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Quality of Caregiver–child Interactions in Early Child Care Centers in Bangladesh: Measurement and Training

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ABSTRACT

The current study assessed (1) the importance of six caregiver interactions skills (sensitive responsiveness, respect for autonomy, structuring and limit setting, verbal communication, developmental stimulation, and fostering positive peer interactions) as rated by several stakeholders, (2) the quality of caregiver interactive skills, and (3) the effectiveness of a training program in early child care centers (children 0- to 6-year-olds) in Bangladesh. Using a quasi-experimental study design, 20 caregivers were allocated to the experimental condition (receiving a training) and 20 caregivers to the control condition (no training). *Research Findings:* Results showed that the importance of the six caregiver interactive skills was acknowledged by parents, managers/factory owners, and caregivers. Caregivers scored on average in the inadequate range for five out of the six CIP skills (except structuring and limit setting). Using a newly developed training program, quality of caregiver interactive skills improved. Finally, caregivers' overall training satisfaction as rated at posttest was high. The relatively low scores on caregiver interactive skills underscore that it is important to assess and monitor pedagogical quality in child care. *Practice or Policy:* Our findings indicate that the quality of caregiver–child interactions in the Bangladesh child care context can be strengthened by training.

The majority of studies on quality of early child care centers are conducted in high-income countries (Rao et al., 2019). We therefore know comparatively little about the quality of formal child care in low-income countries. More specifically, up to date, to our knowledge, no scientific quantitative studies have been published regarding the pedagogical quality of early child care centers for 0- to 6-year-olds in Bangladesh. This is important because due to a steep increase in women's labor participation and large migration flows from the rural to urban areas in search of better employment opportunities, neither mothers, grandparents nor other relatives are available as caregivers for the children. Moreover, due to the introduction of the Bangladesh Labor Act in the Ready Made Garment (RMG) sector in 2006 (adjusted in 2013, UNICEF, 2015), all factories employing more than 40 women have to provide daycare facilities for young children (0-to 3-year-olds), with trained caregivers. As a result, there is a fast-growing demand for formal child care in Bangladesh (Parves, 2017).

There is an abundance of international evidence showing that the quality of child care has an important impact on children's social-emotional development and cognitive development (see for an overview Belsky et al., 2007; Vandell et al., 2010; Vandell & Wolfe, 2000). High-quality care can be defined as care that promotes children's wellbeing and development (e.g., Layzer & Goodson, 2006).

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Generally, quality of care includes both structural and process quality. Process quality is defined as the interactions that children experience with their immediate environment at the care group. Structural quality features, such as group size, caregiver-child ratios, and caregiver stability, are more indirectly related to child outcomes, and can be considered as prerequisites for process quality (see Lamb, 1998; Vandell & Wolfe, 2000). The quality of caregiver-child interactions are the core of process quality and have a direct influence on children's wellbeing and development, which has been demonstrated in both higher-income countries (for example, see Hamre et al., 2014; Mashburn et al., 2008) as well as in lower-income countries (for example, see Brinkman et al., 2016; Jackson et al., 2019; Leyva et al., 2015; Wolf, 2018; Yoshikawa et al., 2015) and also specifically in Bangladesh (Aboud, 2006). Several US studies have suggested that children from lower-income families especially profit from high child care quality (e.g., Burchinal et al., 2000; Winsler et al., 2008). Furthermore, a review examining child care interventions to improve children's learning abilities in several low-income countries has demonstrated that effectiveness of the intervention is most effective when the intervention is focused on aspects of process quality, such as quality of caregiver-child interactions (Jackson et al., 2019). Caregivers, also in lower-income countries, thus play a key role in determining child care quality as experienced by young children. It is therefore important to assess quality of caregiver interactive skills in early child care centers in lower income countries and specifically Bangladesh, where more and more children are spending a significant amount of time in early child care centers nowadays (Parves, 2017). The current study examined the quality of caregiver interactive skills in Bangladesh factory-based and community-based child care centers for 0- to 6-year-olds.

Formal Child Care Context in Bangladesh

Currently, there is no official regulation or control of child care quality in Bangladesh. The government of Bangladesh is working on a Child Care Act which will provide rules and regulations for formal child care (Mazumder, 2018). However, this act will mainly focus on safety issues, health, nutrition, license, and registration. Little attention is paid to the core aspects of child care quality, namely quality of caregiver-child interactions. This raises several issues. First, caregivers, policymakers, practitioners in the field including the RMG sector, and parents are not sufficiently aware of the key role of caregivers in child development in child care. As a result, there is limited knowledge and consensus on the content of institutional certification and education of caregivers and options to get certified as a caregiver. Professional caregiving is not valued as a profession with an important status. Moreover, although the Bangladesh Labor Act imposes RMG factories to provide child care facilities, there currently is no systematic monitoring system in place to check whether factories meet the above-mentioned regulations.

Today, early child care centers in Bangladesh are still limited and mainly situated in and around the capital Dhaka. There are several types of child care facilities that can be distinguished: factory-based, community-based, child care run by specific organizations (governmental and non-governmental), and privately owned child care centers. In the current study, only factory- and community-based child care centers participated. The centers established by the RMG sectors can be either in the factories or in the communities where the women, who work in the RMG sector, live. In the past decades, the RMG sector has played an important role in the economic development of Bangladesh; Bangladesh is one of the largest exporters of garments worldwide. About 80% of the people working in the garment sector are female, which provides these women with ample opportunities in terms of entering the workforce, providing income, and economic independence (UNICEF, 2015).

The factory-based child care centers have been established to take care of the children of mothers working in the garment factories, who are still breastfeeding. These factory centers accommodate around 20 children aged between six weeks to 3 years of age and are generally run by the non-governmental organization (NGO) Phulki. Phulki provides these centers with caregivers and overall caregiving related support such as providing materials, decoration, center set-up, and basic supervision. The community-based child care centers that participated in the current study, were run by

Phulki and provided age-specific stimulation and care for the children of working woman in Bangladesh living in the urban slums of Dhaka's division (Mirpur, Dhaka and Valuka, Mymensingh). Children in these centers are divided in three age groups to provide them with age-appropriate early childhood developmental activities for children between 2–6 years of age. The factory-based and community-based childcare centers differ mainly concerning the age range of the children, set up, and available space. Factory based children are usually aged between 0–3 years old; mainly due to space constraints, factory-based centers rarely have children between 3–6 years old. Whereas community-based day care ensures school readiness, this is not possible in factory-based centers because of the lack of resources and space. Factory-based centers have a breastfeeding facility, but community-based day care centers established by Phulki do not have these facilities because children in community-based centers enroll at the age of two years old. With respect to caregiver-child ratio, factory based and community based child care centers are similar: in both facilities, caregiver-child ratio in infant groups (0-2-year-olds) is 1:2, 1:5 in 2–6 year old groups. In community-based child care centers for 4-6-year-old children there is an additional teacher available.

To our knowledge, no quantitative studies on the pedagogical quality of early child care centers (0- to 6-year-olds) in Bangladesh have been conducted previously. Studying this specific age range is important given that during these earliest developmental stages children rely heavily on their caregivers (either parents or professional caregivers) and, hence, caregivers exert the most significant influence on children's development. During infancy and toddlerhood, children develop rapidly; infants are specifically susceptible and responsive to their caregivers, while toddlers become increasingly independent and autonomous (e.g., Bornstein, 2019; Recchia & Fincham, 2019; Verhoeven et al., 2019). Aboud (2006) has examined the quality of preschools (age range 4.5–6.5 years old) with half-day programs in Bangladesh using the (using the Early Childhood Environment Rating Scale-Revised (ECERS-R), Harms et al., 1998). The ECERS-R measure a broad range of process quality aspects, such as space, materials, activities, and program structure on group level. Results showed that the average score for global process quality was 3.16 on a 7-points scale (ranging between 1.80 and 3.70), indicating minimal quality in preschools. More specifically, scores for the subscale Interaction (quality of caregiver-child interactions, supervision of play, discipline, and interactions between children) were on average 4.06 ($SD = 1.09$, range = 1–6), indicating moderate (between minimal and good) quality (mean scores between $3 \leq M < 5$). This means, for example, that caregivers did not show warmth toward the children, did not have eye contact when interacting with the children, did not respond to children's behaviors, did not effectively use disciplinary strategies, or did not provide help and encouragement when children needed this.

Child Care Training in Bangladesh

Previous reviews and meta-analytic studies have demonstrated that the quality of caregiver interactive skills, as also measured in the current study, can be improved by training programs (Fukkink & Lont, 2007; Werner et al., 2016). On average both studies have found moderate effect sizes: Fukkink and Lont (2007) reported $d = 0.40$ for the aggregated effect on caregiver skills and Werner et al. (2016) found Hedges' $g = 0.35$ (Hedges' g is an effect size measure comparable to Cohen's d , correcting for small sample bias; Hedges & Olkin, 1985). Moreover, not all training programs were effective, and the meta-analysis of Fukkink and Lont (2007) demonstrated that some training programs even had negative effects. Furthermore, both meta-analyses also performed several moderator analyses, which indicated that training programs with a fixed curriculum (Fukkink & Lont, 2007) and individual training sessions (Werner et al., 2016) were more effective. Neither meta-analyses reported on training programs from lower-income countries, let alone from Bangladesh. Three studies evaluating the effectiveness of pre(primary)school programs on children's development in Bangladesh have been published (Aboud & Hossain, 2011; Moore et al., 2008; Opel et al., 2012). However, none of the studies specifically focused on caregiver

interactive skills (rather on overall process quality as measured with the ECERS-R), and the setting and the curriculum of a preschool is in many ways different from early day care centers. For example, children in preschools are older and generally attend only half days.

At the start of the current study, there was no formal certification program for caregivers working in child care centers. Available training programs were provided by the organization that ran the child care center. Organizations would develop their own training programs (lasting about three to five days) on topics such as caregiver's roles and responsibilities (center decoration, health & hygiene, basic care of the children), management, and child safety. Against this backdrop, it is not that surprising that there was a strong need for training programs and certification of (female) caregivers in child care centers related to the pedagogical quality and developmental stimulation of the children of child care centers. Therefore, the second aim of the current research project was to develop and evaluate a broad training program for caregivers to improve overall child care quality. Phulki has extensive experience in providing child care services in Bangladesh (e.g., setting up childcare facilities in factories and communities and providing support to run the childcare center) but is not allowed to provide certifications. Due to governmental regulations, this is only permitted by universities. As such, BRAC Institute of Educational Development (BRAC IED) is able to provide certified courses. BRAC IED was the preferred university for this project, because they are the only university in Bangladesh that has extensive expertise in providing master's programs, several certified courses related to child development, play and school readiness, and certified training programs for caregivers from different organizations (governmental organization, NGO, private). Together with University of Amsterdam, Department of Child Development and Education they collaborated to develop and evaluate the effectiveness of a training program for caregivers in child care. Over the past 7 years, BRAC IED has provided training to caregivers and has a master's program in early child development (developed in collaboration with University of Amsterdam, Department of Child Development and Education*). With this experience in training, the master's program, and research on early child development, BRAC IED has developed the current caregiver training. The training was also reviewed by an international network of scholars in early child development.

The training program was developed following a rigorous process. Firstly, a workshop was conducted to review the existing caregiver training curriculums available in Bangladesh. Based on the review, eight themes (i.e. child development, verbal communication with children, contact with the family, health safety and nutrition, learning environment and play, observing children, child care center, and caregiver responsibilities) with a list of topics were selected and learning objectives were decided. The content was shared with the faculties of Early Child Development Master's program of BRAC IED and with the child care researchers from University of Amsterdam, Department of Child Development and Education. Based on the feedback, topics of the course were finalized and a detailed certificate course manual was developed following the basics of the Caregiver Interaction Profile (CIP) skills as measured with the CIP scales (Helmerhorst et al., 2014; De Kruif et al., 2007).

Present Study

Altogether, rules, regulations and research regarding quality of formal early child care in Bangladesh are still at its infancy. This is the first study to examine the core of process quality, i.e. quality of caregiver-child interactions, in child care in Bangladesh for 0- to 6-year-olds and describing the effectiveness of a newly developed training program in terms of caregiver interactive skills. Quality of caregiver interactive skills was assessed using the existing and validated CIP scales (Helmerhorst et al., 2014; De Kruif et al., 2007), which allow international comparison. Based on developmental theories and models, the six caregiver interactive skills as measured with the CIP scales (i.e., sensitive responsiveness, respect for autonomy, and structuring and limit setting, verbal communication, developmental stimulation, and fostering positive peer interactions), are assumed to play an important role in fostering young children's wellbeing and development (see Helmerhorst et al., 2014). The CIP

scales were specifically developed to measure an in-depth picture of quality of caregiver-child interaction on an individual caregiver level, whereas the ECERS-R measure a broad range of process quality aspects on a group level.

A previous study on quality of preschools (4,5- to- 6,5-year-olds) in Bangladesh found moderate to high scores ($M = 4.06$, $SD = 1.09$, range = 1–6 on a 7-point scale) on quality of caregiver-child interaction as measured with the ECERS-R (Aboud, 2006). Although children in the study of Aboud (2006) did not have the same age as children in early child care centers of the current study, we expected similar outcomes. Furthermore, we had the opportunity to compare the results of the current study in an Asian context to the Western context (i.e. Bangladesh versus The Netherlands and Norway). We are aware of the fact that the concept of quality may differ in different cultural contexts (Cannella & Viruru, 2004; Myers, 2004). Parental socialization and parenting practices are determined for a large part by a culture's societal beliefs, norms, and values. As such, culture shapes social attitudes of caregiving behaviors, which in turn form the way that caregiving behaviors influence child development (Chen et al., 2012). For example, the concept intrusiveness could be susceptible to a culture's societal beliefs, norms, and values: Depending on social attitudes the degree to which a caregiver's behavior is interpreted as intrusive may vary across cultures. A first step was, therefore, to examine whether the importance of the concepts as measured with the CIP scales was recognized in a sample with different stakeholders of the formal child care sector (i.e. parents, managers/RMG factory owners, and caregivers) in Bangladesh. This is important, because acknowledgment of the CIP concepts as key indicators of process quality, will increase acceptance of the outcomes of this study for policy and practice in Bangladesh. The first aim of our study was thus to (1) investigate how stakeholders rated the importance of the following six caregiver-interactive skills: sensitive responsiveness, respect for autonomy, and structuring and limit setting, verbal communication, developmental stimulation, and fostering positive peer interactions. Given that this is the first time that the importance of these specific caregiver-interactive skills is measured in a non-Western lower-income country, we had no a-priori expectations about how stakeholders would rate the relevance of the six CIP scales (H1). In addition to the stakeholder study, we conducted a second and simultaneous study with caregivers, in which we aimed to assess quality of caregiver interactive skills (aim 2) and also aimed to evaluate the effectiveness of a newly developed training program to improve caregiver interactive skills in Bangladesh (aim 3). In this sample, we tested correlations among the six CIP scales; previous Western studies have found significantly, moderate relations between the six scales because they are theoretically different aspects of the same concept (Bjørnstad et al., 2020; Helmerhorst et al., 2014; De Kruif et al., 2007). Considering that Bangladesh has a different cultural background compared to Western countries, we examined the correlations between the six CIP scales in an exploratory fashion (H2). Effectiveness of the training as developed by BRAC IED was evaluated based on different outcomes: quality of caregiver interactive skills (observations of caregiver-child interactions), caregivers' perceptions on the importance of several indicators of process quality (questionnaires), and caregivers' training and trainer satisfaction (questionnaires). Based on previous meta-analytic studies (Fukkink & Lont, 2007; Werner et al., 2016), we expected moderate positive results of the training in terms of quality of caregiver interactive skills (H3a). Furthermore, given that the training specifically addresses why different indicators of process quality are important for children, we expected the training to improve caregiver's perceptions of these process quality indicators (H3b). Lastly, we expected that caregivers were satisfied with the training and trainer (H3c).

Taken together, this study is the first to provide insights in the quality of caregiver-interactive skills in Bangladesh for 0- to 6-year-olds. Using the same measure as used in two previous studies in high-income countries, this study also allows for international comparison of quality of caregiver-interactive skills in lower and higher-income countries. Furthermore, examining the effectiveness of a training program aimed at improving caregiver interactive skills in the setting of Bangladesh provides us with first indications of whether quality of caregiver-child interactions in a lower-income country can be improved by training and enables us to compare effect sizes of this training program to effect sizes reported in the broader international literature.

Method

Participants

Stakeholders Study

We recruited stakeholders from a total of 10 day care centers in Dhaka, Gazipur, and Narshingdi district: two from the private sector and eight from the RMG sector. In all centers, Phulki provided the setup of and technical support for the center. Participants were 20 caregivers, 10 managers/factory owners, and 43 parents.

Caregiver Study

We recruited child care groups (i.e., groups of children who attend child care together in the same classroom) between July 2017 and December 2017 from child care centers in and around the city of Dhaka, Bangladesh. For the selection of the study sample and the allocation of caregivers in either the experimental and control group, BRAC IED was reliant on the support from Phulki as a partner, because of its experience with training and support in childcare centers in both the RMG sector and in the communities. Phulki contacted a total of 60 child care centers. Only centers in the urban and semi-urban area in both RMG factories and communities in Dhaka city were recruited, because these were the centers that Phulki supervised. Phulki contacted senior management of RMG factories with child care centers to select the factory-based childcare centers. Each factory was initially approached with a formal letter through e-mail and in case the factories were interested in participating in the study, a meeting at the factory was planned to finalize participation. Community-based childcare centers were directly approached in person by Phulki at the communities. A total of 40 child care centers provided consent for participation. Per center, only one caregiver participated either in the control or the intervention condition. In this quasi-experimental study, caregivers who were assigned to the intervention group, had to meet the following eligibility criteria: caregivers were committed to their work (as indicated by Phulki) and had been working with Phulki for several years because otherwise, the risk of drop-out would be too high in the intervention group (i.e., due to migration flows, changing jobs are common practice in Bangladesh). For the control group, we had no specific eligibility criteria, but in most cases, these were caregivers that received no prior training at all. Based on the selection criteria, Phulki selected 20 caregivers for the experimental group and 20 caregivers for the control group. Caregivers who did not meet the selection criteria and did not want to be filmed were excluded from this study. The final sample included 40 caregivers from 40 child care centers, with 20 caregivers in the experimental group (8 caregivers from factory-based child care centers and 12 caregivers from community-based child care centers) and 20 caregivers in the control group (9 caregivers from factory-based child care centers and 11 caregivers from community-based child care centers).

We obtained informed consent from all participating caregivers. In a first step, Phulki contacted the human resource department of each factory with a formal letter to ask for permission to film in the child care centers. Invitation letters explaining the procedure were provided and factory owners signed the consent form. Next, caregivers signed a consent form with the human resource department of the factory for the filming procedures. In case the caregivers were from the communities (and not from the factories), Phulki directly approached caregivers and community members to provide information regarding the study procedures. All caregivers from the communities signed the consent form. Lastly, Phulki informed all parents (through letter or verbally or e-mail) about the filming procedures. Parents were all able to ask questions about the study and were explained that they were not obligated to have their children filmed on camera. Given illiteracy among parents, no written consent was obtained from them. In case parents did not give permission, children were not filmed. The study was approved by the local Ethical Committee of BRAC IED.

Caregivers were all female; In Bangladesh, caregiving jobs are generally performed by females. **Table 1** shows the background information of all participating caregivers and separately for the experimental and the control group. There were no significant differences between caregivers in the training and control condition at pretest for caregivers' age, workdays, years of experience, group size,

Table 1. Background information of caregivers; mean scores and standard deviations for the experimental and control group at pretest and posttest.

	Experimental group <i>N</i> = 20	Control group <i>N</i> = 20	All caregivers <i>N</i> = 40	<i>Comparison experimental and control group</i>
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>t</i>
Age	32.50 (5.62)	33.40 (8.02)	32.95 (6.85)	0.41
Workdays per week	6.00 (0.00)	5.70 (0.92)	5.85 (.66)	-1.45
Work experience as caregiver (years)	3.53 (3.41)	5.18 (2.28)	4.35 (2.98)	1.08
Work experience in current child care center (years)	2.48 (2.81)	3.37 (2.72)	2.93 (2.77)	1.02
	%	%	%	
Education				
Completed grade 8 or less	65%	55%	60%	
Completed Secondary School	5%	35%	20%	
Completed Higher Secondary School	20%	0%	10%	
Graduation/postgraduation	10%	10%	10%	

* $p < .05$, ** $p < .01$

caregiver–child ratio, or pretest scores on the quality of caregiver interactive skills as measured with the six CIP scales (see also Table 1). A total of 40 caregivers participated at the pretest and two caregivers in the experimental group dropped out before posttests were conducted. The reason for dropping out was that both caregivers changed jobs during the study. Most caregivers are migrant workers, who tend to switch jobs quite often in case better payments are available at other jobs. Furthermore, we were unable to film the lunch situation for five caregivers at pretest (three from the control group and two from the experimental group). Figure 1 shows the flow chart of the participants (in terms of child care centers and caregivers) through the study.

Design and General Procedures

Stakeholder Study

Several stakeholders (caregivers, managers/factory owners, and parents) rated several indicators of process quality in child care centers, including the six caregiver interactive skills (see Measures section “Indicators of process quality” for more info on the measure). Due to high rates of illiteracy, it was not possible to use written questionnaires and thus one of the data collectors of the study read the questionnaires to all stakeholders.

Caregiver Study

To examine quality of caregiver interactive skills and the effectiveness of the training program, we used a quasi-experimental pre-post intervention-control design. The main reasons we were not able to perform a randomized controlled trial in this study, was that caregivers’ participation in the training program was challenging in general, which lead to the issue that at the start of this study, not all recruited caregivers were able to attend the training in case they would have been randomly assigned to the training group. For example, in case caregivers worked in the RMG sector, the factory management had to provide permission to the caregivers to participate in the training, which was not provided for all caregivers. As such, we could not assign these caregivers to the training group. In other cases, not all caregivers were willing to participate in the training program themselves, because they had to travel far to the capital of Bangladesh (in some cases a 4-hour travel) for the training. Therefore, for feasibility purposes of this study and the limited timeline of the study, we decided to work with a quasi-experimental design. We collected data before (pretest) and after the last training session (posttest). Two data collectors (research assistants from BRAC IED) filmed the caregivers and read the questionnaires to the caregivers on the same day. Before the

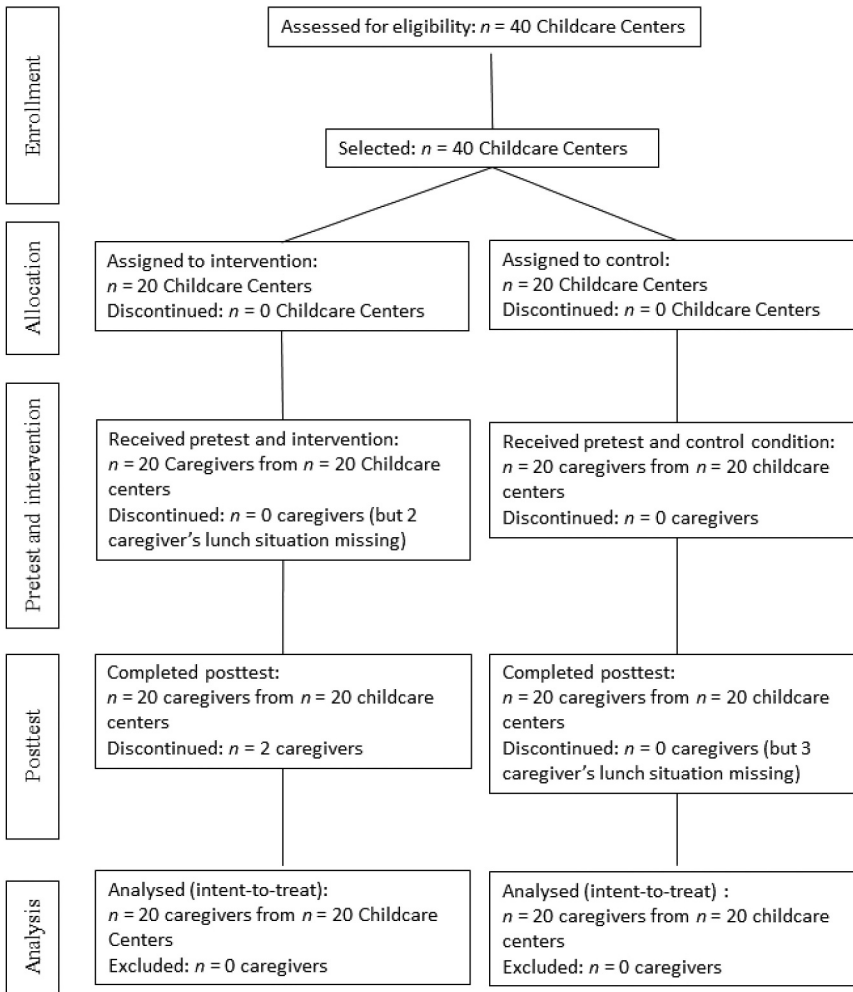


Figure 1. Flow chart of caregivers through the study.

start of data collection, both data collectors received five training days (including several field practice sessions) with instructions for the interviews and filming procedures according to the CIP scales protocol.

For the pretest and posttest, a trained data collector visited the groups from 8 A.M. until approximately 3 P.M. between July 2017 and December 2017. During the visit, the data collector filmed each individual caregiver for 8–10 min for later observation of their interactive skills in three different situations: lunch/snack, play, and transition between group activities. We decided to film different situations during the day to capture caregiver interactive skills in different parts of the daily child care program and to provide a more robust picture of a caregiver's behavior during the day. Trained observers, who had not visited the care group in question, rated the video episodes afterward. All data collectors were blind to the allocation of the caregivers.

Approximately one month after the pretest, the six-day certificate course was provided to the caregivers of the intervention group. One month after the last day of the training, we conducted the posttest. The time period for the posttest was the peak time for factory business therefore it was difficult to get access to the factories to film for the posttest, this was the reason for the delay in

conducting posttest. At the pretest and posttest, questionnaires were read to the caregivers from both the control and intervention group to collect individual background information (e.g., age, education, work experience) and indicators of process quality.

Training Program for Caregiver Study

BRAC IED developed the caregiver certificate course. The content of the six-day certificate course was based on eleven themes: I) Child Rights, II) Child Development, III) Sensitive and non-intrusive interactions, IV) Verbal communication with children, V) Behavioral management, VI) Developmental Stimulation, VII) Play, VIII) Fostering Positive Peer Interactions, IX) Communications with parents, X) Health, Safety & Nutrition, and XI) Pedagogical policy and management. Table 2 shows an overview of the training program. The training program comprised 6 consecutive days in total, each training day lasted for six hours and took place at BRAC IED, using interactive methods (e.g., game, powerpoint presentation, case study, role play, question-answer, open discussion, pair work etc.). The trainers of the certificate course were the team members who had developed the certificate course. Trainers had a master's degree with long experience in delivering caregiver training. Four trainers used the manual and followed a standardized protocol for delivering the training. Each day one trainer was consistently present; in addition, one or more trainers facilitated more specific topics of the course. The trainer introduced each topic either through open discussion or powerpoint presentation. Depending on the content of the training, trainers asked participants to do pair work or group work and present and share findings in the group. Each session started with reviewing the content of the previous day's topic and at the end of each session key lessons were discussed. At the end of the course, the entire content was repeated once again by reiterating the most important parts of each session. Finally, once the training course was completed, the trainer distributed a handout with key points was among participants and provided a certificate. Caregivers in the control group received no training at all and were only contacted for pretest and posttest.

Measures

Indicators of Process Quality

Stakeholders (caregivers, factory owners/managers, and parents) and caregivers participating in the caregiver training study all rated the importance of 14 indicators of process quality in child care centers, including the six caregiver interactive skills on a 4-point scale (1 = *not at all important*, 2 = *not that important*, 3 = *important*, and 4 = *very important*). These items were also used in a previous Dutch study to check whether various stakeholders in the child care setting recognized the importance of the six CIP scales in the Netherlands (see Helmerhorst et al., 2014; De Kruif et al., 2007).

Caregiver Interaction Skills

Quality of caregiver interactive skills of caregivers participating in the training study (both experimental and control group) were assessed through observations using the CIP scales. The CIP scales measure six caregiver interactive skills: (1) *sensitive responsiveness* or the extent to which a caregiver recognizes children's individual emotional and physical needs, and responds appropriately and promptly to their cues and signals; (2) *respect for autonomy* or the extent to which a caregiver is non-intrusive but instead recognizes and respects the validity of children's intentions and perspectives; (3) *structuring and limit setting* or the ability of a caregiver to clearly communicate expectations toward children and structure the situation accordingly and to select clear and consistent limits to the children's behavior; (4) *verbal communication* or the frequency and quality of verbal interactions between caregiver and children; (5) *developmental stimulation* or the degree to which a caregiver deliberately attempts to foster children's development (e.g., motor development, cognitive development and creativity); (6) *fostering positive peer interactions* refers to a caregiver's guidance of interactions between children in the child care center. Each of the six

Table 2. Overview of the sessions and contents of the certificate course.

Day	Themes	Topics	Duration	Method
1.	I) Child Rights II) Child Development III) Sensitive and non-intrusive interactions VI) Developmental Stimulation	<ul style="list-style-type: none"> • General introduction and information about the objective of the training • Children's rights • Early childhood development • Domains of child development • Brain development • Factors affecting child development • Supporting children's autonomy • Stimulating children's creativity • Children with disability 	6 hours	Pair discussion, presentation, brain storming, question & answer, picture card & chart presentation, games, group work & presentation, case study, group discussion
2.	VI) Developmental stimulation VII) Play VIII) Fostering Positive Peer Interactions	<ul style="list-style-type: none"> • Review of the previous day • Age specific play & importance of play • Developmental stimulation through play • Types of play: free play, rhymes & songs, storytelling, arts and crafts, building blocks 	6 hour	Games, brainstorming, question & answer, role play, group work & presentation
3.	VI) Developmental stimulation VII) Play VIII) Fostering Positive Peer Interactions XI) Pedagogical policy and management	<ul style="list-style-type: none"> • Review of the previous day • Outdoor play • Circle play • Pre-math through play • Pedagogical policy: goals and objectives of childcare center, program structure 	6 hours	Games, discussion, question-answer, pair work & group work
4.	III) Sensitive and non-intrusive interactions; IV) Verbal Communication; VI) Developmental stimulation; VII) Play; VIII) Fostering Positive Peer Interactions	<ul style="list-style-type: none"> • Review of the previous day • Play materials • Importance of age and developmentally appropriate play materials • DIY play material workshop • Verbal communication with children and its importance • Different age specific strategies to communicate with children • Sensitive responsiveness 	6 hours	Games, discussion, question-answer, pair work & group work
5.	II) Child Development; III) Sensitive and non-intrusive interactions; V) Behavior management; IX) Communication with parents; X) Health, safety & nutrition	<ul style="list-style-type: none"> • Review of the previous day • Child behavior (temperament, self-regulation, self-concept, separation anxiety & attachment) • Behavior management strategies for children (structuring and limit setting) • Communication with parents/guardians • Child nutrition & food habits • Sensitive responsiveness during feeding • Hygiene 	6 hours	Games, open discussion, presentation, pair work, question-answer, group discussion, game & experience sharing, group activity
6.	X) Health, safety & nutrition; XI) Pedagogical policy and management	<ul style="list-style-type: none"> • Review of the previous day • Child's safety (first aid) • Child abuse • Child care management <p>Course review, closing and certificate distribution</p>	6 hours	Pair work, presentation, question & answer, discussion, group work, presentations

CIP scales is rated on a single 7-point Likert type-scale (7 = very high, 6 = high, 5 = moderate/high, 4 = moderate, 3 = moderate/low, 2 = low, 1 = very low) with detailed behavioral descriptions for each of the seven scale points. In the extensive description of each of the six scales, a general definition of the corresponding caregiver interactive skill is given first, followed by a brief description distinguishing scores at the high (6, 7), middle (3, 4, 5), and low (1, 2) ranges of the scale. For a more comprehensive description of the CIP scales, see Helmerhorst et al. (2014) and De Kruif et al. (2007). The English version of the coding manual of the CIP scales (Netherlands Consortium for Research in Child Care (NCKO), 2016; translated by the authors of the original Dutch version; (Netherlands Consortium for Research in Child Care (NCKO), 2008) was translated to Bangla and back to English by the Bangladeshi authors of the current study.

Three Bangladeshi observers with a master's degree in child development, independently rated the videotaped caregiver-child interaction episodes. Observers attended an extensive four-day training by the Dutch developers of the CIP scales before applying the instrument. During training, the six scales were thoroughly discussed and the observers scored multiple Dutch, English, and Bangladeshi videotapes. To complete the training, all three observers had to meet a criterion of 75% agreement within 1 scale point with a consensus score provided by two experts for each of the CIP scales. After training, 20% of the video episodes were double coded to examine interrater reliability during coding: weighted Kappa (κ) was .95 for sensitive responsiveness, .71 for respect for autonomy, .68 for structure and limit setting, .80 for verbal communication, .80 for developmental stimulation, and .93 for fostering positive peer interaction. Per caregiver, we calculated a mean score for each of the six skills by averaging across the three episodes (play, transition, and lunch/snack). In line with previous research and for comparison purposes (Helmerhorst et al., 2014; De Kruif et al., 2007), we classified mean scores on the CIP scales into three quality levels: inadequate ($M < 3.5$), moderate ($3.5 \leq M < 4.5$), and adequate to good ($M \geq 4.5$).

Training and Trainer Satisfaction

At posttest, all caregivers participating in the experimental group rated their satisfaction with the training and the trainer (e.g., "The trainer provided useful information," "I have become more competent as a result of this training," "The trainer supported me to find solutions") on a 7-point scale (ranging between 1 = *absolutely disagree*, 4 = *neutral*, and 7 = *absolutely agree*). Internal consistency of these 11 items was good ($\alpha = .95$).

Data Analysis

At pretest, we were unable to videotape five caregivers (three in the control group and two in the experimental group) during the lunch/snack situation and for three caregivers, videos for fostering positive peer interactions could not be scored (total of 14 situations), because there was only one child captured in the video (and thus it was not possible to score how caregivers fostered peer interactions). Analysis using Little's MCAR test demonstrated that these data at the level of situation (lunch/snack, transition, and play) per CIP skill were missing completely at random $\chi^2 (178) = 172.87, p = .595$. Although two caregivers in the experimental group dropped out between pretest and posttest, we examined the effectiveness of the training programs using an *intent-to-treat* analysis, and thus all data for all caregivers was analyzed, also the two dropouts. Therefore, we also ran a missing value analysis for caregivers in the experimental group (pretest and posttest) only at the level of the CIP total scores. Little's MCAR test demonstrated that the data were missing completely at random for these two dropouts $\chi^2 (6) = 7.35, p = .290$. Subsequently, we used Expectation Maximization to estimate missing parameters for all missings (both the lunch situations and the two dropouts) (Graham, 2009). We found only one univariate outlier, which, given the small sample size, was winsorized within the normal distribution in order to improve normality (Tabachnick & Fidell, 2001).

To examine the effectiveness of the training on the six CIP scales, we used a repeated measure MANOVA with type of group (experimental or control group) as a between-subjects factor, to analyze the six CIP scales over time (pretest and posttest). Furthermore, we also tested whether there were significant differences between the experimental and the control group (between subjects) in the three different situations (free play, lunch, and transition; within subjects) on the posttest of all CIP scales.

Results

Stakeholder Study

Data from the stakeholder interviews indicated that caregivers, factory owners/managers, and parents all acknowledged the importance of the six caregiver interactive skills (see Table 3). None of the stakeholders scored on average lower than 3.50 (i.e., lower than *important*). Furthermore, there was considerable consensus among the stakeholders, i.e. scores for respect for autonomy were 3.70 ($SD = 0.57$) for caregivers, 3.80 ($SD = 0.42$) for factory owners/managers, and 3.72 ($SD = 0.50$) for parents. In terms of the relative importance of the six caregiver interactive skills, the stakeholders also showed comparable results: all stakeholders rated verbal communication, developmental stimulation, and fostering positive peer interactions in their top three of importance, while sensitive responsiveness, respect for autonomy, and structuring and limit setting were all rated as the bottom three by all stakeholders. Factory owners/managers rated the importance of each of the six caregiver skills slightly higher than caregivers and parents. However, multivariate analysis demonstrated no significant overall effect of type of stakeholders on the different indicators of process quality. Mean scores across all three stakeholder groups were 3.77 ($SD = 0.43$) for sensitive responsiveness, 3.73 ($SD = 0.51$) for respect for autonomy, 3.56 ($SD = 0.75$) for structuring and limit setting, 3.85 ($SD = 0.36$) for verbal communication, 3.84 ($SD = 0.30$) for developmental stimulation, and 3.86 ($SD = 0.40$) for fostering positive peer interactions.

Caregiver Study

Quality of Caregiver Interactive Skills

Table 4 presents the descriptive statistics for caregivers' ratings of the CIP scales from caregivers participating in both the experimental and the control group at pretest. As can be seen, there were considerable differences between the six skills with regard to the mean scores. Except for *structure and limit setting*, caregivers scored on average inadequate ($M < 3.5$) on the caregiver-interactive skills. Overall, caregivers scored relatively higher for the most "basic" (i.e., fundamental/important) caregiver

Table 3. Importance of the caregiver interactive skills as rated by three stakeholders (caregivers, managers/factory owners, and parents).

Indicators of process quality	Caregivers	Managers/ factory owners	Parents	Average
	$N = 20$	$N = 10$	$N = 43$	
	$M (SD)$	$M (SD)$	$M (SD)$	$M (SD)$
Sensitive responsiveness	3.80 (0.41)	3.80 (0.42)	3.74 (0.44)	3.77 (0.43)
Respect for autonomy	3.70 (0.57)	3.80 (0.42)	3.72 (0.50)	3.73 (0.51)
Structuring and limit setting	3.55 (0.83)	3.90 (0.32)	3.49 (0.77)	3.56 (0.75)
Verbal communication	3.80 (0.41)	4.00 (0.00)	3.84 (0.37)	3.85 (0.36)
Developmental stimulation Total ^a	3.81 (0.33)	3.95 (0.15)	3.83 (0.30)	3.84 (0.30)
Creative development	3.75 (0.44)	3.90 (0.31)	3.70 (0.51)	3.74 (0.47)
Motor development	3.90 (0.31)	3.90 (0.32)	3.79 (0.41)	3.84 (0.37)
Language development	3.90 (0.31)	4.00 (0.00)	3.95 (0.21)	3.95 (0.23)
Cognitive development	3.70 (0.47)	4.00 (0.00)	3.88 (0.32)	3.85 (0.36)
Fostering positive peer interactions	3.85 (0.49)	3.90 (0.32)	3.84 (0.37)	3.86 (0.40)

^aDevelopmental stimulation Total = average of Creative development, Motor development, Language development, and Cognitive development.

Table 4. Descriptives for the CIP scales and Pearson correlations between the CIP scales at pretest of caregivers in the training group and in the control group.

Variable	M	SD	Range	CIP (N = 40)						
				1.	2.	3.	4.	5.	6.	
CIP (N = 40)										
1. Sensitive responsiveness	2.67	1.02	1.00– 4.67	-						
2. Respect autonomy	2.73	1.04	1.00– 5.00	.78**	-					
3. Structuring & limit setting	3.94	1.18	1.00– 6.33	.65**	.72**	-				
4. Verbal communication	2.14	0.77	1.00– 3.67	.81**	.55**	.44**	-			
5. Developmental stimulation	1.53	0.58	1.00– 3.77	.43*	.33*	.23	.53**	-		
6. Fostering positive peer interactions	1.33	0.53	1.00– 2.38	.42*	.42*	.41*	.52*	.72**	-	

* $p < .05$, ** $p < .01$ (two-tailed)

skills (sensitive responsiveness, respect for autonomy, and structuring and limit setting), compared to the “educational” skills (verbal communication, developmental stimulation, and fostering positive peer interactions). Furthermore, as can be seen in Table 4, the range of scores for the “educational” skills was restricted (1–4 on a 7-point scale) with none of the caregivers scoring in the adequate to good range for these skills. Table 4 also shows bivariate correlations between the six CIP scales; the correlations among most of the CIP scales are significantly and moderately to highly related ranging between $r = .33$ and $r = .81$. However, the correlation between structuring and limit setting and developmental stimulation was not significant ($r = .23$).

Figure 2 presents the percentage of caregivers that scored in the adequate to good, moderate, and inadequate range, respectively for the six CIP caregiver skills. Only for the most “basic” caregiver skills (sensitive responsiveness, respect for autonomy, and structuring and limit setting) a small percentage of the scores were *adequate to good*, while for the most “educational” skills none of the caregivers scored in the *adequate to good* range. The vast majority of caregivers scored *inadequate* on the caregiver interactive skills, except for structuring and limit setting.

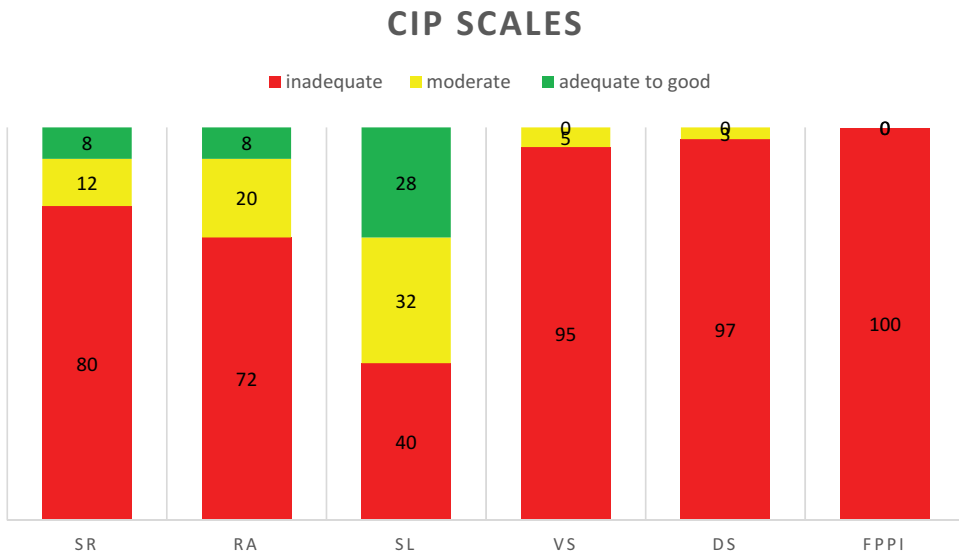


Figure 2. Percentages of caregivers in the training group and in the control group (N = 40) scoring inadequate, moderate, and adequate to good on caregiver interactive skills at pretest. Note: SR = Sensitive Responsiveness, RA = Respect for Autonomy, SL = Structuring and Limit Setting, VS = Verbal Stimulation, DS = Developmental Stimulation, FPPI = Fostering Positive Peer Interactions. The levels are labeled *inadequate* ($M < 3.5$), *moderate* ($3.5 \leq M < 4.5$), and *adequate to good* ($M \geq 4.5$).

Table 5. Mean scores and standard deviations for the experimental and control group at pretest and posttest.

	Experimental group		Control group		<i>Comparison experimental and control group over time</i>	
	Pretest <i>N</i> = 20	Posttest <i>N</i> = 20	Pretest <i>N</i> = 20	Posttest <i>N</i> = 20		
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
<i>CIP scales (observations caregiver interactive skills)</i>						
Sensitive responsiveness	2.79 (1.01)	3.72 (1.30)	2.50 (1.05)	2.57 (0.89)	12.77**	.25
Respect for autonomy	2.81 (0.96)	3.79 (1.01)	2.66 (1.13)	2.58 (1.01)	16.12**	.30
Structure and limit setting	4.30 (1.18)	4.96 (1.21)	3.58 (1.09)	3.82 (1.04)	3.97	.10
Verbal communication	2.25 (0.80)	3.10 (0.86)	2.03 (0.74)	2.10 (0.46)	12.79**	.25
Developmental stimulation	1.59 (0.56)	2.21 (0.68)	1.42 (0.40)	1.45 (0.47)	11.56**	.23
Fostering positive peer interactions	1.48 (0.48)	2.16 (0.56)	1.19 (0.36)	1.27 (0.40)	15.47**	.30
<i>Perceptions caregiver interactive skills (questionnaires)</i>						
Sensitive responsiveness	2.95 (0.23)	3.06 (0.24)	2.95 (0.23)	2.94 (0.54)	0.51	.01
Respect for autonomy	3.16 (0.77)	2.89 (0.47)	3.21 (0.54)	2.61 (0.61)	1.44	.04
Structure and limit setting	2.63 (0.76)	3.00 (0.00)	3.00 (0.33)	2.89 (0.47)	4.08	.11
Verbal communication	3.16 (0.38)	3.06 (0.24)	3.16 (0.38)	3.17 (0.51)	0.41	.01
Developmental stimulation	3.11 (0.21)	3.01 (0.10)	3.20 (0.39)	3.01 (0.36)	0.61	.02
Fostering positive peer interactions	3.00 (0.33)	2.94 (0.24)	3.00 (0.58)	2.89 (0.58)	0.82	.00

* $p < .05$, ** $p < .01$

Evaluation of Training on Caregiver Interactive Skills

In a next step, we analyzed effects of the caregiver training on quality of caregiver–child interactions by analyzing the caregiver interactions skills over time (pretest and posttest) in the experimental and control group (repeated measures MANOVA). Results demonstrated a significant overall positive interaction effect of time (from pretest to posttest) and condition (i.e., experimental and the control) on the CIP scales at posttest, $F(6, 33) = 4.82$, $p = .001$, Wilks's $\Lambda = 0.533$, partial $\eta^2 = 0.47$. Subsequent analyses of variance showed significantly higher scores in the experimental group than the control group at posttest for all CIP scales except for structuring and limit setting as can be seen in Table 5. Average scores on the CIP scales in the experimental group after receiving training were in the moderate quality range for sensitive responsiveness and respect for autonomy. Scores for verbal communication, developmental stimulation, and fostering positive peer interactions remained in the inadequate range.

Furthermore, we also tested whether there were significant differences between the experimental and the control group (between subjects) within the three different situations (free play, lunch, and transition; within subjects) on the posttest of all CIP scales. Results of the repeated measures analysis showed no overall significant difference within the three different situations between the experimental and control group $F(12, 25) = 1.45$, $p = .209$, Wilks's $\Lambda = 0.59$, partial $\eta^2 = 0.41$.

Evaluation of Caregivers' Perceptions of Caregiver Interactive Skills

Next, we tested effects of the training on caregivers' ratings on the importance of the six caregiver interactive skills. Results of the repeated measures analysis demonstrated no significant effect on caregiver's perceptions $F(6, 30) = 1.07$, $p = .405$, Wilks's $\Lambda = 0.82$, partial $\eta^2 = 0.18$.

Evaluation of Caregivers' Training Satisfaction

Finally, at posttest we examined whether caregivers were satisfied with the training. On average, the caregivers were very satisfied with the training program ($M = 6.13$, $SD = 1.52$) on a 7-point scale, *min-max*: 1–7). The highest mean score ($M = 6.67$, $SD = 1.03$) was given for “I think this training was highly necessary.” The lowest mean score ($M = 6.00$, $SD = 1.24$) was given for “The quality of my work has improved due to this training.”

Discussion

This study aimed to provide first insights into the current status of quality of caregiver-child interactions in Bangladesh and, furthermore, explored the effects of a training program in terms of quality of child care centers for 0- to 6-year-olds. Results showed that several stakeholders (i.e. caregivers, factory owners/managers, and parents) all acknowledged the importance of the six caregiver interactive skills in the Bangladeshi context. This is an important first step in measuring pedagogical quality in early child care centers in Bangladesh. Furthermore, correlations between the six CIP scales are very comparable to the correlations found in previous Dutch (Helmerhorst et al., 2014; De Kruif et al., 2007) and Norwegian studies (Bjørnstad et al., 2020). The present study provides some first evidence that, also in Bangladesh (a non-Western country), the CIP scales measure different but related aspects of the construct caregiver interactive skills and as such seems to be a promising tool to apply in future studies in this lower-income country.

Stakeholder Study

Our findings suggest that all stakeholders in our study (i.e., caregivers, managers, and parents) all rated the six caregiver interactive skills all between important and very important. Moreover, none of the stakeholders rated any of the six skills below important. We see merit in these findings because it is an indication that caregivers, managers, and parents in Bangladesh, a lower-income country, agreed with the stakeholders from a higher-income country. More specifically, in the Netherlands (see Helmerhorst et al., 2014; De Kruif et al., 2007), caregivers, center directors, parents, and external experts also rated the exact same items and showed very similar ratings for sensitive responsiveness ($M_{Netherlands} = 3.73$ versus $M_{Bangladesh} = 3.77$), respect for autonomy ($M_{Netherlands} = 3.61$ versus $M_{Bangladesh} = 3.73$), and structuring and limit setting ($M_{Netherlands} = 3.42$ versus $M_{Bangladesh} = 3.56$). Interestingly, the stakeholders in Bangladesh rated the more educational skills statistically higher compared to the stakeholders in the Netherlands: Verbal communication ($M_{Netherlands} = 3.67$ versus $M_{Bangladesh} = 3.85$), developmental stimulation ($M_{Netherlands} = 3.33$ versus $M_{Bangladesh} = 3.84$), and fostering positive peer interactions ($M_{Netherlands} = 3.70$ versus $M_{Bangladesh} = 3.86$). Overall, this indicates that, in line with existing theoretical underpinnings, the six interactive skills, as measured with the CIP scales, are not merely acknowledged by stakeholders from Western, high-income countries, but instead these interactive skills are also recognized and supported by stakeholders in the non-Western, lower-income country Bangladesh. This recognition could as such be an important first step for stakeholders and policy to collectively invest in and improve quality of caregiver-child interactions in Bangladesh.

Quality of Caregiver Interactive Skills

Before training, caregivers in our sample scored on average in the inadequate range for five out of the six CIP skills (except for structuring and limit setting). This was lower than expected based on a study in Bangladeshi preschools (Aboud, 2006). A first possible explanation for this could be that the early child care setting and thus the age range of the children in the present study was different than the children in the preschools setting in the study of Aboud (2006). Children attending the early child care centers in the present study were considerably younger compared to the preschools. Although we did

not have any a-priori expectations about differences between quality in preschools and early child care centers in Bangladesh, quality of caregiver–child interactions may be lower because the current study, in contrast to the study by Aboud (2006), also involves care groups with infants (0–2 year-olds in factory-based child care). This is in line with research in Dutch child care centers, which has demonstrated that caregiver interactive skills are significantly lower in care groups with infants, compared to care groups with older children (Helmerhorst et al., 2015; De Kruif et al., 2009; De Schipper et al., 2007). Nevertheless, stakeholders in our study have indicated the importance of all six CIP scales, and as such the relatively low average scores on all six CIP scales in the current study warrant policies and practices in Bangladesh to improve the quality of caregivers’ interactive skills through training and professional development (LoCasale-Crouch et al., 2007; Mashburn et al., 2008). Caregivers scored relatively low on sensitive responsiveness, respect for autonomy, structuring and limit setting, verbal communication, and developmental stimulation compared to studies in the Netherlands and Norway. For fostering positive peer interactions however, scores resembled the Dutch ($M = 1.72$ $SD = 0.83$) and Norwegian scores ($M = 1.53$ $SD = 0.35$) (Bjørnstad et al., 2020; Helmerhorst et al., 2015; De Kruif et al., 2009). Altogether, these first results on quality of caregiver–child interactions in early child care centers in Bangladesh suggest there is much room for improvement in terms of caregiver interactive skills.

Evaluation of Training on Caregiver Interactive Skills

In a next step, we evaluated a newly developed caregiver training to improve pedagogical quality of early child care centers. Results suggest a positive overall influence of the training over time. Caregivers that received training scored higher on all CIP scales except structuring and limit setting. The effect size found in the present study is very much in line with the moderate effect sizes reported in previous meta-analyses on the effects of caregiver training in child care (Fukkink & Lont, 2007; Werner et al., 2016). However, we should be cautious when interpreting the effects of the current training, considering that, as can be seen in Table 5, average scores for verbal communication, developmental stimulation and fostering positive peer interactions remained in the inadequate quality range. Scores for sensitive responsiveness and respect for autonomy nonetheless improved to the moderate quality range.

A possible explanation for the relatively low scores at pre- and posttest for verbal communication, developmental stimulation, and fostering positive peer interactions could lie in the fact that average scores for sensitive responsiveness and respect for autonomy are in the inadequate (pretest) and moderate (posttest) quality range. This indicates that caregivers at pretest provide minimal or inconsistent emotional support to the children and can be intrusive toward the children without recognizing children’s intentions and perspectives. To obtain higher scores for verbal communication, developmental stimulation, and fostering positive peer interactions, a caregiver should be sensitive and responsive to children’s needs and nonintrusive. For example, a high score for developmental stimulation indicates that the caregiver provides adequate and attuned stimulation to the children’s developmental level and current stage. As such, the caregiver prevents over- and under-stimulation of the children. This example illustrates that it is not likely that a caregiver scoring in the lower ranges of sensitive responsiveness and respect for autonomy, would obtain moderate to high scores for verbal communication, developmental stimulation, and fostering positive peer interactions. This however does not imply that caregivers in Bangladesh do not provide developmental stimulation (or verbal communication and fostering positive peer interactions) at all. It is very well possible that they do provide developmental stimulation, but that this stimulation is not adequately attuned to the children’s developmental needs or intrusive. This interpretation of the findings came up when discussing the scores with the raters of the videos. Future studies should, however, investigate further whether our assumptions are indeed correct. Furthermore, we would also recommend future studies taking the time to thoroughly discuss the more “basic” interactive skills as sensitive responsiveness, respect for autonomy, and structuring and limit setting first during the training program. In a second step, the

more “educational” interactive skills as verbal communication, developmental stimulation, and fostering positive peer interactions would be discussed with the emphasis on the fact that to obtain higher scores on the “educational” skills, caregivers should be nonintrusive and adequately attuned to children’s developmental stage.

For future research, it would be interesting to evaluate the set-up of the current training program and determine whether all topics discussed in the present training program should be retained or that the training program could be slimmed down to a more comprehensive and less time-consuming program. Werner et al. (2016) found that training programs with more than 10 training hours in total did not differ in their effectiveness from programs with less than 10 hours of training in total, indicating that more is not always better. Currently, the training encompasses a broad range of topics, and it could be beneficial for several reasons for example, to explore options to divide the current training into several comprised training programs, that each discusses a single topic instead of a wide range of topics. Nevertheless, in terms of training satisfaction, it is encouraging that caregivers indicated to be very satisfied with the training.

Next, in terms of reviewing the current training program, the large variability in scores between caregivers on the CIP scales and the moderate intercorrelations between the CIP scales suggest that caregivers might benefit from individual training sessions next to the group sessions. That way, the training program would be attuned to individual caregiver profiles, which could optimize the effects of the existing training program. This is also in line with research demonstrating that training through workshop-style learning tends to have a lower sustained change in practice, compared to training in which in-service coaching is added (see for example, Artman-Meeker et al., 2015; Kraft et al., 2018). Finally, building on the present training program, several previous (meta-analytic) studies have demonstrated that one of the most powerful ways to improve caregiver interactive skills is to incorporate video feedback in the training program (Helmerhorst et al., 2017; Werner et al., 2016). As such, we would encourage future research and training approaches to investigate the possibility of adding video feedback sessions to the existing training program.

Limitations and Future Directions

This study is subject to several limitations. First and foremost, an important methodological limitation is that the current study was quasi-experimental and not a controlled trial with random assignment at caregiver level. As such, we cannot fully ensure that differences between the experimental and control group are attributed to the caregiver training. Although we did not find significant differences at pretest between caregivers in the control and experimental condition on quality of caregiver interactive skills, it is possible that, for instance, the selection criteria for caregivers in the experimental group (being committed to their work) resulted in more motivated caregivers in the experimental group compared to the control group. Effectiveness of interventions in child care centers in low- and middle-income countries is seldomly examined using a randomized controlled trial (Higgins & Green, 2011), future research could therefore examine whether a random assignment is feasible in the context of Bangladesh. Secondly, sample size of the current study is relatively modest and as such we should be careful in generalizing the findings of the current study to the entire Bangladeshi context. Moreover, the current study was conducted in the RMG sector and urban/semi-urban child care centers only. Future research would benefit from recruiting child care centers from all different child care settings and thus should also include specific organizations (governmental and non-governmental) and privately owned child care centers. However, findings of the current study are nevertheless interesting and provide important first insights on pedagogical quality of early child care in RMG factories and rural communities from Bangladesh. Third, we should be aware of the fact that the results of the stakeholder questionnaire interviews have a relatively high risk for socially desirable answers. The reason we nonetheless choose this approach to collect data is that most stakeholders have little to low literacy levels and as such written questionnaires were not an option. To reduce social desirability as much as possible, we explicitly

decided to ask these questions halfway through the questionnaire. Furthermore, we did not ask stakeholders to explain their ratings on the importance of the caregiver interactive skills. To better understand why stakeholders rated as they did, future studies could question stakeholders to understand their reasoning behind their scores. Finally, it should be noted that the posttest was planned one month after the last training session and not directly after the last session. As such, the positive moderate effects of the training are an important finding. It is possible that the effects of the training would have been even larger directly after the training. Future research would therefore benefit from a posttest directly after and a follow-up test several months after the last training session, which would provide more insights into both the direct and possible delayed effects of the training.

Implications for Policy and Practice and Conclusion

Considering that more and more children are attending early child care centers in Bangladesh, the relatively low scores on caregiver interactive skills underscore that it is important to assess and monitor pedagogical quality in early child care, also in future research. Focusing on caregiver interactive skills with young children in preschool years is specifically imperative given that children in these early developmental stages are very dependent on their caregivers and are most susceptible for the quality of interactions with their caregivers (e.g., Bornstein, 2019; Verhoeven et al., 2019). Furthermore, developmental theories and models consider the six caregiver interactive skills, as measured with the CIP scales (i.e., sensitive responsiveness, respect for autonomy, and structuring and limit setting, verbal communication, developmental stimulation, and fostering positive peer interactions), to be important for young children's wellbeing and development (Helmerhorst et al., 2014).

Although this study demonstrates that there is much room for improvement, the study of Aboud (2006) suggests that even Bangladeshi preschools of low to moderate quality by Western standards had a positive influence on children's development. Against this backdrop, it is encouraging that the results of the newly developed training program from BRAC IED are promising; implementing a training program in early child care centers in Bangladesh is positively related to caregiver interactive skills and caregivers' training satisfaction was also high. These findings provide preliminary evidence that quality of caregiver-child interactions in the Bangladesh urban child care context can be strengthened by training. It is thus important that the government of Bangladesh finalizes a Child Care Act, which should provide clear guidelines and regulations for quality in formal child care. Furthermore, this Child Care Act should also describe aspects of process quality, such as caregiver interactive skills. Next, a monitoring system to control quality of care will be essential. However, we realize that all of this is easier said than done. This would require a tremendous effort of multiple stakeholders in Bangladesh, who jointly recognize the need for (improving) quality of child care and thus jointly invest in young children's development.

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