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ABSTRACT

Violence against children (VAC) is a global public health issue that can lead to long-lasting negative consequences for child outcomes. The Irie Homes Toolbox (IHT) is an early childhood, violence-prevention, parenting program designed for integration into early childhood educational services in Jamaica. We have previously shown that the program is effective in reducing child maltreatment when implemented by the research team. For wide-scale dissemination, the IHT needs to be delivered by preschool staff as part of their routine duties. We adapted the IHT using results from our previous evaluations and we are conducting a mixed-method feasibility trial of the IHT fully integrated into preschool provision. Twenty-four basic schools in Kingston and St Andrew, Jamaica have been randomly assigned to intervention (n=12) or wait-list control (n=12) with ten caregivers per school participating in the study (240 caregivers, 120/group). The intervention is delivered through twelve, weekly, one-hour sessions by a preschool teacher with groups of ten caregivers of children aged 2-6 years. An ongoing process evaluation includes quantitative measures of caregiver attendance, teacher compliance, and fidelity of intervention implementation and qualitative measures of enablers and barriers to implementation and suggestions for improvement. In the impact evaluation, the primary outcome is frequency of caregivers' use of violence against their child. Secondary outcomes are caregiver attitudes to violence, preferences for harsh punishment, involvement with their child and child conduct problems. All outcomes are measured through caregiver-report. The results of the study will be used to inform revisions of the IHT for implementation at scale.

PUBLIC SIGNIFICANCE STATEMENT

Violence against children (VAC) is a global public health problem and there is growing evidence that early childhood, violence-prevention, parenting programs can be effective in

reducing VAC. However, few evidence-based interventions have been implemented at scale and to extend the reach of these programs, they need to be integrated into existing services. We have adapted an evidence-based program, (the Irie Homes Toolbox), for integration into the early childhood educational network in Jamaica, and we are conducting a feasibility trial of the adapted program using a mixed-methods evaluation.

Keywords: violence prevention, violence against children, preschool, parenting intervention

INTRODUCTION

Globally, over one billion children are affected by violence each year (Hillis et al, 2016). Violence against children (VAC) is a violation of child rights, has high prevalence in low- and middle-income countries (LMIC), is associated with long-term negative effects on child functioning, and with high economic and social costs (McCoy et al., 2022; Cuartas et al., 2019; Hillis et al., 2017; Heilmann et al., 2021; Perenieto et al., 2014). Eliminating violence against children (VAC) is included in the Sustainable Development Goals (SDGs) with goal 16.2 calling for an end to all forms of violence against children (United Nations, 2015). Parenting and caregiver support programs are recommended as an evidence-based strategy for reducing VAC in the INSPIRE framework launched by the World Health Organization (World Health Organisation, 2016). Evidence from meta-analyses show that caregiver-training interventions in the early childhood years have potential to reduce child maltreatment (Chen & Chan, 2015; Vlahovicova et al., 2017) and there is some evidence that effects are sustained over the short term (up to 2 years post-intervention), albeit with diminished effects (Backhaus et al., 2023). There is also growing evidence from low- and middle-income countries (LMIC) that caregiver training programs can be effective in reducing VAC, including in the Latin American and Caribbean region (Mejia et al., 2015; Santini & Williams, 2017; Skar et al., 2017; Altafim & Linhares, 2019). To accomplish the SDG of eliminating VAC, these interventions need to be scaled up and evaluated at the population level (Shenderovich et al., 2021). However, few evidence based parenting programs have been implemented at scale (Britto et al., 2018; Sanders et al., 2022). To maximize scalability and sustainability, evidence-based interventions need to be integrated into existing government services and be delivered by existing staff.

In Jamaica, 84% of caregivers of children aged 2-4 years report using physical violence, and 71% report using psychological aggression demonstrating an urgent need for violence-prevention

programming (Lansford & Deater-Deckard, 2012). This need has been recognized at the national level as Jamaica is a pathfinder country in the Global Partnership to End Violence Against Children and the government has launched 'The National Plan of Action for an Integrated Response to Children and Violence' (Government of Jamaica, 2018). To respond to the need for violence-prevention programming, we developed and evaluated the Irie Homes Toolbox to reduce caregivers' use of VAC at home (Francis & Baker-Henningham, 2020; Baker-Henningham et al., 2023). Irie is a Jamaican term that means 'good' and 'at peace with oneself and the world'. The program targets caregivers of children aged two-to-six years and the aim is to reduce VAC at the population-level by integrating the program into the early childhood educational network.

The IHT was designed by integrating theory, empirically-derived behavior change techniques, and formative research, followed by iterative piloting to ensure the intervention was feasible, relevant, effective, and scalable in the Jamaican context (Francis & Baker-Henningham, 2020). The content of the IHT includes core components of evidence-based, violence-prevention parenting programs operationalised for the Jamaican context. The process of delivery of the IHT is informed by the COM-B system for understanding behavior and includes behavior change techniques to promote participants' capability, opportunity, and motivation (the three factors required for behavior to occur and to be sustained (Mitchie et al., 2011)). The IHT was originally designed as a face-to-face group parenting program delivered through eight 90-minute parenting sessions, held once a week for eight weeks, with groups of 6-8 parents of children aged two-to-six years enrolled in early childhood educational centres. The program consists of five modules: 1) promoting children's positive behavior, 2) preventing children's misbehavior, 3) understanding emotions, 4) managing children's misbehavior, and 5) supporting children's learning. Sessions are designed to be fun and interactive and participants are introduced to

positive discipline strategies using evidence-based behaviour change techniques including demonstration, rehearsal and practice, positive feedback, highlighting the benefits of using the strategies, goal setting, completing homework assignments, and group support. In a small efficacy trial in 18 preschools in Kingston and St Andrew (with 223 caregiver-child dyads), the IHT was effective at reducing violence against children by parents (effect size (ES)=-0.29, 95% confidence interval (CI): -0.05, 0.52), increasing parent involvement (ES=0.30, 95% CI: 0.03, 0.57) and reducing child conduct problems for children with heightened levels of conduct problems at baseline (ES=-0.36, 95% CI: -0.03, -0.68) (Francis & Baker-Henningham, 2021). In that trial, the parenting sessions were facilitated by the research team and co-facilitated by a preschool teacher. During the covid pandemic, we designed a virtual version of the IHT that was evaluated in a randomized controlled trial with 1,113 caregivers across Jamaica in collaboration with the ECC and the Early Learning Partnership, World Bank (Dinarte-Diaz et al., 2023; Francis et al., 2024). The virtual version lasted 10 weeks and consisted of weekly virtual parenting groups (led by an ECC field officer), three SMS messages per week, summaries of sessions sent via WhatsApp and access to an App (Francis et al., 2024). This version also led to significant reductions in VAC by caregivers (ES=-0.12, 95% CI: -0.01, -0.24) and significant reductions to caregivers' positive attitudes to VAC (ES=-0.20, 95% CI: -0.10, -0.30), with benefits sustained at nine-month follow-up (ES=-0.13, 95% CI: -0.01, -0.25 and ES=-0.14, 95% CI: -0.02, -0.26 respectively) (Dinarte-Diaz et al., 2023). For wide-scale dissemination within the early childhood education network, the IHT needs to be delivered by preschool teachers. It is therefore important to test the feasibility, acceptability and effectiveness of this model prior to large scale implementation.

Aims

The aims of the study are to adapt the Irie Homes Toolbox (IHT) to make it suitable for integration into the preschool network and to conduct a feasibility trial of the adapted intervention. The specific objectives are:

1. To utilize data from evaluations of the face-to-face and virtual versions of the IHT to refine the IHT and to make it feasible for use by preschool staff as part of their existing duties.
2. To integrate the delivery of the IHT into preschool services and document caregiver attendance and retention, preschool teacher compliance in implementing the program and the quality and fidelity of intervention implementation.
3. To document the enablers and barriers to implementation and suggestions for improvement from the perspectives of the preschool teachers and the research team.
4. To examine the preliminary effectiveness of the IHT, when integrated into preschool services and delivered by preschool staff, on the primary outcome of caregivers' use of violence against their child (VAC) by caregiver-report and on secondary outcomes of caregivers' attitude to VAC, caregiver involvement with their child, caregiver preferences for harsh punishment, and child conduct problems.

Method

The study involves two phases. In phase 1, we adapted the IHT to make it suitable for preschool teachers to implement the program as part of their routine duties. In phase 2, we are conducting a feasibility trial with a mixed-method evaluation. The trial is registered with ISRCTN, number ISRCTN98317461.

. Phase 1 was conducted from April to September 2023 and is now completed. This paper provides SPIRIT-style details about phase 2 (Chan et al., 2013). Phase 2 started in October 2023 and at the time this paper was submitted in April 2024, recruitment of preschools, preschool teachers and caregivers was complete and the intervention was underway.

Phase 1: Adaptation of The Irie Homes Toolbox

The original face-to-face version of the IHT was adapted for integration in the preschool network using our learnings from previous impact, process, and qualitative evaluations of the face-to-face and virtual versions of the IHT. To adapt the IHT, we considered the content, process of delivery, structure, and materials of the program.

Content

The content of the adapted IHT is similar to the original face-to-face version of the program and includes all five modules and a review session (**Table 1**). However, we have placed additional emphasis on components that were found to be important factors in a previous qualitative evaluation (Francis et al., 2023). Caregivers reported that their use of alternative discipline strategies, better emotional self-regulation, and self-identification as an Irie (good and peaceful) Parent led to reduced use of VAC. They also reported that they continued to use VAC when positive discipline strategies did not work quickly or consistently, when they were upset or angry, and for specific child behaviors including aggression, lying, giving attitude, and behavior perceived as dangerous (Francis et al., 2023). To address these drivers of parents' behavior, we dedicated one full session to understanding child behavior (session 5), a full session on emotional self-regulation (session 6) and a full session on problem-solving (session 10). We also included a greater focus on encouraging caregivers to self-identify as an Irie Parent.

Process of Delivery

The original IHT has been adapted to include face-to-face and asynchronous virtual components. For the face-to-face component, participating caregivers are invited to group parenting sessions held weekly on the preschool compound. Sessions are held either in the morning after parents drop off their children at school or after school. The timing and location of the sessions minimizes the need for childcare and no childcare is provided. For the virtual component, they receive weekly session summaries, textual messages, and short video vignettes via WhatsApp (see **Figure 1** for examples). Since the Covid-19 pandemic, WhatsApp has become an established mode of communication between teachers and parents in preschools. In addition, to increase the salience of the program within the preschool, we have designed school-wide elements that include all caregivers of children attending the preschool. These school-wide elements are built around a weekly theme (**Table 2**). The weekly theme is communicated to parents through two textual messages and one short video clip per week sent via WhatsApp, messages on the school bulletin boards, and preschool teachers encouraging caregivers to engage with these messages during drop-off and pick up (**Figure 2**). We have also developed the technical tools required for wide-scale dissemination including training and supervision manuals and monitoring and evaluation tools.

Structure

We made changes to the structure of the IHT that include changes to the length of the sessions, duration of the program, group size, and to the program facilitators. We have split the content of the original 8-week program into 12 weeks of parenting sessions and shortened each session from 1.5 hours to 1 hour (see **Table 3**). This makes it easier for teachers to fit the sessions into their daily

routine. The shorter sessions also reduce the cognitive load on caregivers as less content is introduced in each session, and provides more opportunity for building in repetition and redundancy to compensate for imperfect attendance by participants. We have increased the group size of the parenting sessions from 6-8 participants to ten participants. Previous qualitative work identified that utilizing a slighter larger group size is more acceptable to school staff and will also increase the reach of the program. Two preschool staff from each school are trained to implement the IHT intervention within their school. These teachers have responsibility for facilitating group parenting sessions, sending the WhatsApp and SMS messages, updating the school bulletin board and liaising with all school staff to ensure the salience of the intervention within the school. The structure of the weekly group parenting sessions is similar to the original program and includes 1) a game or song, 2) feedback from the previous week including a discussion of the home assignment, 3) introduction of a new topic consisting of discussion, role plays, demonstrations, rehearsal and practice, 4) introduction of a child-led play or picture book activity with demonstration and practice, and 5) review, goal setting and allocating home assignment.

Materials

The materials used for the group parenting sessions are similar to the original face-to-face IHT and include materials for the facilitator and materials for caregivers. For facilitators, this includes a fully scripted facilitator training manual, visual aids used to introduce and practice new strategies, hand-held charts that summarise key points, and picture books and toys to practice Irie Time. For caregivers, materials include a homework record form, session summaries, short videos, and three picture books to use with their child (**Figure 1**). Adaptations were made to the materials for two main reasons: 1) to reduce costs, and 2) to make the sessions easier for teachers to deliver. We are reducing the costs of the intervention by sending summaries of each session via WhatsApp to

participating parents rather than giving take-home cards. This strategy was successfully implemented in the virtual version of the Irie Homes Toolbox (Dinarte-Diaz et al., 2023; Francis et al., 2024). In addition, we previously gave caregivers a toy (e.g. blocks, animals, cars, pretend play set) or picture book at each session. In this iteration, caregivers only receive the picture books. We use readily available, low-cost toys to introduce the play activities and encourage caregivers to use toys the child has at home and/or to purchase the toys used in the session. To make the sessions easier for teachers to deliver, we have added more visual aids including additional pictures of caregivers using positive discipline techniques with their child and additional pictures of children engaging in common misbehaviors. These pictures help to provide more structure to the sessions and provide more opportunity for teachers to engage caregivers in discussion and practice as necessary, rather than teachers needing to come up with their own ideas during the session if participants need additional practice. We have also edited the facilitator training manual to ensure the instructions are explicit and the text is written simply and clearly. We have also added resources for the school-wide elements including a poster about the theme of the week to be placed on the school information board and weekly teacher guides with ideas on how to promote the weekly theme (**Figure 2**).

Phase 2: Evaluation of the Irie Homes Toolbox

In phase 2, we are evaluating the revised IHT through a feasibility trial using a mixed-method approach. The feasibility trial includes an ongoing process evaluation and an impact evaluation.

Study Design and Participants

The project involves conducting a cluster randomized controlled trial with parallel assignment in 24 community preschools (12 intervention, 12 wait-list control) located in a prespecified urban,

disadvantaged area of Kingston and St. Andrew, Jamaica. For efficiency, we are working within three neighbouring educational zones within the larger Kingston and St Andrew region (zones 2, 3 and 6). Community preschools are run through community organisations, with government oversight for children aged 2-6 years. Parents pay a small fee and provide school supplies. Within each preschool, we recruited 10 caregiver/child dyads to participate in the study for a total of 240 caregivers of children aged 2-6 years (120 intervention, 120 control). One child from each parent participating in the study was evaluated, if a parent had more than one eligible child, the youngest child was recruited. Preschool was the unit of randomization to prevent contamination among caregivers. In addition, although only ten caregivers per school are recruited into the study, there are school-wide elements included in the intervention which makes randomization at the level of the preschool necessary.

Inclusion criteria for preschools were: 1) situated in a specified, disadvantaged area of Kingston and St Andrew, 2) minimum of three classes of children, 3) sufficient staff to implement the program, and 4) where the preschool principal consents and at least two preschool staff are willing to conduct the sessions. Inclusion criteria for caregivers were: 1) lives with the child at least four days/week, 2) available and interested to participate in the parenting sessions, 3) has a child aged 2-6 years attending the preschool(s), and 4) caregiver gives consent for him/herself and his/her child to participate in the study.

Exclusion criteria for preschools were: 1) less than three classrooms, 2) insufficient staffing to implement the program, and 3) principal does not consent. Exclusion criteria for caregivers are: 1) does not have a child in the target age range, 2) lives with the child for less than four days a week, 3) child has an identified disability and/or 4) does not consent to participate in the study. In preschools assigned to intervention, interested caregivers of children

with disabilities are invited to participate in the parenting sessions but are not included in the evaluation sample.

Figure 3 shows the trial profile. We surveyed all community preschools in specified geographical location with zones 3, 4 and 6 of the Kingston and St Andrew metropolitan area. We assessed 78 preschools for eligibility and 28 preschools met the inclusion criteria. We randomly selected 24 preschools to participate in the study. Three of the selected schools were unable to commit to implementing the program and these schools were replaced.

Participant timeline

The study schedule is detailed in **Table 4** as per the SPIRIT guidelines (Chan et al., 2013). We recruited preschools and teachers from October-November 2023 and caregivers of children attending the selected community preschools from January to March 2024. The intervention is being conducted between January and June 2024 with endline measurements conducted between May and July 2024. Preschool principals and teachers in preschools allocated to control group will be offered training in the Irie Homes Toolbox in the 2024/25 school year.

Sample Size

This is a feasibility pilot study rather than a fully-powered trial to allow us identify key enablers and barriers to integrating the IHT into preschool provision prior to conducting an effectiveness trial. However, we have calculated the power of the study to detect an effect. In a parallel group design, 102 parent/child dyads in each group are sufficient to detect an effect of 0.35 SD with 80% power at a significance of $p<0.1$. With a cluster size of 10 (10 parent/child dyads per school), and assuming an intracluster correlation coefficient of 0.02 (based on our previous data), the design effect is 1.18 (design effect=1+(cluster size-1) x ICC), giving a required sample size of

120 parent/child dyads per group, which yields 12 preschools per group. In our previous trial, our study protocols resulted in less than 2.5% attrition and we are using similar methods to minimize attrition in this study (Francis & Baker-Henningham, 2021). This includes providing caregivers with a small gift for their child at baseline and at post-test, calling in advance and scheduling interviews at a time convenient for participants, and following up when appointments are missed.

Recruitment

Preschools within the selected educational zones in Kingston and St Andrew were visited by the research team and assessed for eligibility. Where initial eligibility criteria were met, preschool principals were informed of the study and invited to participate. If the principal was willing to participate, she was asked to liaise with her staff and identify two preschool staff who were willing to deliver the parenting sessions. In Jamaica, the majority of preschool staff have some vocational training in early childhood education with a smaller proportion having a diploma or B.Ed. In this study, 22/24 (95.7%) of the teachers identified to deliver the IHT had received some training in ECE, 1/24 (4.3%) had a Dip. Ed and 10/24 (41.7%) had a B.Ed. Within all twenty-four preschools, ten caregivers were selected to participate in the study. We used a pragmatic approach to caregiver recruitment using strategies that would be feasible at scale and that align with the preferences and practices of preschool staff. This involves the preschool principal and teachers informing caregivers of children attending the preschool of the program through existing communication channels including via class meetings, WhatsApp messages, a poster on the school information board, and during interactions with caregivers during daily drop-off and pick up. School staff were asked to identify ten caregivers who met the inclusion criteria and who were interested and available to participate in the program. The research team was responsible for seeking informed consent. In preschools allocated to the intervention group, if a caregiver was

ineligible for inclusion into the study (e.g. due to the child having a disability) but s/he expressed an interest in participating in the program, they were invited to attend the sessions. This approach to recruitment has several advantages: 1) it aligns with the processes that preschools currently use to engage parents in school activities, 2) selecting caregivers who are interested and available maximises the likelihood that participants will engage with the program, 3) by recruiting participants who are more likely to engage in and benefit from the program, school staff will be more likely to engage with and believe in the program thus maximising compliance, and 4) the success of the program and the positive attitude of participants and preschool teachers is likely to lead to the program gaining momentum within the preschool thus attracting other caregivers.

Randomization

All preschools and preschool teachers were recruited prior to randomization. Caregivers were recruited after randomization. Schools were randomized to intervention or wait-list control using a computer-generated simple-randomization sequence by an independent statistician who was masked to school identity.

Intervention Implementation

For the IHT implementation, each intervention preschool is provided with one facilitator kit with all the resources required to implement the program. This includes the materials for the parenting sessions and the materials required for the school-wide element. Teachers also receive the weekly session summaries and the SMS messages via WhatsApp so that they can easily forward them to caregivers. Teachers who are responsible for implementing the program receive US$3.50 phone credit each week to facilitate their communication with the caregivers. Teachers are trained in a two full-day initial workshop lasting 6 hours per day in groups of 12 to 15 persons by two

members of the Irie Toolbox team. The two trainers also provide ongoing support during program implementation with each trainer working with six preschools. The trainers visit each school once a fortnight to support the teacher(s) to deliver the session so that each school receives six coaching visits during intervention implementation.

Staff in preschools allocated to the wait-list control arm of the trial continue with educational services as usual and do not receive training in the IHT program or the materials required to implement the program. After endline data is complete, we will provide each control preschool with a full kit that will enable them to implement the IHT in their school and two teachers from each preschool will be invited to participate in the training workshop on how to implement the program.

Measurements

We have measures relating to the ongoing, mixed-method process evaluation and the impact evaluation of the feasibility trial. The theoretical framework for the measures used is shown in **Figure 4**.

Process Evaluation. In the process evaluation, we are measuring caregiver attendance, preschool teacher compliance in implementing the intervention, and intervention quality and fidelity using quantitative tools. We are investigating the enablers and barriers to intervention implementation and suggestions for improvement using qualitative tools.

Caregiver Attendance. Caregiver attendance at the weekly parenting sessions is measured using teacher records.

Preschool Teacher Compliance. Teachers document the time and date when sessions are conducted and reasons why sessions are not held.

Quality and Fidelity of Implementation. A member of the Irie Toolbox team visits each school at least fortnightly and rates the quality and fidelity of the session using a structured observation tool. The observation tool includes documenting session duration and rating teacher preparation (e.g. familiar with script), skills in session delivery (e.g. follows the script, appropriate pacing, delivers session with enthusiasm), skills in building positive relationships with caregivers (e.g. use of praise, repeating caregiver responses, involving all caregivers), and skills in helping participants learn (e.g. clear demonstration of strategies, supporting caregivers as they practice). Ratings are conducted on a five point scale from 1=poor to 5=excellent.

Enablers and Barriers to Intervention Implementation. The Irie Toolbox team keep an ongoing log of the enablers and barriers to intervention implementation and suggestions for improvement based on their interactions with the preschool principals, teachers, and caregivers. After observing each session, the research team also document the strengths and needs of preschool teachers in implementing the sessions, any adaptations made during session delivery and suggestions for improving the script. After completing all sessions, the two IHT trainers conduct interviews with at least one teacher in each of the six schools they are supporting during intervention implementation. All interviews are audio-recorded and stored on a password protected folder only accessible to the research team. The interviews focus on issues relating to session structure and content, the process of delivery, materials and messages used, and caregiver recruitment, retention and engagement. The aim is to identify teachers' perspectives of the enablers and barriers to implementation and suggestions for improvement.

Impact Evaluation. In the impact evaluation, the primary outcome is caregivers' use of violence against their child measured through caregiver report. Secondary outcomes are caregivers' attitudes to violence against their child, caregivers' preference for harsh punishment,

caregiver involvement with their child and child conduct problems, all by caregiver report. All outcomes are measured at baseline and post-test (see **Table 4**).

Caregivers' Use of Violence Against Their Child (VAC). Caregivers' use of VAC is measured using questions from the corporal punishment and psychological aggression subscales of the Conflict Tactics Scale Parent Child (Straus et al., 1998). Although caregiver report may lead to under-reporting of VAC, it is the most used outcome measure in studies of child maltreatment (Chen & Chen, 2015). Observational measures are not appropriate for infrequent behaviors, and official reports of child maltreatment only capture severe cases. The questionnaire includes five questions on corporal punishment: 1) shake, 2) hit on the bottom with bare hand, 3) pinch, 4) hit on the bottom with something hard (e.g. belt, stick), 5) slap on the arms, hand or leg); and five questions on psychological aggression: 1) shout, yell or scream, 2) threaten to hit, 3) call names like idiot, dummy, stupid, 4) threaten to send the child away, 5) swear at child. Caregivers report on the last two weeks and responses are given on a seven point frequency scale from 1=never to 7=more than once a day. Higher scores indicate higher caregiver use of VAC. In a previous study, the internal reliability of the scale (Cronbach α) was 0.69 and test–retest reliability over 2 weeks (Intraclass correlation coefficient (ICC)) was 0.88 (n=20) (Francis & Baker-Henningham, 2021).

Caregivers' Attitude to VAC. Caregivers' attitude to VAC is measured using a questionnaire that has been used previously in Jamaica (Dinarte-Diaz et al., 2023) with good psychometric properties (Cronbach α=0.62, test–retest reliability over 2 weeks: ICC=0.71 (n=21)). The questionnaire consists of five questions: three questions on attitudes to corporal punishment and two questions on attitudes to psychological aggression. Caregivers' answer on a four point scale from 1=disagree completely to 4=agree completely. Higher scores indicate more favourable attitudes to VAC.

Caregiver Involvement With Their Child. Caregiver involvement with their child is measured using a questionnaire that has been used previously in Jamaica with good psychometric properties (Cronbach α=0.71, test–retest reliability over 2 weeks: ICC=0.96 (n=20)) (Francis & Baker-Henningham, 2021). The questionnaire consists of twelve questions: 1) reading storybooks, 2) helping with homework, 3) playing games inside the home, 4) playing outside, 5) play with toys, 6) sit with child as they write, draw or colour, 7) chat with child about school and/or friends, 8) involve child in chores, 9) chat with child during daily routines (e.g. dressing, bathing), 10) teach child household rules, 11) praise child, 12) spend 10-15 minutes with child doing something fun. Caregivers report on the last two weeks and responses are given on a seven-point frequency scale from 1=never to 7=more than once a day. Higher scores indicate higher caregiver involvement.

Caregiver Preferences for Harsh Punishment. The measure of caregiver preferences for harsh punishment has been specially designed for this study using an adapted version of a questionnaire used in Uganda (Satinsky et al., 2023). Caregivers are shown illustrations of nine different scenarios of children misbehaving and asked what they would do to deal with the behavior (see **Figure 5** for an example). The scenarios include four scenarios in a public place (bank, market, supermarket, school) and five scenarios at home. Child misbehaviors include non-compliance, giving attitude, temper tantrum, hitting a younger child or sibling, doing something dangerous, being overly active and making a mess. There two pictures for each scenario: one showing a mother and her child and the other a father to account for the sex of the respondent. For five of the questions, if the caregivers' response(s) do not include physical punishment, we ask what they would do if the behavior continued. A pictorial response scale is provided **(Figure 6)**. However, on piloting the questionnaire, we found that caregivers often give multiple responses so the scoring for each question permits multiple responses that are coded as harsh

punishment (e.g. hit, shout or yell, threaten to hit) or not (e.g. talk with child, withdraw attention, use consequences, redirect child, time-out). The score includes the number of responses that include harsh punishment. We piloted the scale prior to collecting baseline measurements and test-retest over 2 weeks was ICC=0.80 and internal reliability was α=0.52 (n=31).

Child Conduct Problems. Child conduct problems is measured by caregiver report using the frequency scale of the Eyberg Child Behavior Inventory (ECBI) intensity scale (Eyberg & Ross, 1978). The ECBI consists of 36 questions and caregivers report on their child's behavior using a 7-point frequency scale from 1=never to 7=Always. Higher scores indicate higher levels of conduct problems. The scale has been used previously in Jamaica and has good psychometric properties with this population (Cronbach α=0.84, test–retest reliability over 2 weeks: ICC=0.99 (n=20) (Francis & Baker-Henningham, 2021).

Other Measures. Caregiver and child demographic information is collected at baseline including child age and sex, caregiver sex, age, relationship status, employment status, and educational attainment, and household composition and socioeconomic status. At post-test, we will include a social desirability index (SDI) measured using the Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1960). The SDI has been shown to correlate with self-reports of physical and psychological violence (Bell & Naugle, 2007; Fernández-González et al., 2013) and will be used to measure respondent's propensity to report in a socially desirable way when asked about their use of and attitudes to VAC. We piloted the SDI prior to collecting baseline measurements and test-retest over 2 weeks was ICC=0.60 and internal reliability was α=0.65 (n=31).

Impact Evaluation Measurement Procedures. The questionnaires related to caregivers' use of violence, attitudes to violence, preferences for harsh punishment, caregiver involvement

with their child and child conduct problems are administered in face-to-face interviews by two research assistants, masked to the study design and group allocation, at baseline and again within one month after the end of the intervention. All participating caregivers (in both intervention and control schools) receive a small gift for their child (e.g. colouring book and crayons) and US$2.50 phone credit after baseline and post-test measurements. Data is collected at the study preschools. Research assistants rotate across schools and interview equal numbers of caregivers in each group at both time points. Research assistants are trained over a two-week period including 0.5 weeks in office and 1.5 weeks of field training. Ongoing quality control is maintained by each research assistant being observed conducting questionnaires once a week throughout data collection, and completed questionnaires being checked on a weekly basis by the project manager.

Data Management and Analysis

All data sheets (e.g. caregiver questionnaires, qualitative data records, session observations) are stored in a locked filing cabinet and all electronic data is stored in an encrypted folder with password protection. Only the study investigators and researchers authorised by the study investigators have access to the data. All data sheets will be destroyed five years after the end of the study. Audio-recordings of teacher interviews will be deleted after analysis is complete**.** All information collected is treated in strictest confidence and participants' records are identified by a unique identification number only. A book linking the participants name with the relevant ID number is kept in a locked filing cabinet in the project manager's office.

Quantitative data will be entered into SPSS and independently checked. Outcome variables will be assessed for normality and transformed if necessary. Balance across groups at baseline will be assessed using t-test for continuous variables and Chi-Square for categorical

variables. We will also examine differences between those lost and found at post-test. The effect of intervention will be analysed using MLWin v 3.04 (Rasbash et al., 2009) on an intention to treat basis using multilevel linear regression models to take into account the hierarchical nature of the data (caregivers nested in schools). Baseline score, interviewer, and intervention status (in addition to child age and sex for child level data) will be entered as fixed effects and preschool entered as random effects. Any variable different between the study groups and/or different between those lost and found at a significance level of $p<0.1$ will also be entered as a fixed effect. For all multilevel regression analyses, we will use the restricted maximum likelihood estimator available in MLWin to take into account the small number of clusters (Elff et al., 2021). As there is only one primary outcome (caregiver-reported frequency of violence against their child), and secondary outcomes are considered exploratory, we will not control for multiple hypothesis testing. To investigate heterogeneity, we will repeat the above multilevel linear regression analyses with the addition of an interaction term for the baseline scores for caregivers' use of VAC and child conduct problems (baseline score x study group). As the outcome measures are assessed through caregiver self-report, they are susceptible to experimenter demand effects especially for outcomes related to caregivers' use of and attitudes to VAC. We will investigate heterogeneity of experimenter demand effects using an interaction term between the social desirability index and study group. We will also investigate if there is a dose-response relationship between caregiver attendance at sessions and reductions in caregivers' use of VAC. The data from the observation instrument will be analysed using descriptive statistics and used to identify additional training needs and to inform the development of training and supervisory guidelines. The qualitative data collected during intervention implementation, including the data from teachers, the logs from the research team, and the notes made during observations of IHT implementation will be analysed manually using thematic analysis (Braun & Clarke, 2006). We

will develop a list of key themes using a deductive approach for each set of qualitative data (observations, logs, teacher interviews). Due to resource constraints, we will make notes from the audio-recording of each teacher interview rather than transcribe the interviews in full. One of the IHT trainers (TF) will create a thematic matrix that includes extracts from all the qualitative data categorised by theme and source. The analysis will be conducted with ongoing input and consultation with (HBH & MB). The information from the qualitative data will be used to inform revisions required to the program to make it suitable for use at scale and to inform the development of training and supervisory guidelines.

Discussion

Through this mixed-method feasibility study, we will evaluate several key factors that are important for scaling up the IHT program by integrating it into the early childhood education network in Jamaica with the program delivered by early childhood teachers as part of their routine duties. These factors include caregiver engagement, preschool teacher compliance, the quality and fidelity of implementation, the effectiveness of the program in changing caregiver behavior, and the enablers and barriers to implementation from the perspectives of the frontline facilitators (preschool teachers) and supervisors (members of the Irie Toolbox team). The overall objective of the study is to prepare the IHT for implementation at scale. We will use our findings from this study to inform revisions to the content, process of delivery, structure and/or materials of the IHT program as necessary and to develop training, supervision, and monitoring tools to promote the fidelity of intervention implementation when implemented on a larger scale. Conducting a feasibility study also provides the opportunity to identify potential implementation problems prior to implementing the program on a larger scale. This study will thus lay the groundwork for a large-scale effectiveness trial of the IHT integrated into preschool provision.

The IHT has potential to be implemented at scale for several reasons. Firstly, as the intervention is integrated into the preschool system and is delivered by existing staff, it represents a feasible model for wide-scale dissemination. Secondly, in Jamaica, and in many other countries in the Latin America and Caribbean region, enrolment in early childhood education is high, so interventions integrated into preschool provision allows for wide reach. Thirdly, no stigma is attached to accessing services integrated into preschool services and they are conveniently located. Fourthly, in Jamaica, the early childhood education network is well established with a clearly defined organizational structure via the Early Childhood Commission (ECC). The ECC has the staff to train and supervise pre-school teachers to deliver the Irie Homes Toolbox and training and monitoring of preschool teachers are existing tasks of specific personnel. Lastly, the program is relatively low-cost with no need for technology and requiring few resources.

The strengths of the study are the use of a cluster-randomized design, outcome measures with good psychometric properties, assessors masked to the study design, hypothesis, and group allocation, the use of an embedded process evaluation with a cluster-randomized trial, and the mixed-method approach that includes quantitative and qualitative data including data from the preschool teachers who are implementing the program. The limitations of the study are that the measure of caregiver practices and child behavior are by caregiver-report and caregivers are aware of their group allocation, so this may result in biased responses. However, the questions are specific which increases the likelihood that caregiver responses are accurate. We are also using a social desirability index to investigate if caregivers assigned to intervention are more likely to respond in a socially desirable way than caregivers assigned to the wait-list control. Use of caregiver questionnaire to measure use of harsh punishment, involvement and child behavior is common and has the advantage of assessing caregiver and child behavior across all contexts. Another limitation is that this is a feasibility study and the sample size is small and underpowered

to detect small effects and we are collecting data at baseline and post-test only. If this trial leads to positive results, we need to conduct a fully powered effectiveness trial with longer-term follow up and include observational measures of caregiver and child behavior, (in addition to caregiver report measures), to test if the intervention is still effective at scale. We were unable to recruit all caregivers prior to randomization due to the need to conduct teacher training workshops in the school holidays. As preschool staff led the recruitment of caregivers into the study, it is possible that teachers in intervention schools will invite caregivers at higher risk for use of VAC and/or caregivers of children with higher levels of behaviour difficulties to attend the parenting sessions leading to unbalanced groups (Francis & Baker-Henningham, 2021). We will control for any imbalance between groups at baseline in all analyses.

Ethics and Dissemination

Ethics

Ethical approval for the study has been given by the by University of the West Indies, Mona Campus Research Ethics Committee,, reference number: CREC-MN.0247, 2022/2023. Written, informed consent is obtained from preschool principals, preschool teachers, and from caregivers recruited into the study.

Protocol Amendments

Any protocol amendments will be fully disclosed in future publications and the trial registration information will also be updated.

Dissemination Policy

The results of the study will be published as an IDB working paper and in a peer-reviewed journal regardless of the magnitude or direction of effects. An executive summary of the study, including policy implications, will be given to key stakeholders including the Early Childhood Commission, Ministry of Education, Youth and Information and The Violence Prevention Alliance, Jamaica Chapter. A fact sheet written in plain language will be given all participating preschools.

REFERENCES

Altafim, E. R. P, & Linhares, M. B. M. (2019). Preventive intervention for strengthening effective parenting practices: A randomized controlled trial. *Journal of Applied Developmental Psychology, 62*, 160-172. https://doi.org/10.1016/j.appdev.2019.03.003

Backhaus, S., Leijten, P., Jochim, J., Melendez-Torres, G. J., & Gardner, F. (2023). Effects over time of parenting interventions to reduce physical and emotional violence against children: a systematic review and meta-analysis. *eClinicalMedicine, 60,* 102003. https://doi.org/10.1016/j.eclinm.2023.102003

Baker-Henningham, H., Bowers, M., & Francis, T. (2023). Scaling early childhood, violence prevention programs across home and school settings in Jamaica. *Pediatrics, 151*(S2), 1-15. https://doi.org/10.1542/peds.2023-060221M

Bell, K. M., & Naugle, A. E. (2007). Effects of social desirability on students' self-reporting of partner abuse perpetration and victimization. *Violence and Victims, 22*(2), 243-256. https://doi.org/10.1891/088667007780477348

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Britto, P., Singh, M., Dua, T., Kaur, R., & Yousafzai, A. (2018). What implementation evidence matters: scaling-up nurturing interventions that promote early childhood development. *Annals of the New York Academy of Sciences, 1419*(1), 5-16. https://doi.org/10.1111/nyas.13720

Chan, A., Tetzlaff, J. M., Altman, D. G., Laupacis, A., Gotzsche, P. C., Krleža-Jerić, K., Hróbjartsson, A., Mann H., Dickersin, K., Berline, J. A., Doré, C. J. Parulekar, W. R., Summerskill, W. S. M., Groves, T., Schulz, K. F., Sox, H. C., Rockhold, F. W., Rennie, D., Moher, D. (2013). SPIRIT 2013 Statement: Defining protocol items for clinic trials. *Annals of Internal Medicine, 158*(3), 200-207. https://doi.org/10.7326/0003-4819-158-3-201302050-00583

Chen, M., & Chan, K. (2015) Effects of parenting programs on child maltreatment prevention. *Trauma Violence Abuse, 17*(1), 88-104. https://doi.org/10.1177/1524838014566718

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*(4), 349-354. https://doi.org/10.1037/h0047358

Cuartas, J., McCoy, D. C., Rey-Guerra, C., Britto, P. R., Beatriz, E., & Salhi, C. (2019). Early childhood exposure to non-violent discipline and physical and psychological aggression in low- and middle-income countries: National, regional, and global prevalence estimates. *Child Abuse and Neglect, 92*, 93-105. https://doi.org/10.1016/j.chiabu.2019.03.021

Dinarte-Diaz, D., Ravindran, S., Shah, M., Powers, S., & Baker-Henningham, H. (2023). *Violent discipline and child Behavior. Short- and medium-term effects of parenting support to caregivers in Jamaica.* NBER Working Paper No. 31338. https://www.nber.org/system/files/working_papers/w31338/w31338.pdf

Elff, M., Heisig, J. P., Schaeffer, M., & Shikano, S. (2021). Multilevel analysis with few clusters: Improving likelihood-based methods to provide unbiased estimates and accurate inference.

British Journal of Political Science, 51(1), 412-426. https://doi.org/10.1017/S0007123419000097

Eyberg, S., & Ross, A. (1978). Assessment of child behavior problems: The validation of a new inventory. *Journal of Clinical Child Psychology, 7*(2), 113–116. https://doi.org/10.1080/15374417809532835

Fernández-Gonzáles, L., O'Leary, K. D., & Muñoz-Rivas, M. J. (2013). We are not joking: Need for controls in reports of dating violence. *Journal of Interpersonal Violence, 28*(3), 602-620. https://doi.org/10.1177/08862605124555

Francis, T., & Baker-Henningham, H. (2020). Design and implementation of the Irie Homes Toolbox. *Frontiers in Public Health.* 8, 282961. https://doi.org/10.3389/fpubh.2020.282961

Francis, T., & Baker-Henningham, H. (2021). The Irie Homes Toolbox: A cluster-randomized controlled trial of an early childhood parenting program to prevent violence against children in Jamaica. *Children and Youth Services Review, 126,* 106060. https://doi.org/10.1016/j.childyouth.2021.106060

Francis, T., Dinarte-Diaz, D., Powers, S., & Baker-Henningham, H. (2024). The Virtual Irie Homes Toolbox: Adaptation and remote delivery of an early childhood, violence prevention, parenting program in Jamaica. *Journal of Research in Childhood Education*, *38*(sup 1), S92-S111. https://doi.org/10.1080/02568543.2023.2281560

Francis, T., Packer, D., & Baker-Henningham, H. (2023). A qualitative evaluation of the mechanism of action in an early childhood parenting program to prevent violence against children in Jamaica. *Child: Care, Health, and Development*, *49*(3), 579-590. https://doi.org/10.1111/cch.13074

Government of Jamaica, (GOJ). (2018). *National Plan of Action for an Integrated Response to Children and Violence (NPACV) 2018-2023.* Kingston, Jamaica.

Heilmann, A., Mehay, A., Watt, R. G., Kelly, Y., Durrant, J. E., van Turnhout, J. & Gershoff, E. T. (2021). Physical punishment and child outcomes: a narrative review of prospective studies. *Lancet, 398*(10297), 355-364. https://doi.org/10.1016/s0140-6736(21)00582-1

Hillis, S., Mercy, J. Amobi, A., & Kress, H. (2016). Global prevalence of past-year violence against children: A systematic review and minimum estimates. Pediatrics, 137(3), e20154079. https://doi.org/10.1542/peds.2015-4079

Hillis, S. D., Mercy, J. A., & Saul, J. R. (2017)The enduring impact of violence against children. *Psychological Health and Medicine, 22*(4), 393-405. https://doi.org/10.1080/13548506.2016.1153679

Lansford, J., & Deater-Deckard, K. (2012) Childrearing discipline and violence in developing countries. *Child Development, 83*(1), 62-75. https://doi.org//10.1111/j.1467-8624.2011.01676.x

McCoy. D. C., Seiden, J., Cuartas, J., Pisani, L., & Waldman, M. (2022). Estimates of A Multidimensional Index of Nurturing Care in the Next 1000 Days for Children in Low- and Middle-Income Countries: A Modeling Study. *Lancet Child and Adolescent Health, 6*(5), 324-334. https://doi.org/10.1016/S2352-4642(22)00076-1

Mejia, A., Calam, R., & Sanders, M. (2015). A Pilot Randomized Controlled Trial of a Brief Parenting Intervention in Low-Resource Settings in Panama. *Prevention Science, 16*(5), 707-717. https://doi.org/10.1007/s11121-015-0551-1

Michie, S., van Stralen, M.M., & West, R. (2011). The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation Science,* 6(42). https://doi.org/10.1186/1748-5908-6-42

Pereznieto, P., Montes, A., Routier, S., & Langston, L. (2014). *The Costs and Economic Impact of Violence Against Children.* Overseas Development Institute, London.

Rasbash, J., Charlton, C., Browne, W. J., Healy, M., & Cameron, B. (2009). *MLwiN Version 2.10.* Centre for Multilevel Modelling, Bristol, UK.

Sanders, M., Divan, G., Singhal, M., Turner, K., Velleman, R., Michelson, D., Patel, V. (2022). Scaling Up Parenting Interventions is Critical for Attaining the Sustainable Development Goals. *Child Psychiatry and Human Dev*elopment, *53*, 941-952 https://doi.org/10.1007/s10578-021-01171-0

Santini, P., Williams, L. (2017). A randomized controlled trial of an intervention program to Brazilian mothers who use corporal punishment. *Child Abuse and Neglect, 71*, 80-91. https://doi.org/10.1016/j.chiabu.2017.04.019

Satinsky, E. N., Kakuhikire, B., Baguma, C., Cooper-Vince, C. E, Rasmussen, J. D., Ashaba, S., Perkins, J. M., Ahereza, P., Ayebare, P., Kim, A. W., Puffer, E. S., & Tsai, A.C. (2023). Caregiver preferences for physically harsh discipline of children in rural Uganda. *Journal of Family Violence.* https://doi.org/10.1007/s10896-023-00536-4

Shenderovich, Y., Lachman, J., Ward, C., Wessels, I., Gardner, F., Tomlinson, M., Oliver, D., Janowski, R., Martin, M., Okop, K., Sacolo-Gwebu, H., Ngcobo, L. L., Fang, Z. , Alampay, L., Baban, A., Baumann, A. A., Benevides de Barros, R., Bojo, S. Butchart, A., …….Cluver, L. (2021). The Science of Scale for Violence Prevention: A New Agenda for Family Strengthening in Low- and Middle-Income Countries. *Frontiers in Public Health*. *9*, 581440. https://doi.org/10.3389/fpubh.2021.581440

Skar, A., Sherr, L., Macedo, A., Tetzchner, S., & Fostervold, K. (2017). Evaluation of Parenting Interventions to Prevent Violence Against Children in Colombia: A Randomized Controlled Trial. *Journal of Interpersonal Violence. 36*(1-2). https://doi.org/10.1177/0886260517736881

Straus, M., Hamby, S., Finkelhor, D., Moore, D., & Runyan D. (1998). Identification of child maltreatment with the parent-child Conflict Tactics Scales: Development and psychometric sata

for a national sample of American parents. *Child Abuse and Neglect*, *22*(4), 249-270. https://doi.org/10.1016/s0145-2134(97)00174-9

United Nations. (2015). T*ransforming our world: The 2030 agenda for sustainable development.* https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981

Vlahovicova, K., Melendez-Torres, G., Leijten, P., Knerr, W., & Gardner, F. (2017). Parenting Programs for the Prevention of Child Physical Abuse Recurrence: A Systematic Review and Meta-Analysis. *Clinical Child and Family Psychological Review*, *20*(3), 351-365. https://doi.org/10.1007/s10567-017-0232-7

World Health Organization. (2016). *INSPIRE: Seven strategies for ending violence against children.* Geneva, WHO.

Table 1

Content of the Irie Homes Toolbox

Session	TOPICS COVERED	IRIE TIME
Module 1:	Promoting children's positive behavior	
Session 1	Praise your child Praise yourself	Colouring
Session 2	Give your child positive attention throughout the day Me-Time	Playing with blocks
Module 2:	Preventing children's misbehavior	
Session 3	Give clear instructions Know your child	Singing, dancing and playing games
Session 4	Teach your child new skills Give your child some independence Give your child choices	Play with blocks and animals
Session 5	Reasons for child behavior	Looking at books
Module 3:	Understanding emotions	
Session 6	Managing your own emotions Modelling the behavior you want	Playing outside
Session 7	Help your child understand their own emotions	Looking at books
Module 4:	Dealing with children's misbehaviour	
Session 8	Withdraw attention from attention-seeking behavior Redirect your child	Playing with blocks, animals and vehicles
Session 9	Consequences Chillax	Pretend play
Session 10	Problem-solving	Pretend play
Module 5:	Supporting homework	
Session 11	How to help your child with homework	Looking at books
	Review	
Session 12	Review Make a commitment to be an Irie Parent Goal setting	Review of Irie Time

Table 2

Theme of the Week for the Schoolwide Component

Week	Theme
Module 1	Promoting children's positive behavior
1	Praise your child
2	Have Irie Time (child-led play) with your child
3	Praise yourself
4	Involve your child in chores
Module 2	Preventing children's misbehavior
5	Give your child some independence
6	Give your child choices
7	Teach your child household rules
8	Give your child clear instructions
Module 3	Module 2
9	Name your child's emotions
10	Be a good role model for your child
11	Calm down before disciplining your child
Module 4	Supporting homework
12	Help your child learn

Table 3

Process of Delivery and Structure of the Irie Homes Toolbox

MODE	DETAILS
Parents invited to participate in parent sessions	
Face-to-face group sessions	Weekly group parenting session, facilitated by a preschool teacher, lasting one hour with groups of 10 parents held on the school compound.
WhatsApp	Preschool teachers send messages via WhatsApp each week at three time points: 1) the day before the session: a reminder to attend, 2) after the session: a summary of the session and a short video clip, and 3) 2-3 days after the session: a reminder of the Irie Challenge (homework).
School-wide elements	
Bulletin board	Weekly bulletin messages placed on school bulletin board with the strategy of the week
WhatsApp/SMS	Two textual messages per week are sent via WhatsApp that include: 1) What to do (information) and 2) How to do it (actionable advice). A short video clip (1-2 minutes long) of Jamaican parents using the target strategy of the week with their child(ren) and a narrator explaining the strategy is also sent via WhatsApp each week.
Face-to-face	Teachers encourage caregivers to look at the bulletin board and to read the SMS/WhatsApp messages when possible (e.g. during drop-off and/or pick up).

Table 4.
Schedule of Enrolment, Allocation, Measures, and Intervention

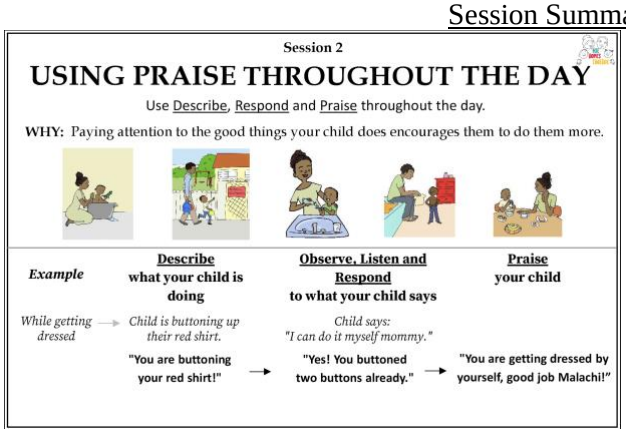
	Study time period			
	Enrolment	**Post-enrolment**		**Close-out**
TIMEPOINT	**Study start (Months 1-3)** Oct-Dec 23	**Baseline assessment (Months 4-6)** Jan-March 24	**Intervention (12 weeks) (Months 4-9)** March-June 24	**Follow-up assessment (Months 8-10)** May-July 24
ENROLMENT:				
Preschool eligibility screen	√			
Preschool/teacher informed consent	√			
Allocation	√			
Caregiver informed consent	√	√		
INTERVENTION: Irie Homes Toolbox			⟷	
Primary Outcome				
Caregivers' use of violence against their child		√		√
Secondary Outcomes				
Caregivers' involvement with their child		√		√
Caregivers' attitude to violence		√		√
Caregivers' preferences for harsh punishment		√		√
Child conduct problems		√		√
Implementation Outcomes				
Caregiver attendance at session			Weekly	
Preschool teachers compliance in conducting sessions			Weekly	
Quality and fidelity of sessions			Biweekly	
Qualitative Evaluation				
Interview with preschool teachers to identify enablers, barriers and suggestions for improvement				√
Supervisor logs on enablers, barriers and suggestions for improvement			Ongoing	

Figure 1

Examples of Resources from the Irie Homes Toolbox

Sample materials for parents attending parenting sessions

Session Summaries (sent via WhatsApp)



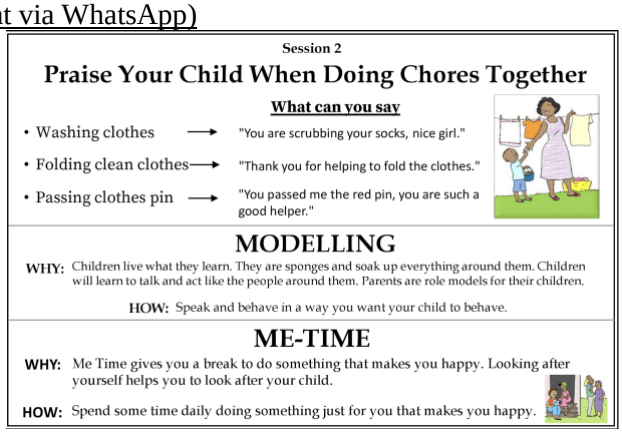
Session 2

USING PRAISE THROUGHOUT THE DAY

Use Describe, Respond and Praise throughout the day.

WHY: Paying attention to the good things your child does encourages them to do them more.

Example	Describe what your child is doing	Observe, Listen and Respond to what your child says	Praise your child
While getting dressed	Child is buttoning up their red shirt.	Child says: "I can do it myself mommy."	
	"You are buttoning your red shirt!"	"Yes! You buttoned two buttons already."	"You are getting dressed by yourself, good job Malachi!"



Session 2

Praise Your Child When Doing Chores Together

What can you say

- Washing clothes → "You are scrubbing your socks, nice girl."
- Folding clean clothes → "Thank you for helping to fold the clothes."
- Passing clothes pin → "You passed me the red pin, you are such a good helper."

MODELLING

WHY: Children live what they learn. They are sponges and soak up everything around them. Children will learn to talk and act like the people around them. Parents are role models for their children.

HOW: Speak and behave in a way you want your child to behave.

ME-TIME

WHY: Me Time gives you a break to do something that makes you happy. Looking after yourself helps you to look after your child.

HOW: Spend some time daily doing something just for you that makes you happy.

WhatsApp Messages: two messages per week

SMS 1

SESSION REMINDER

Dear Irie Parents, I look forward to seeing tomorrow (Tuesday) at 8am for our second parenting session. In this session, we will learn how to give our child(ren) lots of positive attention throughout the day to help them learn well and behave well.

SMS 2

IRIE CHALLENGE REMINDER

Irie Challenge this week: Give your child positive attention throughout the day. Let your child help you with a chore. Good job for being an Irie Parent.

Sample materials for schoolwide elements

WhatsApp Messages: two messages per week

SMS 1

WHAT TO DO AND WHY

Irie time is when we play and have fun with our child, doing what they want. We let our child choose what they want to do and follow their lead. Irie Time makes our child feel special and loved.

SMS 2

HOW TO DO IT

During Irie Time, we can play with toys, look at books and play games. We can play inside or outside. Chat with your child as you play together and listen to what they say. Try to have at least 10 minutes of Irie Time every day.

Weekly School Bulletin and Teacher Guide

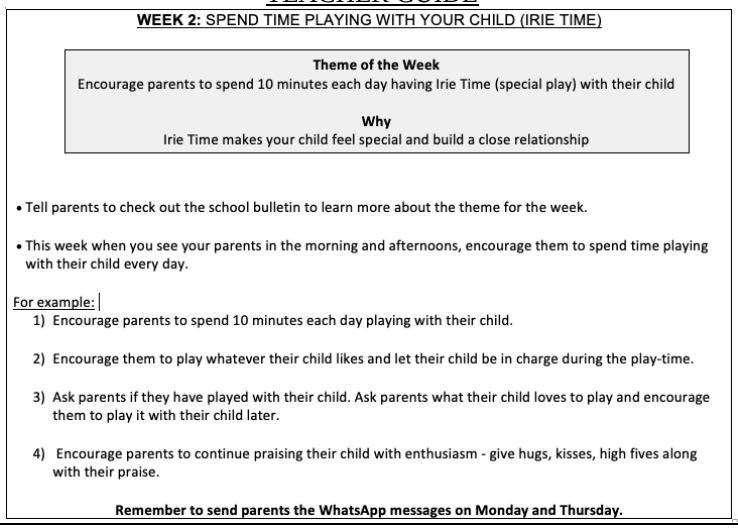
BULLETIN

BE AN IRIE PARENT!

SPEND IRIE TIME WITH YOUR CHILD

- Irie Time is when we play and have fun with our child, doing what they want.
- Try to spend Irie Time with your child every day.
- Let your child choose what they want to do and follow their lead.
- Irie Time makes our child feel special and loved.

TEACHER GUIDE



WEEK 2: SPEND TIME PLAYING WITH YOUR CHILD (IRIE TIME)

Theme of the Week

Encourage parents to spend 10 minutes each day having Irie Time (special play) with their child

Why

Irie Time makes your child feel special and build a close relationship

- Tell parents to check out the school bulletin to learn more about the theme for the week.
- This week when you see your parents in the morning and afternoons, encourage them to spend time playing with their child every day.

For example:

1) Encourage parents to spend 10 minutes each day playing with their child.
2) Encourage them to play whatever their child likes and let their child be in charge during the play-time.
3) Ask parents if they have played with their child. Ask parents what their child loves to play and encourage them to play it with their child later.
4) Encourage parents to continue praising their child with enthusiasm - give hugs, kisses, high fives along with their praise.

Remember to send parents the WhatsApp messages on Monday and Thursday.

Figure 2

Examples of Resources for Schoolwide Element of the Irie Homes Toolbox

WhatsApp Messages: Two Messages per Week

SMS 1

WHAT TO DO AND WHY

Irie time is when we play and have fun with our child, doing what they want. We let our child choose what they want to do and follow their lead. Irie Time makes our child feel special and loved.

SMS 2

HOW TO DO IT

During Irie Time, we can play with toys, look at books and play games. We can play inside or outside. Chat with your child as you play together and listen to what they say. Try to have at least 10 minutes of Irie Time every day

Weekly Poster for School Information Board

Weekly Teacher Guide: Ideas for Engaging Parents

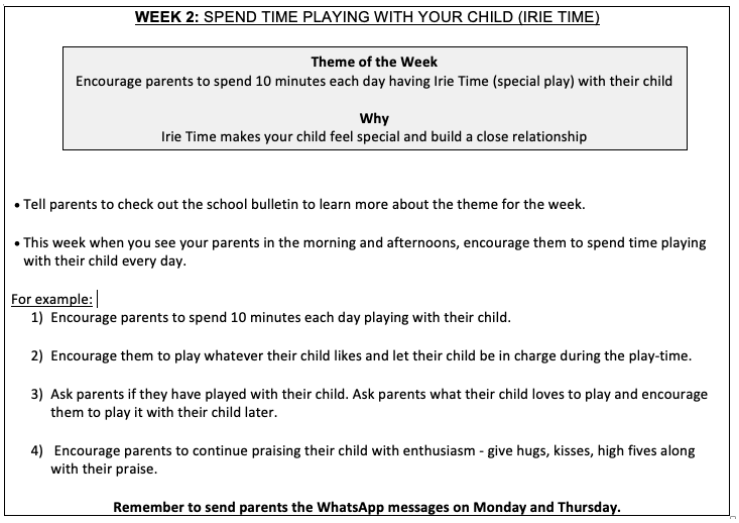


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Figure 3
Trial Profile

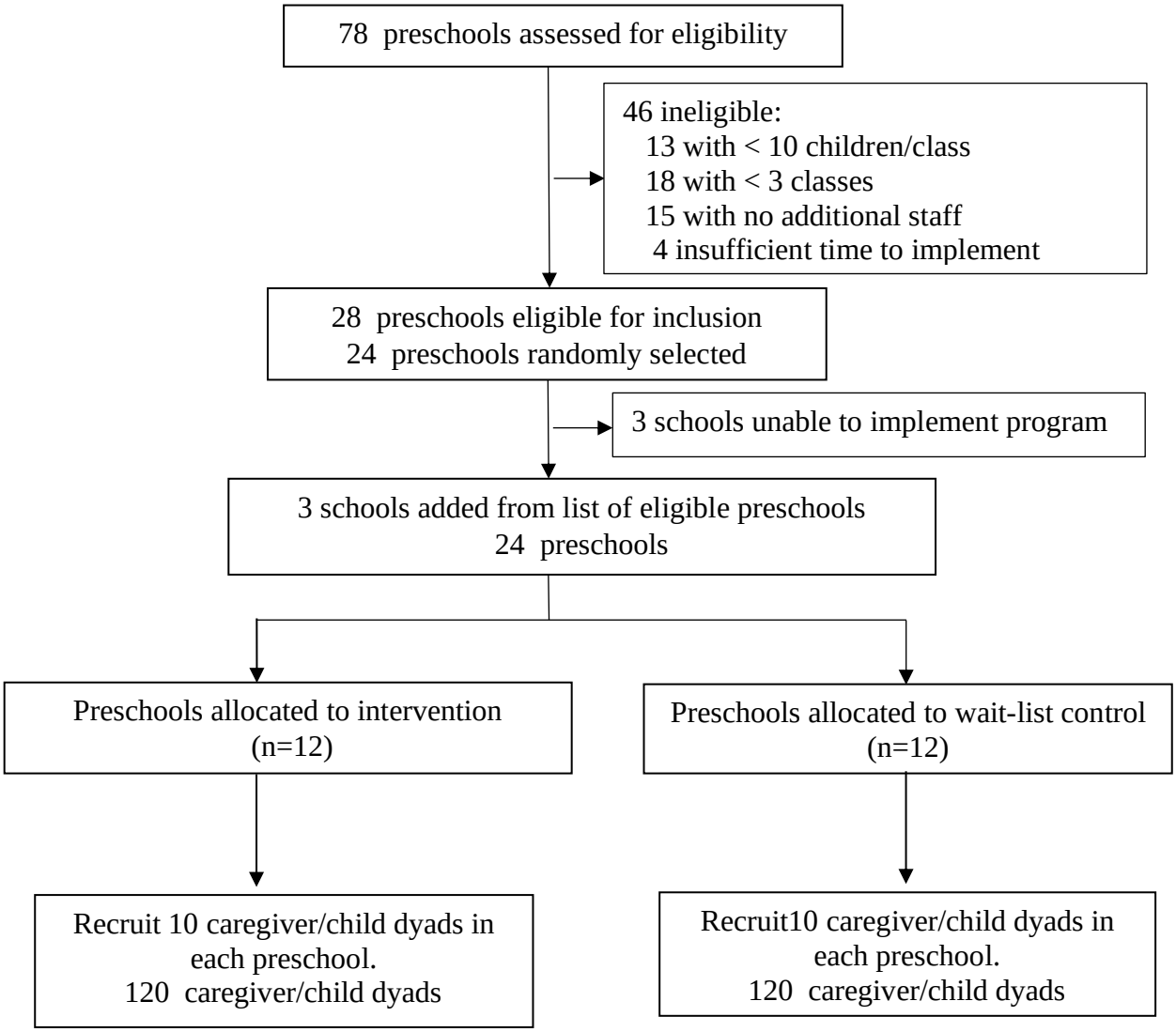

Figure 4

Theoretical Framework for Measurements

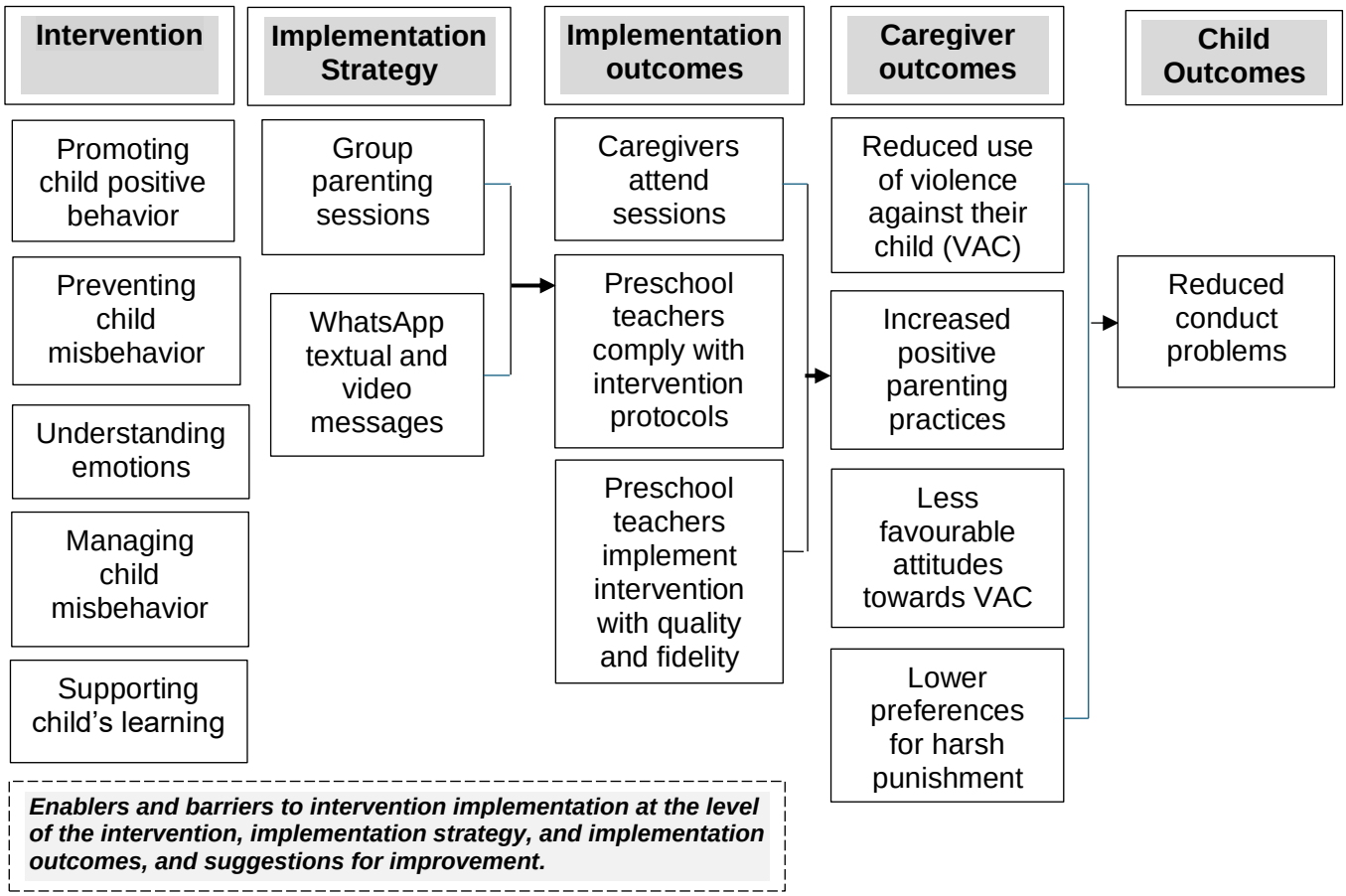

Figure 5

Sample Question from Parent Preferences for Harsh Punishment Scale

Question

This little girl is at the supermarket with her mummy/daddy. She is crying loudly and pulling to try to get him/her to buy her a sweetie. If you were her parent, what would you do to deal with this behaviour?

Picture used with female caregiver

Picture used with male caregiver

Figure 6

Pictorial Response Scales Used for Caregiver Preferences for Harsh Punishment Scale