

# Effect of a bereavement support group on female adolescents' psychological health: a randomised controlled trial in South Africa

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## Summary

**Background** Bereavement increases children's risk for psychological disorders, highlighting the need for effective interventions, especially in areas where orphanhood is common. We aimed to assess the effects of an eight-session support group intervention on the psychological health of bereaved female adolescents in South Africa.

**Methods** This randomised controlled trial enrolled female adolescents at 11 schools in three peri-urban towns of Free State province, South Africa. 453 bereaved ninth-grade students aged 13–17 years who had expressed interest in taking part in the group were randomly assigned (1:1) to receive the intervention or to be waitlisted for programme enrolment after the study period and serve as the control group. The intervention, Abangane ("friends" in isiZulu), is a locally derived, curriculum-based support group focused on coping with loss incorporating indigenous stories and cognitive behavioural therapy components. Weekly group sessions were facilitated by trained social workers or social auxiliary workers from a local non-profit organisation. The primary outcomes included indicators of grief and depression as reported by adolescents and behavioural problems reported by their caregivers. Grief was measured with three scales: the grief subscale of the Core Bereavement Items to assess normative grief; and the Intrusive Grief Thoughts Scale and the Inventory of Complicated Grief–Revised for Children to assess maladaptive grief symptoms in the past 4 weeks. Depression symptoms in the past 7 days were measured with the Center for Epidemiological Studies–Depression Scale for Children. Caregivers completed the Brief Problem Monitor-Parent Form to report on adolescent's behaviour in the previous 4 weeks. Analysis was intention to treat. This study is registered with ClinicalTrials.gov, number NCT02368808.

**Findings** Between Sept 30, 2014, and Feb 5, 2015, eligible female participants were identified, of whom 226 were assigned to the intervention, Abangane, and 227 were assigned to the waitlisted control group. Analysis included 382 adolescents who completed both surveys (193 participants assigned to Abangane and 189 assigned to waitlist). At follow up, the intervention group had significantly lower scores for primary outcomes, including intrusive grief ( $p=0.000$ , Cohen's  $d=-0.21$ ), complicated grief ( $p=0.015$ ,  $d=-0.14$ ), and depression ( $p=0.009$ ,  $d=-0.21$ ) relative to the waitlisted group, while core bereavement scores were similar between groups ( $p=0.269$ ). Caregivers in the intervention group reported lower levels of behavioural problems among adolescents ( $p=0.017$ ,  $d=-0.31$ ).

**Interpretation** Short-term, structured, theory-based support groups with contextually relevant content show promise in mitigating psychological and behavioural problems among bereaved adolescents. Abangane is replicable in resource limited settings, using freely available curriculum materials, existing programme structures, and appropriately trained personnel to implement it.

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## Introduction

Early bereavement is common in South Africa, where almost a fifth of children have lost a parent and many more have experienced the death of another family member or friend.<sup>1,2</sup> Of the 3.8 million children in the country who have lost one or both parents, almost two-thirds were orphaned due to AIDS.<sup>3</sup> Violence and accidents also contribute to high and increasing adult mortality in the country.<sup>4</sup>

Despite the serious potential consequences of bereavement in childhood, including risk for depression,

maladaptive grief, and other emotional and behavioural problems,<sup>5–8</sup> few evidence-based bereavement support services are available to children in South Africa.<sup>9</sup> Four randomised controlled trials done in sub-Saharan Africa of psychological treatments for children experiencing depression, trauma, or parental loss have shown the positive effects of group interventions with a trained facilitator,<sup>10–13</sup> as has one pre-post assessment focused specifically on grief.<sup>14</sup> Related systematic reviews emphasise the need to develop and test interventions that can be feasibly implemented in low-income and middle-income

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### Research in context

#### Evidence before this study

We reviewed the most recent available evidence on the scale and causes of orphanhood and general bereavement among children in South Africa, which confirmed the high prevalence of bereavement, especially orphanhood, and the predominance of AIDS-related deaths. A systematic review of the evidence for mental health issues surrounding bereavement and HIV in children showed the increased psychological risks and absence of evidence-based supportive interventions. We then reviewed evidence about the effectiveness of different psychological support interventions for bereaved children and adolescents, or those exposed to other potentially traumatising events. Two meta-analyses of grief interventions for children showed small to moderate effects on psychiatric and behavioural outcomes. The authors noted a tendency for the severity of depression and other psychological symptoms at baseline to moderate the effects of interventions; studies tended not to assess grief directly.

However, the studies included within these reviews were largely confined to high-income populations. We thus searched PsychINFO and MEDLINE with no date or language restriction for publications that evaluated bereavement interventions for children or adolescents in sub-Saharan Africa with the terms “bereave\* or grief or depression” and “treatment or therapy or intervention or program\*” and “child or adolescent or orphan” and “Africa”, “South Africa” and other sub-Saharan countries. More than 400 records were returned yielding five evaluations of structured group-based interventions that addressed grief or depression among bereaved or war-affected youth: four randomised controlled trials and one pre-post assessment. All but one of the interventions were underpinned by cognitive behavioural therapy or interpersonal therapy. All studies reported improvements on multiple psychological health measures with reduced depressive symptoms reported in four investigating this outcome; only one reported specifically on grief symptoms. Notably, three of the trials targeted children affected by war, which could be contextually different from children experiencing loss in a generalised HIV epidemic.

#### Added value of this study

To the best of our knowledge, this study represents the first randomised controlled trial of a structured bereavement support programme for adolescents in sub-Saharan Africa. The study offers new information about the potential for the intervention under investigation, Abangane, and similar interventions to improve psychological health in this highly vulnerable population. Whereas most research on treatment approaches for young people affected by grief and its harmful sequelae in low-income and middle-income countries focuses on children affected by armed conflict or post-natural disaster settings, this study offers evidence for the sizeable population of orphans and other bereaved children and adolescents in countries with generalised HIV epidemics. The study also represents an unusual effort to ground evidence for psychological health programming in local cultural norms, by applying a locally derived intervention first, and strengthening its basis in theory second. Finally, this study includes a direct assessment of maladaptive grief using multiple measures cognitively adapted among young South Africans.

#### Implications of all the available evidence

Current understanding of the relative value of various treatment approaches for maladaptive grief and depression in bereaved children and adolescents in South Africa and similar contexts is lacking. We found that structured, locally derived, theory-based support groups show great promise. The group of adolescent girls assigned to the intervention reported lower scores for intrusive grief, complicated grief, and depression relative to the waitlist group, and caregivers reported significantly lower levels of behavioural problems among the adolescents in the intervention group. These findings build on existing research and offer new evidence in support of the use of time-limited group therapies for adolescent grief support incorporating cognitive behavioural techniques and gender-sensitive, culturally aware approaches.

countries to adequately address children's grief and depression.<sup>15,16</sup>

We aimed to assess the effect of a locally derived, theory-based support group for female adolescents who have experienced the death of someone important in their lives. To the best of our knowledge this study represents the first rigorous evaluation of a structured bereavement support programme for adolescents in sub-Saharan Africa.

## Methods

### Study design and participants

This randomised controlled trial was designed to evaluate the effect of a structured intervention, Abangane, on the psychological health of bereaved

female adolescents in the Free State province of South Africa; an area with high HIV prevalence.<sup>17</sup> The intervention was implemented in 11 peri-urban schools in three towns by a local non-profit organisation, Child Welfare Bloemfontein & Childline Free State (CWBFN), with all 11 schools included in the evaluation. The schools were chosen by the provincial Department of Education in consultation with CWBFN with emphasis on serving those most in need considering vulnerability indicators of the area and school population.

The study population was identified through a school-based intake process routinely used by CWBFN to identify orphans and vulnerable children eligible for services. Eighth grade students (ages 12–17 years) from participating schools completed an intake form from

**Panel: Abangane session outline\*****Session 1—Introduction and relationship building**

- Activity 1. Crossing the bridge: involves a fun, problem-solving activity designed to build trust among participants
- Activity 2. Safety agreement and ground rules: helps the group to reach consensus on rules and norms for sessions
- Activity 3. Opening and closing ritual: identifies a ritual to open and close sessions, such as a song or dance
- Activity 4. Mr Meintjie's story: introduces key cognitive behavioural therapy concepts with a contextually-specific scenario
- Activity 5. Relaxation: teaches the first of many relaxation techniques included in the programme

**Session 2—Naming, identifying, understanding, and normalising feelings**

- Activity 1. Naming feelings: helps participants to recognise emotions and their effects on thoughts and behaviour
- Activity 2. Whirlpool of Grief: uses an analogy of a river to explore the stages of grief and identify shared experiences
- Activity 3. Types of coping strategies: introduces various coping strategies, both healthy and unhealthy
- Activity 4. Relaxation: teaches a relaxation technique that uses drumming motions to massage the neck and shoulders

**Session 3—My personal experience of loss**

- Activity 1. Time loss line: guides participants to share their story of loss and access emotional support from peers
- Activity 2. Relaxation: teaches simple holds and deep breathing to lessen anxiety and cope with traumatic memories
- Activity 3. Interpersonal support: helps participants to learn about helpful and unhelpful ways to offer support

**Session 4—Changes in my life resulting from loss**

- Activity 1. Changing aspects of my life: encourages participants to discuss the changes that loss brings
- Activity 2. Myths and facts about grief: addresses localised myths about grief, to normalise participants' experiences
- Activity 3. Mashugashuga hempo: uses a locally derived game highlighting ways to have fun despite loss

**Session 5—Rituals and traditions surrounding loss, and saying goodbye**

- Activity 1. Rituals and traditions surrounding death: explores cultural rituals and traditions surrounding loss
- Activity 2. Saying goodbye: guides participants to craft messages for their late loved one, promoting closure
- Activity 3. Relaxation: teaches a relaxation technique focused on releasing physical tension
- Activity 4. Whirlpool of Grief check-in: helps participants to reflect on their current stage of grief

**Session 6—Coping skills**

- Activity 1. Boiling pot: engages participants in a fun game about learning to counter negative thoughts
- Activity 2. Relaxation: teaches the "traffic light" technique of managing difficult emotions

**Session 7—Looking to the future**

- Activity 1. The "if" question: guides participants in a group quiz about applying lessons learned
- Activity 2. My future: helps participants to create a collage indicating what they would like to achieve in the future
- Activity 3. Achieving goals: assists participants to plan for their goals in a concrete way
- Activity 4. Relaxation: introduces a new relaxation activity linked to participants' visions of their futures

**Session 8—Closure of the group**

- Activity 1. Programme quiz: involves an interactive quiz reinforcing the lessons learned over the course of the programme
- Activity 2. Programme debrief: lets participants reflect on their experiences during the programme
- Activity 3. Appreciation of group members: helps group members to affirm one another and develop support networks
- Activity 4. Relaxation: guides participants to select their favourite relaxation technique to practise again

\*The session content was undergoing further refinement at the time of this report and might result in changes to the above activities. The Abangane curriculum is a free, open access resource available from Khululeka Grief Support. The Khu Kit can also be ordered from the website for a nominal fee and includes activities applicable to children aged 5–18 years. Khululeka offers facilitator training services for organisations who wish to implement the programme, for a fee designed to cover staff, supplies, and other costs.

September, 2014, through to February, 2015, containing basic demographic and contact data. Students also reported whether they had experienced the loss of someone close to them and if they would be interested in participating in a bereavement support group. Eligibility was limited to 13–17-year-old Sesotho-speaking girls enrolled in the ninth grade at a participating school in 2015 who reported experiencing a loss and expressed interest in taking part in a support group (answering either "yes" or "maybe"). CWBFN opted to limit the intervention to female participants due to concerns regarding participants' ease of interaction in mixed-sex groups, and because girls had previously shown greater commitment than boys to session attendance. The number of eligible adolescents exceeded the

organisation's service delivery capacity. Thus, adolescents who had experienced the death of one or both parents were given priority because orphanhood is a well-documented risk factor for psychological problems among children.<sup>18</sup>

Caregivers provided written informed consent for their own and their adolescent's participation. Adolescents provided written informed assent. Both caregiver consent and adolescent assent were required for study inclusion. Individuals were not eligible if they were not able to give informed assent due to known or recognisable cognitive or psychiatric impairment. Ethical approval was obtained from the Tulane University Institutional Review Board, USA and the Faculty of Health Sciences Ethics Committee at the University of the Free State, South Africa.

For the Abangane curriculum see <http://www.khululeka.org/> contact

### Randomisation and masking

The researchers first disaggregated the intake data into one dataset for orphans and one for non-orphans at each school with each assigned a random number using the RANUNI function in SAS. Within each list, records were sorted in ascending order by the random number and numbered sequentially. Those with odd and even sequential numbers were assigned to the intervention and waitlist groups, respectively. The orphan lists were initially exhausted and then assignment using the same process was done for non-orphans until the target number of 210 participants per study arm was reached with an additional 16 to account for non-response. Group facilitators from CWBFN were provided with the lists of adolescents selected to receive the intervention, and proceeded to recruit participants via home visits. All potential participants were provided with an informational letter about the study during these visits. Survey interviewers were masked to participants' treatment allocation.

### Procedures

At each school, eligible students were randomly assigned to receive the intervention in 2015 or be waitlisted for programme enrolment after the study. All participants had access to the standard of care consisting of a school-based CWBFN counsellor available to serve students based on self-referral or referral by a teacher. Adolescents and their caregivers were asked to complete a baseline survey before beginning the Abangane sessions and a follow-up survey 3 months after the intervention ended in 2015. The intervention was offered to different groups of participants at three time periods, corresponding with the school year's first three terms. Within each school, baseline and follow-up surveys were done simultaneously with equal numbers of intervention and waitlist group participants to ensure equivalent time between survey rounds (an average of 184 days for the intervention group and 189 for the waitlist group).

The sample size was limited by the number of adolescents that could be accommodated by the programmes at the 11 schools. CWBFN planned to offer two groups at ten schools and one group at one school for a maximum total of 210 participants. Minimum detectable differences were calculated (80% power,  $\alpha=0.05$ , intraclass correlation coefficient of 0.05, and 20% loss to follow-up) using the standard deviation for a grief measure reported from a previous trial of a bereavement support intervention in the USA<sup>19</sup> and used as a primary outcome in this study.

Surveys were translated into Sesotho, back-translated into English, and pre-tested to help to improve clarity and accuracy. All surveys were given by trained interviewers from a research company unaffiliated with CWBFN. Face-to-face interviews were done with participants in their homes using portable electronic devices to read questions and record responses. Following the

baseline survey, interviewers provided all adolescents, including those who declined to take part in the study, with a book of stories related to African children's experiences with loss.

The intervention under study originated from activities described in the Khu Kit, a guide developed by South African non-profit organisation Khululeka Grief Support in response to the psychological needs of the country's many children and adolescents who had lost a parent or someone else important in their lives. CWBFN adapted activities from the Khu Kit into an eight-session curriculum for female adolescents, called Abangane ("friends" in isiZulu), under the guidance of Khululeka Grief Support and Tulane University. Abangane support groups include activities guided by cognitive behavioural therapy principles and indigenous games and songs, contextually relevant stories and scenarios, as well as discussions about cultural rituals and traditions surrounding death. The intervention was pretested for acceptability in the target population. This is the first quantitative evaluation of Khululeka Grief Support's services.

Groups met for weekly, interactive 90 min sessions that included an average of three structured activities focused on experiences of loss and grief, coping skills, and the links between feelings, thoughts and behaviour. The panel presents the overarching theme for each session and a brief description of activities. All sessions included an opening and closing ritual and time for reflection. Homework was assigned at the end of each session and discussed at the start of the next one, including identifying sources of support, defining goals, and recognising and challenging negative thoughts. Each participant was provided with a journal to use for recording their progress and feelings. CWBFN social workers or social auxiliary workers facilitated the groups in private meeting spaces during school hours with permission from the Provincial Department of Education. Facilitators completed a 4-day training from Khululeka Grief Support and began delivering the programme to adolescents (not including the study population) about 1 year in advance of the study. They also participated in a 3-day refresher training immediately preceding the study. Facilitators attended weekly supervision meetings with the CWBFN programme manager and provided a written account of each session for supervision and quality assurance purposes.

### Outcomes

The primary outcomes were adolescent grief, depression, and behavioural problems. The adolescent survey asked multiply bereaved adolescents to identify a focal loss (ie, the death that had affected them the most). Questions about grief were oriented to this focal loss. The grief subscale of the Core Bereavement Items (CBI-G) was used to measure normative grief.<sup>20</sup> Two instruments were used to measure different aspects of maladaptive

grief: the Intrusive Grief Thoughts Scale (IGTS) and the Inventory of Complicated Grief–Revised for Children (ICG–RC). Lacking evidence from the literature of grief measures validated for use with adolescents in South Africa, we opted to conduct cognitive interviews with previous Abangane participants to help to select and adapt grief measures for this study.<sup>21</sup>

The grief subscale of the CBI was originally developed through factor analysis of candidate measures reflecting common grief-associated feelings, such as longing, loneliness, tearfulness, and sadness.<sup>22</sup> Respondents rate their frequency of experiencing these feelings (“never”, “sometimes”, “most of the time,” or “all of the time”) with corresponding values of 0 to 3 assigned. Values are summed across items to yield the subscale score (Cronbach’s  $\alpha=0.84$  at baseline). No time period of reference is specified. The IGTS is a nine-item scale that measures the extent to which bereaved individuals experience intrusive, undesired thoughts about a deceased loved one. For example, respondents report how often they experience interferences with daily activities such as difficulty falling asleep, bad dreams, and concentrating at school due to thinking about the loved one’s passing. This scale has been used to evaluate the Family Bereavement Program in the USA.<sup>19</sup> Respondents are asked how often they experienced these kinds of intrusive thoughts in the past 4 weeks, using a five-item response scale from “almost never or not at all” to “several times a day”, coded 1 to 5, respectively. The IGTS score is the sum of the item scores (Cronbach’s  $\alpha=0.90$  at baseline).

The ICG–RC measures complicated grief, and is a six-item subset of the adult Inventory of Complicated Grief validated for use with children.<sup>23,24</sup> The scale reflects lack of acceptance, shock, changed world perspective, loneliness, and longing for the deceased. Respondents’ ICG–RC scores are the sum of the item values, and use the same reference period, response options, and coding as the IGTS (Cronbach’s  $\alpha=0.90$  at baseline).

Adolescents also completed the 20-item Center for Epidemiological Studies–Depression Scale for Children (CES–DC),<sup>25</sup> which has been previously applied among South African youth.<sup>26–28</sup> Questions assess the past week frequency of depression symptoms, including unhappiness, loss of appetite, low self-esteem, low energy levels, and difficulty sleeping. Responses are totalled across a four-item scale from “not at all” to “a lot”, coded 0 to 3, respectively (Cronbach’s  $\alpha=0.87$  at baseline).

The caregiver survey included an assessment of behavioural problems exhibited by the adolescent using the Brief Problem Monitor–Parent Form (BPM–P). The BPM–P is a 19-item subset of the Child Behavior Checklist that captures internalising behaviour, attention problems, and externalising behaviour in children aged 6–18 years.<sup>29</sup> The Child Behavior Checklist is a widely used measure with well-established cross-cultural validity<sup>30</sup> and has

been used to document the extent of emotional and behavioural problems among HIV-affected children in South Africa.<sup>31,32</sup> Caregivers used three response options to endorse or reject statements characterising their child’s behaviour during the past 4 weeks. Responses were coded 0 to 2 and summed (Cronbach’s  $\alpha=0.83$  at baseline).

Secondary outcomes of interest reflected emotional and social support available to the adolescent including supportive parenting and broader social support. Adolescents’ perceptions of available social support were measured using the receiving emotional support subscale of the 2-Way Social Support Scale (SSS–R).<sup>33</sup> Respondents are asked about seven types of emotional support, including having someone in their life they can trust, who makes them feel worthwhile, and who they can turn to if they are feeling sad. Responses are summed across a four-point scale from “not at all true” to “completely true”, and coded 0 to 3, respectively (Cronbach’s  $\alpha=0.86$  at baseline).

The quality of supportive parenting was measured using two separate instruments. Adolescents completed the 25-item parental subscale of the Inventory of Parent and Peer Attachment (IPA).<sup>34</sup> Respondents report on the extent of respect, acceptance, attention, understanding, and communication they receive from their caregiver. Responses are summed across a four-item scale from “not at all true” to “completely true” and coded 0 to 3, respectively (Cronbach’s  $\alpha=0.83$  at baseline). Caregivers completed the ten-item supportive parenting subscale of the Parent Behavior Inventory (PBI–S).<sup>35</sup> Respondents indicate how often in the past 4 weeks they engaged in supportive behaviour such as listening to the adolescent’s feelings and comforting her during a difficult time. Responses were summed across a five-item response scale from “never” to “always”, coded 1 to 5, respectively (Cronbach’s  $\alpha=0.89$  at baseline).

### Statistical analysis

Frequencies, ranges, means, and standard deviations were generated in SAS version 9.3. Differences between the intervention and waitlisted groups were examined at baseline and between those lost to follow-up or not with *t* tests for continuous variables and  $\chi^2$  tests for dichotomous variables. Mann-Whitney *U* tests were used to test for differences in the outcomes by treatment group at baseline. Programme effects were estimated using generalised estimating equations (GEE) in Stata version 14. The GEE method was chosen for its flexibility in handling skewed data and its ability to yield population-averaged estimates in intention-to-treat analyses such as this one (ie, analysis by treatment assignment rather than recorded attendance). All models used autoregressive covariance structures at the first level to account for correlations within individuals, and bootstrapped standard errors to adjust for correlations within treatment groups. Gamma distributions were specified for the IGTS, ICG–RC,

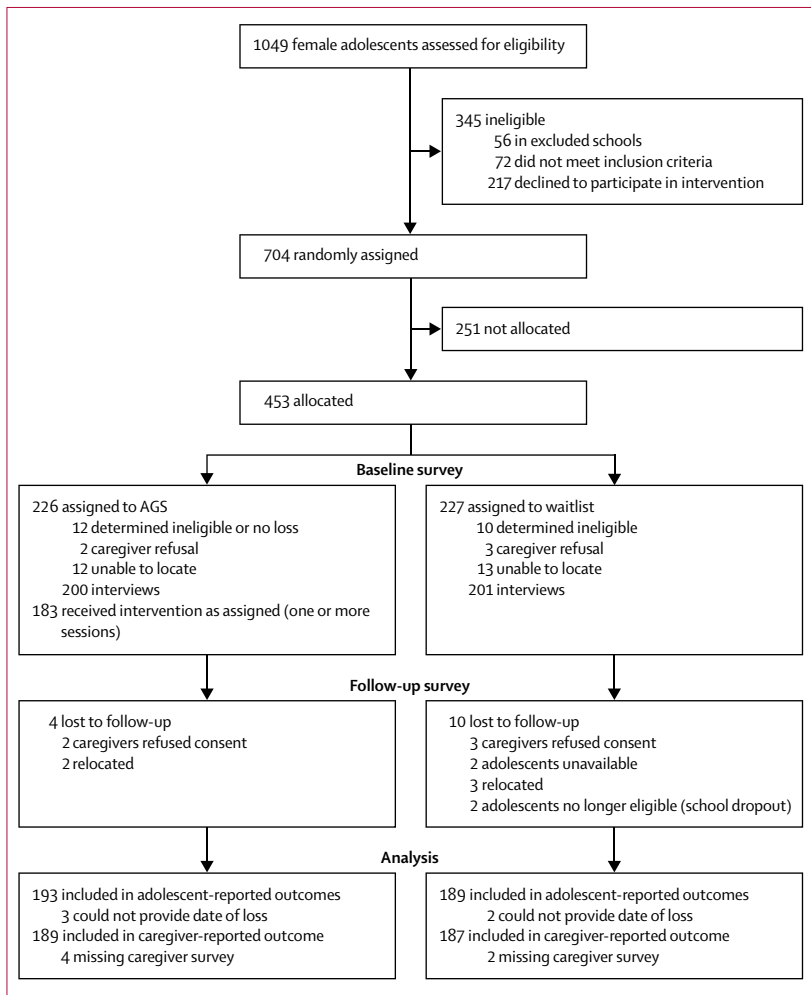


Figure: Trial profile

CES–DC, BPM-P, and CBI-G outcomes due to their right-skewed distributions, while Gaussian distributions were specified for the approximately normally distributed SSS-R, IPA, and PBI-S outcomes. No data were missing for any variable used in these models.

All models included a dummy variable for group assignment and a dummy variable for survey round, with an interaction term for group assignment by survey round. Programme impact was assessed using the group assignment by survey round interaction effect. Two control variables were included in all models: the participant's baseline value for the outcome and the years (or fraction of years) elapsed since the adolescent experienced the focal loss.

Effect sizes were calculated as Cohen's *d* on outcomes with a statistically significant change using group means and standard deviations. Between-group effect sizes were calculated using the method for pretest-posttest control group designs.<sup>36</sup> Within-group effect sizes were calculated using the method for dependent, pretest-posttest designs.<sup>37</sup>

This study is registered with ClinicalTrials.gov, number NCT02368808.

### Role of the funding source

The funder of this study reviewed the final protocol, but had no role in the study design, data collection, data analysis, data interpretation, writing of this report, or decision to submit this paper for publication. The first and second authors (TRT and BGL) had full access to the data and the corresponding first author (TRT) takes responsibility for its integrity and the decision to submit this report.

### Results

Between Sept 30, 2014, and Feb 5, 2015, 704 eligible participants were identified, of whom 226 were assigned to Abangane and 227 were assigned to waitlist (figure).

401 adolescents completed the baseline survey (200 assigned to Abangane and 201 assigned to waitlist), with 96·5% retention at follow-up (387; 196 assigned to Abangane and 191 assigned to waitlist). Post-hoc tests were done to identify differences between participants retained and those lost to follow-up on the outcomes under investigation and the sample characteristics at baseline. No statistical differences were found (data not shown). Analyses of adolescent-reported grief, depression, social support, and supportive parenting are restricted to the 382 adolescents (193 assigned to Abangane and 189 assigned to waitlist) who completed both survey rounds and were able to estimate the time elapsed since their focal loss. Analysis of caregiver-reported indicators of adolescent behavioural problems and supportive parenting was restricted to the 376 adolescents whose caregivers completed both survey rounds (189 assigned to Abangane and 187 assigned to waitlist). Intervention participation was high, with 178 (92%) of adolescents assigned to take part in the intervention attended at least one session, 148 (77%) attended seven or more sessions, and 126 (65%) completed the full eight session programme.

Baseline characteristics were well balanced between the treatment groups (table 1). Mean age of adolescents in the study at baseline was 14·5 years (SD 1·2), and an average of 4·5 years (3·7) had passed since participants' focal loss. About half (173 [45%]) reported the loss of a biological parent as the one that had affected them the most. Nearly three-quarters of adolescents reported that the loss was due to an illness, among whom only 17 (4%) cited AIDS as the cause of death (although 146 [38%] indicated it was due to a prolonged illness lasting 3 or more months).

Descriptive data for the outcomes by treatment group and survey round are shown in table 2. Mann-Whitney *U* tests showed that baseline scores did not differ between the two groups (data not shown), with the exception of BPM-P which was higher for the intervention group

	Waitlisted (n=189)	Intervention (n=193)
Age (years)	14.5 (1.2)	14.4 (1.2)
Years since focal loss	4.5 (3.5)	4.6 (3.9)
Loss that most affected them		
Biological parent	81 (43%)	92 (48%)
Grandparent	54 (29%)	53 (28%)
Other	54 (29%)	48 (25%)
Cause of death		
Accident	9 (5%)	11 (6%)
Violence (including suicide)	5 (3%)	6 (3%)
Illness	142 (75%)	142 (74%)
Unknown	33 (18%)	34 (18%)
Experienced multiple losses	83 (44%)	98 (51%)
Primary caregiver		
Mother	90 (48%)	87 (45%)
Father	9 (5%)	5 (3%)
Grandparent	34 (18%)	49 (25%)
Aunt or uncle	19 (10%)	19 (10%)
Other	37 (20%)	33 (17%)
Orphan (single or double)	96 (51%)	106 (55%)

Data are mean (SD) or n (%).

**Table 1: Baseline characteristics of participants in the intervention and waitlist groups**

than for the waitlist group ( $p=0.008$ ). Scores for primary outcomes declined between survey rounds in both groups, suggesting increasing psychological health, although greater improvements were noted in the intervention group.

The effect of the intervention on study outcomes is shown in table 3. The intervention group showed a significant reduction in two of the grief indices (IGTS and ICG-RC), depression (CES-DC), and behavioural problems (BPM-P). An average reduction of 2.97 points in IGTS scores ( $p=0.000$ ), 1.63 points in ICG-RC scores ( $p=0.015$ ), 2.70 points in CES-DC scores ( $p=0.009$ ), and 1.55 points in BPM-P scores ( $p=0.017$ ) was noted relative to the waitlisted group at follow-up. Although there was a reduction in normative grief scores (CBI-G) for the intervention group, it was not statistically significant. Programme assignment was also associated with an improvement in receiving social support (SSS-R;  $p=0.005$ ). No significant improvements on measures of supportive parenting (IPA and PBI-S) were noted. Small between-group effect sizes ( $d=0.2$  to  $<0.5$ ) were noted for the IGTS, CES-DC, BPM-P, and SSS-R. Null effects ( $d<0.2$ ) were noted for the ICG-RC. Within-group results for the intervention group showed intermediate effect sizes ( $d=0.5$  to  $<0.8$ ) for IGTS, ICG-RC, and BPM-P, whereas the CES-DC and SSS-R showed a small effect size. The within-group results for the waitlist group were small or null across all outcomes.

	Baseline		Follow-up	
	Waitlisted (n=189)	Intervention (n=193)	Waitlisted (n=189)	Intervention (n=193)
<b>Primary outcomes</b>				
Core Bereavement Items (grief subscale)	7.3 (0-15; 3.6)	6.6 (0-15; 3.5)	5.8 (0-15; 3.4)	4.6 (0-14; 3.0)
Intrusive Grief Thoughts Scale	21.9 (9-44; 8.8)	21.7 (9-41; 9.1)	18.7 (9-43; 8.3)	16.6 (9-42; 7.9)
Inventory of Complicated Grief	16.6 (6-30; 7.0)	16.5 (6-30; 7.3)	13.4 (6-29; 6.5)	12.3 (6-30; 6.3)
CES Depression Scale	16.6 (0-46; 10.7)	17.2 (0-54; 10.9)	14.0 (0-45; 10.4)	12.4 (0-41; 10.2)
Brief Problem Monitor* (Parent report)	8.2 (0-27; 5.9)	10.2 (0-33; 7.0)	6.6 (0-35; 5.3)	6.6 (0-38; 6.3)
<b>Secondary outcomes</b>				
Inventory of Parental Attachment	49.4 (13-69; 10.5)	49.4 (20-69; 10.5)	47.4 (15-70; 10.7)	49.5 (18-70; 11.1)
2-Way Social Support Scale (receiving support subscale)	15.3 (1-21; 4.4)	15.0 (0-21; 4.8)	14.6 (2-21; 4.4)	15.5 (0-21; 4.3)
Parent Behavior Inventory* (support subscale)	42.3 (17-55; 7.8)	41.8 (21-55; 8.0)	40.9 (11-55; 7.8)	42.2 (17-55; 7.4)

Data are mean (range; SD). CES=Center for Epidemiological Scale. \*Caregiver-reported measures; all other measures reported by adolescents.

**Table 2: Descriptive statistics for the eight study outcomes by treatment group and time period**

## Discussion

Most research on treatment approaches for young people affected by grief and depression in low-income and middle-income countries derives from armed conflict or post-natural disaster settings.<sup>15</sup> Little evidence exists to inform the design of community-based interventions targeted to the large and growing population of children in countries with generalised HIV epidemics who have experienced the loss of someone close to them. This study offers new information about the potential for the Abangane programme and others like it to mitigate the harmful psychological consequences of loss among adolescents in places where loss is common. The programme was associated with measurable decreases in adolescent-reported depression and maladaptive grief, as well as caregiver-reported behavioural problems among adolescents.

While significant, these effects were modest overall, consistent with studies of grief-focused interventions in the USA.<sup>38,39</sup> To our knowledge, only one other study in sub-Saharan Africa has investigated the effect of a structured psychological health intervention on maladaptive grief among bereaved children in a generalised HIV epidemic setting.<sup>14</sup> Although that study found a more substantial effect on grief outcomes, it did not have a control group and was done with younger children (ages 7-13 years), making the results less directly comparable. Other group-based interventions have also been shown to mitigate depression among orphaned or otherwise vulnerable children in this

	Observations	Regression estimates			Effect size (Cohen's d)*		
		Coefficient	Standard error	p value	Between group	Within intervention group	Within waitlisted group
<b>Primary outcomes</b>							
Core Bereavement Items (grief subscale)	382	-0.49	0.440	0.269	NA	NA	NA
Intrusive Grief Thoughts Scale	382	-2.97	0.831	0.000	-0.21	-0.60	-0.38
Inventory of Complicated Grief	382	-1.63	0.669	0.015	-0.14	-0.60	-0.47
CES Depression Scale	382	-2.70	1.025	0.009	-0.21	-0.46	-0.25
Brief Problem Monitor (Parent report)	376	-1.55	0.649	0.017	-0.31	-0.54	-0.29
<b>Secondary outcomes</b>							
Inventory of Parental Attachment	382	2.01	1.281	0.101	NA	NA	NA
2-Way Social Support Scale (receiving support subscale)	382	1.18	0.420	0.005	0.26	0.11	-0.16
Parent Behavior Inventory (support subscale)	376	1.81	0.986	0.067	NA	NA	NA

NA=not applicable. GEE=generalised estimating equations. CES=Center for Epidemiological Scale. \*Negative effect sizes indicate an average decrease in the score while positive effect sizes indicate an increase.

**Table 3: GEE regression estimates of intervention effect on study outcomes with effects sizes**

region,<sup>10-13</sup> but not all report effect sizes.<sup>11,12</sup> A greater understanding about the effectiveness of various approaches to maladaptive grief and depression among bereaved children in sub-Saharan Africa is needed.

Family bereavement interventions have shown promise in resolving maladaptive grief among children.<sup>14,19</sup> This trial was initially designed to include a parallel support programme for the primary caregivers of adolescent participants, aimed at helping to resolve caregivers' grief so they could better support the children in their care. The caregiver component was dropped from the trial due to very low early session attendance among caregivers; a problem echoed in a trauma-focused trial for children in Zambia.<sup>40</sup> Thus, although social support improved (probably as a result of the intervention's group dynamic), no significant improvements in supportive parenting were noted. Possibly, caregiver participation could have resulted in more pronounced improvements in adolescents' psychological health outcomes. Many caregivers in South Africa experience high levels of bereavement-related grief themselves,<sup>41</sup> a factor found elsewhere to be strongly associated with children's risk for depression.<sup>5</sup> Engaging caregivers might be particularly crucial in South Africa, where previous research suggests that strong cultural norms prevent adults from discussing death with children.<sup>42</sup> Finally, strategies might be required to support attendance and retention in programmes that enrol caregivers as co-participants. Examples include reimbursement for transport costs, hiring a child-minder to watch younger siblings during sessions, and offering refreshments or other participation incentives. Programme implementers should further help caregivers to understand the goals of the programme, and make them aware of the benefits of participation.

Several caveats should be considered with respect to the external validity of the study findings. The study population was restricted to girls, and responses to loss and therapeutic interventions have been found to vary by sex<sup>11,19</sup> precluding generalisation of these results to male adolescents. The decision to restrict the programme to girls was an intentional one based on boys' minimal engagement in the programme during the pilot. The implementers further felt that the intervention's emphasis on emotional disclosure stood in contrast with local behavioural norms for adolescent males. Correspondingly, previous research from Uganda suggests that boys might be unwilling to talk about emotional problems in front of their peers, even in same-sex groups, and that different types of interventions might be necessary for male participants.<sup>11</sup> While separating participants by sex is common practice for group interventions in sub-Saharan Africa,<sup>10,11,13,14</sup> greater attention towards developing and assessing sex-specific programming is needed.

The median time between the focal death and baseline assessment was relatively long, at more than 4 years—a factor that has been associated with poorer treatment outcomes.<sup>38</sup> Among adolescents who had lost one or both parents, an undetermined number were orphaned by AIDS; longitudinal research has shown greater psychological challenges in this population relative to adolescents orphaned by other means and non-orphans.<sup>18</sup> Stigma, secrecy, and social rejection associated with HIV might affect grief by inhibiting helpful communication and social support.<sup>16,43,44</sup> Indeed, previous research in South Africa reported stigma as the strongest predictor of aggravated grief among caregivers of HIV-affected children.<sup>41</sup> At the same time, stigma and the presence of multiple factors contributing to a loss can make it difficult to distinguish AIDS-related deaths from



others.<sup>45,46</sup> While most participants reported that the focal loss was due to illness, only 5% reported that the death was from AIDS, and the extent to which this might reflect unwillingness to disclose or lack of knowledge about the circumstances of the death is unclear. Another nearly 20% reported the cause of death as unknown. Reliance on adolescents' reports probably exacerbates misclassification. Future analyses could help to clarify the factors—such as prolonged illness, adolescent's relationship to the deceased, baseline outcome values, and time since the loss—that affect treatment effects, with implications for intervention targeting and other aspects of implementation.

Attendance might also be an important factor. We analysed outcomes based on participants' treatment assignment rather than session attendance, and unsurprisingly, greater effects have been found in studies of bereavement interventions that are restricted to participants who complete a minimum number of sessions.<sup>39</sup> Although the participation threshold for fostering effects of Abangane has yet to be established, it is possible that the inclusion of those who did not complete all eight sessions—and comprised almost a third of the intervention group—lowered effect estimates. On the other hand, participation was high overall, with more than three-quarters of the intervention group attending at least seven sessions. Further, these results might be more replicable because they incorporate implementation challenges common to structured interventions for adolescents, such as non-completion due to conflicting commitments or waning interest in participation.

The use of a waitlisted control group presents the possibility of a nocebo effect, whereby negative effects emerge among those anticipating (but not receiving) services. A recent review noted that trials of cognitive behavioural therapy interventions using waitlisted controls might overestimate treatment effects compared with studies with so-called true controls; however, this risk also seems more likely in individual versus group-based interventions.<sup>47</sup> In this study, psychological health improved for the waitlist group (albeit less substantially than for the intervention group), making nocebo effects unlikely. Further, although a true control group might provide slightly more conclusive evidence, this must be weighed against the ethical implications of denying children access to treatment.<sup>48</sup> This study leveraged planned programme scale-up to guarantee service delivery to all children while also applying a randomised controlled trial design. At the same time, the study included only one short-term follow-up assessment, restricting our ability to explore benefits that emerge over a longer timeframe. Indeed, in one of the few long-term trials of an intervention for bereaved adolescents in the USA, psychological and behavioural effects were found to persist for as many as 6 years.<sup>19,49</sup>

Despite its limitations, this study offers important new evidence in support of a culturally appropriate and

logistically feasible intervention addressing priority psychological needs among adolescents affected by loss in sub-Saharan Africa. Research from South Africa underscores how culture influences children's experiences and understanding of loss,<sup>42,50,51</sup> highlighting the importance of interventions that are contextually sensitive and accommodate local norms. The intervention's incorporation of principles underpinning cognitive behavioural therapy, a highly effective treatment for depression among adolescents and adults living with HIV,<sup>52,53</sup> is another strength. Abangane emphasises coping strategies for emotions related to loss itself; however, recent theories suggest that helping participants cope with associated restoration stressors like changed responsibilities, family organisation, and financial standing could hold equal importance.<sup>54</sup> These and other components of the programme were recently enhanced based on the evaluation findings, which could result in more robust treatment effects. Notably, this study represents an unusual effort to strengthen the theoretical basis for a locally derived intervention, instead of adapting a foreign intervention to ensure its cultural relevance in context. We hope that future efforts to design and evaluate programmes offering psychological support for bereaved children in low-income and middle-income countries will likewise centre cultural competence alongside theoretical and methodological considerations.

#### Contributors

TRT designed and led the study, including development of the data collection instrument and protocol, study oversight and implementation, and data interpretation. TRT had full access to the data and takes responsibility for its integrity and the decision to submit this report. BGL contributed to the study design and development of the protocol, as well as data analysis and interpretation. JN contributed to study design, development of the data collection instrument and protocol, and study oversight and implementation. AS contributed to study oversight and implementation, and data interpretation. TMT contributed to development of the protocol. All authors participated in drafting the report and read and approved the final version.

#### Declaration of interests

We declare no competing interests.

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