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New findings on managing phantom limb pain for amputees



Katleho Limakatso

Photo: Je'nine May

A University of Cape Town (UCT) doctoral study by Katleho Limakatso has broken new ground on pain management for amputees experiencing phantom limb pain. Katleho completed his doctorate in only three years. And when he is capped on 22 July, he will become UCT's first black PhD in Anaesthesia and Perioperative Medicine.

Katleho first came across phantom limb pain some years ago as an undergraduate student training at Victoria Hospital in Wynberg. He'd rushed to a patient who was experiencing unbearable pain in his left foot. But after finding that the patient's left leg had been amputated, Katleho was left bewildered. How could he still feel pain where there was nothing?

Amputation is often a last resort for diabetics who experience long periods of debilitating pain, the result of poorly managed health. But amputees often still feel pain in a limb that is no longer there. The condition affects roughly seven in every 10 amputees, said Katleho.

He devoted his master's study to investigating the efficacy of a new treatment for the condition. The treatment is called [graded motor imagery](#). It uses a software application and a mirror to 'retrain the brain', by activating the areas that once controlled the movements of the amputated limb.

Spurred by the treatment's success, Katleho developed this work in a PhD. His doctoral thesis is built on four novel studies with two already in publication.

The first is a systematic review and meta-analysis on all the data on prevalence of phantom limb pain globally. The second is a cross-sectional study on the prevalence and risk factors for phantom limb pain in African amputee participants.

The third study is an expert Delphi study on treatment recommendations for phantom limb pain. (Briefly, a Delphi study is a formal, in-depth, systematic qualitative methodology. It is a forecasting process based on multiple rounds of questionnaires sent to a panel of experts.)

The fourth study is a Delphi study with patients with lower limb amputations, identified from the Groote Schuur Hospital registry. This looked at care priorities among these patients. It was this study that produced the truly "a-ha" moment for Katleho.

Interviews with patients showed a discrepancy between what clinicians want to achieve with their patients and the outcome patients want. "If I can help to reduce a patient's pain, I feel like a superhero. I'm happy. I've done my job," he said.

But patients don't always consider this as their priority. Amputation brings other pain: depression and anxiety, loss of hope and motivation, lowered self-esteem and dignity. This stems from lost mobility and access, job losses and patients' struggle to adjust to new ways of living and being.

"Some prioritise mental health, and simple things like water, sanitation and getting accommodation on the ground floor, for example," said Katleho.

"Some of the patients I treated said, 'If only I could get food to eat, to live a decent life, I don't care much about the pain. Food is a priority because I lost my job after the amputation'. We realised that living in South Africa, with its huge economic and social disparities, our needs are different."

Patients also wanted pre- and post-operative education: What would happen in the operating theatre? What could they expect afterwards? Others needed psychological help to cope with the trauma of losing a limb and their struggles to navigate society and isolation. They need long-term psychological care to lead normal, functional lives and reintegrate into society.

These under-diagnosed conditions and needs must be brought into the multi-sectoral system of care and management, Katleho said. This demands a holistic approach.

The results of his PhD study will be used to motivate for change in the approach to care of amputees.

"We are still to appreciate the importance of such teamwork in the management of patients with amputation. The results of this study shed light on that. It shows the extent to which

we need collaboration, not only within the clinical system but with people beyond the clinical system.”

The graduation will also be an opportunity to thank the patients who participated in the research. “I call them the forgotten cohort. You rarely see them in the malls; they don’t have transport to get to the places or access to the things we enjoy.

“Without them we could never generate new knowledge.”

UCT’s first black PhD in Anaesthesia and Perioperative Medicine also has a message for younger students: your background and your past don’t define your future.

“I come from a very humble background. It is possible.” He is prouder still of having contributed to new knowledge from Africa – with the hope that spells for patients through improved clinical practices and outcomes.

Story by Helen Swingler, UCT News.

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