Development and formative evaluation of a family-centred adolescent HIV prevention programme in South Africa

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Highlights

- Family-centred adolescent HIV prevention programmes are scarce in South Africa.
- A programme was locally developed utilizing existing evidence-informed curriculums.
- A mixed methods formative evaluation informed programme refinements.
- Content-specific facilitator training needs were revealed and addressed.
- Culturally inappropriate content and structural issues were identified and remedied.

Abstract

Preventing HIV among young people is critical to achieving and sustaining global epidemic control. Evidence from Western settings suggests that family-centred prevention interventions may be associated with greater reductions in risk behaviour than standard adolescent-only models. Despite this, family-centred models for adolescent HIV prevention are nearly non-existent in South Africa – home to more people living with HIV than any other country. This paper describes the development and formative evaluation of one such intervention: an evidence-informed, locally relevant, adolescent prevention intervention engaging caregivers as co-participants. The programme, originally consisting of 19 sessions for caregivers and 14 for adolescents, was piloted with 12 groups of caregiver-adolescent dyads by community-based organizations (CBOs) in KwaZulu-Natal and Gauteng provinces. Literature and expert reviews were employed in the development process, and evaluation methods included analysis of attendance records, session-level fidelity checklists and facilitator feedback forms collected during the programme pilot. Facilitator focus group discussions and an implementer programme workshop were also held. Results highlighted the need to enhance training content related to cognitive behavioural theory and group management techniques, as well as increase the cultural relevance of activities in the curriculum. Participant attendance challenges were also identified, leading to a shortened and simplified session set. Findings overall were used to finalize materials and guidance for a revised 14-week group programme consisting of individual and joint sessions for adolescents and their caregivers, which may be implemented by community-based facilitators in other settings.

Keywords: South Africa, adolescent HIV prevention, family-centred, orphans and vulnerable children, formative evaluation.

1. Introduction and background

Globally, young people aged 15 to 24 account for 40% of all new HIV infections each year, making effective prevention programming for adolescents a critical precursor to epidemic control (UNAIDS, 2012). More individuals are living with HIV in South Africa than any other country (UNAIDS, 2014), and for several years declining prevention knowledge has been coupled with increasing behavioural risk (Shisana et al., 2014). The country's latest National HIV Prevalence, Incidence and Behaviour Survey found that prevalence rises sharply in adolescence and peaks in young adulthood, especially for adolescent girls and young women (Shisana et al., 2014). Adolescent orphans and those affected by HIV face even higher risk than their same-age peers (Cluver, Orkin, Boyes, Gardner, & Meinck, 2011; Operario, Underhill, Chuong, & Cluver, 2011).

Overall, little is known about the effectiveness of family-centred interventions for adolescent HIV prevention in sub-Saharan Africa (Harrison, Newell, Imrie, & Hoddinott, 2010; Kuo et al., 2016). Although the label 'family-centered' may refer to a range of designs (Pentecost, Ross & Macnab, 2017), we use it here to mean the inclusion of at least one primary caregiver in an intervention intended to effect adolescent behaviour change. Family-centred programmes, including those oriented to the caregiver-adolescent dyad, have been found to be more effective at reducing sexual risk behaviour among participating adolescents in the long term (Rotheram-Borus et al., 2003; Stanton et al., 2004). Despite this evidence, review of the literature suggests that family-centred programmes focused on adolescent HIV prevention in sub-Saharan Africa are rare, and have targeted specialized sub-groups or limited participation to one member of the dyad. For example, two interventions with encouraging pilot trial findings from South Africa were tailored for either pre-adolescents or those living with HIV (Armistead et al., 2014; Bell et al., 2008; Bhana et al., 2014). Other models in the region engaged caregivers exclusively (Bogart et al., 2013; Poulsen et al., 2010; Vandenhoudt et al., 2010).

In light of these limitations, we sought to develop a curriculum-based, family-centred adolescent HIV prevention programme for use in South Africa with vulnerable adolescents and their caregivers. Extensive multi-stage formative evaluation work was embedded in the process. Following background research and expert reviews during the initial development phase, the formative study aimed to capture implementers' and beneficiaries' first experiences with the programme through qualitative interviews and a focused analysis of programme monitoring data reflecting training feedback, participant attendance, and implementation fidelity at the session and activity level. Formative evaluations are increasingly utilized as standalone research efforts or to complement outcome evaluations, and are particularly useful when piloting or adapting interventions for new settings as was done in this case (Lau, 2006). Investment in formative research also allows for greater understanding of how complex programmes function, and provides results that may be used to improve interventions (Oakley, Strange, Bonell, Allen, & Stephenson, 2006). This paper describes the results of this integrated development and assessment effort as well as subsequent revisions to the intervention, called Let's Talk[1] (referred to locally as *Masikhulume* in isiZulu and *Hare Buwe* in Sesotho).

2. Programme planning and development

A literature search was first undertaken to explore the relative significance of multi-level factors influencing risk behaviour among adolescents in low-resource, HIV-affected communities. Notable considerations included higher rates of family dysfunction and mental health problems reported among orphans and other children affected by HIV (Cluver, Gardner, & Operario, 2007; Sherr, Croome, Parra Castaneda, & Bradshaw, 2014; Thurman, Kidman, Nice, & Ikamari, 2015). Ample research supports the existence of a relationship between adolescents' sexual and reproductive health outcomes and the quality of their relationships with primary caregivers (Markham et al.,

[1] The authors wish to acknowledge another programme in South Africa called *Let's Talk!* which similarly focuses on improving parenting practices to prevent children from acquiring HIV. That programme focuses exclusively on parents and there is no affiliation with the current programme under study. Further details on that programme are available elsewhere (Bogart et al., 2013b).

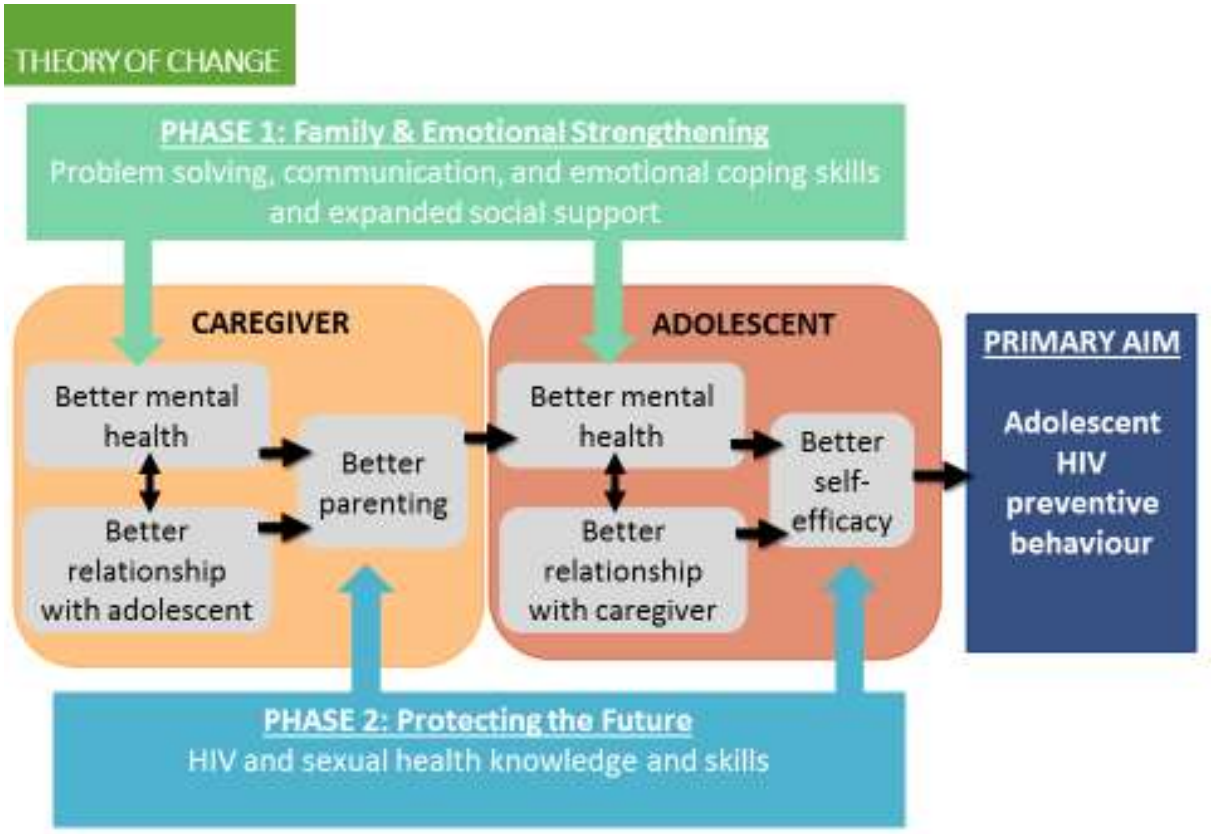
2010; Cluver, Orkin, Boyes, & Sherr, 2014). The mental health of caregivers affects this relationship (Allen et al., 2013; Lachman, Cluver, Boyes, Kuo, & Casale, 2013) and has also been linked to adolescent sexual risk behaviour (Meinck et al., 2017; Mellins et al., 2009). Associations between poor mental health and high risk sexual behaviour among youth have also been reported (Nduna, Jewkes, Dunkle, Shai, & Colman, 2010). These findings highlight the promise of programming that goes beyond offering standard HIV prevention education and behavioural skills promotion to address participants' mental health and family relationships.

Programme development was based on three theoretical frameworks. Eco-developmental theory recognizes family dynamics as pivotal to adolescent outcomes (Szapocznik & Coatsworth, 1999) and is increasingly used to guide adolescent HIV prevention and care (Ortega, Huang, & Prado, 2012; Perrino, Gonzalez-Soldevilla, Pantin, & Szapocznik, 2000; Prado et al., 2010). Cognitive behavioural theory (CBT) posits that thoughts, emotions and behaviours are linked and that modifying one can affect the others in predictable ways. The evidence base for CBT is robust, and several recent reviews support its efficacy for treating psychological problems, including depression and anxiety, in adults and children generally as well as HIV-affected subgroups (Butler, Chapman, Forman, & Beck, 2006; Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012; Sherr, Clucas, Harding, Sibley, & Catalan, 2011). Lastly, Bandura's social learning theory upholds that learning occurs in a social context – such as a support group setting – through direct experience, observation, modelling and imitation (Bandura, 1977).

A multi-level theory of change for the programme was established (Figure 1), suggesting that better mental health among both caregivers and adolescents would improve their relationship, contributing to more positive parenting and adolescent self-efficacy. Thus, the programme was intended to help participants build emotional coping, communication, and problem solving skills with a focus on resolving issues that commonly arise in family life. The group also provides a forum for participants to develop social and emotional support and expand their peer network. The

development of key competencies to prevent HIV and promote sexual health is fundamental to the programme. To build self-efficacy, adolescents practice protective skills such as sexual refusal, condom use, and condom use negotiation. Meanwhile, caregivers learn to develop strategies for mitigating adolescent sexual risk behaviour and promoting safe intimate relationships, including open communication about sexual health, HIV testing, and dating violence.

Figure 1. *Let's Talk* Theory of Change



Several existing family-centred, evidence-based interventions addressing these factors were examined in order to identify models appropriate for adaptation within the South African context. One intervention exhibiting particularly robust evidence was the Teens and Adults Learning to Communicate (TALC) programme (Rotheram-Borus, Lee, Gwadz, & Draiman, 2001). TALC aims to support the mental health of caregivers and adolescents, improve family relationships and increase participants' knowledge about HIV risk. While originally conceived as an intervention for parents

living with HIV and their adolescents, the programme builds emotional coping and problem solving skills that are broadly applicable. TALC was selected as the foundational model for the new programme on the basis that it addressed many risk factors identified in the literature, was family-based, had been applied in several low income country contexts such as Thailand and Haiti, demonstrated numerous long-term positive outcomes in follow-up studies, and incorporated CBT (Li et al., 2012; Rotheram-Borus, Lee, Lin, & Lester, 2004; Rotheram-Borus et al., 2001; Smith Fawzi et al., 2012).

Local experts from Tulane University's Highly Vulnerable Children Research Center and the University of Pretoria in South Africa collaborated to review and revise the curriculum's content and structure, expanding its cultural and contextual relevance. A draft outline of individual sessions for Let's Talk was developed, containing session rationales, objectives, and a set of relevant activities. Curriculum content was also incorporated from other sources, including the US-based HIV Prevention Intervention Focus on Youth with Informed Parents and Children Together (FoY with ImPACT) (Lyles et al., 2007). Messaging, skill-building activities, culturally-relevant stories and scenarios were adapted from three evidence-informed curricula derived in South Africa: the Kgolo Mmogo Resilience Project (Eloff et al., 2014; Visser et al., 2012), the Sinovuyo Caring Families Program (Cluver et al., 2017; Lachman et al., 2016) and Vhutshilo 2.2, a peer-led psychosocial support and HIV prevention group intervention for orphaned and vulnerable adolescents (Swartz et al., 2012). Additional activities were developed by the team to address any identified gaps.

3. Programme structure and materials

Let's Talk was initially designed as a three-phase programme with 19 caregiver and 14 adolescent sessions, of which six were joint caregiver-adolescent sessions (Table 1). Phase 1 allowed caregivers to build personal emotional coping and problem solving skills before shifting the focus to their adolescents. Phase 2 included four sessions in which caregivers focused on improving their parenting skills, which included developing deeper understanding of adolescent behaviour, learning

communication skills, and practicing setting boundaries. Simultaneously, adolescents focused on their own mental health during four individual sessions – learning to cope with difficult emotions, set personal goals, and practicing communication skills to reduce family conflict. Through four joint sessions in Phase 2, caregivers and adolescents worked together to build mutual understanding, explore family strengths, and manage difficult situations at home. Finally, in Phase 3 during four individual sessions, caregivers learned about HIV and adolescent risk behaviour, discussed how to overcome barriers to communicating about sex, and learned ways to respond to a crisis. Adolescents gained sexual health knowledge, discussed the characteristics of healthy intimate relationships, and developed condom use negotiation skills and sexual self-efficacy. In the final two (joint) sessions, caregivers and adolescents reaffirmed their sexual risk knowledge, discussed a case study involving unplanned pregnancy, and developed a shared vision for the future.

Table 1. Pilot programme session outline

Pilot programme model	
Caregiver sessions	**Adolescent sessions**
Phase 1: Caregivers Matter	
1. Building a healthy family	No adolescent sessions
2. Emotional awareness	
3. How to cope with sadness and fear	
4. How to cope with anger	
5. Family problem-solving skills	
Phase 2: Adolescents Matter	
6. Introduction, getting to know one another (joint)	1. Introduction, getting to know one another (joint)
7. Raising an adolescent	2. My strengths and goal setting
8. Developing positive family relationships	3. Developing positive family relationships
9. Effective communication about emotions	4. Creating a positive atmosphere at home
10. Problem solving (joint)	5. Problem solving (joint)
11. Helping adolescents cope with difficult emotions	6. Coping with sadness
12. Behaviour management with adolescents	7. Coping with anger
13. Conflict management (joint)	8. Conflict management (joint)
Phase 3: Protecting the Future	
14. Adolescent risk taking	9. Sexual relationships
15. Communicating with adolescents about relationships and sexual health	10. Communicating about sex
16. Understanding HIV	11. HIV and STI's – Fact and fiction
17. Preventing and responding to crises	12. Condom use
18. Future planning (joint)	13. Future planning (joint)
19. Graduation and looking ahead (joint)	14. Graduation and looking ahead (joint)

The programme features a structured session approach, with a consistent pattern of activities delivered in each two-hour session, including an opening ritual, discussion of the home practice from the previous session, and a series of 3 to 5 core exercises. Sessions close with a reflective discussion on lessons learnt; a home practice assignment, and a lottery draw as a fun participation incentive. Recognizing the dynamics inherent in caregiving arrangements for children and adolescents in heavily HIV-affected communities (Bray & Brandt, 2007), Let's Talk engages the primary caregiver of the enrolled adolescent regardless of the relationship between the two. Interactive, culturally appropriate scenarios and stories were incorporated into the curriculum to foster experiential learning and promote relevance to participants' daily lives through attention to issues including foster care, chronic illness and bereavement. These included scenarios involving household chore negotiation, adolescents going out until late at night, and caregivers offering emotional support to grieving adolescents. Culturally appropriate stories were used to illustrate emotions; for example, the African fable 'The Lion, The Hyena and The Vulture' was included to spark discussion about the effect of uncontrolled anger in relationships.

A comprehensive manual detailing session activities and requirements was provided during facilitator training, together with sample facilitation scripts and related guidance. Facilitators were also given an implementation guide detailing the programme's theoretical framework, session outline, and facilitation tips. Worksheets developed for programme participants were included as appendices in the curriculum manuals. Selected items, including stories, scenarios, and worksheets, were professionally translated into two local languages (isiZulu and Sesotho) for facilitator use.

4. Piloting of the programme

Two non-governmental organisations (NGOs) serving vulnerable and HIV-affected families were selected to implement the Let's Talk pilot. Both NGOs provide services to beneficiaries through community-based organisation (CBO) affiliates in focal communities. The CBOs recruited caregivers and adolescents to participate in the pilot during home visits. Enrolment criteria required caregivers to be serving as the primary caregiver of at least one adolescent aged 13 to 17 years living in their household, interest in participating in the intervention and provide permission for their adolescent(s) to participate, if interested. A total of twelve family-pair groups with approximately 10 members each were organized by seven CBOs (one to two groups each) across the two NGOS in

KwaZulu Natal province (uMgungundlovu district) and Gauteng province (City of Johannesburg metropolitan area). All of the caregivers were female and approximately 66% of the participating adolescents were female. Participants were inclusive of orphaned adolescents, HIV positive caregivers and non-parental caregivers. These and other demographics were collected separately as part of the pilot evaluation examining potential programme effects, and are described in detail elsewhere (Thurman, Nice, Luckett, & Visser, 2017).

Let's Talk is intended to be delivered by trained community workers, in order to support both replicability and fidelity to the programme model in under-resourced communities. Participating CBOs selected a total of 25 community workers (about three quarters were female, ages 25 to 40 years) to serve as facilitators and co-facilitators for the pilot. Facilitator employment qualifications included fluency in English as well as the predominant local language, graduation from high school, and at least some tertiary training in community-based care. Preference was given to those with prior experience facilitating group interventions, and/or who resided in close proximity to a community where the intervention was being offered. Social workers employed at the affiliated NGOs were assigned as programme supervisors to monitor pilot implementation and provide quality assurance and oversight via weekly supervision meetings. Supervisors met monthly with facilitators individually and as a group to debrief on session content and provide psychosocial support.

Facilitators, supervisors, and programme managers received three weeks (120 hours) of intensive Let's Talk implementation training led by the programme developers. Training was offered immediately prior to the start of each phase over the course of five months, allowing implementers to gain experience between training sessions. The training was informed by principles of social learning theory, with implementers experiencing the intervention as participants would. Implementers practised facilitating the sessions during training, and were instructed in foundational content on key topics including managing group dynamics, implementing CBT principles, adolescent development, and sexual and reproductive health knowledge. Facilitators also participated in

activities and discussions to enhance sensitivity concerning the particular challenges that non-parental caregivers, orphans and HIV positive participants may face.

Programme sessions, whether parallel or joint, were typically offered once a week at selected venues in the community. However, CBOs sometimes offered two sessions per week to shorten the overall time required to complete the programme and/or to adhere to participant preference. While only selected session activities were formally translated from English into isiZulu and Sesotho for use during the pilot, facilitators reported that they predominantly delivered the programme in vernacular. In recognition of the sensitive nature of the programme's content, comprehensive referral systems were developed and facilitators were trained to be sensitive to participants' emotional difficulties and to make referrals for professional assistance at referral social service organizations accordingly.

Participants were provided with refreshments and small transport allowances, and had the opportunity to win small attendance incentives via a lottery draw held at the end of each session (prizes included toiletries, crockery, and store vouchers).

5. Data collection

In order to better understand the performance of the adapted design on critical precursors to programme success, such as participant involvement and positive response to key intervention components, the pilot implementation was coupled with an analysis of process and monitoring data. Data collected throughout the pilot implementation originated from the following sources:

- Participant attendance records from session registers.
- Session fidelity checklists, wherein facilitators reported on the time required for each activity (less, more or as indicated in the curriculum), the perceived effectiveness of each exercise as measured by participant responses (very well, somewhat well, not well at all), and levels of

participation (high, moderate or minimal). Open-ended questions enabled reporting on other challenges experienced as well as suggestions for improvement.

- Phase evaluation forms wherein facilitators submitted lessons learnt, changes observed among participants, suggestions for programme improvement and any other feedback at the end of each programme phase.
- Training evaluation forms completed by facilitators at the end of each training phase, containing data on their perceived preparedness in terms of knowledge and skills acquired.

Qualitative monitoring data were additionally collected from two sources: focus group interviews and a programme workshop. Focus group interviews with facilitators from all 10 sites (n = 25 participants) took place at the training venue after the completion of programme implementation after each phase. The discussions lasted approximately 1.5 hours and were conducted in English by the programme developers. Further, a one-day workshop was conducted with programme managers and supervisors from implementing organisations, allowing participants to share lessons learned and discuss potential programme revisions. Key personnel involved in programme implementation from each of the attending organisations completed a pre-workshop survey and the researchers documented the discussions held during the course of the workshop. The pilot also included a quantitative assessment of key outcomes among participating caregivers and adolescents pre- and post-intervention. These results are reported elsewhere (Thurman et al., 2017).

6. Findings

6.1. Facilitator preparedness and competencies

Facilitators rated the training highly overall; 95% reported that they understood the content and 94% reported satisfaction with their ability to plan and facilitate sessions (Table 2). Self-efficacy on some of the therapeutic components was somewhat lower: 82% of facilitators felt that they could explain CBT effectively. As one trainee noted, “I need more practice on challenging negative thoughts.” (Facilitator 14, KZN)

Table 2. Self-rated facilitator preparedness and competencies

Facilitator responses	Percentage (n=30)
Found the training content well-organised and easy to follow	95% (28)
Learned skills in the training that could be applied in personal life	91% (27)
Very likely to recommend the training to others	98% (29)
Feel confident in ability to explain CBT	82% (25)
Feel confident in ability to help participants manage and express their anger	95% (28)
Satisfied with ability to plan and facilitate sessions overall	94% (28)
The training was able to retain trainee interest	93% (28)
The curriculum manual is easy to use overall	84% (25)

In qualitative feedback, trainees requested additional preparation for managing challenging group dynamics and ensuring that factual information and facilitation skills were clearly communicated. Further, trainees felt that obtaining critical feedback on their performance during training would better prepare them and develop both personal and job-related confidence. They expressed gratitude for the opportunity to experience the programme first-hand during the training, which they felt enabled their personal growth and prepared them to help participants address individual challenges, as exemplified in these quotes:

> "What I liked about the training is how our facilitators helped me to understand the power of thoughts in our lives." (Facilitator 1, KZN)

> "It was a very informative training and taught me a lot about myself, and that in order to help others we need to deal with our own issues to further assist people to solve their own problems." (Facilitator 11, KZN)

6.2. Programme content and structure

Facilitators' ratings of effectiveness and participation improved markedly as sessions progressed. Except for the first two caregiver sessions, between 77% and 96% of facilitators endorsed caregiver sessions as effective and between 83% and 94% facilitators said the same for adolescent sessions (Table 3). Similarly, while 50-69% of facilitators rated group members' participation as active during the first five caregiver sessions, results increased to 80-100% for subsequent caregiver sessions.

Table 3. Summary of fidelity checklist data

Caregiver sessions	**Overall effectiveness***	**Overall participation****
Building a healthy family	68%	50%
Emotional awareness	63%	61%
How to cope with sadness & fear	81%	62%
How to cope with anger	92%	61%
Family problem-solving skills	88%	69%
Raising an adolescent	92%	92%
Effective communication about emotions	87%	84%
Helping the adolescent deal with difficult emotions	77%	69%
Behaviour management with adolescents	94%	85%
Adolescent risk taking	96%	88%
Communication with adolescents about relationships & sexual health	84%	80%
Understanding HIV	87%	100%
Preventing & responding to crises	95%	100%
Adolescent sessions	**Overall effectiveness***	**Overall participation****
My strengths & goal setting	83%	92%
Creating a positive atmosphere at home	83%	77%
Coping with sadness	87%	77%
Coping with anger	92%	77%
Sexual relationships	88%	88%
Communication about sex	93%	100%
HIV and STI's – Fact and fiction	90%	100%
Condom use	94%	100%
Joint sessions	**Overall effectiveness***	**Overall participation****
Introduction and getting to know one another	94%	83%
Developing positive family relationships	89%	85%
Problem solving	85%	100%
Conflict management	88%	84%
Future planning	95%	89%
Graduation and looking ahead	100%	89%

*Average % of facilitators that rated exercises in the session as working very well (very effective)

**Average % of facilitators that rated participation in the session as being very active

Engagement in adolescent and joint sessions was reported as consistently high by between 77% and 100% facilitators. Participation was rated as more active as sessions progressed. The fidelity checklist and facilitator focus group data also reflected largely positive feedback, suggesting that the content was well received and perceived as relevant:

> "The programme is practical, it's innovative; it talks about real issues that affect all families, rich or poor." (KZN facilitator, focus group discussion)

> "[Let's Talk] empowers adolescents and caregivers. It confronts in a constructive manner the cultural values, norms and beliefs of adolescents and caregivers with regards to various factors that put adolescents at risk of HIV infection and pregnancy. I like the fact that it focuses on setting future goals after empowering the adolescents, and all is done in partnership with guardians." (Gauteng facilitator, focus group discussion)

> "Caregivers became aware of how their children feel. The caregivers were able to put themselves in the children's shoes and understand them, and try to come to solutions." (Facilitator 4, KZN)

> "The children were full of anger and had nowhere to go where they could express themselves and did not feel their families were supportive. Now they will say and express how they feel honestly and directly and have more open relationships with their family as a result of the programme." (Gauteng facilitator, focus group discussion).

Not all sessions were perceived favourably. The lowest participation and effectiveness ratings were for those sessions where emotional issues were discussed (such as the first two sessions for caregivers). Facilitators described mixed reactions: some participants became extremely emotional when sharing personal stories; others were reluctant to convey intensely personal information. The initial lack of rapport between participants coupled with the expectation of emotional disclosure was a particular concern.

"Some participants had an attitude in terms of opening up and sharing with people they did not know. But the session was also emotional, as some participants started crying." (Facilitator 2, Gauteng)

"The group was a type of therapy where the caregivers shared their burdens and emotions. Some caregivers shared personal stories for the first time in their lives. They cry and let their anger out and they leave feeling a lot better."(KZN facilitator, focus group discussion)

Facilitators noted that caregivers generally did not relate to imaginative activities, such as the guided relaxation provided in each session or artistic activities, such as drawing a road map of events in their lives. Reasons provided ranged from cultural differences to limited literacy or familiarity with the task:

"One group member shared that as a black middle-aged woman, the relaxation exercise is for their grandchildren, not for them. They don't relate to such things." (Facilitator 18, Gauteng)

"We did not implement the relaxation [exercise] in this session as the parents have never been keen on them." (Facilitator 7, KZN)

"There are low levels of literacy. Caregivers struggled to draw a road map of their lives– out of 15 people, only 3 could read and write – although caregivers were excited to 'be at school' again." (Gauteng facilitator, focus group discussion)

"The caregivers can't draw - they prefer talking and sharing based on the road map." (Facilitator 20, Gauteng)

Both adolescents and caregivers were reportedly eager to engage in topics related to sexual health and HIV prevention. Participation and effectiveness were generally rated as high for these sessions (Table 3). However, participants became hesitant during reflective exercises and open discussions

about sexuality, including those addressing adolescents' intimate relationships and sexual health communication with their caregivers. Adolescents expressed embarrassment over explicit references to anatomy and sexuality and some were reluctant to share, due to concerns about confidentiality and fears about potential backlash from their caregivers. Facilitators relayed that while some caregivers embraced the opportunity to gain skills for promoting open communication about sexual health topics, older caregivers in particular felt that the programme was "in favour of" the adolescents, and voiced concerns that it would encourage adolescents to be sexually active. Facilitators struggled to respond to participants' concerns and expressed varying levels of comfort with presenting sensitive material of this nature.

> "It was a bit hard to talk about sex with the adolescents because at the beginning they were ashamed to talk about sex." (Facilitator 5, KZN)

> "The topic of sex was challenging to caregivers and therefore became challenging to facilitators as well." (Respondent 4, Partner workshop survey)

> "They [caregivers] were not comfortable talking about this. They didn't feel it was their place to address these issues with their adolescents." (KZN facilitator, focus group discussion).

Fidelity checklist reports indicated high overall engagement among participants in joint sessions, however, focus group data suggested that this level of participation was predominantly driven by caregiver participation. The dominance caregivers displayed at times squelched dialogue.

> "When teens are in an individual session they are much more expressive, they are a little reserved in joint sessions. Sometimes caregivers would impose their rules over teens in joint sessions when teens were reserved." (Gauteng facilitator, focus group discussion)

Adolescents reportedly felt uncomfortable joining the programme during a joint session. The caregivers had already gained experience with the programme and formed relationships with other

group members. Facilitators felt that adolescents did not actively participate in joint sessions, since they had not yet bonded with other adolescent group members, and had not yet dealt with their own emotions and personal challenges. Further, facilitators conveyed that adolescents did not like that they started the intervention later than caregivers.

> "After recruitment, our adolescents will have to wait for over six weeks to start attending, and they become impatient while waiting for their caregivers to complete Phase 1." (Respondent 12, Partner workshop survey)

6.3. Session length

Analysis of the fidelity checklist data revealed that the time taken to implement activities often exceeded the allotments specified in the manual. This was especially true when emotive topics were being addressed, resulting in lengthier and less focused discussions of participants' personal challenges and feelings. This effect was more common in caregiver groups. For example, in the second session of Phase 1 caregivers were asked to reflect on both positive and negative life events, which resulted in strong emotional responses and in caregivers sharing their stories and obtaining affective support from the group. While not outside the programme's goals, this response led to extended session duration. This particular session also resulted in a number of social service referrals to assist participants with fully addressing the emotions raised. The same dynamic was also observed in other emotion-focused sessions.

> "Phase 1 for caregivers raised strong emotions and opened wounds. We had to refer caregivers for further support but this helped them to face their issues." (Gauteng facilitator, focus group discussion)

Sessions also exceeded the allotted time when new concepts challenging cultural or social norms were introduced. This was frequently met with extensive discussion. For example, activities related to sexual health, risky adolescent behaviour, communicating with adolescents about sex, and

replacing punitive disciplinary practices with recommended ones exceeded their expected duration during caregiver sessions. Caregivers indicated that these approaches were culturally foreign.

Facilitators indicated a lack of comfort managing or redirecting conversations, as they did not want to offend participants. During focus group discussions, facilitators expounded on these issues:

> "Groups often ran for 3 hours because the caregivers speak in a roundabout way and take a long time to get to the point." (Gauteng facilitator, focus group discussion)

> "Caregivers were sharing their emotions and we didn't want to cut them off." (KZN facilitator, focus group discussion)

6.4. Participant attendance

Attendance was one of the primary challenges encountered during pilot implementation, particularly among caregivers (Table 4). Only 17% of caregivers and 21% of adolescents attended all of the sessions in the programme. Overall, caregivers attended an average of 12.4 sessions (out of 19 possible sessions) and adolescents an average of 10.1 sessions (out of 14 possible sessions). Attendance at the joint sessions was poor overall, with only 21% of caregiver-adolescent dyads attending all six joint sessions together. No significant variations in attendance by adolescent gender were found (data not shown). In total, 63% of caregivers and 69% of adolescents attended 70% of sessions.

Table 4. Pilot programme session attendance by participant group

Programme attendance	**Caregivers (N=131) All 19 sessions**		**Adolescents (N=114) All 14 sessions**		**Caregiver-adolescent dyads – Joint sessions (N=114) All 6 joint sessions**	
	Number of participants	**Percentage**	**Number of participants**	**Percentage**	**Number of participants**	**Percentage**
Attended all sessions	22	16.8	23	20.2	6	17.5
Attended all but one session	13	9.90	13	11.4	22	19.3
Attended 70% of sessions	81	61.8	77	67.5	61	53.5
Attended one session only	12	9.2	8	7	14	12.3
Mean number of sessions attended	12.2		10.1		3.3	

During focus group discussions, the majority of facilitators opined that the programme was too long for optimal participant engagement. Facilitators described a range of obstacles to participant attendance, including competing responsibilities and lack of transportation, but felt strongly that it was not reasonable to expect consistent caregiver attendance in a programme of this length.

> "Attendance on a weekly basis was a challenge. Caregivers have other commitments and so do we. It would be better to combine the sessions." (Gauteng facilitator, focus group discussion)

> "Reduce the number of sessions, especially for the parents." (Respondent 8, Partner workshop survey)

6.5. Programme materials

Facilitators noted a number of challenges related to the pilot programme materials. They found the phase-specific curriculum manuals, which incorporated both caregiver and adolescent sessions, difficult to use and the activity instructions troublesome to follow. Further, facilitators found it challenging to translate curriculum content provided to them in English themselves, which may have compromised fidelity. Facilitators also indicated that the participant worksheets were too text-heavy given varying literacy levels of caregivers, and noted that participants regularly misplaced their home assignments and repeatedly requested their own copies of the manuals for use outside of sessions.

> "The manual should have been split rather than have all the sessions in one book: one for adolescents and another for the parents and joint sessions." (Facilitator 13, Gauteng)

> "Manuals should be in Zulu - it is so difficult to translate." (Facilitator 1, KZN)

> "You should have participant manuals so that they can go through the content at home, including the exercises they can do at home." (KZN facilitator, focus group discussion)

> "The hand-outs didn't work with illiterate adults but were helpful to literate people." (Facilitator 23, Gauteng)

7. Resulting revisions

7.1. Training

Training content regarding CBT principles and anger management strategies was enhanced as a result of the formative evaluation findings. Additional training components were added using real-life examples, with opportunities for trainees to apply specific CBT concepts. Further, guidance regarding key facilitation skills was provided across various programme materials; detailed information on establishing and running support groups and managing difficult group dynamics was added to the training curriculum and the facilitator implementation guide. Guidance on logistical considerations and strategies to enhance participant engagement was also added. A peer review component was added to the module, offering each trainee opportunities to facilitate programme activities and receive detailed feedback.

The training curriculum was revised to standardise key content. All presentations used to train facilitators on key content areas were upgraded to incorporate greater detail and to allow for group discussion, ensuring trainee engagement and enhancing learning outcomes. Training presentations were upgraded and converted into pre-recorded digital videos for dissemination among new trainees by programme trainers and implementers (Table 5). This approach was adopted to ensure that all trainees receive the same level of exposure to core training content, and to support replicability in a range of settings. Finally, in order to address some of the misconceptions observed by the research team among trainees regarding HIV and sexual health topics, videos were developed to educate trainees specifically on these topics and improve the delivery of factual information during programme sessions.

Table 5. List of technical presentation videos provided on training DVD

Let's Talk Overview
Group Facilitation and the Role of the Facilitator
Adolescence in Perspective
Cognitive Behaviour Theory
Identifying and Changing Unhealthy and Unhelpful Ways of Thinking
Anger Management and Assertive Communication
Group Dynamics
Programme Attendance and Quality Control
Understanding and Addressing Adolescent Risk Behaviour
Let's Talk about Sex
Basic Facts about HIV and Other STI's
Pregnancy and Pregnancy Prevention

Further, additional training content and tips for group management were added to both the implementation guide and training module in order to support adherence to allotted session times. Training content was also expanded to include discussion and role-plays for managing the various dynamics that may arise in joint sessions, including managing dominant caregivers and other potential negative group dynamics. CBOs and programme staff were further encouraged to identify and use targeted strategies to increase attendance such as alternative implementation schedules (e.g. two sessions per day), offering refreshments, facilitating transport or transportation reimbursement, and establishing a "buddy system" among participants to promote accountability.

7.2. Programme content, structure and length

Given the overall acceptability of the intervention content, a major focus of programme refinement was increasing participation rates and the perceived effectiveness of caregiver sessions, particularly those in Phase 1. This was accomplished by shortening the programme and sessions to focus on support for key intermediate outcomes, and restructuring the intervention to involve adolescents from the beginning. Exercises rated as being highly effective by at least 80% of facilitators were typically maintained, while others were removed, simplified or revised. Some exercises deemed repetitive and/or less imperative to programme goals were removed regardless of their perceived

efficacy, to allow for extended time allocated to key exercises discussing emotions and culturally sensitive topics.

Table 6. Revised programme session outline

Revised programme model	
Caregiver sessions	**Adolescent sessions**
Phase 1: Family & Emotional Strengthening	
1. Raising an adolescent	1. My strengths and goals
2. Effective communication	2. Effective communication
3. Coping with sadness	3. Emotional awareness
4. Coping with anger	4. Coping with sadness
5. Helping adolescents cope with difficult emotions	5. Coping with anger
6. Behaviour management with adolescents	6. *No session for adolescents*
7. Joint – Families working together	
8. Joint – Positive family relationships	
Phase 2: Protecting the Future	
9. Adolescent risk taking	9. Sexual relationships
10. Communicating with adolescents about relationships and sexual health	10. Communicating about sex
11. Understanding HIV	11. HIV and STI's – Fact and fiction
12. Preventing and responding to crises	12. Condom use
13. Joint – Future planning	
14. Joint – Graduation and looking ahead	

In this process, the programme was reduced from three to two phases for a new total of 10 caregiver sessions, nine adolescent sessions and four joint sessions. This was accomplished by removing three Phase 1 sessions entirely, integrating the remaining two into the revised programme structure, and limiting the number of joint sessions (Table 6). The revised structure allowed caregivers and adolescents to begin the programme at the same time, while still offering caregivers an opportunity to improve their own mental health before addressing parenting skills. An additional session focused on emotional awareness was added for adolescents to further enhance their coping skills. Joint sessions were maintained to promote and allow practice for caregiver-adolescent communication, but were moved to the end of each phase to enable both groups to develop individual skills and to empower adolescents to more effectively participate in discussions with caregivers. The first joint session also included more time and guidance for setting ground rules for

group interactions. Activities such as relaxation exercises, those requiring high levels of literacy, and culturally sensitive exercises were removed or adapted.

7.3. Programme materials

Revised curriculum manuals were separated into caregiver and adolescent-specific documents by phase. The manuals' formatting was revised, providing facilitator scripts with clear, directive instructions and easily identifiable icons denoting varying manual content. All scripted sections of the curricula were professionally translated into vernacular and reviewed for accuracy to support fidelity to the model and ease of use. Participant worksheets were simplified, with graphics added, and placed within the newly-separate caregiver and adolescent workbooks, alongside home practice assignments and printouts of key scenarios and stories from the curricula. Both workbooks were fully translated into vernacular, with programme implementers advised to provide every participant with their own workbook. The programme is currently available in English, isiZulu and Sesotho, although training is offered mainly in English. All proposed revisions were critically reviewed by two expert reviewers prior to finalising the updated materials.

8. Discussion

Structured family-centred adolescent HIV prevention interventions are virtually non-existent in South Africa (Knerr, Gardner, & Cluver, 2013; Kuo et al., 2016), yet growing evidence suggests the importance of these models and the multi-level risk factors they address (DiClemente et al., 2008). As funding agencies and programme planners look to maximize the effectiveness of their HIV service investments through support for evidence-informed programming, attention to the feasibility and cultural acceptability of programmes' structure and content in different implementation contexts is crucial. Prior research has illustrated that cultural enhancements of existing evidence-based interventions can be efficacious but requires an iterative process (Barrera, Castro, Strycker, & Toobert, 2013). Let's Talk was adapted from successful adolescent support programmes, with necessary adjustments to ensure cultural acceptability and relevance to the target population. Given

the level of adaptation required, as well as the relative lack of similar interventions to guide family-centred adolescent prevention programming in this context, extensive formative evaluation was used to provide information on how best to ensure intervention quality and promote replicability.

Methods employed included literature review; expert reviews; qualitative inquiries conducted with facilitator-trainees, facilitators, and programme managers; as well as analysis of mixed-methods programme monitoring data and feedback collected by and from implementers during the pilot implementation. Data obtained from these sources were analysed and interpreted both iteratively and concurrently in order to inform recommendations and shape meaningful changes to the programme during staged development.

The formative study confirmed that both facilitators and participants involved in the first Let's Talk implementation in South Africa experienced the programme as useful, worthwhile and innovative, with some challenges noted and targeted improvements suggested. In the first stage of development, the preliminary literature review pointed us towards important risk factors to address and corresponding theoretical models ultimately applied to the programme, including eco-developmental theory, CBT and social learning theory. Our review also provided information on a number of programmes that would prove foundational to Let's Talk. The local experience of programme developers contributed to the cultural acceptance of activities and scenarios used.

Feedback from facilitators, both during training and pilot implementation, led to revisions of the training curriculum and implementation guide, including the addition of content related to CBT and skill-building for group management, as well as the creation of training DVDs to help ensure the standardised presentation of programme material. Programme monitoring data obtained from session fidelity checklists and facilitator focus group discussions underscored serious issues arising from the length of the sessions and overall programme structure. It also conveyed limited acceptance among caregivers for activities involving imaginative work, activities requiring high levels of literacy, or promoting discussions about sexuality with adolescents. Previous research confirms

that open discussions between parents/caregivers and adolescents about sex are often taboo in rural areas of KwaZulu-Natal where the programme was implemented (Bastien, Kajula, & Muhwezi, 2011; Kuo et al., 2016; Vilanculos & Nduna, 2017), requiring sensitive approaches in programmes with this aim. In response, the number of sessions was decreased, and curriculum materials were adjusted to be simpler and more responsive to cultural norms. Facilitators and programme managers provided invaluable input to enhance the programme's cultural relevance – an approach used successfully in previous adaptations of interventions (Bhana, McKay, Mellins, Petersen, & Bell, 2010; Verdeli et al., 2003).

The manualised design allowed community workers with the necessary training and supervision to deliver the programme in a structured and consistent manner. Providing programme facilitators with the opportunity to experience Let's Talk first-hand before leading groups themselves reportedly supported effective facilitation. This approach meant that social learning theory was applied to programme design, but also as a primary means of promoting skills acquisition during facilitator training. The integrated development and training model served to deepen trainees' understanding of the programme as well as offer the same benefits experienced by participants: capacity building, increased self-efficacy in focal areas, and a stronger support network. Participating in the group process has similarly been successful in training community health workers to implement group interpersonal therapy elsewhere in sub-Saharan Africa (Verdeli et al., 2003).

Some limitations were present in this formative study. The research did not engage programme participants as respondents directly, but used facilitators' observations of their reactions. Ideally, participants' first-hand perspectives would have been more fully reflected in the formative work. Without the direct involvement of participants we may have missed important findings related to their experience that could benefit programme development (Israel et al., 2008). However, the exclusion of pilot participants was intentional because we instead sought their engagement to obtain unbiased evidence on potential programme effects, reported elsewhere (Thurman et al.,

2017). Moreover, the programme was limited to female caregivers consistent with the demographic profile of the beneficiaries' reported primary caregiver. Thus, its relevance and acceptability among male caregivers is unknown and their inclusion would likely require some programmatic adjustments. Other studies have found it necessary to include content specific to fatherhood, employ male facilitators, and deliver sessions to exclusively male groups in order to increase men's participation (Panter-Brick et al., 2014). At the same time, family interventions that move beyond the caregiver-adolescent dyad to include more family members could have significant impacts on adolescent behaviour (Pentecost et al., 2017) and is an area for future research. Despite these limitations, the formative evaluation served to inform important modifications to the programme's content, materials, and overall structure.

Support group prevention interventions like Let's Talk have been prioritized as a scalable intervention for resource-limited settings (Liamputtong, Haritavorn, & Kiatying-Angsulee, 2009; Mundell, Visser, Makin, Forsyth, & Sikkema, 2012). The revised version of Let's Talk is already undergoing extensive scale-up implementation in South Africa as part of the DREAMS initiative and other projects funded by USAID Southern Africa. Subsequent investment and buy-in to the Lets Talk programme highlights the importance of its development and the structured processes undertaken for its improvement. Evaluation data from participants of the original pilot programme suggests promising effects on caregiver-adolescent relationships and communication about sexual health issues, mental health, and prevention knowledge (Thurman et al., 2017). Future research is needed to identify the sustainability and long term impacts of the revised programme; however, we hope it proves to be an effective and replicable intervention to prevent HIV among vulnerable adolescents in South Africa.

8.1. Lessons learned

The experience of developing a structured, theory-based, family-centred adolescent HIV prevention intervention to fill a recognized gap in programming designed for the South African context was

instructive. We found that an iterative, collaborative approach – including mixed formative evaluation methods, involving implementers employed at various stages of programme development and testing – was successful at identifying major implementation challenges, curriculum shortcomings, unmet training needs, and more.

In this particular case, early formative work suggested the applicability of CBT and social learning theory and pointed to the most appropriate existing programme models for adaptation. From this basis, a programme-specific, theory and evidence-grounded conceptual model was drafted around which programme content and structure could be meaningfully crafted. Structured and open-ended feedback from multiple stakeholders on core aspects of programme development, including participant involvement, effectiveness and acceptability of activities, (Berkel, Mauricio, Schoenfelder, & Sandler, 2011) provided valuable information about aspects of the training curriculum and programme content, and implementation requiring adaptation. Programme monitoring data were leveraged from reporting systems already established for use by Let's Talk implementers, offering a rich source of data about participant attendance (and attendance gaps). Fidelity checklists were developed to obtain facilitators' perceptions of specific sessions and activities in order to make targeted revisions. Finally, focus group discussions and other qualitative inquiries with local facilitators and implementation stakeholders provided a wealth of complementary information for improving the relevance and cultural acceptance of the programme, a process also deemed critical in prior programme development studies conducted in South Africa (Bhana et al., 2010; Lachman et al., 2016).

We conclude that for complex prevention interventions—especially those designed to use innovative programme models, fill a recognized programming gap, or operate in untested social, cultural and linguistic settings—formative research is essential to programme quality and should precede any large-scale expansion or rigorous outcome evaluation. Specifically, future efforts to develop structured, family-centred adolescent HIV prevention programmes in Southern Africa

should integrate participatory, multi-stakeholder approaches to curriculum and implementation review. Programme developers should pay special attention to the issues raised in this study, such as the need for an array of strategies to support participant attendance and identify attrition as early as possible, the likelihood that activities included in curricula successfully implemented elsewhere may not be universally well-received or effective, differing responses to elements of the programme targeted towards caregivers and adolescents, and the importance of consulting with facilitator trainees regarding the adequacy of training and related materials. The authors sincerely hope that the result of these lessons learned is an increasingly robust evidence base for interventions to lower HIV risk among vulnerable adolescents and provide effective family strengthening support, in South Africa and beyond.

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