

gender composition of children plays a role in spousal sexual abuse, in a cultural context where there is a preference of sons over daughters.

**Methods:** I analyzed data for 3705 married mothers from the Kenya Demographic and Health Survey 2008–2009. To address concerns about unmeasured confounding, I tested the validity of using gender of the firstborn child as an instrumental variable for gender composition of children by examining 1) whether gender of the firstborn was independent of pre-birth characteristics of the mothers (i.e., age, age at birth, age at first intercourse, ethnicity, education attainment, literacy, religion, and husband's age and education attainment) and 2) the difference in risk (RD) of experiencing sexual abuse between mothers of firstborn girls and firstborn boys. I obtained instrumental variable estimates of the effect of having at least one son compared to only daughters on ever and past year experience of spousal sexual abuse using additive structural mean models.

**Findings:** Twelve percent reported past-year sexual abuse. Firstborn gender was independent of pre-birth characteristics of the mother. Mothers of firstborn girls were 3.8 percentage points more likely to have ever been abused (RD=0.038; 95% CI 0.024–0.073) and more likely to have been abused in the past year (RD=0.035; 95% CI 0.016–0.069) compared to mothers of firstborn sons. Instrumental variable estimates showed mothers with only daughters were more likely to have ever been abused (RD=0.131; 95% CI 0.012–0.251) and abused in the past year (RD=0.124; 95% CI 0.080–0.239) than mothers with at least one son.

**Interpretation:** In Kenya, a country with documented evidence of son preference, mothers with no sons are at greater risk for spousal sexual abuse. Further evidence is needed to assess whether efforts to address preferential treatment of sons over daughters also reduce sexual abuse of mothers.

**Funding:** None.

**Abstract #:** 2.029\_NEP

### Interdisciplinary collaboration to promote comprehensive services for human trafficking survivors in Ethiopia

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**Background:** Human trafficking is an egregious human rights violation that is occurring around the world in startling numbers. Ethiopia is a country with a burgeoning human trafficking problem with domestic servitude, child labor, and commercial sex work as core issues. Human trafficking survivors have myriad needs including physical and mental healthcare, social support, economic resources, and legal services. Our project involved an interdisciplinary, transnational collaboration among law, public health, and nursing from the University of Michigan and Addis Ababa University to conduct a needs assessment of human trafficking services in Ethiopia. The purpose of our research project was to utilize a community-based participatory research approach to engage key

stakeholders in a qualitative needs assessment to: (1) identify the potential health, legal, social, and economic service needs for survivors, and (2) explore ideas for interventions and models of service delivery.

**Methods:** This qualitative needs assessment used purposive and network sampling to recruit healthcare providers, lawyers, non-government organization personnel, and government workers for semi-structured qualitative interviews (n=15). Once saturation was achieved, the interviews were transcribed, and data was analyzed using analytical memos and the constant comparative method of analysis.

**Findings:** Mental health needs were identified as the most pressing issue for survivors of human trafficking. Participants also identified physical health needs such as the treatment of injuries and infections, reproductive healthcare, and health education. Legal and economic services were also noted as an area of need.

**Interpretation:** Patient-centered models of care, peer support groups, narrative therapies, and psychoeducation emerged as optimal interventions for survivors of human trafficking in Ethiopia. These interventions are needed to address their physical and mental health needs and should be offered in collaboration with comprehensive services, including legal, economic, and job training services. Culturally-appropriate, trauma-informed interventions should be developed and evaluated based on the needs identified by this study. Future studies should explore the perspectives of survivors and engage them in the development, evaluation, and implementation of interventions.

**Funding:** We are grateful to the University of Michigan EM-PACE (Ethiopia-Michigan Platform for Advancing Collaborative Engagement) Seed Grant, International Institute, and William Davidson Institute for supporting our interdisciplinary research team.

**Abstract #:** 2.030\_NEP

### Research priorities for adolescent health in low- and middle-income countries

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**Background:** Although a vast majority of adolescent mortality and morbidity occurs in low- and middle-income countries, adolescent health research in these regions remains underrepresented. In 2015, the Department of Maternal, Child, and Adolescent Health of the World Health Organization (WHO) conducted an exercise to establish global research priorities for adolescent health in low- and middle-income countries through 2030. Specific adolescent health areas included communicable diseases prevention and management, health systems, injuries and violence, mental health, non-communicable diseases (NCD) management, nutrition, physical activity, and substance use. The exercise built on earlier work by WHO using a similar methodology that established research priorities in adolescent sexual and reproductive health.

**Methods:** We used a modified version of the Child Health and Nutrition Research Initiative (CHNRI) methodology for reaching

consensus on priorities for health research. In a three phase process, we 1) identified research and programme experts with wide-ranging backgrounds and experiences from all geographic regions through systematic searches and key informants; 2) invited these experts to propose research questions related to epidemiology/description, interventions (discovery, development/testing, and delivery/implementation), and policy/systems; and 3) asked the experts to prioritise the research questions based on five criteria: clarity, answerability, importance or impact, implementation, and equity.

**Findings:** 142 experts submitted 512 questions which were cleaned and reduced to 303 for scoring. The research types of the top 10 questions in each of the eight health areas included epidemiology/description (26%), interventions: discovery (11%), development/testing (25%), delivery (33%), and policy, health and social systems (5%). Across health areas, the top questions highlighted integration of health services, vulnerable populations, and different health platforms (such as primary health care, schools, families/parenting, and interactive media).

**Interpretation:** We have identified, for the first time, priority questions for research in eight key areas of adolescent health research in low- and middle-income countries. These expert-generated questions may be used by donors, programme managers, and researchers to prioritize and stimulate research in adolescent health.

**Funding:** World Health Organization.

**Abstract #:** 2.031\_NEP

### Impact of Ebola on loss to follow-up of HIV-infected soldiers and their dependents in Sierra Leone

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**Background:** UNAIDS noted that the recent Ebola outbreak was disruptive to HIV/AIDS care, citing fear of health facilities and closure of some HIV clinics during the epidemic. We investigated the impact of the Ebola outbreak on the loss to follow-up of HIV-infected soldiers and their dependents receiving care through the Republic of Sierra Leone Armed Forces (RSLAF) Medical Unit.

**Methods:** We completed a retrospective chart review, approved by the Institutional Review Board, of 263 HIV-positive soldiers and their dependents at the RSLAF Medical Unit in Freetown, Sierra Leone from January 1, 2014 through May 1, 2015. Patients were excluded if they transferred care to another facility during the study period. Medical records were abstracted for baseline characteristics at enrollment and clinical data available at each visit. We have completed preliminary descriptive analyses of the average percent loss to follow-up of HIV-infected patients before and during the Ebola epidemic in four-month increments throughout the study period.

**Preliminary Findings:** Patients receiving care at the RSLAF HIV clinic were between 9–63 years old, with 2.3% under 18 years old and 72.2% between 25–44 years old. Males comprised 62.7% and soldiers comprised 65.8% of the patients. The majority of patients (77.7%) were diagnosed with WHO Clinical Stage 3 at enrollment. In the four-month period prior to the start of the epidemic (January–April

2014), the average percent loss to follow-up was 9.8%. This increased to 12.1% at the start of the epidemic (May–August 2014), then to 25.2% at the height of the epidemic (September–December 2014). At the downturn in the epidemic (January–April 2015), the average percent loss to follow-up continued to rise to 32.3%.

**Interpretation:** Our preliminary findings show a trend of increased percent loss to follow-up for HIV-infected soldiers and their dependents at the RSLAF HIV clinic over the course of the Ebola outbreak. Further analysis is in process to measure more precisely the potential impact of this epidemic on loss to follow-up and other important clinical outcomes in these patients. Our findings will help inform strategies to minimize the impact of future epidemics on the management of existing diseases.

**Funding:** None.

**Abstract #:** 2.032\_NEP

### The effectiveness of using taxes on sugar-sweetened beverages to reduce obesity in middle income countries: a systematic review

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**Background:** The prevalence of obesity has increased globally over the last several decades, notably in middle income countries (MICs). MIC governments are considering a tax on sugar-sweetened beverages (SSB) as a way to address this challenge. Interest in this policy option has spurred new studies on the effectiveness of the tax in the MIC context. There is now a need to evaluate the tax's effectiveness in the MIC context to inform policy decisions.

**Methods:** To address this need, we conducted a systematic review for the period 1990–2015. Our review includes only primary research on whether changes in the price of SSB are associated with changes in the consumption of SSB, total energy intake, or obesity-related outcomes in MICs.

**Findings:** We identified nine papers from Brazil, Mexico, Peru, India, and South Africa. They range from repeated cross sectional studies with quasi-experimental studies to modeling studies based on cross-sectional data. While the study designs are relatively weak, our review finds that their estimates are consistent. Price elasticity estimates all fall within the range of -0.6 to -1.3, similar to estimates from the United States. Given larger changes in price, changes in SSB consumption are statistically and clinically significant. Studies also estimate around a 3 percent reduction in obesity prevalence given a 20 percent increase in the price of SSB, taking substitution to other beverages into account.

**Interpretation:** Our review indicates that a tax on SSB may be an effective way to reduce obesity in MICs, but more research is needed. Implementing governments should consider improving their monitoring systems to create opportunities for higher quality studies on effectiveness. Additional research is needed to better understand the implications of the tax for manufacturers and retailers of SSB, and to consider the case for taxing other products such as edible oils.

**Funding:** Abt Associates.

**Abstract #:** 2.033\_NEP