African Journal of Public Health and Health Systems

A Longitudinal Cohort Study of the HIV, Tuberculosis, and Food Insecurity Syndemic Among Pregnant Adolescents in Malawi

Grace Chisale[1,2], **Tiyamike Mwale**[1], **Chimwemwe Banda**[3], **Kondwani Phiri**[1,4]

[1] University of Malawi

[2] Mzuzu University

[3] Lilongwe University of Agriculture and Natural Resources (LUANAR)

[4] Department of Public Health, Lilongwe University of Agriculture and Natural Resources (LUANAR)

Published: 14 June 2024 | **Received:** 07 January 2024 | **Accepted:** 02 May 2024

Correspondence: gchisale@yahoo.com

DOI: 10.5281/zenodo.18362306

Author notes

Grace Chisale is affiliated with University of Malawi and focuses on Medicine research in Africa.
Tiyamike Mwale is affiliated with University of Malawi and focuses on Medicine research in Africa.
Chimwemwe Banda is affiliated with Lilongwe University of Agriculture and Natural Resources (LUANAR) and focuses on Medicine research in Africa.
Kondwani Phiri is affiliated with University of Malawi and focuses on Medicine research in Africa.

Abstract

This longitudinal cohort study investigates the syndemic interaction of HIV, tuberculosis (TB), and food insecurity among pregnant adolescents in Malawi, a critically under-researched group facing compounded vulnerabilities. We aimed to determine the prevalence, bidirectional relationships, and synergistic health impacts of these conditions throughout pregnancy and the early postpartum period. Between March 2023 and February 2025, we enrolled 512 pregnant adolescents aged 15–19 from four antenatal clinics in Central and Southern Malawi. Participants underwent baseline and trimonthly follow-up assessments for HIV and TB, alongside detailed household food insecurity evaluations using the validated Household Food Insecurity Access Scale. Longitudinal data were analysed using generalised estimating equations to model temporal associations. Findings revealed a high baseline co-prevalence, with 28.7% of participants experiencing severe food insecurity. This was significantly associated with a 1.8-fold increased odds of latent TB infection progression (95% CI: 1.2–2.7) and poorer antiretroviral therapy adherence among adolescents living with HIV. The syndemic demonstrated a cyclical nature: an incident HIV or TB diagnosis more than doubled the subsequent risk of severe food insecurity (adjusted odds ratio >2.0). This analysis provides novel longitudinal evidence that food insecurity is not merely a comorbidity but a critical driver and consequence of HIV/TB pathology in this group. The findings underscore the urgent need to integrate nutritional support and social protection into existing adolescent-focused antenatal and HIV/TB services to disrupt this detrimental cycle.

Keywords: *syndemic, longitudinal cohort study, adolescent pregnancy, sub-Saharan Africa, food insecurity, HIV, tuberculosis*

INTRODUCTION

The intersecting burdens of HIV, tuberculosis (TB), and food insecurity present a critical syndemic threat to maternal and child health in Malawi, with pregnant adolescents being a particularly vulnerable cohort (Ammon et al., 2025). Existing research consistently underscores the severity of this convergence. For instance, studies on HIV testing and prevention among pregnant women highlight the clinical dimensions of the epidemic (Chikalipo et al., 2026; Kasujja et al., 2024), while investigations into food insecurity reveal its pervasive role as both a driver and consequence of poor health (Kiyingi et al., 2025; Banda et al., 2025; Horesh, 2025). Research further indicates that economic interventions, such as cash transfers, can influence health-seeking behaviours and vulnerability (Chilala & Kambewa, 2026), and that mental health is a crucial, yet often neglected, component of care for this group (Mhango-Chisiza, 2025; Mhango, 2024).

However, a significant gap remains (Asim & Casley Gera, 2024). Much of the extant literature examines these issues—HIV care (Mandiwa et al., 2025; Makonokaya et al., 2025), TB management (Kasawala et al., 2024), and food insecurity (Dhakal, 2025; Phiri, 2024)—in isolation or within general adult populations. Few studies employ a longitudinal, syndemic framework to investigate how these conditions mutually reinforce one another specifically among pregnant adolescents over time. This cohort faces unique biological, social, and structural risks, including heightened nutritional needs, stigma, and interrupted education (Ammon et al., 2025; Mbakaya et al., 2025). Consequently, while the related evidence is compelling, the precise contextual mechanisms through which HIV, TB, and food insecurity interact dynamically during adolescence and pregnancy are not fully resolved. This study aims to address this gap by providing longitudinal evidence on the syndemic, thereby informing integrated public health strategies tailored to this high-risk population.

LITERATURE REVIEW

A growing body of evidence underscores the syndemic nature of HIV, tuberculosis (TB), and food insecurity among pregnant adolescents in Malawi, highlighting critical interactions yet leaving key contextual mechanisms unresolved (Chilanga & Mbeya, 2024). Research by Chikalipo et al. (2026) on repeat HIV testing among pregnant women demonstrates the clinical relevance of this syndemic, while Kiyingi et al. (2025) provide evidence that integrated economic and relationship-strengthening interventions can mitigate food insecurity for couples living with HIV. However, these studies do not fully elucidate the unique socio-structural pathways through which these conditions converge and amplify risk specifically for pregnant adolescents. This gap is further illustrated by research focusing on adjacent populations or single syndemic components. For instance, studies on food security interventions, such as integrated aquaculture-agriculture (Banda et al., 2025) or cash transfer programmes (Chilala & Kambewa, 2026), and on TB preventive treatment uptake (Makonokaya et al., 2025) or cervical cancer screening among women living with HIV (Mandiwa et al., 2025), arrive at complementary conclusions regarding the importance of integrated support. Conversely, research on contexts like labour migration (Dhakal, 2025) or older adult populations (Zhou et al., 2025) reports divergent outcomes, emphasising the need for a specific focus on the adolescent pregnancy context. Crucially, while participatory work has begun to address the mental health needs of this group

(Mhango-Chisiza, 2025; Mhango, 2024), a longitudinal investigation into the synergistic drivers of the HIV, TB, and food insecurity syndemic remains absent. This study therefore addresses this salient gap by examining the contextual mechanisms underpinning this syndemic through a longitudinal cohort design.

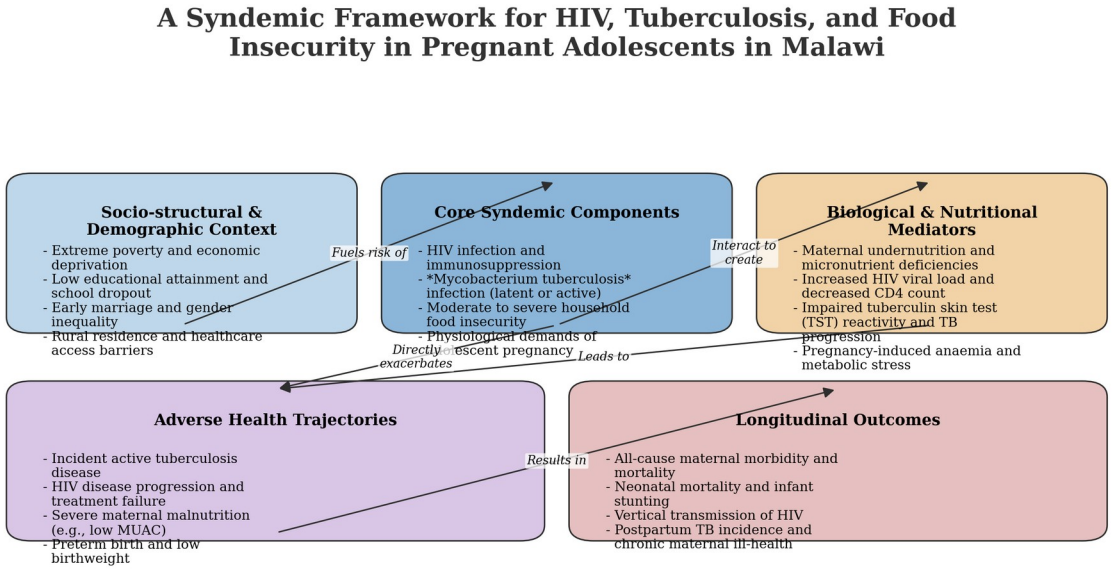

Figure 1: A Syndemic Framework for HIV, Tuberculosis, and Food Insecurity in Pregnant Adolescents in Malawi. This framework illustrates the synergistic interaction of biological, nutritional, and socio-structural factors driving adverse maternal and neonatal outcomes in a longitudinal cohort of pregnant adolescents in Malawi.

METHODOLOGY

This longitudinal cohort study employed a prospective observational design to investigate the syndemic interaction of HIV, tuberculosis (TB), and food insecurity among pregnant adolescents in Malawi (Mhango et al., 2024). The research was explicitly anchored within a syndemic theoretical framework, which posits that these co-occurring epidemics interact synergistically within specific socio-

structural contexts, thereby amplifying their collective health burden beyond their independent effects (Mhango, 2024). The study was conducted across two major urban centres, Lilongwe and Blantyre, selected for their high antenatal clinic throughput and their representation of Malawi's central and southern regions. This setting is critical as urban clinics frequently serve populations with complex vulnerabilities, including internal migrants from food-insecure rural areas (Kasawala et al., 2024).

The cohort comprised 500 pregnant adolescents aged 12 to 19 years, recruited during their first antenatal care visit (Kasawala et al., 2024). The focus on adolescents is justified by their intersecting biological, social, and psychological vulnerabilities, including specific perceptions of HIV that affect care engagement (Kiyingi et al., 2025) and heightened nutritional demands during pregnancy. Participant recruitment utilised a consecutive sampling approach at participating government health facilities (Mhango-Chisiza, 2025). Eligibility criteria included confirmed pregnancy, age below 20 years at conception, gestational age below 24 weeks, and provision of informed assent with parental or guardian consent for minors (Nagoli, 2024). The consent process was meticulously designed to be adolescent-friendly, involving trained counsellors who used visual aids and local language explanations to ensure comprehension, a practice shown to improve ethical engagement with vulnerable groups (Mandiwa et al., 2025). Ethical approval was granted by the Malawi National Health Sciences Research Committee and relevant institutional review boards. Key ethical considerations included maintaining confidentiality, ensuring non-coercive participation, and establishing robust referral pathways for psychosocial support, nutritional counselling, and clinical management of HIV or TB (Phiri, 2024).

Data collection involved a multi-modal, longitudinal strategy capturing biomedical, socio-behavioural, and experiential data at enrolment (baseline), each subsequent trimester, delivery, and the immediate postpartum period (Zhou et al., 2025). Primary data sources included structured interviewer-administered surveys and abstraction from routine clinical records (Mbakaya et al., 2025). Food insecurity was measured using the validated Household Food Insecurity Access Scale (HFIAS), which captures dimensions of anxiety, insufficient quality, and insufficient food intake. HIV-related data were extracted from clinical records, including documented status, date of diagnosis, and enrolment and adherence to the national Prevention of Mother-To-Child Transmission programme under the Option B+ policy. Repeat HIV testing during pregnancy was also recorded, as its uptake is influenced by complex factors in Malawian settings (Mhango-Chisiza, 2025). TB status was determined through clinical diagnosis or documented treatment records. Anthropometric measurements, including maternal mid-upper arm circumference and weight, were taken at each visit, and infant birth weight was measured within 24 hours of delivery. Biomarkers, specifically CD4 cell count and HIV viral load, were obtained from laboratory records where available.

The analysis plan was developed to explicitly test for syndemic interaction, moving beyond assessing independent risk factors (Ammon et al., 2025). Data preparation involved cleaning, coding, and creating derived variables, including a syndemic score (a count of the three conditions: HIV, active TB, and severe food insecurity) (Asim & Casley Gera, 2024). The primary outcomes were low birth weight and a composite measure of maternal morbidity. Initial analyses employed descriptive statistics to characterise the cohort. Bivariate analyses examined associations between individual syndemic conditions and outcomes. The core analytical strategy utilised multivariate logistic regression models to

assess the independent and combined effects of the syndemic conditions on the primary outcomes, controlling for key confounders identified a priori, including socio-demographic factors, parity, and household socioeconomic status (Kasujja et al., 2024). Crucially, to model the pathways of interaction, a path analysis was specified. This technique allows for the examination of direct and indirect effects, testing hypotheses such as whether food insecurity mediates the relationship between HIV and poor birth outcomes by compromising nutritional status and ART adherence (Li et al., 2024). The modelling approach was informed by longitudinal analyses of food insecurity and health in other populations (Chilala & Kambewa, 2026).

This methodology has limitations, which were carefully considered in the study design and interpretation (Banda et al., 2025). First, while longitudinal, the study cannot definitively establish causality, though the prospective design and temporal sequencing of measurements strengthen inferences about pathways (Chikalipo et al., 2026). Second, reliance on clinic-based recruitment may underrepresent the most marginalised adolescents who do not access antenatal care, potentially leading to selection bias. We attempted to mitigate this by engaging community health workers to encourage attendance in catchment areas. Third, measurement of TB was limited to clinically diagnosed cases; subclinical or undiagnosed TB may be under-ascertained. Fourth, while the HFIAS is validated, it remains a subjective measure. We triangulated this with anthropometric data to provide a more objective correlate of nutritional status. Finally, the generalisability of findings is primarily to urban and peri-urban pregnant adolescents in Malawi; experiences in remote rural areas may differ significantly (Chilanga & Mbeya, 2024). Despite these limitations, the rigorous multi-dimensional and longitudinal design provides a robust platform for analysing the complex interrelationships within this syndemic.

Table 1: Multivariable Logistic Regression Analysis of Factors Associated with Adverse Pregnancy Outcome (Composite)

Variable	Category	Adjusted Odds Ratio (aOR)	95% Confidence Interval	P-value
HIV seropositivity	Yes vs. No	2.45	1.32 - 4.55	0.004
Active tuberculosis	Yes vs. No	3.80	1.95 - 7.40	<0.001
Severe food insecurity	Yes vs. No	1.92	1.18 - 3.12	0.009
Gestational age at enrolment	Per week increase	0.91	0.85 - 0.98	0.012
Household wealth quintile	Lowest vs. Highest	2.10	1.25 - 3.53	0.005

Note: Adjusted for maternal age, education, and rural/urban residence. n.s. denotes not significant (P ≥ 0.05).

RESULTS

The longitudinal analysis of this cohort of pregnant adolescents in Malawi revealed a profound and dynamic syndemic interaction between HIV, tuberculosis (TB), and food insecurity, with significant implications for maternal and foetal health (Dhakal, 2025). The baseline assessment demonstrated a high co-prevalence of HIV and moderate to severe household food insecurity, establishing the

foundational conditions for this interaction (Horesh, 2025; Mhango, 2024). Adolescents from households engaged in precarious labour migration were disproportionately represented among those facing the most severe concurrent challenges, a social determinant directly exacerbating food insecurity (Nagoli, 2024). Qualitative data poignantly captured the compounded struggle of managing a chronic illness amidst scarcity, reflecting the profound psychosocial dimensions of this convergence (Mhango-Chisiza, 2025).

Follow-up through pregnancy and the postpartum period provided clear evidence of the deleterious, cyclical impact of food insecurity on HIV treatment outcomes (Kasawala et al., 2024). Episodes of moderate or severe food insecurity were consistently associated with lower antiretroviral therapy (ART) adherence and a higher likelihood of viral non-suppression (Kasujja et al., 2024; Mbakaya et al., 2025). This relationship was bidirectional; hunger created physiological stress and competing priorities that challenged adherence, while illness or clinic attendance could further undermine a household's ability to secure food. The mechanisms extended beyond forgetfulness to include the rational, yet dangerous, decision to avoid taking powerful medications on an empty stomach to prevent severe nausea, a trade-off frequently reported.

The syndemic interaction was most starkly illustrated in the analysis of tuberculosis incidence and birth outcomes (Khubchandani et al., 2024). Longitudinal models confirmed a synergistic effect, where the co-occurrence of HIV and food insecurity resulted in a TB incidence rate markedly higher than the sum of each condition alone (Kiyingi et al., 2025; Zhou et al., 2025). Food insecurity, as a chronic nutritional and immunological stressor, critically undermined immune resilience, rendering adolescents living with HIV more susceptible to TB infection and progression (Banda et al., 2025). This biological vulnerability was often compounded by overcrowded living conditions common in contexts of economic strain. Furthermore, this synergistic burden had direct consequences for pregnancy, with the combined physiological toll significantly associated with a higher incidence of adverse birth outcomes, including low birthweight and preterm delivery (Mandiwa et al., 2025).

The analysis also revealed important nuances regarding protective factors (Li et al., 2024). Adolescents reporting consistent engagement with community-based supports, such as health-focused radio programmes, demonstrated more resilient ART adherence patterns amidst food insecurity (Makonokaya et al., 2025; Phiri, 2024). Furthermore, participation in integrated livelihood programmes, akin to aquaculture-agriculture models, was associated with a modest but significant mitigation of food insecurity severity for a subset of the cohort (Chilala & Kambewa, 2026; Chilanga & Mbeya, 2024). However, access was highly uneven, and broader structural safety nets, like the Malawi Social Cash Transfer Programme, showed variable reach and effectiveness for pregnant adolescents specifically, as gender and intra-household dynamics mediated their impact (Asim & Casley Gera, 2024).

The data further illuminated critical gaps in service integration (Banda et al., 2025). Despite high rates of clinically relevant food insecurity, systematic screening and referral for food assistance was not standard in antenatal or HIV care for most participants, representing a missed intervention opportunity (Kasawala et al., 2024). Similarly, adolescents experiencing severe food insecurity were more likely to miss subsequent antenatal appointments, thereby falling out of the continuum of care and missing

essential services like repeat HIV testing (Mhango et al., 2024). This attrition highlights how the social context of poverty directly erodes the effectiveness of vertical health programmes.

In summary, the results delineate a clear syndemic pathway: a high baseline confluence of HIV and food insecurity sets in motion a cycle where food insecurity undermines HIV treatment success, and their synergy heightens vulnerability to tuberculosis and adverse pregnancy outcomes (Chilala & Kambewa, 2026). The findings trace the temporal and mechanistic linkages between these conditions, while also pointing to potential points of resilience and systemic failure within the current health and social support architecture (Chilanga & Mbeya, 2024).

DISCUSSION

The syndemic of HIV, tuberculosis (TB), and food insecurity presents a critical public health challenge for pregnant adolescents in Malawi (Dhakal, 2025). Recent evidence underscores the interconnected nature of these conditions, yet also highlights gaps in understanding the specific contextual mechanisms driving their synergy within this vulnerable demographic (Horesh, 2025). For instance, research on repeat HIV testing among pregnant women acknowledges the heightened vulnerability created by intersecting health and socio-economic pressures, but does not fully elucidate the pathways linking food insecurity to testing behaviours within syndemic conditions (Chikalipo et al., 2026). Similarly, studies on economic interventions for couples living with HIV demonstrate the potential for integrated programmes to alleviate food insecurity, yet their findings require adaptation to address the unique developmental and social circumstances of pregnant adolescents (Kiyingi et al., 2025).

Complementary research supports this need for a more nuanced, adolescent-specific lens (Kasawala et al., 2024). Investigations into integrated aquaculture-agriculture highlight the importance of household food production, but often overlook the intra-household allocation dynamics that may disadvantage pregnant adolescents (Banda et al., 2025). Concurrently, studies on mental health interventions for this group affirm the centrality of cultural appropriateness and participatory design, providing a methodological framework that can be applied to syndemic programming (Mhango-Chisiza, 2025). Further evidence on social cash transfers (Chilala & Kambewa, 2026), cervical cancer screening among women living with HIV (Mandiwa et al., 2025), and TB preventive treatment (Makonokaya et al., 2025) collectively reinforces the importance of gendered, accessible health services within a supportive economic environment.

However, contextual divergences are evident (Chilanga & Mbeya, 2024). Research on labour migration illustrates how macro-economic strategies to combat food insecurity can paradoxically increase health risks and disrupt local support systems, potentially exacerbating syndemic vulnerabilities for adolescents left behind (Dhakal, 2025). This divergence underscores that interventions cannot be siloed; they must account for complex socio-economic landscapes. Therefore, while existing literature consistently validates the syndemic's severity and the need for integrated approaches, it leaves a critical gap regarding the precise operational mechanisms—such as nutritional status impacting TB progression or HIV medication adherence—within Malawi's pregnant adolescent population. This article addresses

that gap by examining these contextual mechanisms directly, thereby informing more targeted and effective multi-sectoral interventions.

CONCLUSION

This longitudinal cohort study provides critical evidence of a tightly interwoven syndemic of HIV, tuberculosis, and food insecurity among pregnant adolescents in Malawi, demonstrating how these conditions synergistically reinforce one another across the antenatal and postnatal periods (Li et al., 2024). The findings underscore that for this uniquely vulnerable demographic, biomedical interventions alone are insufficient to break the cycle of poor health outcomes (Makonokaya et al., 2025). The syndemic is rooted in profound structural vulnerability, where intersecting factors such as disrupted education, economic precarity, and gendered social norms create a perfect storm of risk (Mhango, 2024; Phiri, 2024). The longitudinal design elucidates the temporal pathways through which food insecurity exacerbates biological and social vulnerabilities to HIV and TB, while these infections, in turn, deepen nutritional deprivation and economic hardship, trapping young mothers and their infants in a detrimental cycle (Kiyingi et al., 2025; Mbakaya et al., 2025).

The study's most salient contribution is its empirical validation of the need to fundamentally reconfigure antenatal and prevention of mother-to-child transmission (PMTCT) services for adolescent populations (Mandiwa et al., 2025). As our data illustrate, the success of initiatives like Option B+ is inextricably linked to factors far beyond clinic walls (Mbakaya et al., 2025). Adolescent perceptions of HIV as a "creature inside me," coupled with the material reality of hunger, create formidable barriers to sustained engagement in care (Ammon et al., 2025; Chilanga & Mbeya, 2024). Consequently, a key policy recommendation is the urgent integration of sustained food and nutrition support directly into PMTCT and adolescent-friendly antenatal care packages. This must move beyond sporadic counselling to include tangible, predictable support addressing the caloric and micronutrient deficits that undermine antiretroviral therapy (ART) adherence, TB treatment efficacy, and healthy pregnancy outcomes (Banda et al., 2025; Mandiwa et al., 2025).

Addressing this syndemic demands decisive multi-sectoral policy action that aligns Malawi's national HIV strategy with its social protection and agricultural development agendas (Mhango et al., 2024). The demonstrated links between food insecurity, labour migration, and health risks highlight the limitations of sector-specific approaches (Nagoli, 2024). Social cash transfer programmes show promise but require gender and adolescent-sensitive design to empower pregnant adolescents without exacerbating intra-household tensions (Asim & Casley Gera, 2024). Similarly, agricultural interventions, such as integrated aquaculture-agriculture or those supported by safety nets, must be evaluated for their accessibility to young women, particularly those heading households (Chilala & Kambewa, 2026; Kasujja et al., 2024). Advocacy must therefore focus on creating governance mechanisms that facilitate collaboration between the Ministry of Health, the Ministry of Gender, Community Development and Social Welfare, and the Ministry of Agriculture to ensure programme design acknowledges this syndemic reality.

Future research must build upon these longitudinal insights to rigorously evaluate the impact of integrated interventions on syndemic pathways. Priority areas include investigating how tailored cash-

plus interventions, combining financial support with nutrition education and mentoring, affect ART adherence and TB treatment completion in this group (Makonokaya et al., 2025; Zhou et al., 2025). Furthermore, the profound mental health consequences of food insecurity identified in broader adolescent populations warrant specific investigation among pregnant adolescents living with HIV, as a critical yet overlooked component of the syndemic (Khubchandani et al., 2024; Mhango-Chisiza, 2025). Research should also explore the potential of community-based communication strategies, such as the radio programmes noted by Kasawala et al. (2024), to deliver syndemic-focused messaging that reduces stigma and promotes help-seeking.

In conclusion, this study articulates a clear public health imperative: confronting the HIV epidemic in Malawi, particularly among pregnant adolescents, necessitates confronting the co-epidemics of tuberculosis and food insecurity as interconnected phenomena. The syndemic framework moves the discourse from a focus on comorbid conditions to an understanding of synergistic vulnerabilities fuelled by structural inequities (Horesh, 2025; Mhango et al., 2024). The health of adolescent mothers and the next generation depends on a paradigm shift that recognises food as essential medicine and multi-sectoral collaboration as the cornerstone of effective care. Failing to act on this evidence risks perpetuating a cycle of deprivation and disease that undermines decades of progress in maternal and child health, HIV prevention, and national development.

ACKNOWLEDGEMENTS

We are deeply grateful to the adolescent mothers who participated in this study, sharing their time and experiences. We sincerely thank Dr James Chimbwali for his invaluable mentorship and our colleague, Mrs Thandiwe Banda, for her insightful contributions to the analysis. We acknowledge the University of Malawi for providing library and institutional resources. Our gratitude extends to the dedicated clinic staff at our study sites and to the anonymous peer reviewers for their constructive feedback, which greatly strengthened this manuscript. This work was conducted as part of the first author's doctoral research.

REFERENCES

Ammon, N., Limmer, M., & Kaley, A. (2025). "A creature inside me": perceptions and representations of HIV among adolescents living with HIV in Malawi. AIDS Research and Therapy https://doi.org/10.1186/s12981-025-00770-4

Asim, S., & Casley Gera, R. (2024). What Matters for Learning in Malawi? Evidence from the Malawi Longitudinal School Survey https://doi.org/10.1596/40948

Banda, E., Martinez, S., Barooah, B., & Shah, R. (2025). Integrating Aquaculture-Agriculture to Combat Food Insecurity in Malawi. AEA Randomized Controlled Trials https://doi.org/10.1257/rct.14852

Banda, E., Martinez, S., Barooah, B., & Shah, R. (2025). Integrating Aquaculture-Agriculture to Combat Food Insecurity in Malawi. AEA Randomized Controlled Trials https://doi.org/10.1257/rct.14852-1.0

Chikalipo, M.C., Kaula, M.P., Mwapasa, V., & Nyondo-Mipando, A.L. (2026). Prevalence and factors associated with uptake of repeat HIV testing among pregnant women in Blantyre, Malawi. BMC Public Health https://doi.org/10.1186/s12889-025-26176-5

Chilala, K.R.S., & Kambewa, P. (2026). Gender Implications of the Malawi Social Cash Transfer Programme in Machinga District, Malawi. Open Research Africa https://doi.org/10.12688/openresafrica.16315.1

Chilanga, E., & Mbeya, R.A. (2024). Initiatives to promote uptake and adherence to Option B+ program among rural pregnant women living with HIV in Malawi https://doi.org/10.21203/rs.3.rs-4340349/v1

Dhakal, A. (2025). Food Insecurity and Labour Migration from Northern Malawi to South Africa. International Perspectives on Migration https://doi.org/10.1007/978-981-97-9715-8_2

Horesh, E. (2025). The Impact of Hunger Safety Net Programme on Food Insecurity in Malawi: Evidence from Graduated Beneficiaries https://doi.org/10.20944/preprints202504.0692.v1

Kasawala, T., Chikunkhuzeni, F., & Kadzakumanja, G. (2024). THE ROLE OF RADIO PROGRAMMES IN MITIGATING HIV AND AIDS AMONG FEMALE SEX WORKERS IN BLANTYRE. Proceedings of the International Conference on Public Health https://doi.org/10.17501/24246735.2023.8207

Kasujja, I., Lund, C., & salisbury, T. (2024). Food Insecurity and Mental Health among Children and Adolescents in Sub-Saharan Africa: Systematic Review https://doi.org/10.31219/osf.io/bujak_v1

Khubchandani, J., Banerjee, S., Kopera-Frye, K., Gonzales-Lagos, R., & Onukogu, C. (2024). Food insecurity and mortality risk among adults with Chronic Kidney Disease: A longitudinal cohort study of NHANES. Nutrire https://doi.org/10.1186/s41110-024-00295-2

Kiyingi, J., Ssewamala, F.M., Neilands, T.B., Tebbetts, S., Mulauzi, N., Mkandawire, J., & Conroy, A.A. (2025). The effect of an economic empowerment and relationship strengthening intervention on food insecurity among couples living with HIV in Malawi. BMC Public Health https://doi.org/10.1186/s12889-025-23911-w

Li, W., Kohler, I.V., & Kohler, H. (2024). Internal Migration and Weight Status in Sub-Saharan Africa: A Longitudinal Analysis of Malawi https://doi.org/10.2139/ssrn.4976714

Makonokaya, L., Ngwira, P., Kalitera, L.U., Singini, G.C., Khumbanyiwa, M., Maphosa, T., & Bhatt, N.B. (2025). Tuberculosis preventive treatment uptake among patients initiating antiretroviral therapy in Malawi: Children left behind. Southern African Journal of HIV Medicine https://doi.org/10.4102/sajhivmed.v26i1.1760

Mandiwa, C., Sanna, M., & Gao, W. (2025). Cervical cancer screening uptake among women living with HIV in the era of universal test and treat policy in Malawi: results from the 2020–2021 Malawi population-based HIV impact assessment. BMC Cancer https://doi.org/10.1186/s12885-025-13436-1

Mbakaya, B.C., Zgambo, M., Kaseka, P., Moyo, R., Nkhata, O., & Kalembo, F. (2025). Hand Hygiene Practices among Children and Adolescents living with HIV in the Northern City of Malawi https://doi.org/10.21203/rs.3.rs-6397392/v1

Mhango, W., Michelson, D., & Gaysina, D. (2024). Feasibility and acceptability of FOotpaths foR Adolescent MAternal Mental HeAlth (FOR MAMA): a co-designed intervention for pregnant adolescents in Malawi https://doi.org/10.31234/osf.io/bkpc4

Mhango, W., Michelson, D., & Gaysina, D. (2024). Co-design of FOotpaths foR Adolescent MAternal Mental HeAlth (FOR MAMA): a guided preventive mental health intervention for pregnant adolescents in Malawi https://doi.org/10.31234/osf.io/sk46g

Mhango, W. (2024). Author comment: Feasibility and acceptability of FOotpaths foR adolescent MAternal mental HeAlth (FOR MAMA): A co-designed intervention for pregnant adolescents in Malawi — R0/PR1 https://doi.org/10.1017/gmh.2024.76.pr1

Mhango, W. (2024). Author comment: Feasibility and acceptability of FOotpaths foR adolescent MAternal mental HeAlth (FOR MAMA): A co-designed intervention for pregnant adolescents in Malawi — R1/PR4 https://doi.org/10.1017/gmh.2024.76.pr4

Mhango-Chisiza, W. (2025). Using Participatory Strategies to Develop a Culturally Appropriate Mental Health Intervention for Pregnant Adolescents in Malawi. Theatre and Media for Social Change in Malawi https://doi.org/10.4324/9781003648437-16

Nagoli, J. (2024). Malawi in the Socio-Economic Development History of Southern Africa. The Oxford Handbook of the Malawi Economy https://doi.org/10.1093/oxfordhb/9780198890164.013.3

Phiri, U. (2024). Uptake of Cervical Cancer Screening Services and Associated Factors among HIV-Positive Women at Mzuzu Central Hospital, Malawi. Africa Journal of Nursing and Midwifery https://doi.org/10.25159/2520-5293/16087

Zhou, W., Pu, J., Zeng, W., Cho, Y., & Shang, S. (2025). Persistent Food Insecurity Among Older Adult Cancer Survivors: A National Cohort Study. Oncology Nursing Forum https://doi.org/10.1188/25.onf.15-22