



Combining pre-school teacher training with parenting education: A cluster-randomized controlled trial



Berk Özler^{a,*}, Lia C.H. Fernald^b, Patricia Kariger^b, Christin McConnell^c, Michelle Neuman^d, Eduardo Fraga^e

^a Development Research Group, World Bank, USA

^b School of Public Health, University of California, Berkeley, USA

^c Education Global Practice, The World Bank, USA

^d Graduate School of Education, University of Pennsylvania, USA

^e Department of Economics, Yale University, USA

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ABSTRACT

We used a randomized, controlled study to evaluate a government program in Malawi, which aimed to support child development by improving quality in community-based, informal preschools through teacher training, financial incentives, and group-based parenting support. Children in the integrated intervention arm (teacher training and parenting) had significantly higher scores in assessments of language and socio-emotional development than children in preschools receiving teacher training alone at the 18-month follow-up. There were significant improvements in classroom organization and teacher behavior at the preschools in the teacher-training only arm, but these did not translate into improved child outcomes at 18 months. We found no effects of any intervention on child assessments at the 36-month follow-up. Our findings suggest that, in resource-poor settings with informal preschools, programs that integrate parenting support with preschools may be more (cost-) effective for improving child outcomes than programs focusing simply on improving classroom quality.

1. Introduction

Early childhood is a sensitive period during which adverse exposures as well as positive interventions can have large effects on an individual's developmental trajectory (Heckman and Mosso, 2014; Black et al., 2017). Children living in poverty are less likely to attend school and less likely to learn when they are in the school setting, often because they are unprepared for school when they get there (Behrman et al., 2006).¹ Returns to investments in early childhood are often higher than investments made later in life because beneficiaries have a longer time to

reap the rewards, and because early investments have dynamic complementarities (Carneiro and Heckman, 2003).²

Investments in early child development (ECD) can take many forms, including promotion of good health and nutrition, parenting support and early learning experiences, and social sector investments (Britto et al., 2017). Preschool attendance, for example, is associated higher child development scores across a range of outcomes (for reviews, see (Engle et al., 2011; Rao et al., 2015)).³ Teacher training programs to improve preschool quality are generally most effective when programs provide complementary materials, including textbooks or reading materials, and

* Corresponding author.

E-mail address: bozler@worldbank.org (B. Özler).

¹ Pre-primary (or preschool) programs generally refer to an organized learning group that meets at least 2 h per week and can be categorized as formal (institutionalized, intentional and planned through public organizations) or informal (not institutionalized, less structured, less organized) (UNESCO, 2011).

² Early life investments can be beneficial for children for a range of outcomes including better labor market returns (Gertler et al., 2014); programs targeting disadvantaged children can also be socially efficient (Elango et al., 2015).

³ Enrollment in preschool programs has increased substantially in LMICs over the past several decades (Behrman et al., 2013), but is still far from optimal. UNESCO's Global Monitoring Report of pre-primary enrollment rates in 2012 showed coverage ranging from 19% (86%) for low-income (high-income) countries (UNESCO, 2015). Preschool attendance compared with non-attendance has been associated with better cognitive performance among preschool children in Mozambique (Martinez et al., 2012); reduced dropout and grade repetition among children in Uruguay (Berlinski et al., 2008); better school performance among third graders in Argentina (Berlinski et al., 2009); and improved 4th grade math scores in a national sample in Brazil (Rodrigues et al., 2010). The role of preschool quality is also an area of active investigation (Britto et al., 2014; Behrman et al., 2013).

when there are concrete benefits to teachers for their participation (for review see (Popova et al., 2016)).⁴ Parenting support is another approach to promoting early child development, and there is a large and robust literature demonstrating the efficacy and effectiveness of parenting support programs for the promotion of child development (for review see (Britto et al., 2017)).⁵

In the current study, we test the effectiveness of a range of quality improvement interventions at informal preschools in Malawi on early childhood development and primary school readiness, using a cluster-randomized controlled trial (cluster-RCT). Our study focuses on Community-Based Childcare Centers (CBCCs) in Malawi, which are widespread and estimated to serve 580,000 pre-school aged children in approximately 5000 communities (Drouin and Heymann, 2010). Given the consistent effectiveness of parenting support in the promotion of early child development, and the widespread use of informal preschools within LMICs (Garcia et al., 2008), our findings have the potential for broad policy relevance within a context of extreme poverty and limited government resources.

We designed a four-arm experiment among CBCCs where all groups received a standard kit of learning materials and supplies from UNICEF. The first arm, the comparison group, received only the standard kit of supplies. In the second arm, teachers received training and mentoring in addition to the package of supplies and in a third arm, materials and teacher training were paired with receipt of a small monthly stipend during the first school year following the intervention. In the fourth and final arm of the trial, teacher training and materials were paired with a 12-module, group-based, parenting education program for the primary caregivers of the children enrolled at the CBCC. In this integrated arm, the program used the teachers and their mentors as parenting education facilitators and focused on increasing parental engagement by teaching them specific tools for stimulating their children's cognitive development and promoting their health and nutrition – for example, by reading and playing with them, by washing hands, etc.⁶

We find that primary child development outcomes improved at the

⁴ As an example, the Chilean government developed a teacher-training program (*Un Buen Comienzo*, A Good Start), which showed effects on improving preschool quality but not on improving child development. Although *Un Buen Comienzo* had benefits for many classroom characteristics and prekindergarten and kindergarten teacher behaviors, the program did not affect children's language or literacy skills (Yoshikawa et al., 2015). These findings were interpreted to be a consequence of a low intensity program (Mendive et al., 2016), paired with insufficient exposure of the children to the program (Arbour et al., 2016).

⁵ Meta-analyses of parenting and home visiting programs from high- and low-income countries have found that the most effective parenting programs included systematic training methods, a structured, evidence-based curriculum built on a strong, theory-driven approach (Segal et al., 2012; Engle et al., 2011). Most existing studies of home-visiting studies in low- or middle-income countries have been smaller efficacy trials, though some recent papers have examined programs at scale. For example, a home visiting program in Pakistan utilized community health workers and demonstrated improved child development outcomes (Yousafzai et al., 2014). A recent scaled-up program in the Caribbean delivered parenting support messages within primary care clinics and showed benefits to child development (Chang et al., 2015). A study set in Mexico utilized the existing structure of the country's conditional cash transfer program (*Prospera*) to deliver group-based parenting support and showed positive effects on child development (Fernald et al., 2017a), as did a similar study in Colombia, which used a home-visiting approach (Attanasio et al., 2014). An explanation for the Mexican findings was the increase in the number of play activities that parents engaged in with children, which led to improved child development outcomes (Knauer et al., 2016). There were also modest, positive effects of an adult literacy and parental participation program in India on outcomes in older children aged 5–8 years old (Banerji et al., 2015).

⁶ This model has the advantage of being much cheaper than stand-alone home-visiting programs, which made it more suitable for a poor country like Malawi; there is the additional advantage of using the newly trained teachers and mentors that makes this model scalable.

18-month follow-up (when the average child in our study sample was 5.5 years old), but only in the treatment group that received the integrated intervention – with teacher training and parenting education. In this group, children had significantly higher scores in an assessment of language skills and exhibited more prosocial behaviors when compared with both the control group and the teacher training only group. The gains at the child level from the added parenting education were accompanied by substantial improvements in family care indicators, such as how many times a day their primary caregivers read to their children or played with them. Teacher training alone (or with monthly stipends for retention) did not improve children's outcomes, despite significant improvements relating to the classroom environment and teacher behaviors. At 36 months after baseline, there were no treatment effects among the 6–8 year-old children in any treatment arm, indicating a substantial fadeout of program effects in the integrated intervention arm. Our analyses suggests that, in this context, the effect of classroom quality improvements was negligible while those of parenting quality were large and significant, at least in the short-term, given that the integrated intervention was the only arm showing improvements in numeracy, literacy, and problem-solving activities both in the classroom and at home.

Our paper makes several contributions to the literature on early childhood investments. First, we examine the effects of teacher training in an African context, where the workforce is untrained and unpaid, which is not uncommon in Sub-Saharan Africa (Garcia et al., 2008), and where there is little research on effects of teacher training efforts (Popova et al., 2016). Second, our findings echo those of Chile's *Un Buen Comienzo*, which also found that improvements in classroom quality did not translate into improvements in child-level outcomes at the end of the two-year teacher training intervention.⁷ Third, our trial has incorporated parenting support into the context of a preschool-based quality improvement intervention, and these two existing approaches have not previously been tested together.⁸ As the marginal cost of integrating group-based parenting education sessions into preschools with trained teachers was approximately 15% of total program costs, the short-term impact findings in the combined intervention arm makes this a promising and cost-effective approach. Finally, the trial design also allows us to investigate the effects of exogenously improving classroom and parenting quality on child development outcomes using an instrumental variables approach.

The paper proceeds as follows. Section 2 describes the study design and our estimation strategy. Section 3 presents our findings, while Section 4 provides concluding remarks and ideas for future research.

2. Study design

2.1. Study setting

Early childhood development (ECD) services are inadequate in Malawi, estimated by the World Bank to reach only 38% of children under 5 (2015). While there are some privately owned ECD centers in urban areas, such as preschools, daycare centers, and nursery schools, the majority of children attending ECD centers in rural areas attend Community-based Childcare Centers, or CBCCs (Neuman et al., 2014). CBCCs are community-initiated and -owned centers, supported by the

⁷ Being assigned to higher quality classrooms in kindergarten has been recently shown to modestly increase math, language, and executive function test scores among children (Araujo et al., 2016). Yet, the study by (Yoshikawa et al., 2015) in Chile and our study in Malawi highlight the difficulty of converting program-induced improvements in classroom quality into better child outcomes.

⁸ The fact that the group-based parenting support sessions were delivered by the newly trained preschool teachers ruled out a more classical two-by-two factorial design. As such, we are unable to speak to the effectiveness of parenting support alone, but we found promising evidence that this approach can improve child outcomes over and above teacher training – at least in the short run.

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