, BMI, adherence to treatment, and World Health Organization stage. The integration of the SVM model into electronic medical records could enable real-time malnutrition risk alerts during clinic visits, requiring minimal clinician training.

Conclusion: ML models offer a robust approach for predicting malnutrition risk in PLWHIV patients. The integration of these tools into routine care could enhance nutritional management, particularly in low-resource settings. Further studies are needed to confirm these findings and improve the deployment of the model in clinical settings.

Track 5: Mental Health and Psychosocial Support in Emergencies

Mental Health and Psychosocial Support in Emergencies / 109

Help-Seeking Behavior and Quality of life among Women with Stress, Anxiety, and Depression in Northwest Ethiopia: A community-based study

Authors: Shegaye Shumet Mekonen¹; Wondale Getinet Alemu²

¹ Department of Psychiatry, College of Medicine and Health Sciences, University of Gondar

² University of Gondar

Corresponding Author: shegayeshumet27@gmail.com

Background: Women of reproductive age face unique stressors that can contribute to mental health challenges. In low-resource settings like Ethiopia, help-seeking behavior for mental health issues remains low, potentially compromising women's quality of life. This study aims to assess help-seeking behavior and quality of life among women of reproductive age experiencing stress, anxiety, and depression.

Methods: A community-based cross-sectional study was conducted in northwest Ethiopia from March to May 2021, using an interviewer-administered questionnaire for data collection. Screening of stress, anxiety, and depression was conducted among 804 study participants. The World Health Organization Quality of Life (WHOQOL-Brief) and the General Help-Seeking Questionnaire were used to assess health-related quality of life and help-seeking behavior, respectively. Independent sample t-tests and ANOVA were conducted to examine group differences in quality of life, while simple and multivariable linear regression analyses were performed to identify factors associated with quality of life among women experiencing stress, anxiety, and depression.

Result: The average quality of life score among women of reproductive age in the stress group was 35.27 (95% CI: 34.27, 36.28), followed by the anxiety group with a mean score of 35.05 (95% CI: 34.24, 35.87), and the lowest in the depression group at 34.04 (95% CI: 33.26, 34.81). On average, 21.75% of participants sought formal help for stress, 24.6% for anxiety, and 23.65% for depression. Quality of life among women experiencing stress varied across sociodemographic variables. Women who were divorced or widowed had a mean (SD) quality of life score of 20.22±0.83, while those residing in rural areas had a mean (SD) score of 9.57±1.75. Women with no formal education had a mean score of 20.33±4.05, and farmers had a mean score of 20.46±3.06. Additionally, women with anxiety had lower mean scores in psychological and social quality of life, at 16.42±2.55 and 8.96±1.73, respectively. Women who used contraceptives reported a better quality of life, with a mean (SD) score of 22.71±4.07, compared to those who did not. Women with depression have low mean score of quality of life with mean score of 7.67±1.37.

Conclusion: Women of reproductive age in this study exhibited a low quality of life and underutilized formal help sources across all disorders. Quality of life varied based on factors such as marital status, occupation, education, residence, suicidal behaviors, contraceptive use, and history of abortion. Additionally, being divorced or widowed, living in rural areas, having a history of abortion, and having an unemployed husband were significantly associated with lower quality of life. Therefore, to address these disparities, improving access to reproductive health services, integrating mental health screening and support into primary healthcare, and implementing appropriate interventions could enhance help-seeking behavior and improve the quality of life for women of reproductive age.

Mental Health and Psychosocial Support in Emergencies / 77**Depression and Its Determinants among Internally Displaced Persons in Sub-Saharan Africa: A Systematic Review and Meta-Analysis to Inform Psychosocial Reintegration Strategies**

Author: Girum Nakie¹

¹ *University of Gondar College of Medicine and Health Sciences Department of Psychiatry*

Corresponding Author: girumnakie@gmail.com

Background: Internally displaced persons (IDPs) are highly vulnerable to mental health conditions such as depression due to forced displacement, loss, and exposure to traumatic events. These conditions can severely impact reintegration, recovery, and long-term well-being. However, existing evidence on the burden of depression among IDPs in Sub-Saharan Africa remains fragmented and inconsistent.

Objective: This study aimed to determine the pooled prevalence of depression and its associated factors among internally displaced persons in Sub-Saharan Africa.

Methods: A systematic review and meta-analysis were conducted following PRISMA guidelines. Articles were retrieved from PubMed, EMBASE, ScienceDirect, and African Journals Online (AJOL), including studies published up to April 27, 2023. Thirteen primary studies with a combined sample size of 8,383 IDPs were included. The analysis was performed using STATA version 14. A random-effects DerSimonian-Laird model was employed. Heterogeneity was assessed using the I^2 statistic. Publication bias was evaluated using Egger's test and funnel plots. Subgroup and sensitivity analyses were also conducted.

Results: The pooled prevalence of depression among IDPs was 64% (95% CI: 46.47–81.46). Subgroup analysis showed variation by assessment tool: 66.9% (Hopkins Symptom Checklist), 73.37% (PHQ), and 52.53% (other tools). Depression was significantly associated with being female (AOR = 2.68), non-married (AOR = 3.19), exposure to traumatic events (AOR = 2.16), and loss of a family member (AOR = 2.72).

Conclusion: Depression is highly prevalent among IDPs in Sub-Saharan Africa, driven by gender, trauma, and loss-related factors. These findings highlight the urgent need to integrate mental health screening and psychosocial support into post-displacement reintegration programs to foster recovery and resilience in this vulnerable population.

Mental Health and Psychosocial Support in Emergencies / 25**Global Prevalence and Determinant Factors of Pain, Depression, and Anxiety Among Cancer Survivors: An Umbrella Review of Systematic Reviews and Meta-Analyses**

Authors: Addisu Getie Nigatu¹; Manay Ayalneh²; Melaku Bimerew²

¹ Debre Markos university

² Department of Nursing, College of Medicine and Health Sciences, Injibara University, Injibara, Ethiopia.

Corresponding Author: addisugetie@gmail.com

Introduction: Depression and anxiety are prevalent psychological disorders that significantly affect physical, emotional, and social well-being, reducing quality of life and increasing medical costs. These issues are especially challenging for cancer survivors, complicating treatment management, affecting adherence, and potentially impacting survival rates.

Objective: This umbrella review aimed to evaluate the global prevalence of pain, depression, and anxiety, as well as their determinants among cancer patients.

Method: An exhaustive umbrella review was conducted to systematically assess the prevalence and determinants of pain, depression, and anxiety among cancer survivors worldwide by analyzing systematic reviews and meta-analyses. The review involved a thorough search of multiple databases and included studies published in English up to July 2024 that reported on these symptoms. The process involved screening and selecting studies based on specific criteria, assessing the risk of bias using the AMSTAR tool, and analyzing data with statistical methods to determine overall prevalence and identify predictors. This comprehensive approach aimed to provide a detailed understanding of these psychological issues in cancer survivors and guide future research and interventions.

Result: The global summary prevalence of depression among cancer survivors was 33.16% (95% CI 27.59-38.74), while anxiety had a prevalence of 30.55% (95% CI 24.04-37.06). Pain prevalence after treatment was 39.77% (95% CI 31.84-47.70). Before treatment, 65.22% (95% CI 62.86-67.57) of cancer patients reported pain, which persisted in 51.34% (95% CI 40.01-62.67) during treatment. The analysis also found that during the COVID-19 pandemic, depression and anxiety rates among cancer patients were at their highest, with prevalences of 43.25% (95% CI 41.25-45.26) and 52.93% (95% CI 50.91-54.96), respectively.

Conclusion and recommendations: The umbrella review found that depression and anxiety prevalence among cancer survivors was 33.16% and 30.55%, respectively, with significantly higher rates during COVID-19 at 43.25% and 52.93%. Key factors contributing to depression included poor social support, advanced cancer stage, and inadequate sleep, while anxiety was significantly linked to advanced cancer stage and poor sleep quality.

Mental Health and Psychosocial Support in Emergencies / 53**Direct and Indirect Factors Associated with Depression among PLHIV on Second-Line ART in Northeast Ethiopia of conflict affected areas: A Structural Equation Modeling Approach**

Authors: Keleb Takele Tiruneh^{None}; Anmut Endalkachew Bezie^{None}; Asnakew Molla Mekonen^{None}; Eyob Tilahun Abeje^{None}; Ziyin Worku^{None}; Mulugeta Desalegn Kasay^{None}; Amare Muche¹

¹ Wollo University

Corresponding Author: amaremu7@gmail.com

Background: Depression among people living with HIV on second-line ART is often driven by interconnected factors, including financial hardship, the psychological burden of an HIV diagnosis, and stigma. However, the complex effects of such interconnected constructs have not been well explored.

Objective: This study aimed to examine the direct and indirect factors affecting depression among PLHIV on second-line ART.

Methods: An institutionally based cross-sectional study was conducted from January 13 to April 13, 2025, with 825 PLHIV on second-line ART selected through simple random sampling. Data were collected via face-to-face interviews and document reviews via the Kobo Toolbox and analyzed in STATA version 17. Depression was measured by the PHQ-9, and social support was measured with the Oslo-3 scale. A structural equation modeling analysis was employed. Statistical significance was declared at $P < 0.05$, and the effect size was reported with 95% CIs.

Results: The prevalence of clinical depression was 49% of PLHIV on second-line ART (95% CI: 46.4, 53.4%). Perceived stigma, nonmedication adherence and internalized stigma had direct positive effects on depression, with [$\beta = 0.69$, (95% CI: 0.540, 0.830)], [$\beta = 0.17$, (95% CI: 0.076, 0.258)] and [$\beta = 0.33$, (95% CI: 0.225, 0.430)], respectively. In addition, social support had direct [$\beta = -0.12$, (95% CI: -0.200, -0.035)] and indirect [$\beta = -0.48$, (95% CI: -0.58, -0.376)] negative effects on depression mediated through perceived stigma.

Conclusion and recommendations: This finding suggests that perceived and internalized stigma partially mediate the relationship between social support and depression among PLHIV on second-line ART. Furthermore, nonworkable functional status, social support, nonoptimal medication adherence, perceived and internalized stigmas were significant predictors of depression. Hence, health-care facilities should incorporate and reinforce routine mental health screenings and interventions within HIV care programs. Moreover, acknowledging the substantial effect of stigma on depression is crucial.

Mental Health and Psychosocial Support in Emergencies / 21**A Community-Based Cross-Sectional Study on Developmental Delay and Related Factors in Children Aged 6–36 Months in Assosa City, Western Ethiopia.**

Author: Wondaya Fenta Zewdia¹

¹ Senior researcher at Center of Excellence International Consultancy

Corresponding Author: wondayafen@gmail.com

Background: Early childhood development is a critical determinant of a child's future health, educational attainment, and overall well-being. The study aimed to assess the prevalence of developmental delay and its associated factors among children aged 6–36 months at Assosa City Ethiopia.

Methods: A community-based cross-sectional study was conducted among 520 children aged 6–36 months in Assosa City between January 13 and February 21, 2025. The data were extracted and managed using STATA version 17. A binary logistic regression model was applied to assess the significant predictors that affect the developmental delay.

Results: The prevalence of developmental delay in the studied population was 166 (31.5%, 95% CI: 26.1%–35.8%). The most common area/section of delay was observed in personal-social (44.4%), followed by problem-solving (31.8%), fine motor (28.6%), communication (28.4%), and gross motor (21.8%). Moreover, key significant predictors include: family size (AOR=1.96, 95% CI: 1.09, 3.54), birth interval (AOR=0.56, 95% CI: 0.33, 0.96), not taking iron folic acid (AOR= 2.22 95% CI: 1.59, 5.04), female child (AOR= 2.18, 95% CI: 1.30, 3.64), not completed immunization (AOR= 1.452, 95% CI: 1.258, 1.852), home birth place (AOR=1.35, 95% CI: 1.281, 2.365), poor wealth status (AOR=1.23, 95% CI: 1.156, 2.365), and stunting (AOR=3.08, 95% CI: 1.78, 5.32).

Conclusions: This community-based cross-sectional study revealed a high prevalence of developmental delay among children aged 6–36 months in Assosa City, Western Ethiopia. The most affected developmental domains were personal-social, problem-solving, and fine motor skills, highlighting the need for early screening and targeted intervention. These findings underscore the multifactorial nature of developmental delays, emphasizing the need for integrated interventions across health, nutrition, and education. Priorities include improving maternal care particularly antenatal iron-folic acid use promoting birth spacing, preventing stunting, expanding immunization, and supporting caregivers through education and early stimulation. In resource-limited settings like Assosa, early screening and targeted interventions are essential. Longitudinal studies are also needed to clarify causal pathways and long-term outcomes.

Mental Health and Psychosocial Support in Emergencies / 108**Exploring the Lived Experiences and Coping Strategies of Mental Health Caregivers in Ethiopia: Implications for Supportive Interventions**

Authors: Ejigu Gebeye Zeleke¹; Shegaye Shumet Mekonen²

¹ University of Gondar

² Department of Psychiatry, College of Medicine and Health Sciences, University of Gondar

Corresponding Author: shegayeshumet27@gmail.com

Background: Caring for individuals with mental illness is stressful, with challenges like stigma, unequal responsibilities, and patient aggression. These stressors impact caregivers' mental health and treatment outcomes, yet little is known about coping strategies in Ethiopia. Therefore, this mixed-methods study assessed the coping strategies, lived experiences, and determinants for coping among family caregivers of patients with mental illness northwest Ethiopia.

Methods: A convergent parallel mixed-methods study was conducted between Jun and July 2024. Caregivers were selected through systematic random sampling. Coping strategies were assessed using the Brief-COPE tool, while qualitative data were collected via tape-recorded in-depth interviews. Quantitative data were analyzed with SPSS AMOS Version 23 software using structural equation modeling, and qualitative data were analyzed with inductive thematic analysis using NVivo-15.

Results: The mean score for adaptive and maladaptive coping was 34.65 (SD = ± 7.70) and 21.10 (SD = ± 5.00), respectively. Factors negatively associated with adaptive coping included being a farmer ($\beta = -0.21$), female sex ($\beta = -0.10$), longer illness duration ($\beta = -0.10$), higher number of patient's hospital admissions ($\beta = -0.07$), and older age ($\beta = -0.07$). A history of physical abuse and more hospital admissions also had an indirect negative effect on adaptive coping. In contrast, perceived stigma had a positive effect on adaptive coping ($\beta = 0.09$). Factors positively influencing maladaptive coping included caregiving burden ($\beta = 0.39$) and psychological distress ($\beta = 0.13$). Comorbid illnesses and abuse experiences also had positive indirect effects. Negative indirect effects on maladaptive coping were seen in farmers, females, literate caregivers, and those experiencing job loss due to caregiving. Social support had a significant negative indirect effect on maladaptive coping ($\beta = -0.09$). Family caregivers face emotional, financial, and social challenges and cope through faith, advice, withdrawal, and social support.

Conclusion: Family caregivers exhibited lower coping strategies than the general population. Factors such as farming, being female, prolonged illness, and frequent hospitalizations hindered adaptive coping. Caregiving burden and psychological distress increased maladaptive coping, while social support mitigated it. Targeted interventions are needed to help caregivers develop diverse coping strategies. Initiatives to alleviate burden and distress should be implemented to reduce maladaptive coping. Policymakers must integrate caregiver support into mental health policies to ensure sustainable and effective assistance.

Mental Health and Psychosocial Support in Emergencies / 127**Assessment of suicidal acts and perception among clients attending emergency outpatient departments in public hospitals of Amhara Region, Ethiopia (2023–2024)**

Authors: Desalew Tewabe¹; Adane Nigusie Weldeab¹; Kalkidan Haile¹; Melashu Balew Shiferaw¹; Alemayehu Abate¹; Negese Sewagegn Semie¹; Matewos Ejigu²; Biresaw Tazaye Lake¹; Damtie Lankir Abebe^{None}; Abraham Amsalu Berneh¹; Sisay Awoke Fenta¹; Muket TesfaMariam¹; Bayeh Abera Beyene³; Belay Bezabih Beyene¹

¹ Amhara Public Health Institute

² Amhara National Regional State Health Bureau

³ Bahir Dar University

Corresponding Author: desalew131@gmail.com

Background: Suicide is a self-inflicted or deliberate act of ending one's life. A suicide attempt is a non-fatal, self-initiated, intentional injury. Suicide is a significant public health problem in Ethiopia. This assessment investigated suicidal acts, its associated factors, and community perceptions towards suicide.

Objective: The objective of the study is to assess the status of suicidal acts and community perception among clients visiting emergency outpatient departments in public hospitals of the Amhara region, Ethiopia, from 2023 to 2024.

Methods: An institutional retrospective, cross-sectional mixed-methods study was conducted in Emergency Departments of public hospitals. A multistage random sampling method was used to select the study hospitals. A total of 565 suicide acts who visited Emergency Outpatient Department (EOPD) between June 2023 and 2024 were analyzed. Community perceptions were assessed via 6 KIIs, 5 FGDs, and 5 IDIs. Descriptive statistics was used to summarize the quantitative data and thematic analysis for the qualitative data.

Result: Of 565 suicidal acts analyzed, this study found an 8.14% fatality rate and 11.7% unknown outcomes. The cases were predominantly young, with an average age of 26 and 78.4% being between 11 and 30 years old. Most individuals (63%) were female. The primary method used was ingestion of readily available agrochemicals, accounting for 83% of cases. Conflicts between individuals in a relationship were the leading suspected cause, representing 65.6% of incidents. The health facility response was hindered by inadequate infrastructure, limited resources, and workforce shortages. Essential antidotes, pharmacological supplies, and laboratory equipment were also lacking. Furthermore, no Suicide Information and Control Center (PICC) was present. Only 60% of hospitals conducted clinical audits, and a similar proportion of patients lack integrated medical and psychological treatments.

Implication and recommendation: High death rates and unknown outcomes demand better prevention and data tracking by health facilities. Youth aged 11–30 face the highest suicide risk, requiring targeted mental health support. Adequate health care provider training and tighter agrochemical controls should be urgently implemented by the Regional Health Bureau.

Mental Health and Psychosocial Support in Emergencies / 130**Prevalence of depression and its associated factors among HIV-positive youths taking antiretroviral therapy at selected hospitals in Amara region, North West Ethiopia. Multiple crises focused.**

Authors: Dessie Mulatu¹; Getnet Gedif Engida²; Samuel Derbie²

¹ *Burie town health office*

² *Debre Markos University*

Corresponding Author: get4ged@gmail.com

Introduction: Depression is one of the most common neuropsychiatric complications of human immunodeficiency virus disease, and in turn it is associated with worse HIV-related outcomes. The World Health Organization predicts that both diseases are expected to be the leading causes of disease burden by 2030.

Objective: -To assess the prevalence of depression and its associated factors among HIV-Positive Youths on antiretroviral therapy at Selected Hospitals in Amhara Region, Northwest Ethiopia, 2024

Methods: - An institutional-based cross-sectional study design was conducted from April 21 to June 18, 2023, among 452 HIV-positive youths attending ART clinics at selected hospitals in the Amhara Region, Northwest Ethiopia. Data were collected by interview administered using a structured questionnaire. Binary logistic regression was used to identify factors associated with depression. Variables with a p-value ≤ 0.25 on the bivariate analysis were candidates for multivariable analysis. Adjusted odds ratios with the respective 95% CI were calculated, and p-values < 0.05 were used to set statistically significant variables in the multivariable analysis.

Results: Out of a total of 460 sampled HIV-positive youth, 452 have participated in this study with a response rate of 98.3%. The prevalence of depression was 32.3% (95% CI: 28.0%, 36.8%). School dropout due to HIV/AIDS illness (AOR=4.9, 95% CI: 1.87-12.87), poor social support (AOR=4.80, 95% CI: 1.28-17.91), poor treatment adherence (AOR=2.27, 95% CI: 1.08-4.7), and a history of opportunistic infections (AOR=3.23, 95% CI: 1.44-7.29) were factors significantly associated with depression.

Conclusion: This study demonstrated a high prevalence of depression among HIV-positive youths according to the national youth health strategy target. Regular screening for depression comorbidity among HIV-positive youths and linkage with mental health service providers were recommended.

Mental Health and Psychosocial Support in Emergencies / 33**Mental Health Problem and Mental Health Services in Primary Health Care Setting in Oromia Region, Ethiopia****Author:** Atinkut Zewdu Asefa¹¹ *Ambo University***Corresponding Author:** atinkutpsycho09@gmail.com

Mental health problem is a public health problem. In Ethiopia, where malnutrition and preventable infectious diseases are very common, mental illness are not given due attention. This study is intended to explore the status of mental health problem and implementing Mental Health Services in primary health care setting in Oromia Region. Mixed method explanatory research design was employed. Apart from interview, FGD and document analysis, Self-Reporting Questionnaire (SRQ-20), World Health Organization-Assessment Instrument for Mental Health Systems (WHO-AIMS) and Community Attitudes toward the Mentally Ill (CAMI) were used for assessment from 532 randomly selected respondents. Descriptive statistics, independent sample t-test, Multivariate logistic regression, multiple linear regressions and ANOVA were utilized. As a result, the prevalence of common mental disorders among community was 13.6%. Specifically, feeling nervous (16.3%), losing interest in things (16.1%), feeling unhappy (15.4%), problems with decision making (14.5%) and fatigue (12.5%) were highly prevalent. Also, age, educational status and income of respondents were significantly associated with higher prevalence of common mental disorders. While being divorced in marital status was found to be a risk factor from common mental disorders. According to WHO-AIMS, the implementation of mental health service was in general down beat. All respondents confirmed that there is no practical mental health strategy, mental health action plan, mental health legislation, plan for monitoring and training on human rights in mental health, financing of mental health services, day treatment facilities, availability of psychosocial treatment in mental health facilities, community residential facilities, mental hospitals, forensic inpatient units, other residential facilities and community-based psychiatric inpatient units. In addition, 37.1% of the respondents had positive attitude towards mental illness. Sex was associated with authoritarianism. Marital status, educational status and training on mental health of respondents had significant effect on authoritarianism, benevolence, social restrictiveness and mental health ideology attitude of the community towards mental illness. As conclusion, common mental health disorder symptoms were prevalent among the community indicating a need to develop strategies to change it at community level. Creating and routinely arranging mental health interventions and rehabilitation services are advisable.

Mental Health and Psychosocial Support in Emergencies / 66**Post-Traumatic Stress Disorders among Sexual Gender Based Violence survivors in war affected zones in Ethiopia****Author:** Tamrat Anbesaw¹¹ *Wollo University***Corresponding Author:** tamratanbesaw@gmail.com

Background: Post-Traumatic Stress Disorder (PTSD) among survivors of Sexual Gender-Based Violence (SGBV) in war-affected zones is a pressing public health issue, as these individuals often endure compounded trauma from both the violence they experience and the broader context of conflict. Post-traumatic stress disorders are overlooked in Ethiopian society, despite the country having the greatest number of victims of violence and its detrimental effects on mental health. This study aimed to explore PTSD in Sexual Gender-Based Violence Survivors attending one-stop centers in war-affected Zones, Amhara, Ethiopia.

Method: A cross-sectional study design was carried out among 321 individuals at least 15 years old at the time of attendance at the one-stop center in December/2022 and January 2023. The research participants were chosen by a systematic random sampling method. The outcome measure used in the study was the Post-traumatic Stress Disorder Checklist for DSM-5 (PCL). Data was entered into the Epi-data version 4.6 and it was exported to SPSS version 26 statistical software for further analysis. Pretested, structured questionnaires and face-to-face interviews were used for data collection. To identify factors associated with PTSD, bivariate and multivariable logistic regressions were performed. Variables in multivariable logistic regression with a p-value of less than 0.05 were considered significant, and the strength of the association was present using adjusted OR (AOR) with a 95% confidence interval.

Result: The prevalence of posttraumatic disorder among participants was found to be 36.4 % (95% CI:30.8,36.4). In multivariable analysis, experiencing multiple violence history (AOR=3.34; 95% CI 1.44, 7.77), family history of suicide (AOR=3.26; 95% CI 1.49, 7.16), and depression (AOR=8.71; 95% CI 4.84,15.67) were variables significantly associated with PTSD.

Conclusion: This study showed PTSD is extremely common among SGBV survivors in war-affected regions, with experiencing two or more violence history, a family history of suicide, and co-occurring depression as major contributing factors.

Recommendations: Post-Traumatic Stress Disorder remains a major challenge among Sexual Gender-Based Violence survivors in Ethiopia's war-affected zones. Expanding one-stop centers with integrated medical, psychological, and legal support is essential to improve access, quality, and survivor-centered care.

Mental Health and Psychosocial Support in Emergencies / 67

Post-traumatic stress disorder and associated factors among people who experienced traumatic events in Dessie town, Ethiopia. A community-based study

Authors: Amare Asmamaw¹; Maregu Shegaw¹; Nahom Biru¹; Tamrat Anbesaw²; Yosef Zenebe¹

¹ *Department of Psychiatry, College of Medicine and Health Science, Wollo University, Dessie,*

² *Wollo University*

Corresponding Author: tamratanbesaw@gmail.com

Background: Posttraumatic stress disorder (PTSD) may develop as a serious long-term consequence of traumatic experiences, even many years after trauma exposure. Dessie town residents have experienced prolonged armed conflict due to inter-communal conflict in 2021. Those people are exposed to different kinds of trauma, and violence, making them more prone to psychological disorders. Despite the highest number of people affected due to conflict and its negative impact on mental health, post-traumatic stress disorders among people are overlooked in Ethiopia. This study aimed to assess the prevalence and associated factors of post-traumatic stress disorder among people who experienced traumatic events in Dessie town, Ethiopia, 2022.

Methods: Community based cross-sectional study was conducted on May 1-30, 2022, by using a multi-stage cluster sampling with a total sample of 785. Pretested, structured questionnaires and face-to-face interviews were used for data collection. PTSD was assessed by the Post-traumatic stress disorder Checklist for DSM-5 (PCL-5). Data was entered using Epi-data version 3.1 and, then exported to SPSS version 26 for analysis. The association between outcome and independent variables was analyzed with bi-variable and multivariable logistic regression. P-values less than 0.05 was considered statistically significant.

Results: The prevalence of PTSD among Dessie town residents was found to be 19.4% (95% CI, 16.7, 22.0). In multivariable analysis, being females (AOR=1.63, 95% CI 1.10-2.44), previous history of mental illness (AOR=3.14, 95% CI 1.14-7.06) depressive symptoms (AOR=3.12, 95% CI 1.92-5.07), witnessing a serious physical injury of a family member or friend (AOR=2.82, 95% CI 1.18-6.70) and high perceived life threats (AOR=5.73, 95% CI 3.05-10.78) were found to be significant predictors of PTSD.

Conclusion: The prevalence of PTSD among Dessie town residents was high. Independent predictors included female gender, previous history of mental illness, depressive symptoms, witnessing severe injury of close contacts, and high perceived life threats.

Recommendations: Mental health programs local officials, psychologists, and NGOs should expand PTSD programs, ensuring screening, treatment, awareness, and sustained psychosocial support to aid trauma victims' recovery and reduce prevalence.