The Impact of Responsive Parenting Program Towards Early Childhood Development Outcomes

Siti Aisah
Department of Program and Sponsorship ChildFund International in Indonesia Jakarta, Indonesia
iaisah@childfund.org

Granasti Aprilia
Department of Program and Sponsorship ChildFund International in Indonesia Jakarta, Indonesia
gaprilia@childfund.org

***Abstract*—Apart from food, sanitation and access to health services, warmth and responsiveness by adult caregivers to a child's needs are equally important for optimal survival and development. This research was carried out to examine the effect of a responsive parenting program towards early childhood development in 17 ChildFund-assisted locations in Indonesia. A comparative research design was used to compare results of responsive parenting implemented in both intervention and non-intervention groups. Quantitative data were collected out of interviews and assessments of parents to examine parenting knowledge, attitude, and practices among a total of 321 parents who participated in the program and 358 non-intervention parents. The development of a total of 311 children of the intervention group and 344 children of the non- intervention group were also measured. The main outcome of early childhood development towards 0 to 35- month-old children is measured through CREDI (Caregiver Reported Early Childhood Development Instrument) and IDELA (The International Development and Early Learning Assessment) for children aged 42 to 72-month-old. Changes in parenting behavior were measured using HOME (Home Observation for Measurement of the Environment) to disclose parental responsiveness and Multiple Indicator Cluster Survey (MICS) version 6 to observe the application of stimulation activities and parental discipline practices towards children. The result of data analysis indicate that the responsive parenting program has brought positive impacts on increasing child development achievements. Parents who participate in responsive parenting program were shown to have better knowledge and practices of parenting as well as better knowledge of child stimulation than non-intervention parents. However, parents from both groups still face challenges implementing nonviolent parenting practices at home.**

Keywords: child development, parenting, responsive parenting

I. INTRODUCTION

A child's early years are a crucial developmental period and lay the foundation for future growth, learning and well-being. Globally, an estimated 250 million children under 5 years of age (43%) are at risk of not achieving their developmental potential in the earliest years of life due to several nutritional, health and psychosocial risks (Black et al., 2017; Lu et al., 2016; Walker at al., 2007; Walker et al., 2011). Promoting healthy growth and development of children during early life is very important for the global policy agenda, including in Indonesia. Therefore, various promotive interventions from the aspects of nutrition and health, as well as parenting are carried out to ensure that children can achieve optimal growth and development.

Promotive interventions are very important in the first 3 years of life when the developing brain is most sensitive to experiences and the environment. Additionally, this is a period of rapid change across all domains of development (McLean et al., 2023; Shonkoff et al., 2012). In this formative phase, the quality of the parent-child relationship plays a central role in shaping a child's

developmental course. Responsive parenting characterized by sensitivity, warmth, and consistent support, has emerged as a key factor in promoting optimal early childhood development. Responsive parenting can be described as the ability of the parents to read and respond to the child's needs in a timely and appropriate manner (Eshel et al., 2006; Guralnick, 2006). This approach includes providing emotional support, participating in mutual interactions, and meeting the child's physical and psychological needs. With responsive parenting practices, parents create a safe and nurturing environment that promotes healthy growth and development of their children. Recent evidence has revealed that parenting interventions that strengthen parent-child relationships are more effective to improve early cognitive, language, motor, and socioemotional development. (Engle and Ricciuti, 1995; Richter 2004; Shonkoff and Phillips, 2000).

Understanding the significance of responsive parenting in nurturing early child development holds significant implications for parents, caregivers, educators, and policymakers. Responsive parenting has contributed to the well-being and future success of children, and ultimately fosters healthier and more prosperous communities. Since 2018, ChildFund International in Indonesia has been working with implementing partners to develop the quality of the responsive parenting program for participating families. The responsive parenting program helped parents expand their parenting knowledge and skills to meet their children's basic needs from birth to age 5, ranging from health, nutrition, early intervention and the adoption of child protection and disaster risk reduction elements into the program.

By the end of 2021 ChildFund International in Indonesia, in collaboration with implementation partners, has managed to capacitate 540 community-representative facilitators in 32 districts/cities to deliver 206 responsive parenting class sessions and assist 10,330 parents and children in sustainable protection efforts and healthy environment that supports optimal growth and development of children. This action research is an assessment tool to determine the impact of the responsive parenting program, which has been running for four years. The study observed and assessed parents' knowledge, attitudes and perceptions towards parenting and relevant daily habits by comparing parents and children participating in the responsive parenting program with parents and children from other villages who did not participate in the program. The aim of the research is to measure the impact of responsive parenting program towards early childhood development outcomes in 17 assisted locations, conducted in collaboration with 9 implementing partners, from February to July 2021.

II. METHODS

Study Design

We used comparative research to compare the results of program implementation in the responsive parenting participant group and the non-participant group. Quantitative data were collected in person with strict COVID-19 health protocols.

Participant

This study was conducted from February to July 2021. Seventeen villages across 12 regencies/cities were carefully selected as study sites to provide diverse contextual features of ChildFund's responsive parenting program in Indonesia. The twelve regencies/cities are South Jakarta, Cilacap, Banyumas, Kulon Progo, Sumba Barat Daya, Sumba Timur, Kupang, South Lampung, Ende, Sikka, Belu, and Malaka. The sample of parents was collected using a multi-stage random sampling method to obtain representative respondents from the population. The total number of parents participating in the responsive program from 17 locations was 1,299 people. With a margin of error of 5% and a confidence interval of 95%, the required minimum sample size was 323 people. After adding 20% for proportional sampling, the study retrieved data from 388 people as the final target sample. After the data were sorted and cleaned 321 individuals from the intervention group and 358 individuals from the non-intervention group were identified as the final respondents.

The study also required groups of children aged 0-35 months and children over 35 months. The total number of children involved in the study must match the parents, which were 388 people. During children data collection from different study sites, the study found 103 children aged 0-35 months and 294 children aged 42-72 months. Following data sorting and cleaning, it was identified that the study engaged 68 children aged 0-35 months and 243 children aged 42-72 months in the intervention group, and 98 children aged 0-35 months and 246 children from 42-72 months in the non-intervention group. In summary, 311 children of the intervention group and 344 children of the non-intervention group were surveyed.

Data collection

Quantitative data were collected from parents and children. With an open data kit program, enumerators were trained to read out the questionnaires and input all respondents' answers. During their visit to the parents, they identified the age of the children, followed by assessment to measure the children developmental status and assessment to the parents afterwards. ChildFund child protection guidelines were implemented throughout the research process to ensure the child safeguarding. We ensured to obtain the respondent's consent before conducting data collection. For children's respondents, we first required parents to complete a parental consent form. Parents are constantly involved in the process to ensure the child's safety, comfort, and well-being.

Research Instrument/Measurement

To measure aspects of parental knowledge, attitudes and practices, different questionnaires were used. A knowledge measurement tool was developed by the research team based on responsive parenting program modules, which are parenting skills and child stimulation activities. Most of the materials were given and practiced during the responsive parenting program's class sessions. Aspects of parental attitudes and practices were measured using globally standardized HOME inventory (Home Observation for Measurement of The Environment) and Multiple Indicator Cluster Survey (MICS) version 6 observing practice of stimulation activities and parental disciplining on children. MICS version 6 is to further measure, in a natural setting, the quality and quantity of stimulation and support available to children at home. The eight dimensions measured using this tool include learning materials, language stimulation, physical environment, parental responsivity, academic stimulation, modelling, variety in daily stimulation, and acceptance of the child.

MICS are household surveys designed to collect and analyze statistically sound and internationally comparable data on important social indicators to monitor the situation of children and women, including child protection and early childhood education. MICS serves as the main source of data on children's health and nutrition. The new MICS6 incorporates rapid tests of water quality, social transfer, basic learning skills, child and adult role functioning, migration status, etc.

Aspects of child development were measured according to age. For children aged 0-35 months, CREDI was used while IDELA was used for children aged 42-72 months. These measurement tools have been adapted and used in various studies in Indonesia. They were also selected in this study because of their ability to measure outcomes by assessing project impacts at the population level rather than the individual level. CREDI is used in this study as a measurement tool to assess the overall developmental status of children aged 0-3 years in a specific population. The development of children under 3 is measured in four domains: motor, cognitive, language and social-emotional. CREDI is a low-cost tool which has been shown to have good properties of validity and reliability (McCoy et al., 2018).

The study also used IDELA to measure the impact of the responsive parenting program on the development of children aged 42-72 months. Five measurement areas of IDELA focus on: 1) socio-emotional development; 2) emergent numeracy; 3) new literacy; 4) motor development; 5) executive function.

Data Analysis

This study used quantitative analysis to assess the characteristics of respondents and the differences between intervention group and non-intervention group. Descriptive quantitative analysis was used to explore the sociodemographic characteristics of parents and caregivers, parental knowledge and practice on parenting skills and children stimulation in intervention and non-intervention group. Moreover, to assess the impact of responsive parenting programs on children aged 0-35 months (under 3 years) and children aged 42-72 months, the significant difference of intervention and non-intervention group was evaluated using the t-test analysis. A p-value of less than 0.05 will determine the statistical difference between both groups.

The results of this study will be useful for encouraging caregivers and the community to implement responsive parenting patterns to improve the quality of children's growth and development. Furthermore, it can also be used as a recommendation for alternative policies in the future to support the creation of an environment that supports optimal child growth and development.

III. RESULTS AND DISCUSSION

III.1 *The Multiple Indicator Cluster Survey 6 (MICS6)*

A total of 679 parents and caregivers (321 individuals from the intervention group and 358 individuals from the non-intervention group) participated as study respondents. MICS6 shows demographic characteristics of parents and caregivers (e.g., gender, age, education level, income, and family structure). Caregivers on this study, mostly mothers were between <20 and >50 years old, 91% of the intervention group and 93% of the non-intervention group. Grandmothers were among primary caregivers from the intervention (4.7%) and non-intervention group (3.6%). In addition, fathers who among primary caregivers from the intervention (2.5%) and non-intervention group (2.2%). Other primary caregivers that appeared in the data were aunts, adoptive parents, and others. The age range with the highest number of respondents was 30-39 years, comprising 46% in the intervention group and 49% in the non-intervention group. Most parents and caregivers graduated from high school, 67% of the intervention group and 65% of the non-intervention group. Other respondents graduated from junior high school (18% of the intervention group and 24% of the non-intervention group) and elementary school (15% of the intervention group and 11% of the non-intervention group).

In terms of income, the data showed that about half of the respondents (49% of the intervention group and 58% of the non-intervention group) have an income below IDR 1,400,000 (US$ 93) per month. Then, as many as 24% of families from the intervention group and 19% of families from the non-intervention group earn a total income of between IDR 1,400,000 and IDR 2,100,000 (US$ 139). About 7% of respondents from the intervention group earn a total of between IDR 3,000,001 (US$ 199) and IDR 4,200,000 (US$ 279) and only 6% of respondents from the non- intervention group earn more than Rp. 4,200,000 (US$ 279) per month.

Regarding family structure, most respondents, both from intervention group (61%) and the non-intervention group (64%) stated that their children live with no more than three adults aged over 18 years in the house. Most adult respondents (81% of the intervention group and 84% of the non-intervention group) live with less than three children at home. Most respondents (94% of the intervention group and 91% of the non-intervention group) also live with their spouse. We have a limitation during the data collection process due to the COVID-19 pandemic which affected the reduction in the number of respondents. Some potential respondents could not be contacted for face-to-face data collection due to some constraining situations. The flash flood disaster also canceled data collection from one study site in Flores Timur. Although the number of respondents did not reach the initial target, the minimum sample size was still met.

majority of participants were not single mothers (70%). Participants' education is dominated by higher education graduates (55%). Meanwhile, the participants' jobs are fairly evenly distributed, starting from housewives, working part-time, and working full-time. For economic conditions, participants are more dominated by high SES/can save (56.1%) and can meet their needs. The majority of participants live on the island of Java (67.9%). The 0-24 month age group with male and female sex has a balanced proportion. This age group is divided into 5 age categories which also have fairly balanced proportions.

III.2 *Parental Knowledge and Practices on Parenting Skills, Children Stimulation Activities and Non-violent Disciplinary*

Data analysis results show that the mean score of parents and caregivers' knowledge on parenting skills in the intervention group from all locations is considered higher (65.6%) than parents and caregivers in the non-intervention group (58.9%). Furthermore, the study results showed that respondents from the intervention group achieved a higher mean score of knowledge on children's stimulation activities (67.8%) compared to the non-intervention group (58.3%). This indicates that participating parents in the responsive parenting program have better understanding of parenting skills and children's stimulation activities than parents who do not. Community-based parenting groups have shown promising results in some settings, and may be effective, low-cost platform for interventions to improve child health and development (Aboud, 2007; Aboud et al., 2013; Aboud and Yousafzai, 2014; Lewycka et al., 2013; Prost et al., 2013; Yousafzai et al., 2014). Parenting interventions additionally improved parenting knowledge, attitudes, practices, skills, and parent-child interactions to promote early childhood development (Black et al., 2017; Jeong at al., 2021).

We acknowledge a limitation of this study. The study is not designed to measure changes in the knowledge or behavior of target respondents before and after participating in the responsive parenting program. Therefore, our study is to compare the level of knowledge and behavior between respondents who participate and those who do not participate in the program.

Non-violent disciplinary practices, also measured in the study, focus on how parents care for, educate, and discipline children without violence throughout daily activities. Parental discipline refers to the methods used by parents to correct their children's inappropriate behavior and enforce their obedience (Locke and Prinz, 2002; Quail and Ward, 2020), is an important aspect of positive child development (Dads and Tully, 2019). Unlike violent discipline, nonviolent discipline (NVD) includes taking away privileges, time-outs, compensation, and explanations of expected behaviors. Parents are encouraged to use appropriate NVD strategies to reduce undesired behavior (Ateah et al., 2003). The result of this study showed that most parents of the intervention group still find it difficult to practice non-violent discipline. Only 25% of respondents from intervention group and 32% of respondents in the non-intervention group have practiced non-violent discipline.

The percentage of respondents of the intervention group who still used psychological aggression was higher (59%) than the non-intervention group (56%). In fact, the results of various cross-sectional and longitudinal studies have highlighted that psychological aggression is positively associated with a broad range of maladaptive behaviors, relational problems, and mental health disorders (Kwok, 2011; Spinazzola et al., 2014). Furthermore, the percentage of parents or caregivers of the intervention group who still practice physical punishment was also slightly higher (56%) compared to the non-intervention group (54%). It shows that in general, the practice of positive discipline without violence towards children in Indonesian society is still quite low.

Evidence has shown that punitive discipline can have harmful consequences on children such as anxiety, depression, and aggressive behavior (Cuartas et al., 2019). One reason for the persistence of corporal punishment may be the lack of awareness of positive disciplinary alternatives (Quail and Ward, 2022). However, results by locations shows a higher percentage of intervention group who

have exercised non-violent disciplinary practices than the non-intervention group in 7 out of 12 study locations (South Jakarta, Belu, Malaka, Sumba Timur, Sikka, Ende and Kulon Progo).

In general, the intervention group had a lower percentage of non-violent disciplinary practices than the non-intervention group. This occurrence could be attributed to various factors. It is possible that the non-intervention respondents had a better understanding of applying non-violent discipline to children and tend to provide answers that are aligned with non-violent practices based on their social norms. Hence, this bias could have arisen due to these reasons. Children's rights advocates have recommended the elimination of all forms of violent discipline because of its detrimental impact on children's development. However, little is known about the global prevalence of various forms of discipline, especially in low-and middle-income countries (LMICs) (Cuartas et al., 2019).

III.3 *Observational Analysis of Parenting Practices at Home*

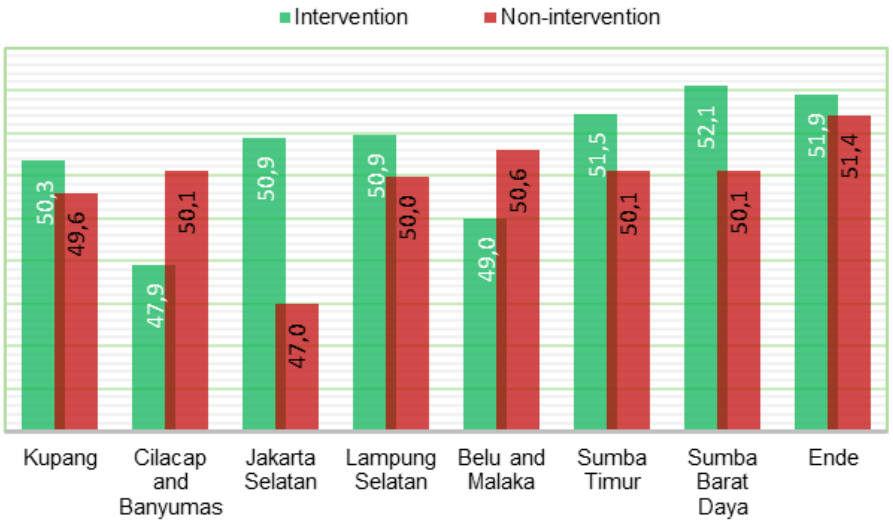
The overall results of HOME inventory measurement show that there is no significant difference in the quality of parental care for children aged 0-35 months from both intervention and non-intervention groups. The assessment encompasses six dimensions, which are learning materials, parental responsivity, acceptance of the child, organization of the environment, parental involvement, and variety in daily stimulation. However, the mean score comparison per dimension shows that the intervention group (70.9) has prominent score difference compared to the non-intervention group (64.09) in the environment organization dimension. It means, parents who participate in the responsive parenting program are equipped with better ability to organize family activities, provide a safe and supportive environment for their child's optimal growth and development than parents who are not program participants.

The results of the HOME inventory measurement on parenting practices towards children aged 42-72 months shows significant difference between the total scores of the intervention and non-intervention groups on 7 of 8 assessment dimensions (learning materials, language stimulation, physical environment, parental responsivity, academic stimulation, modelling, variety in daily stimulation, and acceptance of the child). These findings suggest that parents and caregivers' participation in the responsive parenting program enhances the quality of childcare and education at home. T-test measurement shows no significant difference in the dimension of child acceptance across all locations, meaning all respondents from both groups in all study locations have the same ability toapply child discipline practices. Totsika and Sylva (2004) defined HOME as an environmental measurement that systematically assesses the caregiving environment with a focus on children's development.

III.4 *CREDI Measurement*

A total of 67 parents and caregivers from the intervention group and 98 from the non- intervention group with children aged 0-35 months from 10 regencies/cities were enrolled for CREDI measurement. Sikka and Kulon Progo did not have respondents with children under 3 years old, so these two areas were excluded. CREDI is designed to measure five domains that develop most rapidly in children under 3 years old, including motor, language, cognitive, social emotional, and mental health (McCoy et al., 2018). In most study areas (60%), the intervention group had a higher CREDI total score than the non-intervention group as shown in figure 1. Only the intervention groups in Cilacap, Banyumas, Belu and Malaka had CREDI total scores below the non- intervention group. The analysis results on the significance reference *p*-value of 0.05 show a significant difference in the total score and the score for each domain. It means that children whose parents participate in the responsive parenting program demonstrate better development than parents who do not participate in the program.

Figure 1. CREDI Scores by area and group



This result seemed to add to a growing body of literature on early childhood intervention delivery in low resource settings. A series of recent studies in Uganda have provided of the positive potential of community-based parenting interventions to improve child development in Sub-Saharan Africa (Bass et al., 2016; Boivin et al., 2013; Signla et al, 2015). A study in rural Sindh, Pakistan also shown children who received responsive stimulation had significantly higher development scores on the cognitive, language, and motor scales at 12 and 24 months of age (assessed by Bayley Scales of Infant and Toddler Development, Third Edition, and on the social-emotional scale at 12 months of age, than did those who did not receive the intervention Yousafzai et al., 2014). The analysis results by area for each domain shows that in most of study areas (60%), the intervention group had higher mean scores than the non-intervention group; only in Cilacap, Banyumas, Belu, and Malaka that this group had mean scores of domains below the non-intervention group. However, ANOVA test results found no significant differences between areas in the intervention group (*P*-value of 0.082; 0.085; 0.078; and 0.056 respectively for motor, cognitive, language, and socio-motional) and the non-intervention group (*P*-value of 0.086; 0.37; 0.485; and 0.448).

The motor domain measures a child's ability to use fine and gross motor skills involving large and small muscle movements to explore and interact with the environment. Meanwhile, cognitive domain measures a child's ability to pay attention, retain information, solve problems, acquire basic knowledge, understand, and distinguish between people and objects around them. The measurement of the language domain focuses on the child's ability to communicate his/her desires and needs as well as to understand what others are saying, and the social-emotional domain measures a child's ability to control behavior, manage emotions, understand feelings, and get along comfortably with others. When caregivers engage interactively with their children in the first years, providing a high level of stimulation, the children's cognitive and motor functions develop more fully. Meanwhile, in the absence of stimulation, children are at risk of developmental delays, with consequences that can hinder their future education, productivity, and well-being (Heckman, 2012).

Table 1. CREDI scores by group

Group	**All Areas**				
	CREDI Domains				
	Total	**Motor**	**Cognitive**	**Language**	**Social Emotional**
Intervention (n=67)	50,57	50,57	50,29	50,84	50,59
Non-intervention (n=98)	49,79	49,77	49,60	50,06	49,74
***P*-value**	0,02	0,04	0,03	0,02	0,02

The analysis results pertaining to child development between the ages of 0-35 months, with a significance reference p-value of 0.05, demonstrate a noteworthy difference in the total score and scores for each domain, as shown in table 1. The ANOVA test conducted on data for children aged 0-35 months, utilizing the CREDI instrument, indicated a significantly higher mean score difference in the intervention group for the motor domain (p-value = 0.044), cognitive domain (p-value = 0.029), language domain (p-value = 0.018), and socio-emotional domain (p-value = 0.023) compared to the non-intervention group. Based on the results, it can be concluded that children aged 0-35 months, whose parents and caregivers participate in the responsive parenting programs tend to exhibit better development in all domains compared to children whose parents do not participate in responsive parenting. In addition to food, sanitation, and access to health services, having a warm and affectionate relationship with an adult caregiver who is responsive to a child's needs is equally crucial for their survival and optimal development (Shonkoff and Phillips, 2000). Such a relationship profoundly influences the health and development of the child, ensuring survival and physical, neurophysiological, and psychological well-being (Shonkoff and Phillips, 2000; Richter 2004; Engle and Ricciuti, 1995). A study of 260 children in rural India demonstrated a significant association between maternal responsiveness and positive deviance with regards to motor, mental, and overall development (Aruna, Vazir and Vidyasagar, 2001).

III.5 *IDELA Measurement*

A total of 489 children aged 42-72 months consist of 243 children from the intervention group and 246 children from the non-intervention group from 12 regencies/cities were enrolled for IDELA measurement. The intervention group in all locations had a higher IDELA total score than the non-intervention group as shown in figure 2. Results of the overall assessment based on the five main IDELA measurement domains revealed that children whose parents enrolled in the responsive parenting program tend to have a higher development status than children from the non-intervention group as shown in table 2. The intervention groups in all study areas achieved higher IDELA total scores compared to the non-intervention groups, as demonstrated in figure 2. This indicates a strong and positive correlation between the responsive parenting practiced by parents or caregivers and the child's age-appropriate development in the domains of socio- emotional, emergent numeracy, emergent literacy, motor development, and executive function.

Figure 2 Figure 2. IDELA scores by area and group

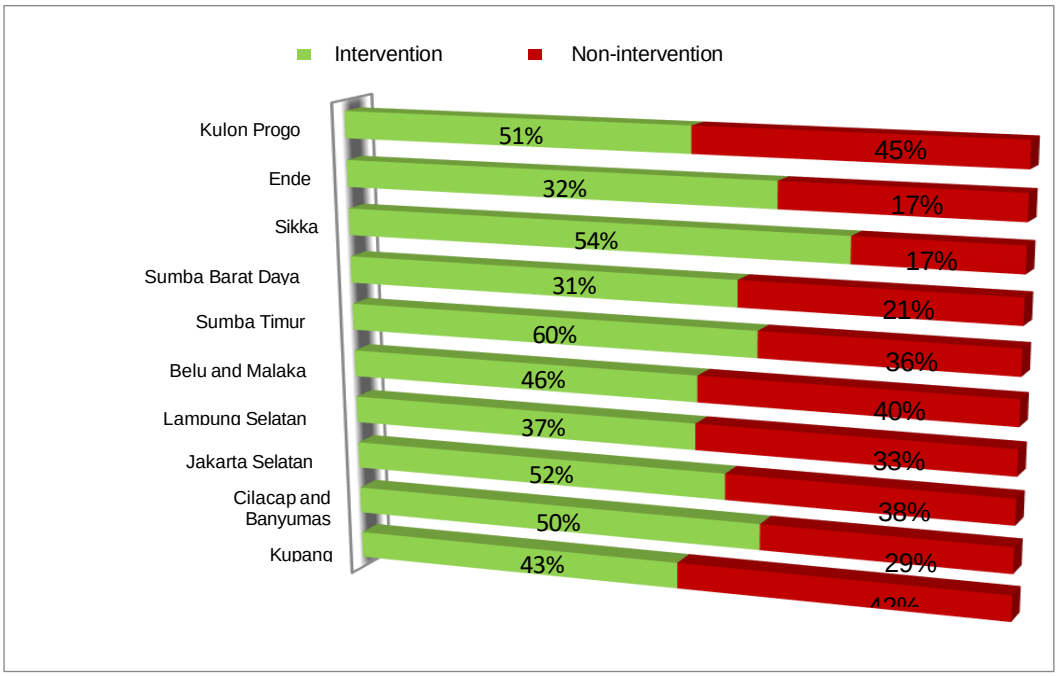


Table 2. IDELA scores by group

Group	% Children have age-appropriate growth and development				
	Socio-Emotional	Emergent Numeracy	Emergent Literacy	Motor Development	Executive Function
Intervention	37%	56%	37%	53%	44%
Non-intervention	28%	41%	22%	38%	32%

The IDELA was developed in 2011 by Save the Children as a holistic, rigorous, open- source assessment that is feasible and easily adapted to different national and cultural contexts (Wolf et al., 2017). Socio-emotional domain in this study measures the development of children's emotional intelligence, including their ability to interact positively with people in the surrounding environment, which is elaborated in five aspects of the assessment subdomain: 1) self-awareness; 2) peer relations; 3) emotional awareness; 4) empathy; 5) conflict resolution. In emergent numeracy domain, a child's fundamental ability to hone logic is measured based on seven subdomain aspects, namely: 1) measurement and comparison; 2) classification/sorting; 3) shape identification; 4) number identification; 5) simple operations; 6) one-to-one correspondence; and 7) simple problem solving. The development of children's early literacy skills is measured in six subdomain aspects: 1) expressive vocabulary; 2) print awareness; 3) letter identification; 4) initial sound discrimination; 5) emergent writing; 6) listening comprehension. In the motor domain, children's development is assessed based on the ability to mobilize their gross and fine motor skills in carrying out tasks of four subdomain aspects: 1) copying a shape; 2) drawing a human figure; 3) folding paper; 4) hopping on one foot. While executive function is one of the factors of cognitive development in humans that shows the ability to regulate and plan their behavior. IDELA measures this ability in two aspects of subdomains: 1) short-term memory; and 2) inhibitory control. The results of data analysis indicate that the responsive parenting project has brought positive impacts on increasing child development achievements.

Given our findings, there are broad directions for future research. Given that preschool cognitive skills have been shown to be good predictors of higher educational attainment and adult labor productivity, our findings have serious implications for creating Indonesia's Golden Generation in 2045. Further research is needed to design and upscale programs that promote parenting skills and practices and increase non-violent disciplinary practices among caregivers.

Based on our review of childcare interventions, it was found that parenting skills and practices can be promoted, and the current interventions have proven to be effective in enhancing responsiveness among caregivers, echoing results of World Health Organization's program on mental health (1998): all adults have the capacity to lovingly care for their children, but a number of reasons stop some from doing so: poverty, stress, illness, or just lack of awareness of the need for such care. The interventions we reviewed attempted to tackle the lack of awareness factor by using several strategies, such as home visits, clinic care, adult education, community projects, family therapy and mass media education.

IV. CONCLUSION AND RECOMMENDATION

A strong association exists between the responsive parenting program and child development, leading to better outcomes for children. The responsive parenting program demonstrated effectiveness in improving the developmental scores of children under 5 years old, as measured by the CREDI and IDELA instruments. This positive impact was observed when the program was targeted at a population and focused on specific behavioral changes. The responsive parenting program seemed effective to increase children's developmental scores aged under 5 years based on CREDI and IDELA

instruments when targeted at population and focused on specific behavioral change. Parenting knowledge and practices of parents who participate in this program have been shown to increase effectively; also, parents' knowledge of child stimulation increased. While parents are facing challenges to apply non-violent parenting practices at home. Our responsive parenting modules offer in-depth knowledge and practical parenting skills to effectively stimulate, identify, and intervene in the early childhood growth and development process. Furthermore, these modules can be adapted and tailored to suit local conditions and circumstances. Additionally, the responsive parenting program can be implemented at a minimal cost and easily integrated with existing child and family education programs, especially at the village and subdistrict levels, offering a flexible approach.

V. ACKNOWLEDGMENTS

We would like to express our sincere gratitude to all the individuals and organizations that contributed to the completion of this research project. First, we would like to thank our organization, ChildFund International in Indonesia, for the full support of this project. The resources and facilities provided by the organization greatly facilitate our research activities. We would like to thank the research team who contributed their time, expertise, and effort to the successful completion of this study. We would also like to thank the implementing partners involved for their cooperation and the data collection process for this research. Lastly, we would like to extend our thanks to all the participants who generously volunteered their time and participated in this study.

REFERENCES

Aboud F.E. (2007). Evaluation of an early childhood parenting programme in rural Bangladesh. J Health Popul Nutr. 2007; 25:3–13. PMID: 176158991.

Aboud F.E, Singla D.R, Nahil M.I, Borisova I. (2013). Effectiveness of a parenting program in Bangladesh to address early childhood health, growth and development. Soc Sci Med. 2013; 97:250–8. https://doi.org/ 10.1016/j.socscimed.2013.06.020 PMID: 23871435.

Aboud F.E, Yousafzai A.K. (2015). Global health and development in early childhood. Annu Rev Psychol. 2015; 66:433–57. https://doi.org/10.1146/annurev-psych-010814-015128 PMID: 25196276.

Aruna M, Vazir S, Vidyasagar P. (2001). Child rearing and positive deviance in the development of preschoolers: a microanalysis. *Indian Pediatr*,38,332-9.

Ateah, C.A, Secco M.L, Woodgate R.L. (2003). The risks and alternatives to physical punishment use with children, Journal of Pediatric Health Care, Volume 17, Issue 3, 2003, Pages 126-132, ISSN 0891-5245, https://doi.org/10.1067/mph.2003.18.

Bass J.K, Nakasujja N, Familiar-Lopez I, Sikorskii A, Murray S.M, Opoka R, et al. (2016). Association of caregiver quality of care with neurocognitive outcomes in HIV-affected childrenaged 2–5 years in Uganda. AIDS Care. 2016; 28(Suppl 1):76–83.

Black M.M, Walker S.P, Fernald L.C.H, Andersen C.T, DiGirolamo A.M, Lu C, et al. (2017). Early childhood development coming of age: science through the life course. Lancet. 2017; 389(10064):77–90. https://doi. org/10.1016/S0140-6736(16)31389-7 PMID: 27717614.

Boivin M, Bangirana P, Nakasujja N, Page CF, Shohet C, Givon D, et al. (2013). A year-long caregiver training program to improve neurocognition in preschool Ugandan HIV-exposed children. J Dev Behav Pediatr. 2013; 34:269–78. https://doi.org/10.1097/DBP.0b013e318285fba9 PMID: 23535340.

Britto, P. R., Lye, S.J., Proulx, K., Yousafzai, A. K., Matthews, S.G., Vaivada, T, et al. (2017). Nurturing care: Promoting early childhood development. Lancet. 2017;389(10064):91–102. pmid:27717615.

Dadds, M.R, Tully, L.A. (2019). What is it to discipline a child: What should it be? A reanalysis of time-out from the perspective of child mental health, attachment, and trauma. Am Psychol. 2019 Oct;74(7):794-808. doi: 10.1037/amp0000449. Epub 2019 Feb 25. PMID: 30802080.

Engle, P.L, Ricciuti H.N. (1995). Psychosocial aspects of care and nutrition. *Food Nutr Bull*,16,356-77.

Eshel, N., Daelmans, B., Cabral De Mello, M., & Martines, J. (2006). Responsive parenting: interventions and outcomes. *Bulletin of the World Health Organization,* 84(12), 992 - 998. World Health Organization. Retrieved from https://apps.who.int/iris/handle/10665/269790

Guralnick, M. J. (2006). Family influences of early development: Integrating the science of normative development, risk and disability, and intervention. In K. McCartney & D. Phillips (Eds.), *Handbook of early childhood development* (pp. 44– 61). Blackwell Publishers.

Heckman J. Giving Kids a Fair Chance. Boston, MA: The MIT Press; 2013. Retrieved from https://mitpress.mit.edu/books/givingkids-fair-chance.

Jeong J, Franchett E.E, Ramos de Oliveira C.V, Rehmani K, Yousafzai A.K (2021) Parenting interventions to promote early child development in the first three years of life: A global systematic review and meta-analysis. PLoS Med 18(5): e1003602. https://doi.org/10.1371/journal.pmed.1003602.

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 & Neglect, Volume 92, 2019, Pages 93-105, ISSN 0145-2134, https://doi.org/10.1016/j.chiabu.2019.03.021.

Lewycka S, Mwansambo C, Rosato M, Kazembe P, Phiri T, Mganga A, et al. (2013). Effect of women's groups and volunteer peer counselling on rates of mortality, morbidity, and health behaviours in mothers and children in rural Malawi (MaiMwana): a factorial, cluster-randomised controlled trial. Lancet. 2013; 381:1721–35.https://doi.org/10.1016/S0140-6736(12)61959-X PMID: 23683639.

Locke, L.M and Prinz, R.J. (2002). Measurement of parental discipline and nurturance, Clinical Psychology Review, Volume 22, Issue 6, 2002, Pages 895-929, ISSN 0272-7358, https://doi.org/10.1016/S0272-7358(02)00133-2.

Lu C, Black M.M, Richter LM. (2016). Risk of poor development in young children in low-income and middle-income countries: an estimation and analysis at the global, regional, and country level. Lancet Glob Health. 2016; 4(12):e916–e22. Epub 2016/10/09. https://doi.org/10.1016/S2214-109X(16)30266-2 PMID: 27717632.

McCoy, D.C., Waldman, M., CREDIFieldTeam1, & Fink, G. (2018). Measuring early childhood development at a global scale: Evidence from the Caregiver-Reported Early Development Instruments. Early Childhood Research Quarterly, 45, 58-68.

McCoy, D.C., Seiden, J., Waldman, M., & Fink, G. (2021). Measuring early childhood development: Considerations and evidence regarding the Caregiver Reported Early Development Instruments. Annals of the New York Academy of Sciences, 1492, 3-10.

McLean, M.A., Humphreys, K.L., Zeanah, C.H. (2023). Infant Development: The First 3 Years of Life. In: Tasman, A., et al. Tasman's Psychiatry. Springer, Cham. https://doi.org/10.1007/978-3-030-42825-9_97-1.

Prado, E. L., Larson, L. M., Cox, K., Bettencourt, K., Kubes, J. N., Shankar, A.H. (2019). Do effects of early life interventions on linear growth correspond to effects on neurobehavioural development? A systematic review and meta-analysis. Lancet Glob Health. 2019;7(10):e1398–e413. Epub 2019/09/21. pmid:31537370.

Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A, et al. (2013). Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. Lancet. 2013; 381:1736–46. https://doi.org/10.1016/S0140-6736 (13)60685-6 PMID: 23683640.

Quail, K. R., and Ward, C. L. (2022). Nonviolent Discipline Options for Caregivers and Teachers: A Systematic Overview of the Evidence. Trauma, Violence, & Abuse, 23(2), 620-638. https://doi.org/10.1177/1524838020967340.

Richter L. (2004). *The importance of caregiver-child interactions for the survival and health development of young children: a review*. Geneva: World Health Organization.

Signla D.R, Kumbakumba E, Aboud F.E. (2015). Effects of a parenting intervention to address maternal psychological wellbeing and child development and growth in rural Uganda: a community-based, cluster-randomised trial. Lancet Global Health. 2015;3:e458–69. https://doi.org/10.1016/S2214-109X(15)00099-6 PMID: 26144389.

Shonkoff J.P, Phillips DA, editors. (2000). *From Neurons to Neighborhoods: The Science of Early Childhood Development.* Institute of Medicine. Washington: National Academy Press.

Shonkoff J.P, Richter L, van der Gaag J, Bhutta Z.A. (2012). An integrated scientific framework for child survival and early childhood development. Pediatrics. 2012; 129(2):e460–72. Epub 2012/01/06. https://doi. org/10.1542/peds.2011-0366 PMID: 22218840.

Totsika, V & Sylva, K. (2004). The Home Observation for Measurement of the Environment Revisited. *Child and Adolescent Mental Health Volume 9*, No. 1, 2004, pp. 25–35. Retrieved from https://lchcautobio.ucsd.edu/wp- content/uploads/2017/04/Sylva_2004.pdf

Walker S.P, Wachs T.D, Gardner J.M, Lozoff B, Wasserman G.A, Pollitt E, et al. (2007). Child development: risk factors for adverse outcomes in developing countries. Lancet. 2007; 369(9556):145–57. Epub 2007/ 01/16. https://doi.org/10.1016/S0140-6736(07)60076-2 PMID: 17223478.

Walker S.P, Wachs T.D, Grantham-McGregor S, Black M.M, Nelson CA, Huffman SL, et al. (2011). Inequality in early childhood: risk and protective factors for early child development. Lancet. 2011; 378 (9799):1325–38. Epub 2011/09/29. https://doi.org/10.1016/S0140-6736(11)60555-2 PMID: 21944375.

Wolf, S., Halpin, P., Yoshikawa, H., Dowd, A. J., & Pisani, L. (2017). Measuring school readiness globally: Assessing the construct validity and measurement invariance of the International Development and Early Learning Assessment (IDELA) in Ethiopia. Early Childhood Research Quarterly, 41(April), 21–36. https://doi.org/10.1016/j.ecresq.2017.05.001.

World Health Organization Programme on Mental Health. (1997). *Improving mother/ child interaction to promote better psychosocial development in children*. Geneva: World Health Organization.

Yousafzai A.K, Rasheed M.A, Rizvi A, Armstrong R, Bhutta Z.A. (2014). Effect of integrated responsive stimulation and nutrition interventions in the Lady Health Worker programme in Pakistan on child development, growth, and health outcomes: a cluster-randomised factorial effectiveness trial. Lancet. 2014; 384:1282–93. https://doi.org/10.1016/S0140-6736(14)60455-4 PMID: 24947106.