

TECHNICAL BRIEF

Building MindSKILLZ for a Healthy Future:

Evaluating an Accessible, Sport-Based, Youth Mental Health Program in Nairobi and Mombasa, Kenya

SITUATION:

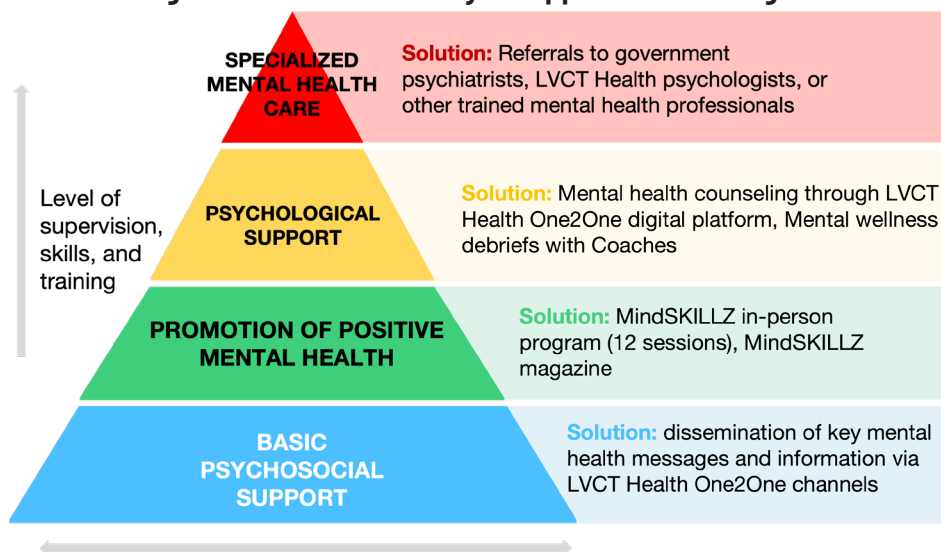
Poor mental health is the most critical health issue facing young people globally, with 1 in 4 adolescents experiencing a mental health condition¹. In Kenya, this problem is even worse due to a combination of high stress, limited mental health knowledge, lack of mental health services, and high levels of stigma that prevent young people from seeking support². Recent evidence indicates that nearly one half of Kenyan high school youth were experiencing depression symptoms, and over one-third were experiencing anxiety symptoms³. Ultimately, over 90% of adolescents in Sub-Saharan Africa never receive the mental health support they need, which can lead to compounding adverse effects on other areas of health, including increased HIV risk and unintended pregnancy^{4,5}. As such, we urgently need scalable solutions that promote mental health and support young people to develop competencies that help them navigate life's challenges and thrive, and avoid needing specialized care.



MINDSKILLZ SOLUTION:

In response to this challenge, Grassroot Soccer (GRS) and LVCT Health partnered with the Departments of Health (DoH) in Nairobi and Mombasa Counties to co-develop, pilot, and evaluate MindSKILLZ, a play-based mental health promotion and prevention intervention for adolescents (10-14 years old). MindSKILLZ uses soccer language, metaphors, and activities to draw connections to mental health, and is delivered by trained near-peer Coaches. Employing a positive, strengths-based approach to mental health, MindSKILLZ was designed with meaningful input from young people to improve the mental health of all young people: to help those who are currently struggling with their mental health, as well as preventing others from experiencing poor mental health in the future. Key program topics include: self-knowledge, gender norms, mental health awareness, strengths, coping skills, emotional regulation, goal setting, peer pressure, care seeking, substance misuse, and empathy.

Figure 1: MindSKILLZ Kenya Stepped Care Package



EVALUATION OVERVIEW:

Dates: January 2023 – April 2024

Partners: Grassroot Soccer, LVCT Health, Nairobi County Department of Health, Mombasa County Department of Health, University of Illinois Chicago

Ethical Approval: Amref Health Africa Health Ethics and Scientific Review Committee, Kenya National Commission for Science, Technology, and Innovation (NACOSTI), Nairobi County Government, Mombasa County Government

Research Permit and Authorization: The Kenya National Commission for Science, Technology, and Innovation (NACOSTI) in Kenya, Nairobi County Government, Mombasa County Government

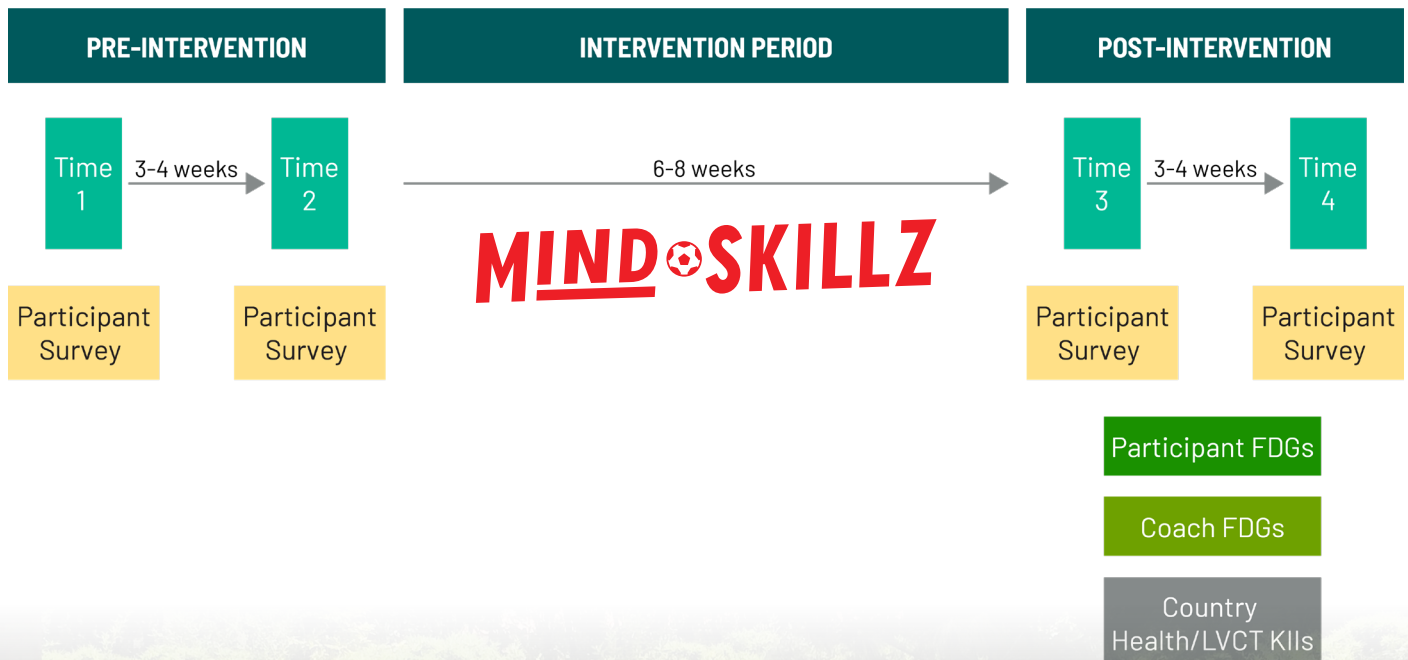
EVALUATION OBJECTIVES:

- Assess effects of MindSKILLZ on adolescent participant mental well-being, depression, emotional problems, and conduct issues.
- Evaluate program implementation feasibility, acceptability, perceived cost, and facilitators/barriers.
- Examine effects of MindSKILLZ on mental health knowledge, attitudes, and help-seeking behaviors among participants and Coaches.

STUDY DESIGN:

The study used a mixed methods, interrupted time-series (ITS) design with quantitative surveys at four time points (two pre- and two post-intervention) with participants.

Figure 2: Study Design



Quantitative Methods: participant surveys were administered at 4 different time points (Time 1-Time 4) using the following measures:

Table 1: Quantitative Measures

Measure	# of Items	Description
World Health Organization-5 (WHO-5)	5	Measures well-being in the past two weeks
Patient Health Questionnaire-9 (PHQ-9)	9	Measures depressive symptoms in past two weeks
Mental Health Literacy Scale:		
Mental health stigma items	4	Selected sub-scale examines stigmatizing mental health beliefs
Mental health support-seeking items	9	Selected sub-scale examines knowledge of services and willingness to seek support
Strengths and Difficulties Questionnaire (SDQ):		
Emotional processing difficulty	5	Selected sub-scale examines difficulty with emotional processing
Conduct problems	5	Selected sub-scale examines conduct/behavioral problems
Prosocial behavior	5	Selected sub-scale examines prosocial behavior
MindSKILLZ core questionnaire	12	Developed by GRS based on MindSKILLZ program content, including mental health knowledge, coping skills, and positive self-concept
Mental Health Implementation Science Tools (mhlST) acceptability items	7	Selected items examine participant satisfaction with the program

Quantitative data analysis employed segmented fixed effects regression modeling.

Qualitative data was collected using the following methods:

Table 2: Qualitative data collection methods

Method	Respondents	Site	
		Nairobi	Mombasa
Focus group discussions (FGDs)	Coaches	2 groups	1 group
	Adolescents	3 groups	2 groups
Key informant interviews (KIs)	LVCT Health Staff	2	1
	Country DoH Staff	1	1

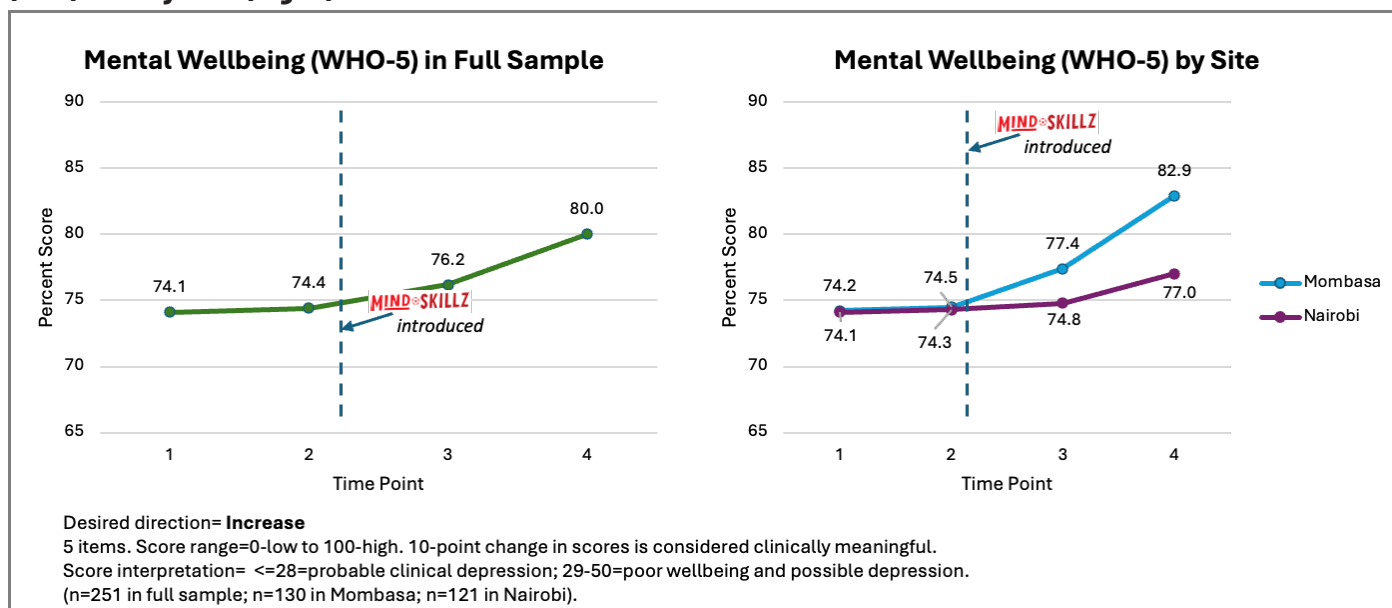
KEY FINDINGS:

- 251 participants completed surveys at all four time points and were included in the analysis: 56.2% female, 51.8% in Nairobi, 63.4% in Grade 4-6.

Positive trends on all mental health outcome measures

- All five quantitative mental health measures trended in the desired direction, and changes in participant scores on the WHO-5 Well-being Index approached statistical significance ($p=0.08$).
 - Trends in this measure showed greater changes in Mombasa than those in Nairobi.
- The PHQ-9, mental health literacy sub-scales, SDQ subscales and MindSKILLZ core questionnaire all showed positive changes, although they were not statistically significant ($p>0.05$). See Limitations below on statistical testing.

Figure 3: Changes in mean scores for mental well-being (WHO-5) across time in the full sample (left) and by site (right)



- Additionally, positive trends in quantitative outcomes continued and in some cases strengthened from Time 3 to Time 4, after the completion of the intervention. The absence of ‘fadeout’ effects⁶ suggests that MindSKILLZ participants may have gained long-term skills to cope with challenges and lessen their experiences of poor mental health.

Reduced mental health challenges

- For the PHQ-9 and WHO-5, the proportion of participants reporting moderate to severe symptoms of depression and poor well-being respectively was nearly cut in half from pre-intervention to Time 4.

Table 3: Proportion of participants showing difficulties at each time point

Sample	Pre-intervention		Post-intervention	
	Time 1	Time 2	Time 3	Time 4
	n(%)	n(%)	n(%)	n(%)
WHO-5 (≤ 50): poor well-being/possible depression symptoms	23 (9.2%)	39 (15.5%)	21 (8.4%)	20 (8.0%)
PHQ-9 (10+) moderate/severe depression symptoms	41 (17.3%)	40 (16.9%)	33 (13.9%)	22 (9.3%)

- Participants showing difficulties at Time 1 similarly showed greater changes in their scores for between Time 1 and Time 4 compared to the full sample of participants.
 - For both the PHQ-9 and WHO-5, notable improvements in their scores occurred from Time 1 to Time 2, prior to the introduction of MindSKILLZ.
 - For some participants experiencing difficulties, even having the space to talk about their challenges may have lessened symptoms experienced by some participants, a phenomenon that has been noted in other studies⁷.

High program acceptability

- Participants reported very high program satisfaction: 91% gave the program the highest possible rating.
- Adult stakeholders all viewed the program positively.
- The fun, engaging nature of MindSKILLZ was particularly highlighted by both participants and adults as a key feature.



The moment classes began, if a participant has forgotten, some adolescent would remind them to join the MindSKILLZ session because it was fun.

- MindSKILLZ Coach, Nairobi

Improved coping skills and mental health knowledge, attitudes, and behaviors

- **MindSKILLZ participants reported improved coping skills, changes which were also observed and reported by Coaches and key stakeholders.**
- **They highlighted anger management, stress management, and communication with others as particularly beneficial:**



I learned that mental health is the state of being healthy mentally, and you are able to do what is expected and to deal with normal challenges of life.

- MindSKILLZ Participant, Mombasa

Before I came to MindSKILLZ I liked supporting fights, whenever people would fight, I would be in the front line supporting. I used to be short tempered but since I came to MindSKILLZ whenever I come across people fighting, I would look for ways of separating them so that they don't hurt each other. Also, I rarely get mad over small things like before...I use the three Ts [take a breath, think of the consequences, talk it out] and Take 5 [breathing].

- MindSKILLZ Participant, Mombasa

- Participants also reported improved mental health knowledge and attitudes, including where to access services, how to support friends, and decreased stigma:



We learned about mental illnesses and we are told mental illnesses are common. It's not just going crazy. Some of them is being anxious, being stressed, all those, depression. It's not just going mad.

- MindSKILLZ Participant, Nairobi



Improvements in Coach mental health knowledge, attitudes, and behaviors

- Coaches in Nairobi and Mombasa reported that taking part in MindSKILLZ helped them personally by building their mental health knowledge and coping skills, as well as developing patience, cooperation, and self-esteem:

“After going through the MindSKILLZ program, I now understand maybe someone can do something and it's not because they want to do it, but it's because even themselves they're facing a certain challenge [...] Yeah, so nowadays I'm not judgmental. I just understand them and deal with them the way they are and sometimes I also help them deal with their mental health issues.

- MindSKILLZ Coach, Mombasa

Positive secondary effects of MindSKILLZ

- Qualitative data revealed that MindSKILLZ extended its positive effects beyond intended mental health outcomes, with key stakeholders and Coaches observing improved school performance.
- Participants also reported that they shared mental health resources such as the MindSKILLZ magazine with friends and family members facing challenges.

Key implementation facilitators and barriers

- MindSKILLZ's strategic recruitment of near-peer Coaches local to implementation communities was highlighted as a facilitator to successful implementation.
- The play-based methodology that made the program fun and attractive to young people, positive government engagement at all stages of the program, and the complementary MindSKILLZ Magazine also facilitated successful implementation.
- Identified barriers to MindSKILLZ implementation were the complexity of certain mental health concepts, challenges with participant mobilization through community gatekeepers, time limitations from schools around session length, and inadequate supply of select program materials (balls, cones, etc.).

Perceived sustainability

- Nearly all stakeholders considered MindSKILLZ to be a low-resource program that could be eventually adopted by the government and sustained.
- Integration with existing structures and continued government support were reported as crucial for wider rollout of the program.

“The Government can still sustain the program.... Yes, it is because it doesn't require a lot of resources. It doesn't require, you know if one Coach or two Coaches can take up to 15 kids, you see that's a good number [...] it's one of the best models that we have actually around.

- Key Informant Interview, Mombasa

Limitations

- Given the small number of time points and the limited sample size (Nairobi only achieved 63% of the planned sample), the study was likely underpowered, which could explain the lack of statistically significant findings, despite all outcome measures trending in the desired direction.
- The pragmatic ITS design used only four time points (two on either side of the intervention delivery), and segmented fixed effects regression typically requires at least eight to twelve data points on either side of the intervention delivery for validity^{8,9}.

Conclusions:

- MindSKILLZ is low-cost and universally delivered to adolescents by lay providers, benefiting both young people currently experiencing mental health challenges and those doing well. It was developed locally in Kenya with young people and experts, creating a culturally appropriate and youth-friendly solution. MindSKILLZ offers an important complement to traditional psychological interventions designed primarily for adults outside of the Kenyan context.
- MindSKILLZ participants showed improvements in key mental health outcomes, and reported positive changes in their own behavior, which were also observed by Coaches and other key stakeholders. Participants found MindSKILLZ highly acceptable and enjoyable.
- While quantitative outcomes did not show statistically significant differences using the segmented fixed effects regression model, all outcomes were trending in the desired direction and nearly all outcomes continued that trend at the final follow-up point after MindSKILLZ sessions were completed.

Recommendations:

Considering feedback from study participants, programmatic experience, research experience, and the results of this evaluation, we recommend the following to optimize the MindSKILLZ program in Kenya and regionally:

Programmatic Recommendations:

- Review and revise MindSKILLZ program guide and magazine to address feedback about the complexity of certain topics and terminology.
- Provide optional modifications in the program guide to improve inclusive implementation, and further support for Coaches in implementing with participants with disabilities.
- Consider segmenting participants further by age, where possible.
- Continue to support Coach mental health (“caring for the carers”) and personal and professional development.
- Continue government and key stakeholder engagement to build MindSKILLZ into existing structures.
- Plan support of MindSKILLZ ‘clubs’ to offer continued engagement after participants complete the intervention.

Research Recommendations:

- Complete costing of MindSKILLZ to further examine sustainability.
- Explore effects of MindSKILLZ on secondary outcomes, such as school performance.
- Review and refine research and routine monitoring tools to consider cultural appropriateness and potential alignment with national and other indicators.

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