

DR MACHOENE DERRICK SEKGALA

RESEARCH SCIENTIST

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Cape Town

PROFILE

Dr. Sekgala, a dedicated researcher and public health professional specializing in non-communicable diseases (NCDs) and nutrition-related cardiometabolic disorders, holds a PhD in Public Health from the University of the Western Cape. Dr. Sekgala's outstanding achievements include his doctoral research on metabolic syndrome and street food consumption among South African taxi drivers. His work led to the development of diagnostic criteria for screening metabolic syndrome in male taxi drivers, earning him the Excellent Research Award from HSRC in 2022. His research has been featured in magazine publications and radio interviews. Currently, he works at SAMRC, managing the South African Diabetes Registries and The Comorbid Diabetes and Depression (CDD) projects.

SHORT COURSES

Good clinical practice: NIDA Clinical trial network

Health Data Analysis in the Healthcare Industry

Statistical training on SPSS, STATA and R studio

Basic research ethics training

Machine learning and data analysis with R

National Department of Health Standard Treatment Guidelines & Essential Medicines List - Webinar Series-1 CPD Point' for the course 'Medical Webinar Series 2024

EDUCATION

Doctor of Philosophy (Public Health)

University of the Western Cape

2019-2022

Master of Science in Human Physiology

University of Limpopo

2016-2018

REFERENCES

- Prof Zandile J Mchiza: PhD Supervisor
Non-communicable diseases unit, South African Medical Research Council, Tel: +27 76 942 3749
Email: Zandile.Mchiza@mrc.ac.za
- Prof Kotsedi Daniel Monyeki: MSc Supervisor.
University of Limpopo. Tel: +27 15 268 2953
Email: Kotsedi.monyeki@ul.ac.za
- Dr Nompumelelo Zungu: Line manager.
Human Sciences Research Council Tel: +27 12 302 2008, Email: mzungu@hsrc.ac.za

WORK EXPERIENCE

Junior Research Fellow

University of Cape Town (UCT) 2024-current

Post-Doctoral Fellow

South African medical research Council (SAMRC) 2023-2024

- Research Conduct:** Conducting independent and collaborative research within the field of non-communicable diseases.
- Data Analysis:** Analyzing research data using appropriate statistical methods and tools.
- Publication and Presentation:** Preparing research findings for publication in scientific journals and Presenting research outcomes at conferences, workshops, and seminars.
- Grant Writing:** Collaborating in the development and submission of research grant proposals.
- Supervision and Mentoring:** Mentoring and supervising junior researchers, students, or research assistants
- Project Management:** Managing research projects, ensuring they are conducted efficiently and within specified timelines. Coordinating with team members to achieve project objectives.
- Ethical Compliance:** Ensuring adherence to ethical standards and guidelines in research activities. Obtaining necessary ethical approvals for research studies.

PhD Researcher

2016-2023

Human Sciences Research Council (HSRC)

- Literature Review:** Conducting comprehensive reviews of existing literature relevant to the research area.
- Data Collection:** Assisting in the design and implementation of research projects. Collecting and recording data through various methods, such as surveys, interviews, or observations.
- Data Analysis:** Analyzing research data using statistical methods or other appropriate techniques.
- Research Support:** Providing support to senior researchers in their ongoing projects
- Professional Development:** Engaging in professional development opportunities, such as training sessions or workshops.
- Presentation:** Presenting research findings at internal meetings, workshops, or conferences
- Academic Pursuits:** Pursuing academic goals related to the completion of a PhD degree. Integrating research internship experiences into academic development.

Project activities

1. Ellisras longitudinal study (ELS), 2015-current
2. Television cooking shows, food literacy and eating behaviors among school children in the Western Cape (2017-current)
3. Body Size-Mental Health and Inequalities: a life-course approach (BMI)(2017-current)
4. Teen momConnect study (2018)
5. Characterizing Risk Indicators to cause Anaemia Prevalence among young Children and Adolescents in BRICS countries (India, SA, Russia) using Machine Learning Approach and Agent-Based Modelling (2020-current)
6. The South African National Survey on Health, Life Experiences and Family Relations (2020-current)
7. HIV-ART Barrier Project (Current)
8. South African Diabetes Registry (SADR) (Current)
9. Food environments in Africa: Addressing malnutrition using a syndemics approach (FOODSAMSA) (Current)
10. The Comorbid Diabetes and Depression (CDD)

Honors, awards and prizes

1. HSRC surplus finding: Human Science Research Council. Amount: R123 660.00
2. NRF travelling funds to the INTERNATIONAL SCIENTIFIC CONFERENCE ON FOOD SECURITY AND SAFETY 2018.
3. Collaboration for Evidence Based Healthcare and Public Health (CEBHA+) Doctoral Scholarship: R400 000.00
4. School of Public Health Department study bursary: R13 000.00
5. Excellent research award of the year (2022) from the Human Sciences Research Council

Postgraduate student supervision

1. Assistant Co-supervision: Dissertation title: Adjusting, validating and finding reliability of a questionnaire from Belgium for its successful measure of meal planning among school-going children aged 11–18 years in the Cape Metropole area, South Africa. Year: 2017 Level of study: Degree of Bachalaureus Technologiae: Consumer Science: Food and Nutrition Name of Institution: Cape Peninsula University of Technology
2. Co-supervised: Dissertation Title: The relationship between blood glucose levels and muscle strength amongst Ellisras rural children aged 7 to 11 years: Ellisras Longitudinal Study. Year: 2018 Level of study: Honors Degree: Physiology Institution: University of Limpopo
3. Co-supervisor: 1. Dissertation title: A SOCIO-ECOLOGICAL APPROACH TO CARDIOMETABOLIC RISK ASSESSEMENT AND POLICY IMPLICATIONS FOR CORPORATE COMPANY EMPLOYEES IN KAMPALA-UGANDA Year: 2023 Level of study: PhD Institution: UWC
4. Co-supervisor: Dissertation title: The association between socio-economic status, diet intake, nutritional status, and other risk factors for chronic diseases of lifestyle among adolescent pupils in the Limpopo province, South Africa: year:2023 level of study: Masters degree

Relevant Conferences

1. Oral presentation: **Sekgala Machoene Derrick**, Maretha Opperman, Buhle Mpahleni, and Zandile June-Rose Mchiza. "Association between macronutrient and fatty acid consumption and metabolic syndrome: a South African taxi driver survey." SAYAS Annual Young Scientist Conference to give Oral Presentation in Limpopo province, Thohoyandou, South Africa at the University of Venda on 12 – 13th June 2023.
2. Oral presentation: **Sekgala Derrick**. Metabolic syndrome and the risk of consuming street food among commercial taxi drivers in South Africa: a cross-sectional study. 5th CEBHA+ annual networking meeting. Addis Ababa, Ethiopia, 6th – 9th September 2022
3. Poster presentation: **Machoene Derrick Sekgala** and Zandile Mchiza. Association between Macronutrient and Fatty Acid Consumption and Metabolic Syndrome: A South African Taxi Driver Survey. The 22nd International Congress of Nutrition (ICN). 6-11 December 2022 in Tokyo, Japan.
4. Poster presentation: **Sekgala Derrick**. The determinants of metabolic syndrome and associated risk factors of CVDs among taxi drivers operating in Cape Town and surrounding areas: a focus on street food. Midterm Meeting of the "Research Networks for Health Innovations in Sub-Saharan Africa" in Accra, Ghana 28 to 31 January 2020.
5. Oral presentation: **Mr Derrick Sekgala** - PhD Student at the University of the Western Cape Influence of Street Food on Metabolic Syndrome among Taxi Drivers Operating in Western Cape, South Africa. SPOTLIGHT SERIES: WORLD HEALTH DAY, Youth reimagining the future of Health. Hosted by the Tygerberg International Office (TIO), Faculty of Medicine and Health Sciences (FMHS), Stellenbosch University (SU). 7 APRIL 2022, 10h00 – 12h00 (SAST, CAT).
6. Poster presentation: **Machoene D. Sekgala**, Zandile J. Mchiza, Whadi-ah Parker and Kotsedi D. Monyeki. Dietary Fiber Intake and Metabolic Syndrome Risk Factors among Young South African Adults. The Non-Communicable Disease (NCD) Research Symposium, 4 March 2020. Somerset west, Cape Town

Frequent peer reviewer for Frontiers and BMC journals

Relevant publication list

- 1.Lopes, T.; Zemlin, A.E.; **Sekgala, M.D.**; Mchiza, Z.J.-R.; Erasmus, R.T.; Kengne, A.P. The Association between Plant-Based and Dietary Patterns with Cardiometabolic Risk in a Sample of Commercial Taxi Drivers in South Africa. *Nutrients* 2023, 15, 178.
- 2.**Sekgala, M.D.**, Opperman, M., Mpahleni, B. and Mchiza, Z.J.R., 2023. Sociodemographic and lifestyle factors and the risk of metabolic syndrome in taxi drivers: A focus on street food. *Frontiers in Nutrition*, 10.
- 3.**Sekgala MD**, Opperman M, Mpahleni B, Mchiza ZJ., 2022. Association between Macronutrient and Fatty Acid Consumption and Metabolic Syndrome: A South African Taxi Driver Survey. *International Journal of Environmental Research and Public Health*,19(23):15452.
- 4.**Sekgala MD**, Opperman M, Mpahleni B and Mchiza ZJ-R (2022). Anthropometric indices and cut-off points for screening metabolic syndrome among South African taxi drivers. *Front. Nutr.* 9:974749.doi: 10.3389/fnut.2022.974749
- 5.**Sekgala, M.D.**; Sewpaul, R.; Opperman, M.; Mchiza, Z.J., 2022. Comparison of the Ability of Anthropometric Indices to Predict the Risk of Diabetes Mellitus in South African Males: SANHANES-1. *Int. J. Environ. Res. Public Health*, 19, 3224.
- 6.Awe, O.O.; Dogbey, D.M.; Sewpaul, R.; **Sekgala, D.**; Dukhi, N. Anaemia in Children and Adolescents: A Bibliometric Analysis of BRICS Countries (1990–2020). *Int. J. Environ. Res. Public Health* 2021, 18, 5756. <https://doi.org/10.3390/ijerph18115756>
- 7.Dukhi N, Sewpaul R, **Sekgala M. D**, Awe O. O. Artificial Intelligence Approach for Analyzing Anaemia Prevalence in Children and Adolescents in BRICS Countries: A Review. *urr Res Nutr Food Sci* 2021; 9(1). Available From: <https://bit.ly/2XWSf2s>
- 8.Ronel Sewpaul, Rik Crutzen, Natisha Dukhi, **Derrick Sekgala** and Priscilla Reddy. 2021. A mixed reception: perceptions of pregnant adolescents' experiences with health care workers in Cape Town, South Africa. *Reprod Health*, 18:167.
- 9.Fagbamigbe, A.F., Desai, R., Sewpaul, R., Kandala, N.B., **Sekgala, D.** and Reddy, P., 2020. Age at the onset of tobacco smoking in South Africa: a discrete-time survival analysis of the prognostic factors. *Archives of Public Health*, 78(1), pp.1-11.
- 10.Sebati, B., Monyeki, K., Kemper, H.C.G., **Sekgala, M.D.** and Mphekgwana, P., 2019. Anthropometric indices for predicting cardiovascular risk factors: Ellisras longitudinal study. *American Journal of Human Biology*, 31(6), p.e23293.
- 11.**Sekgala, M.D.**; Mchiza, Z.J.; Parker, W.-A.; Monyeki, K.D. Dietary Fiber Intake and Metabolic Syndrome Risk Factors among Young South African Adults. *Nutrients* 2018, 10, 504.
- 12.**Sekgala, M.D.**, Monyeki, K.D., Mogale, A., Mchiza, Z.J., Parker, W., Choma, S.R. and Makgopa, H.M., 2018. The risk of metabolic syndrome as a result of lifestyle among Ellisras rural young adults. *Journal of Human Hypertension*, 32(8-9), pp.572- 584.
- 13.**Sekgala, M. D.**, K. D. Monyeki, M. A. Mogale, and N. E. Ramoshaba. Performance of blood pressure to height ratio as a screening tool for elevated blood pressure in rural children: Ellisras Longitudinal Study. *Journal of Human Hypertension* (2017)
- 14.Sebati, R.B., Monyeki, K.D., Ramoshaba, N.E., **Sekgala, M.D.**, Matshipi, M. and Mashiane, T.J., 2017. Relationship between blood glucose levels and muscle strength in rural South African children aged 7 to 11 years: Ellisras longitudinal study. *African Journal for Physical Activity and Health Sciences (AJPHES)*, 23(1.2), pp.140151.
- 15.Monyeki, K., Kemper, H., Mogale, A., Hay, L., **Sekgala, M.**, Mashiane, T., Monyeki, S. and Sebati, B., 2017. Association between Blood Pressure and Birth Weight among Rural South African Children: Ellisras Longitudinal Study. *International Journal of Environmental Research and Public Health*, 14(9), p.974.
- 16.Alicia Northa, Allanise Cloeteb, Shandir Ramlaganb, Thabang Manyapelob, Amukelani Ngobenib,c,Noloyiso Vondob and **Derrick Sekgala.**, 2023. "...[I]f I can[be]infected now that means I am going to die...": an explorativestudy focusing on vulnerable and immunocompromised groups and caregiversexperiences and perceptions of the Covid-19 pandemic in South Africa. *JOURNAL OF SOCIAL ASPECTS OF HIV/AIDS*. <https://doi.org/10.1080/17290376.2023.2187446>
- 17.Nkwana, M.R., Monyeki, K.D., Matshipi, M., **Sekgala, M.D.**, Ramoshaba, N.E. and Mashiane, T.M., 2017. The Relationship between Strength Measurements and Anthropometric Indicators (BMI and Skinfold Thickness) in Ellisras Rural Adolescents Aged 9–15 Years: Ellisras Longitudinal Study. *Human Movement*, 18(1), pp.11-18
- 18.Mchiza W, Parker W, Ronel S, Buldeo P, Tshetu N, **Sekgala D**, Job N. Using National data repositories to estimate the proportion of morbidity attributable to selected modifiable cardio-metabolic risk factors of diabetes and heart disease. Funded through H2020 2016/2017 Surplus Funding. Submitted March 2017
- 19.Vondo N, Mabaso M, Mehloamakulu V, Sewpaul R, Davids A, Ndlovu P, **Sekgala D**, Shandu L and Moyo S (2023) Risky sexual behaviors among orphaned youth in South Africa: findings of the 2017 population-based household survey. *Front. Child Adolesc Psychiatry* 2:1033663. doi: 10.3389/frcha.2023.1033663
- 20.Sewpaul R, Awe OO, Dogbey DM, **Sekgala MD**, Dukhi N. Classification of Obesity among South African Female Adolescents: A Comparative Analysis of Logistic Regression and Random Forest Algorithms. *International Journal of Environmental Research and Public Health*. 2023 Dec 19;21(1):2.
- 21.Mmethi TG, Modjadji P, Mathibe M, Thovhogi N, **Sekgala MD**, Madiba TK, Ayo-Yusuf O. Substance Use among School-Gone Adolescents and Young Adults in Rural Mpumalanga Province, South Africa. *Behavioral Sciences*. 2024 Jul;14(7):543.

22. **Sekgala MD**, Sewpaul R, Kengne AP, Mchiza Z, Peer N. Clinical utility of novel anthropometric indices in identifying type 2 diabetes mellitus among South African adult females. *BMC Public Health* 2024. 24, 2676
23. **Sekgala MD**, Opperman M, Mpahleni B, Mchiza ZJ. Functioning problems associated with health conditions with greatest disease burden in South Africa: a scoping review.
24. Choshi J, Flepisi B, Mabhida SE, **Sekgala MD**, Mokoena H, Nkambule BB, Ndwandwe D, Mchiza ZJ, Nqebelele U, Kengne AP, Dlodla PV and Hanser S (2024) Prevalence of chronic kidney disease and associated risk factors among people living with HIV in a rural population of Limpopo Province, South Africa. *Front. Public Health* 12:1425460. doi: 10.3389/fpubh.2024.1425460
25. Choshi J, Hanser S, Mabhida SE, Mokoena H, Moetlediwa MT, Muvhulawa N, **Sekgala MD**, Nkambule BB, Mchiza ZJ, Ndwandwe D, Nqebelele U. A systematic review assessing the association of inflammatory markers with kidney dysfunction in people living with HIV on highly active antiretroviral therapy. *BMC Infectious Diseases*. 2024 Aug 2;24(1):776
26. Okanmelu EC, Mchiza ZJ, **Sekgala MD**. Leveraging community health workers for context-specific food and nutrition education: the implementation and process of a multi-media edutainment intervention for South Africans.

Accepted for publication

1. Haskly Mokoena, Sidney Hanser, Sihle E. Mabhida, Joel Choshi, **Machoene Sekgala**, Bongani Nkambule, Zandile Mchiza, Duduzile Ndwandwe, André Kengne, Phiwayinkosi Dlodla. The pathological link between elevated markers of inflammation, endothelial activation, and cardiovascular diseases in people living with HIV on combination antiretroviral therapy: A systematic review. *Journal of Inflammation Research*, Dovepress, Submission ID: 472896
2. Haskly Mokoena, Sihle E. Mabhida, Joel Choshi, **Machoene D. Sekgala**, Bongani B. Nkambule, Duduzile Ndwandwe, Zandile J. Mchiza, André P. Kengne, Phiwayinkosi V. Dlodla, Sidney Hanser. Soluble P-selectin as an inflammatory mediator potentially influencing endothelial activation in people living with HIV in sub-rural areas of Limpopo, South Africa, *PLOS ONE*, Submission ID: PONE-D-24-08124R1
3. Wentzel A, Mabhida SE, ...Nguyen KA, **Sekgala MD**, ..., Kengne AP, Mchiza ZJ. Prevalence of Metabolic Syndrome in Children and Adolescents with Obesity: A Systematic Review and Meta-analysis. *BMC Public Health*
4. Wentzel A, Eichinger M, Govender L, Esterhuizen B, **Sekgala MD**, Nguyen K, von Philipsborn P, Mchiza ZJ. The extent of outdoor food and beverage advertising surrounding primary and secondary schools in poorly resourced townships in Cape Town, South Africa. *Health and Place*