Original Paper

Peer Mentor Training and Supervision for a Digital Adolescent Depression Treatment in South Africa and Uganda: Mixed Methods Evaluation

Zamakhanya Makhanya[1,2,3*], MA, MPH; Bianca Moffett[2*], MBChB, MSc; Julia R Pozuelo[2,4,5], DPhil; Meghan Davis[6], MPH; Joy Louise Gumikiriza-Onoria[7], MSc, PhD; Shayni Geffen[8], MSc; Tlangelani Baloyi[9], MA; Tholene Sodi[10], MA, PhD; Eugene Kinyanda[7], MBChB, MMed Psy, PhD; Michelle G Craske[11,12], PhD; Christine Tusiime[13], MSc; Crick Lund[14,15], MA, PhD; Alastair Van Heerden[16], PhD; Kathleen Kahn[2,17], MBChB, PhD; Alan Stein[2,18,19], MBChB, FCPsych; Heather O'Mahen[20], PhD; DoBAt and Ebikolwa Consortium[21]

[1]Department of Social Policy and Intervention, University of Oxford, Oxford, United Kingdom
[2]SAMRC/Wits Rural Public Health and Health Transitions Research Unit (Agincourt), School of Public Health, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa
[3]Centre for Social Science Research, University of Cape Town, Cape Town, South Africa
[4]Department of Global Health and Social Medicine, Harvard Medical School, Boston, MA, United States
[5]Department of Psychiatry, University of Oxford, Oxford, United Kingdom
[6]Mind Ease, London, United Kingdom
[7]Department of Psychiatry, Makerere University, Kampala, Uganda
[8]SA Federation for Mental Health, Cape Town, South Africa
[9]The Vaccines and Infectious Diseases Analytics (VIDA) Research Unit, University of the Witwatersrand, Johannesburg, South Africa
[10]SAMRC-DSI/NRF-UL SARChI Chair in Mental Health and Society, University of Limpopo, Polokwane, South Africa
[11]Department of Psychology, University of California, Los Angeles, Los Angeles, CA, United States
[12]Department of Psychiatry and Biobehavioral Sciences, University of California, Los Angeles, Los Angeles, CA, United States
[13]Department of Psychology, Butabika Hospital, Kampala, Uganda
[14]Centre for Global Mental Health, Health Service and Population Research Department, King's College London, London, United Kingdom
[15]Department of Psychiatry and Mental Health, Alan J Flisher Centre for Public Mental Health, University of Cape Town, Cape Town, South Africa
[16]SAMRC/Wits Developmental Pathways for Health Research Unit, Department of Paediatrics, School of Clinical Medicine, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa
[17]Umeå Centre for Global Health Research, Department of Public Health and Clinical Medicine, Division of Epidemiology and Global Health, Umeå University, Umeå, Sweden
[18]Africa Health Research Institute, KwaZulu Natal, South Africa
[19]Blavatnik School of Government, University of Oxford, Oxford, United Kingdom
[20]Mood Disorders Centre, Department of Psychology, University of Exeter, Exeter, United Kingdom
[21]See Acknowledgments
*these authors contributed equally

Corresponding Author:

Zamakhanya Makhanya, MA, MPH
Department of Social Policy and Intervention
University of Oxford
Barnett House, 32-37 Wellington Square
Oxford OX1 2ER
United Kingdom
Phone: 44 07470762759
Email: zamakhanya.makhanya@spi.ox.ac.uk

Abstract

Background: Blended digital mental health interventions combining technology with human support are more effective than stand-alone treatments. However, limited research has examined how to train and supervise personnel delivering human support components. The Kuamsha app, a gamified digital intervention for adolescent depression based on behavioral activation, was designed to be paired with low-intensity telephone-based peer support. A structured training and supervision

program for peer supporters was codeveloped through workshops with mental health professionals and youth with lived experience of mental health challenges in South Africa and Uganda. To the best of our knowledge, this is the first study to evaluate a structured peer mentor model within a digital mental health intervention in low- and middle-income countries.

Objective: This study assessed the feasibility, acceptability, and fidelity of a training and supervision program for peer supporters delivering a digital mental health intervention in South Africa and Uganda.

Methods: We conducted a mixed methods evaluation of the peer mentor program. Quantitative metrics assessed the feasibility of recruitment, retention, and attendance among peer mentors (n=13, South Africa; n=4, Uganda), as well as training acceptability. Fidelity, adherence, and competence were scored at the session level and converted to percentages of the maximum possible score. Linear mixed-effects regression models with a random intercept for provider and site estimated adjusted marginal means (95% CI). In-depth interviews and focus group discussions explored program acceptability and implementation factors.

Results: The peer mentor training and supervision program was feasible and acceptable in both settings, with high recruitment (South Africa: n=13/19, 68%; Uganda: 4/4, 100%), retention (South Africa: 9/13, 69%; Uganda: 4/4, 100%), and training attendance rates (89%-92% in South Africa and 100% in Uganda), alongside qualitative reports of high satisfaction. All peer mentors met a minimum posttraining competency threshold (≥50%), with median competency scores of 70.7% (IQR 45.8%-78.2%) in South Africa and 75.4% (IQR 73.8%-77.3%) in Uganda. Independent ratings of recorded calls indicated high overall fidelity in South Africa (84.7%, 95% CI 80.3%-89.0%) and Uganda (87.7%, 95% CI 83.4%-92.1%). Adherence was higher in Uganda than South Africa (adjusted mean difference [AMD] 13.30 percentage points, 95% CI 8.99-17.61; $P<.001$), as was competence (AMD 4.88 percentage points, 95% CI 1.23-8.53; $P=.009$). The AMD in overall fidelity (3.06 percentage points, 95% CI –0.98 to 7.10) was not statistically significant ($P=.14$). The qualitative findings emphasized the value of ongoing supervision and capacity development, interactive training approaches, and blended delivery models.

Conclusions: Locally adapted training and supervision models can strengthen peer mentor capabilities to support digital interventions. Adequate supervisory capacity and incentive structures are critical to sustain engagement, retention, and fidelity. In settings with frequent network disruptions, periodic in-person contact between peer mentors and supervisors may enhance fidelity. Future research should examine how peer mentor fidelity influences user engagement and mental health outcomes.

Trial Registration: Pan African Clinical Trials Registry PACTR202206574814636; https://pactr.samrc.ac.za/TrialDisplay.aspx?TrialID=23792

International Registered Report Identifier (IRRID): RR2-10.1136/bmjopen-2022-065977

JMIR Ment Health 2026;13:e86470; doi: 10.2196/86470

Keywords: depression; adolescent; digital interventions; mobile app; behavioral activation; program evaluation; peer support; task-sharing; training and supervision; fidelity; competence and adherence; low- and middle-income countries

Introduction

Burden and Unmet Need in Low- and Middle-Income Countries

Adolescent depression is a significant global public health concern and a leading contributor to disability among young people worldwide [1,2]. It is consistently linked to long-term psychosocial difficulties in adulthood, including persistent mental health issues, lower academic achievement, impaired social functioning, and unstable employment [3,4]. These challenges are particularly acute in low- and middle-income countries (LMICs), where recent studies from South Africa and Uganda estimate that up to 20% of adolescents experience depressive disorders [5-7]. In these settings, adolescent depression is also associated with substance use, sexual risk behaviors, and entrenched poverty and inequality, further exacerbating social and economic burdens [8-10]. Although effective treatments exist [11,12], access remains limited in LMICs due to shortages of trained professionals, under-resourced health systems, and stigma [10,13]. These barriers are often more severe for adolescents than for adults because youth mental health services, policies, and resources are frequently underdeveloped, contributing to substantial unmet need [14-16].

Promise and Limits of Digital Mental Health

Digital mental health interventions (DMHIs), such as mobile apps and web-based platforms, may offer scalable, cost-effective solutions to bridge access gaps [17-19]. By delivering therapeutic content remotely, DMHIs can help overcome workforce shortages and geographic and logistical barriers to care [20,21]. The feasibility of DMHIs in LMICs is supported by increasing access to mobile phones, including smartphones, and rising digital literacy among young people. National survey data from several Southern African countries indicate that mobile phone ownership among youth aged 15 to 24 years ranges from 32% in Malawi to 83% in Eswatini and is trending upward [22]. In South Africa, recent data from urban adolescents indicate that more than 85% report owning a smartphone and nearly 70% use the internet to seek health-related information [23]. These patterns suggest that mobile-based interventions have become a more viable strategy for reaching adolescents with mental health support. Realizing this potential, however, requires attention to equity,

contextual relevance, and inclusive design, priorities that are increasingly underscored in the digital health promotion literature [24].

Human Support and Task-Sharing

Despite this potential, digital-only interventions face important limitations, including high attrition and lower-than-expected effectiveness outcomes [19,25]. Meta-analytic evidence suggests that blended models, which combine technology with real-time communication, social connection, and accountability [26,27], improve engagement, adherence, and clinical outcomes [28-30]. Task-sharing approaches have emerged as a promising strategy to address workforce gaps in LMICs [31,32]. In these models, nonspecialists, defined as individuals without formal professional training in mental health (eg, lay counselors or community health workers), are trained and supervised to provide low-intensity psychosocial support, often alongside digital tools [21]. A newer variation within task-sharing is the peer support model. Peer supporters are nonspecialists who share similar sociodemographic characteristics (eg, age, ethnicity, or cultural background) and/or lived experience of mental health challenges with the target population [33]. Among adolescents, such shared identity may enhance trust, relatability, and engagement, potentially overcoming barriers often encountered in traditional clinical settings [34-38].

Training, Supervision, and Fidelity

Although blended approaches have demonstrated success across diverse settings [39,40], variations in training and supervision can affect their effectiveness [41]. Central to this challenge is fidelity, defined as providers' adherence to intervention protocols and their competence or skill in delivering the intervention [42,43]. Fidelity influences outcomes across psychological treatments in both routine clinical practice and controlled trials [44-46]. Maintaining fidelity is especially critical when interventions are delivered by nonspecialists, given their less extensive mental health training, clinical experience, and the potential impact on treatment effectiveness [20,47]. At the same time, overly rigid protocols can constrain provider competence and authentic engagement with participants, necessitating a balance between adherence and flexibility.

Structured training programs for nonspecialist health care workers and lay counselors can improve the effectiveness of psychological treatments [20,32]. Ongoing supervision supports sustained fidelity and provider competence over time [48]. However, evidence on how best to design and deliver training and supervision programs for peer-supported digital interventions remains limited, particularly in low-resource settings. The rapid expansion of digital technologies creates opportunities to provide training and supervision remotely, potentially increasing the scalability and reach of treatments [49,50]. Rigorous evaluation of the feasibility, acceptability, and outcomes of such models can inform program adaptation, implementation, and scale-up. This is particularly important in relation to fidelity and downstream intervention effectiveness.

Study Context and Objective

Kuamsha is a gamified mobile app that delivers behavioral activation (BA) through interactive narrative stories [51]. Users choose between 2 storylines, each comprising 6 sequential modules. Each module takes approximately 15 to 20 minutes and introduces a core BA skill (further details are available in separate publications [52,53]). The intervention schedule comprised 6 modules over 11 weeks. To enhance engagement and reinforce BA concepts, trained and supervised peer mentors made brief weekly telephone calls to participants. Each adolescent was paired with a peer mentor and received up to 7 calls: 1 introductory call and 1 call per module. We reported outcomes of Kuamsha among users elsewhere [53,54].

The objective of this study was to evaluate the feasibility, acceptability, and fidelity of peer mentor training and supervision among delivery agents (ie, peer mentors) in South Africa and Uganda.

Methods

Study Design and Registration

This mixed methods evaluation of the peer mentor training and supervision program was embedded within 2 related feasibility studies conducted in South Africa and Uganda. In South Africa, the evaluation was nested within the digital delivery of BA therapy to overcome depression and facilitate social and economic transitions of adolescents (DoBAt) study, a 2-arm pilot randomized controlled trial assessing the feasibility, acceptability, and preliminary effectiveness of the Kuamsha app with peer support [53]. The DoBAt study was prospectively registered with the Pan African Clinical Trials Registry (PACTR202206574814636). In Uganda, the evaluation was conducted within Ebikolwa n'Empisa, a single-arm feasibility study of the Kuamsha app with peer support, adapted for a peri-urban Ugandan context [54].

This study focused specifically on evaluating the feasibility, acceptability, and fidelity of the peer mentor training and supervision model across both settings, using a convergent mixed methods design. Quantitative and qualitative data were collected and analyzed simultaneously with equal emphasis. The findings were integrated using a merging approach to provide complementary insights into feasibility, acceptability, and fidelity (see the GRAMMS [Good Reporting of A Mixed Methods Study] checklist; Checklist 1).

Ethical Considerations

Ethical approval was obtained from institutional review boards in South Africa (University of the Witwatersrand Human Research Ethics Committee, MED20-05-01, and the Mpumalanga Province Research Committee), Uganda (Makerere University School of Public Health [HDREC750] and the Uganda National Council for Science and Technology [HS724ES]), and the United Kingdom (Oxford Tropical Research Ethics Committee, OxTREC 72-19 and OxTREC 34-20).

Peer mentors were provided with written information about the study objectives, procedures, potential risks and benefits, and their rights as participants, including the voluntary nature of participation and their right to withdraw at any time without consequence to their employment. Written informed consent was obtained prior to participation. Adolescents provided informed assent or consent, and parental consent was obtained for their participation and for the recording of peer mentor calls.

Confidentiality and privacy were protected throughout the study. Audio recordings and transcripts were deidentified and stored on secure, password-protected institutional servers accessible only to authorized members of the research team. Quotations included in this manuscript have been anonymized to prevent identification.

Peer mentors received reimbursement for their role in delivering the intervention, as described in Table 2; no additional compensation was provided specifically for participation in this evaluation. Risks arising during the study were managed in accordance with a predefined Risk Management Protocol [52], with supervisors conducting assessments and facilitating referrals to local services when necessary.

Study Setting

In South Africa, the DoBAt study [53,55] took place in the Bushbuckridge subdistrict of the Mpumalanga Province, within the Health and Socio-Demographic Surveillance System study area of the South African Medical Research Council/Wits Rural Public Health and Health Transitions Research Unit (Agincourt) [56]. Bushbuckridge is a rural yet densely populated region located near the Mozambique border and is home to approximately 1 million people. Most adolescents attend secondary school, and youth literacy rates are high (91%-95.7%); however, 36.8% of young adults (18-30 y) are not employed, in tertiary education, or in training [57,58].

In Uganda, the Ebikolwa n'Empisa study [54] was implemented by BRAC Uganda in catchment areas mapped around the Katabi town in Wakiso District, a peri-urban region approximately 30 km from the capital, Kampala, with an estimated population of 170,000 [59]. Approximately half of adolescents attend secondary school; however, given the predominance of subsistence farming, not employed, in tertiary education, or in training rates are around 15% [60].

In both contexts, access to mental health services remains sparse, with specialist mental health care usually concentrated in district or regional hospitals. Accessing these facilities often requires lengthy travel, commonly a 2-hour journey by public transportation, and families face additional barriers due to transport costs and the opportunity costs of lost work or schooling [61,62]. The scarcity of mental health human resources further exacerbates these access challenges. South Africa has an estimated 1.3 psychiatrists and 8.5 mental health nurses per 100,000 people, while Uganda has fewer than 0.1 psychiatrists and 1.4 mental health nurses per 100,000, with most based in Kampala [62,63]. Given these constraints, we adopted a peer-mentor model to complement the Kuamsha app and extend the reach of psychological treatments to low-resource environments.

Peer Mentor Training and Supervision

Development of the Peer Mentor Program

The peer mentor training and supervision program was codeveloped through a series of workshops. First, we conducted 6 online workshops with 8 mental health professionals (HOM, MGC, CL, TS, EK, AS, BM, and JLG-O) to develop a draft peer mentor manual. Next, we held in-person workshops with youth with lived experience in South Africa (4 workshops with 6-8 participants each) and Uganda (6 workshops with 8-10 participants each) to refine the program's content and structure. Specialists from the United Kingdom, United States, and Uganda (HOM, AS, MGC, EK) provided expert input on BA. The training program drew from established models of peer-to-peer coaching, particularly the Screening and Treatment for Anxiety and Depression program developed by MGC at University of California, Los Angeles [39,64]. The co-design process shaped the structure of the program, which was iteratively refined to (1) build core competencies required to deliver telephone-based support to Kuamsha users and (2) optimize cultural and contextual suitability. Multimedia Appendix 1 outlines the development process.

The co-design process shaped the role specifications for peer mentors. The specifications focused on recruiting supporters close in age to, but slightly older than, adolescent users (15-19 years), typically 18 to 30 years, as age proximity was viewed as key to relatability and shared experiences of adolescence. Additional requirements included fluency in the local language and familiarity with the local culture. Other qualities included respect for confidentiality; a basic understanding of mental health problems; and a nonjudgmental, supportive attitude. The lived experience of mental health challenges was also considered valuable for empathy and rapport; however, we did not conduct formal assessments nor require mentors to disclose personal experiences of depression due to concerns about mental health–related stigma in South Africa and Uganda.

Recruitment of Peer Mentors

In South Africa, we recruited applicants through advertisements circulated via university psychology and social work departments. A total of 19 Xitsonga-speaking students or recent graduates with a bachelor's degree in psychology or social work participated in training. In Uganda, 4 youth workers (3 women and 1 man) were trained as peer mentors. Their academic backgrounds included counseling, guidance and psychology, and library and information science. All were fluent in Luganda.

Training Content and Format

Training was conducted online between May and November 2021, focusing on both program-specific competencies (ie, delivering BA telephone-based support) and nonspecific skills needed to establish a therapeutic alliance (Table

1). In addition to these core competencies, peer mentors received training on the study context, research ethics, and risk management. The training included didactic elements (presentations) and interactive components (skills rehearsal, role-plays) and used multimedia materials, including video content, learner workbooks, and structured call sheets.

Table 1. Core competencies of the peer mentor program.

Competency domain	Observable behavior or evidence
Program-specific competencies	
Behavioral activation: knowledge and skills	• Explains how avoidance and withdrawal reinforce low mood • Explains why identifying and engaging in personally meaningful activities can break this cycle • Describes how to take small steps toward their goals • Identifies strategies to overcome common barriers to engagement (sleep, interpersonal relationships, problem-solving)
Structured weekly call delivery	• Introduces the call and reiterates confidentiality • Inquires about the participant's mood • Assesses their engagement with the app over the past week • Supports understanding and engagement with weekly activities • Summarizes the call and schedules the next one
Nonspecific competencies	
Professionalism	• Is prepared for each call • Follows the 5 steps of the call • Delivers 15- to 20-minute calls consistently
Ethical standards	• Upholds confidentiality except in cases of risk of harm to self or others
Nonjudgmental stance	• Respects differences in cultural backgrounds or belief systems • Listens to participants' ideas
Self-reflection	• Reflects on performance • Seeks opportunities to improve competencies
Active listening	• Listens without interrupting excessively • Asks open-ended questions • Checks to ensure they have understood their mentee correctly

Supervision

Weekly online group supervision sessions (1 hour in South Africa; 30 minutes in Uganda) encouraged reflection, addressed challenges, and supported ongoing skills development. To optimize fidelity and enhance peer mentor competencies, all calls were recorded. Supervisors reviewed selected recordings and provided structured feedback to peer mentors. In both settings, supervisors were mental health professionals (a clinical psychologist in South Africa and a psychiatric clinical officer in Uganda). Supervisors conducted additional brief reflective check-ins with individual peer mentors to monitor well-being and reduce the risk of burnout.

Delivery of Training and Supervision

The content and materials used for training and supervision were standardized across sites; however, delivery was adapted to account for local resource availability and logistical considerations related to the study designs. For example, in South Africa, due to the wider geographical distribution of peer mentors, training was conducted entirely remotely via Microsoft Teams, with no in-person contact between peer mentors or with their trainers. In Uganda, peer mentors met at the BRAC office for online training delivered via Microsoft Teams. We have summarized the key differences in Table 2.

Table 2. Delivery of the peer mentor program in South Africa and Uganda.

Program characteristic	South Africa	Uganda
Peer mentors trained	19	4
Peer mentors delivering program	13	4
Employment period	Part-time, approximately 12 months	Full-time, approximately 3 months
Reimbursement	Approximately US $123 per month per mentor; mobile phone credit and data vouchers provided	US $100 per month per mentor
Training hours	36	78
Trainer-trainee ratio	1:10 (1:5 during intervention period)	1:2
Supervisor characteristics	Clinical psychologist	Psychiatric clinical officer

A TIDieR (Template for Intervention Description and Replication) checklist describing the training and supervision components (content, dose, providers, mode, tailoring, modifications, and fidelity) is provided in Checklist 2.

Outcomes

Feasibility and Acceptability

Feasibility and acceptability were assessed quantitatively using supervisors' recruitment and retention records and training and supervision attendance registers. Peer mentors also completed a structured 36-item Peer Mentor Training Evaluation questionnaire at the end of training (Multimedia Appendix 2). Focus group discussions (Multimedia Appendix 3) with peer mentors in South Africa (n=10) and Uganda (n=4) and follow-up in-depth interviews (Multimedia Appendix 4) with peer mentors in South Africa (n=9) provided further insights into satisfaction, perceived value, implementation challenges, and opportunities for improvement.

Fidelity

Posttraining Competence

We assessed peer mentors' competence post training using a posttraining assessment developed for this study (Multimedia Appendix 5).

Several established competency frameworks guide the training and assessment of nonspecialist mental health providers, including the Enhancing Assessment of Common Therapeutic Factors and the Working With Children – Assessment of Competencies Tool, both developed within the World Health Organization's Ensuring Quality in Psychological Support initiative [65-67]. These frameworks emphasize the assessment of core, transdiagnostic counseling competencies (eg, communication skills, ethical practice) that are applicable across psychological interventions and delivery contexts. While these tools provide a robust foundation for evaluating nonspecific competencies, we intentionally developed a program-specific assessment to capture competencies central to the peer mentor role in this intervention, including BA-specific skills (eg, activity monitoring, goal setting) and structured support tasks required to accompany a digital treatment.

Intervention Period Fidelity

Independent assessors evaluated peer-mentor fidelity during intervention delivery. In South Africa, approximately 10% of calls were randomly selected using proportional sampling, stratified by peer mentor, excluding introductory, incomplete, corrupted, or termination calls. In Uganda, we randomly selected 1 recording per peer mentor per week.

Recordings were evaluated using a supervisor feedback form that assessed competence (score out of 30) and adherence (scored out of 37). Fidelity scores were calculated as the sum of adherence and competence scores (Multimedia Appendix 6).

To ensure interrater reliability, 2 independent assessors double-rated 5 recordings in South Africa and 7 recordings in Uganda. The assessors resolved discrepancies through discussion and, once they reached consensus on their scoring, proceeded independently.

Data Analysis

Quantitative data analyses were conducted using Microsoft Excel and Stata 19 SE (StataCorp LLC). Descriptive statistics summarized recruitment, retention, attendance, and implementation outcomes. Continuous variables are presented as means and SDs or medians and IQR, as appropriate, and categorical variables as counts and percentages. To compare posttraining competence scores between South Africa and Uganda, we used the Wilcoxon rank sum test.

Intervention period fidelity (0-37), adherence (0-7), and competence (0-30) were scored at the session level and converted to percentages of the maximum possible score to facilitate comparison across outcomes. Because multiple sessions were delivered by the same peer mentor, observations were clustered within providers. To account for this hierarchical structure, we fitted linear mixed-effects regression models with a random provider intercept and included site (Uganda vs South Africa) as a fixed effect. Adjusted marginal means and 95% CI were estimated using postestimation margins commands, and absolute percentage-point differences between sites were derived from pairwise comparisons of marginal predictions. Intraclass correlation coefficients were calculated from model variance components to quantify provider-level clustering.

Given that only 1 implementation site was included per country, comparisons reflect site-level differences rather than country-level effects. Statistical significance was defined as $P<.05$ (2-sided).

For the qualitative component, experienced bilingual research assistants translated audio recordings from focus group discussions and in-depth interviews into English and transcribed them using a naturalized verbatim approach. Two researchers then analyzed transcripts thematically, following Braun and Clarke's 6-phase analytical approach [68-70]: (1) familiarization with the data, (2) generating initial codes, (3) generating themes, (4) reviewing potential themes, (5) defining and naming themes, and (6) producing the report. We used NVivo 10 Software (QRS International) for data management and coding.

The qualitative analysis was informed by a contextualist epistemological position, acknowledging that participants' accounts reflect both individual experiences and the social and implementation contexts in which the peer mentor program was delivered. Reflexivity was supported through analytic discussions among the research team, during which assumptions, positionalities, and emerging interpretations were examined and refined.

Within this broader mixed methods framework, a convergent mixed methods design was used, with quantitative and qualitative data analyzed separately and then integrated

during interpretation. The findings from both data strands were compared to identify convergence, complementarity, and divergence across feasibility, acceptability, and fidelity outcomes.

Results

Feasibility and Acceptability

Recruitment and Retention Rates

In South Africa, 19 individuals who met the peer mentor person specifications participated in training. Of these, 13 (68%) peer mentor trainees achieved a competency score ≥50% (median 70.7%, IQR 45.8%-78.2%). We recruited them to participate as peer mentors (of these trainees, 2 with borderline initial scores passed on their second attempts). During the DoBAt pilot randomized controlled trial (approximately 12 mo), 4 of 13 (31%) peer mentors withdrew from the program, resulting in a retention rate of 69%. Baseline characteristics of peer mentors who withdrew (n=4) and those who completed (n=9) are presented descriptively (see Multimedia Appendix 7). Given the small sample size and number of withdrawals, formal statistical comparisons were not conducted, as such analyses would be underpowered and potentially misleading. Those who withdrew were slightly older on average (mean 24.8, SD 3.0 y vs mean 22.7, SD 1.3 y), while distributions of gender and qualification background appeared similar across groups. These descriptive observations should be interpreted cautiously, as the small sample sizes preclude meaningful inference regarding baseline differences. Reported reasons for withdrawal included new employment or study opportunities, dissatisfaction with compensation, and declining to address performance concerns raised by supervisors.

In Uganda, 4 individuals who met the role specifications underwent training. All 4 (100%) trainees achieved a competency score ≥50% (median 75.4%, IQR 73.9%-77.3%) and were recruited as peer mentors. During the Ebikolwa n'Empisa feasibility study (approximately 3 months), no peer mentors withdrew (100% retention).

Attendance Rates

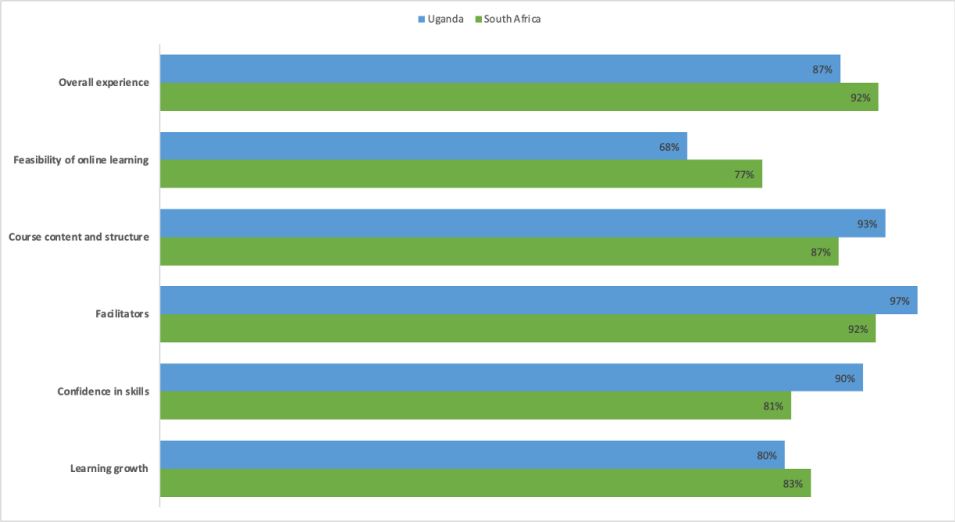
Training attendance was high across both sites. In South Africa, trainees attended 6.3 (89%) out of 7 of the initial training sessions, and those selected attended 9.2 (92%) out of 10 of the booster training sessions. In Uganda, all 4 trainees attended 100% of the sessions.

Attendance at weekly supervision sessions varied. In South Africa, median attendance among mentors was 23 (IQR 21.0-36.5) out of 40 sessions (57.5%) over 12 months. In Uganda, supervisors reported near-full attendance over the 3 months, despite no formal attendance logs being kept.

Peer Mentor Training Evaluation

The results indicated high overall satisfaction in both South Africa and Uganda (Figure 1). Peer mentors reported that training enhanced learning, boosted confidence in mentoring skills, and improved the understanding of BA. Facilitators were commended for clear communication and for fostering a supportive learning environment. Role-plays, instructional videos, and learner workbooks were rated as particularly useful for bridging theory and practice. While most mentors felt well prepared, a few expressed a desire for additional support to better prepare them for their roles.

Figure 1. Peer mentor training evaluation scores in South Africa and Uganda.



One area of divergence was the feasibility of online learning, which received lower ratings than other domains. In both settings, trainees reported occasional disruptions due to power outages and network interruptions, as well as intermittent disengagement. Suggestions for improvement included scheduled breaks and adjustments to training hours.

Qualitative findings support the high acceptability of the training.

When we did the training, I felt like, "Yes, I'm on top of this thing. [PM 8, focus group]

From my side, I felt like we had a lot of training. The training was good. The content was great, and also the role-plays. [PM 9, focus group]

For the first time, I was engaging in behavioral activation. Even today, in my practice, I apply it. [PM 6, interview]

Taken together, these findings suggest strong overall acceptability of the training model, while also identifying opportunities for refinement, particularly in settings relying on remote delivery.

Fidelity

Posttraining Competence

We assessed trainees' competence and engagement using a structured posttraining assessment; median competence was high at both sites (Table 3).

Table 3. Posttraining competence assessment scores.

Competency domain	South Africa (n=19), median (IQR)	Uganda (n=4), median (IQR)	*P* value[a]
Nonspecific competencies	74.3 (50.0-83.6)	75.7 (73.6-78.6)	.83
Program-specific competencies	75.0 (56.3-81.7)	78.3 (72.5-80.8)	.63
Posttraining total for group	70.7 (45.8-78.2)	75.4 (73.8-77.3)	.37
Overall reliability (Krippendorff α)	0.67	—[b]	—

[a]Mann-Whitney *U* test (exact *P* value).
[b]Not applicable.

Intervention Period Fidelity

A total of 89 sessions were rated (South Africa: 40 sessions across 10 providers; Uganda: 49 sessions across 4 providers). Table 4 provides adjusted marginal means for competence, adherence, and overall fidelity. Competence was 83.8% (95% CI 79.7%-87.8%) in South Africa and 88.6% (95% CI 84.6-92.6) in Uganda. Competence was higher in Uganda, with an adjusted mean difference of 4.88 percentage points (95% CI 1.23-8.53; *P*=.009). Adherence was 79.7% (95% CI 75.6%-83.7%) in South Africa and 93.0% (95% CI 89.0%-96.9%) in Uganda, corresponding to an adjusted mean difference of 13.30 percentage points (95% CI 8.99-17.61; *P*<.001). Overall fidelity was 84.7% (95% CI 80.3%-89.0%) in South Africa and 87.7% (95% CI 83.4%-92.1%) in Uganda; the adjusted mean difference of 3.06 percentage points was not statistically significant (95% CI –0.98 to 7.10; *P*=.14). Likelihood ratio tests supported the inclusion of provider-level random effects for adherence (*P*=.009), competence (*P*<.001), and fidelity (*P*<.001), indicating meaningful between-provider variability.

Table 4. Fidelity of peer mentor calls in South Africa and Uganda.

Outcome	South Africa (n=40 calls)	Uganda (n=49 calls)	*P* value
Competence[a]	83.8 (79.7-87.8)	88.6 (84.6-92.6)	.009
Adherence[a]	79.7 (75.6-83.7)	93.0 (89.0-96.9)	<.001
Fidelity score[a]	84.7 (80.3-89.0)	87.7 (83.4-92.1)	.14

[a]Adjusted marginal means with 95% CI.

Across outcomes, scores were generally high, with consistently higher adherence and competence in the Ugandan site. Because only 1 implementation site was included per country, these comparisons reflect site-level differences and should not be interpreted as country-level effects. Fidelity did not vary significantly across the 6 treatment calls ($F_{6,82}$=1.31; *P*=.26), indicating that fidelity did not differ systematically across treatment phases. We also examined fidelity over calendar time (week of delivery) and found no significant trend ($F_{17,69}$=0.76; *P*=.73), indicating that peer mentor performance remained stable throughout the study.

Qualitative perspectives on supervision highlighted barriers and facilitators to program delivery, underscoring opportunities to enhance peer mentor engagement, competence, and adherence.

Peer mentors reported that feedback on call recordings helped them develop their skills.

That actually was very important because you could receive feedback and actually see how you're doing and where to improve. [PM 2, interview]

Group supervision was considered valuable because it enabled peer mentors to learn from one another.

If I come across a challenge, then I can say, "My mentee was difficult, and this is how I worked around it." The next person has now taken that skill to say, "I can look out for certain things, and when that time comes, I now have something that I can use to mitigate that problem." [PM 8, focus group]

For peer mentors in South Africa employed across the DoBAt pilot trial (approximately 12 months), barriers to engagement included competing work and studies.

> *It was just a bit difficult for me to juggle around (my work) and be able to give all my mentees my full attention at the same time*. [PM 4, interview]

While many South African peer mentors found the online nature of the work convenient, some felt that periodic in-person contact with supervisors and fellow mentors would have supported engagement and retention.

> *I think that can be a barrier in itself, not having the in-person contact*. [PM 2, interview]

Discussion

Principal Findings

This study evaluated the feasibility, acceptability, and fidelity of an online training and supervision program for peer mentors supporting the delivery of a BA digital intervention. This intervention (Kuamsha app) targeted adolescents with depression across 2 studies conducted in South Africa and Uganda. The findings suggest that the peer mentor program offered a feasible and acceptable approach in both settings and achieved high overall fidelity. Differences in retention, adherence, and fidelity across sites underscore the importance of implementation factors, such as supervision models.

In South Africa, we trained 19 peer mentors and recruited 13 for the study, with a 12-month retention rate of 9 of 13 (69%). In Uganda, all 4 trained mentors were retained in the 3-month program. Training attendance was consistently high in both countries (approximately 90% in South Africa; 100% in Uganda), but supervision attendance was more variable in South Africa (64%); in Uganda, supervisors reported few absences, although formal logs were not kept. In South Africa, weekly online group supervision followed a structured format, whereas in Uganda, supervision was more informal.

Satisfaction ratings and qualitative findings support the high overall acceptability of training and supervision. Peer mentors reported positive learning experiences, greater confidence in their acquired mentorship skills, and appreciation for multimodal and interactive training methods (eg, role-plays, guided workbooks, supervised practice). However, technical challenges, such as network disruptions and power outages, hindered participation in online training. For some peer mentors in South Africa, the part-time nature of the work and competing priorities reduced engagement in the program. Addressing these obstacles may improve retention and adherence. Examples of possible solutions include flexible online training schedules, opportunities for periodic in-person contact, and, where feasible, full-time roles with higher remuneration.

Competence assessments showed that all peer mentors met the minimum competency threshold (50%). Fidelity assessments indicated moderate-to-high adherence in both countries and remained stable across treatment phases and over time. These findings align with prior research demonstrating that digital interventions are feasible and can provide effective mental health support in LMICs [19]. Competence and adherence were higher in the Ugandan than the South African site, which is unsurprising given the shorter program duration (3 months as opposed to 12 months) and higher supervisor: peer mentor ratio (1:4, as opposed to 1:13). It is also possible that some in-person contact of peer mentors with their supervisors in Uganda contributed to engagement, retention, and performance. These findings highlight the need for adequate supervisory capacity to maintain fidelity.

Comparison With Prior Work

The findings of this study contribute to the broader literature on training nonspecialist providers to deliver mental health interventions in LMICs and add emerging evidence on training and supervising peer supporters. A recent systematic umbrella review found that peer-delivered interventions are more likely to succeed when peer supporters receive structured training, ongoing supervision, and clear role guidance. However, most of this evidence comes from high-income settings [71]. The DoBAt pilot trial findings indicate that peer mentors promoted engagement and adherence to the app, as evidenced by a positive association between call frequency and usage metrics, as well as adolescents' reports of the value of peer guidance [53].

Research on DMHIs suggests that human-supported approaches tend to yield better adherence than digital-only interventions. Our study contributes to this evidence base by demonstrating that structured online supervision and booster training can help maintain fidelity in peer-led interventions in low-resource settings [72]. The differences observed between South Africa and Uganda mirror previous task-sharing research, which suggests that economic and contextual factors influence volunteer retention and performance. Prior research also highlights the necessity of ongoing supervision and refresher training to maintain fidelity in peer-delivered mental health interventions [20]. Collectively, these findings support context-specific training and supervision to optimize program outcomes.

Implications for Future Research and Practice

The results have several implications for future training and supervision models in LMICs. Retention remains a key challenge, as competing work or study priorities, or difficulty achieving competencies, may reduce long-term engagement and performance [73]. Competence assessment should remain central in peer-delivered interventions. Established tools, such as Enhancing Assessment of Common Therapeutic, Working with Children – Assessment of Competencies Tool, and the broader Ensuring Quality in Psychological Support platform, have been widely used to evaluate the clinical competencies of nonspecialist providers and share commonalities with the structured supervisor rating form used in this study [65-67]. However, our assessment was intentionally designed to capture BA-specific skills (eg, activity monitoring, structured

goal setting) that are not fully encompassed in generalist tools. Future research could examine how BA-specific assessments integrate with or benchmark against existing competency frameworks.

Flexible and hybrid training and supervision models, financial incentives, career development opportunities, and credentialing or certification should be explored to improve retention. Additionally, broadening recruitment to peer mentors who meet the role requirements (eg, age, language, cultural familiarity, confidentiality, and supportive attitude) but are not limited to psychology or social work students or graduates could expand the applicant pool. Recruiting peers from local communities would also facilitate periodic in-person contact among peer mentors, mentees, and supervisors. To further reduce barriers to engagement, future programs should budget for data or mobile credit or negotiate zero-rated access, as digital inequities can disrupt call quality and limit app engagement. This recommendation is consistent with digital health scale-up frameworks that emphasize data affordability as a key barrier in LMICs [74,75].

Structured, ongoing supervision was critical for maintaining fidelity, particularly among mentors with lower adherence scores. Programs can build on these findings by optimizing remote digital and peer-led group supervision to support cost-effective and sustainable implementation [76]. Addressing logistical challenges, such as network disruptions and power outages, will further improve delivery. Access to reliable technology and alternative communication strategies may enhance engagement and prevent disruptions.

Finally, future research should evaluate clinical outcomes associated with peer mentorship in adolescent mental health because while peer-delivered and peer-supported approaches are increasingly used, the evidence base remains mixed, particularly in LMIC settings. Recent reviews of peer-led mental health interventions for youth (10-24 y) found promising effects in several programs, but also highlighted substantial variability in intervention models (eg, structured vs informal support), outcomes, and implementation quality, alongside limited reporting on supervision, fidelity, and mechanisms through which peer support may influence symptom change [35,77]. Additionally, the outcome findings from the DoBAt pilot trial indicate that peer support may plausibly influence downstream outcomes through engagement pathways (eg, associations between mentor call frequency and intervention use). However, the pilot was not powered to isolate peer effects on depressive symptoms [53]. Together, these observations motivate fully powered studies that (1) link peer mentor fidelity and contact "dose" to user engagement metrics; (2) test whether engagement mediates symptom change; and (3) examine how modifiable implementation factors, such as supervision intensity, mentor employment conditions, and training modality, affect both fidelity and clinical outcomes.

Strengths and Limitations

Overall, the findings highlight both promise and practical challenges of implementing peer mentor models in LMIC contexts. We have noted several strengths of this study. First, the peer mentor program was implemented and evaluated across 2 distinct low-resource settings, a rural district in South Africa and a peri-urban area in Uganda, enhancing the generalizability and relevance of the findings to diverse contexts. Second, the program was co-designed with mental health professionals and youth with lived experience, ensuring that the training content, delivery format, and support structures were grounded in clinical expertise and the realities of providers (peer mentors) and end users (adolescents). Third, the use of a mixed methods approach provided a comprehensive evaluation with quantitative data providing objective assessments of the program's feasibility, acceptability, and fidelity, while qualitative insights contextualized peer mentors' experiences, helping to interpret variability in outcomes. Fourth, the study assessed both the training phase and intervention delivery, offering insights into retention, supervision, and quality over time. Fifth, rigorous fidelity evaluation was conducted through structured tools and independent ratings of a proportion of recorded sessions, with a subset double-coded to ensure interrater reliability. Finally, the program incorporated adaptable training and supervision models that drew on interactive methods (eg, role-plays, guided workbooks) and targeted booster sessions, which are critical for supporting peer-delivered care in real-world settings. This study, therefore, contributes to the literature on task-sharing models and underscores the potential scalability of peer-delivered digital mental health programs [32].

Several limitations need to be acknowledged. First, the relatively small sample size, particularly in Uganda, restricts the generalizability of site-specific findings and precludes granular analyses (eg, by gender or education level). Second, self-reported measures, such as the peer mentor training evaluation survey, are susceptible to response bias. Third, variations in the recruitment of peer mentors and the delivery of training and supervision, as well as sample size and study duration, hinder direct comparisons of outcomes between South Africa and Uganda. Finally, we did not measure the direct clinical effect of peer mentorship on adolescent mental health outcomes. Future studies should evaluate the clinical effectiveness of peer mentorship within DMHIs. Prior research has shown that structured training and supervision can enhance the effectiveness of nonspecialist health workers delivering mental health care [21]. Additionally, digitally supported training and supervision may improve scalability while maintaining fidelity [78].

Conclusions

This study demonstrates that peer support for a digital adolescent depression intervention in South Africa and Uganda is feasible and acceptable among providers and achieves moderate overall fidelity. These findings highlight the potential of DMHIs, supported by trained nonspecialists or peer mentors in LMICs. Further research should optimize training and supervision models and assess the effects of peer support on adolescent mental health outcomes.

Acknowledgments

We thank the peer mentors who participated in this study, cosupervisor Tinyiko Mafumo (registered counselor), and field supervisor Princess Makhubela for their dedication and hard work. We also thank the adolescents; community stakeholders; and the staff at BRAC, the South African Medical Research Council/Wits University-Agincourt Research Unit, and Sea Monster for their contributions and expertise.

The digital delivery of behavioral activation therapy and Ebikolwa Consortium collaborators are as follows: Alan Stein, Kathleen Kahn, Munshi Sulaiman, Julia R Pozuelo, Bianca D Moffett, Michelle G Craske, Stephen Tollman, Crick Lund, Tholene Sodi, Heather A O'Mahen, Eugene Kinyanda, Kate Orkin, Mahreen Mahmud, Sarah-Jayne Blakemore, Eustasius Musenge, Zamakhanya Makhanya, Joy Onoria, Megan Davis, Christine Nabulumba, Doreen Sikoti, Princess Makhubela, Meriam Maritze, Nokhutula Mayindi, Tlangelani Baloyi, Gabriele Chierchia, Emma J Kilford, Sophie L Fielmann, and Sophie Dallison.

During manuscript preparation, ZM used ChatGPT (OpenAI) and Grammarly for language editing. The authors reviewed and edited all output and take full responsibility for the manuscript's integrity and accuracy. No generative artificial intelligence tools were used to generate data, results, or images.

Funding

Research reported in this publication was supported by the South African Medical Research Council with funds received through the Medical Research Council-Newton UK-South Africa Joint Initiative on Mental Health (grant: MR/S008748/1). The development of the peer supporter training model and fidelity scales was supported by a Medical Research Council Global Challenges Research Fund grant supplement to the University of Exeter. Additional support was provided by a UK Research and Innovation Official Development Assistance Institutional grant supplement to the University of Oxford. The study was conducted within the South African Medical Research Council /Wits Rural Public Health and Health Transitions Research Unit and Agincourt Health and Socio-Demographic Surveillance System, a node of the South African Population Research Infrastructure Network, which is supported by the Department of Science and Innovation; the University of the Witwatersrand; and the Medical Research Council, South Africa, and previously the Wellcome Trust, UK (grants: 058893/Z/99/A, 069683/Z/02/Z, 085477/Z/08/Z, and 085477/B/08/Z).

Data Availability

The deidentified quantitative data and analysis code that support the findings of this study are available from the corresponding author upon reasonable request and subject to institutional data-use agreements. Audio recordings and full interview transcripts are not publicly shared to protect participant privacy; deidentified exemplar quotations are included in the text. Training materials and assessment tools are provided in Multimedia Appendices 1-7.

Authors' Contributions

Conceptualization: AS, AVH, BM, CL, EK, HOM, JLG-O, JRP, KK, MD, MGC, TS
Methodology: BM, AS, AVH, CL, CT, EK, HOM, JLG-O, JRP, KK, MD, MGC, SG, TB, TS, ZM
Investigation: BM, JLG-O, MD, SG, TB, ZM
Data curation: JRP, MD, SG, ZM
Formal analysis: BM, JRP, ZM (quantitative); BM, ZM (qualitative)
Project administration: BM, JRP, MD, SG, ZM
Supervision: JRP, BM, MD, SG, ZM
Funding acquisition: AS, HOM, KK, JRP
Writing – original draft: BM, ZM
Writing – review & editing: AS, AVH, BM, CL, CT, EK, HOM, JRP, JLG-O, KK, MD, MGC, SG, TB, TS, ZM

Conflicts of Interest

MGC reports editorial honoraria and/or payments from Oxford University Press, the American Psychological Association, Elsevier (serving as Editor-in-Chief of *Behaviour Research and Therapy*), and UpToDate, Inc., outside the submitted work. MGC also holds editorial leadership positions that are unrelated to this manuscript. All other authors declare no conflicts of interest.

Multimedia Appendix 1

Development of the peer mentor program in South Africa and Uganda.
[DOCX File (Microsoft Word File), 29 KB-Multimedia Appendix 1]

Multimedia Appendix 2

Peer mentor training evaluation: domains and scoring.
[DOCX File (Microsoft Word File), 27 KB-Multimedia Appendix 2]

Multimedia Appendix 3

Focus group discussion guide.
[DOCX File (Microsoft Word File), 29 KB-Multimedia Appendix 3]

Multimedia Appendix 4

Interview guide.
[DOCX File (Microsoft Word File), 28 KB-Multimedia Appendix 4]

Multimedia Appendix 5

Peer mentor competence assessment instrument.
[DOCX File (Microsoft Word File), 29 KB-Multimedia Appendix 5]

Multimedia Appendix 6

Posttraining competence and intervention period fidelity: assessment overview.
[DOCX File (Microsoft Word File), 28 KB-Multimedia Appendix 6]

Multimedia Appendix 7

Baseline characteristics of peer mentors by retention status.
[DOCX File (Microsoft Word File), 27 KB-Multimedia Appendix 7]

Checklist 1

GRAMMS checklist for the peer mentor training and supervision program.
[DOCX File (Microsoft Word File), 29 KB-Checklist 1]

Checklist 2

TIDieR checklist for the peer mentor training and supervision program.
[DOCX File (Microsoft Word File), 31 KB-Checklist 2]

References

1. Erskine HE, Moffitt TE, Copeland WE, et al. A heavy burden on young minds: the global burden of mental and substance use disorders in children and youth. Psychol Med. May 2015;45(7):1551-1563. [doi: 10.1017/S0033291714002888] [Medline: 25534496]
2. Kieling C, Adewuya A, Fisher HL, et al. Identifying depression early in adolescence. Lancet Child Adolesc Health. Apr 2019;3(4):211-213. [doi: 10.1016/S2352-4642(19)30059-8] [Medline: 30878111]
3. Clayborne ZM, Varin M, Colman I. Systematic review and meta-analysis: adolescent depression and long-term psychosocial outcomes. J Am Acad Child Adolesc Psychiatry. Jan 2019;58(1):72-79. [doi: 10.1016/j.jaac.2018.07.896] [Medline: 30577941]
4. Johnson D, Dupuis G, Piche J, Clayborne Z, Colman I. Adult mental health outcomes of adolescent depression: a systematic review. Depress Anxiety. Aug 2018;35(8):700-716. [doi: 10.1002/da.22777] [Medline: 29878410]
5. Goin DE, Pearson RM, Craske MG, et al. Depression and incident HIV in adolescent girls and young women in HIV Prevention Trials Network 068: targets for prevention and mediating factors. Am J Epidemiol. May 5, 2020;189(5):422-432. [doi: 10.1093/aje/kwz238] [Medline: 31667490]
6. Herman AA, Stein DJ, Seedat S, Heeringa SG, Moomal H, Williams DR. The South African Stress and Health (SASH) study: 12-month and lifetime prevalence of common mental disorders. S Afr Med J. May 2009;99(5 Pt 2):339-344. [Medline: 19588796]
7. Kaggwa MM, Najjuka SM, Bongomin F, Mamun MA, Griffiths MD. Prevalence of depression in Uganda: a systematic review and meta-analysis. PLoS One. 2022;17(10):e0276552. [doi: 10.1371/journal.pone.0276552] [Medline: 36264962]
8. Pozuelo JR, Desborough L, Stein A, Cipriani A. Systematic review and meta-analysis: depressive symptoms and risky behaviors among adolescents in low- and middle-income countries. J Am Acad Child Adolesc Psychiatry. Feb 2022;61(2):255-276. [doi: 10.1016/j.jaac.2021.05.005] [Medline: 34015483]
9. Lund C, Tomlinson M, De Silva M, et al. PRIME: a programme to reduce the treatment gap for mental disorders in five low- and middle-income countries. PLoS Med. 2012;9(12):e1001359. [doi: 10.1371/journal.pmed.1001359] [Medline: 23300387]
10. Patel V, Saxena S, Lund C, et al. The Lancet Commission on global mental health and sustainable development. Lancet. Oct 27, 2018;392(10157):1553-1598. [doi: 10.1016/S0140-6736(18)31612-X] [Medline: 30314863]
11. Cuijpers P, Stringaris A, Wolpert M. Treatment outcomes for depression: challenges and opportunities. Lancet Psychiatry. Nov 2020;7(11):925-927. [doi: 10.1016/S2215-0366(20)30036-5] [Medline: 32078823]

12. Cuijpers P, van Straten A, Smit F, Mihalopoulos C, Beekman A. Preventing the onset of depressive disorders: a meta-analytic review of psychological interventions. Am J Psychiatry. Oct 2008;165(10):1272-1280. [doi: 10.1176/appi.ajp.2008.07091422] [Medline: 18765483]
13. GBD 2019 Universal Health Coverage Collaborators. Measuring universal health coverage based on an index of effective coverage of health services in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet. Oct 17, 2020;396(10258):1250-1284. [doi: 10.1016/S0140-6736(20)30750-9] [Medline: 32861314]
14. Ghafari M, Nadi T, Bahadivand-Chegini S, Doosti-Irani A. Global prevalence of unmet need for mental health care among adolescents: a systematic review and meta-analysis. Arch Psychiatr Nurs. Feb 2022;36:1-6. [doi: 10.1016/j.apnu.2021.10.008] [Medline: 35094819]
15. Malhotra S, Padhy SK. Challenges in providing child and adolescent psychiatric services in low resource countries. Child Adolesc Psychiatr Clin N Am. Oct 2015;24(4):777-797. [doi: 10.1016/j.chc.2015.06.007] [Medline: 26346389]
16. Morris J, Belfer M, Daniels A, et al. Treated prevalence of and mental health services received by children and adolescents in 42 low-and-middle-income countries. J Child Psychol Psychiatry. Dec 2011;52(12):1239-1246. [doi: 10.1111/j.1469-7610.2011.02409.x] [Medline: 21554305]
17. Bantjes J. Digital solutions to promote adolescent mental health: opportunities and challenges for research and practice. PLoS Med. May 2022;19(5):e1004008. [doi: 10.1371/journal.pmed.1004008] [Medline: 35639740]
18. Bevan Jones R, Hussain F, Agha SS, et al. Digital technologies to support adolescents with depression and anxiety: review. BJPsych Adv. Jul 2023;29(4):239-253. [doi: 10.1192/bja.2022.3] [Medline: 37521105]
19. Naslund JA, Aschbrenner KA, Araya R, et al. Digital technology for treating and preventing mental disorders in low-income and middle-income countries: a narrative review of the literature. Lancet Psychiatry. Jun 2017;4(6):486-500. [doi: 10.1016/S2215-0366(17)30096-2] [Medline: 28433615]
20. Singla DR, Kohrt BA, Murray LK, Anand A, Chorpita BF, Patel V. Psychological treatments for the world: lessons from low- and middle-income countries. Annu Rev Clin Psychol. May 8, 2017;13(1):149-181. [doi: 10.1146/annurev-clinpsy-032816-045217] [Medline: 28482687]
21. van Ginneken N, Tharyan P, Lewin S, et al. Non-specialist health worker interventions for the care of mental, neurological and substance-abuse disorders in low- and middle-income countries. Cochrane Database Syst Rev. Nov 19, 2013(11):CD009149. [doi: 10.1002/14651858.CD009149.pub2] [Medline: 24249541]
22. Greenleaf AR, Millington M, Robles-Torres L, et al. Mobile phone ownership among young adults in seven Southern African countries. J Glob Health. Apr 18, 2025;15:04123. [doi: 10.7189/jogh.15.04123] [Medline: 40247694]
23. Feldman JA, le Roux DB. Research report—smartphone use among South African adolescents. Open Science Framework. 2024. URL: https://osf.io/kvxhd/files/928ke [Accessed 2016-03-04]
24. Ferretti A, Vayena E, Blasimme A. Unlock digital health promotion in LMICs to benefit the youth. PLOS Digit Health. Aug 2023;2(8):e0000315. [doi: 10.1371/journal.pdig.0000315] [Medline: 37540713]
25. Linardon J, Fuller-Tyszkiewicz M. Attrition and adherence in smartphone-delivered interventions for mental health problems: a systematic and meta-analytic review. J Consult Clin Psychol. Jan 2020;88(1):1-13. [doi: 10.1037/ccp0000459] [Medline: 31697093]
26. Baumeister H, Reichler L, Munzinger M, Lin J. The impact of guidance on Internet-based mental health interventions—a systematic review. Internet Interv. Oct 2014;1(4):205-215. [doi: 10.1016/j.invent.2014.08.003]
27. Schueller SM, Tomasino KN, Mohr DC. Integrating human support into behavioral intervention technologies: the efficiency model of support. Clin Psychol Sci Pract. 2016;24(1):27-45. [doi: 10.1111/cpsp.12173]
28. Leung C, Pei J, Hudec K, Shams F, Munthali R, Vigo D. The effects of nonclinician guidance on effectiveness and process outcomes in digital mental health interventions: systematic review and meta-analysis. J Med Internet Res. Jun 15, 2022;24(6):e36004. [doi: 10.2196/36004] [Medline: 35511463]
29. Musiat P, Johnson C, Atkinson M, Wilksch S, Wade T. Impact of guidance on intervention adherence in computerised interventions for mental health problems: a meta-analysis. Psychol Med. Jan 2022;52(2):229-240. [doi: 10.1017/S0033291721004621] [Medline: 34802474]
30. Renfrew ME, Morton DP, Morton JK, Przybylko G. The influence of human support on the effectiveness of digital mental health promotion interventions for the general population. Front Psychol. 2021;12:716106. [doi: 10.3389/fpsyg.2021.716106] [Medline: 34489818]
31. Galagali PM, Brooks MJ. Psychological care in low-resource settings for adolescents. Clin Child Psychol Psychiatry. Jul 2020;25(3):698-711. [doi: 10.1177/1359104520929741] [Medline: 32567351]
32. Patel V, Chowdhary N, Rahman A, Verdeli H. Improving access to psychological treatments: lessons from developing countries. Behav Res Ther. Sep 2011;49(9):523-528. [doi: 10.1016/j.brat.2011.06.012] [Medline: 21788012]

33. Triece P, Massazza A, Fuhr DC. Effectiveness and implementation outcomes for peer-delivered mental health interventions in low- and middle-income countries: a mixed-methods systematic review. Soc Psychiatry Psychiatr Epidemiol. Sep 2022;57(9):1731-1747. [doi: 10.1007/s00127-022-02294-y] [Medline: 35484436]
34. Halsall T, Daley M, Hawke L, Henderson J, Matheson K. "You can kind of just feel the power behind what someone's saying": a participatory-realist evaluation of peer support for young people coping with complex mental health and substance use challenges. BMC Health Serv Res. Nov 16, 2022;22(1):1358. [doi: 10.1186/s12913-022-08743-3] [Medline: 36384511]
35. Simmons MB, Cartner S, MacDonald R, Whitson S, Bailey A, Brown E. The effectiveness of peer support from a person with lived experience of mental health challenges for young people with anxiety and depression: a systematic review. BMC Psychiatry. Mar 24, 2023;23(1):194. [doi: 10.1186/s12888-023-04578-2] [Medline: 36964523]
36. Saloojee G, Bezuidenhout M. Community-based peer supporters for persons with disabilities: experiences from two training programmes. South Afr Health Rev. 2020;2020:89-97. URL: https://journals.co.za/doi/abs/10.10520/ejc-healthr-v2020-n1-a12 [Accessed 2026-03-16]
37. Marks J, Foster R, Gibson SL, et al. Development of a peer support intervention to improve the experience and outcomes of discharge from inpatient mental health care: the role of experiential knowledge in a coproduced approach. BMC Res Notes. Aug 21, 2021;14(1):320. [doi: 10.1186/s13104-021-05735-0] [Medline: 34419155]
38. White S, Foster R, Marks J, et al. The effectiveness of one-to-one peer support in mental health services: a systematic review and meta-analysis. BMC Psychiatry. Nov 11, 2020;20(1):534. [doi: 10.1186/s12888-020-02923-3] [Medline: 33176729]
39. Patel V, Weobong B, Weiss HA, et al. The Healthy Activity Program (HAP), a lay counsellor-delivered brief psychological treatment for severe depression, in primary care in India: a randomised controlled trial. Lancet. Jan 2017;389(10065):176-185. [doi: 10.1016/S0140-6736(16)31589-6]
40. Wolitzky-Taylor K, LeBeau R, Arnaudova I, et al. A novel and integrated digitally supported system of care for depression and anxiety: findings from an open trial. JMIR Ment Health. Jul 24, 2023;10:e46200. [doi: 10.2196/46200] [Medline: 37486735]
41. Lund C, Schneider M, Garman EC, et al. Task-sharing of psychological treatment for antenatal depression in Khayelitsha, South Africa: effects on antenatal and postnatal outcomes in an individual randomised controlled trial. Behav Res Ther. Jul 2020;130:103466. [doi: 10.1016/j.brat.2019.103466] [Medline: 31733813]
42. Bond GR, Drake RE, McHugo GJ, Peterson AE, Jones AM, Williams J. Long-term sustainability of evidence-based practices in community mental health agencies. Adm Policy Ment Health. Mar 2014;41(2):228-236. [doi: 10.1007/s10488-012-0461-5] [Medline: 23266661]
43. Schoenwald SK, Garland AF. A review of treatment adherence measurement methods. Psychol Assess. Mar 2013;25(1):146-156. [doi: 10.1037/a0029715] [Medline: 22888981]
44. Bumbarger B, Perkins D. After randomised trials: issues related to dissemination of evidence-based interventions. J Child Serv. Apr 12, 2008;3(2):55-64. [doi: 10.1108/17466660200800012]
45. Cross WF, West JC. Examining implementer fidelity: conceptualizing and measuring adherence and competence. J Child Serv. 2011;6(1):18-33. [doi: 10.5042/jcs.2011.0123] [Medline: 21922026]
46. Fixsen D, Naoom S, Blase K, Friedman R, Wallace F. Implementation research: a synthesis of the literature. Louis de la Parte Florida Mental Health Institute, University of South Florida, National Implementation Research Network; 2005. URL: https://fpg.unc.edu/sites/fpg.unc.edu/files/resource-files/NIRN-MonographFull-01-2005.pdf [Accessed 2024-09-24]
47. van Ginneken N, Chin WY, Lim YC, et al. Primary-level worker interventions for the care of people living with mental disorders and distress in low- and middle-income countries. Cochrane Database Syst Rev. Aug 5, 2021;8(8):CD009149. [doi: 10.1002/14651858.CD009149.pub3] [Medline: 34352116]
48. Raviola G, Naslund JA, Smith SL, Patel V. Innovative models in mental health delivery systems: task sharing care with non-specialist providers to close the mental health treatment gap. Curr Psychiatry Rep. Apr 30, 2019;21(6):44. [doi: 10.1007/s11920-019-1028-x] [Medline: 31041554]
49. Long LA, Pariyo G, Kallander K. Digital technologies for health workforce development in low- and middle-income countries: a scoping review. Glob Health Sci Pract. Oct 10, 2018;6(Suppl 1):S41-S48. [doi: 10.9745/GHSP-D-18-00167] [Medline: 30305338]
50. Mudiyanselage KWW, De Santis KK, Jörg F, et al. The effectiveness of mental health interventions involving non-specialists and digital technology in low-and middle-income countries—a systematic review. BMC Public Health. Jan 3, 2024;24(1):77. [doi: 10.1186/s12889-023-17417-6] [Medline: 38172713]
51. Pozuelo JR, Moffett BD, Davis M, et al. User-centered design of a gamified mental health app for adolescents in sub-Saharan Africa: multicycle usability testing study. JMIR Form Res. Nov 30, 2023;7:e51423. [doi: 10.2196/51423] [Medline: 38032691]

52. Moffett BD, Pozuelo JR, van Heerden A, et al. Digital delivery of behavioural activation therapy to overcome depression and facilitate social and economic transitions of adolescents in South Africa (the DoBAt study): protocol for a pilot randomised controlled trial. BMJ Open. Dec 30, 2022;12(12):e065977. [doi: 10.1136/bmjopen-2022-065977] [Medline: 36585150]
53. Moffett B, Pozuelo JR, Musenge E, et al. A behavioral activation digital intervention incorporating gamification and peer support for adolescent depression in rural South Africa: a pilot randomized controlled trial (the DoBAt study). JAACAP Open. Dec 2025;3(4):1270-1283. [doi: 10.1016/j.jaacop.2025.06.009] [Medline: 41367987]
54. R Pozuelo J, Nabulumba C, Sikoti D, et al. A narrative-gamified mental health app (Kuamsha) for adolescents in Uganda: mixed methods feasibility and acceptability study. JMIR Serious Games. Dec 19, 2024;12:e59381. [doi: 10.2196/59381] [Medline: 39700489]
55. Moffett BD, Pozuelo JR, Musenge E, et al. A gamified digital intervention using behavioural activation for adolescent depression in rural South Africa: a pilot randomised controlled trial (the DoBAt study). SSRN. Preprint posted online on Nov 15, 2024. [doi: 10.2139/ssrn.5020643]
56. Agincourt Health and Demographic Surveillance Systems (HDSS). Agincourt HDSS – MRC/Wits Agincourt Unit. URL: https://www.agincourt.co.za/agincourt-maps-2 [Accessed 2025-02-06]
57. Education series volume III: educational enrolment and achievement, 2016. Statistics South Africa (Stats SA); 2017. URL: https://www.statssa.gov.za/publications/Report%2092-01-03/Report%2092-01-032016.pdf [Accessed 2025-10-13]
58. Mudiriza G, Lannoy A. Profile of young people not in employment, education or training (NEET) aged 15-24 years in South Africa: an annual update. Southern Africa Labour and Development Research Unit; 2023. URL: https://sona22-content.stage-v1.co.za/assets/pyei/resources/neet-youth-2023_saldru-wp.pdf [Accessed 2025-09-13]
59. Katabi (town council, Uganda)—population statistics, charts, map and location. City Population. URL: https://citypopulation.de/en/uganda/central/admin/busiro_county/113106__katabi/ [Accessed 2025-10-09]
60. National population and housing census 2014—main report. Uganda Bureau of Statistics (UBOS); 2016. URL: https://www.ubos.org/wp-content/uploads/publications/03_20182014_National_Census_Main_Report.pdf [Accessed 2025-10-13]
61. Flisher AJ, Dawes A, Kafaar Z, et al. Child and adolescent mental health in South Africa. J Child Adolesc Ment Health. Oct 2012;24(2):149-161. [doi: 10.2989/17280583.2012.735505] [Medline: 25860182]
62. Verity F, Turiho A, Mutamba BB, Cappo D. Family care for persons with severe mental illness: experiences and perspectives of caregivers in Uganda. Int J Ment Health Syst. May 20, 2021;15(1):48. [doi: 10.1186/s13033-021-00470-2] [Medline: 34016125]
63. Mental health atlas 2020. World Health Organization; 2021. URL: https://iris.who.int/server/api/core/bitstreams/912699ec-18d0-4b78-be50-366c2f8ec616/content [Accessed 2026-03-03]
64. Rosenberg BM, Kodish T, Cohen ZD, Gong-Guy E, Craske MG. A novel peer-to-peer coaching program to support digital mental health: design and implementation. JMIR Ment Health. Jan 26, 2022;9(1):e32430. [doi: 10.2196/32430] [Medline: 35080504]
65. Kohrt BA, Jordans MJD, Rai S, et al. Therapist competence in global mental health: development of the ENhancing Assessment of Common Therapeutic factors (ENACT) rating scale. Behav Res Ther. Jun 2015;69:11-21. [doi: 10.1016/j.brat.2015.03.009] [Medline: 25847276]
66. Kohrt BA, Pedersen GA, Schafer A, et al. Competency-based training and supervision: development of the WHO-UNICEF Ensuring Quality in Psychosocial and Mental Health Care (EQUIP) initiative. Lancet Psychiatry. Jan 2025;12(1):67-80. [doi: 10.1016/S2215-0366(24)00183-4] [Medline: 39250925]
67. Jordans MJD, Coetzee A, Steen HF, et al. Assessment of service provider competency for child and adolescent psychological treatments and psychosocial services in global mental health: evaluation of feasibility and reliability of the WeACT tool in Gaza, Palestine. Glob Ment Health (Camb). 2021;8:e7. [doi: 10.1017/gmh.2021.6] [Medline: 34026237]
68. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. Jan 2006;3(2):77-101. [doi: 10.1191/1478088706qp063oa]
69. Braun V, Clarke V. Reflecting on reflexive thematic analysis. Qual Res Sport Exerc Health. Aug 8, 2019;11(4):589-597. [doi: 10.1080/2159676X.2019.1628806]
70. Braun V, Clarke V. One size fits all? What counts as quality practice in (reflexive) thematic analysis? Qual Res Psychol. Jul 3, 2021;18(3):328-352. [doi: 10.1080/14780887.2020.1769238]
71. Cooper RE, Saunders KRK, Greenburgh A, et al. The effectiveness, implementation, and experiences of peer support approaches for mental health: a systematic umbrella review. BMC Med. Feb 29, 2024;22(1):72. [doi: 10.1186/s12916-024-03260-y] [Medline: 38418998]
72. Fortuna KL, Naslund JA, LaCroix JM, et al. Digital peer support mental health interventions for people with a lived experience of a serious mental illness: systematic review. JMIR Ment Health. Apr 3, 2020;7(4):e16460. [doi: 10.2196/16460] [Medline: 32243256]

73. Andersson LMC, Schierenbeck I, Strumpher J, et al. Help-seeking behaviour, barriers to care and experiences of care among persons with depression in Eastern Cape, South Africa. J Affect Disord. Nov 2013;151(2):439-448. [doi: 10.1016/j.jad.2013.06.022] [Medline: 23890669]
74. Labrique AB, Wadhwani C, Williams KA, et al. Best practices in scaling digital health in low and middle income countries. Global Health. Nov 3, 2018;14(1):103. [doi: 10.1186/s12992-018-0424-z] [Medline: 30390686]
75. Till S, Mkhize M, Farao J, et al. Digital health technologies for maternal and child health in Africa and other low- and middle-income countries: cross-disciplinary scoping review with stakeholder consultation. J Med Internet Res. Apr 7, 2023;25:e42161. [doi: 10.2196/42161] [Medline: 37027199]
76. Fuhr DC, Weobong B, Lazarus A, et al. Delivering the Thinking Healthy Programme for perinatal depression through peers: an individually randomised controlled trial in India. Lancet Psychiatry. Feb 2019;6(2):115-127. [doi: 10.1016/S2215-0366(18)30466-8] [Medline: 30686385]
77. Chow D, Matungwa DJ, Blackwood ER, Pronyk P, Dow D. A scoping review on peer-led interventions to improve youth mental health in low- and middle-income countries. Glob Ment Health (Camb). 2025;12:e1. [doi: 10.1017/gmh.2024.149] [Medline: 39781336]
78. Fairburn CG, Patel V. The impact of digital technology on psychological treatments and their dissemination. Behav Res Ther. Jan 2017;88:19-25. [doi: 10.1016/j.brat.2016.08.012] [Medline: 28110672]

Abbreviations

BA: behavioral activation
DMHI: digital mental health intervention
DoBAt: digital delivery of behavioral activation therapy
GRAMMS: Good Reporting of A Mixed Methods Study
LMIC: low- and middle-income country
SAPRIN: South African Population Research Infrastructure Network
TIDieR: Template for Intervention Description and Replication

Edited by John Torous; peer-reviewed by Maria Loades, Richard Munthali; submitted 24.Oct.2025; final revised version received 23.Feb.2026; accepted 24.Feb.2026; published 09.Apr.2026

Please cite as:
Makhanya Z, Moffett B, Pozuelo JR, Davis M, Gumikiriza-Onoria JL, Geffen S, Baloyi T, Sodi T, Kinyanda E, Craske MG, Tusiime C, Lund C, Van Heerden A, Kahn K, Stein A, O'Mahen H, DoBAt and Ebikolwa Consortium
Peer Mentor Training and Supervision for a Digital Adolescent Depression Treatment in South Africa and Uganda: Mixed Methods Evaluation
JMIR Ment Health 2026;13:e86470
URL: https://mental.jmir.org/2026/1/e86470
doi: 10.2196/86470

© Zamakhanya Makhanya, Bianca Moffett, Julia R Pozuelo, Meghan Davis, Joy Louise Gumikiriza-Onoria, Shayni Geffen, Tlangelani Baloyi, Tholene Sodi, Eugene Kinyanda, Michelle G Craske, Christine Tusiime, Crick Lund, Alastair Van Heerden, Kathleen Kahn, Alan Stein, Heather O'Mahen, DoBAt and Ebikolwa Consortium. Originally published in JMIR Mental Health (https://mental.jmir.org), 09.Apr.2026. This is an open-access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work, first published in JMIR Mental Health, is properly cited. The complete bibliographic information, a link to the original publication on https://mental.jmir.org/, as well as this copyright and license information must be included.