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The 31st International Research Conference on "Getting Research into Policy and Practice (GRIPP): Innovations and Technologies in Fostering the Health System."

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Conference details

Date: 20-21 February 2025
Venue: Wollega University, Nekemte, Ethiopia
Organizer: Institute of Health Sciences

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EXECUTIVE SUMMARY

Wollega University organized an international research conference from 20-21 February 2025 under the theme **"Getting Research into Practice and Policy (GRIPP): Innovations and Technology in Fostering Health Systems."** The conference aimed to generate evidence on health system transformation, traditional medicine, and digital technologies, while addressing the gap between research and its application in policy and practice.

Recognizing that much research remains underutilized, often limited to publication, presentation, or social media, the conference brought together researchers, policymakers, evidence users, and international experts to promote dialogue on translating research into action.

Keynote speakers stressed that traditional dissemination is insufficient to influence policy and practice, calling for deliberate strategies aligning research agendas with policy priorities and implementation realities. Twenty-two research findings were presented, followed by discussions on their relevance and pathways for uptake.

The addresses underscored research's central role in strengthening health systems in Ethiopia and globally. The theme was timely given the rising burden of non-communicable diseases, infectious threats, and demands for equitable, resilient, and sustainable systems. Transformation was identified as a cornerstone of national health reform, emphasizing universal health coverage.

Despite progress, Ethiopia's health system requires further transformation. Rapid urbanization, demographic shifts, and growing non-communicable diseases necessitate rethinking service design, delivery, financing, and governance. A people-centered approach prioritizing equity, accessibility, quality, and efficiency was highlighted.

Key components included strengthening service delivery in underserved areas; ensuring sustained access to maternal and child health, nutrition, disease prevention, and health promotion; and investing in the workforce. Persistent challenges in distribution, capacity, and retention, especially in rural settings, make research-informed policies critical for workforce planning.

Integration of health information systems and innovation was identified as a major enabler. Digital technologies, including electronic health records and management systems, were highlighted for improving monitoring, supporting evidence-based decisions, and enhancing efficiency. Sustainable and equitable financing remains a challenge, requiring innovative, research-driven approaches to expand coverage, protect households, and ensure efficient resource use. Leadership and governance were emphasized as cross-cutting enablers, with research strengthening accountability and institutional capacity.

In conclusion, the conference emphasized that health system transformation, traditional medicine, and digital technologies are interconnected. Their integration, guided by policy-relevant research, can substantially improve outcomes and performance. The conference served as a platform for aligning researchers, policymakers, practitioners, and students around the shared goal of translating research into policy and practice, supporting Ethiopia's efforts toward universal health coverage and equitable healthcare.

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WELCOME ADDRESS

H.E. Tesfaye Lemma, PhD

I would like to welcome you all to Wollega University, Nekemte campus, and would like to express my appreciation to you for joining us for a conference that takes place today and tomorrow under the theme "*Getting Research into Practice and Policy (GRIPP): Innovations and Technologies in Fostering Health System.*"

Wollega University was established 17 years ago with the triple mandate of producing highly skilled human resources, conducting problem-solving research, and providing transformative community services. WU currently runs 233 academic programs consisting of 94 undergraduate programs, 119 second degree programs, and 14 PhD programs at its Nekemte, Shambu, and Gimbi campuses. The university has been engaged in relevant and problem-solving research in various disciplines, and has been providing community services in different areas, such as agriculture, health, education, free legal services, and social development.

Wollega University has been designated/ differentiated by the Ministry of Education as an applied sciences university. Accordingly, the university conducts applied and problem-solving research under different thematic areas with special focus on agriculture, health, manufacturing, and mining. Our research activities, including those conducted by postgraduate students, are expected to focus mainly on solving real problems facing communities and industries at local and national levels. Also, we are expected to do policy-relevant research.

The extent to which our research outputs inform health policy at regional and national levels, stimulate entrepreneurship, and foster innovation and improvement in health service delivery are key performance indicators in addition to publishing scientific articles in peer-reviewed journals that are indexed in internationally recognized indexing databases. In this regard, we are making continuous improvements, but a lot remains to be done. Wallaga University has been engaged in revising and refocusing its institutional research thematic areas. Conferences that showcase successful experiences in doing research that generates policy-relevant evidence and stimulate innovation and entrepreneurship are very important and timely.

Allow me to thank the conference organizers and the technical team who have been working very hard for the last several weeks to make the conference a reality. Also, I would like to recognize and appreciate Dr Diriba Diba, Vice President for Research and Technology Transfer, and Dr Temesgen Tilahun, Chief Executive Director of Wallaga Institute of Health, for providing the required leadership and follow-up. Finally, I wish you all successful deliberations during the conference and an enjoyable stay in Nekemte.

Welcome, and let the conference commence,

Tesfaye Lemma, PhD (Asso.Prof)

President, Wollega University

Keynote speech I

H.E. Dereje Duguma, Dr.

Good morning, and I greet you all virtually from the Ministry of Health of Ethiopia. It is an immense honor for me to join you at the Annual Research Conference of Wollega University, hosted by the Institute of Health Sciences. Although we are meeting virtually, the importance of the discussions and the shared commitment to improving health systems worldwide bind us together in this moment.

The theme of this year's conference, **"***Getting Research into Practice and Policy (GRIP): Innovations and Technology in Fostering Health Systems***,"** could not be more

timely. We are all acutely aware of the rapidly evolving challenges that our health systems face, not only in Ethiopia but around the globe. Whether it's dealing with the rising burden of non-communicable diseases, the ongoing threat of infectious diseases, or the need for an equitable and sustainable health system, the urgency of transforming health delivery has never been more evident.

As State Minister of Health, I have seen firsthand how research, when aligned with policy and practice, can drive systemic change. I commend Wollega University for this initiative and for bringing together diverse stakeholders to discuss the cutting-edge innovations that will define the future of healthcare.

According to the conference objective**,** the first sub-theme of our conference, Health System Transformation**,** is at the heart of every healthcare reform initiative. In Ethiopia, our health system is evolving, but we recognize that substantial transformation is still required to achieve universal health coverage for all Ethiopians. The rapid pace of urbanization, the demographic shift with a growing young population, and emerging health challenges, such as non-communicable diseases, make it imperative to rethink how we design and implement health services.

Health system transformation means moving away from the traditional approach and embracing a people-centered approach that prioritizes equity, accessibility, and the efficient delivery of care. Transformation requires us to focus on several key components:

1. **Healthcare and Service Delivery**: We must continue to strengthen our health infrastructure, particularly in underserved and remote areas. Ensuring the availability of essential health services, including maternal and child health, nutrition, and disease prevention programs, is fundamental.

2. **Strengthening the Health Workforce**: The backbone of any health system is its workforce. In Ethiopia, we have made strides in training more health professionals, but challenges remain in ensuring that healthcare workers are adequately distributed, well-equipped, and supported in their roles. Research must guide policies that focus on training**,** recruitment, and retention strategies, especially in rural and hard-to-reach regions.

3. **Health Information Systems and Innovations**: The integration of health information technology into everyday practice is key to improving care delivery. By utilizing electronic health records (EHRs) and health management information systems (HMIS)**,** we can enhance the monitoring of health outcomes, streamline services, and ensure better decision-making at every level.

4. **Health Financing**: One of the challenges we face is ensuring that health financing is sustainable and equitable. It is critical that research helps us develop innovative financing models, allowing us to expand coverage without overwhelming existing resources. The work done at this conference could contribute to creating financing strategies that prioritize the most vulnerable communities.

5. **Health Leadership and Governance**: Effective leadership and governance are essential for transforming Ethiopia's health system. Research can guide the development of policies that promote transparency, improve governance structures, and ensure accountability within our health system.

The second sub-theme of our conference, Traditional Medicines, speaks to an area where Ethiopia has a wealth of knowledge and experience. Traditional healing practices have been integral to the health and wellness of our communities for centuries, and they remain a primary source of care, especially in rural areas.

Research into traditional medicines offers a dual benefit: it not only preserves and enhances cultural heritage but also provides an opportunity to discover new treatments and therapies. As we confront drug resistance and rising healthcare costs, ethnobotanical research studying the medicinal properties of indigenous plants becomes more critical. However, integrating traditional medicine with modern healthcare systems requires careful and responsible research to ensure that these remedies are safe, effective, and evidence-based. I strongly encourage researchers to explore:

1. **The potential of herbal remedies**: Ethiopia's diverse flora holds untapped potential for discovering new drugs. Understanding the active compounds within traditional remedies and validating their efficacy can significantly contribute to the development of new therapies for common health issues.

2. **Gene and Stem Cell Therapy**: Advancements in modern medicine, such as gene therapies and stem cell research, offer exciting possibilities for addressing genetic diseases. Integrating these with traditional practices may open the door to holistic treatment options.

3. **Complementary and Integrative Medicine**: A complementary approach that combines the best of traditional and modern medicine can be powerful. Traditional healing methods should be explored as part of a multidisciplinary approach to healthcare that provides more comprehensive and individualized treatment options.

The third sub-theme, Digital and Technologies in the Health System, offers an extraordinary opportunity to leapfrog some of the traditional challenges we face in delivering care, particularly in low-resource settings. Digital health technologies from artificial intelligence (AI) and machine learning to telemedicine and mobile health apps are not just concepts for the future; they are being used today to improve healthcare delivery.

In Ethiopia, telemedicine has already shown its promise, especially in remote regions, where access to healthcare services and specialists is limited. The potential for digital health technologies to improve access, efficiency, and quality of care is immense. We must prioritize research that focuses on:

1. **AI in Healthcare**: Artificial intelligence can aid in diagnosing diseases, predicting patient outcomes, and creating personalized treatment plans. The application of AI in areas such as radiology**,** pathology, and clinical decision-making will significantly improve the precision and efficiency of healthcare delivery.

2. **Health Information Systems (HIS)**: The future of healthcare hinges on our ability to digitize patient records, manage health data securely, and integrate these systems across facilities and regions. Ethiopia's ongoing efforts to digitize health records and enhance interoperability are critical. Research can help us overcome challenges in data privacy**,** cybersecurity, and data sharing.

3. **Telemedicine and Remote Health Monitoring**: Through telemedicine platforms, we can expand access to specialized care for rural and remote populations, cutting down on barriers such as cost and distance. Remote health monitoring technologies also empower patients to manage their health outside of the clinical setting, contributing to better long-term health outcomes.

In conclusion, I want to reaffirm how vital research is to the future of our healthcare system. The Health System Transformation**,** Traditional Medicine, and Digital Technologies are not separate or isolated elements; they are interconnected, and the integration of these areas can catalyze profound improvements in healthcare outcomes.

This conference is an opportunity for all of us, including researchers, policymakers, healthcare professionals, and students, to unite around the common goal of making health research actionable and policy-oriented. The findings from this conference will contribute directly to the efforts we are making at the Ministry of Health to advance universal health coverage and ensure equitable health access for all Ethiopians.

I would like to thank Wallaga University and the Institute of Health Sciences for hosting this conference and for your commitment to advancing health research in Ethiopia. I look forward to the innovative ideas, discussions, and collaborations that will emerge from these sessions.

Together, we can build a more resilient, sustainable, and inclusive health system for Ethiopia and for the world. Let us continue to turn knowledge into action.

Thank you.

Dereje Duguma, Dr.

State Minister,

Ministry of Health, Ethiopia

Keynote speech II

H.E. Zeleke Mekonnen, PhD

- **Research:** A scientific and systematic study to generate evidence through data collection and analysis
- **Policy:** Guideline or rules deliberately developed by policy-makers of the government/organizations to achieve specific goals based on research evidence
- **Practice:** Changing knowledge/skill/techniques obtained from research into real
  - The research-policy-practice landscape is a complex ecosystem.
  - Involving numerous stakeholders, each with distinct roles and perspectives.
- **Gaps**: Disconnects between research evidence and its application into policy or practice (either from a lack of knowledge, understanding, or missing data).
- **Bridging**: A solution to connect gaps/disconnects b/n research policy, practice, and impact
- **Impact**: Effect/change brought by policy practice, action, intervention in terms of +ve/-ve outcomes on individuals, community, system, environmental

Which means:

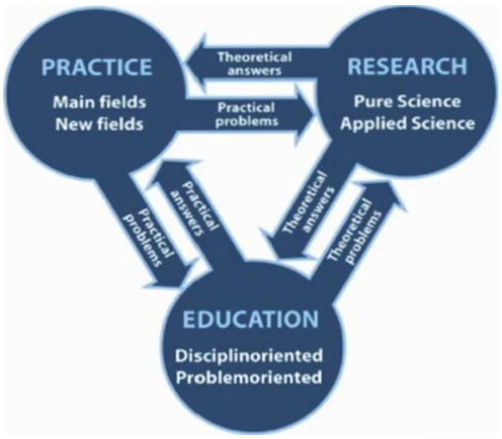
- Researchers generate knowledge through systematic inquiry,
- Policymakers utilize this knowledge to develop regulations
- Guidelines, Practitioners implement these policies in real-world settings.
- Navigating this landscape requires understanding the priorities, constraints, and communication styles of each stakeholder group.

Why do we do research?

- To generate evidence
- Make/change policy
- Solve the problem
- Expand knowledge
- Develop innovation
- Improve quality of life

Key steps: Research evidence to Policy?

- Select relevant research topic (based on gaps, need assessment,...)
- Approach policy makers (early)
- Prepare practical recommendations
- Advocate
- Demonstrate as a pilot
- Collaborate with key stakeholders
- Implement a larger scale



- Monitor and evaluate the impact

Understanding the Research-Policy-Practice Divide

The divide often stems from differing priorities.

- Research focuses on discovery and rigor/novelty.
- Policy and practice prioritize immediate solutions.
- This misalignment creates a significant gap.

Research

- Focuses on discovery.
- Emphasizes rigor and validity.
- Publish finding on
- academic journals

Policy

- Driven by Political considerations,
- public concern and the budgetary
- Seeks practical solutions.
- Demands timely answers.

Key stakeholders and challenges

- Several challenges impede the effective translation of research into policy and practice.
- These include:
  - a lack of communication b/n researchers and policymakers,

- conflicting priorities, a disconnect b/n research questions and policy needs, and a shortage of resources for knowledge translation activities.
- Overcoming these challenges requires a concerted effort to foster collaboration, build trust, and develop communication strategies tailored to diverse audiences.

Gaps from Research to Policy Impact

- Identifying Actionable Research Findings: From Data to Decisions
- Identifying actionable research findings is a critical step in translating research into policy and practice
- Not all research is directly applicable to policy or practice,
- It is essential to distinguish b/n findings that have the potential to inform decision-making and those that are primarily of academic interest.
- This process involves carefully evaluating the research methodology, the strength of the evidence, and the relevance of the findings to specific policy or practice questions.

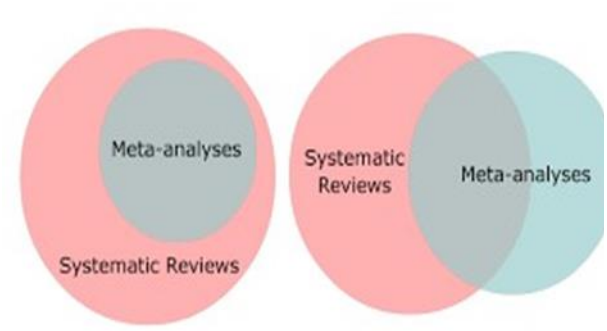
Research-to-Policy- Gap

- Accessibility……
- Relevance……
- Timing…….
- Interpretation……
- Capacity…...
- Political pressures…
- M & E….
- Contextual/external factors

Identifying Actionable Research findings: From Data to Decisions

Focus on research that addresses pressing societal problems or policy priorities.

- Eg, research on the effectiveness of early childhood education programs may be of particular interest to policymakers seeking to improve educational outcomes for disadvantaged children.
- Similarly, research on the impact of climate change on coastal communities may be relevant to practitioners working to mitigate the effects of rising sea levels.



Identifying Actionable Research Findings: From Data to Decisions

• Another approach is to conduct SR and meta-analyses to synthesize the existing evidence on a particular topic.

• These methods can help to identify consistent patterns and trends across multiple studies, providing a more robust basis for
policy and practice recommendations.

• It is also important to consider the limitations of the research and to identify areas where further research is needed.

• Research is to see what everybody else has seen, and to think what nobody else has thought." - Albert Szent-Gyorgyi.

Strategies for effective communication

Tailoring Message for Diverse Audiences

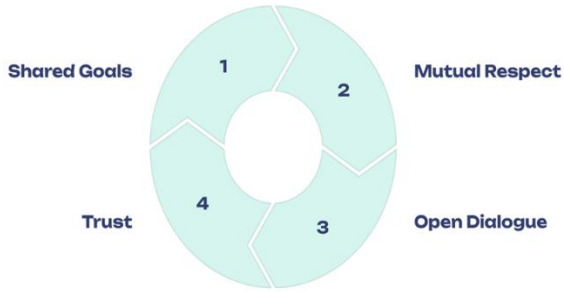
- Effective communication is paramount to bridging the gap b/n research and its practical application.
- The key is to tailor messages to resonate with diverse audiences, including policymakers, practitioners, and the general public.
- Researchers must move beyond academic jargon and present their findings in a clear, concise, and accessible manner.

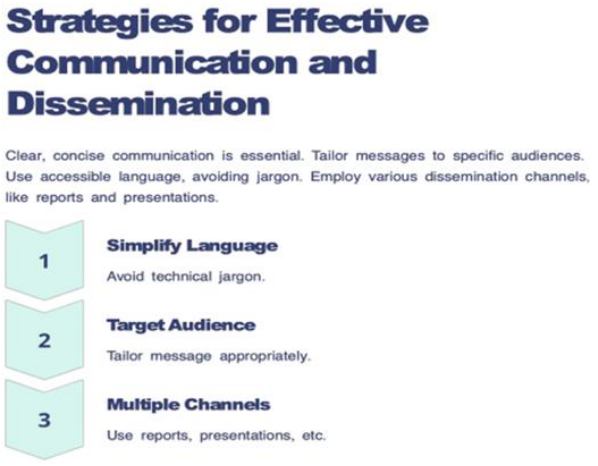
Tailoring Message for Diverse Audiences…

- Visual aids, such as infographics, charts, and videos, can be powerful tools for conveying complex information in an engaging and easily digestible format.
- Storytelling can also be an effective way to connect with audiences on an emotional level and to illustrate the real-world implications
- of research findings.
- For policymakers, it is crucial to provide concise summaries of key findings, along with policy recommendations that are feasible
- and aligned with their priorities.

Tailoring Message for Diverse Audiences…

- For practitioners, it is important to provide practical guidance on how to implement research-based interventions and to address potential barriers to adoption.
- Engaging with stakeholders early and often throughout the research process can help to ensure that the findings are relevant and useful to their needs.
- Building trust and establishing strong relationships with key influencers can also facilitate the dissemination and uptake of research findings.





Building Collaborative Partnerships for Impact

- Partnerships foster trust and shared understanding.
- They promote co-creation of solutions.
- Include all relevant stakeholders in the process.
- Collaboration enhances the relevance and usability of research.

Building Collaborative Partnerships:

Researchers, Policymakers, and Practitioners Working Together

- Building strong, collaborative partnerships is essential for fostering a culture of impact.
- Facilitate the exchange of knowledge, promote mutual

understanding, and ensure that research is relevant to the needs of P and P

- Collaborative partnerships can take many forms, including joint research
- projects, advisory boards, and communities of practice.

Building Collaborative Partnerships:

Researchers:

- benefit from engaging with **P** and **P** to identify pressing policy and practice questions, to refine research designs, and \dissemination

Policymakers

- benefit from accessing the latest research evidence to inform their decision-making, to evaluate the impact of policies, and to identify promising interventions.

Practitioners

benefit from receiving training and technical assistance on how to implement research-based practices, to adapt interventions to their specific contexts, and to monitor outcomes

- Establishing clear roles and responsibilities, shared goals and objectives, and fostering open communication are critical for successful collaboration
- Ensure all partners have a voice in the decision-making process and that benefits are shared equitably.

Researcher

- Engage with policymakers and practitioners to identify pressing questions and refine research designs of the partnership

Policy Makers

- Access the latest research evidence to inform decision-making and evaluate\ policy impacts.

Practitioners

- Receive training and technical assistance on implementing research-based practices and adapting intervention
- **Case Studies: Examples of Successful Research Impacting Policy & Practice**

- Several initiatives demonstrate effective translation.
- They involved collaboration and clear communication.

- Examples include public health campaigns and educational reforms. Success hinges on understanding stakeholder needs.

Public Health Initiatives improved vaccination rates

- **Educational Reforms** Enhanced student outcomes.
- **Environmental Policies:** Reduced pollution levels.

Practice

Needs implementable strategies
Practical implications of policies require clear guidance.
Target the specific problem.

Case Studies: Examples of Successful Research Impacting Policy and Practice

• E.g. 1, Nurse-Family Partnership (NFP), a program that provides home visits by nurses to low-income, first-time mothers.

• NFP improves MCH health outcomes, reduces child abuse and neglect, and increases economic self-sufficiency.

• Eg.2, Use of behavioral economics principles to design more effective policies

• Simple changes to the way information is presented can significantly influence people's choices, leading to

- Improved health behaviors, increased savings rates, and greater compliance
- E.g. 3, Use of behavioral economics principles to design more effective policies
- Several governments incorporated these insights into their policymaking processes, using "nudges" to encourage citizens to make better decisions.
- highlights the potential for research to drive positive social change when it is effectively translated into policy and practice.

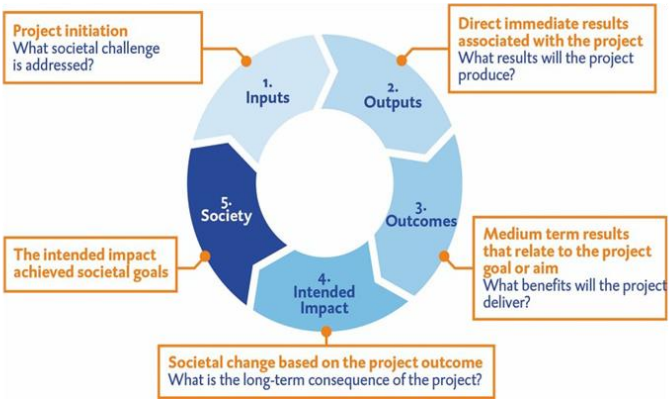
• Analyzing these examples, researchers, policymakers, and practitioners can learn valuable lessons about how to maximize the impact of their work

• Measuring Impact and Evaluating Outcomes: Demonstrating the Value of Research Translation

Measuring Impact and Evaluating Outcomes:

How do we know if there is a research-to-policy gap?

Journey Research-to-Impact



• Are research findings effectively influencing decision-making?

• Three perspectives on the gap

• Two communities

Two Communities

- Technocratic
- Research-Politics interface•
- Researchers and policymakers speak different languages
- Therefore, research needs to be translated
- Researchers and policymakers have different priorities and needs
- Increased engagement can increase alignment and understanding
- Policymakers collaborate with researchers?
- Political bias?

Measuring Impact and Evaluating Outcomes: Technocratic

- Research needs to be synthesized to be useful for policymaking
- Systematic search of all evidence
- Critical appraisal
- Synthesis
- Translation
- Policy implications drawn out

Research-Politics interface

- Evidence-Based/Informed Policy movement
- Knowledge brokers (inside or outside government)
- Institutionalization
- Interaction between researchers and policymakers
- Research evidence credible, data-driven, biased...?
- Research evidence simplified to a policy brief?
- Research on actual-world public trust, political support, ...?

Barriers to effective translation: Research-to-Policy-to-Practice

- **Academic barriers**: Technical jargon, limited dissemination
- **Policy barriers**: Short political cycles, competing priorities
- **Practice barriers**: Lack of resources, training, and infrastructure

Measuring Impact and Evaluating Outcomes: Demonstrating the Value of Research Translation

- Measuring impact and evaluating outcomes are crucial for demonstrating the value of research

translation.

- Ensuring that resources are being used effectively.
- Impact can be measured in a variety of ways, including changes in policy, changes in practice, and improvements in societal outcomes.
- Evaluating outcomes requires rigorous methods, such as randomized controlled trials, quasi-experimental designs, and longitudinal studies.
- Define clear goals and objectives for research translation efforts and
- Identify specific indicators that can be used to track progress. Such as
    - the number of policies that are informed by research,
    - the number of practitioners who adopt research-based practices, and
    - the changes in health, education, or economic outcomes that can be attributed to research translation activities

- Collecting data on these indicators requires a concerted effort to engage all stakeholders.
    - It is also important to consider the limitations of the data and to attribute causality appropriately.

Identifying Actionable Research Findings: From Data to Decisions

- Focus on research that addresses pressing societal problems or policy priorities.
- Eg, research on the effectiveness of early childhood education programs may be of particular interest to policymakers seeking to improve educational outcomes for disadvantaged children.

- Similarly, research on the impact of climate change on coastal communities may be relevant to practitioners working to mitigate the effects of rising sea levels.
- Another approach is to conduct SR and meta-analyses to synthesize the existing evidence on a particular topic.
- These methods can help to identify consistent patterns and trends across multiple studies, providing a more robust basis for policy and practice recommendations.
- It is also important to consider the limitations of the research and to identify areas where further research is needed.
- Research is to see what everybody else has seen, and to think what nobody else has thought." - Albert Szent-Gyorgyi.

Recommendations for Sustainable Knowledge Translation: Fostering a Culture of Impact

- To foster a culture of impact, several recommendations can be implemented to ensure sustainable knowledge translation.
- 1st, invest in training and capacity-building programs for researchers, policymakers, and practitioners to enhance their skills in communication, collaboration, and evaluation.
- 2nd, establish dedicated funding streams for knowledge translation activities, such as dissemination grants, policy fellowships, and practice-based research projects.
- 3rd, create platforms and networks that facilitate the exchange of knowledge b/n researchers, policymakers, and practitioners. These include online forums, conferences, and communities of practice.
- 4th, develop clear guidelines and standards for reporting research findings that are accessible and relevant to diverse audiences.
- 5th, incentivise researchers to engage in knowledge translation activities by incorporating impact metrics into promotion and tenure decisions.
    - By implementing these recommendations, it is possible to create a more seamless and effective system for translating research into policy and practice, ultimately leading to improved societal outcomes.
    - Sustained commitment and collaboration across all stakeholder groups are essential for achieving this vision.
    - Invest in training and capacity-building programs.
    - Establish dedicated funding streams for knowledge translation.
    - Create platforms and networks for knowledge exchange

Summary:

- **Demand-led research**
    - Responding to policy needs - providing solutions
    - Responding to population needs - advocating for change
    - Does demand-led mean policy ready? Policy likely?
    - But need to ensure the policy direction is correct
    - What about unmet needs, neglected areas, and neglected groups of people?
    - Need to be careful about objectivity.
- **Why policymakers need research evidence**
    - Disease: prevalence, impact, mortality, birth, ...
    - Statistical: demographic information
    - Analysis and evaluation: cost and benefit
    - Social: public opinion
    - Comparative: best practices
    - Market: demand-supply

- Innovation: technology
- Environmental: ecology
- Feasibility: implementation
- How is evidence generated by research used for policy?

❖ Direct or instrumental use of evidence: where relevant research results are seen to be directly affecting policy decisions. Typical example: Implementation research (cf IS frameworks)

❖ Selective or legitimating/political use of evidence: where evidence is used to legitimate or sustain a predetermined position already taken by policymakers.

❖ Enlightening or conceptual use of evidence: this can help enrich or deepen understanding of a problem.

"Science can identify solutions to pressing public health problems, but only politics can turn most of those solutions into reality," Oliver quoted in Greet et al (2017).

Zeleke Mekonnen (PhD)

Professor, Medical Parasitology

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LIST OF SCIENTIFIC PAPERS PRESENTED

Stakeholder Perception of the Effectiveness of the Reproductive, Maternal, Neonatal and Child, Adolescent and Youth Health (RMNCAYH) Program in Ethiopia, 2024: Policy, Strategy, Guideline, Partnership, Health Innovation

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ABSTRACT

Introduction: Ethiopia's Ministry of Health is key in developing healthcare policies, ensuring standards, and overseeing healthcare delivery. Despite progress, challenges persist in providing equitable access, particularly in rural areas, and improving care quality and infrastructure. The Reproductive, Maternal, Newborn, Child, and Adolescent Youth Health (RMNCAYH) program focuses on improving health outcomes for women, children, adolescents, and youth, aligning with national priorities and international guidelines to reduce disparities and promote health equity across the country.

Objective: To assess the effectiveness of the Reproductive, Maternal, Newborn, Child, and Adolescent Youth Health program in Ethiopia, focusing on policy, strategic planning, program implementation, partnerships, and health innovations and associated factors among health stakeholders, MOH, 2024.

Methods and Materials: The assessment was conducted at national, regional, and health facility levels using online surveys. Data was collected from policymakers, healthcare professionals, and stakeholders involved in RMNCAYH. SPSS V 25 software was used for data analysis, including univariate, bivariate, and multivariable analyses. The odds ratio (OR) and 95% confidence interval (CI) were calculated to assess variable relationships, with a p-value of <0.05 considered statistically significant. All analysis assumptions were thoroughly checked.

Results: The study found a low perception of effectiveness regarding the current health policy (45.3%), health strategies (55.1%), and RMNCAYH

programs (44.4%). Fewer respondents perceived effective implementation (36.8%), partnerships (33.8%), and health innovations (32.5%), with only 47.4% expressing a positive view of the Health Policy, Strategy, Program, Implementation, Partnership and Innovation (PSPIPI) framework. Significant associations were identified between respondents' sex, years of service at RMNCAYH, belief in the health policy's responsiveness to diverse demographic needs, lower age, and awareness of the policy, all linked to perceptions of effectiveness. Factors significantly associated with policy effectiveness in RMNCAYH services include being female (AOR, 0.19; 95% CI: 0.06, 0.56), having more than 10 years of service in the RMNCAYH Program (AOR, 0.44; 95% CI: 0.23, 0.85), and believing that the health policy adequately addresses the needs of different demographic groups (AOR, 3.21; 95% CI: 1.34, 7.70). In terms of health innovation effectiveness, higher age (AOR, 0.3; 95% CI: 0.10, 0.96) and awareness of the current health policy (AOR, 1.88; 95% CI: 1.08, 6.43) were significantly associated. Additionally, females (AOR, 0.25; 95% CI: 0.11, 0.57) and those aware of the current amended health policy (AOR, 2.67; 95% CI: 1.27, 5.55) were significantly associated with a high level of effectiveness in the overall RMNCAYH services (P<0.05).

Conclusions: The study revealed a generally low perception of effectiveness concerning the current health policy, health strategies, and RMNCAYH programs, with even lower perceptions of implementation, partnerships, and health innovations. The findings highlight that a significant proportion of respondents expressed negative views about the overall PSPIPI framework, with only 47.4% viewing it positively. Key factors significantly influencing perceptions of effectiveness included respondents' sex, years of service, belief in the policy's ability to address diverse demographic needs, age, and awareness of the health policy. Specifically, females, those with longer service years, and those who believed in the health policy's responsiveness were more likely to perceive policy effectiveness positively. Similarly, awareness of the current health policy and higher age were associated with greater perceptions of innovation effectiveness.

Recommendations: The study recommends improving health policy effectiveness through targeted communication, inclusive training, and participatory design. It emphasizes refining implementation strategies, involving stakeholders in planning, and fostering collaboration. Additionally, it suggests tailoring health innovations to age groups, enhancing partnership communication, and strengthening the PSPIPI framework to better align with community needs, ultimately improving perceptions of RMNCAYH services, especially among females.

Keywords: Stakeholder, perception, effectiveness, RMNCAYH, Policy, strategy, guideline, partnership, innovation.

Spatial variations of short birth intervals and determinant factors in selected countries of the Asia-Pacific region

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ABSTRACT

Background: Short birth intervals (SBI) are common in low- and middle-income

countries with high fertility rates. SBI is associated with an increased risk of adverse maternal and child health outcomes. This study aimed to investigate spatial variations in SBI and its determinant factors in selected countries across the Asia-Pacific region.

Methods: We used Demographic and Health Surveys (DHS) data from 2014-2021 for eight countries (Bangladesh, Cambodia, India, Myanmar, Nepal, Pakistan, Philippines, and Timor-Leste) in the Asia-Pacific region. A total of 175,565 women were included in the analysis. The degree of spatial autocorrelation was identified using Global Moran's I statistics, and the degree of clustering of SBI was measured using Getis-Ord General G statistics. Getis-Ord Gi* was used to identify SBI hot spots. A multilevel logistic regression analysis was also used to identify factors associated with SBI.

Results: Nearly half of the women (49%) in the studied countries experienced SBI. SBI hot spots were identified in Bangladesh, India, Myanmar, Nepal, Pakistan, the Philippines, and Timor-Leste. Women were more likely to have SBI if they were ≤18 years or between 19 and 34 years old, had their first birth at ≥19 years, had their index childbirth at ≤ 18 years or between 19 and 34 years, had a birth order of ≥5, had given birth to ≥3 children before the index child, and wished to delay pregnancy. In contrast, women who married at ≤18 years or between 19 and 24 years, had primary or secondary education, were employed, belonged to wealthier households, had a birth order of 3-4, did not perceive the distance to a health facility as a problem, and made contraceptive decisions independently were less likely to have SBI.

Conclusion: This study revealed significant spatial variation in SBI across the Asia-Pacific region, with hotspots in several countries. Strengthening family planning services, raising awareness, and empowering women through education, autonomy, income, and access to contraception reduces the likelihood of short birth intervals.

Keywords: Short birth interval, birth spacing, determinants**,** Asia-Pacific region, Women**;** Demographic and Health Survey

Built Environment and its association with Incidence of type 2 diabetes mellitus: A Systematic Review and Meta-analysis of longitudinal studies

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ABSTRACT

Introduction: A lack of clarity exists regarding the potentially causal impact of the built environment on rising rates of type 2 diabetes mellitus (T2DM). This study aimed to systematically review longitudinal studies examining associations between the incidence and prevalence of T2DM and built environmental factors, specifically walkability, green/open space, and food resources.

Methods: This systematic review and meta-analysis adhered to the 2020 PRISMA guidelines. Longitudinal studies examining associations between incidence and prevalence of T2DM and the built environmental features were eligible. Built environment constructs correspond to the following themes: 1) Walkability – factors such as sidewalks/footpaths, crosswalks, parks, and the density of businesses and services; (2) Green/open space – size, greenness, and type of available public

outdoor spaces; (3) Food environment – ratio of healthful food outlets (e.g., greengrocers, butchers, supermarkets, and health food shops) to unhealthful food outlets (e.g., fast-food outlets, bakeries, sweet food retailers, and convenience stores). Data sources included Medline, Embase, Scopus, Web of Science, and Environmental Complete, with searches conducted from inception until July 2023. Three reviewers conducted independent screening, data extraction, and risk of bias assessment. Qualitative and quantitative synthesis were used to summarise key findings, including a meta-analysis of adjusted Hazard Ratios (aHR).

Results: Of 3,343 articles, 18 longitudinal studies from eight countries, published between 2015 and 2023, involving 13,443,011 baseline participants (median of 53,009), were included. Six studies focused on the food environment, eight on green/open space, and four on walkability. Overall, our review showed a statistically significant association between built environmental measures and T2DM: greater T2DM incidence was associated with the ratio of unhealthful relative to healthful food environments (pooled HR: 1.21; 95% CI: 1.04, 1.42); and T2DM incidence was inversely associated with green/open space environments (pooled HR: 0.82; 95% CI: 0.74, 0.92) and walkability (pooled HR: 0.98; 95% CI: 0.98, 0.99). Limitations in the primary studies underlying these pooled estimates include ambiguity in study-specific expressions of built environment constructs, lagged effects, and potential residual confounding.

Conclusions: This review underscores consistency in the nature of associations between built environment features related to T2DM. We observed statistically significant inverse or "protective" associations between T2DM and walkability, healthful food environments, and green/open space. These results support calls for policies and guidelines that promote healthful food environments, walkability, and green/open space.

Keywords: Built environment; Type 2 diabetes; T2DM; Food environment; Walkability; Green space; Open space; Prevention

Multi-regional investigation of compliance with standard precautions among nurses in clinical settings

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ABSTRACT

Background: Standard Precautions (SPs) represent the latest infection control protocols implemented in the majority of healthcare environments globally. The compliance rate is unsatisfactory. There have been increasing demands for this type of study internationally. Nonetheless, minimal progress has been made in the sector thus far. Compliance with Standard Precautions (CSPS), a tool for assessing the use of standard precautions among nurses, has been translated and validated in 11 distinct languages. This enables a multi-regional investigation of SP practices and enhances comprehension of the inadequacies requiring our attention on a worldwide scale.

Methods: The cross-sectional study has been enlisting 2,100 nurses from seven regions (Brazil, Hong Kong, Korea, Indonesia, Italy, Saudi Arabia, and Turkey) since 2012. The questionnaire comprised demographic information and CSPS in their respective languages. This abstract reported the initial findings from 683 valid data points, around 100 samples from each region.

Results: The average age of participants was 35.28 years (SD=9.49, range=22-64). The average clinical experience of the nursing staff was 8.49 years (SD=9.51, range=0.08-

42.00). The SP compliance rate was 64.2% (SD=16.52, range=0%-95.0%). Notably, inadequate compliance was seen in multiple areas, specifically hand hygiene (40.7%-45.5%), failure to recap used needles (38.8%), improper disposal of sharps containers (21.8%), and incorrect timing and circumstances for utilizing Personal Protective Equipment (PPE) (42.8%-52.7%). ANOVA analysis revealed substantial regional differences in different demographic variables and SP practices, including age (F=60.36), clinical experience (F=74.37), all CSPS items (F=5.09-118.44), and total compliance rate (F=15.64). Clinical experience had a mild correlation with compliance rate (r=0.16, p<0.001) and 14 specific items (r=0.08-0.27), excluding items relating to the appropriate use of gloves, masks, and PPE (p=0.09-0.96).

Conclusion: The results suggested inadequate compliance with SPs. Certain nurses exhibited noncompliance with all SP items, warranting prompt worldwide attention. Regional disparities exhibited a markedly selective practice of SPs among Nurses.

Cognitive behavioral therapy for depression, internalized stigma and adherence to treatment among people living with HIV/AIDS: A randomized control trial

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ABSTRACT

Background: Depression and internalized stigma affect people living with HIV (PLWH) more frequently than the general population. PLWH's adherence to antiretroviral therapy (ART) is greatly impacted by depression and internalized stigma, which is detrimental to the treatment's efficacy. Cognitive behavioral therapy (CBT) has been shown to help with adherence, depressive symptoms, and internalized stigma. For this demographic, there is no evidence of CBT in the research area.

Objectives: To evaluate the impact of cognitive behavioral therapy on internalized stigma, ART adherence, and depressive symptoms in PLWH receiving ART follow-up care at Mettu Karl and Bedele hospital.

Methods: This is a two-arm, randomized controlled trial (n =107) comparing CBT to enhanced treatment as usual (ETAU). Eight sessions of CBT were given to the experimental group every week. Analyses were conducted for at four timeframes: 1) baseline = T0, 2) immediately or three months after treatment = T1, 3) at the sixth month of post-treatment = T2, and 4) at the ninth month of post-treatment = T3. Repeated measures (general linear models - GLM) were used for pre-post assessments. Depression was assessed by the Patient Health Questionnaire (PHQ-9) Depression Scale. Medication adherence was assessed by the Simplified Medication Adherence Questionnaire (SMAQ), and internalized stigma was assessed by an HIV-related perceived stigma scale.

Results: At post-treatment of all three time frames, the CBT condition showed significantly greater improvement than ETAU. There was a clinically important difference between PHQ-9, HIV-related perceived stigma scale and SMAQ score differed significantly across four-time points which is (F (3, 315) = 20.819, $p < 0.001$), (F(3, 315) = 15.788, $p < 0.001$), and (F (3, 315) = 13.550, $p < 0.001$) respectively.

Conclusions: For HIV-positive people who are having trouble with depression, internalized stigma, and adherence, CBT may be helpful. Larger efficacy trials should be replicated and expanded upon.

Keywords: Cognitive behavior therapy, PLWHA

ClinicalTrials.gov Identifier: NCT06109610

Anemia and Risk of Perinatal Mortality among Pregnant Women on Antenatal Care Follow-Up at Public Hospitals in Ilubabor and Buno Bedelle Zones, Southwest Ethiopia: A Prospective Cohort Study, 2024

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ABSTRACT

Introduction: Globally, anemia affects 37% of pregnant women, causing adverse pregnancy outcomes such as perinatal deaths, low birth weight, and preterm birth, maternal and among many others.

Objective: To assess the incidence of perinatal mortality and its predictors among pregnant women on antenatal care follow-up at public hospitals in Ilubabor and Buno Bedelle zones, southwest Ethiopia, 2023/2024.

Methods: A facility-based prospective cohort study was conducted among 492 pregnant women on antenatal follow-up at public hospitals of Ilubabor and Buunnoo Beddelle Zones, southwest Ethiopia. Preliminary screening of anaemia was done using Hemocue Hb 301. Study participants were selected using a systematic random sampling technique and were followed until delivery. Data was collected using mothers' medical record review, an observation checklist, and face-to-face interviewer-administered approaches, and then analysed using SPSS V.25. Bivariable and multivariable Poisson regression analyses were done. Statistical significance was declared at a p-value of less than 0.05.

Result: 492 respondents participated in this study, making the response rate 92.5%. The incidence of stillbirth and neonatal loss was there were 59.37 per 1000 births and the incidence of perinatal mortality was 96 per 1000 births, 95%CI (70.0, 120.0). The risk of perinatal mortality was 4.6 times higher among anaemic pregnant women as compared to non-anaemic [aRR=4.56, 95% CI (1.95, 12.47)]. Predictors of perinatal mortality were: Morbidity at the time of conception [aRR = 2.9; 95% CI (1.1, 7.1)], unwanted pregnancy [aRR = 3.4; 95% CI (1.5, 8.0)], obstetric complication during delivery [aRR = 3.5; 95% CI (1.2, 9.1)], Level of severity of anaemia [aRR = 3.864; 95% CI (1.10, 13.5); P < .01], mode of delivery [aRR = 9.9, 95% CI (4.504, 21.974)].

Conclusion and recommendation: Perinatal mortality was very high in the study area. Health care providers and health managers should take intervention actions focusing on enhancing obstetric care quality, and early detection and treatment of comorbidities.

Antimicrobial resistance infection drivers, and outcomes in neonatal intensive care units: pathways, risks, and solutions

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ABSTRACT

Background: Antimicrobial resistance (AMR) in neonatal intensive care units (NICUs) complicates the treatment of healthcare-associated infections, causing high morbidity and mortality. This study evaluates AMR prevalence, risk factors, outcomes, and infection control measures at Felege Hiwot Hospital, aiming to guide clinical practices, antimicrobial stewardship, and improved neonatal health outcomes.

Methods: This mixed-methods study (Oct 2022–Jun 2023) assessed AMR in NICU neonates by analyzing 420 blood samples, environmental swabs, and staff insights. Bivariate and multivariable regressions identified significant variables, and content analysis was used for qualitative data.

Results: Out of 420 samples, 35% tested positive for AMR pathogens, with Coagulase-Negative Staphylococci (16.7%), Klebsiella pneumoniae (12.9%), and Acinetobacter spp. (5.6%) being the most prevalent. Resistance rates for Gentamicin, Cotrimoxazole, and Ciprofloxacin were alarmingly high (98-100%), while Amikacin demonstrated low resistance (3.0-5.56%), indicating potential efficacy. Among the neonates admitted, 91.8% survived, and 8.2% succumbed. Risk factor analysis revealed that improper PPE usage (AOR 3.90, $p < 0.001$), non-functional handwashing sinks (AOR 3.20, $p < 0.001$), and inadequate disinfection practices (AOR 2.70, $p < 0.001$) were strongly associated with microbial contamination. Environmental factors, including cockroach presence (AOR 1.80, $p = 0.040$) and high traffic flow (AOR 2.10, $p = 0.005$), were also significant contributors. The qualitative data analysis confirmed that improper PPE use, inadequate disinfection practices, pest control challenges, and non-functional handwashing sinks contributed to AMR microbial contamination risks in the NICU, aligning with the quantitative findings.

Conclusions: This study underscores key factors driving AMR in NICUs, such as inadequate IPC practices and environmental contamination, alongside high resistance to Cotrimoxazole and Ciprofloxacin. Amikacin shows promise as an effective treatment for CONS. Urgent actions, including strengthened IPC measures, staff training, and environmental management, are crucial to combat AMR, ensuring improved neonatal care and outcomes.

Keywords: Antimicrobial resistance (AMR), NICU, Coagulase-Negative Staphylococci (CONS), Infection prevention and control (IPC), Amikacin

Determinants of Head and Neck Cancer among Patients Attending Jimma Medical Center, Jimma, Southwest Ethiopia: An Unmatched Case-control Study

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ABSTRACT

Background: Head and neck cancer ranks as the seventh most common cancer worldwide. The burden of this cancer is high in low- and middle-income countries like

Ethiopia. Despite the distinct sociodemographic and habitual characteristics of people in Jimma, there is a lack of data on the specific risk factors for this disease. Thus, this study aims to identify the determinants of head and neck cancer among patients attending Jimma Medical Center.

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

Results: The study had a 100% response rate, including a total of 315 participants, with 105 cases and 210 controls. Age (AOR=1.11 [95% CI: 1.08,1.14]), body mass index (AOR = 0.75 [95% CI: 0.67, 0.86), cigarette smoking (AOR= 5.92 [95% CI: 1.89,18.57]), alcohol drinking (AOR= 5.82 [95% CI: 1.12,30.60]), khat chewing (AOR= 2.99 [95% CI: 1.54, 5.81]), a high intake of meat (AOR=2.95 [95% CI: 1.13, 7.70]), and tooth brushing habit (AOR== 0.27 [95% CI: 0.13, 0.54]) were the factors that showed statistically significant association with head and neck cancer.

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

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

Evaluation of Novel Biocredit Rapid Diagnostic Tests for Detection of *Plasmodium* Species Among Febrile Patients at Dilla Zuria Woreda Health Facility, South Ethiopia

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ABSTRACT

Background: Rapid diagnostic test (RDT) plays an essential role in the prompt diagnosis of malaria in settings where microscopy is not feasible.

Objective: To evaluate the diagnostic performance of Biocredit RDTs Pf(pLDH/HRP2) and Pf/Pv (pLDH/pLDH) for the detection of *Plasmodium* species.

Methods: A health facility-based cross-sectional study was conducted from September to November 2024 in 384 malaria-suspected febrile study subjects at Dilla Zuria health facility. Finger-prick blood samples were collected for malaria diagnosis using microscopy, RDTs, and Quantitative Polymerase Chain Reaction (qPCR). The sensitivity, specificity, and positive and negative predictive values of the RDTs were

determined by comparing them with the gold standard microscopy and qPCR.

Results: By taking microscopy as a reference, the Biocredit Pf/Pv (pLDH/pLDH) RDT had sensitivity and specificity of 97.9% and 97.4% for *P. falciparum* and 94.5% and 97.5% for *P. vivax,* respectively. The Biocredit Pf (pLDH/HRP2) RDT had a sensitivity and specificity of 97.4% and 97.5%. In contrast, SD Bioline RDT had sensitivity and specificity of 51.3% and 93.2% for *P. falciparum*, and 86.3% and 96.5% for *P. vivax*, respectively. By taking qPCR as a reference, the sensitivity and specificity of Biocredit Pf/Pv (pLDH/pLDH) were 95.5% and 96.4% for *P. falciparum,* and 90.8% and 99.1% for *P. vivax,* respectively. The Biocredit Pf (pLDH/pHRP2) RDT had sensitivity and specificity of 94.9% and 97.4%, respectively, whereas the SD Bioline RDT had sensitivity and specificity of 50.0% and 96.5% for *P. falciparum*, and 83.0% and 96.5% for *P. vivax*, respectively.

Conclusion and recommendation: The sensitivity and specificity of Biocredit RDT kits documented in this study comply with the WHO limit of detection for routine diagnosis of clinical malaria, with more reliable diagnostic performance compared to the conventional (Care start) RDT.

Keywords: Ethiopia, Plasmodium, Rapid diagnostic test

Investigation of Antimicrobial Susceptibility Patterns and Contributing Factors of Extended-Spectrum Beta-Lactamase–Producing Bacteria Among Patients with Suspected Urinary Tract Infections at Bule Hora University Teaching Hospital, Southern Ethiopia

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ABSTRACT

Background: Extended-spectrum cephalosporin and penicillin groups can be hydrolyzed by extended-spectrum-lactamase (ESBL)-producing bacteria. Most ESBL makers are Gram-negative bacteria. A growing number of isolated ESBLs are responsible for severe UTIs, are a significant factor in the failure of cephalosporin medications, and have negative effects on infection management.

Objective: This study aims to determine the prevalence of extended-spectrum β-lactamase-producing bacteria, antimicrobial susceptibility patterns, and associated factors among UTI-suspected patients visiting Bule Hora University Teaching Hospital, southern Ethiopia, in 2022.

Method: A cross-sectional study conducted at the institution included 292 participants who were suspected of having a UTI between May and August 2022. The study population was chosen using a convenience sampling technique. To find the etiologic agents, urine samples were cultured on blood and MacConkey agar. The detection of ESBL-producing bacteria was carried out using the combination disc approach. Data were entered into EPI-Data version 4.6.0.6, exported to the Statistical Package for Social Science (SPSS) version 25, and then analyzed with that program.

Results: In the current study, ESBL-producing phenotypes were detected in 23.6% (95% CI, 0.155–0.397) of urinary isolates, of which *E. coli* represented 66.7%, *K. pneumoniae* represented 20%, *P. aeruginosa* represented 6.6% and *K. oxytoca* represented 6.6%. ESBL-producing phenotypes showed high resistance to ampicillin (100%) and ceftriaxone (93.3%). Factors such as previous

antibiotic use of more than two cycles in the previous year (AOR, 5.66; 95% CI, 1.07-30.07) and history of recurrent UTI (AOR, 5.43; 95% CI, 1.33- 22.10) were significantly associated with the ESBL-producing groups.

Conclusion: An ESBL-producing strain was detected in urinary tract isolates. All of the gram-negative bacteria that produced ESBL in this investigation were MDR. The prudent use of antibiotics in healthcare settings and surveillance studies to keep track of changes in antimicrobial resistance patterns should be encouraged.

Keywords: Bacteria, ESBLs, UTI, GNB, AST

Anti-Ulcer activity of 80% Methanolic leaf extract of Lippia Adoensis Hochst in Rats

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ABSTRACT

Background: *Lippia adoensis* leaf is used to treat gastric ulcers in Ethiopian traditional medicine, but this claim has not yet been scientifically investigated. This study aims to evaluate the anti-ulcer activity of an 80% methanolic leaf extract of *Lippia Adoensis.*

Methods: *Lippia adoensis* leaves were extracted with 80% methanol by maceration. The extracts were evaluated for anti-ulcer potential using pylorus ligation, indomethacin, and ethanol-induced stomach ulcer models. The extract was given in three different doses. Pantoprazole 40mg/kg was given to positive controls, and distilled water to negative controls. Ulcer index and protection percent were calculated for each model. Gastric fluid volume, free acidity, and total acidity were measured in a pyloric ligation and ethanol-induced model. Acute toxicity tests were conducted using the OECD 425 protocol. Data were analyzed using SPSS and expressed as SEM±SE. The data was analyzed using ANOVA followed by the Post Hoc Tukey test.

Result: Pretreatment with 80% methanolic extract of *L. adoensis* significantly reduced stomach mucosal ulceration and increased ulcer prevention in indomethacin, ethanol, and pyloric ligation-induced ulcers. The *L. adoensis* extract (100, 200, and 400 mg/kg) significantly reduced the number of ulcers and ulcer index ($p<0.001$) in indomethacin, ethanol, and pyloric-induced ulcer models when compared with the negative control. The 400 mg/kg extract provided the highest ulcer protection (83.37%) in indomethacin-induced ulcers, comparable to pantoprazole 40mg/kg (94.95%). The extract at 100, 200, and 400 mg significantly reduced free and total acidity ($p<0.001$) in the pyloric ligation model when compared with the negative control.

Conclusion: Substantial anti-ulcer activity was observed from the 80% methanolic leaf extract of *L. adoensis*.

Keywords: Ethanol-induced, Indomethacin, Pantoprazole, Pyloric ligation

Effects of psychological intervention on health-related quality of life in patients with epilepsy at Mettu Karl Comprehensive Specialized and Bedelle general hospitals, south-west Ethiopia, 2022: A quasi-experimental study

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ABSTRACT

Background: Epilepsy is a global public health issue that frequently has negative impacts on social, cognitive, psychological, and physical aspects of life, which might impair one's ability to work, be independent, and participate in social activities. Merely using pharmaceutical management alone is insufficient to address these, especially in developing nations like Ethiopia, where access to antiepileptic medications is limited.

Objectives: To assess the effects of psychological interventions on health-related quality of life in patients with epilepsy at Mettu Karl and Bedelle hospitals, southwest Ethiopia, 2022.

Methods: A quasi-experimental study was conducted. The participants were 128 patients with epilepsy conveniently recruited from both hospitals and allocated to a control (n=64) and an intervention (n=64) group. Problem-solving therapy and educational interventions were applied over three months for the intervention group, and the control group received health care services. Quality of life was assessed by World Health Organization Quality of Life Scale Brief Version (WHOQOL-BREF). Both groups were assessed before and two months after the intervention. Independent sample t-tests and paired sample t-test was used to compare the mean difference.

Result: The data analysis showed that the mean score of the total WHOQOL-BREF was 79.36 ± 14.11 and 95.89 ± 10.41 in the intervention group before and after the intervention, respectively, and 57.33 ± 34.28 and 57.75 ± 33.60 in the control group, respectively. The intervention group showed a significant score increase in their subscales and total quality of life ($p<0.001$), whereas no significant change in total of quality of life in the control group.

Conclusion: Psychological intervention approach could be used as an effective intervention method for improving the quality of life of patients with epilepsy.

Keywords: Epilepsy, Psychological intervention, Health-related quality of life

Enhanced Tracing of *Campylobacter* Infection Sources in Ethiopia through Whole-Genome Sequencing

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ABSTRACT

Campylobacter is an important zoonotic foodborne pathogen that poses significant health risks, particularly to children and immunocompromised individuals. A limited understanding of risk factors and transmission routes contributes to the spread of foodborne pathogens, including *Campylobacter* spp. This study aimed to identify potential sources of *Campylobacter* infections in children by tracing food, food animals, and environmental samples using whole-genome sequencing (WGS). A total of 262 diarrheic children were screened at healthcare facilities. Through case-based tracing, food, food animals, and environmental samples were collected from both urban and rural settings. *Campylobacter* was isolated using culture methods and sequenced with the Illumina NextSeq 550 instrument. Quality checks and analyses of sequence reads were performed using various bioinformatics tools, and phylogenetic tree cluster analysis was employed to predict the sources of this pathogen. The overall prevalence of *Campylobacter* in children was 8.4%, with no significant differences observed between urban and rural settings ($p > 0.05$). Its food contamination rate was 4.2%,

with 3.2% in meat, 5.3% in milk, and 5.4% in other food categories. Regression analysis revealed that the likelihood of *Campylobacter* contamination in the environment was 5.8 times higher in the presence of poultry (17.7%; OR = 5.8; CI: 1.1–30.6) compared to sheep and goats. Out of the 37 sequenced isolates, *C. jejuni* was detected more frequently (62.16%, 23/37) than *C. coli* (37.84%, 14/37). Notably, the detection frequency of *C. jejuni* was 76.9% (10/13) in children, 16.7% (1/6) in food, and 75% (6/8) in food animals. Multi-Locus Sequence Typing (MLST) analysis identified 8 distinct *Campylobacter* sequence types (STs) in eastern Ethiopia, with ST353 being the most common. Phylogenetic clustering showed that most case isolates were closely related to those from food or food animals (SNP < 30), indicating shared transmission pathways. In conclusion, the findings from WGS underscore the interconnectedness of *Campylobacter* strains isolated from children, food, and food animals, highlighting the need for enhanced food safety practices, improved wastewater management, and better handling of animal waste. WGS is a promising tool for tracing the sources of foodborne disease and could be integrated into surveillance systems for real-time monitoring of foodborne pathogens within communities.

Keywords: Contamination, Foodborne pathogen, One health, Sequencing, Transmission

Genetic Insights into Antimicrobial Resistance: Acquired Genes and Point Mutations in *Salmonella* isolates from Ethiopian Children

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ABSTRACT

Background: Antimicrobial resistance (AMR) is becoming a global challenge, especially in resource-limited countries like Ethiopia. AMR occurs when pathogens evolve to resist the effects of drugs intended to treat infections, making these diseases more difficult to treat and increasing the risk of death. This study focused on predicting AMR by identifying acquired genes and point mutations in *Salmonella* isolates from children and tracking contact samples in Ethiopia using whole genome sequencing (WGS) analysis.

Methods: We sequenced a total of 57 *Salmonella* isolates using the Illumina NextSeq sequencer. The sequencing reads from each isolate were trimmed and quality assessed using the *FAST*QC and *bbd*uk2 tools, and the serotypes were determined using the SeqSero bioinformatics tool. Antimicrobial resistance genes (ARGs) and point mutations were identified using the *ResFinder* and *Point Finder* analyses.

Results: Each sample contained at least one ARG, with a total of 22 distinct ARGs identified across the *Salmonella* strains. The aminoglycoside resistance genes, *aac*(6')-Iaa and *aph*(3')-Ib, were identified in all isolates. Other frequently detected ARGs included *sul*2, *aph*(6)-Ib, *blaTEM*-1B, and *tet*(A), conferring resistance to folate inhibitors, aminoglycosides, β-lactams, and tetracycline, respectively. Interestingly, many of the identified β-lactam ARGs showed multidrug resistance, with *blaCTX*-M-15 linked to resistance against nine antibiotics, including third-generation cephalosporins, in 3.5% of the isolates. Additionally, various chromosomal mutations contributing to AMR

were detected, with nucleotide substitution point mutations being the most common. In total, 105-point mutations were identified in the genes 6*S_rrs*D, *acr*B, *gyr*A, *gyr*B, *par*C, *pmr*A, and *pmr*B.

Conclusion: This genotypic analysis highlights the widespread presence of drug-resistant *Salmonella* strains in Ethiopia. Implementing robust and regular AMR surveillance is essential for monitoring the emergence and spread of these resistant strains.

Keywords: Diarrhea, Genotypic resistance, One health, Pathogen, Transmission

Virtual Reality Upper Limb Training and Daily Living Activities in Stroke: A Systematic Review and Meta-Analysis

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ABSTRACT

Background: Virtual reality (VR) technology shows promise as a rehabilitation tool for improving upper limb function in stroke patients. We performed a systematic review and meta-analysis to evaluate the effectiveness of VR upper limb training in enhancing these individuals' daily activities.

Method: A systematic review and meta-analysis were conducted per PRISMA standards and registered with PROSPERO. Studies on activities of daily living in stroke survivors' post-VR intervention were screened from Scopus, PubMed, and Web of Science, limited to English publications. The PEDro scale assessed the methodological quality. Meta-analysis was performed using R 4.4.1 by calculating standardized mean differences (SMDs) with 95% confidence intervals, employing random effects models for I^2 >50% and fixed effects models otherwise.

Result: This review included 25 RCTs, with 19(76%) using non-immersive VR systems. Sessions lasted 20 to 120 minutes (median: 60 minutes) over 2 to 12 weeks (median: 4 weeks). VR therapy significantly outperformed conventional therapy in improving daily activities (SMD = 0.24, $p < 0.001$). Additionally, VR combined with conventional therapy showed more significant improvement (SMD: 0.27, $p < 0.001$), and a notable effect was observed in subacute stroke patients (SMD: 0.48, $p < 0.001$).

Conclusion: VR upper limb therapy, when combined with conventional therapy in the subacute phase, significantly improves patients' ADL. More research is needed to assess retention rates and the applicability of these techniques in acute and chronic phases, as current studies in this area still need to be included.

Keywords: Rehabilitation technology, stroke rehabilitation, upper extremity, and day-to-day activities.

The global burden of chemotherapy-related adverse drug reactions among pediatric cancer patients: Systematic review and meta-analysis

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ABSTRACT

Background: Although many new anti-cancer drugs have been approved for use, they are known to cause significant adverse drug reactions. In children with cancer, chemotherapy-related side effects remain a common and notable concern.

Objectives: The study aimed to assess the pooled prevalence of chemotherapy-related adverse drug reactions among pediatric cancer patients.

Methods: Six databases, namely PubMed, HINARI, Cochrane Library, Web of Science, Google Scholar, and Scopus, were utilized. This systematic review and meta-analysis were conducted using the PRISMA 2020 approach. The data were analyzed using STATA 17. The Cochrane Q test statistics and the I^2 tests were used to assess heterogeneity. To examine publication bias, a funnel plot, Egger's weighted regression, and Begg's test were used. Subgroup analyses by country was carried out by using a random-effects model. The sensitivity analysis was conducted to determine the effects of a single study on the results of the overall meta-analysis.

Result: The pooled prevalence of chemotherapy-related adverse drug reaction was 59.16% (95% CI: 38.43–79.90). Heterogeneity was observed across the included studies (I^2=99.7%, p<0.001). According to the subgroup analysis for publication year, the magnitude of adverse drug reaction (ADR) ranged from 9.0% (95%CI: -7.19- 25.19) in 2015 to 93.0% (95%CI: 78.56-107.44) in 2019. Heterogeneity was detected in 2020 (I^2=89.7%, P=0.002), 2022(I^2=95.7%, P=<0.001) and in 2023(I^2=89.1%, P=0.002). In relation to their country, the magnitude of ADR ranged from 7.6% (95%CI:7.39-22.59) in China to 93% (95%CI: 78.56-107.44) in Kenya. The heterogeneity was detected in Mexico (I^2=96.2%, P=<0.001).

Conclusion: The burden of chemotherapy-related adverse drug reactions is found to be high. Clinical pharmacists should participate in the prevention and management of chemotherapy-related adverse drug reactions in pediatric cancer patients.

Antibacterial activity of *Pycnostachys abyssinica* and *Rhamnus prinoides* root and leaf extracts against targeted bacterial strains

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ABSTRACT

The flora of Ethiopia is estimated to comprise around 6500-7000 species, with 12-19% endemic to the country, including valuable medicinal plants. Species like *Rhamnus prinoides* (Gesho) and *Pycnostachys abyssinica* (Tontan) are used in traditional medicine to treat various illnesses. The present study was focused on testing the antibacterial activity of crude extracts from *P. abyssinica* and *R. prinoides* root and leaf parts against human pathogenic bacteria

Enterobacter aerogenes, *Pseudomonas aeruginosa*, *Staphylococcus epidermidis*, and *Streptococcus pyogenes*. Roots and leaves were extracted using ethanol, methanol, and water, then screened for phytochemicals and tested for antibacterial properties through agar diffusion, MIC, and MBC assessments. Results showed varied phytochemical composition in extracts based on plant part and solvent used. Extracts from both plants demonstrated significant antimicrobial effects against the tested bacterial strains, with effectiveness varying by concentration. MIC values ranged from 1.5 to 50 mg/mL and MBC values from 3 to 25 mg/mL. The study suggests *P. abyssinica* and *R. prinoides* could be valuable sources of antibacterial agents. Further research is needed to explore their toxicology and optimal treatment concentrations for microbial infections.

Keywords: Antibacterial activity, Bacteria, Crude extract, Pycnostachys abssinica, Rhamnus prinoides

Synergistic Antibacterial and Antioxidant Potential of Silver Nanoparticles Functionalized with Schiff Base Copper Complexes

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ABSTRACT

The integration of nanotechnology with bioactive compounds offers a transformative approach in drug delivery systems, minimizing drug-related side effects while developing effective antibacterial and antioxidant agents. This study investigates the antibacterial and antioxidant potential of silver nanoparticles (AgNPs) and their functionalized counterparts, including imine quinoline ligand complexes (AgNP@L, AgNP@CuL, and AgNP@CuL2), as prospective therapeutic agents. Comprehensive characterization using EDX-SEM, pXRD, UV-Vis, and FTIR confirmed the successful synthesis and functionalization of the nanoparticles. The synthesized AgNPs and decorated AgNPs with the complexes and ligand were tested for biological potency against Gram-positive (*Staphylococcus aureus* ATCC 25926) and Gram-negative (*Escherichia coli* ATCC 25922 and *Pseudomonas aeruginosa* ATCC 248) bacterial strains using the disk diffusion method. The antioxidant properties of the synthesized nanoparticles were tested to evaluate their free radical scavenging potential. The formation of polycrystalline nanoparticles and nanocomposites was confirmed by pXRD and EDX-SEM, having the average crystal sizes of AgNP, L@AgNP, CuL@AgNP, and CuL_2@AgNP, which are 25.63, 20.67, 20.83, and 19.74 nm, respectively. The CuL@AgNP showed maximum growth inhibition of 12.00, 10.00, and 11.33 mm against *S. aureus*, *E. coli,* and *P. aeruginosa,* respectively; similarly, it exhibited the highest antioxidant activities against DPPH radicals with a half inhibition concentration (IC50) of 105.9 ±0.978 µg/ml. The decorated CuL@AgNP had the highest potency of biological activities.

Keywords. Bioactivities, Decorated nanoparticle, Silver Nanoparticle, Schiff base complexes of Cu (II)

Time to recovery from severe acute malnutrition and its predictors among under-five children admitted to therapeutic feeding units of public hospitals in East Wollega zone, Western Ethiopia: Prospective cohort study

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ABSTRACT

Background: Severe acute malnutrition affects nearly 20 million under-five children worldwide. In Africa, more than 14.0 million under-5 children are wasted, of which 4.1 million are severely wasted. Ethiopia is one of those countries with the highest under-five child mortality rate, with malnutrition accounting for 28% of all child deaths. Childhood undernutrition is a major global health problem contributing to childhood morbidity, mortality, impaired intellectual development, suboptimal adult work capacity, and increased risk of diseases in adulthood. Children with SAM are predisposed to serious infections like diarrhea, pneumonia, skin infection, gut bacterial overgrowth, and others. Adherence to the protocol in managing children with SAM results in improved recovery. The treatment integrates both nutritional deficiency and medical co-morbidities. The management of severe acute malnutrition is critical for child survival and is a key cost-effective component of the scaling up nutrition framework for addressing undernutrition.

This study aimed to assess time to recover from severe acute malnutrition and its predictors among children admitted to therapeutic feeding units of public hospitals in East Wollega Zone.

Method: Using an institutional-prospective cohort study design, we conducted this study from January 01 to March 30/2024, in public hospitals of East Wollega Zone. We coded and entered the data into Epidata version 4.6 and exported it to STATA version 14.0. We estimated the survival probability using the Kaplan-Meier survival curve and log log-rank test; assessed the proportional hazard assumption using log-log plot and global test; and assessed the overall adequacy using Cox-Snell residual. Then, we used a Hazard regression model to determine predictors of recovery; computed Hazard Ratio (HR) with 95% CI; and declared statistical significance at P-value <0.05.

Results: Out of the total 332 children, 58.43% of them made a recovery. The overall incidence density rate of recovery was 8.47 per 100 children (95% CI: 7.36, 9.76) person-day observation with 8 days median time to recovery. The mean age of the children at admission was 21.36 (SD±0.87) months, while 74.70% of them had <11.5 MUAC at admission. Edema grade (+) (AHR=3.01, 95% CI: 1.59,5.71), normal blood glucose level (AHR=1.64, 95% CI: 1.15,2.34), treatment by IV-antibiotic (AHR=1.96, 95% CI: 1.12,3.42), absences of dermatosis (AHR=2.70, 95% CI: 1.30, 5.25) and absence of pneumonia (AHR=2.14,95% CI: 1.35,3.42) were found to have positive association with time to recovery from severe acute malnutrition.

Conclusion: Generally, this study showed a low recovery rate from severe acute malnutrition in the study area. It is low, particularly among children who have edema grade (+++), pneumonia, dermatosis, been hypoglycemic, and who have not been treated with IV antibiotics. Therefore, health workers need to give special emphasis to children admitted with complicated severe acute malnutrition and provide antibiotics for children with other comorbidities.

Keywords: Time to recovery, severe acute malnutrition, under-five children, predictors, Ethiopia

Effectiveness of male partner-targeted breastfeeding education and support interventions on mothers' breastfeeding self-efficacy in central Ethiopia: a cluster-randomized controlled trial

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ABSTRACT

Background: Maternal breastfeeding self-efficacy (BFSE) is one of the potentially modifiable factors that are consistently linked with positive breastfeeding outcomes. However, studies focusing on the practical effect of male partner-targeted breastfeeding education and support interventions on BFSE were limited in Ethiopia. Therefore, the study aimed to evaluate the effect of breastfeeding education and support interventions via male partner involvement on maternal BFSE in central Ethiopia.

Methods: A two-arm parallel group cluster randomized controlled trial was carried out among couples (husband/partner and wife) in a community setting in the Hadiya Zone, central Ethiopia. Couples in the intervention group received breastfeeding education and support, while those in the control group received existing routine care. A total of 408 couples from 16 clusters were randomly assigned to either the intervention (n = 204) or control group (n = 204). The analysis was conducted using an intention-to-treat approach. A generalized estimating equation (GEE) analysis was done to evaluate the effectiveness of the interventions.

Result: Maternal BFSE was significantly higher among mothers whose male partner received breastfeeding education and support interventions than those who did not receive the interventions (130 (65·0%) v 90 (45·9%), P < 0·001). The net effect of the intervention on improving maternal BFSE was 20.9% [95% CI: 16.9%-24.9%]. In the GEE model, maternal BFSE was 48% [RR = 1.48, 95% CI: 1.23, 1.79] higher in the intervention group than the control group.

Conclusion: Involving male partners in breastfeeding promotion activities can enhance the mother's self-efficacy and confidence in breastfeeding. Thus, male partner involvement strategies for breastfeeding counselling should be designed to enhance BFSE and maximize the positive outcomes of breastfeeding.

Trial registration: *ClinicalTrials.gov identifier (NCT number):* **NCT05173454,** May 20, 2022.

Keywords: Breastfeeding self-efficacy, male partner, education and support, Ethiopia

Larvicidal activities of Soapberry (Phytolacca Dodecandra) and Chinaberry (Melia Azedarach) powders, separate and combined application against Anopheles species (Diptera: Culicidae) in Ethiopia

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ABSTRACT

Rapidly emerging mosquito resistances to synthetic insecticides necessitate the search

for alternative malaria vector control tools. Botanical larvicides, due to their ease of availability and non-toxic nature, are promising alternatives to synthetic insecticides for controlling malaria vectors. The purpose of this study was to determine larvicidal activities of Soapberry (Phytolacca dodecandrian) and Chinaberry (Melia azedarach) seed powders, separate and combined application against wild Anopheles species in Bako Tibe District, Western, Ethiopia. Extractions were done with aqueous and methanol solvents. A randomized experimental design was conducted using 1140 wild-collected 3rd instar larvae of Anopheles mosquitoes. The SPSS analysis revealed that methanol extracts outperformed aqueous extracts when used alone, and Chinaberry seed products displayed the highest mortality compared to soapberry seed products. When paired with Chinaberry and soapberry, methanol extracts were the most poisonous crude extract with the lowest median fatal concentration values against the mosquito larvae (LC95, 3.368g/ml and LC50, 1.009g/ml). On the other hand, aqueous extracts of soapberry (LC95, 112.52g/ml) and LC50, 6.64g/ml) had high fatal concentration values against the mosquito larvae. The mortality rate increased with concentration and the combination of botanicals. The study suggests that combining Soapberry and Chinaberry seed extracts with higher concentrations of methanol is a promising control option against larval malaria mosquitoes.

Keywords: Anopheles species, Larvicidal, Lethal Concentration, Melia azedarach, Phytochemicals, Phytolacca dodecandrian

Paederus dermatitis' Case Incidence and Paederus Beetle (Coleoptera: Staphylinidae) Abundance in Nekemte, Western Ethiopia: Mind the Reason and Season for Public Intervention

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ABSTRACT

This study aims to assess Paederus Dermatitis (PD) case incidence and Paederu Beetle (PB) prevalence in Nekemte, western Ethiopia. To assess PD case incidence and patients' perception of the disease, the passive case detection method was used. That is patients who presented to Wollega University (WU) campus clinic and Nekemte town (NT) communal house health centre (Cheleleki Health Center) during six months from June to November 2022 were assessed using self-reported patient history and clinical features diagnosis. Concurrently, PD vector infestation-prone public residential areas, particularly the WU compass dormitory and NT common residential areas (condominium) were surveyed for PB by hand and sticky trap collection methods. A total of 131 patients presented to the campus clinic and communal house health centre. The PD patients were presented to the health facilities every month from June to November with the peak incidence in September that coincided with the trend and peak months of PB abundances. The peak PD incidence and PB abundance simultaneously observed during the rainy months particularly in September after heavy rains. It should be considered by public health workers in selecting PD and PB control time

via public health education and other optional intervention measures.

Keywords: Campus dormitory, communal house, Nekemte, Paederus beetle, Paederus dermatitis

Excessive screen time and its associated factors among under-five children in Woliso City Administration, Central Ethiopia: A community-based cross-sectional study

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ABSTRACT

Background: Excessive screen time is the time an individual spends per day while watching or using screen devices more than the recommended amount. In children, it affects all developmental health domains. However, poor attention has been given to assessing the amount of screen time among children globally and locally, particularly in Ethiopia.

Objective: This study aimed to assess excessive screen time and its associated factors among children in Woliso City Administration, Central Ethiopia.

Methods: A community-based cross-sectional study was conducted among 506 participants selected using a systematic random sampling, from January 10 to February 30. The interviews were conducted using a structured questionnaire. EpiData version 3.1 and Statistical Product and Service Solutions version 25.0 were used for data entry and analysis, respectively. The findings were presented in narrations, tables, and graphs. A binary logistic regression analysis was done to test factors associated with excessive screen time. The adjusted odds ratio and p-value of < 0.05 were used to illustrate the strength of the association and pronounce statistical significance, respectively.

Results: Of the 498 participants involved, 378 (75.9%) had excessive screen time. Father's age ≥30 years (AOR 0.225, CI: 0.080, 0.630), mother's age ≥30 years (AOR = 1.775, CI: 1.045, 3.015), child's age ≥24 months (AOR 0.464, CI: 0.251, 0.858), parental supervision (AOR 4.329, CI: 1.367, 13.71), parental perception of maximum screen time as <60minute (AOR 5.894, CI: 2.255, 15.41), parental perception of maximum screen time as an hour and above (AOR 4.30 CI: 1.577, 11,743), parental restrictive practice (AOR 0.495, CI: 0.354, 0.691), and availability of screen devices in the bedroom (AOR 1.869, CI: 1.069, 3.629) were identified as factors significantly affecting screen time.

Conclusion and recommendation: Three in four children had excessive screen time in the area. Modifiable parental factors, including parental supervision, parental perception of maximum screen time, and parental restrictive practice and screen devices in eating, playing, or sleeping rooms, were identified as factors influencing screen time. Hence, parent education to limit children's screen time as per the recommended guidelines and regular supervision of young children are needed in the area.

Keywords: Screen time, screen device, under-five children, Woliso City

Maternal Platelet Indices as Predictors of Adverse Neonatal Outcomes in Mothers with Preterm Premature Rupture of Membranes in Public Hospitals of Ilubabor Zone

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ABSTRACT

Background: Preterm premature rupture of membranes (PROM) complicates approximately 3% of pregnancies and poses significant risks to maternal and neonatal health. Predicting adverse neonatal outcomes (ANO) linked to preterm PROM remains challenging. Studies have indicated that maternal platelet indices may have predictive value in various obstetric conditions. However, their relevance in the context of preterm PROM has not been thoroughly investigated.

Objective: This study aims to assess platelet indices and their association with ANO in PPROM patients at public hospitals of Ilubabor zone, Southwest Ethiopia, 2024.

Methods: A prospective cohort study was conducted among 164 women with pretermPROM and 164 with preterm labor in Ilubabor zone public hospitals. Data on socio-demographic, maternal, and clinical characteristics were collected using structured questionnaires. Blood samples were processed per standard protocols. Using SPSS version 25, descriptive statistics, chi-square, independent t-test, bivariable, and multivariable logistic regression analyses were done at a 5% significance level.

Result: ANO occurred in 45.7% of cases vs. 33.7% of controls, P=0.043. The mean Plateletcrit (PCT) (0.23±0.05% vs. 0.96±0.05%), platelet distribution width (PDW) (16.3±1.4% vs. 15.8±1.4%), and mean platelet volume (MPV) (9.85±1.05 fl vs. 9.28±1.16 fl) were significantly higher in the preterm PROM group compared to controls. PCT≥ 0.22% (AOR=2.3, 95%CI: 1.55–6.78), and PDW (AOR=1.54, 95%CI: 1.10–2.17) were significantly associated with ANOs.

Conclusion: Maternal platelet indices are significantly elevated in women with preterm PROM and are associated with ANO, suggesting their potential utility in predicting adverse outcomes in this population.

Keywords: Platelet indices, Preterm PROM, adverse neonatal outcomes

CLOSING SESSION

The session was closed after summaries of parallel sessions and discussions with participants were held. The president thanked all participants for their participation in presenting and initiating discussions on the presented papers. His Excellency emphasized that all evidence should be put into practice to improve the lives of human beings. The keynote speakers and paper presenters are certified.

Annex

List of Participants of the International Research Conference of Wollega University, organized by the Institute of Health Sciences

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Conference Program

Time (Local time)	Activities	Resource person	Facilitator
2:00-2:30	Registration	Participants	Committee
2:30-2:35	Program Detail	Dr Girmaye Kenassa	Dr Ebisa Dhaba
2:35-2:42	Blessing	Elders	
2:42-2:47	Key messages from the Institute of Health Sciences	Dr. Dereje Chala, SRCSCD, IHS	
2:47-2:55	Welcome addresses	Dr Diriba Diba, VPRT, WU	
2:55-3:10	Opening Speech	Dr Tesfaye Lema, President, WU	
3:10-3:40	**Keynote Address 1** Getting Research into Practice and Policy: Innovations and Technology in Fostering Health System in Ethiopia	H.E. Dr. Dereje Duguma, State Minister, Ministry of Health, Ethiopia	Dr. Dereje Chala
3:40-4:10	**Keynote Address 2** The Asthma in Pregnancy Toolkit: Getting Research into Practice"	Dr. Vanessa, The University of Newcastle, Australia	Dr. Tesfaye Shibiru
4:10-4:40	**Keynote Address 3** Bridging the Gap: Translating Research into Policy and Practice for Impact	Prof. Zeleke Mekonnen, Jimma University, Ethiopia	Dr. Meseret Belete
4:40-5:00	Health break		Committee
5:00-6:30	**Discussion on the keynote speech**	All keynote speakers	Dr. Tesfaye Lemma and Dr. Diriba Diba
6:30-8:00	**Lunch (**Staff Lounge)		Committee

Day One, Thursday, Feb 20, Afternoon

Section-I ICT Smart Room, Facilitator: Dr Girmaye (0911780637)

Local time	Title	Presenter	Chair Person	Rapporteur
8:00-8:20	Multi-regional investigation of compliance with standard precautions among nurses in clinical settings	Prof. Simon Lam	Mrs. Lemane Dereje	Markos Desalegn

8:20-8:40	Spatial variations of short birth intervals and determinant factors in selected countries of the Asia-Pacific region	Dr. Tesfalidet Tekleab		
8:40-9:00	Stakeholder Perception of the Effectiveness of the Reproductive, Maternal, Neonatal and Child, Adolescent and Youth Health (RMNCAYH) Program in Ethiopia, 2024: Policy, Strategy, Guideline, Partnership, Health Innovation	Prof. Sileshi Garoma	Dr. Tesfaye Shibiru	Tesfaye Abera
9:00-9:40	**Discussion**			
9:40-9:50	**Health Break**			
Local Time	Title	Presenter	Chair Person	Rapporteur
9:50-10:10	Effects of psychological intervention on health-related quality of life in patients with epilepsy at Mettu Karl Comprehensive specialized and Bedelle general hospitals, south-west Ethiopia, 2022: A quasi-experimental study	Defaru Desalegn	Dr. Desalegn Wirtu	Busha Gemechu
10:10-10:30	Effectiveness of male partner targeted breastfeeding education and Support Interventions on mother's breastfeeding self-efficacy in central Ethiopia: A Cluster Randomized Controlled Trial	Mulatu Abageda		
10:30: -10:50	Excessive screen time and its associated factors among under-five children in Woliso City Administration, Central Ethiopia: A community-based cross-sectional study	Wubishet Gezimu	Mathiwos Lema	Worku Etefa
10:50-11:20	**Discussion**			
Section-I: ICT SMART Room, Day two, Feb 21; Friday Morning				
Local Time	**Title**	**Presenter**	**Chair Person**	**Rapporteur**
2:50- 3:10	Maternal Platelet Indices as Predictors of Adverse Neonatal Outcomes in mothers with Preterm Premature Rupture of Membranes in Public Hospitals of Ilubabor Zone	Zewudu Befkadu	Mr. Emiru Adeba	Worku Fekadu
3:10-3:30	Productivity, distribution and cooperative networks reporting in bibliometric analysis: An example of artificial intelligence in nursing	Stoney Shi	Adugna Olani	Chaltu Shimelis
3:30-3:50		*Abdi Geda*	Emiru Adeba	Worku Fekadu

	Anemia and Risk of Perinatal Mortality among Pregnant Women on Antenatal Care Follow-Up at Public Hospitals in Ilubabor and Buno Bedelle Zones, Southwest Ethiopia: A Prospective Cohort Study, 2024			
3:50-4:40	**Discussion**			
4:40-5:00	**Health Break**			
Time Local Time	Title	Presenter	Chair	Rapporteur
5:00-5:20	Enhanced Tracing of *Campylobacter* Infection Sources in Ethiopia Through Whole-Genome Sequencing	Dinaol Belina	Dr. Girmaye Kenesa	Esayas T.
5:20-5:40	Antimicrobial Resistance Infection Drivers, and Outcomes in Neonatal Intensive Care Units: Pathways, Risks, and Solutions	Chalachew Yenew		Edosa K.
5:40-6:00	Investigation of Antimicrobial Susceptibility Patterns and Contributing Factors of Extended-Spectrum Beta-Lactamase–Producing Bacteria Among Patients with Suspected Urinary Tract Infections at Bule Hora University Teaching Hospital, Southern Ethiopia	Alqeer Aliyo		
6:00-6:30	**Discussion**			
6:30-8:00	**Lunch**	Committee		
Day One, Feb 20, Thursday Afternoon				
	Section-II: Mechanical Smart Room, Facilitator: Dr Dereje Chala (0913342627)			
Local time	**Title**	**Presenter**	**Chair Person**	**Rapporteur**
8:00-8:20	Built environment and its association with incidence of type 2 diabetes mellitus: a systematic review and meta-analysis of longitudinal studies	Dr. Tesfaye Regassa	Dr. Dereje Chala	Edosa Tesfaye
8:20-8:40	Paederus dermatitis' Case Incidence and Paederus Beetle (Coleoptera: Staphylinidae) Abundance in Nekemte, Western Ethiopia: Mind the Reseason and Season for Public Intervention	Oljira Kenea	Dr. Bashana	Kinfu Soresa
8:40-9:00	Genetic Insights into Antimicrobial Resistance: Acquired Genes and Point Mutations in *Salmonella* isolates from Ethiopian Children	Dinaol Belina	Dr. Mebrate Dufera	
9:00-9:40	**Discussion**			

9:40-9:50	**Health Break**			
Local Time	Title	Presenter	Chair Person	Rapporteur
9:50-10:10	Anti-Ulcer Activity Of 80% Methanolic Leaf Extract Of *Lippia Adoensis* Hochst In Rats	Dagim Samuel	Dr. Negera A	Nigatu Adisu
10:10-10:30	Antibacterial activity of *Pycnostachys abyssinica* and *Rhamnus prinoides* root and leaf extracts against targeted bacterial strains	Galana Abaya		
10:30-10:50	Synergistic Antibacterial and Antioxidant Potential of Silver Nanoparticles Functionalized with Schiff Base Copper Complexes	Gemechu Shumi		
10:50-11:20	**Discussion**			
Section-II: Mechanical SMART Room, Day two, Feb 21; Friday Morning				
Time (Local Time)	**Title**	**Presenter**	**Chair Person**	**Rapporteur**
2:30-2:50	The global burden of chemotherapy-related adverse drug reaction among pediatrics cancer patients: Systematic review and meta-analysis	Firomsa Bekele	Dr. Meseret Belete	Segni Hambisa
2:50-3:10	Determinants of Head and Neck Cancer Among Patients Attending Jimma Medical Center, Jimma, Southwest Ethiopia: An Unmatched Case-control Study	Abebe Dukessa		
3:10-3:30	Time to recovery from severe acute malnutrition and its predictors among under-five children admitted to therapeutic feeding units of public hospitals in East Wollega zone, Western Ethiopia: Prospective cohort study	Befirdu Mulatu	Wase Benti	Diriba Bayisa
3:30-3:50	Cognitive behavioural therapy for depression, internalized stigma and adherence to treatment among people living with HIV/AIDS: A randomized controlled trial	Zakir Abdu		
3:50-4:45	**Discussion**			
4:40-5:00	**Health Break**			
Time Local Time	Title	Presenter	Chair	Rapporteur
5:00-5:20	Virtual Reality Upper Limb Training and Daily Living Activities in Stroke: A Systematic Review and Meta-Analysis	Diriba Dereje	Dr. Gurmessa Hinkosa	Tadele Amante

5:20-5:40	Larvicidal activities of Soapberry (*Phytolacca dodecandra)* and Chinaberry *(Melia azederach)* powders, separate and combined application against *Anopheles* species (Diptera: Culicidae) in Ethiopia	Dr. Oljira Kenea	Yonas Adisu	Kumsa Asefa
5:40-6:00	Evaluation of Novel Biocredit Rapid Diagnostic Tests for Detection of *Plasmodium* Species Among Febrile Patients at Dilla Zuria Woreda Health Facility, South Ethiopia	Ayalu Bogale		
6:00-6:30	**Discussion**			
6:30-8:00	**Lunch**	Committee		
Day two, Feb 21, Auditorium (Communal Session)				
8:00-9:00	**General Discussion**	Dr Tesfaye, Dr Diriba, Prof. Zeleke and Dr. Girmaye		
9:30-9:50	**Certification**	Dr Melka H, Dr. Olana D. and Dr Dereje Chala		
9:50-10:00	**Closing Remark**	Dr Tesfaye L.		
10:00-11:30	**Social Evening**	Committee		