

ABSTRACT REPORT

Annual SAPRIN Conference 2025

21 – 23 July 2025

Krystal Beach Hotel, Gordon's Bay, Western Cape



SAPRIN
POPULATION-BASED SCIENCE

SOUTH AFRICAN POPULATION RESEARCH INFRASTRUCTURE NETWORK



Contents

1. Overview	6
2. Oral Presentations – Epidemiology and Surveillance	7
Oral Presentation 1: A spatio-temporal analysis of the epidemiological transition in sub-Saharan Africa from 1990-2021.....	8
Oral Presentation 2: Overall and cause-specific mortality and associated risk factors among middle-aged and older South Africans: Findings from the Health and Aging in Africa: A Longitudinal Study of an INDEPTH Community in Rural South Africa (HAALSI).....	9
Oral Presentation 3: Differences and Similarities in the Evolution of Multimorbidity Clusters across Rural SAPRIN and Global HDSS Sites.	10
Oral Presentation 4: Latent class analysis of multimorbidity and all-cause mortality: DIMAMO HDSS clinic linkage dataset.....	11
Oral Presentation 5: The assessment and development of methodology to detect and quantify Mycobacterium tuberculosis in wastewater	12
Oral Presentation 6: Real-Time Reporting of Notifiable Diseases in South Africa, North West Province	13
Oral Presentation 7: The association between household head demographics, household crowding, and wealth status with food security in rural South Africa	14
Oral Presentation 8: Cumulative lead exposure and cognitive performance among the elderly in Johannesburg, South Africa.....	15
Oral Presentation 9: Co-development of a Mental Health Data Discovery Platform and Harmonisation of Mental Health Measures for Young People in South Africa (PAMHoYA).....	16
Oral Presentation 10: Implementation of a genotyped virtual African population cohort: A feasibility study in the Western Cape Province, South Africa	17
3. Oral Presentations - Research to Policy and Practice Translation.....	18
Oral Presentation 11: Translating Mental Health Research into Policy and Practice through the Mental Health Data Prize Africa Initiative.....	19
Oral Presentation 12: A proof-of-concept study to demonstrate feasibility and utility of surgical indicators for inclusion in the South African National Department of Health's National Indicator Data Sets (NIDS).....	20



Oral Presentation 13: Primary Care Drug Therapy (PCDT) pharmacists: A missed rural primary health care opportunity?	21
Oral Presentation 14: Progress on SDGs in seven Southern African Countries based on Demographic and Health Surveys conducted in the past 10 years (2015-2024) ...	22
4. Oral Presentations – Implementation Science	23
Oral Presentation 15: Unpacking Index Contact Testing in Johannesburg: Healthcare Workers' Insights on Barriers and Enablers in Clinics and Communities	24
Oral Presentation 16: Assessing Implementation Fidelity of Targeted Universal Testing for Tuberculosis at Primary Care Facilities in Johannesburg in 2025.....	25
Oral Presentation 17: Biometrics application in public healthcare clinics in South Africa: A case of Limpopo	26
5. Oral Presentations – Public Health and Social Wellbeing	27
Oral Presentation 18: Longitudinal Study of Hypertension Prevalence Risk Factors in Rural South Africa	28
Oral Presentation 19: Socioeconomic Factors and Living Conditions Associated with Teenage Pregnancy in Soweto and Thembelihle Townships	29
Oral Presentation 20: Prevalence of non-communicable diseases and multimorbidity in Soweto and Thembelihle Townships, Johannesburg, South Africa: 2022	30
Oral Presentation 21: Prevalence, Associated Factors and Consequences of Revenge Pornography: A Scoping Review	31
Oral Presentation 22: Evaluating the impact of sanitation practices and clean drinking water on diarrheal prevalence among under-five children in South Africa: Insight from the 2019 GHS	32
Oral Presentation 23: Can a Tape Measure Predict Diabetes? Identifying Insulin Resistance in a South African Community.....	33
Oral Presentation 24: Insights for Measuring Wellbeing in Economic Evaluations of Interventions for Adolescents and Young People Living with HIV in sub-Saharan Africa	34
Oral Presentation 25: Migration as a Social Determinant of Multimorbidity in the Migrant Health Follow-Up Study (MHFUS) Cohort	35
Oral Presentation 26: Where We Live, How We Live: Unearthing the Links Between Housing, Youth Vulnerability, and Social Wellbeing	36



6. Poster Presentations – Epidemiology and Surveillance	37
Poster Presentation 1: Physical function and all-cause and cause-specific mortality among middle and older adults in rural South Africa: A Longitudinal Study of an INDEPTH Community in Rural South Africa (HAALSI)	38
Poster Presentation 2: Social determinants of all-cause mortality in the DIMAMO HDSS: A Survival Analysis Approach	39
7. Poster Presentation – Implentation Science	40
Poster Presentation 3: Recognition of language barriers in comprehending non-communicable disease management among rural elderly people in the DIMAMO surveillance area: a case of AWI-Gen participants	41
8. Poster Presentations – Public Health and Social Wellbeing.....	42
Poster Presentation 4: Linking Mothers: A descriptive analysis of routine health and household data to characterize pregnant Individuals in the Nomzamo Health Demographic Surveillance Site (HDSS), Cape Town.....	43
Poster Presentation 5: Using sequence analysis to explore transitions to adulthood in rural South Africa.	44
Poster Presentation 6: Geospatial Analysis of Access to Primary Healthcare Services in Mopani District, Limpopo Province, South Africa	45
Poster Presentation 7: Nutritional practices, obesogenic environments, and obesity prevalence among primary healthcare workers in Limpopo province	46
Poster Presentation 8: Stress and coping in nursing students	47
Poster Presentation 9: What Employers Expect: Hiring Youth with Mild Intellectual Disabilities in South Africa, Gauteng Province -Tshwane region.....	48
Poster Presentation 10: Perceived body image and weight management in a South African population	49
Poster Presentation 11: Does housing type, in-migration status and household crowding predict self-reported mental health diagnosis among adults in Soweto and Thembelihle: Evidence from panel data analysis.....	50
Poster Presentation 12: Assessing HIV risk, perception, PrEP knowledge and preferences, and BART feasibility among young women in uMkhanyakude, KwaZulu-Natal	51

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Health and Demographic Surveillance System (HDSS) Nodes



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1. Overview

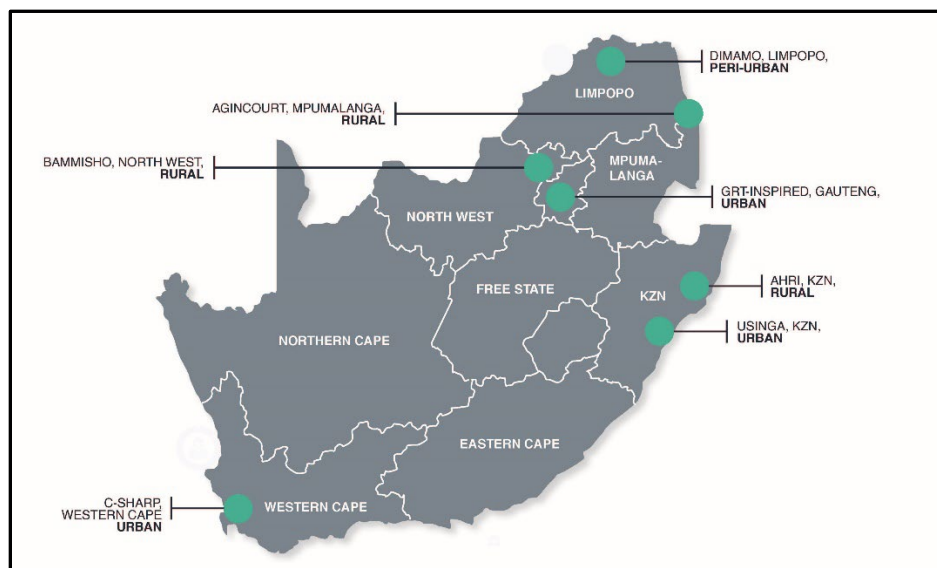
The second annual [South African Population Research Infrastructure Network \(SAPRIN\)](#) conference takes place from 21 – 23 July 2025 at the Krystal Beach Hotel, Gordon's Bay in the Western Cape. The overarching theme of the conference was, "Advancing Health and Social Wellbeing through Population Science." The four sub-themes were; Public Health and Social Wellbeing, Implementation Science, Research to Policy and Practice Translation, and Epidemiology and Surveillance.

The first annual SAPRIN conference replaced the previous Best Practice workshop and moved from an operationally focused gathering to a more science-focused event. In 2025 the conference moves to a primarily science focused conference, with the call for abstracts open to all interested presenters.

A total of 57 abstracts were received. Following the review process, 27 were selected for oral presentation and 16 for poster presentation.

SAPRIN is funded by the [Department of Science, Technology and Innovation](#) (DSTI) and forms part of DSTI's strategy to enhance research capacity in the country. SAPRIN is hosted by the [South African Medical Research Council \(SAMRC\)](#). Of the seven SAPRIN Health and Demographic Surveillance System (HDSS) nodes, four are rural and they are Agincourt (Mpumalanga), DIMAMO (Limpopo), AHRI (KwaZulu – Natal) and BMMISHO (North West). There are three urban nodes; GRT-INSPIRED (Gauteng), C-SHARP (Western Cape) and USINGA (KwaZulu-Natal).

SAPRIN aims to enhance research capacity, produce high-quality research, and inform evidence-based policies. By collecting longitudinal data on a large population, SAPRIN provides a valuable resource for researchers and policymakers to study various health and demographic trends. The network's commitment to collaboration, partnership, and ethical research practices contributes to building a robust research infrastructure in South Africa.





2. Oral Presentations – Epidemiology and Surveillance



Oral Presentation 1: A spatio-temporal analysis of the epidemiological transition in sub-Saharan Africa from 1990-2021.

Annah Bengesai

Background

Despite notable health shifts in recent decades, comprehensive analyses of epidemiological change in sub-Saharan Africa remain limited. This study uses data from the Global Burden of Disease (GBD) to examine the temporal and spatial progression of the epidemiological transition across 44 sub-Saharan African countries from 1990 to 2021.

Methods

We calculated the Epidemiological Transition Index (ETI) - defined as the ratio of deaths from non-communicable diseases to those from communicable diseases, using mortality data from the GBD. We then performed a descriptive spatio-temporal analysis of the ETI to identify regional patterns and temporal trends, as well as joinpoint regression analysis to detect shifts in transition trajectories and years with notable changes. Finally, we estimated each country's average annual percent change (AAPC) based on the regression slopes to quantify the transition velocities.

Results

Findings suggest heterogeneous transition patterns with three main phases: an initial slow progression (1992-1997), a widespread regional shift (2000-2005), and a recent synchronous transition (2017-2020) in 34 countries. The regional AAPC was 1.47% (95% CI: 1.03-1.92), indicating a significant progression toward non-communicable diseases. Country-specific AAPCs ranged from -1.32% (Botswana) to 3.67% (Comoros), with 39 countries showing a positive transition, 5 - a negative transition, and 1 (Gabon) showing no significant change. Transition complexity also varied: 25 countries experienced three distinct shifts, 12 had two, and 7 had only one. The spatio-temporal analysis revealed regional clustering, with negative transitions concentrated in Southern Africa and possibly reflecting the impact of HIV/AIDS.

Conclusion

The results of this study show a non-linear transition across the region characterised by three phases and suggest the need for interventions that address the transition stage and speed of each sub-region. The multi-dimensional analysis also offers critical insights into the timing, location and spread of disease burden and provides a baseline for future research examining the causal factors driving these transitions.



Oral Presentation 2: Overall and cause-specific mortality and associated risk factors among middle-aged and older South Africans: Findings from the Health and Aging in Africa: A Longitudinal Study of an INDEPTH Community in Rural South Africa (HAALSI)

Belinda Njiro

Background

Assessing mortality levels, causes of death, and their associated risk factors is vital for strengthening health systems, and prioritising health services and interventions. This study examined risk factors for overall and cause-specific mortality among middle-aged and older adults in a rural, rapidly transitioning South African setting.

Methods

We utilised data from the Health and Aging in Africa: A Longitudinal Study of an INDEPTH Community (HAALSI). The cohort was followed across three waves (2014/2015, 2018/2019, 2021). Factors associated with mortality were analysed using Cox Proportional Hazards and Fine and Gray competing risk models, accounting for cause-specific outcomes.

Results

The 5059 men and women aged 40 years and older who completed the HAALSI baseline wave accumulated 28,955 person-years of exposure and experienced 1,116 (22.1%) deaths by 2021. Overall, males experienced higher mortality (48.3 deaths per 1000 person-years) than females (30.7 deaths per 1000 person-years). The risk of death increased with age and was directly associated with male sex, lower education, history of smoking or alcohol use, poor self-rated health, being underweight, increased limitations in activities of daily living, slower walking pace, weaker grip strength, history of hypertension, diabetes, stroke, tuberculosis, and being HIV positive with unsuppressed viral load. Cardiovascular diseases accounted for the highest mortality burden (30.3%, 338/1116) in both men (25.9%, n=162/625) and women (35.8%, n=176/491), followed by other infectious diseases (23.8%), neoplasms (14.4%), and HIV/AIDS and TB (10.1%).

Conclusion

The cause of death profile highlights the prominence of mortality burden from cardiovascular diseases and neoplasms alongside the persistent burden from HIV/AIDS, TB and other infectious diseases. Targeted interventions addressing modifiable risk factors and incorporating functional assessments in routine care are essential for reducing mortality. Integrated health strategies targeting both communicable and non-communicable diseases are key to address the double burden of diseases in this transitioning rural population.



Oral Presentation 3: Differences and Similarities in the Evolution of Multimorbidity Clusters across Rural SAPRIN and Global HDSS Sites.

Cyril Chironda

Background

Multimorbidity patterns, how clusters of communicable and non-communicable diseases co-occur vary across different regions of the world and have shifted over time. We compared two clustering approaches (Latent Class Analysis and Partitioning Around Medoids) across 13 Health and Demographic Surveillance System (HDSS) sites, focusing on three South African Population Research Infrastructure Network (SAPRIN) nodes (Agincourt, AHRI, Dimamo) versus 10 other sites in Africa and South Asia.

Methods

We applied LCA and PAM to routine surveillance data of all ages at each, defining two periods: pre-COVID (≤ 2019) and COVID (2020–21). We extracted cluster compositions and counts, then contrasted changes over time at SAPRIN sites and compared these with trends in East Africa, Southern Africa (non-SAPRIN), West Africa, and South Asia.

Results

Agincourt & AHRI (high-HIV SAPRIN sites) both displayed a pre-COVID “TB+HIV” cluster that, during COVID, split into two distinct groups: one pairing TB with hypertension and another pairing HIV with diabetes, alongside a persistently robust hypertension+diabetes cluster and an emergent low-morbidity group. Dimamo (lower local HIV prevalence) exhibited the opposite: its pre-pandemic TB-only cluster merged into the broader NCD cluster (hypertension + diabetes), leaving a two-cluster solution. Non-SAPRIN sites mirrored these patterns by HIV burden: East/Southern Africa sites frequently showed cluster fragmentation (emergent HIV+NCD and TB+HPT profiles), while West African and South Asian sites saw minimal reconfiguration or cluster merging.

Conclusions

SAPRIN sites exhibited divergent multimorbidity dynamics during COVID-19—two high-HIV sites fragmenting their infectious clusters into NCD-linked subgroups, and one lower-HIV site collapsing its TB cluster into chronic disease burdens. These contrasts, aligned with broader regional trends, underscore the need for tailored integrated care models: HIV and TB services must now embed hypertension and diabetes management in high-HIV contexts, while consolidated chronic care may suffice in lower-HIV settings.



Oral Presentation 4: Latent class analysis of multimorbidity and all-cause mortality: DIMAMO HDSS clinic linkage dataset

Kagiso Seakamela

Background

Multimorbidity, defined as the presence of two or more chronic conditions in an individual, is a growing global health concern with a prevalence of 37.2%. Its patterns differ based on demographic and geographic factors. This study aimed to explore the patterns of multimorbidity, associated risk factors, and links to mortality within the DIMAMO Population Health Research Centre (PHRC) surveillance area in rural South Africa.

Methods

A retrospective analysis was conducted using data from 2,007 participants attending 11 clinics in the DIMAMO PHRC area, collected as part of a linkage-to-care project. Ethical approval was obtained from the University of Limpopo Research Ethics Committee. Latent class analysis (LCA) was performed using RStudio to identify distinct multimorbidity patterns, while further statistical analyses were conducted in Stata v16.1. A p-value < 0.05 was considered statistically significant.

Results

Three latent multimorbidity classes were identified: Class 1 (low burden with a high proportion of HIV), Class 2 (cardio-metabolic and musculoskeletal conditions), and Class 3 (a combination of HIV, hypertension, and diabetes mellitus). The prevalence of multimorbidity increased with age, with individuals aged 40–69 associated with moderate multimorbidity (Class 2), and those aged 70+ linked to severe multimorbidity (Class 3). Widowed individuals were less likely to be multimorbid. Class 3 was significantly associated with a 2.37-fold increased risk of all-cause mortality, though this association lost significance after adjusting for confounding factors.

Conclusion

The findings underscore the urgent need for tailored healthcare approaches that address the specific needs of each multimorbidity group. Prioritizing prevention strategies—particularly for older adults, women, and less-educated individuals—can aid early detection and management. Further research is necessary to understand the mechanisms driving higher mortality among certain multimorbidity groups, to improve outcomes and quality of life for affected individuals.



Oral Presentation 5: The assessment and development of methodology to detect and quantify *Mycobacterium tuberculosis* in wastewater

Natasha Singh

Wastewater surveillance is a well-established tool currently used to identify and track the spread of pathogens. In this study we aimed to develop, optimize, and validate an assay for the detection and quantification of *Mycobacterium tuberculosis* (MTB) in wastewater through spiking experiments. Wastewater samples were spiked overnight with various concentrations of heat inactivated MTB, *Mycobacterium Avium* and a clinical isolate. The nucleic acids were extracted using various extraction kits - DNeasy® PowerWater® Kit, MagMAX™ Wastewater Ultra Nucleic Acid Isolation Kit (A52610 and A52606), DNeasy® PowerSoil® Pro Kit and AllPrep® PowerFecal® Pro DNA/RNA Kit and tested on digital PCR using two primers targeting IS6110 and glycosyltransferase. Our results showed that the DNeasy® PowerSoil® Pro Kit showed high extraction efficacy compared to the other extraction methods. Out of 389 wastewater samples tested in the Gauteng region, 335 (86.5 %) and 189 (48.8 %) were positive for MTB using IS6110 and glycosyltransferase primers, respectively. In total, for the IS6110 primers, 114 (34.0 %) samples tested positive were collected from City of Tshwane, City of Johannesburg 55 (16.4 %), and City of Ekurhuleni 166 (49.6 %). For the glycosyltransferase primers, 43 (22.8 %) samples tested positive were collected from City of Tshwane, City of Johannesburg 42 (22.2 %), and City of Ekurhuleni 104 (55.0 %). We successfully developed and optimized an extraction method and primers to detect and quantify MTB from wastewater samples. This is an ongoing study and future work is necessary to successfully sequence MTB in wastewater to identify hotspots and circulating strains. The information will also allow us to correlate wastewater data to TB clinical cases to support the clinical surveillance.



Oral Presentation 6: Real-Time Reporting of Notifiable Diseases in South Africa, North West Province

Nompomelelo Nkosi

Background

Timely and accurate reporting of notifiable diseases is essential for effective public health surveillance, outbreak control, and pandemic preparedness. Surveillance of notifiable diseases is a cornerstone of pandemic preparedness, enabling early detection and rapid response to emerging public health threats. South Africa's National Notifiable Medical Conditions Surveillance System (NMCSS) aims to collect and disseminate real-time notifications of diagnosed cases nationwide to support early detection, monitoring, and response to communicable diseases. This study evaluates reporting completeness, timeliness, and accuracy in North West Province from January 2024 to January 2025.

Methods

We retrospectively analysed NMCSS reports, including clinical and laboratory notifications, merged and back-captured cases. Reporting platforms (NMC Reporting App, paper-based) and sectors (public, private) were assessed for data quality and timeliness. Laboratory-confirmed cases from the National Health Laboratory Service (NHLS) and outbreak investigations were compared with NMCSS notifications to evaluate underreporting and delays.

Results

North West Province reported approximately 5,000 cases, representing 3.5–4.0% of national notifications monthly. Pulmonary tuberculosis accounted for nearly 60% of Category 2 notifications. Measles, a Category 1 condition, was primarily reported via the NMC App, with 70 cases in Ngaka Modiri Molema district. A typhoid cluster in Klerksdorp was confirmed by genomic surveillance but underreported clinically, indicating data integration gaps. The NMC App accounted for over 80% of clinical notifications in the public sector, while private sector reporting remained low. Paper-based reporting declined below 5%. Median notification time for urgent conditions was 0 day. NHLS data consistently showed more confirmed tuberculosis, meningococcal disease, and typhoid cases than notified clinically, indicating under-ascertainment. Data completeness was suboptimal, with 30–40% missing patient identifiers. Back-captured cases comprised 5–7% of notifications.

Conclusion

The North West Province has made significant progress in adopting electronic real-time reporting for notifiable diseases, enhancing timeliness and data completeness. However, persistent underreporting and incomplete data, especially when comparing diagnosed laboratory-confirmed cases to notifications, limit the surveillance system's effectiveness. Strengthening integration of laboratory and clinical data, expanding digital infrastructure, and ongoing healthcare worker training are critical to improving the accuracy and responsiveness of disease surveillance in the province.



Oral Presentation 7: The association between household head demographics, household crowding, and wealth status with food security in rural South Africa

Reneilwe Mashaba

Background

Food insecurity is a persistent public health challenge. The negative implications of food insecurity includes poorer health outcomes, and predispose to chronic conditions such as diabetes and high blood pressure. The present study aimed to associate household food security with the demographics of the household head and household-level characteristics such as household crowding and wealth index, Limpopo province, South Africa.

Methods

The study was cross sectional. Household crowding was calculated by dividing the number of household members of rooms in their dwelling. Household crowding tertiles were created by dividing a variable into three equal groups based on its distribution to categories using the xtile command on STATA. Principal Component Analysis (PCA) were used to create a category for the household food security index using household assets. Data were analyzed using Statistical Package for Social Sciences SPSS, version 27.0.

Results

The present study included 17374 household (47.17% male-headed and 52.83% female headed). The overall prevalence of food insecurity was 3.51%. There was a significant difference (p -value = <0.001) in food security by household wealth index (poor: 3.69%, middle: 2.73% and rich: 4.09%). On bivariate logistic regression, household headed by younger individuals were likely to be food insecure. Household in the middle category of wealth index were significant -0.31 less likely to be food insecure, p value = 0.003. Households that were of crowding level medium 0.33 (95 % CI 0.11, 0.54) and high 0.71 (95 % CI 0.50, 0.91) were more likely to be food insecure with respective p values of 0.003 and <0.001 .

Conclusion

The study found that food insecurity in the DIMAMO area was associated with household headed by younger individuals, wealth index and household crowding.



Oral Presentation 8: Cumulative lead exposure and cognitive performance among the elderly in Johannesburg, South Africa

Tahira Kootbodien

Background

Lead (Pb) is a known neurotoxin, but evidence linking low chronic exposure to cognitive performance, particularly in low- and middle-income countries, remains limited.

Objectives

This study examined cumulative Pb exposure (bone lead) in relation to cognitive performance in elderly individuals.

Methods

We included 139 participants aged 60 to 75 years from state-owned elderly assisted living facilities in Johannesburg, Gauteng Province. Cumulative lead exposure was measured in the tibia using K-X-ray fluorescence (KXRF). Cognitive performance was assessed using the Early Dementia Questionnaire (EDQ) and the Cambridge Neuropsychological Test Automated Battery (CANTAB), focusing on memory, executive function, attention and psychomotor speed. Multivariable linear regression models adjusted for age, sex, education, and smoking status were used to assess associations between bone Pb levels and cognitive performance.

Results

Participants had a mean age of 69.9 years (54% male); 30% reported occupational Pb exposure or had been engaged in Pb-related activities. Mean bone Pb levels were 8.1 $\mu\text{g/g}$ (SD 6.4), and 55% of participants met criteria for mild cognitive impairment ($\text{EDQ} \geq 8$). Elevated bone Pb levels were associated with poorer working memory (Spatial Working Memory: $\beta=0.36$, 95% CI 0.22 to 0.49, $p<0.001$) and increased impulsivity (Reaction time: $\beta=7.52$, 95% CI 2.8 to 12.2, $p=0.002$).

Conclusion

Low-level cumulative Pb exposure may negatively impact cognitive function in the elderly, particularly affecting executive function and impulse control. Larger studies are needed to confirm these associations.



Oral Presentation 9: Co-development of a Mental Health Data Discovery Platform and Harmonisation of Mental Health Measures for Young People in South Africa (PAMHoYA)

Trust Gangaidzo

Background

In South Africa (SA), as in many other sub-Saharan African countries, the burden of mental health is disproportionately higher among young people. Beyond medical factors, young people in SA face high levels of persistent unemployment and poverty, non-decreasing historical and contemporary inequalities in education, employment, and health, and exposure to high levels of violence, and a quadruple burden of diseases, which are all risks for poor mental health. Despite this burden, the mental health data and data collection systems in SA remain fragmented and disparate, hampering the ability to monitor trends, inform interventions, and develop evidence-based policies.

Purpose

This study aims to co-develop a mental health data platform (PAMHoYA) that pools and harmonises mental health data on young people aged 15–24 across South African sources.

Methods

Over the 12 months of our project, we will work with people living with mental health issues (lived experience experts – LEEs), scientists, mental health managers from the Department of Health, and the civil society advocates, among other stakeholders, to: a) map and integrate available meta-data sources (including SAPRIN) in SA containing information on depression and anxiety for 15 to 24-year-olds; b) design the mental health data discovery platform; c) harmonise the various mental health measures using Natural Language Processing; and d) make harmonised datasets openly accessible via the SAPRIN data repository. Given that SAPRIN collects mental health data that is not harmonised across the network, with each node collecting its data, SAPRIN will be our main provider of the data that we will pool and harmonise.

Expected outputs

Co-developing the platform with stakeholders will promote the development of a relevant, inclusive, and user-oriented tool to advance mental health research and surveillance in SA. The platform will facilitate access to and synthesis of existing studies, support national estimations, highlight research gaps, and foster collaboration. It will inform improvements in data systems, intervention design, and strategic resource allocation. The project includes capacity building for emerging researchers and data science postgraduates and will engage policymakers and programme planners to explore integration into national monitoring systems and opportunities for scale-up.



Oral Presentation 10: Implementation of a genotyped virtual African population cohort: A feasibility study in the Western Cape Province, South Africa

Tsaone Tamuhla

Background

There is limited knowledge of African genetic drivers of disease due to the prohibitive cost of large-scale genomic research on the continent.

Methods

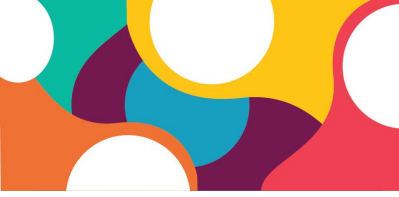
We piloted a cost-effective, scalable genotyped cohort in South Africa, designed for ongoing virtual follow-up through linkage to routinely collected health data. This design enables longitudinal tracking of clinical outcomes without requiring in-person visits. Participants were recruited using a tiered informed consent model, and DNA was collected via buccal swabs. Genotyping was performed using the H3Africa Illumina microarray, and phenotype data were derived from routine health records. We evaluated the feasibility of nested case-control genome-wide association studies (GWAS) using phenotypes for type 2 diabetes mellitus (T2DM) and severe COVID-19.

Results

A total of 2,267,346 variants were analysed in 459 participant samples. Quality control retained 78.6% of SNPs and 74% of samples. Principal component analysis revealed extensive ancestry admixture among participants. Of 1,780 published COVID-19-associated variants, 3 SNPs in the pre-imputation data and 23 SNPs in the imputed data were significantly associated with severe COVID-19. For 2,755 published T2DM-associated variants, 69 SNPs (pre-imputation) and 419 SNPs (post-imputation) showed significant associations with T2DM status.

Conclusions

These preliminary findings illustrate the potential of this cohort model to support large-scale genomic discovery as it expands. While current results require further validation with increased sample size, the study demonstrates the feasibility of implementing a genotyped population cohort with virtual follow-up in a resource-constrained African setting. This approach offers a scalable, sustainable platform for future nested case-control studies and the identification of context-relevant genomic risk factors.



3. Oral Presentations - Research to Policy and Practice Translation



Oral Presentation 11: Translating Mental Health Research into Policy and Practice through the Mental Health Data Prize Africa Initiative

Christine Ochola

Background

Despite increasing data on the mental health burden, translating such research into actionable policy remains challenging. The African Population and Health Research Center (APHRC), in collaboration with Wellcome, launched the Mental Health Data Prize Africa (MHDPA) initiative in December 2023 to address this issue. This initiative was designed to generate data-driven solutions to improve our understanding of anxiety, depression, and psychosis and to evaluate the use of evidence in policy and decision-making across Africa. This abstract highlights communication-based strategies for transforming mental health research findings into policy-relevant information and stakeholder engagement tools.

Methods

The MHDPA initiative was supported by a strategic communications approach to boost visibility, foster engagement, and influence policy. We connected early with key stakeholders, policymakers, researchers, advocates, media, and people with lived experience to align with regional mental health priorities. Locally relevant content like blogs, infographics, videos, and policy briefs made complex data accessible. We also hosted Twitter Spaces to reach younger audiences and spark real-time dialogue. By combining digital outreach with in-person forums and centring human stories, especially of young innovators, we made mental health data relatable, driving advocacy, deeper engagement, and stronger calls to action.

Results The communications efforts played an important role in elevating mental health research into national and regional media houses. By strategically engaging key policymakers, including health ministries and mental health task forces across Africa the project ensured mental health was a priority focus in policy dialogues. Most importantly, the initiative fostered deeper collaboration between researchers, communicators, and decision-makers, making mental health evidence more accessible and aligned with real policy needs in the context.

Conclusion

More than just dissemination, effective research-to-policy translation requires strategic communication approaches that tailor data, and integrating diverse voices of stakeholders establish long-term engagement channels. The MHDPA experience provides practical insights for African-led organizations seeking to translate evidence into action, particularly in underserved domains such as mental health. Investing in cross-disciplinary collaboration among research and communication teams can significantly promote data-driven policymaking and transforming mental health care and outcomes in Africa.



Oral Presentation 12: A proof-of-concept study to demonstrate feasibility and utility of surgical indicators for inclusion in the South African National Department of Health's National Indicator Data Sets (NIDS)

Hyla Kluyts

Background

Despite South Africa's pioneering role in surgical outcomes research on the African continent, systematic utilization of perioperative data to guide surgical systems policy remains lacking. Key barriers include the absence of formalized surgical health programmes, inadequate digital infrastructure, fragmented health information systems, and disparities in healthcare resource allocation. The integration of surgical care within South Africa's National Health Insurance (NHI) planning framework presents an opportunity to leverage interoperable health information systems for improved policy coherence and clinical outcomes.

Method

A proof-of-concept study was conducted from March 2023 to September 2024, aiming to demonstrate the practicality of defining two surgical indicators—Perioperative Mortality Rate (POMR) and Surgical Volume (SV)—for inclusion in the National Department of Health's National Indicator Data Sets (NIDS). Semi-structured interviews assessed local data-collection resources, institutional readiness, and pilot potential for the DHIS2 surgical tracker. The Utstein Perioperative Metrics Project data elements were used to inform patient-level data collection. Stakeholder engagements involved National and Provincial health departments. Data analysis involved thematic interpretation without systematic coding.

Results

Institutional support for routine patient-level data collection to define POMR and SV was confirmed across nine provinces. However, significant barriers emerged, including limited Routine Health Information Systems (RHIS) capable of capturing surgical data, inadequate digital infrastructure, fragmented data access, and delays in regulatory processes. Pilot testing of the DHIS2 surgical tracker at three provincial sites was unsuccessful due to poor data quality with incomplete data, despite motivated site teams.

Conclusion

This feasibility study highlights both the potential and persistent systemic barriers to integrating surgical indicators into national health policy. Successful implementation of surgical data collection hinges on addressing digital infrastructure inadequacies, enhancing policy coherence, and fostering collaborative governance, particularly as South Africa moves toward universal health coverage under the NHI initiative.



Oral Presentation 13: Primary Care Drug Therapy (PCDT) pharmacists: A missed rural primary health care opportunity?

Ilse Truter

Background

Primary Care Drug Therapy (PCDT) pharmacists have an expanded scope of practice and can diagnose a limited list of primary health care (PHC) conditions and treat them according to the Essential Medicines List. It can be assumed that the ideal setting for a PCDT pharmacist should be in smaller towns, rural areas or environments where there is limited healthcare services. The primary aim was to investigate where these pharmacists practice and which conditions they are treating.

Methods

A mixed-method research design was used, following an explanatory-sequential model. A questionnaire survey was conducted under registered PCDT pharmacists, followed by a focus group discussion. The response rate to the survey was 21.2% (N=77). Ethical approval for the study was obtained.

Results

Most PCDT pharmacists were based in Gauteng (27.4%) and the Western Cape (26.2%). Nearly 60% were practicing in urban settings, and more than half worked in independent community pharmacies. PCDT pharmacists were generally practicing in smaller pharmacies, without a large staff complement. Conditions in Chapter 1 (Dental and oral conditions), Chapter 5 (Skin conditions), Chapter 7 (Family planning) and Chapter 19 (Ear, nose and throat conditions) of the EML were the most prevalent. Conditions that were more common in rural areas included gastrointestinal conditions, and ear, nose and throat ailments. From the focus group discussion, it was evident that there is minimal scope for PCDT pharmacists in the public healthcare sector, despite a need for their services.

Conclusion

Both the private and public healthcare sectors in South Africa need the human resources and expertise that PCDT pharmacists can offer. Contrary to expectations, most PCDT pharmacists were not practising in rural South Africa, but in independent community pharmacies in the more urban provinces. Closer collaboration between PCDT pharmacists and nurses were identified as a possibly missed opportunity to strengthen PHC services.



Oral Presentation 14: Progress on SDGs in seven Southern African Countries based on Demographic and Health Surveys conducted in the past 10 years (2015-2024)

Lesibana Malinga

Background

The 2015 Sustainable Development Goals (SDGs) are universally accepted actions to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. Countries need to monitor and report progress on SDGs using data collected from multiple resources to support evidence-based decision-making. Demographic and Health Survey (DHS) provides a comprehensive resource to estimate eight SDG indicators related to health, malnutrition and other areas. Southern African Countries (SAC) have conducted at least one DHS between 2015 and 2024, which offers a great resource to compare progress within the region. We provide a comprehensive analysis on data collected from seven SAC between 2015 and 2024 using STATcompiler.

Methods

Data was extracted from DHS program and analyzed using STATcompiler which allows for comparison of data across countries and track indicator trends over time. Briefly custom tables were created with DHS data from seven SAC and graphs displayed as background characteristics, over time, and across countries. SDG 2 and SDG 3 were selected for analysis.

Results

The indicators for SDG 2 and SDG 3 estimated on the DHS showed improvement between 2015 and 2024, consistent across geographic areas. Within SDG 2, the percentage of children stunted was lower in Zimbabwe and higher in Madagascar. South Africa had the highest percentages of live births attended by skilled health personnel which translated in low levels of infant mortality in the region, indicative of improvements in SDG 3 attainment.

Conclusions

The DHS offers an attractive option to compare data among countries and regions in reaching their SDG goals. However, DHS are not done consistently every five years and timeous data is often unavailable to measure SDG indicators within the available period. Countries will need to adopt other mechanisms that collect disaggregated population data at a national level with frequent updates.



4. Oral Presentations – Implementation Science



Oral Presentation 15: Unpacking Index Contact Testing in Johannesburg: Healthcare Workers' Insights on Barriers and Enablers in Clinics and Communities

Nyeleti Chauke

Background

The World Health Organization emphasizes contact investigation of people with HIV for case finding. However, satisfactory implementation of index contact testing (ICT) remains challenging in Johannesburg. This study draws from the Consolidated Framework for Implementation Research (CFIR) to explore healthcare workers' (HCWs) insights on barriers and enablers of ICT implementation in clinics and communities.

Methodology

A qualitative study was conducted, exploring barriers and enablers to ICT in Johannesburg's sub-district G. Data were collected through semi-structured interviews at four healthcare facilities and four nonprofit organizations, from October-November 2023, with 18 HTS counsellors and five nurses. Data were analysed thematically, guided by the CFIR framework.

Findings

HTS counsellors had a more nuanced understanding of ICT than nurses. Major barriers were identified in the innovation, outer setting, and inner setting domains, and key enablers in the innovation and process domains. Barriers in the innovation domain included perceived complexity and confusion around ICT guidelines, and the time-consuming nature of ICT. Key enablers were adapting ICT to educate clients about pre-exposure prophylaxis (PrEP) to enhance awareness and client agency, incorporating ICT into pre-counselling sessions, and offering home-based testing for index contacts. In the outer setting, barriers included fears of intimate partner violence (IPV), stigma, and challenges due to geographic dispersion of contacts, complicating outreach and testing efforts. Inner setting barriers were due to limited training, insufficient knowledge, and inadequate skill-building among HCWs, compounded by a lack of resources. Passive referral, where index clients bring their contact, was the preferred tracing strategy.

Conclusion

This study highlights critical barriers, including complex guidelines, limited HCW training, stigma, and fears of IPV, hindering ICT implementation. Addressing these through simplified guidelines, targeted training, resource allocation, stigma, and IPV-reduction strategies is essential. Leveraging enablers like PrEP education and home-based testing can enhance ICT implementation and engagement.



Oral Presentation 16: Assessing Implementation Fidelity of Targeted Universal Testing for Tuberculosis at Primary Care Facilities in Johannesburg in 2025

Omphile Rashope

Background

Despite South Africa's National Tuberculosis Programme, tuberculosis control remains suboptimal. In 2023, the Targeted Universal Testing for Tuberculosis intervention was introduced to improve case detection, but without assessing implementation fidelity. This study assessed provider adherence to the Targeted Universal Testing for Tuberculosis standard operating procedure in primary health facilities in Johannesburg and analysed fidelity scores and moderators.

Methods

A cross-sectional survey was conducted among 89 providers across 22 facilities. Fidelity was assessed using Carroll's Framework, measuring content and frequency. Moderators included intervention complexity, quality of delivery, facilitation strategies and participant responsiveness. Sociodemographic variables included age, sex, role, experience and education. A composite fidelity score (out of 74) was calculated for each provider and classified as high or low using the median cut-off. Associations were analysed using linear regression with robust standard errors.

Results

Most participants were nurses (82.95%) and aged ≥ 31 years (84.21%). Fidelity scores ranged from 88.79% to 97.73%, with a median of 93.86%. Tuberculosis champions achieved the highest fidelity scores (80%). Intervention complexity negatively influenced fidelity, while quality of delivery, facilitation strategies and participant responsiveness showed positive associations. Additionally, 55.06% of providers reported clients' inability to produce sputum. Slightly more providers (by 3%) scored above the median than below.

Conclusion

A moderate number of health providers implemented the Targeted Universal Testing for Tuberculosis standard operating procedure with fidelity. Tuberculosis champions performed well, but many nurses lacked training. Issues with sputum production and follow-up hindered implementation. Interventions should prioritise sputum support, training and contact tracing. Findings provide insights to strengthen the 2024–2025 scale-up under the National Tuberculosis Recovery Plan. Keywords: Implementation fidelity, Targeted Universal Testing for Tuberculosis standard operating procedure, South Africa



Oral Presentation 17: Biometrics application in public healthcare clinics in South Africa: A case of Limpopo

Vhulenda Sumbana

Background

Accurate patient identification remains a persistent challenge in healthcare environments especially in low developed areas, often leading to administrative errors, treatment delays, and compromised patient safety. With the high volume of outpatient and limited staff and administrative resources, traditional identification methods such as presenting ID or verbal confirmation often result in duplicated records, loss of records, impersonation, inefficiencies, and inaccurate headcount statistics. This paper explored the role biometrics technologies such as fingerprints, facial recognition, and iris scanning could have in public healthcare clinics in addressing these challenges. The study examined the technical, ethical, and logistical considerations of deploying such technologies, especially in resource-constrained environments like Limpopo province which is predominantly rural. By drawing on the use of biometrics, the study aimed to offset the challenges outlined.

Methods

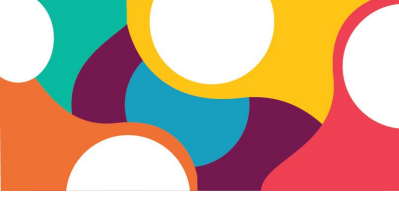
The study employed a qualitative approach through observations. It involved observations of the walk-ins in the centre, headcount registry, the elderly people at the registry desk and daily activities at eight healthcare centres. This was augmented by case studies as well that outline the importance and recommendations of biometric implementation in public healthcare settings.

Findings

Incorporating biometrics at the public healthcare clinics can improve the staff workload where short staff are experienced, will assist the elderly people in case they forget their IDs or copy at home, will reflect the exact statistics within the centre and reduce the fraud of people collecting medication in various centre for personal profit.

Conclusion

Implementing biometrics systems at the clinics can have a positive impact on service delivery and medication dispensary. This approach can also benefit centres that experience shortage of staff with easy patient registry system.



5. Oral Presentations – Public Health and Social Wellbeing



Oral Presentation 18: Longitudinal Study of Hypertension Prevalence Risk Factors in Rural South Africa

Cairo Ntimana

Background

The percentage of adults with hypertension globally is estimated to increase from 1.28 billion in 2020 to 1.5 billion or more by 2025, with the sub-Saharan Africa numbers estimated to exceed 216 million by 2030. The present study aimed to investigate the trend in the prevalence of hypertension and if the trend in the prevalence of hypertension is associated with trends in the prevalence of its determinants, among the rural Black population of Limpopo Province, South Africa.

Methods

This was a retrospective longitudinal study conducted amongst 518 participants observed between 2014 and 2022. Data were analyzed using Statistical Package for Social Sciences (SPSS) version 27.0. Categorical variables were presented as percentages and continuous variables were presented as mean \pm standard deviation. A comparison of proportions was performed using Chi-Square whilst a comparison of means was performed using an unpaired Student-t-test. Binary logistic regression with backward conditioning was used to determine the factors associated with hypertension.

Results

Baseline prevalence of hypertension to be at 43.8%. On follow-up, the prevalence increased to 46.1%. Hypertensive participants were older and female compared to non-hypertensive participants ($53.85 \pm 8.6.7$ vs 50.02 ± 7.4 , $p < 0.001$) and (48.7% vs 29.0%, 0.001). At baseline, adjusted odds ratios showed that an increase in age (aOR=4.961; 95% CI: 2.97-8.30), alcohol consumption (aOR=1.625; 95%CI: 1.12-2.36), being diabetic (aOR=2.671; 95%CI: 1.45-4.92), being obese (aOR=1.735; 95% CI:1.13-2.66) and having central obesity (aOR=2.048; 95%CI: 1.12-3.36), were more likely to be associated with hypertension. The same was observed at follow-up.

Conclusion

The findings of the present study showed a 3% increase in the prevalence of hypertension among the rural Black population of Limpopo Province, South Africa, rising from 43.8% at baseline to 46.1% at follow-up.



Oral Presentation 19: Socioeconomic Factors and Living Conditions Associated with Teenage Pregnancy in Soweto and Thembelihle Townships

Dave Temane

Teenage pregnancy remains a significant public health concern in South Africa, particularly in disadvantaged communities. This study explores factors associated with teenage pregnancy in Soweto and Thembelihle, two peri-urban townships marked by socioeconomic disparities. Using a cross-sectional design, data from the Soweto and Thembelihle Health and Demographic Surveillance System (SaT-HDSS) were analysed. Logistic regression models assessed associations between teenage pregnancy and socio-demographic and household-level factors, including age, wealth index, dwelling conditions, internet access, and contraceptive use. The analysis included 6,064 adolescents aged 13–19 years. Adolescents aged 18–19 years were 12.75 times more likely to have been pregnant than those aged 13–15 years (AOR = 12.75; 95% CI = 5.63–28.86). Wealthier households demonstrated a protective effect, with teenagers from the richest wealth quintile being less likely to experience pregnancy (AOR = 0.31; 95% CI = 0.12–0.80). Access to the internet at home was associated with reduced odds of pregnancy, even after controlling for wealth index (AOR = 0.62; 95% CI = 0.40–0.97). However, contraceptive use was associated with a higher odds of pregnancy (AOR = 6.77; 95% CI = 4.56–10.04). Teenagers in male-headed households were at increased risk of pregnancy (AOR = 2.13; 95% CI = 1.39–3.26). These findings show the interplay of age, socioeconomic status, digital access, and household arrangement in shaping teenage pregnancy. Interventions should focus on comprehensive sex education, equitable access to contraceptives, internet-based health resources, and support for adolescents in vulnerable household contexts.



Oral Presentation 20: Prevalence of non-communicable diseases and multimorbidity in Soweto and Thembelihle Townships, Johannesburg, South Africa: 2022

Nqaba Mthimkhulu

Background

South Africa faces rising non-communicable diseases (NCDs) and multimorbidity, exacerbated by a fragile health system, particularly affecting the poor, with limited research on patterns in townships such as Soweto and Thembelihle. This study aims to determine the prevalence of NCDs and evaluate the extent of multimorbidity among residents within the Soweto and Thembelihle Health and Demographic Surveillance System (SaT-HDSS).

Methodology

This is a cross-sectional study utilising data collected from May 2021 to July 2022 using a structured interviewer-administered questionnaire to gather data. The outcome variable was the self-reported presence of an NCD, specifically diabetes, hypertension, chronic lung disease, asthma, epilepsy, stroke, kidney disease, and chronic liver disease. Multimorbidity was defined as the presence of two or more self-reported conditions. A binary logistic regression analysis was employed to identify sociodemographic predictors of NCDs.

Preliminary Results

Among 34073 individuals, 17% reported having at least one NCD, while 0.06% reported three or more conditions. The two most prevalent NCDs in the SaT-HDSS were hypertension (16%) and diabetes (12%). Overall, the prevalence of NCDs increased with age, particularly among women. Diabetes and hypertension had notable levels of comorbidity. Multimorbidity increased with age, particularly among women. Women aged 45–84 showed the highest frequency of multiple NCDs. Although men had lower overall rates of multimorbidity, they exhibited similar age-related trends. Being female (AOR=2.76, 95% CI 2.55 – 2.99), a pensioner (AOR=2.30, 95% CI 1.41 – 3.76), and being married (AOR=1.54, 95% CI 1.39 – 1.71) were associated with the presence of an NCD.

Conclusion

Multimorbidity of NCDs is common, particularly among older adults and women. The frequent co-occurrence of conditions, especially hypertension and diabetes, underscores the urgent need for integrated, patient-centred care models. Enhancing early detection and improving the current health system are essential to effectively address the growing burden of NCDs.



Oral Presentation 21: Prevalence, Associated Factors and Consequences of Revenge Pornography: A Scoping Review

Lanre Abdul-Rasheed Sulaiman

The importance of technology in modern-day life cannot be overemphasised. Technology drives innovation, growth, and sustainable development. It is also central to intimate relationships, providing various platforms through which partners can regularly stay in touch. However, what appears to be an instrument for sustaining intimate relationships can also serve as a tool for sexual blackmail and other forms of cyber violence, exacerbating existing forms of interpersonal violence. In fact, most known forms of interpersonal violence can now be perpetrated in the digital space and have even given rise to new forms, such as revenge pornography, non-consensual pornography, cyberbullying, cyber rape, etc. In recent times, increasing scholarly attention has been on understanding the nature, extent, and consequences of cyber sexual abuse. However, revenge pornography which is an emerging form of cyber sexual abuse has not been well explored. This scoping study aims at consolidating and synthesising the existing studies on the prevalence, causes and consequences of revenge pornography. The review will involve a systematic search of empirical, peer-reviewed studies published between 2010 and 2024 in the following databases: ACM Digital Library, Criminal Justice Abstracts, Google Scholar, IEEE Xplore, ProQuest, PubMed, PsycINFO, Scopus, and Web of Science. The following keywords will be used to identify relevant empirical, peer-reviewed studies on the prevalence, causes, and consequences of revenge pornography in the selected databases: "revenge porn*" OR "involuntary porn*" OR "image-based sexual abuse*" OR "non-consensual porn*" AND "prevalence" OR "rate*" OR "factors associated*" OR "factor*" OR "cause*" OR "determinant*" OR "risk*" AND "consequence*" OR "adverse effect*" OR "implication*" OR "impact*". This study will synthesise findings on the prevalence, causes, and consequences of revenge pornography, as well as identify gaps in the existing literature. The findings also have the potential to inform policies, programmes, and interventions aimed at addressing revenge pornography.



Oral Presentation 22: Evaluating the impact of sanitation practices and clean drinking water on diarrheal prevalence among under-five children in South Africa: Insight from the 2019 GHS

Philomene Nsengiyumva

Background

Diarrhoea is one of the leading causes of morbidity and mortality in under-five-children in developing regions, such as South Africa. Inadequate and poor sanitation practices, such as open defecation and the use of bucket toilets, account for the prevalence of preventable diseases among children.

Objective

To investigate the factors associated with poor sanitation facilities and their contribution to Diarrheal-related infections in South Africa, utilizing data from the 2019 General Household Survey (GHS).

Methods

This quantitative study employed Chi-square tests and logistic regression analysis to examine the relationships between sanitation variables (bucket toilets, open defecation) and health outcomes (diarrheal-related infections), considering demographic and socioeconomic factors.

Results

The study found that about 3.3% (n= 211) of children under-five have prevalence of diarrhoea in two weeks prior the survey took place. The results reveal that African/Black households have higher odds of the prevalence of diarrhoea among children under-five (OR: 1.795) than White households. Households accessing water sources from a distance of 201m-500m and 500m-1km away from the dwelling resulted in higher odds of prevalence of diarrhoea among children (OR: 3.58 and OR: 5.930 respectively). The results reveal that African/Black households have higher odds of the prevalence of diarrhoea among children under-five (OR: 1.795) than White households.

Conclusions

The study underscores the urgent need for improved sanitation infrastructure to reduce diarrheal-related infections in children under five years in South Africa. Addressing poor sanitation practices through targeted interventions could significantly lower diarrheal-related deaths and improve public health outcomes.



Oral Presentation 23: Can a Tape Measure Predict Diabetes? Identifying Insulin Resistance in a South African Community

Saarah Davids

Background

Obesity and type 2 diabetes are steadily increasing, driven by metabolic dysfunction. Inflammation from excess body fat contributes to insulin resistance (IR), often long before diabetes is diagnosed. In low-resource settings, body measurements may offer a low-cost tool to identify at-risk individuals. This study assesses the use of various body measurements to predict IR in a Mixed Ancestry population in Cape Town, South Africa.

Methods

A total of 1391 adults from Bellville South and Belhar were studied. Trained staff collected blood samples and anthropometric data using World Health Organisation (WHO) protocols. Participants without diagnosed diabetes underwent a 75 g oral glucose tolerance test. IR was defined using the Homeostasis Model Assessment of Insulin Resistance (HOMA-IR) index. Receiver operating characteristic (ROC) curves were used to test the diagnostic accuracy of body measurements, including waist, hip, body mass index (BMI), and body fat.

Results

Results showed that 316 participants were insulin resistant while 1075 were not. All body measurements, except skeletal muscle, were significantly higher in those with IR ($p < 0.001$). In both sexes, body size positively correlated with IR. Waist circumference, waist-to-height ratio, and visceral fat showed moderate to good diagnostic accuracy (area under the curve (AUC) > 0.70).

Conclusion

Simple body measurements may be used to identify early IR in underserved communities. This approach could support early action, improve metabolic health, and reduce long-term diabetes risk by advancing health and social wellbeing through scalable, population-based strategies. A measuring tape may be all we need to identify hidden diabetes risk in vulnerable communities before it is too late.



Oral Presentation 24: Insights for Measuring Wellbeing in Economic Evaluations of Interventions for Adolescents and Young People Living with HIV in sub-Saharan Africa

Stanley Carries

Background

Maximising wellbeing is an important HIV/AIDS policy goal, aligned with SDG3. As sub-Saharan Africa (SSA) countries progressively adopt more multi-sectoral and integrated approaches to HIV/AIDS interventions, there is need for generic wellbeing outcome measures to capture the net benefit across sectors. This is important for adolescents and young people living with HIV (AYPLHIV) from SSA, given their vulnerability to multi-system comorbidities, risk of mental health disorders, lifelong ART, and lived experience challenges (e.g. stigma, food insecurity). This overview of reviews aimed to identify the determinants of wellbeing among AYPLHIV from SSA to inform developing an adolescent wellbeing scale for use in economic evaluation of interventions and programmes for AYPLHIV from SSA.

Methods

We searched reviews between January 2000 and September 2023 from 10 databases in EBSCO Host and Ovid platforms using Preferred Reporting Items for Overviews of Reviews guidelines. Quantitative, qualitative and mixed methods reviews linked to psychological wellbeing, subjective wellbeing and mental health among AYPLHIV (10-24-years) from SSA were included. Quality of studies was assessed using the Joanna Briggs Institute Critical Appraisal Checklist. Findings were categorised into themes and mapped onto Ryff's psychological wellbeing (PWB) framework.

Results

Sixteen medium-to-high quality reviews were included. South Africa (n=15) and Uganda (n=14) were among the most represented countries across reviews. Most reviews included ALYPHIV within the 10-19-year range (n=11). Emerging wellbeing themes were social support, acceptance and belonging, self-concept, aspirations and goals, coping, and household environment. The following dimensions potentially characterised AYPLHIV wellbeing: positive relationships, self-acceptance, purpose in life, and environmental mastery.

Conclusion

Positive relationships and social support are important to the wellbeing of AYPLHIV. Economic evaluation measures should incorporate wellbeing dimensions that go beyond functioning to guide the design of interventions and programmes targeted at improving wellbeing among AYPLHIV. Policy should invest in multi-sectoral interventions promoting acceptance and integration of AYPLHIV into society.



Oral Presentation 25: Migration as a Social Determinant of Multimorbidity in the Migrant Health Follow-Up Study (MHFUS) Cohort

Tariro Ndoro

Background

South Africa is experiencing an increase in chronic illness multimorbidity, with detrimental personal and public health implications. Various social factors play a significant role in the development of pluripathology; and can be leveraged to design healthcare interventions. South Africa has high rates of rural/urban migration which may impact health outcomes. However, there remains a dearth of studies on internal mobility and health. This study aims to ascertain the prevalence and determinants of multimorbidity in a mobile population.

Methods

A cohort study was carried out using panel data from the first four waves of the MHFUS cohort, aged 18 – 40 at study inception, nested in the Agincourt HDSS. Data were described and bivariate analyses (Kruskal-Wallis and χ^2 tests) were carried out. A random effects model was used to ascertain the relationship between migration with multimorbidity. A wider model will be used to ascertain other social determinants of multimorbidity.

Results

At baseline (Wave 1, 2019), 3092 participants with a median age of 28 years (IQR=24 – 33) were included in the study, with an almost equal number of male (50.19%) and female (49.81%) participants. More than half of the participants were nonmigrants (56.95%). At Wave 4 (2022), 10.5% of participants were multimorbid. Migrants were significantly less likely to become multimorbid than nonmigrants AOR=0.98 (0.97 – 0.99) $p=0.001$ after four years of observation. Increasing age was positively associated with multimorbidity AOR=1.01 (1.00 – 1.01) $p<0.001$, while male gender was protective against multimorbidity 0.98 (0.96 – 0.99) $p=0.003$.

Conclusions

Preliminary results indicate that mobile adults have better health outcomes than their nonmobile counterparts. These results are consistent with the healthy migrant theory and support a need for an increased focus on best health interventions in rural areas.



Oral Presentation 26: Where We Live, How We Live: Unearthing the Links Between Housing, Youth Vulnerability, and Social Wellbeing

Eulender Mbetse

Background

Understanding how dwelling conditions shape social and economic wellbeing is central to advancing public health. In South Africa's urbanising landscape, disparities in housing particularly among backyard structures, informal dwellings, and apartments are closely tied to access to services, youth vulnerability, and economic hardship.

Methods

This longitudinal study was conducted by GRT-Inspired (GRT-I) in Hillbrow, Melusi and Atteridgeville urban communities in Gauteng. Data were collected through in-person interviews with household member and included information on dwelling type, household composition, water and electricity access, education, employment, and reliance on social grants. Descriptive statistics were used to identify patterns across dwelling types.

Results

The sample revealed that 8% (1771) of households are headed by individuals under 18 years old, indicating a high proportion of youth-led homes. Unemployment was widespread, with 32% of adult respondents reporting no employment. Social grants were the main income source for 44% of households. Basic services remain inconsistent: 13% of households had no access to piped water within 200 metres, and 13% reported no electricity connection. Households in informal and backyard dwellings showed higher levels of service deprivation and economic vulnerability.

Conclusion

Housing type is a strong indicator of household vulnerability, with youth-headed households and those in informal settings facing compounded challenges. These findings underscore the need for targeted interventions to improve access to services and economic opportunities in marginalised urban areas. Future analysis will explore associations between housing characteristics and health outcomes to inform evidence-based policy and population health strategies.



6. Poster Presentations – Epidemiology and Surveillance



Poster Presentation 1: Physical function and all-cause and cause-specific mortality among middle and older adults in rural South Africa: A Longitudinal Study of an INDEPTH Community in Rural South Africa (HAALSI)

Belinda Njiro

Background

Assessing the role of physical function on mortality among adults in rural settings is key in addressing modifiable risk factors and integrating context-specific interventions in healthcare. This study aimed to characterise levels of physical function defined as physical activity (PA), walking pace, and grip strength; and their associations with all-cause and cause-specific mortality in rural South Africa.

Methods

We utilised data from the Health and Aging in Africa: A Longitudinal Study of an INDEPTH Community (HAALSI) among a prospective cohort of 5059 adults aged 40+. PA was assessed using the Global Physical Activity Questionnaire and categorised into low, moderate, and vigorous physical activity as <600, 600-1200, and >1200 metabolic equivalent (MET-minutes) respectively. Walk pace and grip strength were objectively measured using digital timer and digital hand dynamometer respectively. We analysed the association between the physical function variables and mortality using Cox-Proportional Hazards and Fine and Gray competing risk models, accounting for cause-specific outcomes.

Results

About 25.95% were physically inactive; most participants engaged in travel-related PA, and 70.48% of participants had a gait speed of <0.8m/s. The all-cause mortality fraction over the follow up period was 22.1%(n=1116). Adults with moderate (HR:0.70; 95%CI:0.56-0.87) and vigorous (HR:0.61; 95%CI:0.54-0.70) PA and those with the strongest grip strength (HR:0.51; 95%CI:0.42-0.61) had a reduction in overall mortality. Similarly, PA and strong grip strength was associated with a reduction in mortality from cardiovascular (CVD), cancer, HIV/TB, other infectious diseases, metabolic, and other NCDs causes. For walk pace, participants with average to brisk walk pace had a reduction in all-cause, infectious-disease, CVD, and other NCD-related deaths.

Conclusion

Majority of middle-aged and older adults engage in travel-based PA and exhibited slow walk pace and weak grip strength predisposing them to higher mortality. We recommend targeted intervention to promote PA and integrate physical function assessment in routine care.



Poster Presentation 2: Social determinants of all-cause mortality in the DIMAMO HDSS: A Survival Analysis Approach

Kagiso Seakamela

Background

All-cause mortality remains a significant public health concern, with individuals of lower socioeconomic status (SES) experiencing a higher burden of chronic diseases and premature death. Social determinants of health (SDOH) play a crucial role in shaping mortality risk; however, gaps persist in understanding their long-term interactions. This study employs survival analysis to examine the relationship between social determinants and all-cause mortality using longitudinal data from the DIMAMO PHRC.

Methods

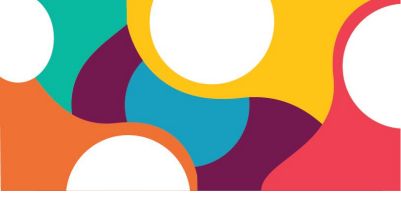
This study utilized longitudinal data collected from the DIMAMO PHRC. Survival probabilities were estimated using the Kaplan-Meier method, while Cox proportional hazards models determined hazard ratios for various socioeconomic and demographic factors.

Results

Indicate that mortality risk increases with age, with individuals aged 40–69 years having five times and those 70+ years having up to 20 times the likelihood of mortality compared to younger individuals. Unemployment tripled mortality risk, while marital status also influenced survival, with widowed individuals having the highest likelihood of mortality. Household headship was associated with a fivefold increase in hazard ratios. After adjusting for demographic and socioeconomic factors, the mortality risk for those aged 70+ decreased to 14 times.

Conclusion

Higher education attainment was a protective factor, as individuals without formal education had twice the mortality risk compared to those with tertiary education. Married individuals had a 20% lower mortality risk than single individuals. The study recommends community-based support systems, adult education programs, and job creation initiatives to reduce mortality risk by addressing ageing, unemployment, and low education levels.



7. Poster Presentation – Implentation Science



Poster Presentation 3: Recognition of language barriers in comprehending non-communicable disease management among rural elderly people in the DIMAMO surveillance area: a case of AWI-Gen participants

Reneilwe Given Mashaba

Background

Language plays a critical role in health communication, particularly in the management and understanding of non-communicable diseases (NCDs) among elderly populations. This study aimed to explore the language barriers that affect elderly participants' comprehension of NCDs, focusing on how these barriers impact their understanding of disease causes, symptoms, treatment, and self-management. The study also investigated how linguistic differences between healthcare workers and patients influence the effectiveness of health interventions in a rural South African context.

Methods

This qualitative phenomenological study was conducted with elderly participants aged 60 years and above, all of whom have chronic diseases. In-depth face-to-face interviews were conducted using an interview guide during the AWI-Gen 2 research feedback sessions in the Ga-Dikgale area. Data analysis was performed using QSR NVivo 10 to identify key themes.

Results

Five major themes emerged regarding participants' understanding of NCDs and the perceived language barriers. These include Limited Knowledge and Awareness of NCDs, Misconceptions about NCDs, Mixed perceptions regarding NCD causes and treatment, Discrepancies in healthcare workers' communication, and the Importance of interpreters in facilitating NCD-related communication.

Conclusion

The study revealed significant misconceptions about diabetes and hypertension, as well as traditional practices like bloodletting, which were perceived to relieve hypertension symptoms. It also identified critical communication barriers, including limited time for health practitioners to explain diagnoses and treatments. The findings emphasize the need for interpreters and culturally sensitive communication strategies to improve health literacy and care. Collaborative efforts between traditional and western health practitioners are recommended to address these issues and enhance community health interventions.



8. Poster Presentations – Public Health and Social Wellbeing



Poster Presentation 4: Linking Mothers: A descriptive analysis of routine health and household data to characterize pregnant Individuals in the Nomzamo Health Demographic Surveillance Site (HDSS), Cape Town

Erin von der Heyden

Background

The Provincial Health Data Centre (PHDC) integrates electronic health data across the Western Cape public health sector. Previous limitations in address data restricted analysis of health trends to facility and hospital level patterns, which did not fully reflect conditions in the communities. Data linkage and geocoding allow for more accurate assignment of clients to a geographic area, enabling population-level analyses of specific vulnerable groups.

Methodology

This cross-sectional study uses Nomzamo HDSS baseline household data from 2023- 2024 and linked individual data, based on health records and household enumeration. For each identified pregnancy, we examined associated socio-demographic characteristics, household-level factors and health-related variables.

Results

A total of 642 pregnant individuals were identified, with a median age of 28 years. Of these, 25.5% aged 20–30 and 8.7% classified as teenagers (≤ 19 years). Among those with employment data, 58.9% were unemployed, while 21.2% were employed full-time and 19.9% part-time. Despite high unemployment, only 4.4% reported receiving a social support grant, and just 1.7% experienced food insecurity.

Over half reported living with a partner, while 27.2% had no partner. Education data showed that 43.1% had completed Grade 12, while 18.7% had not completed Grade 9.

Previous HIV testing was reported by 38.6% individuals, 18.5% were HIV-positive on treatment.

Mental health and risk indicators were present in a minority: 14% reported loss of interest 8% reported feeling hopelessness, 2% reported substance use, 3.4% reported smoking and 0.5% household violence. Only seven pregnant individuals were referred to mental health services.

Conclusion

Routinely collected health data, when linked with geocoded population surveillance, can offer valuable insights into the social, household, and health characteristics of pregnant individuals at the community level. Continued household surveillance and future integration of C-SHARP data will further enhance community profiling, helping to inform more responsive health services.



Poster Presentation 5: Using sequence analysis to explore transitions to adulthood in rural South Africa.

Erofili Grapsa

Background

Adolescence and young adulthood are critical developmental stages, with decisions and experiences during these periods often shaping outcomes later in life. In developing countries, however, little is known about transitions to adulthood in rural areas - contexts where access to post-secondary education and employment is limited, and where young people may migrate in search of better opportunities.

Methods

This study examines pathways to adulthood among individuals aged 18 to 27 in rural South Africa, using longitudinal data from 2003 onward collected through a Household and Demographic Surveillance System in a KwaZulu-Natal sub-district. We analyse key life events by gender (entry into employment, partnership formation, parenthood) using sequence analysis to assess the order, timing, and duration of these events, and cluster analysis to identify common transition pathways.

Findings

Women are found more likely to follow a quick partnership acquisition and parenthood pathway to adulthood than men. Five distinct transitions to adulthood are identified for young women, among which, three represent women who transition to motherhood by the age of 27 but differ in the timing of motherhood and employment. The remaining two mostly include non-mothers and capture differences in the timing and duration of partnership and employment. For young men four pathways to adulthood are evident: one includes men who transition to fatherhood by the age of 27 and the remaining three have captured childless men with different transitions in partnership acquisition and employment.

Conclusion

Significant differences in transitions to adulthood by gender are illuminated, consistent with the high prevalence of non-marital fertility and persistent gender roles in childcare in South Africa.



Poster Presentation 6: Geospatial Analysis of Access to Primary Healthcare Services in Mopani District, Limpopo Province, South Africa

Kuhlula Maluleke

Background

Geographical accessibility to healthcare facilities significantly influences healthcare utilisation, particularly in low- and middle-income countries (LMICs). Long travel distances and inadequate transport infrastructure often delay access to diagnostic and treatment services, increasing the risk of disease progression and poor outcomes. This study was conducted as part of a broader investigation into COVID-19 diagnostic services. Since these services were delivered through existing primary healthcare (PHC) infrastructure, the findings have broader implications for PHC accessibility and planning.

Methods

A stepwise geospatial analysis was conducted to assess access to PHC clinics and district hospitals in Mopani District, Limpopo Province. Using ArcGIS and ArcMap 10.8.2, the district was divided into 20-hectare hexagonal units through dasymetric mapping. The analysis used three key datasets: population distribution, health facility locations, and the road network layout. Travel distances from population centres to the nearest PHC clinic and from clinics to the nearest district hospital were computed to identify areas of good and poor accessibility.

Results/Findings

Of the district's 1,202,916 residents, 78.5% (n=944,160) lived within 5 km of a PHC clinic, while 21.5% (n=258,756) lived beyond this threshold. Among 105 PHC clinics, 68.6% were located within 30 km of a district hospital, and 31.4% were beyond this range. The Greater Giyani sub-district had the highest number of people without nearby PHC clinics. Both Greater Giyani and Greater Letaba had the most clinics located more than 30 km from a district hospital, revealing spatial disparities across sub-districts.

Conclusion

The study highlights significant spatial inequities in access to PHC services in Mopani District. GIS-based accessibility analyses provide valuable insights for policymakers and health planners to ensure equitable distribution of healthcare services, especially in remote and underserved communities. This approach can support long-term health system strengthening beyond the COVID-19 context.



Poster Presentation 7: Nutritional practices, obesogenic environments, and obesity prevalence among primary healthcare workers in Limpopo province

Mabitsela Mphasha

Background

Healthcare workers (HCWs) play a critical role in promoting health, yet many are themselves at risk of nutrition-related conditions such as obesity. Poor dietary habits and obesogenic workplace environments contribute to the growing burden of non-communicable diseases (NCDs), even among health professionals.

Aim

This study aimed to assess the dietary habits, nutritional intake, obesogenic environmental factors, and the prevalence of obesity among primary healthcare workers in Lepelle-Nkumpi Local Municipality, Limpopo Province.

Methods

A cross-sectional quantitative study was conducted among 174 healthcare workers, selected through stratified sampling. Data were collected using a structured food frequency questionnaire, anthropometric measurements (weight & height for body mass index), and an obesogenic environment assessment tool. Environmental factors included access to fast-food outlets, food delivery reliance, and availability of healthy food at work. Data were analyzed using statistical software, with descriptive statistics used for summarization. Ethical standards were upheld throughout the study.

Results

The study found high rates of overweight (28%) and obesity (48%) among healthcare workers, with poor dietary habits marked by low fruit and vegetable intake and frequent consumption of high-fat foods. Many worked near fast-food outlets and had limited access to healthy food at work.

Conclusion

The study found poor dietary habits, high overweight and obesity rates, and low fruit and vegetable intake among healthcare workers. Limited healthy food options in work environments may contribute to these issues. There is a need for targeted interventions including improving food access, nutrition education, policies to limit unhealthy foods, and regular health screenings for workers.



Poster Presentation 8: Stress and coping in nursing students

Meghann Petersen

Background

Nursing is a demanding and stressful job. Stress may be experienced as nursing students struggle to cope in an unfamiliar environment. It is pivotal that nursing students identify the stressors and how they cope in this environment as it may negatively impact their academic progress.

Methods

A qualitative, exploratory, descriptive design was used to determine explore and describe the experiences of stress and coping of nursing students at a university in the Western Cape. Purposive sampling was used to collect data from 45 participants in five focus group interviews. Interviews were audio-recorded and validated through member-checking after the transcription of the interviews. Data was analysed through content analysis.

Results/Findings

Four themes emerged from the analysed data namely: Understanding of stress; Stressors related to the academic environment; Adaptive and maladaptive strategies used to cope; and Suggested stress reduction strategies. Participants understanding of stress was defined as eustress and distress. Stressors identified related to multiple assessments and personal safety concerns. The academic environment was found to be stressful with limited support. Adaptive coping mechanisms were socialisation with peers, self-motivation and engaging in prayer and maladaptive coping related to the detachment from others and reliance on substances to cope. Stress reduction strategies included a revision of the academic timetable to accommodate the workload and specific support from the university support services.

Conclusion

As stress is an inevitable part of life, it is important that students are taught coping skills. How students cope depends largely on their personalities, support networks and the extent and timing of the stress. The working environment and careers that nursing students will pursue are inherently stressful thus stakeholders would benefit from a more coherent systemic approach to identifying stressors and enlisting appropriate academic and personal support for nursing students.



Poster Presentation 9: What Employers Expect: Hiring Youth with Mild Intellectual Disabilities in South Africa, Gauteng Province -Tshwane region.

Ntsieni Teresia Dzhugudza

Background

Youth with mild intellectual disability have fewer career development opportunities than their counterparts. Their entry into the open labour market is limited by the high unemployment rate, lack of skills, workplace discrimination, and lack of preparation for work by the education system. The researcher observed that South African learners leave special schools at the age of 18 -21. However, there is no system in place in the South African Department of Education to assist learners in transitioning from school to work. Employers play an important role in determining the employment outcomes for youth with mild intellectual disability. Employers' desire to employ, assessments of job preparedness, and expectations for workplace support can either generate employment opportunities or exclude learners with mild intellectual disability in the workplace. The purpose of this study was to explore the expectations of employers regarding the employment of youth with mild intellectual disability.

Methods

This research was a component of a larger project to develop a conceptual framework for the school-to-work transition. A qualitative exploratory research design was employed to identify employers interested in hiring youth with disabilities in Gauteng province-Tshwane region, using a purposive sampling technique. Data were gathered through focus group discussions, and thematic data analysis was employed to analyse the results.

Results

Three themes emerged: alignment of vocational skills training with workplace skills, work competencies for employability, and collaborative effort.

Conclusion

While many employers are receptive to inclusive employment, their expectations are defined by how well youth with MID can exhibit basic professional skills. This study also emphasises the importance of a collaborative approach, including family, community, a multidisciplinary team, and government. The study recommends policy refinement and practical support systems that link skill development to employer needs, long-term career prospects for youth with MID in South Africa.



Poster Presentation 10: Perceived body image and weight management in a South African population

Shanel Raghubeer

Background:

Misperception of one's own body image is common and may prevent individuals from undertaking healthy corrective measures or participating in intervention programs.

Methods

A cross-sectional study involving 1889 adults aged 20 years or older was conducted. Participants were required to estimate their weight prior to anthropometric (weight, height, waist and hip circumferences) measurements and the Stunkard Figure Rating Scale (FRS) was used for participants to select silhouettes that they believed closely resembled their body types. Additionally, metabolic syndrome (MetS) parameters were measured for all participants.

Results

The median age was 49 for males (n=455) and 52 for females (n=1434), respectively. Approximately 20% of overweight participants estimated their weight correctly whilst over 40% of obese individuals underestimated their weight. This was exaggerated in obese men, where only 9.5% estimated their weight correctly compared to 26.9% of women. Approximately 30.6% overweight or obese participants were engaged in a weight loss programme, although 90% of obese and over 65% of overweight individuals desired to be thinner. Using logistic regression analyses adjusted for age, sex, and MetS components, only the waist circumference was associated with the likelihood for weight loss management (odds ratio (95% confidence interval), 5.66 (3.79 – 8.44); $p < 0.0001$)

Conclusions

Our data shows that both men and women underestimate their weight and show distorted perceptions of their body shape, which influences participation in healthy initiatives or weight loss programmes. Our study contributes to the importance of mental health awareness in conjunction with physical health. We recommend that health facilities managing obesity include visual representations of body shapes corresponding to an individual's weight, which may assist in addressing the disconnect between how individuals perceive their body shape and their actual weight, thereby encouraging corrective health-conscious actions, such as improved dietary choices and increased physical activity.



Poster Presentation 11: Does housing type, in-migration status and household crowding predict self-reported mental health diagnosis among adults in Soweto and Thembelihle: Evidence from panel data analysis.

Takwanisa Machemedze

Background

This study investigates the association between housing type, in-migration status, and household crowding, with self-reported mental health diagnosis among adults residing within the Soweto and Thembelihle Health and Demographic Surveillance System (SaT-HDSS).

Method

Utilising three rounds of SaT-HDSS data from June 25, 2019, to July 24, 2022, the study describes the proportion of participants who had a prior diagnosis of mental health conditions (bipolar, depression, anxiety, dementia, Schizophrenia) that they were experiencing at the time. The study employs random effects panel logistic regression to model the effect of household characteristics on mental health, controlling for time-varying demographic factors (age, education, and employment status) and time-invariant characteristics (sex and neighbourhood).

Results

Over the three rounds, 61,641 unique respondents had mental health outcomes. The proportion reporting a prior mental health diagnosis remained consistent across rounds (0.74%, 129/17258 in round 5; 0.74%, 322/41355 in round 6; and 0.74%, 249/34897 in round 7). Among those who reported a mental health diagnosis, severity ranged from 49.6-56.5% mild, 37.0-39.8% moderate, and 6.0-13.2% severe. Across the rounds, 82.9-85.5% were diagnosed more than three years prior, and 90.7-93.6% were on treatment. Of those with mental health diagnoses, 4.7-8.8% lived in informal houses, 13.3-19.4% in crowded households, and 71.1-77.5% had in-migrated at least once. Participants who were living in formal houses were more than six times (aOR = 6.4, 95%CI: 1.3-32.3) likely to report mental health than those in informal houses. Living in crowded houses (aOR = 0.8, 95%CI: 0.4-1.6) and being an in-migrant (aOR = 1.2, 95%CI: 0.7-2.1) were both not significantly associated with a mental health diagnosis.

Conclusions

Significant mental health challenges in people living in formal houses may suggest differences in health-seeking behaviour and reporting bias compared to people living in informal houses. Results may also suggest differences in stressors between formal and informal dwellers.



Poster Presentation 12: Assessing HIV risk, perception, PrEP knowledge and preferences, and BART feasibility among young women in uMkhanyakude, KwaZulu-Natal

Siyabonga Dubazana

Background

Young women face a disproportionately high risk of HIV acquisition, with biological susceptibility, sexual risk behaviours, and structural factors contributing to this vulnerability. Despite these risks, young women often perceive themselves as being at low risk of HIV acquisition, which can hinder engagement with HIV prevention services. This study aims to explore the correlations between behaviour-based risk, self-perceived risk, and risk-taking propensity among young women.

Methods

This cross-sectional study will recruit 250 young women aged 18–30 years from the Africa Health Research Institute's Health and Demographic Surveillance System, part of the South African Population Research Infrastructure Network. Risk-taking propensity will be assessed using the BART, a computerised measure of risk taking propensity, alongside two self-reported measures: Perceived Risk of HIV Scale and the VOICE Risk Score. Descriptive and inferential statistical analyses, including correlations and regression models, will be used to examine relationships between BART scores, self-perceived risk, and behaviour-based HIV risk. Data collection for this study is currently underway and will be completed by June.

Results

The feasibility of the BART as a tool to measure risk-taking propensity in this population is a novel approach to understanding young women's likelihood of engaging in risky sexual behaviour. Moreover, this study moves beyond the traditional single-question measures of risk perception, allowing for a more nuanced understanding of young women's risk. Findings will help identify whether behavioural tasks such as BART can complement or enhance self-report measures of HIV risk perception and behaviour.

Conclusion

Integrating objective behavioural measures such as BART into HIV risk assessment could improve identification of individuals at heightened risk and inform tailored prevention strategies. This study has the potential to advance how risk is conceptualised and assessed among young women, thereby supporting more responsive HIV prevention interventions in high-burden communities.