

Vitamin deficiency evidence – a likely

game-changer
in mental health

During her early post-graduate years, Megan Schultz, a psychiatry registrar at Dora Nginza Hospital in Port Elizabeth, did a lot of clinical work in local townships. Whether it was Kwanobuhle, Motherwell, Missionvale or New Brighton, she noticed that many mentally ill people had one thing in common; they were malnourished and living in severe poverty.

It triggered her determination to research the nutritional state of mentally ill people. When she shared this idea with her senior colleagues and supervisor, their advice was to select a single nutritional marker of high significance for mental illness. They pragmatically suggested that she establish her initial study at Dora Nginza Hospital, which takes patient referrals from the township clinics where she worked. It did not take her long to single out vitamin B12, an extremely important vitamin for brain and nerve function, as her marker. Its moderate to severe deficiency is also a proven cause of neuropsychiatric symptoms. Currently, if this deficiency is identified and treated early enough, physicians can reverse these symptoms and prevent countless complications, following the acute presentation of the condition.

Links with anaemia and dementia

“Besides clear links with anaemia and dementia, we’re not sure of everything else that vitamin B12 deficiency causes. There are many studies globally showing other links, but not exactly how it works,” she adds.

Over three months, she will review the files of 135 patients admitted to Dora Nginza Hospital’s Mental Health Unit, documenting vitamin B12 deficiency levels. Her objective is to tailor the WHO-approved borderline levels to South African conditions, set an appropriately tailored local level and perhaps, after more research, influence policy and legislation around health-promoting additives to common foodstuffs.

Documenting the benefits of healthy vitamin B12 levels will be central to her research – the genesis of which probably lies in her upbringing.

DR MEGAN SCHULTZ

Rural Individual Fellowship Award

Walter Sisulu University

Family Medicine

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Schooling shapes her world view

Megan attended a multi-racial school in Graaf Reinet and grew up in Uitenhage, which shaped her outlook on life. Her attitude is best illustrated by her response when asked why she was drawn to work in the townships. "It wasn't so much going to the townships. This is the Eastern Cape; this is who we are. My work has been a natural progression from working in the outreach clinics – I really enjoyed it and slowly fell in love with our communities. There is a great homeliness to working in the townships. I never wanted to run away from it," she says passionately.

Like many medical officers and registrars, she had her rough edges smoothed off during her Community Service year.

"You either work in casualty or the labour wards. At Uitenhage Provincial Hospital, I would work in the psyche ward in the day and in the labour ward at night, with weekends in high care. The upside was I could see my patients through. For example, for new mothers, I'd make sure she was bonding with her baby," she explains.

Heading up the mental health unit

One of her most valuable experiences was running the mental health unit at Uitenhage Hospital during her second six-month Community Service stint, a common generic experience for young doctors in our healthcare environment.

"They decided this small hospital doesn't need a consultant psychiatrist. I found myself in the deep end and had to deal with whatever came my way – I was the only one there. I will say that it gave me some breathing room in how I structured my day. I also experienced the joys of seeing pregnant mothers get better. I often visited them and their babies in the psyche ward, and it was wonderful to see the positive outcomes," she adds.

It was here that she started doing vitamin B12 testing after she noticed marked deficiencies in young patients with mood disorders and a whole spectrum of psychiatric illnesses, which seemingly conflicted with the available literature about vitamin B12 deficiency symptoms.

"I started doing extra tests and after two weeks, I picked up the phone to the lab and asked if their machine was working properly or if it had gone out of calibration. They assured me it hadn't!" she recalls. She explains that, although suffering psychiatric symptoms, these patients were young and seemed healthy – yet they showed severe vitamin B12 deficiency.

"I theorised that even if the vitamin B12 deficiency wasn't causing the psychiatric symptoms, it was contributing to them," she adds.

Her ambition, should her research show causal links, is to expand the testing into other hospital departments. "If these deficiencies are present in the general population and not just a psychiatric problem, it will give us even more grounds to introduce minimum vitamin B12 amounts into prescribed dietary requirements, perhaps even introducing legislation for staple foods like mealie-meal and bread," she says.

Establishing maximum vitamin B12 deficiency levels

While the World Health Organization-recommended level to identify vitamin B12 deficiency is between 150 and 221 nanograms in each millilitre of blood, locally the recommended cut-off level stands at 136. Megan thinks this is too low, adding that an ideal minimum level should be tailored to each country's unique demographics, gender and age profile. She is confident that at 150 in South Africa, treatment can begin.

"Anything over 221 is less likely to be a vitamin B12 deficiency," she asserts.

One scientific caveat is that in South Africa, the marker used in testing is relatively crude compared with the more expensive testing cascade method – but it is the most affordable. The outflow from Megan's work stands to significantly improve the lives of many people, especially if bolstered by evidence-based policies and changes in nutrition-related laws.