

CDIA

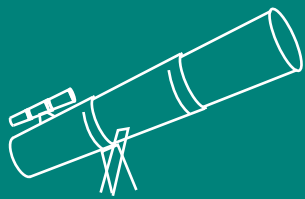
REPORT

2019

EDITED BY: **PROFESSOR NAOMI LEVITT**



CDIA Vision & Mission



OUR VISION:

To reduce the burden of chronic diseases and their risk factors in Africa.



OUR MISSION:

To develop, implement and evaluate interventions to prevent NCDs, reduce their risk factors and improve care at the level of communities, health services and policy.

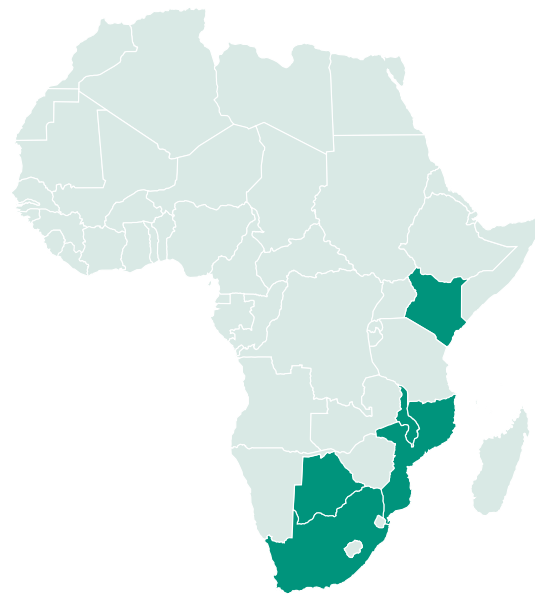
To develop public health research capacity and to enhance collaboration among researchers in the African region.

About CDIA

The Chronic Disease Initiative for Africa (CDIA) is a network of multidisciplinary researchers and policymakers drawn from multiple tertiary academic institutions in South Africa ([Universities of Cape Town, Stellenbosch, Western Cape, Witwatersrand, Pretoria, North West](#)), [South African Medical Research Council, and Africa](#) (Eduardo Mondlane University, Mozambique; University of Botswana; Malawi Epidemiology Research Unit) and Unit representatives from the South African Provincial and [National Department of Health](#).

The Centre serves as a regional hub for developing and evaluating models of chronic disease care and prevention. Since the launch in November 2009, the CDIA network has expanded to include members from Malawi, Kenya and Botswana and from the University of Pretoria and University of Witwatersrand in South Africa.

CDIA is currently involved in the postgraduate training of seven local and eight international students, registered at five national and international universities, and is unique in Africa in that it strives to connect scientists in an expanding collaborative network to optimise the contribution of the limited number of chronic disease researchers in the region.



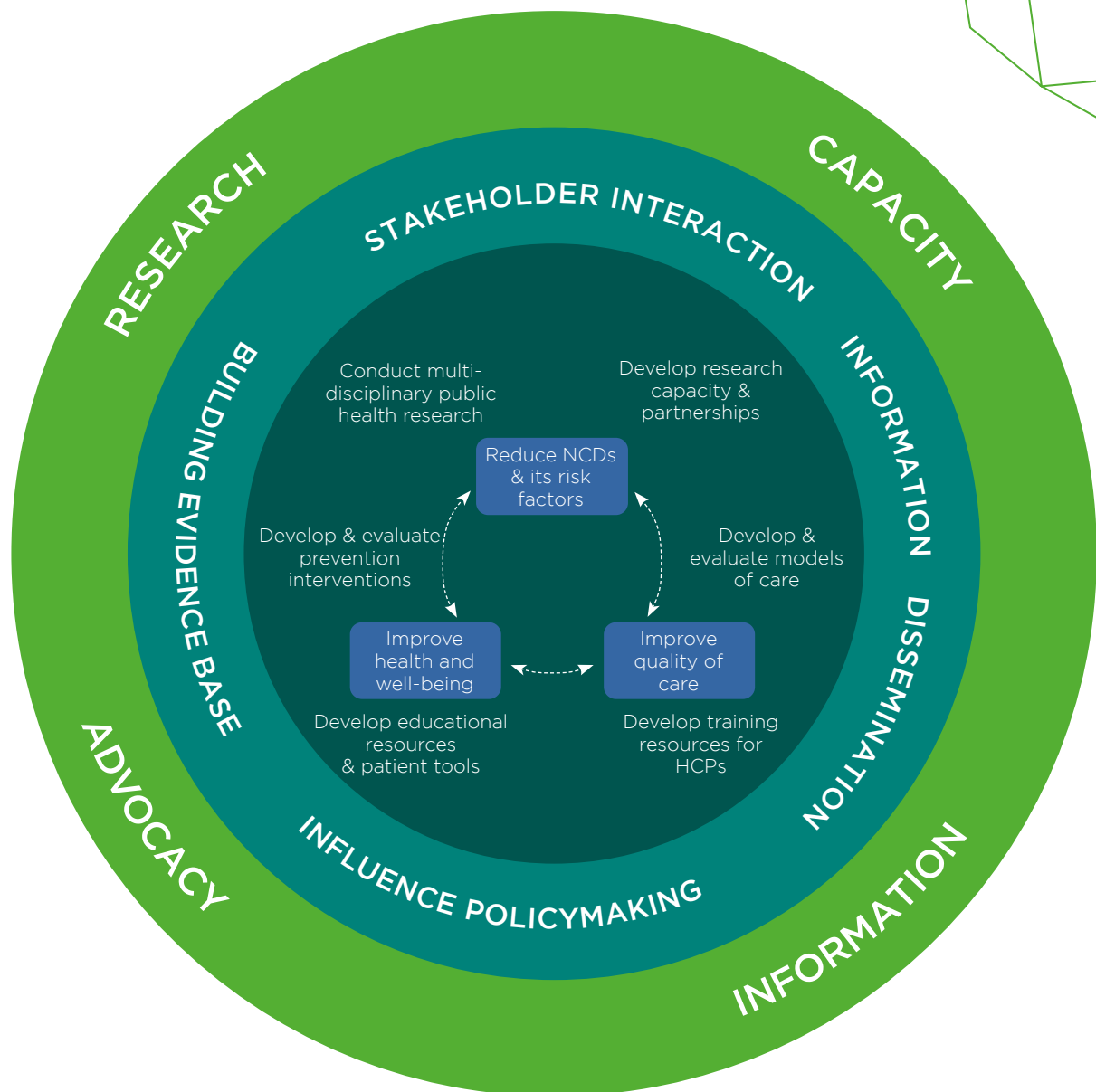
Postgraduate
training of
7 local and
8 international
students



Registered at
5 national
and international
universities



Conceptual Model



Director's Foreword

On behalf of the Chronic Disease Initiative for Africa (CDIA), it gives me great pleasure to present the updated report for 2019.

This report provides an overview of the activities conducted in the second to fourth year after the end of the first funding cycle. The focus has been on disseminating results of completed studies, implementing new projects, and developing funding proposals, while support for postgraduate students remained a core activity.

CDIA research projects are collaborative and take two forms: the first are projects managed from within the directorate, including IINDIAGO, STAR2D and elements of CEBHA+. The second are projects located within the CDIA member network but based at partner institutions, such as the University of Stellenbosch, UWC and Wits, including MIND, PRIME, SMART-2D and COBALT. For these projects, CDIA was involved in the conceptualisation, planning and fundraising, illustrating the extent and range of CDIA's collaborative research across institutions and research groups.

“CDIA continues to provide top-class research and capacity building in the field of NCDs and will continue to do so in the years to come.”



CDIA has continued to provide policy support and strategic advocacy, for example in relation to the South African NCD National Strategic Plan and the impact of alcohol and tobacco industry on public health and policymaking. We would like to acknowledge the guidance of the Governing Board chaired by the late Professor David Sanders and the Management Committee.

The Centre has faced several challenges, including the turnover of core staff of the Directorate and the passing of two of our dearest colleagues, Prof Krisela Steyn and Prof David Sanders.

Professor Dinky (Naomi) Levitt
MBChB, MD and FCP (SA)

Obituaries



PROF KRISELA STEYN

It is with great sadness that we inform you of the unexpected passing of our wonderful colleague and friend Krisela on 7 October 2019 when returning from a holiday in Italy. She was truly one of a kind and we will remember her as an inspiring public health researcher who was committed to reducing the personal and societal burden of non-communicable diseases. She was renowned for her collaborative style, affirmation of others, and mentoring the next generation of researchers, whilst being a single parent of four sons and, subsequently a proud grandmother of ten grandchildren.

Krisela spent all but the last 10 years of her career at the South African Medical Research Council where she was the founding Director of the Chronic Diseases of Lifestyle Unit, a WHO Collaborating Centre which conducted seminal work on the impact of hypertension and smoking as well as building the evidence base for interventions. Her work identified high risk groups and showed that South Africans at risk of cardiovascular diseases received inadequate treatment. Her work also highlighted the worsening risk factor patterns and urgency for interventions. She was a passionate advocate for the prevention and management of non-communicable diseases, and served on the boards of national organisations such as the Heart and Stroke Foundation. She was frequently consulted by the National Department of Health and contributed to global initiatives that brought these conditions to the forefront, culminating in the first high-level meeting on non-communicable diseases held by the UN in 2011.

Following her formal retirement from the SA-MRC she was appointed to UCT from 2005 where she assumed a pivotal role in establishing the Chronic Disease Initiative for Africa (CDIA). As a Deputy Director, she helped create the partnership between several Western Cape institutions with the ambition of developing and testing tools to address chronic diseases in the primary care setting and the community. She was instrumental in guiding CDIA towards implementation by building the partnership with government and non-governmental agencies and was dedicated to training and mentoring students in the complexities of public health research. She retired from CDIA in 2016.

Krisela was a role model in collaborative public health research and will be sadly missed by colleagues at UCT, the SA-MRC and well beyond.



PROF DAVID SANDERS

It is with equally great sadness that we inform you of the sudden passing of Prof David Sanders, our dear colleague, friend and chairperson of our Governing Board, while on holiday in the UK.

David Sanders, who was Honorary Professor in the Department of Paediatrics and Child Health, was revered as a giant in the field of both child and public health and an unwavering fighter for social justice. He was internationally recognised for his work to advance the cause of child health – via his networks locally and across the globe, through his involvement with national and liberation movements and his consulting work with organisations such as the World Health Organisation and UNICEF. In South Africa, he was highly active in supporting Health for All and People’s Health Movement, having been a founder member in 2000 and Co-Chair of the Global Steering Council for the last six years.

David started his public health career in the 1980s, where he was responsible for the design and coordination of a large rural health programme in Zimbabwe and started a national intersectoral programme to address child malnutrition, hailed as one of the great successes of the immediate post-independent Zimbabwe. He was appointed as the founding Director of the School of Public Health (SOPH) at the University of the Western Cape in 1993 and continued in that role until he retired in 2009. During his tenure SOPH grew to international recognition and trained numerous students from across Africa and the Indian subcontinent.

Prof Sanders was a prolific academic who wrote over 250 journal publications and four books. He was also the Editor of the Global Health Watch, the ‘Alternative World Health Report’. His many academic honours included being Visiting Lecturer at the London School of Hygiene and Tropical Medicine, and Honorary Professor at the same institution from 2005 to 2007; Visiting Professor at Charité–Universitätsmedizin, Berlin, and at the Centre for International Health, University of Bergen, Norway; Professor in the School of Medicine, Faculty of Health Sciences, Flinders University of South Australia and being awarded an Honorary Doctorate by the University of Cape Town in 2013 in recognition of his academic scholarship and multiple contributions to advance child health across the world. Professor Sanders was a highly esteemed colleague, whose passion for social justice in health inspired many. He touched many people deeply, sharing his passion for life and justice with warmth and good humour.

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CDIA Research Projects & Collaborations

IINDIAGO

**Integrated INtervention for DIAbetes risk
after GestatiOnal diabetes**



SUMMARY

Women with gestational diabetes mellitus (GDM) are at significant risk of developing Type-2 Diabetes (T2D) in the 5-10 years after a GDM pregnancy. In South Africa, most women with GDM receive good clinical care at tertiary level hospitals, but are lost to follow up after delivery and lack continued support for lifestyle change to minimise the risk of progressing to T2D.

The IINDIAGO study aims to develop and evaluate an intervention that i) offers convenient post-partum glucose monitoring at the Well Baby clinics, which mothers routinely visit to get their babies immunised and ii) sustains support for ongoing lifestyle change through individual counselling and peer support groups post-partum. Women with GDM have been recruited into the study from Groote Schuur, Tygerberg, Somerset and Mowbray Maternity in Cape Town and Chris Hani Baragwanath in Soweto and are followed up at eight weeks and 12 months after delivery. Primary outcomes are attendance for the six-week post-partum glucose test and diabetes risk at 12 months.

The IINDIAGO study is a five-year project (2015-2020) which includes three PhD and one Master's at UCT and three interns from Montreal, offering opportunities for training and participation in national and international conferences. To date, eight articles have been published in international peer-reviewed journals.



INVESTIGATOR(S)

Dinky Levitt (UCT); Christina Zarowsky (University of Montreal); Shane Norris (WITS), Katherine Murphy (UCT), Lisa Ware (Wits), Vicki Lambert, Janetta Harbron, Sharmilah Booley, Mushi Matjila (all UCT), Carl Lombard (SA-MRC); Mark Tomlinson, Magda Conradie (University of Stellenbosch)

STUDENTS

Lorrein Muhwava, Tawanda Chivese, Jean-Claude Mutabazi, Stephanie Krige

FUNDER

International Development Research Centre (IDRC)

STAR2D

SMS supporting TreAtment foR people with type-2 Diabetes



*StAR2D

SUMMARY

The overall aim of STAR2D is to test the effectiveness of sending short message service (SMS) texts in improving health outcomes and supporting medication adherence in patients with type 2 diabetes. An individually randomised controlled trial, with process and economic evaluation, was completed at the two study sites, one in Cape Town and the other in Lilongwe, Malawi in April 2019. Delivery of SMS messages was monitored centrally throughout the trial. We were able to follow up 92% of the 1186 trial participants. Analysis of the trial outcomes and interview data for the process evaluation are underway and the economic evaluation will follow thereafter.

To date, two papers have been published in international peer-reviewed journals.

ISRCTN REGISTRY NB

70768808

WEBSITE

<https://doi.org/10.1186/ISRCTN70768808>



PRINCIPAL INVESTIGATOR(S)

Andrew Farmer (Oxford University)

CO-INVESTIGATORS

Dinky Levitt, Stephanie Robinson, Moffat Nyirenda (LSHTM), Shane Norris (Wits), Natalie Leon (SA-MRC), Kirsty Bobrow (UCT), Emmanuelle Daviaud (SA-MRC), Mia Crampin (MERU), Lionel Tarassenko, Ly-Mee Yu, University of Oxford,

FUNDER

Global Alliance for Chronic Diseases (GACD), UK Medical Research Council

CEBHA+ Collaboration for Evidence-Based Healthcare and Public Health in Africa



SUMMARY

The Collaboration for Evidence-based Healthcare and Public Health in Africa (CEBHA+) is a collaborative project involving two German and seven African partners. It is aimed at building long-term capacity and infrastructure for evidence-based public health (EBPH) in Africa, including primary research, evidence synthesis and evidence-based policy-and-practice. CEBHA+ is informed by research priority setting and focuses on interventions to prevent, screen and treat diabetes and hypertension; and interventions to prevent road traffic injuries at a population level. In South Africa, the Centre for Evidence-based Health Care (CEBHC), Cochrane South Africa (CSA) and CDIA are contributors. CDIA leads a primary research task related to diabetes and hypertension, and CEBHC and CSA lead the research synthesis and knowledge translation components.

RESEARCH TASKS

The project includes five research tasks, including (i) evaluation of the effectiveness of different screening approaches for diabetes and hypertension, based on a literature review and field work in Ethiopia, Malawi and Rwanda; (ii) informing evidence-based policies and practices on integrated models of care delivery for diabetes and hypertension in SSA based on evidence review and synthesis, and implementation research; (iii) informing evidence-based policies and practices on population-level interventions to prevent diabetes and hypertension in SSA based on a systematic literature review, situation analysis, and the evaluation of ongoing population-level interventions targeting risk factors for diabetes and hypertension in Rwanda; (iv) evidence synthesis for improved implementation of road safety interventions in Rwanda and Uganda; and (v) promotion of an integrated, rigorous methodological approach across the CEBHA+ project.

CAPACITY DEVELOPMENT

The CEBHA+ capacity development-working group, comprising one member from each partner site, conducted a baseline survey among project partners to assess institutional capacity in terms of evidence-based health care training and training needs. The survey was administered online and circulated among partners for feedback. The results indicated few training initiatives linked to EBHC, systematic reviews and knowledge translation among African partner countries, with opportunities to address CEBHA+ staff development needs using short courses offered by partners from Germany and South Africa. Generic needs were thereafter addressed through transferable skills workshops planned throughout the project.

INTEGRATED KNOWLEDGE TRANSLATION (IKT)

IKT is implemented in conjunction with research tasks in all CEBHA+ partner countries, where site-specific IKT strategies are developed and implemented, recognising existing stakeholder relationships at partner institutions, the local context, and the varying needs of the research tasks. In addition, a coordinated IKT approach was developed to ensure that site-specific IKT strategies are sharing common ground and each follow the steps towards development, implementation and evaluation of IKT in CEBHA+. So far, this has entailed a foundational workshop with IKT focal points to introduce the concept of evidence-informed decision-making, IKT and the overall IKT approach in CEBHA+ which was organised in Cape Town in 2018, and the development of site-specific IKT strategies.

PRINCIPAL INVESTIGATOR(S)

Harriet Mayanja-Kizza (Makerere University, Uganda) Eva Rehfuess (Ludwig Maximilians University, Munich),

CO-INVESTIGATORS

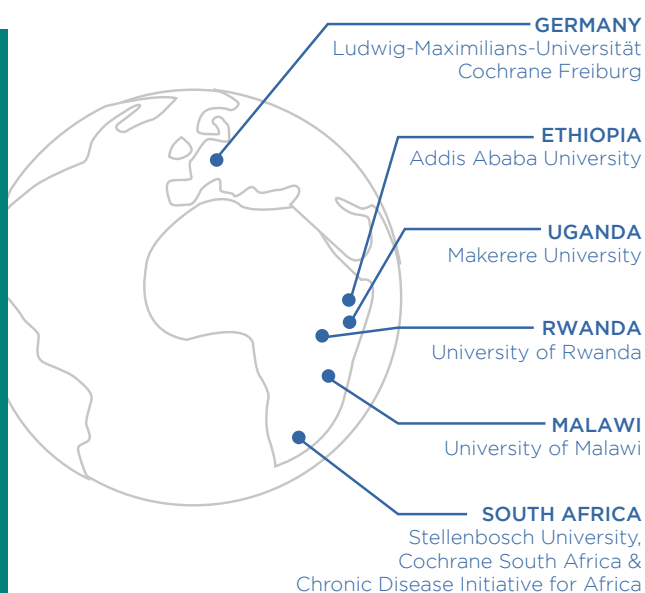
Dinky Levitt (UCT), Anke Rohwer (SU), Brenda Asimwe-Kateera, Olive Kobusingye, Taryn Young (SU), Rawleigh Howe (AHRI), Tamara Kredo (SA-MRC)

FUNDER

German Ministry for Education & Research (BMBF)

PERIOD

2017-2022



THE SOUTH AFRICAN TEAMS ARE INVOLVED IN THREE PRIMARY RESEARCH PROJECTS

Implementation of comprehensive patient education and counselling for NCDs



The prevalence, patterns and associations of multimorbidity in people living with HIV and on ART



Evaluation of the use of the total non-laboratory CVD risk score in Ethiopia, Rwanda and Malawi





Implementation of comprehensive patient education and counselling for NCDs

SUMMARY

This is a study nested within the larger CEBHA+ project to evaluate the implementation of comprehensive patient education and counselling for NCDs at two primary care facilities: Symphony Way Health Centre in the Metropolitan District and Cloetesville Health Centre in the rural Cape Winelands District.

Being comprehensive means implementing in an integrated way brief behaviour change counselling (BBCC) by primary care providers for the four key behavioural risk factors (unhealthy diet, physical inactivity, tobacco smoking and harmful alcohol use) as well as Group Empowerment and Training (GREAT) for diabetes, asthma, chronic obstructive pulmonary disease (COPD) and hypertension. In addition, appropriate patient education materials would be provided.

Implementation will involve collaborative inquiry groups at both facilities to explore how to do this over a two-year period and within a participatory action research approach.

Evaluation of implementation will involve a mixed methods study combining both quantitative and qualitative data to measure outcomes such as appropriateness, adoption, feasibility, fidelity, coverage, cost and sustainability.

This should form the basis of a doctoral study for Dr Joleen Cairncross. The project has now been running for almost a year and the co-operative inquiry groups have implemented BBCC and GREAT for diabetes. Next year we will develop and implement GREAT for asthma/COPD and hypertension as well as evaluate the success of initial implementation at the end of year one.

PRINCIPAL INVESTIGATOR(S)

Bob Mash, Joleen Cairncross
(Stellenbosch University)

FUNDER

German Ministry for Education & Research
(BMBF)



The prevalence, patterns and associations of multimorbidity in people living with HIV and on ART

SUMMARY

This is a study led by CDIA that is taking place in three countries- i.e. Ethiopia, Malawi and South Africa with different study protocols.

South African Study Investigators: Naomi Levitt, Ntobeko Ntusi, Landon Myer, Joel Dave, Kirsty Bobrow, Mashudu Mthethwa (UCT/CDIA) and Bronwyn Myers (SA-MRC).

This cross-sectional study is being conducted in HIV-infected individuals ≥ 35 years old, and on ART for at least two years attending Gugulethu HIV clinic and ART adherence clubs. Using validated questionnaires, clinical measurements and biochemical tests, the prevalence of the following chronic conditions are being assessed: cardiometabolic disease including hypertension, diabetes and dyslipidaemia, mental disorders, renal disease, musculoskeletal pain, chronic respiratory disease, ischaemic heart disease and stroke. Validated questionnaires are also being used to assess quality of life, cognitive function and sense of coherence. The findings of this study will contribute to the existing yet limited knowledge on the prevalence and patterns of multimorbidity and the impact of these on quality of life, cognitive function and health care utilisation in PLWH in South Africa.

PRINCIPAL INVESTIGATOR(S)

Naomi Levitt (CDIA), Mia Crampin (MERU)
Rawleigh Howe (Ethiopia)



Evaluation of the use of the total non-laboratory CVD risk score in Ethiopia, Rwanda and Malawi

SUMMARY

This project, being led by CDIA has the following objectives: To compare the laboratory-based Framingham CVD risk score and the non-laboratory-based score in identifying the most at-risk persons in each of the countries; to assess the knowledge and perceptions of cardiovascular disease (CVD) risk in two communities in each country, with a view to developing recommendations for improving risk communication; to implement population-based CVD risk assessments, referrals and risk communication in the three countries using community health workers.

PROGRESS

Preliminary analysis of the three countries, risk score is underway. All three countries have begun addressing the second objective. Kufre Okop visited each county to facilitate Citizen Science training, data collection and stakeholders' advocacy workshops. The focus group discussions and citizen science data collection has been completed and data analysis is underway. Citizen Scientists-led community advocacy with relevant key stakeholders in the rural and urban communities yielded immediate outcomes such as support for pilot CVD prevention intervention programmes in Ethiopia and Rwanda. The last phase, namely implementing a pilot programme of population-based CVD risk assessments, referrals and risk communication in the three countries using community health workers is planned for 2020.

INVESTIGATOR (S)

Naomi Levitt, Kufre Okop, Katherine Murphy, Vicki Lambert (CDIA), Kiya Kedir, Hailemichael Getachew, Rawleigh Howe (Ethiopia), Stephen Kasenda, Effie Chipeta, Mia Crampin, Christopher Burn (Malawi), Jean Berchmans, Seleman Ntweu, Charlotte Burvum (Rwanda)



DEVELOPING AND EVALUATING MODELS OF CHRONIC DISEASE CARE



PRIME

Collaborative care model for the detection and management of depression among adults receiving treatment for hypertension



SUMMARY

The aim of PRIME is to determine the real-world effectiveness of strengthened, integrated depression care among patients with co-existing hypertension, in a district where the integrated chronic care approach is being piloted.

The PRIME intervention has three components: Supplementary training in the mental health components of Adult Primary Care guidelines (APC); clinic-based counsellors equipped to provide morning talks on mental health to promote mental health literacy, manualised counselling for depression (eight sessions, individual or group) and adherence counselling (individual); and clinical communications skills training for nurse clinicians. The trial includes patients attending primary care clinics, receiving anti-hypertensive therapy with co-morbid depression and assessment using the Patient Health Questionnaire (PHQ-9). It is a pragmatic cluster randomised controlled trial with 20 clinics in the Dr Kenneth Kaunda district of the North West Province randomised to two parallel arms, and outcomes are assessed on individual participants.

PROGRESS

A total of 1043 patients were enrolled in the study in 2015 and interviewed by trained fieldworkers. Nurses in the intervention clinics received supplementary training in the mental health components of Adult Primary Care (APC) guidelines from April 2015, and counsellors were placed at the facilities from June 2015. Patients were re-interviewed six and 12 months after their baseline interview, with 91% follow-up rate at six months, and 89% follow-up rate at 12 months.

The trial and data analyses are completed and the manuscripts with the results will be submitted in 2020.

PRINCIPAL INVESTIGATOR(S)

Inge Petersen (University of Kwazulu- Natal), Lara Fairall (Kings College)

CO-INVESTIGATORS

Naomi Folb, Babalwa Zani, Daniella Georgeu-Pepper, Tasneem Kathree, Crick Lund, Naomi Levitt (UCT), Arvin Bhana, One Selohilwe, Ruwayda Petrus, Ntokozo Mntambo, (UKZN), Carl Lombard (SA-MRC), Max Bachmann(University East Anglia), Thomas Gaziano (Harvard University), Graham Thornicroft (KCL)

FUNDER

DFID

COBALT

Collaborative care for the detection and management of depression among adults receiving antiretroviral treatment in South Africa



SUMMARY

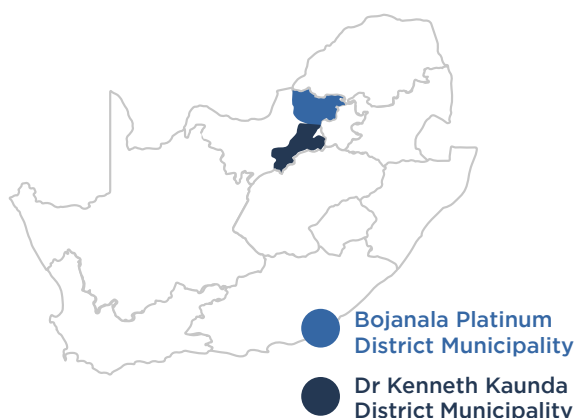
The study aims to assess the effectiveness of a collaborative model of care for the detection and management of depression among adults receiving antiretroviral therapy, in reducing depressive symptoms and improving viral load suppression.

The COBALT intervention has the same three components described earlier in the PRIME intervention: supplementary training in the mental health components of APC guidelines; clinic-based counsellors equipped to provide morning talks on mental health to promote mental health literacy, manualised counselling for depression (eight sessions, individual or group) and adherence counselling (individual); and clinical communications skills training for nurse clinicians.

The trial includes patients attending primary care clinics, receiving anti-retroviral therapy and with co-morbid depression as assessed using the Patient Health Questionnaire (PHQ-9). It is a pragmatic cluster randomised controlled trial with 40 clinics in the Dr Kenneth Kaunda and Bojanala districts of the North West Province randomised to two parallel arms, and outcomes assessed on individual participants.

PROGRESS

Overall 2002 patients were enrolled in the study and interviewed by trained fieldworkers. Nurses in the intervention clinics received additional training and behavioural health counsellors were placed at the facilities. Patients were re-interviewed six and 12 months after their baseline interview, with 88% follow-up rate at six months, and 84% follow-up rate at 12 months. The trial is completed, data analysis finalised and the results being prepared for publication.



PRINCIPAL INVESTIGATOR(S)

Lara Fairall (UCT and King's College London), Inge Petersen(UKZN)

CO-INVESTIGATORS

Babalwa Zani, Naomi Folb, Daniella Georgeu-Pepper (KTU, UCT), One Selohilwe, Ruwayda Petrus, Jill Hanass-Hancock, Ntokozo Mntambo, Tasneem Kathree (UKZN), Arvin Bhana, Carl Lombard, Max Bachmann, Crick Lund (KCL, UCT), Paul McCrone (KCL), Sergio Carmona (WITS), Thomas Gaziano (Harvard), Naomi Levitt, Graham Thornicroft (KCL)

FUNDER

NIMH (USA)

SMART2D

Self-Management Approach and Reciprocal Transfer for Type-2 Diabetes



SUMMARY

SMART2D is a multi-centre study aimed at exploring new interventions to address the growing burden of type-2 diabetes in high-, middle- and low-income countries. The four-year project was launched in 2015 and included a formative phase and an intervention development and implementation phase. The formative research was led by the University of the Western Cape and included a situation analysis of policy and civil society stakeholders; a scoping review to inform cross-lessons from other chronic diseases (including HIV/AIDS); a literature review on the role of CHWs in type-2 diabetes self-management; and empirical research to collect data on NCD perceptions, health services delivery and NCD care and management in a local township.

The intervention consisted of a trial, comparing a facility- versus a facility- and community-based model of NCD care and management in another township (Khayelitsha). Intervention strategies focused on facility- and community-based approaches, including evaluating community health workers in supporting patient self-management.

The study has resulted in the publication of two papers in high-impact journals, and presentations at international conferences, including the European Conference on Tropical Medicine and International Health in 2017, Health Systems Global 2018 and the 2018 International Congress of Behavioural Medicine.



PRINCIPAL INVESTIGATOR(S)

Meena Daivadanam (Karolinska Institutet)

CO-INVESTIGATORS

Josefien van Olmen (Institute of Tropical Medicine), Pilvikki Absetz (University of Eastern Finland), Helle Molsted-Alvesson (Karolinska Institutet) David Guwatudde, Elizabeth Ekirapa, Roy Mayega (Makerere University), Peter Delobelle, Thandi Puoane, David Sanders (UWC)

FUNDER

EU Horizon 2020

ROFE

Researching Obesogenic Food Environments in South Africa and Ghana

SUMMARY

ROFE is undertaken by researchers from the University of the Western Cape School of Public Health in collaboration with the Kwame-Nkrumah University of Science and Technology in Kumasi, Ghana.

Findings reveal how food system changes are transforming food environments by making ultra-processed food more available and accessible even to impoverished households, thereby promoting obesity and various NCDs. These insights have been shared at various fora across diverse networks. By making obesogenic food environments more visible, the ROFE project is informing governance strategies that respond to the links between food system transitions, neighbourhood food environments, household poverty and obesity. The project involves three PhD students, whose proposals have been submitted, and 2 Masters' students. Each of the students are at various stages of progress. The PhD students use sections of the data generated which they complement with additional data. Students are in the process of writing up publications for their PhDs. Masters students (full thesis) conducted the specific component of research that they are writing up and an additional mini-thesis student is doing secondary data analyses as part of their mini-thesis.

A paper has been published in a major international peer-reviewed journal showing that South African respondent households consume ultra-processed and obesogenic foods far more frequently than their Ghanaian counterparts do. Several other papers are in progress with the intention to publish as a supplement to an international journal in 2020.



PRINCIPAL INVESTIGATOR(S)

David Sanders, Rina Swart (UWC)

CO-INVESTIGATORS

Reginald Annan (Ghana),
David Neves (UWC), Robert Naidoo

FUNDER

International Development Research
Centre (IDRC)

PURE Prospective Urban & Rural Epidemiological Study



PURE is a longitudinal cohort study in which changing lifestyles and chronic disease risk factors are tracked among 150,000 people spread across 17 high- to low-income countries worldwide over a period of 15 years. The study includes investigation of community-level factors (urban-rural differences; built environment; policy environment related to tobacco and food; and social factors), household-level factors (family structure; income; housing) and individual-level factors (lifestyle behaviours and attitudes, and genetic markers).

From 2009, the UWC School of Public Health has been leading the research collaboration in the Western Cape (urban) and the Eastern Cape (rural) sites, with researchers from the Medical Research Council, Human Sciences Research Council and the University of Cape Town. North West University started data collection in 2005 and leads the research collaboration in urban and rural sites in North West Province and has now been appointed as the African focal point, guiding teams in Zimbabwe, Tanzania and Rwanda. When the UWC arm of the study was initiated in 2009, it incorporated urban and rural communities in the Western Cape and Eastern Cape in the global study. In 2013, the PURE study team chose to link the project to the CDIA network.

The PURE study will go into year nine of its data collection in 2020 and in 2021 will roll out to two more rural and two more urban sites for the UWC component. In doing so, it will expand the collaboration to other institutions. NWU will do year 15 data collection in 2020 and also roll out to two new sites in 2021.

PRINCIPAL INVESTIGATOR(S)

Lanthe Kruger (North West University), Rina Swart (UWC)

CO-INVESTIGATORS

Herman Myburgh (North West University), Lungiswa Tsolekile, Thandi Puoane (UWC)

FUNDER

Public Health Research Institute (PHRI), McMasters University Canada with some funds from SA-MRC, NRF and DST/NRF CoE in Food Security

DPP Diabetes Prevention Program for the developing world



SUMMARY

DPP for the developing world was initiated as part of the collaboration with the University of Missouri and Children's Mercy Hospital in 2016. The study involves contextualising DPP for the local study setting (Khayelitsha - urban setting), including implementation of the intervention in support groups facilitated by CHWs; enhancing the intervention through interactive text messaging; and enhancing CHW communication skills through simplified Motivational Interviewing techniques. The feasibility and effectiveness of intervention were tested in a second phase, consisting of a two-year cluster randomised trial of sixty health clubs in the study site with a cross-over from usual care to intervention after the first year.

The first phase of implementation started in 2018 after recruitment and enrolment of eligible overweight participants from a total of 52 randomised health clubs from Khayelitsha and Nyanga townships that are supported by a local NGO (South African Christian Leadership Association). The same will occur for the waitlisted clubs in year three of the project, once study biometric and survey data have been collected.

Study results have been presented at national and international conferences (including the Annual Meeting of the Society of Behavioural Medicine; North American Social Networks Conference, Washington, DC; Health Psychology Innovations Conference, New Zealand; Life Through Movement International Conference Port Elizabeth, Public Health Association of South Africa Annual Conferences).



PRINCIPAL INVESTIGATOR(S)

Delwyn Catley (University of Missouri),
Thandi Puoane (UWC), Ken Resnicow
(University of Michigan)

CO-INVESTIGATORS

Kathy Goggin (University of Missouri),
Kathy Fleming (University of Michigan),
Lungiswa Tsolekile (UWC), Vicki Lambert,
Dinky Levitt (UCT)

FUNDER

National Institutes of Health (NIH)

Project MIND

Strengthening South Africa's health system through integrating treatment for mental illness into chronic disease care



SUMMARY

Integrating mental health care into primary health services could reduce the impact of chronic diseases in low- and middle-income countries. There is limited knowledge of how mental health care can be integrated into chronic disease services in ways that are acceptable, feasible and effective. Project MIND aims to assess whether a “dedicated” approach to integrating mental health care (wherein a community health worker (CHW) has the sole responsibility of delivering mental health care) or a “designated” approach (wherein a CHW provides this service in addition to usual responsibilities) is most effective and cost-effective for improving mental health and chronic disease outcomes in people with HIV or diabetes. This three arm cluster randomised trial that includes a treatment-as-usual arm, is taking place in 24 primary health care facilities in the Western Cape province of South Africa. The primary outcomes are reductions in self-reported hazardous/harmful alcohol use and risk of depression. Secondary outcomes are HIV viral load and HbA1c and adherence to chronic disease treatment.

Recruitment has been completed (n= 1348), with 620 participants with diabetes and 809 participants being treated for HIV. The interventions have been provided and the six-month follow up assessments have been completed (follow up rate: 87%). Twelve-month follow up assessments are ongoing, with the study coming to a close on 1 February 2020. Six papers have been published in international peer-reviewed journals to date.

PACTR REGISTRATION

PACTR201610001825403

PROJECT WEBSITE

<http://projectmind.mrc.ac.za/>

PRINCIPAL INVESTIGATOR(S)

Bronwyn Myers (SA-MRC)

CO-INVESTIGATORS

Dinky Levitt, Katherine Sorsdahl, John Joska, Dan Stein, Crick Lund, Sue Cleary (All UCT), Carl Lombard (SA-MRC), Tracey Naledi (Western Cape DOH), Christopher Butler (Oxford University)

FUNDER

Joint Health Systems Research Initiative (UK Medical Research Council, DfID, Wellcome Trust)

Supporting community health workers through interprofessional learning

SUMMARY

This project aims to develop a strategy and toolkit to support CHWs through interprofessional learning (IPL) in the Western Cape, by investigating existing NCD management support systems for CHWs and testing and evaluating the model among a sample of CHWs and UWC students using a pre-/post-design and a validated questionnaire to assess IPL readiness.

The project is based on a previous partnership with VIVES Belgium (2017-18) in which Communities-of-Practice (CoPs) were established in rural communities in the Vhembe District to strengthen capacity of CHWs in NCD prevention and lifestyle changes. The project used participatory techniques to facilitate social learning and exchange of knowledge and best practices with regard to healthy lifestyle habits and NCDs and was co-hosted in South Africa by T. Puoane and P. Delobelle from the UWC School of Public Health.

Process evaluation pointed to the high perceived satisfaction of CoPs to act as a knowledge exchange platform and hence their usefulness in terms of creating sustainable learning networks among CHWs.



PRINCIPAL INVESTIGATOR(S)

Prof Lizbeth Netshikweta (University of Venda), Thandi Puoane (UWC), Dr Marianne Reid (University of Free State), Tony Claeys (VIVES, Belgium)

CO-INVESTIGATORS

Dr Josefien van Olmen (Institute of Tropical Medicine), Prof Edwin Wouters (University of Antwerp), Dr Peter Delobelle, Lungiswa Tsolekile, & Firdouza Waggie (UWC)

FUNDER

Flemish Interuniversity Council (VLIR)

GDAR
Global Diet and Activity Research
<https://www.gdarnet.org>



SUMMARY

The goal of the Global Diet and Activity Research Group and Network (GDAR) is to help prevent non-communicable diseases (NCDs), such as type 2 diabetes, heart disease, and cancers, in low and middle income countries (LMICs). Our work involves finding solutions that are affordable and created in partnership with local communities. GDAR builds on the expertise and knowledge of research in Cameroon, the Caribbean, Kenya, South Africa and the UK. The current Work Packages in the GDAR research portfolio are:

1. **Evidence review and synthesis.** This work involves identification and review of published and grey literature from Africa and the Caribbean to investigate determinants of diet and physical activity in LMICs.
2. **Transport and Health Modelling.** This study is focused on the potential for modelling the health impacts of current travel patterns, and of potential changes in those impacts if travel patterns were changed.
3. **Interventions for diet and physical activity in adolescents.** This study aims to identify a system of factors that can be leveraged to improve health outcomes.
4. **Mapping the policy environments and processes relevant to the determinants of NCDs across African and Caribbean settings.**
5. **Voluntary pledge assessment.** The evaluation of the food and beverage environment in primary schools in Gauteng province in South Africa
6. **Hypermarket, foodscape and health.** This study concerns a natural experimental evaluation of the impacts of a new hypermarket in Kisumu, Kenya, on food shopping practices, dietary behaviours, physical activity patterns and nutritional status in local residents.

PRINCIPAL INVESTIGATOR(S)

Tolullah Oni, Nick Wareham (Joint Leads, SA-MRC Epidemiology Unit, University of Cambridge)

CO-INVESTIGATORS

Estelle Lambert, Maylene Shung-king (UCT), Karen Hofman, Shane Norris, Lisa Micklesfield (Wits), Jean Claude Mbanya, Eugene Sobngwi, Felix Assah (Yaounde), Marshall Tulloch-Reid, Ishtar Govia, Ian Hambleton, Alafia Samuels, Joanne Smith (University of the West Indies), Charles Obonyo, Pamela Wadende (Kenya Medical Institute of Research), Louise Foley, Nigel Unwin, James Woodcock (SA-MRC Epidemiology Unit, University of Cambridge)

FUNDER

NIHR Global Health Research initiative

Capacity Building

R³

Robust Relevant Reviews

As part of the R³ - Robust Relevant Reviews to inform CDIA, an online course was developed to increase the capacity of researchers, practitioners and policymakers to use systematic reviews. This course, originally developed by the Effective Health Care Research Consortium (www.evidence4health.org) as a face-to-face course, is now available as an online six-week course accredited by Stellenbosch University. The course consists of presentations, practical examples, links to relevant resources, exercises and self-assessments. Participants commit two-four hours per week and engage with each other and facilitators, before, during and after the course.

The online course underwent extensive user testing during the development stages, specifically to evaluate the content, accessibility and usability from clinicians, students, researchers and policymakers. This was evaluated using a mixed method study, drawing from both qualitative (in-depth interviews and focus groups) and quantitative data (via online surveys). Participants reported enjoying the interactive nature of the course, the use of relevant examples, blended teaching approach, and called for expansion of the workshop to reach a wider audience. For many, it was the first time they had read a systematic review. Reported benefits included learning at participants' own pace and in a place convenient to them. Participants liked the self-assessment and the variety of activities and resources.

An outline of the course was presented at the Global Evidence Summit in September 2017 in Cape Town.

IMPLEMENTING PARTNER

Michael McCaul, Anke Rohwer, Solange Durao, Tamara Kredo, Paul Garner, Taryn Young (Centre for Evidence-Based Health Care, Division of Epidemiology & Biostatistics, Stellenbosch University; Cochrane South Africa)

GREAT Implementation of GRoup Empowerment And Training for diabetes

LIVING GREAT WITH DIABETES

This project is funded by the World Diabetes Foundation with the intention of implementing Group Empowerment and Training (GREAT) for diabetes in all nine provinces of South Africa. GREAT for diabetes was developed in Cape Town as a group diabetes empowerment programme with four sessions and has been evaluated in a pragmatic randomised controlled trial as well as a quasi-experimental study.

Training of facilitators for GREAT has been completed in the Khayelitsha-Eastern Substructure of Cape Town, City of Johannesburg, North West Province and KwaZulu-Natal. Next year training is already planned for Northern Cape, City of Tshwane and Mpumalanga. Ten primary care facilities will implement GREAT for diabetes in each province.

Funding has just been obtained from the SA-MRC to also research the implementation of GREAT for diabetes in 2020-21 under the Global Alliance for Chronic Diseases umbrella.

IMPLEMENTING PARTNER

Bob Mash, Joleen Cairncross (Division of Family Medicine and Primary Care, Stellenbosch University)



Brief behaviour change counselling

Dr Zelra Malan previously developed the model of brief behaviour change counselling (BBCC) in her doctoral study and evaluated a training programme for primary care providers. This showed that primary care providers changed their clinical practice and achieved competency in BBCC after eight-hours of training.

Subsequent to this the Department of Health and other stakeholders have requested training of primary care providers in BBCC. The BBCC approach has been included in the 2019 primary care guideline for the Western Cape and training has been offered to a wide variety of primary care providers from different institutions, including clinical nurse practitioners, medical doctors, social workers and occupational therapists. Registrars in Family Medicine and undergraduate medical students are also being trained in this approach at Stellenbosch University, and this has been included in the postgraduate Family Medicine curriculum. Previously, faculty representatives from all Departments of Family Medicine in the country were trained to offer training in BBCC.

In addition, Dr Jani Fouche has established the validity and reliability of the Assessment of Brief Behaviour Change Counselling (ABC) tool as part of her Master's research. Dr Johan Ganzevoort is evaluating the effect of BBCC in a rural primary care facility where obesity and overweight are targeted.

Work is ongoing with the SA Academy of Family Physicians to provide BBCC as an online course for continuing professional development of health care providers.

IMPLEMENTING PARTNER

Zelra Malan, Bob Mash, Jani Fouche, Johan Ganzevoort (Division of Family Medicine and Primary Care, Stellenbosch University), Katherine Murphy (CDIA, UCT)

World Health Organisation (WHO) Guidelines Development for Physical Activity in Persons Living with HIV/AIDS-Umbrella Review

This project is part of the WHO guidelines development process for Global Recommendations for Physical Activity and Health 2020. Professor Estelle Lambert is part of the WHO Guidelines Development Group, and through this opportunity, was able to advocate for the need for a physical activity guideline for persons living with HIV/AIDS (PLWHA) as a chronic disease.

Through HPALS, UWC, CDIA and the Desmond Tutu HIV Foundation, a team of post-doctoral fellows and PhD candidates, with oversight from Assoc. Professor Lloyd Leach (University of Western Cape Dept of Sport, Recreation and Exercise Science), are completing a commissioned umbrella review for the WHO. This project will result in evidence-based physical activity recommendations for persons living with HIV/AIDS (PLWHA). To provide some idea of the scope of HIV, in 2017 there were approximately 36.9 million people worldwide living with HIV/AIDS, 53% of whom were from Eastern and Southern Africa, with approximately 5000 new infections per day (www.hiv.gov). Nearly 60% of PLWHA are receiving anti-retroviral therapy, and there has been an overall reduction in HIV/AIDS-related deaths. Thus, PLWHA may live active, productive lives. Moreover, antiretroviral therapy may predispose these individuals to cardiometabolic co-morbidities, and centralisation of body fat, and PLWHA may also experience substantial psychological distress, neurological disorders, and fatigue. The outcomes that this review will focus on include: 1. Centralisation of body fat, body fat redistribution; 2. Risk of co-morbid conditions (cardiometabolic markers) 2. Physical function 3. Health-related quality of life 4. Mental Health 5. Cognitive Function 6. Disease progression (Viral Load, CD4 count, AIDS-defining conditions- sarcoma etc.)

This project is capacity developing, requiring rigorous methodology, collaborative work, reaching consensus, drafting/editing/finalising a report, quality assessment of peer-reviewed manuscripts, and data abstraction. Additionally, this review has been earmarked for publication in the British Journal of Sports Medicine.

IMPLEMENTING PARTNER

Prof. Lloyd Leach, Dr. Smart Mabweazara, Dr. Sunday Onagbiye (University of the Western Cape, UWC), Dr. Nancy Laguette, Dr. Kate Larmuth, Dr. Feyi Odunitan-Wayas (UCT HPALS), Dr. Kufre Okop, Dr. Mashudu Mthethwa (CDIA), Dr. Phillip Smith (Desmond Tutu HIV Foundation). Lisa Micklesfield (Wits), Prof. Estelle (Vicki) Lambert

Other initiatives

WoW! Western Cape on Wellness



The Western Cape on Wellness (WoW!) initiative is a transversal health promotion initiative, founded by Dr. Frederick Marais, and implemented by the Western Cape Government Department of Health, and involves health champions, who operate in worksites, communities and schools, to support health behaviour and lifestyle change in their respective settings. Professor Estelle (Vicki) Lambert leads the Training, Implementation, Research & Evaluation Consortium (Three TIREC), which is a collaboration between all 4 tertiary academic institutions, for programme development and evaluation. Three of these tertiary academic institutions in the Western Cape were responsible for Phase One pilot of the programme, evaluating impact and attrition. This work has been presented at the International Society for Behavioural Nutrition and Physical Activity Annual Meeting in Prague (2019) and there are three manuscripts in preparation. The programme is now in Phase Three of its development and evaluation. The programme is also the basis of a Worldwide University Network (WUN) collaboration between the University of Bristol and the University of Cape Town. This has resulted in a four-year successful PhD Cotutelle programme, during which time, the WoW! initiative will undergo social network analysis, and realist evaluation, to better understand what works, and in what context, and by what mechanism. The programme is also now being implemented as part of the BSc Nursing programme at the University of Stellenbosch. Funding has been secured for 2020-2022, through the Western Cape Department of Health. To date, over 700 wellness champions have been trained, there are over 130 active WoW! groups, over 70 WoW! partners, and activities ranging from WoW! group activities, to public physical activity events and activations, vegetable gardening workshops, plant-based cooking electives, first-aid and first-responder training, and health risk screening.

In 2018, the Centre for Evidence-based Health Care (CEBHC) represented by Dr Celeste Naude continued to partner with the Western Cape Government Department of Health (WCDoH) to support WoW!. Celeste provides support to WoW! by serving as member of the WCDoH Technical Reference Group for Healthy Eating. The initiative aims to both co-develop, test, evaluate and systematise (institutionalise) a healthy lifestyle initiative that is multi-sectoral (“all of government” and “all of society”), multi-modal (uses various methods), area-specific and that follows a person-centred life course approach (ultimately from pre-pregnancy to senior citizens).

WoW! implements activities and interventions that address both individual health behavioural, and social determinants of health in order to co-create enabling environments and prevent, reduce and better manage the burden of non-communicable diseases (including obesity) as the first focus.

WoW! is being developed in alignment with international, national and provincial policies and strategies. These interactions serve to promote the use of best-available research evidence along with other important contextual factors to support evidence-informed decision-making that can benefit the broader community through better interventions for improved health. <https://www.westerncape.gov.za/westerncape-on-wellness/>



CDIA Students

Masters

ENOCK HAVYARIMANA MPH UCT

Blood pressure variation and its association with outdoor temperature among adults with hypertension in a primary care setting in South Africa.

NINA ABRAHAMS MPH UCT

Factors that influence patients' empowerment in-patient chronic care: An evaluation of a Diabetes care intervention in South Africa.

KIRSTEN BOBROW MMED UCT

Burden and severity of neurocognitive impairment in adults with type 2 diabetes in primary care in South Africa: a cross-sectional analysis using a novel screening tool.

MAGRET HAYNES MSC NURSING UCT

Prevalence of overweight and obesity in children aged five to six years exposed to gestational Diabetes Mellitus-complicated pregnancies in the Western Cape, South Africa.

PhD Thesis topics

Type 2 diabetes after gestational diabetes in Africa: prevalence, risk factors, screening and prevention.

Early detection, prevention and self-management of type 2 diabetes and hypertension in an urban township in the Western Cape, South Africa.

Formative research for the development of an appropriate, acceptable and feasible intervention aimed at reducing type 2 diabetes risk in disadvantaged women after gestational diabetes in South Africa.

Collaborative care for the detection and management of depression among adults receiving antiretroviral therapy in South Africa: a pragmatic cluster randomised controlled trial (COBALT).

Evidence-based strategy for primary care level Type 2 diabetes mellitus management in SA: A comprehensive Community Health Worker-based Supported Self-management intervention.

Development and evaluation of a home-based stroke rehabilitation programme for a primary health care setting in the Western Cape, South Africa.

The Response of the National Health System to the Burden of the Non-Communicable Diseases: Policy, Health Care System and Community Perspectives in Mozambique.



PhDs

TAWANDA CHIVese (PHD, MEDICINE, UNIVERSITY OF CAPE TOWN)

Supervisors

Prof Naomi Levitt (Department of Medicine, CDIA, University of Cape Town) and Prof Shane Norris (SA-MRC / Wits Developmental Pathways for Health Unit, University of the Witwatersrand)

Thesis topic

Type 2 diabetes after gestational diabetes in Africa: prevalence, risk factors, screening and prevention

Expected graduation

June 2020

Summary of Research

Women with a history of gestational diabetes (GDM) constitute a high-risk group for developing type-2 diabetes. Although GDM substantially increases the risk for development of T2D, and may increase the risk for cardiovascular risk and possibly overweight in their children, no study has evaluated how African women with GDM pregnancy progress to T2DM, the role of the traditional and non-traditional risk factors in this progression, the link between GDM and cardiovascular risk, and the role of GDM in childhood overweight.

Progress

The research consists of a systematic review exploring the prevalence of type 2 diabetes in women of child-bearing age in Africa and a cross-sectional study investigating the prevalence of, and risk factors for T2D in women with a history of GDM in South Africa.

The overall aim of this study is to investigate the prevalence of risk factors for and interventions to delay or prevent T2D in African women of child-bearing age, particularly those who have had previous GDM. Phase One included a systematic review and meta-analysis as reported in studies during the period 2000 to 2016. A protocol was published on [BMJ Open](#) and the review article is being finalised for publication.

Phase Two included assessment of the prevalence of and risk factors for T2D in women previously managed for GDM five years ago in the Western Cape region of South Africa. Data management is currently in progress.

In Phase Three the diagnostic accuracy of HbA1c in screening for T2DM in African adults was assessed by using a systematic review and meta-analysis of studies of HbA1c diagnostic accuracy. The protocol for this study has been published on PROSPERO. Six studies meeting the inclusion criteria have been identified and data analysis is in progress.

Publications

Chivese T, Mahmoud W, Magodoro I, Kengne AP, Norris SA, Levitt NS. Prevalence of type 2 diabetes mellitus in women of childbearing age in Africa during 2000–2016: protocol of a systematic review and meta-analysis. *BMJ Open*. 2016 Dec 1;6(12):e012255



TINY MASUPE (PHD, PUBLIC HEALTH, UNIVERSITY OF WESTERN CAPE)

Supervisors

Dr Peter Delobelle, Dr Hanani Tabani,
Prof Thandi Puoane (School of Public
Health, University of the Western Cape)

Thesis topic

Early detection, prevention and self-management of type 2 diabetes and hypertension in an urban township in the Western Cape, South Africa

Expected graduation

June 2020

Summary of Research

The rising burden of T2D and hypertension and the impact of NCDs on weak public health systems in LMICs requires innovative approaches to disease prevention and management. T2D and hypertension are NCDs that are preventable through early risk factor detection and self-management, but late diagnosis remains a problem. We hypothesise that self-efficacy plays a critical role in health-seeking behaviour and that effective contextualised interventions that promote patients' self-efficacy significantly reduce late detection and improve patient self-management. The aim is to design a set of policy guidelines tailored for an urban township that promotes patients' self-efficacy towards early detection, prevention and self-management of T2DM and HTN.

The study is a two-phased mixed methods study. In Phase One, the concepts of self-efficacy and self-management in the early detection of T2DM and HTN were explored through in-depth interviews with health care providers, followed by assessment of barriers towards early detection among patients using FGDs. Phase Two assesses current provision of public health services towards early detection, prevention and management of these diseases through a seven-year retrospective audit of medical records (process) and a cross-sectional survey among patients (outcomes).

Progress

In 2016, ethics for the proposal was approved and a first manuscript on the concept of self-management from a patient perspective published. Data collection for Phase Two started in 2017 in tandem with SMART2D baseline data collection and completed towards the end of 2018. Data analysis of the medical audit is currently ongoing and a second manuscript is in the pipeline.

Publications

Masupe TK, Ndayi K, Tsolekile L, Delobelle P, Puoane T. Redefining diabetes and the concept of self-management from a patient's perspective: implications for disease risk factor management. Health Educ Res. 2018;33(1):40-54.



LORREIN S. MUHWAVA (PHD, MEDICINE, UNIVERSITY OF CAPE TOWN)

Supervisors

Dr Katherine Murphy (CDIA, University of Cape Town); Professor Christina Zarowsky (CDIA, University of Montreal); Naomi Levitt (Department of Medicine, CDIA, University of Cape Town)

Thesis topic

Formative research for the development of an appropriate, acceptable and feasible intervention aimed at reducing type 2 diabetes risk in disadvantaged women after gestational diabetes in South Africa

Expected graduation

December 2019

Summary of Research

Women with a history of gestational diabetes mellitus (GDM) have a seven-fold increased lifetime risk of developing type-2 diabetes mellitus (T2D). Post-partum follow-up for GDM is essential to delay or prevent progression to T2D. In South Africa, as in other countries, most women with GDM are lost to follow-up after delivery and little is known about the barriers and facilitators to follow-up care. The purpose of this study is to assess the acceptability and feasibility of an intervention as part of the IINDIAGO study aimed at developing and evaluating a novel health system intervention to reduce the risk of developing T2D in women with recent GDM. The findings of the formative research will inform the planning, development and testing of appropriate and innovative interventions for women with prior GDM to be integrated into existing health services in South Africa.

Progress

In Phase One, current policies and clinical practices related to antenatal and post-natal care for women with GDM in South Africa were explored, as well as stakeholders' perspectives on the barriers and facilitators for delivering an integrated service that extends beyond the first week post-partum to the infant's first year of life. Following a policy and clinical practice guideline review, in-depth interviews were conducted with key informants including policy makers, health service managers and health care providers working in public health services in two main cities. The document review indicated that health services adhere to international guidelines for diagnosis and management, in addition to guidelines and protocols for clinical practice in South Africa. Health systems barriers included fragmentation of care and the absence of a standardised postnatal care approach for post-GDM women. Key informants raised patient-related challenges to postnatal GDM care, including perceived lack of risk of developing T2D and defaulting on postpartum follow-up. Despite the alignment between international guidelines, local policy and reported clinical practice in managing GDM, there is a gap in the continuation of care in the postpartum period. Health systems interventions that support and facilitate follow-up for women with prior GDM are hence needed if high rates of progression to T2D are to be avoided.

In Phase Two, we explored perspectives of women with recent GDM around their experience of care from the health system. Data

analysis has been completed and the findings are written up for publication.

Data collection for Phase Three, which consists of interviews with health care providers at primary care level (Well Baby Clinics offering child health services), was completed in 2018.



BABALWA ZANI (PHD, MEDICINE, UNIVERSITY OF CAPE TOWN LUNG INSTITUTE)

Supervisor

Prof L Fairall (University of Cape Town, Department of Medicine)

Thesis topic

Collaborative care for the detection and management of depression among adults receiving antiretroviral therapy in South Africa: a pragmatic cluster randomised controlled trial (COBALT)

Co-supervisor

Prof M Bachmann (Norwich Medical School, University of East Anglia, UK)

Summary of Research

The aim of the study is to assess the effectiveness of a collaborative care model for the detection and management of depression among adults receiving antiretroviral therapy, in reducing depressive symptoms and improving viral load suppression. The trial includes patients attending primary care clinics, receiving anti-retroviral therapy and with co-morbid depression as assessed using a nine-question patient health questionnaire (PHQ-9). It is a pragmatic cluster-randomised controlled trial with 40 clinics in the Dr

Publications

Muhwava LS, Murphy K, Zarowsky C, Levitt N. Policies and clinical practices relating to the management of gestational diabetes mellitus in the public health sector, South Africa - a qualitative study. BMC health services research. 2018;18(1):349.

Kenneth Kaunda and Bojanala districts of the North West Province randomised to two parallel arms, and outcomes assessed on individual participants.

Progress

A total of 2002 patients were enrolled in the study from April 2015 to December 2016 and interviewed by trained fieldworkers. Nurses in the intervention clinics received supplementary training in the mental health components of APC from April 2015, and behavioural health counsellors were placed at the facilities from June 2015. Patients were re-interviewed six and 12 months after their baseline interview, with 88% follow-up rate at six months, and 84% follow-up rate at 12 months. The interviews were completed by 14 December 2017 and data analysis is currently being finalised.

Publications

Fairall L, Petersen I, Zani B, Folb N, Georgeu-Pepper D, Selohilwe O, et al. Collaborative care for the detection and management of depression among adults receiving antiretroviral therapy in South Africa: study protocol for the CobALT randomised controlled trial. Trials. 2018;19(1):193.



BONAVENTURE A EGBUJIE (PHD, PUBLIC HEALTH, UNIVERSITY OF WESTERN CAPE)

Supervisors

Dr Peter Delobelle, Professor Naomi Levitt (Department of Medicine, CDIA, University of Cape Town), Professor Brian van Wyk (School of Public Health, University of the Western Cape) & Professor Thandi Puoane (School of Public Health, University of the Western Cape),

Thesis topic

Evidence-based strategy for primary care level Type 2 diabetes mellitus management in SA: A comprehensive Community Health Worker-based Supported Self-management intervention.

Expected graduation

June 2020

Summary of Research

Diabetes mellitus has been growing as a major cause of disease burden globally and in South Africa (SA). More than 2.6 million individuals in the country presently live with the disease and the prevalence is expected to rise significantly over the next decades if there is no shift in strategies to contain the disease. Facility-based health care workers deliver a significant part of chronic disease management with very little evidence or other experience on the application of self-management strategy at the household and community level. This study aims to explore the feasibility of and design of a contextually appropriate, comprehensive and integrated type 2 diabetes mellitus self-

management strategy for SA that involves Community Health workers.

The study is divided into three phases including a scoping review; situational analysis (public facility and an NGO-based case study of HIV experience in CHW involvement in diabetes self-management; and model design.)

Progress

Phase One of the study is completed and a manuscript detailing the findings from the study has been published in a major peer-reviewed international journal.

All necessary authorisations for the second phase of the study have been submitted and permission is now obtained from the Kwazulu Natal and Western Cape Departments of Health.

Publications

Puoane T, Tsolekile L, Egbujie B, Lewy M, Sanders D. Advancing the agenda on non-communicable diseases: prevention and management at community level. In: Padarath A, Barron P, editors. South African Health Review 2017. Durban: Health Systems Trust; 2017. p. 185-93.

Egbujie BA, Delobelle PA, Levitt N, Puoane T, Sanders D, van Wyk B. Role of community health workers in type 2 diabetes mellitus self-management: A scoping review. PLoS one. 2018;13(6):e0198424.



ELSJE SCHEFFLER (PHD, FAMILY MEDICINE AND PRIMARY CARE, STELLENBOSCH UNIVERSITY)

Supervisors

Professor Bob Mash, Division of Family Medicine and Primary Care, Stellenbosch University

Thesis topic

Development and evaluation of a home-based stroke rehabilitation programme for a primary health care setting in the Western Cape, South Africa

Expected graduation

December 2019

Summary of Research

Stroke is a serious cause of disability in the Western Cape, South Africa and significantly burdens the family, community and health services. The shortage of professional rehabilitation personnel and services in rural areas combined with inappropriate models of care and contextual barriers limit access to rehabilitation services and result in poor functional outcomes after stroke. The aim of this study is to develop (Phase One) and evaluate (Phase Two) a home-based stroke rehabilitation programme for a low-resourced primary health care setting in the Western

Cape, South Africa.

Progress

The study integrated a participatory action research design with the ADDIE (Analyse, Design, Develop, Implement and Evaluate) model which guides the development of educational interventions. The Analyse phase of the ADDIE process was completed through an observational cross-sectional survey of stroke survivors, their caregivers and outcomes in the Cape Winelands District. This was combined with descriptive phenomenological qualitative interviews with stroke survivors, caregivers and health workers. This understanding of the context was used by a Co-operative Inquiry Group to help design, develop, implement and evaluate a training programme for community health workers. The training programme aims to equip CHWs with the ability to assist stroke survivors as well as to train and support caregivers in the period immediately after the stroke when the patient returns home.

All data is now collected and the four articles for a PhD by publication are being prepared. The candidate hopes to graduate in December 2019.



TAVARES MADEDE MD, MPH, PHD CANDIDATE AT THE UNIVERSITY OF CAPE TOWN

Supervisors

Prof Naomi Levitt, CDIA, Department of Medicine, UCT, Prof Albertino Damasceno, Department of Medicine, Faculty of Medicine, UEM, Dr. David Beran, Faculty of Medicine, University of Geneva

Thesis topic

The response of the national health system to the burden of the non-communicable diseases: policy, health care system and community perspectives in Mozambique.

Expected graduation

December 2021

Summary of Research Project

This study aims to assess the main gaps in the response provided to the growing NCD burden in one SSA country, Mozambique, and how the response is met or not, the need expressed by health care providers and communities at large. The study has four main objectives:

1. Using diabetes as a tracer condition for NCDs, to describe the trends in prevalence and cascade of care over a ten-year period (2005-2015);
2. To analyse health-related policy changes as a result of demands imposed by NCDs and its risk factors;
3. To explore the perceptions of rural and peri-urban communities about diabetes and the challenges they face for its self-management;
4. To assess the main gaps in the health care teams to adequately respond to the needs in relation to NCDs and improve care provided to the patients.

This study will use the Innovative Care for Chronic Conditions framework to guide its execution and will use a mixed methods approach with sequential strategy design. The first objective will be met by doing secondary data analysis of two countrywide WHO STEPS surveys conducted in 2005 and 2014/2015. Perceptions of rural and peri-urban communities about diabetes and the challenges they face for their self-management will assess changes at policy level and their contribution to the achievement of positive outcomes for diabetes.

This will be a descriptive qualitative study, based on a phenomenological theory aiming to assess the level of perceived empowerment, capability and received support by patients and their families and caregivers to self-manage their diabetes.

Assessment of health care teams organisation and equipment to respond to the needs of urban and rural diabetic and HT patients will be a descriptive qualitative study aiming to assess the extent to which health care teams have skills in effective communication, expertise in behavioural interventions, guidance for self-management, and how adequately they are equipped with medical equipment, laboratory and essential medicines.

Progress

The study proposal was developed and recently submitted to the Health Research Ethics Committee of the Faculty of Health Sciences of UCT. A draft of the quantitative study using secondary data analysis is in progress.



Completed PhD Thesis topics

Informing development of diabetes self-management **care intervention for older people attending community health centres** in South Africa.

How to **transform the workplace environment** to prevent and control risk factors associated with non-communicable chronic diseases.

Community insights into, and an international perspective on **the role food environments and diets play** in the self-management of type 2 diabetes mellitus in urban and rural South Africa.

Development of an integrated model of care for use by community **health workers working with chronic non-communicable diseases in Khayelitsha**, South Africa.

Exploring the **association between body image, body fat, and total cardiovascular disease risk** among adults in a rural and an urban community of South Africa.

The prevalence of **multimorbidity in people with HIV and on ART**.

PhD graduations



MAHMOUD WERFALLI (PHD, MEDICINE, UNIVERSITY OF CAPE TOWN)

Supervisors

Prof Naomi Levitt (Department of Medicine, CDIA, University of Cape Town) and Prof Sebastiana Kalula (Division of Geriatric Medicine, and the Albertina & Walter Sisulu Institute of Ageing in Africa, University of Cape Town)

Thesis topic

Informing development of diabetes self-management care intervention for older people attending community health centres in South Africa

Graduation

July 2019

Summary of Research

The purpose of this thesis was to inform the development of a self-care management programme for older people attending public sector primary health care services in Cape Town applying the PRECEDE planning model. The thesis integrated five studies, including (1) a systematic review of the prevalence of type-2 diabetes among older people in Africa; (2) secondary analysis of the Study on global AGEing and adult health (SAGE) South Africa Wave One data; (3) a cross-sectional survey of older people with diabetes attending primary care clinics in Cape Town, South Africa; (4) documentary review and key informant interviews; and (5) a systematic review of peer and non-professional health worker-led diabetes self-management programmes (COMP-DSMP) in LMICs primary health care settings.

The first systematic review found that the overall prevalence of type 2 diabetes in individuals aged 55 years and older was 13.7% and two-fold higher in studies reporting the use of oral glucose tolerance test than in those using fasting plasma blood glucose. SAGE data analysis indicated that diabetes was associated with lower quality of life and increased disability as well as a range of impairments and co-morbidities predisposing to loss of autonomy. Survey data showed lack of knowledge about diabetes complications, but also the positive impact of social support on knowledge and self-care. Documentary review and interviews revealed multiple efforts to re-orient the health care system towards a greater focus on NCDs and the second systematic review showed evidence to support the use of COMP-DSMP for people with diabetes in LMICs and suggested that peer / CHW-led programmes need to be explored in more detail given the health care workforce shortages in LMICs.

Publications

Werfalli M, Musekiwa A, Engel ME, Ross I, Kengne AP, Levitt NS. The prevalence of type 2 diabetes mellitus among older people in Africa: a systematic review study protocol. *BMJ open*. 2014;4(6):e004747.

Werfalli M, Raubenheimer P, Engel M, Peer N, Kalula S, Kengne AP, et al. Effectiveness of community-based peer-led diabetes self-management programmes (COMP-DSMP) for improving clinical outcomes and quality of life of adults with diabetes in primary care settings in low and middle-income countries (LMIC): a systematic review and meta-analysis. *BMJ open*. 2015;5(7):e007635.

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DARCELLE D SCHOUW (PHD, FAMILY MEDICINE, UNIVERSITY OF STELLENBOSCH)

Supervisors

Professor Bob Mash (Family Medicine, University of Stellenbosch) & Dr Tracy Kolbe-Alexander (School of Health and Wellbeing, University of Southern Queensland Ipswich, Australia)

Thesis Topic

How to transform the workplace environment to prevent and control risk factors associated with non-communicable chronic diseases.

Graduation

March 2019

Summary of Research

The main study design was participatory action research (PAR). A co-operative inquiry group (CIG) was established as one of the commonly used approaches to conducting PAR in a professional context. The CIG planned, implemented, observed and reflected on a multifaceted intervention that targeted the catering, physical activity, health and wellness services as well as management. An annual cross-sectional survey measured the baseline NCD risk factor profile amongst the workforce. A representative sample of the workforce was followed up at 12 months and 24 months. The incremental costs of the intervention were analysed.

The workplace health intervention was associated with significant changes in behaviour (fruit and vegetable intake, physical activity, alcohol use) as well as metabolic factors (blood pressure, total cholesterol) and a reduction in some psychosocial risk factors. The incremental costs were negligible.

Publications

Schouw D, Mash R, Kolbe-Alexander T. Risk factors for non-communicable diseases in the workforce at a commercial power plant in South Africa. *Occupational Health Southern Africa*. 2018;24(5):145-52.

Schouw D, Mash R, Kolbe-Alexander T. Transforming the workplace environment to prevent non-communicable chronic diseases: participatory action research in a South African power plant. *Global health action*. 2018;11(1):1544336.

Schouw D. How to transform the workplace environment to prevent and control risk factors associated with non-communicable chronic diseases. Cape Town: Stellenbosch University; 2019. Available from <http://scholar.sun.ac.za/handle/10019.1/105791>



MARK SPIRES (PHD, PUBLIC HEALTH, UNIVERSITY OF WESTERN CAPE)

Supervisors

Prof Thandi Puoane (School of Public Health, University of the Western Cape), Prof David Sanders & Dr Peter Delobelle (CDIA, University of Cape Town)

Thesis Topic

Community insights into, and an international perspective on the role food environments and diets play in the self-management of type 2 diabetes mellitus in urban and rural South Africa.

Graduated

November 2018

Summary of Research

Type 2 diabetes mellitus (T2DM) and pre-diabetes contribute increasingly to the global burden of disease. By 2035, the most dramatic change in the epidemiologic landscape is expected to come from the projected increase in T2DM cases in sub-Saharan Africa (SSA) from 20 million in 2013 to 41 million, an increase of more than 100%. Additionally, low-income countries in Africa have the highest estimated proportion of undiagnosed diabetes (78%). Along with other behavioural risk factors, diet plays a key role in the onset and management of T2DM, in turn largely determined by what foods are immediately accessible in local food environments.

The thesis aim was to assess the role of local food environments in promoting or inhibiting access to healthy foods as part of the self-management of T2DM in urban /rural communities in South Africa, and

what can be learned from an international perspective. Specific research objectives included: (i) to identify the presence of food-related environmental factors associated with onset & management of T2DM; (ii) to explore community perspectives on the role the local food environment plays in the self-management of T2DM; (iii) to explore the relationships between environmental factors and community perspectives; and (iv) to develop intervention and/or policy-related recommendations that can be implemented based on study findings.

Quantitative data were collected through the creation of an environmental profile to address the first research objective, and comparable data were collected as part of the SMART2D study at two other international sites (Kampala, Uganda and Stockholm, Sweden). Included in the second objective was the collection of qualitative data through a community-based participatory research method. An exploration of the relationships between the environmental factors and community perspectives was then conducted. Finally, intervention and/or policy-related recommendations were developed based on study findings and in consultation with relevant stakeholders through the convening of a multisectoral workshop.

Publications

Spires M, Delobelle P, Sanders D, Puoane T, Hoelzel P, Swart R. Diet-related non-communicable diseases in South Africa: determinants and policy responses. In: Padarath A, King J, Mackie E, Casciola J, editors. South African Health Review 2016. Durban: Health Systems Trust; 2016. p. 35-42.



LUNGISWA PRIMROSE TSOLEKILE (PHD, PUBLIC HEALTH, UNIVERSITY OF WESTERN CAPE)

Supervisors

Professor Thandi Puoane (School of Public Health, University of the Western Cape), Prof Helen Schneider (School of Public Health, University of the Western Cape) & Professor Naomi Levitt (Department of Medicine, CDIA, University of Cape Town)

Thesis Topic

Development of an integrated model of care for use by community health workers working with chronic non-communicable diseases in Khayelitsha, South Africa.

Graduation

April 2019

Summary of Research

Non-communicable diseases (NCD) continue to be a public health concern globally and contribute to the burden of disease. The formal health system in developing countries lacks the capacity to deal with these NCDs as it is overburdened by communicable diseases. Thus, community health workers (CHWs) have been suggested as a solution to the current crisis. The thesis aimed to develop an integrated model of care for CHWs working with patients with NCDs by describing and exploring current CHW roles, knowledge and practices in relation to community-based NCD care. Mixed methods were used to achieve the objectives of this study. As revealed in the findings, CHWs perform numerous tasks, and these include linking community members with a health facility, provision of care, facilitation of NCD

support groups and peer education amongst others. Roles performed were influenced and shaped by the communities they serve.

Despite the multiple NCD-related roles CHWs performed, the most reported roles were the distribution of medication, provision of dietary advice and physical assessment with only 52% receiving NCD training. A further 44% of NCD-trained CHWs received refresher training. Their knowledge of diabetes and hypertension was poor, while high knowledge scores were associated with having an NCD and the frequency of supervisory contact. Actual NCD-specific roles focused on secondary prevention. Further shown in the findings was a misalignment between the current practice and policy. However, there were some agreements between policy and practice especially relating to the supervision of CHWs. Neither in-service training nor refresher training is addressed by the policy document. Based on the roles of the CHW, competencies for NCD care were developed using a competency framework, which highlights cognitive, social, functional, and meta-competencies. A proposed model of care that has emanated from this research is shared, incorporating all the components highlighted in the different phases.

The CDIA fellow is currently involved in research work that is very much connected to the work she undertook as part of her PHD. The two research projects are both collaborations with other universities in South Africa as well as the United States and Belgium. One of the

studies is a cluster randomised trial focusing on evaluating the adaption and implementation of the Diabetes Prevention Programme for Type 2 Diabetes Mellitus in South Africa (DPP-SA) funded by the National Institutes of Health (NIH) in the US. While the other research project is titled *Supporting Community Health Workers through Interprofessional learning*, this works seeks to develop a strategy to support and strengthen Community Health Workers (CHWs) in preventing Non-Communicable Diseases (NCDs) in South Africa through interprofessional learning.

Publications

Tsolekile, L. P., Puoane, T., Schneider, H., Levitt, N. S., & Steyn, K. (2014). The roles of community health workers in management of non-communicable diseases in an urban township. *African Journal of Primary Health Care & Family Medicine*, 6(1), 1-8. (From PhD)

Tsolekile, L. P., Abrahams-Gessel, S. and Puoane, T. (2015). Healthcare professional Shortage and Task-shifting to Prevent Cardiovascular Disease: Implications for Low- and Middle-Income. *Current Cardiology Reports*, 17(12), 1-6.

Puoane, T., Tsolekile, L., Egbujie, B.A., Sanders, D. (2017). Advancing the agenda on non-communicable diseases: prevention and management at community level. In: Padarath A, Barron P, editors. *South African Health Review*, 171-179.

Tsolekile, LP; Schneider, H; Puoane, T. (2018). The roles, training and knowledge of community health workers about diabetes and hypertension in Khayelitsha, Cape Town. *Curationis*, [S.l.], 41(1): 8 (From PhD)





Postdocs



KUFRE JOSEPH OKOP (PHD, PUBLIC HEALTH, UNIVERSITY OF WESTERN CAPE)

Supervisors

Thandi Puoane (School of Public Health, University of the Western Cape) & Naomi Levitt (CDIA, University of Cape Town)

Thesis Topic

Exploring the association between body image, body fat, and total cardiovascular disease risk among adults in a rural and an urban community of South Africa.

Graduation

April 2017

Summary

Perception about body image is considered an important contributor to the increasing rates of obesity and associated cardiovascular disease risk (CVD) factors in black African populations. This study used a mixed method design to explore the association between body image perceptions and perceived obesity threat, changes in body weight over time, and the risk of dying from cardiovascular disease in a longitudinal cohort study involving adults aged 35-78 years in South Africa. Excessive body fat at baseline and at five-year follow-up were higher in women than men. Most obese and overweight participants had a high CVD risk score and 82% underestimated their own weight. Those who did not view their weight as a problem were less willing to lose weight. Findings of this study have important implications for

future interventions to reduce the prevalence of overweight and obesity in South African adults. All the examiners indicated that the thesis provided important information on obesity prevention in South Africa.

Progress

The CDIA fellow is currently undertaking a Post-Doctoral Research Fellowship at the Faculty of Health Sciences, University of Cape Town. He facilitates collaborative research on drivers of obesity and the nexus of obesity and food insecurity; community household ethnography on food-ways, and physical activity. His research focus is on implementing Citizen Science and “social mobilisation” to improve access to and affordable healthy food and physical activity. The fellow has published his research in high profile international peer-reviewed journals (PlosOne and BMC Public Health).

Publications

Okop KJ, Levitt N, Puoane T. Factors associated with excessive body fat in men and women: cross-sectional data from black south Africans living in a rural community and an urban township. PloS one. 2015;10(10):e0140153.

Okop KJ, Mukumbang FC, Mathole T, Levitt N, Puoane T. Perceptions of body size, obesity threat and the willingness to lose weight among black South African adults: a qualitative study. BMC public health. 2016;16:365.

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Okop KJ, Lambert EV, Alaba O, Levitt NS, Luke A, Dugas L, Rvh D, Kroff J, Micklesfield LK, Kolbe-Alexander TL, Warren S, Dugmore H, Bobrow K, Odunitan-Wayas FA, Puoane T. Sugar-sweetened beverage intake and relative weight gain among South African adults living in resource-poor communities: longitudinal data from the STOP-SA study. *Int J Obes (Lond)*. 2019 Mar;43(3):603-614. doi:10.1038/s41366-018-0216-9. Epub 2018 Oct 3. PubMed PMID: 30283079.

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MASHUDU MTHETHWA (PHD, MEDICAL PHYSIOLOGY, STELLENBOSCH UNIVERSITY)

Supervisors

Prof Dinky (Naomi) Levitt (UCT),
Ntobeko Ntusi (UCT)

Graduation

Dr Mashudu completed her PhD in 2015 under the supervision of Prof Hans Strijdom in Medical Physiology, Stellenbosch University. Her PhD project explored the heterogeneous responses of different endothelial cell types to injurious stimuli such as tumor necrosis factor-alpha (TNF- α), and its possible impact on endothelial function. She is currently undertaking a postdoctoral research fellowship at CDIA.

Project title

The prevalence of multimorbidity in people with HIV and on ART.

Summary of research

Mashudu is coordinating the South African study on the prevalence, patterns and associations of multimorbidity in people living with HIV and on ART. The aims of his cross-sectional survey are:

Aim 1: To study the prevalence of multimorbidity in PLWH on ART.

- To determine the prevalence of cardiometabolic disease including hypertension, diabetes and dyslipidaemia in PLWH on ART

- To determine the prevalence of mental disorders, musculoskeletal pain, chronic respiratory disease, ischaemic heart disease or stroke in HIV positive individuals on ART.

Aim 2: To determine patterns of multimorbidity in PLWH on ART.

- To determine the prevalent cluster of conditions in PLWH on ART.
- To determine the cluster of conditions associated with mental disorders in PLWH on ART.
- To assess which cluster of conditions are associated with poor quality of life, low sense of coherence in people and cognitive dysfunction among PLWH on ART.
- To determine the cluster of conditions associated with increased health care use in PLWH on ART.

Aim 3: To study factors associated with multimorbidity in PLWHIV on ART

- To identify the behavioural, environmental, sociodemographic, and biological factors associated with the prevalent cluster of conditions.

The field work has commenced and is scheduled to be completed by mid 2020.

Research Output

2016

- Allen ML, Van der Does AMB, Gunst C. Improving diabetic foot screening at a primary care clinic: a quality improvement project. *Afr J Prim Health Care Fam Med*. 2016; 8(1):2016, 9 pages.
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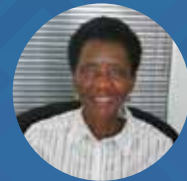
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