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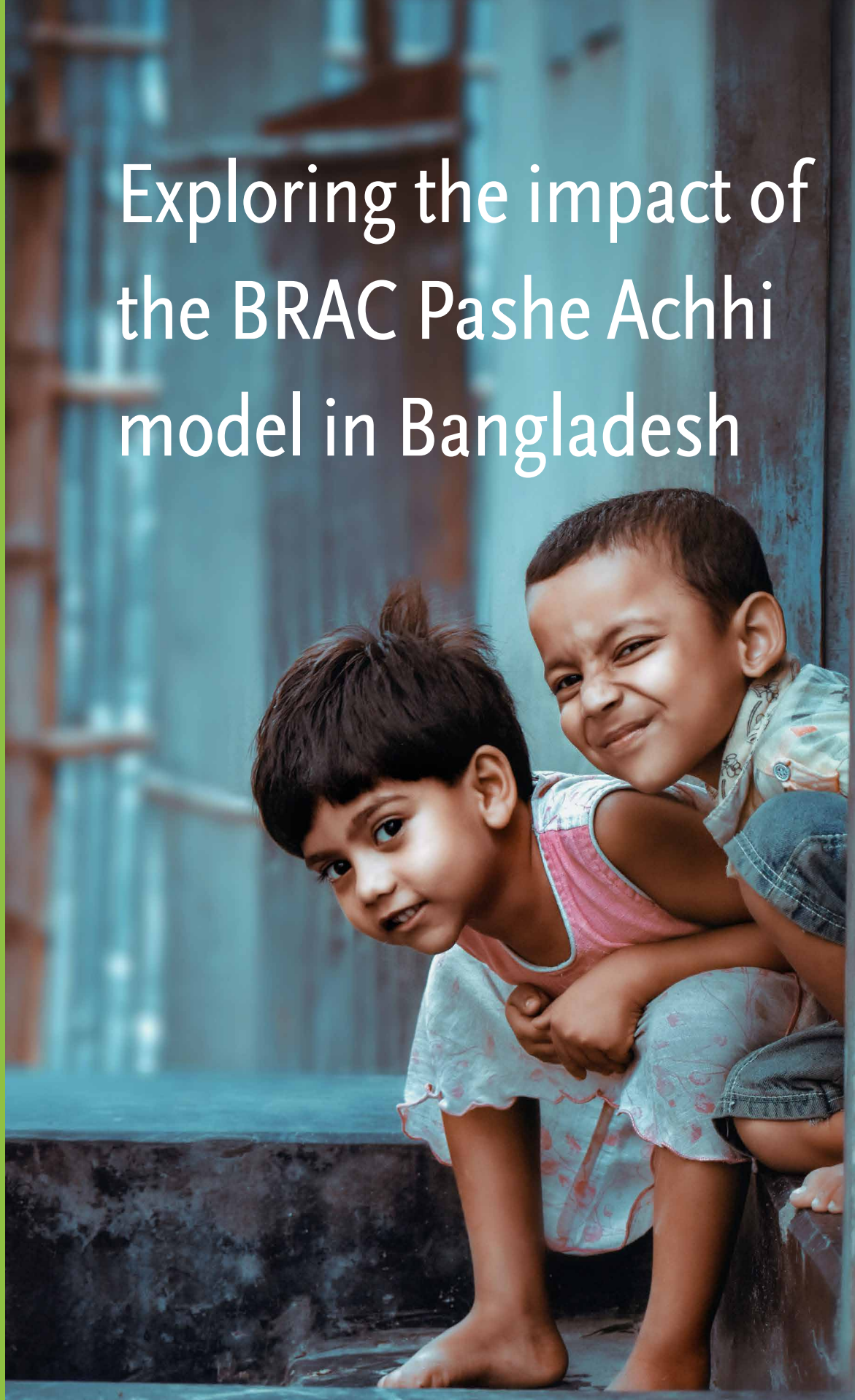

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Introduction

The foundation for an individual's optimal development is laid during their early years as these years offer a critical window of opportunity to shape their holistic development, including physical, cognitive, language, and socio-emotional development (Kariuki et al., 2007). Moreover, a wide array of research, ranging from developmental neuroscience to biology to epigenetics, values the necessity of Early Childhood Development (ECD) programs to ensure children's overall development (Young, 2010). The poorest, conflict-affected and most vulnerable children are also likely to benefit from ECD interventions. However, many children, especially from low- and middle-income countries, do not have access to interventions due to household risks or structural barriers to access (Global Education Monitoring Report Team, 2006/2006, pp. 1–405). Moreover, the COVID-19 pandemic imposed new challenges in accessing in-person services.

In this pandemic, caregivers and the home environment are the only pathways to contribute to children's development. Some evidence also suggests that parent's well-being, knowledge of ECD, responsive interactions, capacity to provide stimulating home learning environments, and play-based learning improve children's development (Belcher et al., 2007; Boonk et al., 2017; Jeong et al., 2018; Lehrl et al., 2020; Melhuish et al., 2008; Phua et al., 2020; Shah et al., 2019; Tu et al., 2021; Yesmin et al., 2016). However, though there were improvements in evidence-based ECD interventions from centre-based learning programs for children to home-based parenting and learning programs, they are limited. (Karoly et al., 2005). Hence, as a response to the COVID-19 pandemic, BRAC designed the Pashe Achhi Telecommunication Model (0-5y) to meet the needs of Bangladeshi (BD) and Rohingya Refugee communities' psychosocial support and learning needs of children. The intervention was implemented for three months in ten districts of Bangladesh and seven months in Rohingya Camps, though it was a nine-month framework.

The Pashe Achhi remote learning mechanism is intended to promote caregivers' and children's well-being and foster child development through play-based learning, positive parenting, and self-care practices of caregivers. Since providing psychosocial support became increasingly pivotal during the pandemic, this model has incorporated psychosocial support via learning-through-play approaches to encourage positive interactions between

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caregivers and children. Therefore, scripts were designed, incorporating psychosocial support, learning through play, and health and hygiene. Each script delivers a 20-minute phone conversation facilitated by a Play Leader. The call consisted of a 10-minute counselling session with the caregiver, which focuses on familial well-being and positive parenting, and a 10-minute learning session engaging the child and their caregiver with age-appropriate activities, such as reciting rhymes and storytelling. Through active and empathetic listening, Play Leaders created a warm, respectful, and trustworthy environment in the calls.

Trained facilitators, named Play Leaders (PL), facilitated the calls for caregivers and children once a week. To facilitate the calls, Play Leaders were trained remotely through Google Meet, IMO, and conference phone calls on ECD, learning through play, playfulness, mental well-being, and basic psychosocial skills. Following a cascade model, curriculum developers and psychologists trained a pool of trainers (frontline staff), who, in turn, trained Play Leaders.

One of the major limitations was that the program was not fully implemented due to unstable finance. Because of several fire incidents in some camps, the Government restricted the use of mobile phones, which halted the Pashe Achhi call and resumed the adaptation of Pashe Achhi home visits to maintain communication with children and families.

Statement of the Problem

Emergency settings as a result of pandemics, natural disasters, and conflict pose a multitude of risks to accessing services due to barriers to logistic supplies, infrastructure, health hazards, safety, and security (Oden et al., 2012); UNICEF, 2014; The Sphere Project, 2000, pp. 1–251). UNICEF (2010) reported that a large portion of the population, especially children's lives and well-being, are under threat during an emergency and, thus, require extraordinary action to ensure care, protection, and survival, such as keeping basic living standards and conditions. In such situations, a remote mechanism is an avenue to support early childhood.

Recently, the provision of services through audio signals is becoming increasingly commonplace in early childhood intervention (Hughes et al., 2016; McCarthy et al., 2010; Muñoz et al., 2016; Stredler-Brown, 2012). On the other hand, an increasing pool of evidence supports that telecommunication modality, a supplementary, even an alternative to "in-person" services, is feasible and includes the benefits of improved access to services, more efficient use of time, and reduction in travel costs (Cason et al., 2012; Crowell et al., 2011; Davis et al., 2012; McCarthy et al., 2018); Ishani et al., 2016; Kelso et al., 2009; Mammas et al., 2014; McCarthy, Duncan, & Leigh, 2012; Moffet et al., 2015; Sabesan, 2014; Segrelles, et al., 2014; Smith et al., 2008; Tousignant et al., 2011).

Though the feasibility of telecommunication modality is well recognised, up-taking the modality in early intervention is limited. As a result, the Pashe Achhi Telecommunication Model can be a promising low-cost model in the field of ECD by reaching children and their caregivers even in conflict-affected and hard-to-reach areas. Therefore, the study intended to examine the effectiveness of the Pashe Achhi in improving mothers' knowledge, attitudes, and practices on ECD and promoting well-being to stimulate development in children aged 0-5 years old.

Method

STUDY DESIGN

Pre-post single group design was followed in this study. Baseline and end-line data were collected during the first, and last Pashe Achhi calls, respectively. Thus, end-line data were collected three and around seven months after the baseline in mainstream and Rohingya camps.

STUDY AREA AND SAMPLE

The study was located in ten districts of Bangladesh, covering northern, central, and eastern parts of Bangladesh. The study includes 23 camps. Data were collected from 340 mother-child dyads and 60 Play Leaders (PLs) who facilitated the calls. Additionally, 152 mother-child dyads and 162 Rohingya Play Leaders/Mother Volunteers were selected from the Rohingya camps of Cox's Bazar. All mother-child dyads were selected randomly.

TRAINING AND DATA COLLECTION PROCESS

Field Research Assistants (FRAs) and Research Supervisors received interactive and rigorous training on theories, tools, and hands-on practices. The inter-observer reliability with expert trainers (≥.70) was assured. After training, FRAs collected child, caregiver, and PL outcomes data through telephonic interviews. On the other hand, fidelity data was acquired by hearing the audio-record calls. Additionally, research supervisors checked 5% ongoing reliability to ensure data quality. Standard ethical protocols were followed in both interviews and call recordings.

DATA PROCESSING AND ANALYSIS

Before the analysis, the proponents checked the normality and assumptions of the statistical tests. For data analysis, descriptive statistics, Paired Sample t-tests, and correlation analyses were used.

STUDY INSTRUMENTS

The following instruments were used for data collection both in baseline and end-line. Bangla and Rohingya versions of the tools were used for the Bangladeshi and Rohingya samples, respectively.

KAP (KNOWLEDGE, ATTITUDES & PRACTICES) FOR PARENTS

The KAP tool has been developed based on the HOME inventory and the parenting education program, which was used previously in several studies (Ahmed et al., 2011; Khanom et al., 2013). Later, the tool was revised and validated in 2018 for low-resource settings (Yesmin et al., 2018). In 2020, the instrument was reviewed and adapted for telecommunication. The items in the tool focused on parents' knowledge, attitudes, and practices on early childhood development, learning through play, gender equity in play, engagement in play, and mental health.

KAP QUESTIONNAIRE FOR PLAY LEADER

This tool was designed to measure Play Leaders' knowledge, attitudes, and practices on ECD, learning through play, playfulness, health & hygiene routines, and psychosocial skills.

PATIENTS HEALTH QUESTIONNAIRE (PHQ-9)

PHQ-9 measures caregivers' depressive symptoms. The internal consistency of the Bangla tool was >.8, and Rohingya was >.7 (Yesmin et al., 2016, 2018).

AGES AND STAGES QUESTIONNAIRE (ASQ:3)

ASQ:3 measures children's communication, gross motor, fine motor, problem-solving, and personal-social skills with scores ranging from 0-10. The psychometric properties of both Bangladeshi and Rohingya validated scales were satisfactory (Cronbach's alpha >0.7) and used in several studies (Frongillo et al., 2013; Yesmin, et al., 2018).

AGES AND STAGES QUESTIONNAIRE: SOCIAL-EMOTIONAL (ASQ:SE-2)

The ASQ:SE-2 tool was used to measure children's socio-emotional development where scores range from 0-10. The lower scores indicate better development. The psychometric property of the validated Bangladeshi and Rohingya Version was satisfactory (Cronbach's alpha >0.8) (Yesmin et al., 2015, 2018).

FIDELITY FOR PASHE ACHHI

The Fidelity Tool was designed to assess the degree to which the program was delivered as intended. This measures PL's competencies in session management, rapport building, providing emotional support, and playful engagement with children.

Findings

The distribution of caregivers' and children's characteristics, as well as their families, demonstrates that most of the mothers and fathers were young and completed at least primary education in the Bangladeshi community. Most fathers were day labourers, and their family income was low. Similarly, in camp, most fathers and mothers were young and less educated, and monthly income was meagre. Table 1 also shows that the number of girls and boys was almost equal among the sample.

Table 1. ***Distribution of children's and their families' characteristics***

Variable	Bangladeshi	Camp Rohingya
Mothers' factor		
* Age	25.03(4.69)	25.9(5.07)
Education (Completed primary education)	83.80%	7.89%
Occupation (Homemaker)	93.80%	97.4%
Fathers' factor		
* Age	31.71(5.88)	32.8(7.37)
Education (Completed primary education)	79.40%	8.6%
Occupation (Day labour)	33.20%	76%
Children's factor		
Gender (Boy)	46.40%	52%
* Age	23.67(16.18)	21.7(13.97)
Families' factor		
Types (Nuclear)	58.80%	78.9%
* Monthly economic (In taka)	16,372(20,698)	3,501(4,781)

* ***Mean (SD)***

Table 2 illustrates that after three months of intervention, Bangladeshi caregivers showed significant improvement in their knowledge (p<.001, d=.99, attitude (p<.001, d=0.97), and practices (p<.001, d=0.83), as well total KAP (p<.001, d=1.25). Similar results were found in the Rohingya community after seven months of intervention (Knowledge: p<.001, d=.4; Attitude: p<.001, d=1.16; Practice: p<.001, d=2.56; Total KAP: p<.001, d=1.69).

Table 2. ***Distribution and comparison of caregivers' outcomes***

Variable	Baseline (BL) Mean±SD	Endline (EL) Mean±SD	Mean Difference (EL-BL)	t	Effect size d
Bangladeshi					
Knowledge	5.28±2.8	8.55±1.98	3.28	18.20***	0.99
Attitude	14.68±3.75	18.48±1.95	3.79	17.86***	0.97
Practice	10.59±2.11	12.55±1.39	1.91	13.22***	0.83
Total KAP	30.63±7.11	39.79±3.66	9.16	19.93***	1.25
Depressive symptoms	3.05±3.43	2.52±2.87	-.53	-2.25*	-.12
Rohingya					
Knowledge	7.00±2.90	8.71±.194	1.71	5.61***	.4
Attitude	13.14±2.66	16.15±.209	3.00	14.34***	1.16
Practice	3.87±1.33	8.737±.122	4.86	31.81***	2.56
Total KAP	24.01±4.43	33.59±4.32	9.58	20.94***	1.69
Depressive symptoms	4.86±.292	1.88±.176	-2.98	-8.86***	-.71

p<.05,
p<.01,
****p<.001***

Table 2 also reveals that the intervention also promoted mothers' well-being by demonstrating decreases in depressive symptoms (Bangladeshi: p<.05, d=-.12; Rohingya: p<.001, d=-.71). Figure 1 also provide that the percentage of depressed caregivers declined after the intervention.

Figure 1. ***Comparative statistics of Bangladeshi and Rohingya caregivers' mental health status.***

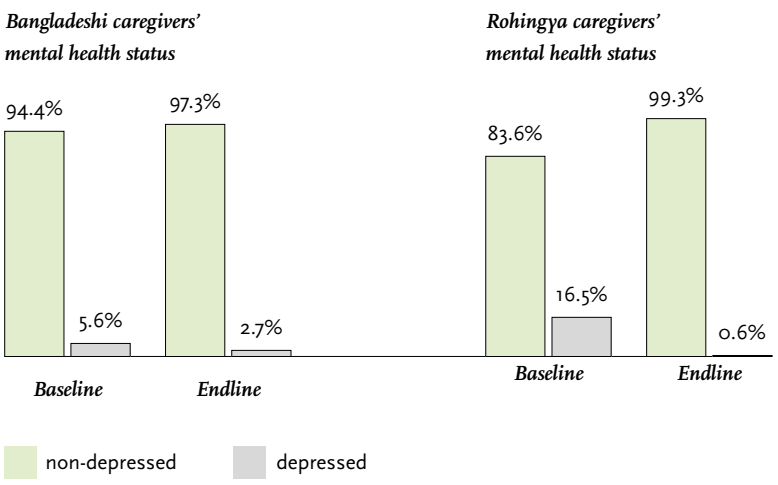

Table 3 illustrates that children significantly (p<.001) progressed in communication, gross motor, fine motor, problem-solving, the personal-social, collective total score of ASQ:3, and socio-emotional development (in ASQ:SE lower the score indicates better children's socio-emotional development) with low to medium effect in the Bangladeshi (.46 to .76) and medium to large effect in Rohingya (.5 to 3.41).

Table 3. ***Distribution and comparison of children's outcomes.***

Variable	Baseline (BL) Mean±SD	Endline (EL) Mean±SD	Mean Difference (EL-BL)	t	Effect size d
Bangladeshi					
Communication	41.51±14.22	52.54±9.24	11.04	10.89***	.65
Gross Motor	40.52±15.51	49.62±13.06	9.10	8.15***	.49
Fine Motor	28.44±16.57	40.90±14.57	12.46	9.64***	.58
Problem-Solving	34.48±15.99	47.63±13.38	13.15	11.44***	.68
Personal Social	39.16±14.27	49.75±11.31	10.59	10.02***	.60
Total ASQ:3	184.10±57.29	240.45±46.26	56.34	12.71***	.76
Socio-emotional	2.30±1.15	1.60±.93	-.70	-7.75***	-.46
Rohingya					
Communication	31.41±12.25	49.01±11.2	17.6	15.07***	1.22
Gross Motor	38.75±16.05	49.54±10.46	10.79	7.95***	0.64
Fine Motor	33.45±13.37	43.75±15.22	10.3	6.58***	0.53
Problem-Solving	35.16±13.03	45.36±13.73	10.2	7.26***	0.59
Personal Social	42.2±11.48	49.97±11.3	7.76	6.18***	0.5
Total ASQ:3	180.99±40.24	237.63±48.95	56.64	12.15***	0.99
Depressive symptoms	4.86±.292	1.88±.176	-2.98	-8.86***	-.71

p<.05,
p<.01,
****p<.001***

Figure 2 demonstrates Play Leaders also gradually improved their knowledge, attitude, practices, and collectively on total KAP with a larger effect size (.9 to 1.6) except attitude (.22) in Bangladeshi caregivers and low to medium in Throughout the intervention, the fidelity of Pashe Achhi was assessed twice.

Figure 2. ***A comparative difference in Mainstream Play Leaders' KAP of Bangladeshi and Rohingya.***

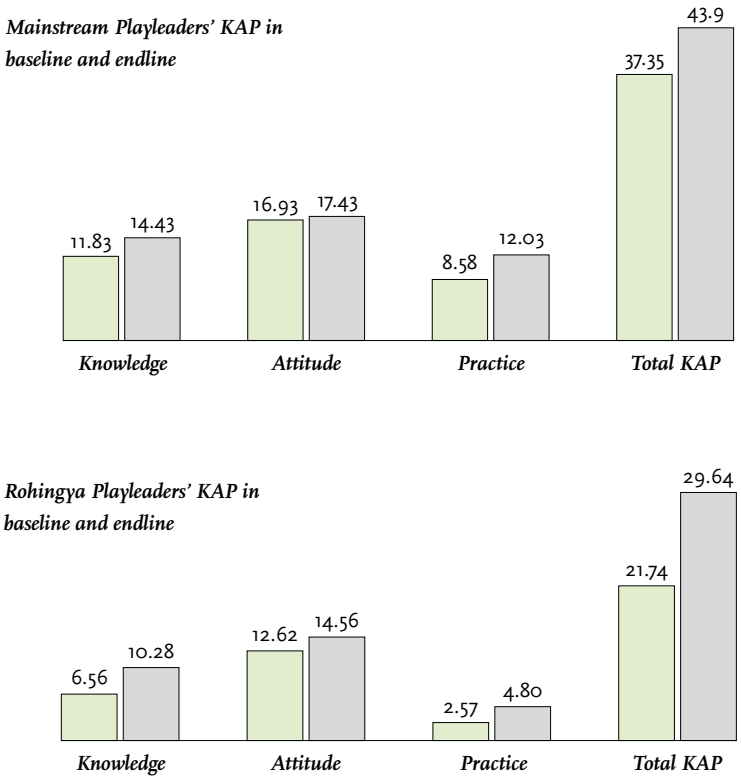

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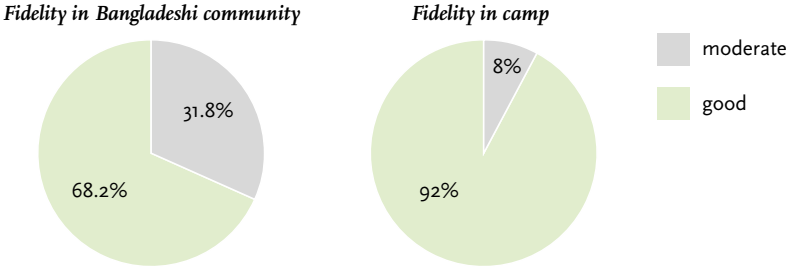
Figure 3. ***Comparative fidelity scores of Bangladeshi and Rohingya Play Leaders' (PLs) competency***



Thus, understanding the Play leaders' (PLs') competencies, the fidelity scores were averaged and categorised as poor, moderate, and good. Figure 3 shows that most PLs demonstrated good competency in calls (Bangladeshi:68.2%, Rohingya: 92.0%).

Findings reveal that Play Leaders' competency was positively correlated with mainstream caregivers' improvement in attitude (r=.17), practices (r=.20) and total KAP (r=.17), and Rohingya caregivers' practices (r=.18) and total KAP (r=.22). Fidelity score was also found to be positively correlated with children's improvement. Moreover, Play Leader-child interaction was positively correlated with gross motor (r=.18) and problem-solving (r=.22), and negatively correlated with fine motor (r=-1.4) in the main Bangladeshi community. However, in the camp, children's improvement in all the measures except socio-emotional was positively correlated with Playleader-child interaction.

Table 4. ***Correlation between Play Leaders' competencies with caregivers' and children's outcomes.***

Variable	**Bangladeshi**	**Rohingya**	**Bangladeshi**	**Rohingya**
	Fidelity		Play Leader-child interaction (subtest of Fidelity)	
Knowledge	-0.04	-.01	-	-
Attitude	.17**	.05	-	-
Practice	.20**	.18*	-	-
Total KAP	.17**	.22**	-	-
Total score in PHQ-9	-0.01	.12	-	-
Communication	0.09	.17*	0.11	.46**
Gross motor	0.00	-.21	.18**	.35**
Fine motor	-0.08	-.02	-.14*	.57**
Problem-solving	.19**	.05	.22**	.42**
Personal Social	-0.07	.18*	-0.07	.33*
Total of ASQ:3	0.03	.22**	0.08	.61**

Discussion

The present study aims to explore the effect of the Pashe Achhi in improving mothers' knowledge, attitudes, and practices on ECD and promoting well-being to stimulate development in children aged 0 -5 years. Therefore, following a pre-post intervention group design, the study was conducted on 340 and 152 randomly selected caregiver-child dyads from the Bangladeshi - and Rohingya communities, respectively. Additionally, data were collected from 60 Bangladeshi and 162 Rohingya Play Leaders.

The analysis shows that the invention had a large effect in improving mothers' knowledge, attitudes, practices, and total KAP and reducing maternal depressive symptoms (Table 2). Across categories, the intervention significantly improved children's developmental outcomes (Table 3). Play Leaders also demonstrated strong competencies when facilitating calls, which positively affected caregivers' and children's outcomes (Table 4).

The findings of the present study are supported by other studies linking early childhood development with adult well-being and ECD knowledge, and practices that contribute to promoting children's development through improvements in the home environment and childrearing practices (Belcher et al., 2007; Benasich & Brooks-Gunn, 1996; Bond & Burns, 2006; Bornstein & Cote, 2004; Huang et al., 2005; Larsen & Juhasz, 1985; Mercy & Saul, 2009; Black et al., 2017; Yesmin et al., 2016). Though the intervention was short, the accessible telecommunication modality using phone calls, flexible schedule, easy participation, and fewer social barriers might ensure the mother's participation in the calls. Thus, the Pashe Achhi model has the potential to close gaps in ECD services, especially where face-to-face ECD interventions are not possible. The program has potential scope in normal situations since it seeks to foster the well-being of caregivers and their children's development. To move forward, communication with stakeholders, governments, and evidence on large-scale implementation is essential.

Based on the evidence presented, the study raised the following recommendations:

- The Pashe Achhi Model can be considered when implementing a centre-based program that is challenging in reducing learning losses and improving children's development during crises.
- Since the program is feasible, low cost, and possible to implement within limited resources regarding indentures, it can be scaled up in both national and international settings, including humanitarian and hard-to-reach areas, to increase access to children's attendance in early childhood programs in the year before formal education and to build the foundation of their lifelong learning.

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