Improving Guidelines for an Early Childhood Development Program in Rural Colombia

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Sector(s): Health, Education

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Location: rural Colombia

Sample: 1,460 children aged 0-12 months

Data: OUP

Partner organization(s): Colombian Family Welfare Agency (ICBF)

Early childhood, from conception to age five, is a crucial period for promoting cognitive and socio-emotional development. Past research suggests parenting interventions to promote psychosocial stimulation for young children can improve children's long-term cognitive abilities. However, it is unclear if such programs can be delivered well on a large scale. Researchers partnered with the Colombian Family Welfare Agency to evaluate how providing enhanced curriculum guidelines and larger nutritional supplements for the Family, Women, and Infancy Program impacted child development. Compared to children receiving the traditional FAMI program, the enhanced FAMI intervention led to significant improvements in the quality of children's home environment and their cognitive development, particularly for poorer children. There was no significant impact on socio-emotional development.

Policy issue

Early childhood, from conception to age five, is a crucial period for promoting cognitive and socio-emotional development. During this time, children's brains are rapidly developing learning capacity. However, an estimated 250 million children (43%) below age 5 in low- and middle-income countries are at risk of not reaching their developmental potential.[1] Such developmental risks stem from both a lack of stimulation, including playing, reading, or singing, as well as malnutrition. A previous evaluation of the Reach Up and Learn program in Jamaica found that a small-scale parenting intervention to promote early childhood stimulation at home improved cognitive gains, improved schooling outcomes, and increased adult wages. However, initial efforts to deliver a cost-effective version of the program on a large scale has proved difficult due to significant implementation challenges and fadeout of initial improvements in child development after two years. Is it possible to design and implement early childhood stimulation programs to reach young children at scale?

Context of the evaluation

In Colombia, as in many other countries, children from low-income households often accumulate delays in cognition and language, which can be detected as early as twelve months of age.[2] A2014 study found that, by age three, the cognitive and

language differences between children from middle- and low-income households in Colombia were as large as one standard deviation of a standardized score.

The Family, Women, and Infancy Program (FAMI), run by the Colombian Family WelfareAgency, provides pre- and postnatal services for low-income pregnant women and children under two in rural Colombia. Local women with at least a high school degree provide weekly group meetings and one monthly home visit. However, the FAMI guidelines provide little structure or guidance to the FAMI mothers on how to offer effective and high-quality parenting support and early stimulation for children. Instead, the content varies depending on the local program facilitators.

Among children participating in the evaluation, 12 percent were stunted (compared to 7.6 percent of children in urban areas) and 15 percent were at risk of stunting. Twenty three percent of mothers were teenagers. The average household income was COP 501,000 per month (US$ 178 at the time of the evaluation) and 62 percent of households lived below the poverty line.



Photo: Oscar Pocasangre | J-PAL

Details of the intervention

Researchers partnered with the Colombian Family Welfare Agency to evaluate how providing more structured curriculum guidelines and larger nutritional supplements impacted child development for FAMI participants in rural areas. By introducing low-cost changes to an existing government program and working closely with the Family Welfare Agency, researchers sought to improve the quality of early childhood stimulation and nutrition in a way that could be scaled.

Researchers randomly assigned 87 towns in three districts of Colombia to receive either the enhanced FAMI intervention or continue to receive the status quo FAMI services with little structure or guidance. The enhanced FAMI intervention lasted for an average of 10.4 months and, like the status quo services, consisted of weekly group sessions for two hours and one monthly

home visit for one hour. All FAMI program facilitators were embers of the community with a high school degree but did not necessarily have specific training on early childhood development.Having the program delivered by local facilitators was a critical element to designing a sustainable, scalable program. The average FAMI group contained 12-15 mothers and focused on children aged 0 to 24 months.

The enhanced FAMI program provided extra training to FAMI program facilitators and adapted curriculum from Reach Up and Learn, the Jamaica home visiting model, for group meetings. The enhanced curriculum and training for FAMI mothers had four key elements:

1. Structured early stimulation curriculum to improve child development and teach mothers how to play with their children in a stimulating and age-appropriate way
2. Play materials such as books, puzzles, and toys
3. Training, supervision, and coaching for FAMI program facilitators
4. Nutritional supplements corresponding to approximately 22-27% of the monthly recommended nutritional intake for children under two, along with nutrition education.These supplements were larger and of better quality than the one that had been typically received by FAMI participants, with more protein, fats, vitamins, and minerals to specifically target children's height-for-weight.

Researchers conducted household surveys to collect information on children's nutritional status, cognitive development, and socio-emotional development, as well as mothers' knowledge of child development. To measure the quality of children's home environment, researchers also collected information on the availability of toys or learning materials and the number of play activities children engaged in with adults.

Results and policy lessons

Though children and parents attended about half the intended number of sessions, the enhancedFAMI intervention led to significant changes in the FAMI curriculum, which put more emphasis on practicing play activities with mothers and their children and encouraging parents to play with their children at home. The program also improved the quality of children's home environment and their cognitive development. Improvements in cognitive development were driven by improvements for the poorest half of children. The enhanced program also reduced the fraction of children who were stunted or at risk of stunting. There was no impact on socio-emotional development.

Curriculum change: Fifty-seven percent of program facilitators in the enhanced FAMI group found the curriculum to be very different from their usual practices. Ninety nine percent said they would continue using it after the intervention ended.

Attendance: Seventy-four percent of all children assigned to the enhanced FAMI group participated in at least one group meeting or home visit. Of these, children attended an average of28 parenting sessions, out of a possible 55.

Child development: The enhanced FAMI intervention improved overall child development by an average of 0.15 standard deviations. This translates to a 25% reduction in the developmental deficit between children in the enhanced FAMI group and the average child in the United States.The largest improvements were in expressive language, which improved by 0.15 standard deviations, followed by gross motor skills (0.14 standard deviations), cognition (0.10 standard deviations), and receptive language (0.11 standard deviations). The impacts were driven by children from the poorest half of participating households. The program had the same impact on boys and girls and was equally effective for children regardless of whether their mother had completed high school or not.

Nutritional status: The fraction of children who were stunted or at risk of stunting decreased by5.8 percentage points relative to children in the traditional FAMI group.

Socio-emotional development: The enhanced FAMI curriculum had no impact on socio-emotional development. Researchers speculate this may have been due to the program's focus on cognitive stimulation during instruction and practice at home. Conversely, responsive parenting to improve children's socio-emotional development was taught through group discussions and thus used a less interactive approach.

Children's home environment: The enhanced FAMI intervention improved the quality of children's home environment, including the number of toys and frequency of stimulating play, by an average of 0.34 standard deviations. This improvement suggests parents are adopting the parenting practices that program facilitators are promoting. Further analysis suggests the improvements in children's home environments explain a large fraction of the improvements in child development.

Costs: The status quo FAMI program costs US$310 per child per year and the enhanced intervention cost an additional US$320 per child per year. The most expensive component of the enhanced FAMI intervention was the additional nutritional supplementation, costing US$212, followed by US$82 in supervision, US$28 in pedagogical materials, and US$12 in FAMI facilitator training. For comparison, center-based child care in Colombia costs approximatelyUS$1,100 per child per year.

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2. Attanasio, Orazio, CamilaFernández, Emla Fitzsimons, Sally Grantham-McGregor, CostasMeghir, and Marta Rubio-Codina. 2014. "Using the Infrastructure of a Conditional Cash TransferProgram to Deliver a Scalable Integrated Early Childhood Development Program in Colombia:Cluster Randomized Controlled Trial." BMJ349:g5785.