1. Maternal health: Preeclampsia development and HIV infection

Hypertensive disorders of pregnancy are the 3rd leading cause of maternal deaths, affecting almost 14% of all pregnancies. Preeclampsia is described as new onset hypertension and proteinuria during mid-gestation, with underlying end-organ dysfunction. Predicting and diagnosing those at high risk is essential in order to improve maternal and fetal outcomes. Despite major developments in our understanding of preeclampsia etiology, its prediction and diagnosis prior to symptom onset remains a challenge. Even though various preeclamptic animal models have been recommended, it is still restrictive in fully mimicking this disorder.

I am currently working on an animal study which aims to develop a pharmacologically induced (arginine vasopressin) rat model, with the hope of improving therapeutic/intervention opportunities. We will measure the circulating levels of copeptin, a surrogate biomarker of vasopressin and glycosylated fibronectin in rat serum as well as histologically examine relevant systemic tissues to validate the maternal circulating levels of glycosylated fibronectin in this experimentally induced preeclamptic rat model. Additionally, we are also measuring the circulating levels of copeptin, a surrogate biomarker of vasopressin and glycosylated fibronectin in maternal serum throughout pregnancy. This current study allowed for both intradepartmental (Dr B Mkhwanazi) and interdepartmental (Prof P Reddy - Environmental Health) collaboration and has recruited 2 full time and 2 Part-time Masters students in the faculty of Health Sciences.

The study is in its preliminary stages and outputs are still developing. It is envisaged that sample tissues collected during the development of the animal model will assist in the recruitment of a PHD candidate and promote the growth of the niche area.

Medical education

This current study is facilitated by Dr Fazila Ally and myself. It is evident that academics worldwide are required to adapt their current teaching, learning and assessment strategies in order to embrace the graduate attributes required for the holistic development of today’s scholars. In order to embrace this, the learning style preferences of all students must be recognized. We plan to explore the use of the VARK questionnaire, which has been widely used to assess the different learning style preferences of all students. The learning style preferences as described by the VARK questionnaire, include visual (V; learning from graphs, charts, and flow diagrams), auditory (A; learning from speech), read-write (R; learning from reading and writing), and kinesthetic (K; learning from touch, hearing, smell, taste,
and sight). In addition to identifying the individual learning style preferences of students, it is imperative to acknowledge any gender differences that may also exist.

This is a quantitative, exploratory study that will be conducted in the department of Basic Medical Sciences, targeting all undergraduate students registered for the different medical science courses offered by the department between January 2018 and December 2019. We therefore aim to investigate the relationship between preferred learning styles and gender in undergraduate students, in an attempt to improve their understanding and academic performance of basic medical sciences in the faculty of Health Sciences.

**Diabetes Research**
Collaborating with both Prof P Reddy (an epidemiologist/biostatistician: Community Health Studies) looking the prevalence of uncontrolled diabetes, and identifying its sociodemographic and clinical determinants.

**Peer-reviewed publications**


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