Reducing incidence of depression and anxiety among adolescents living in poverty in South Africa by turning afterschool sport into a place that protects mental health

Feasibility and mental health outcomes of a self-regulation intervention using surfing in a pilot cluster randomised controlled trial for adolescents and their caregivers living in poverty in Cape Town, South Africa

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THE PROBLEM

Low- and middle-income countries (LMICs) face an extreme mental health crisis, and much of it is generated upstream. Young people in economically deprived households face compounding disadvantages due to routine exposure to violence, caregiver stress, food insecurity and disrupted schooling, all raising their risk of depression and anxiety.[1] The relationship runs both ways. Depression and anxiety that emerge in adolescence often become chronic, generate sustained healthcare costs, and disrupt education and early employment, trapping young people in poverty into adulthood.[2]

The result is health systems that are overburdened, with more than 75% of people who need mental health care receiving no treatment at all.[3]

Expanding access to treatment alone cannot solve a problem created by poverty and adversity. Prevention in adolescence is therefore not only a mental health objective but a poverty-reduction one.

Adolescence is the window for prevention. Most lifetime mental health conditions begin in adolescence.[4] Ninety per cent of the world's adolescents live in LMICs,[5] yet the evidence base comes overwhelmingly from high-income settings, and evidence for interventions that prevent, rather than treat, depression and anxiety in LMICs remains limited.[6]

Adolescents in South Africa face poverty and violence in an acute form. South Africa is among the most unequal countries in the world (Gini coefficient 0.63). Forty-six per cent of youth are multidimensionally poor and 35.5% of 15–24 year olds are not in employment, education or training.[7] With too few skilled professionals, clinician-delivered treatment cannot close the gap, **so cost-effective, upstream prevention delivered by non-specialists is a necessity.**

THE OPPORTUNITY

If we want to improve children's mental health at scale, we need to look beyond specialist services and ask a different question: **Can we optimize systems that already reach millions of children to promote mental wellbeing and protect mental health?**

Afterschool sport is a simple, low-cost and accessible answer. Physical activity is an evidence-based active ingredient for preventing youth anxiety and depression.[8] It can be delivered by trained sports coaches or youth facilitators rather than clinicians, and it is intrinsically engaging, so young people keep coming back. The idea is to layer in international activities that strengthen the potential of physical activity programmes to improve mental health outcomes for young people. We call these intentional activities 'Take 5'.

01	02	03
Supportive relationships A trusted coach and a positive peer group	**Strengthening self-regulation & emotion regulation.** Regular practice managing stress, emotions and setting goals	**Safe, predictable spaces** A consistent routine young people can rely on each week

Why self-regulation? Self-regulation, the capacity to stay focused on goals and manage emotions under stress, can be undermined by poverty; where it is disrupted, the risk of depression and anxiety rises.[9] **Supportive relationships, opportunities to develop emotional regulation and safe, predictable environments** can act as important protective factors[10] that prevent stress responses developing into mental health and behavioural challenges.

THE STUDY

This study summary draws on data from ALIVE 1.0, a four-arm pilot cluster randomised controlled trial.[11] Schools were randomly assigned to: (1) **Self-regulation** (Surfing augmented with Take 5); (2) **Combined** (Surfing augmented with Take 5, financial education and a cash transfer; (3) **Econ** (financial education and a cash transfer only; or (4) **control**.

This summary isolates data from the self-regulation arm and the control arm. It tests the **feasibility and acceptability** of surfing augmented with Take 5 and gauges **preliminary outcomes** such as hope, early symptom reduction and cumulative incidence of depression and anxiety at baseline, 6, 12 and 18 month timepoints.

59 Adolescents	59 Caregivers	20 sessions	6 sessions
aged 13–15 from four non-fee paying schools	Adolescents primary caregivers	Weekly after-school sessions for adolescents over 6 months	Monthly sessions for caregivers over 6 months

[1]Pillay, L. G. et al. (2024). S Afr J Psychiatry, 30; Whitsett, D. et al. (2019). J Pediatr Psychol, 44(4), 478–489.
[2]Bauer, A. et al. (2021). Soc Psychiatry Psychiatr Epidemiol, 56, 1687–1703; Lund, C. et al. (2010). Soc Sci Med, 71(3), 517–528; Patel, V. et al. (2007).
[3]Reference to be confirmed (cited as "ref" in the paper draft).
[4]Solmi, M. et al. (2022). Age at onset of mental disorders worldwide: large-scale meta-analysis of 192 epidemiological studies. Molecular Psychiatry, 27, 281–295.
[5]Patton, G. C. et al. (2018). Adolescence and the next generation. Nature, 554, 458–466.
[6]Stockings, E. A. et al. (2016). Psychological Medicine, 46(1), 11–26; Skeen, S. et al. (2019). Pediatrics, 144(2).
[7]Statistics South Africa (2024). Quarterly Labour Force Survey, Q1 2024 (P0211).
[8]Wellcome Trust (2021); Hu, S. et al. (2020). Frontiers in Psychiatry, 11.
[9]Palacios-Barrios, E. E. & Hanson, J. L. (2019). Comprehensive Psychiatry, 90, 52–64; Ridley, M. et al. (2020). Science, 370(6522).
[10] https://pubmed.ncbi.nlm.nih.gov/31262779/
[11]ALIVE 1.0 protocol: Jordans, M. J. D. et al. (2026). Pilot and Feasibility Studies, 12(1). https://doi.org/10.1186/s40814-026-01858-y

How it worked: Sports coaches from participants' own communities were trained to deliver surfing sessions augmented with Take 5. Specially, coaches learnt 9 helping and facilitation skills alongside the **Take 5** five-step routine,[12] **augmented with scripted Self-regulation & emotion regulation activities**. Learning to surf was included in every session to support mastery and confidence building. Caregivers attended monthly workshops adapted from War Child's BeThere, an intervention designed to reduce stress and strengthen wellbeing and parenting among caregivers in highly stressed households. Randomisation took place at school level, across four schools in Mitchells Plain and Hout Bay. All adolescents screened below the depression and anxiety cut-offs at baseline and were followed up at 6, 12 and 18 months post baseline.

KEY FINDINGS

✓
Hope increased
Adolescents in the self-regulation arm showed greater increases in hope than the control arm at 18 months: an additional 2.31 points on the Children's Hope Scale (statistically significant).

✓
Anxiety symptoms decreased
Adolescents in the self-regulation arm showed a greater short-term reduction in anxiety symptoms after the intervention than the control arm (statistically significant), with the trend continuing to 18 months.

◎
Fewer new cases of depression and anxiety
By 18 months, 12.5% of adolescents in the self-regulation arm had developed depression, compared with 17.9% in the control arm. For anxiety, it was 12.5% compared with 14.9%. A promising trend, not significant at pilot scale.

✓
Delivered well and valued
Sessions were delivered with 97% fidelity, adolescents attended 78% of sessions on average, and coach competency improved. Adolescents and caregivers found the programme acceptable and valuable.

Interpreting these results: *This pilot was not designed or powered to test hypotheses about health outcomes; findings are preliminary estimates that warrant confirmation in a fully powered trial.*

What participants said. Interviews found the intervention feasible, though participants recommended **reducing its complexity**. Adolescents and caregivers described an intervention that was **responsive to their needs**, created **physically and emotionally safe spaces**, fostered **social connection with peers and coaches**, and was **enjoyable and engaging**. Adolescents also reported learning communication and stress management skills.

WHAT WE LEARNED AND NEXT STEPS:

Sport, Recreation and Physical activity programmes have the potential to significantly strengthen the delivery of mental health and psychosocial support to vulnerable young people. The infrastructure exists, it just needs strengthening.

Keep it simple - The Take 5 Routine: Augmenting Sport, Recreation and Physical activity with activities that can promote self-regulation is feasible, acceptable and potentially effective. To safeguard coach-child contact time and meaningful engagement in physical activity related activities, self-regulation activities should be simplified and woven into existing sessions. To action these recommendations, we created The Take 5 Teaching Routine.

A competency standard for sport coaches. Coach-Child interaction and relationships are a key driver of impact. The trial led Waves for Change to define nine foundational coach competencies,[13] informed by WHO–UNICEF Ensuring Quality in Psychological Support (EQUIP), and develop supporting training assets that are now embedded on the WHO–UNICEF EQUIP platform for sport and play programmes worldwide:

Engaging each child
1. Non-verbal communication
2. Verbal communication
3. Empathy, warmth and genuineness
4. Rapport building
5. Identifying safeguarding concerns

Leading the group
6. Managing groups
7. Using positive forms of discipline
8. Being inclusive
9. **Making sessions fun**

so that children want to keep coming back

WHAT THIS MEANS FOR POLICY AND THE SECTOR

Build the mental health workforce from the adults young people already trust.

Coaches and youth workers are often the adults young people turn to, and in South Africa these workforces already exist at scale through government afterschool sport and community clubs. Early evidence suggests Take 5 could equip them to hold safe spaces and build self-regulation skills: a feasible route to scaling prevention.

WHAT HAPPENS NEXT

ALIVE 2.0: a fully powered trial within a government sport programme

Building on the foundations of ALIVE 1.0, the new phase will work closely with adolescents with lived experience to deliver and evaluate a four-arm cluster randomised controlled trial across public schools in the Western Cape. The interventions target key mechanisms underlying adolescent mental health: self-regulation; poverty-related deprivations; and a combined intervention addressing both pathways. All arms include caregiver sessions to strengthen co-regulation and parental support. Funded by the Wellcome Trust, the 36-month study starts in January 2027, with the Western Cape Department of Cultural Affairs and Sport's Mass Participation, Opportunity and Access (MOD) Programme.[14]

[12] take-5.org; Davies, T. et al. (2025). Cambridge Prisms: Global Mental Health, 12.
[13] WHO–UNICEF EQUIP platform (equipcompetency.org); Jordans, M. J. D. et al. (2021). Global Mental Health, 8, e7.
[14] https://www.centreforglobalmentalhealth.org/news-events/wellcome-trust-awards-major-three-year-grant-to-alive-2-0/