INCREASING CAREGIVERS' APPLICATION OF LEARNINGS FROM TRAINING AT HOME THROUGH APPLIED BEHAVIORAL SCIENCE

FINAL REPORT | SEPTEMBER 2022

Introduction

Background and motivation

Children in Jordan are at risk of not reaching their development potential due to the lack of social and educational interaction between caregivers and children during their early years. The developmental consequences of lack of parental or caregiver engagement can be severe for young children, given the crucial role these early years play in their development.

The emerging field of behavioral science offers a new way of thinking about improving early childhood development (ECD) outcomes among young children in Jordan by providing caregivers with the support they need to take the many actions—from regularly breastfeeding to participating in play-based interactions to attending group parenting sessions—that are critical to healthy child development. Although one might assume that low ECD levels are due to parents' lack of awareness, motivation, or financial incentives, behavioral insights instead indicate that people often act the way they do because of how the environment around them influences their ability to manage their mental bandwidth and translate decisions into actions. Evidence shows that people living in a state of need—as do many families in Jordan—have a particularly difficult time spending the mental energy it requires to plan to play and read to their children, remember to attend parenting coaching sessions, or apply techniques they have learned in dedicated training sessions during their daily routine. There is an opportunity for light-touch, low-cost behavioral interventions to help bridge the gap between intention and action, leading caregivers to engage in activities that help promote their children's development.

Approaches that help parents maximize the use of their limited cognitive bandwidth have begun to show large impacts on parenting decisions and actions. In Madagascar, for example, helping parents set goals and make plans to practice better parenting techniques after receiving a cash transfer accelerated their children's socio-cognitive development. Similarly, reminding parents to attend group parenting sessions and participate in guided interactions with their children increased children's receptive vocabulary and socio-emotional development in Chile. It is possible to expect similar impact on families in Jordan.

In partnership with the Bernard van Leer Foundation, ideas42 and Nudgeco (formerly known as Nudge Lebanon) facilitated an interactive workshop with BvLF's partners and grantees, with the goal of defining the behavioral problems preventing ECD in Jordan by focusing on caregiver behaviors. Following the workshop, ideas42 and Nudgeco met with the organizations that participated in the event to further identify behaviors that need reinforcement in partner-run programs, as well as assess a potential partnership for future work. Plan International Jordan (PIJO) was one of the participating organizations that was selected as a partner for such work.

Objectives

Since 2020, ideas42 has worked in partnership with Plan International Jordan (PIJO) and the Royal Health Awareness Society (RHAS) to improve caregivers' application of learnings from the First Steps Big Step (FSBS) parenting program at home with their young children. The partnership aimed to:

1. Define behavioral problems or challenges to focus on
2. Identify the behavioral barriers causing or exacerbating the challenges
3. Design solutions that directly address the behavioral barriers identified, and
4. Test the impact of the designed solutions

This document summarizes insights and learnings from each of the phases of work outlined above, as well as recommendations for next steps.

Understanding the Challenge

Children need positive social and educational interactions from caregivers in the early years of their life, particularly in the first 1000 days, to achieve their full development potential. Evidence suggests that substantial quality interactions with caregivers and Early Childhood Development (ECD) interventions can help to improve children's cognitive and physical development and prepare them to succeed in school. Accordingly, the developmental consequences of a lack of caregiver engagement or ECD activities can be severe for young children, given the crucial role these early years play in their development. Across Jordan, many young children, especially the most vulnerable, are at risk of not achieving their full development and learning potential. For example, as of 2018, more than 40% of children aged five were not participating in formal education and 80% of children in early grades were reading without comprehension.

The FSBS parenting program is an 11-week training for caregivers that teaches them crucial parenting skills – from nutrition, to the importance of play-based interactions, to enforcing positive and non-violent discipline methods with their young children. The group setting of this parenting program also allows caregivers to meet peers in similar situations and hear about their parenting journey, including some of the challenges of parenthood.

Through initial research, which included reviewing FSBS parenting program materials, speaking with Plan International Jordan staff, and interviewing caregivers and facilitators who had previously participated in the parenting program, we identified three behavioral problems that caregivers experienced with the program:

1. Caregivers who participate in the program are not applying learnings from the training at home, leading to lower early childhood development outcomes for young children
2. Caregivers engage in different types of play activities with boys than with girls
3. Male caregivers are not signing up to participate in the parenting trainings

Behavioral barriers causing the problems identified

To understand the behavioral barriers (1) preventing consistent application of learnings from training at home, (2) leading caregivers to engage in different types of play activities with boys and with girls, and (3) preventing male caregivers from signing up to participate in trainings, we conducted qualitative interviews with 10 mothers from Jordan's host communities and refugee populations. All the mothers we spoke to had the following characteristics:

- had at least one child between the ages of 0-5 years
- was participating in the FSBS parenting program at the time of the interview

- had more than one child (all mothers interviewed had both male and female children)

Our interviews with mothers revealed that:

1. they often have the intention to apply learnings from training at home, but the realities of their environments are not optimally designed to help them do so,
2. cultural norms often shape how they engage with male and female children, and
3. although many men would like to participate in parenting programs, the way in which these are currently designed may unintentionally create behavioral barriers that stand in the way.

We identified several themes around barriers affecting each of the problems identified:

APPLYING PROGRAM LEARNINGS AT HOME

1. I DON'T THINK I CAN DO ALL THIS

Mothers are busy tackling various responsibilities. Many feel like they won't have time to apply new parenting techniques regularly.

Psychologies at play:

- ***Time scarcity***: Mothers are busy and juggle various priorities. Many feel they lack the time to apply learnings at home.
- ***Ostriching***: Many mothers avoid trying new parenting techniques because they seem complex and time intensive.

Quotes:

"Household chores can be very overwhelming, and it stops me from doing anything with my children."
"I raise and teach my children alone and my husband isn't available most of the time."

2. IT'S TOO MUCH

Even those who planned to apply learnings at home get derailed due to lack of time or focusing

on immediate needs and competing priorities.

Psychologies at play:
- ***Time scarcity***: Mothers are busy and juggle various priorities. Many feel they lack the time to apply learnings at home.
- ***Limited attention***: Mothers' responsibilities makes it challenging to dedicate all their attention to applying the learnings from training at home.
- ***Tunneling***: Mothers tend to focus on immediate needs and priorities over other less immediate tasks.

Quotes:
"More than one time I was ready to sit and play and apply the activity [from the session] with my children, but then something came up and I wasn't able to continue."
"When I want to play with my young kids, my older children or husband ask for something or I get busy with chores."

3. EASIER SAID THAN DONE

Applying learnings at home with young children is often harder than what mothers originally expected during the training program.

Psychologies at play:
- ***Hassle factors***: Mothers can get discouraged when children don't participate in activities as they expected them to. This is especially true for mothers of children with disabilities.
- ***Mental models***: Many mothers expect that applying learnings at home with their kids will be easier than it is in reality.

Quotes:
"My child is very stubborn and difficult to deal with. She doesn't like to play or be part of the activities that we learned at the sessions."
"I find it hard to talk and discuss topics with my two-year-old daughter because she's very young and can't understand what I tell her."

4. I'LL GO WITH WHAT I KNOW

Changing mothers' original parenting techniques requires consistency and repetition, which can be difficult and time intensive.

Psychologies at play:
- ***Status quo bias***: Mothers resort to already established parenting techniques, particularly when facing time constraints and stress.
- ***Limited attention***: Mothers' competing tasks (cooking, cleaning, taking care of children, etc.) makes it challenging to focus on applying new learnings consistently.

Quotes:
"I was able to apply most of the learnings except for sometimes when I feel overwhelmed from my children and the household chores. I feel tired and can't avoid not yelling to my children and it becomes difficult to sit and apply the activities."

PROMOTING GENDER EQUITY IN PLAY

*Note that we only interviewed mothers, so the barriers below are from mothers' perspectives.

1. NOT FOR YOU

   Parents believe that boys and girls should play different games. They see "aggressive" activities as best for boys, while care-oriented activities as best for girls.

   Psychologies at play:
   - ***Mental models/stereotypes***: Previous experience, whether with older children of their own or children from family members or friends, has taught parents to associate certain games and activities by gender.
   - ***Status quo bias***: Parents prefer to stick to the "norm" when determining play for their own children.

   Quotes:
   "It's obvious that games that are related to balls, guns, cars, and playing in the street are for boys, and girls' games are mostly very quiet and peaceful."
   "It's easy to determine. If the game needs power and aggressiveness, then it's for boys. And if it needs soft character, then it's for girls."

2. COMMUNITY'S RULES

   Parents follow their community's gendered-play associations. They are concerned that if they don't, they will be judged as "bad parents" and their children will be teased.

   Psychologies at play:
   - ***Social norms***: Parents copy the play behavior divisions by gender that they observe among their peers when interacting with their own children.
   - ***Risk aversion***: Parents worry that their kids (and them) will be teased/judged if they allow their children to play with toys perceived as meant for the opposite sex.

   Quotes:
   "Actually, the community taught us that there are certain games for boys and other for girls."
   "In my community, it is forbidden to see boys playing with girls' games. That's very shameful."
   "In regard to boys playing girls' games, I think other boys will bully the boy and tease him for playing those games."

3. FUTURE HARM

   Parents think that allowing their kids (especially boys) to play with games "meant for girls" will have long-term effects on their personality.

   Psychologies at play:
   - ***Mental models/stereotypes***: Parents associate certain types of play as "games for boys" or "games for girls" and learn to deem this as correct and beneficial.
   - ***Risk aversion***: Parents worry that their kids will be harmed if they play with games meant for the opposite gender, so they avoid this altogether.

   Quotes:
   "For boys, [playing games meant for girls] may weaken their personality and might make them less

masculine."
"When girls get used to playing games that are meant for boys their personality will change and they will not be girly and sensitive anymore."
"I believe that my son's personality will be weaker than his friends' when he grows up because he spent most of his time playing with his sisters and because he's the only son I have."

4. MALE BIAS

While most mothers try to play with all children equally, they say their husbands spend more time playing with their sons. Therefore, girls spend less time engaging in play with their parents overall.

Psychologies at play:
- ***Mental models***: Some members of the community, notably many fathers, see sons as more valuable or important than daughters.
- ***Stereotypes/bias***: These skewed perceptions subsequently lead to biased and unequal parental attention and engagement for boys versus girls.

Quotes:
"Girls deserve the same attention, but I think the community around us gives more attention to boys. Sometimes I feel that I give more attention to my daughter because I know that her father will prioritize our sons more."
"I think that boys should get more attention than girls. The community gives males more priority and more attention than females because that's how we were raised. We have this mindset that males are more important and useful than females."

5. WRONG GAME

Parents feel uncomfortable when their children choose to play a game associated with the opposite gender. They tend to redirect their children to "gender-appropriate games."

Psychologies at play:
- ***Mental models***: Parents hold very clear opinions about what activities are suited for boys versus girls.
- ***Stereotypes***: When parents observe their children playing a game that, in their mind, is meant for the opposite gender, their stereotypes about what they should or should not play with are activated.

Quotes:
"I would stop [my daughter] directly. I don't like my daughter to get used to play games that are boys. It's not nice or acceptable in our community and my husband would also not allow her to do that."
"I wouldn't let [my daughter play games for boys]. I would discuss and explain that this game is not suitable for her, and I would give her another toy or suggest another game that suits girls more."
"I would stop [my son] and explain that those kinds of games are for girls, not for boys. If my husband sees that our son is playing with something for girls, he will hit him directly."

INCREASING MALE PARTICIPATION IN THE PROGRAM

*Note that we only interviewed mothers, so **the barriers below are from mothers' perspectives,** rather

than fathers'. We would also recommend interviewing fathers in future work to identify behavioral barriers to participating in parenting programs.

1. NOT MY ROLE

   Fathers think that the parenting program is not built for them, as it's scheduled during their work hours and doesn't take their time constraints into account. They feel like it's not their role as fathers to attend the program.

   Psychologies at play:
   - ***Mental models***: Men believe that their role is to work and earn money, while women should care for the children and attend parenting programs.
   - ***Mental accounting***: Since many fathers bring in most of the household income, they think they have already "done their part" by allocating the necessary labor and time for family tasks.
   - ***Hassle factors and time scarcity***: Men who want to attend the program face constraints that make it difficult to do so, particularly having a demanding work schedule that overlaps with the timing of the course.

   Quotes:
   "This question is embarrassing to me somehow because I see that any husband's role is to work but not to raise the children."
   "It's a nice idea [to have fathers participate in the parenting training], but I have never thought about it and neither has my husband. We are used to the idea that the mother is responsible for raising the children and the father is responsible for work."

2. WHAT WILL OTHERS THINK

   Fathers worry about being judged by their peers for attending a parenting course, an activity that is culturally considered "for women" in Jordan.

   Psychologies at play:
   - ***Social norms***: Men don't see other fathers attending parenting programs, so they don't do it either (even if they did have interest in attending).
   - ***Stereotype threat***: Men have internalized stereotypes about caregiving roles (e.g. women take care of the children and men are the breadwinners) and may consider attending the program to be feminine.

   Quotes:
   "From what I see, fathers would make fun of any father that gets involved in raising his children and attend these kind of programs."

3. MY OWN WAY

   Men see other ways as more appropriate and efficient for building and sharing parenting skills than attending a parenting training.

   Psychologies at play:
   - ***Status quo bias***: Men are used to discussing parenting topics with other fathers (e.g. friends, family members, neighbors) in casual settings. They would rather continue doing this than attending formal parenting training sessions.

   Quotes:

"One time I saw [my husband] talking to our neighbor about the mental health of children and how being patient and understanding with them can be very beneficial for their mental health, and how yelling at them can negatively affect their wellbeing."
"I always see him discussing [children-related] topics with our relatives and friends about how to raise children and how this generation is so different than our generation, and so on."

Behavioral problem selection for the design of solutions

Based on the Diagnosis insights above, we ranked each of the behavioral problems based on the following criteria:

1. **Diagnosis depth** – how confident we are in the diagnosis insights shared in the previous section
2. **Potential impact** – how much impact would changing each behavior have on children's ECD outcomes
3. **Feasibility** – ability to change each behavior through the existing FSBS parenting program

Problem	Diagnostic Depth	Potential Impact	Feasibility	Overall Score
Caregivers apply learnings	*4.00*	*3.00*	*4.00*	***3.63***
Gender equality in play	*3.00*	*3.00*	*2.50*	***2.81***
Fathers attending training	*1.00*	*2.50*	*1.00*	***1.49***

After ranking each behavior based on these criteria, we recommended focusing on **helping caregivers apply learnings from training at home** for the remainder of the project. This problem had the highest score in all criteria: we felt confident with the diagnosis insights, it had high potential impact, and it was the most feasible to address through the FSBS program directly.

Promoting gender equality in play was the runner up. Although we were confident in the diagnosis insights, we would have liked to speak to fathers as well to get their perspectives, particularly since mothers felt that fathers would have a harder time letting their children engage in play activities that were considered "for the opposite gender." Although impact potential was high, changing this behavior through the existing FSBS program was less feasible, since there is only one module in the course that focuses on play, and additional time and effort would be required to change this behavior.

Finally, increasing fathers' attendance to training programs received the lowest ranking. We did not feel comfortable with the diagnosis insights, since we spoke only to mothers rather than fathers directly. This was a result of not having fathers participate in past trainings, and therefore our partners having less access to them while recruiting participants to be interviewed. We recommend speaking to fathers directly to (1) confirm whether the barriers in the previous section exist, and (2) identify additional barriers preventing them from attending parenting trainings. Feasibility was also a challenge in this case since there are structural barriers currently preventing fathers from attending the trainings. For example, the timing of the training overlaps with their work. We would not want to encourage fathers to leave their jobs to attend the training. Instead, we encourage our partners to consider alternatives that meet fathers' needs (e.g. offering trainings close to their work during lunch break, on weekends, virtually, etc.).

Both PIJO and RHAS team members agreed with our recommendation to focus on improving caregivers' application of learnings from training at home with their children throughout the Design and Testing phases of the project.

Accounting for Behavioral Barriers with New Solutions

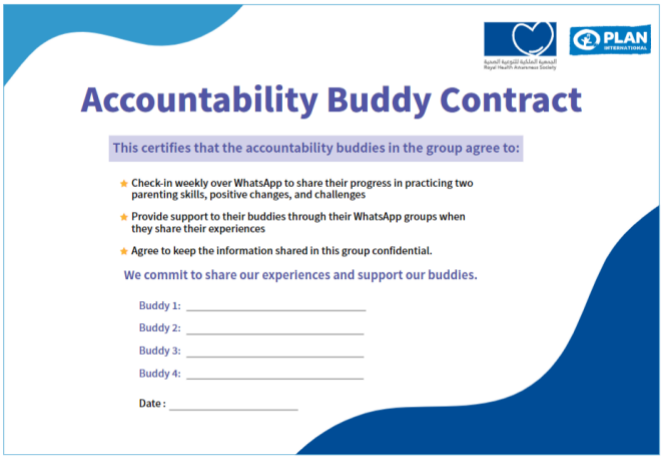
The ideas42 team led several co-design sessions with PIJO and RHAS team members to generate design ideas that would directly address the behavioral barriers listed in the previous section. Due to the Covid-19 pandemic, FSBS training sessions have been taking place virtually. However, there is a plan to eventually hold these in person (as they were originally designed to take place). Due to this constraint, we focused on designing interventions that would work in a virtual setting, but could be easily implemented in person as well once trainings go back to in-person settings. As a result of these exercises, we developed the following solutions:

Accountability buddy groups + contract

The accountability buddy group is made up of 3-4 caregivers participating in the same FSBS training session. For this study, these groups were formed virtually through WhatsApp groups. Once the FSBS training moves back to an in-person setting, the recommendation is for these groups to happen both in person and via WhatsApp to foster deeper relationship between buddies.

Buddy groups were encouraged to check in with each other at least once a week, and given prompts on what to share and ask each other during these check-ins. These prompts (outlined in the activity tracking calendar section below) encouraged caregivers to share their progress applying learnings from the training at home, share challenges they had experienced that week, and provide support to each other.

Additionally, during the first session of the training, each buddy group was asked to sign an accountability buddy contract, where each of them committed to do the activities outlined above, as well as sign their name on the contract. Each participant received a copy of this contract.



English version

Arabic version

Potential limitations

Contracts were designed to be distributed both virtually and in print. Given the virtual nature of the training program, due to the Covid-19 pandemic, caregivers received only a virtual copy of the certificate via WhatsApp. They were then asked to send a confirmation message via WhatsApp that they had read the contract. We expect the virtual nature of the exercise to be less impactful than the alternative: receiving a physical copy of the contract, signed by each of the "buddies" to indicate their commitment to meeting each week, and that each caregiver could take home as a reminder of their commitment to the group.

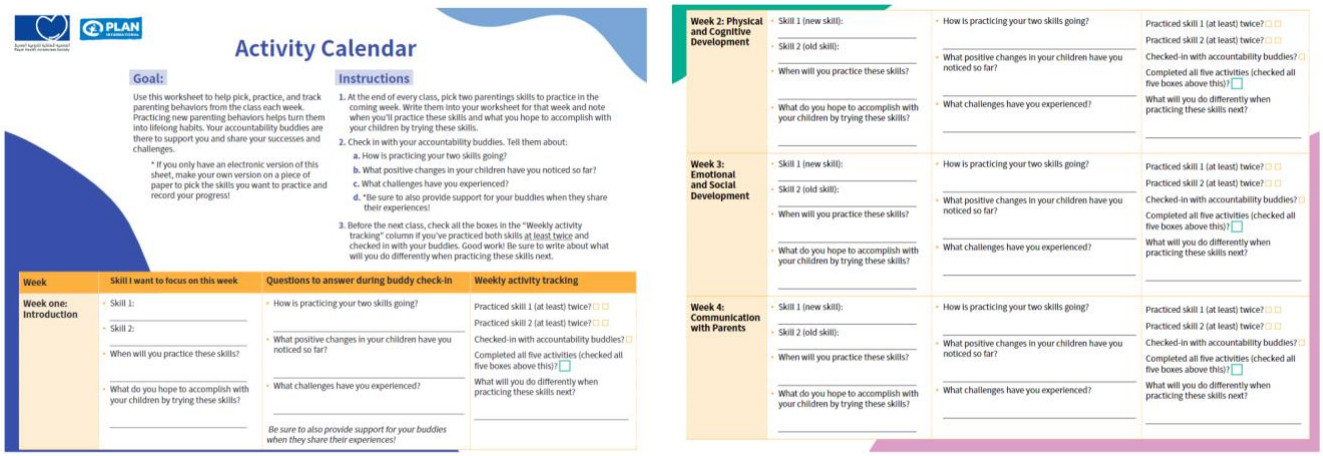
Activity tracking calendar

The activity tracking calendar helps caregivers pick, practice, and track different learnings from each week's class, as well as learnings from any previous weeks. It is meant to encourage caregivers to practice at least two new behaviors per week (one from their latest training session and one from any previous sessions) in order to make the application of learnings at home a habit through repetition.

Each calendar is divided into 11 weeks (the total duration of the parenting training) and specifies the topic covered each week (e.g. "Week 4: Communication with Parents"). Each week, caregivers are asked to choose two skills or behaviors learned during the training and write it into their calendar. The calendar also prompts caregivers to plan a day and time when they plan to practice the selected skills with their children.

Additionally, the calendar has guiding questions for caregivers to use during their check-ins with their buddy groups, including how they feel practicing their two skills that week, what positive changes they have noticed in their interaction with their children, what challenges they have experienced, and encouragement to provide support to their buddies as they share their experience as well.

Finally, it includes a checklist to keep track of whether they have practiced the two skills they selected for that week, whether they checked in with their accountability buddy group that week, and whether they plan to do anything differently in the following week.



Activity Calendar

Goal:

Use this worksheet to help pick, practice, and track parenting behaviors from the class each week. Practicing new parenting behaviors helps turn them into lifelong habits. Your accountability buddies are there to support you and share your successes and challenges.

* If you only have an electronic version of this sheet, make your own version on a piece of paper to pick the skills you want to practice and record your progress!

Instructions

1. At the end of every class, pick two parentings skills to practice in the coming week. Write them into your worksheet for that week and note when you'll practice these skills and what you hope to accomplish with your children by trying these skills.
2. Check in with your accountability buddies. Tell them about:
   a. How is practicing your two skills going?
   b. What positive changes in your children have you noticed so far?
   c. What challenges have you experienced?
   d. *Be sure to also provide support for your buddies when they share their experiences!
3. Before the next class, check all the boxes in the "Weekly activity tracking" column if you've practiced both skills at least twice and checked in with your buddies. Good work! Be sure to write about what will you do differently when practicing these skills next.

Week	Skill I want to focus on this week	Questions to answer during buddy check-in	Weekly activity tracking
Week one: Introduction	Skill 1: Skill 2: When will you practice these skills? What do you hope to accomplish with your children by trying these skills?	How is practicing your two skills going? What positive changes in your children have you noticed so far? What challenges have you experienced? *Be sure to also provide support for your buddies when they share their experiences!*	Practiced skill 1 (at least) twice? ☐☐ Practiced skill 2 (at least) twice? ☐☐ Checked-in with accountability buddies? ☐ Completed all five activities (checked all five boxes above this)? ☐ What will you do differently when practicing these skills next?
Week 2: Physical and Cognitive Development	Skill 1 (new skill): Skill 2 (old skill): When will you practice these skills? What do you hope to accomplish with your children by trying these skills?	How is practicing your two skills going? What positive changes in your children have you noticed so far? What challenges have you experienced?	Practiced skill 1 (at least) twice? ☐☐ Practiced skill 2 (at least) twice? ☐☐ Checked-in with accountability buddies? ☐ Completed all five activities (checked all five boxes above this)? ☐ What will you do differently when practicing these skills next?
Week 3: Emotional and Social Development	Skill 1 (new skill): Skill 2 (old skill): When will you practice these skills? What do you hope to accomplish with your children by trying these skills?	How is practicing your two skills going? What positive changes in your children have you noticed so far? What challenges have you experienced?	Practiced skill 1 (at least) twice? ☐☐ Practiced skill 2 (at least) twice? ☐☐ Checked-in with accountability buddies? ☐ Completed all five activities (checked all five boxes above this)? ☐ What will you do differently when practicing these skills next?
Week 4: Communication with Parents	Skill 1 (new skill): Skill 2 (old skill): When will you practice these skills? What do you hope to accomplish with your children by trying these skills?	How is practicing your two skills going? What positive changes in your children have you noticed so far? What challenges have you experienced?	Practiced skill 1 (at least) twice? ☐☐ Practiced skill 2 (at least) twice? ☐☐ Checked-in with accountability buddies? ☐ Completed all five activities (checked all five boxes above this)? ☐ What will you do differently when practicing these skills next?

English version

Arabic version

Potential limitations

Due to the virtual nature of the training, participants did not receive a physical, printed version of the calendar. Although the intervention was designed to be used online as well, we predict that fewer caregivers used it every week than they would have if it had been printed. If possible, we encourage the PIJO and RHAS teams to hand out physical versions of this calendar to future cohorts.

Testing the Impact of Designed Solutions

Data

Randomization

To randomize caregivers into their groups for the intervention, ideas42 worked with the PIJO team to identify a plan that would minimize disruption of the default training group structure. It was decided that randomization would be stratified by health center location and facilitator type: whether they were (1) Ministry of Health staff or (2) parents who had completed the program previously. As a part of this intervention, there were 16 caregiver groups split between 8 health center locations. Each health center location had two caregiver groups - one assigned to treatment and the other to control, for a total of 8 groups in each category. Furthermore, across the 16 groups, there was an even split between groups led by Ministry of Health staff and parents who had previously completed the program. There was one additional caregiver group composed entirely of men, but they were excluded from the test analysis. The reason for excluding them was mainly because all the research for this project was conducted with women, as they were the only caregivers participating in the FSBS parenting program to date, and the interventions were designed based on barriers expressed by women.

Data Collection

For our test, the main data collection method was a mobile survey. Through Qualtrics, ideas42 created three surveys to be sent to caregivers: baseline, weekly, and endline. All surveys were translated from English to Arabic by an official translator. The surveys can be found in the Appendix. Each week, ideas42 shared the relevant survey link with PIJO and RHAS staff who then distributed the link to all group

facilitators to share with their caregivers. Caregivers in both the treatment and control groups were asked to complete all surveys.

- **Baseline survey:** This was shared with caregivers during week one of the test and consisted mostly of basic demographic questions as well as base markers for our main outcome variable.
- **Weekly surveys:** These were shared with caregivers during weeks two through nine of the test and consisted mostly of markers for our main outcome variable.
- **Endline survey:** This was shared with caregivers during week ten of the test and consisted of the combination of demographic questions as well as information on our main outcome variable.

A note on statistical power

Due to program constraints, particularly around sample size, this study was not fully powered to detect a treatment effect we believe feasible for our outcomes of interest. Because we were not able to collect enough caregiver data from the intervention, it would be unlikely to be able to reasonably detect and attribute a true causal effect to our behavioral designs. We originally calculated that we would need about 400 caregivers (~200 in treatment; ~200 in control) answering surveys each week to reach power. However, due to the predefined number of groups that would participate in the test as well as the predefined duration that the test could run for, we were only able to reach a population size that averaged ~92 caregivers per week who completed the surveys.

Method

Our strategy was to test our hypotheses that the treatment has effects on outcomes using the following regression model specification:

$$Y = a_0 + a_1 T_1 + a_2 X_1 + e$$

Where Y is the outcome variable (numeric variable to identify the number of times caregivers reported practicing development activities learned in training sessions at home with their children per week), T1 is a binary treatment variable that indicates if the caregiver was randomly assigned to a group designated treatment or control, X_1 includes control variables (age, number of children, refugee camp status, and employment status), and e is the error term.

Results

Balance

In **Table 1**, we display balance of the main caregiver characteristics across the treatment and control groups that would potentially have an effect on the test results. We assess this to determine if there were significant differences between the groups across key demographic variables so we can understand if it would be reasonable to compare the two groups. From this, we found that there are few significant differences between the treatment and control groups: caregivers in the control group were significantly more likely to report (1) having a greater number of children and (2) having lived in a refugee camp at some point in their lifetime. This suggests there may have been some slight differences that make it difficult to compare the two groups. However, we still ran the analysis, presenting a specification that controls for these two variables when reporting any results for this test.

Table 1: Caregiver Balance Table

VARIABLES	N	(1) Control Mean/SE	N	(2) Treatment Mean/SE	t-test Difference (1)-(2)
Median Caregiver Age	92	32.21 (0.621)	131	30.82 (0.557)	1.39
Number of Children	92	3.21 (0.165)	131	2.53 (0.144)	0.68***
Refugee Camp Status	92	0.33 (0.049)	130	0.19 (0.035)	0.13**
Employment Status	92	0.05 (0.024)	131	0.12 (0.028)	-0.06

*Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*
The value displayed for t-tests are the differences in the means across the groups.

Main Results

This section includes the main results and analysis from the test we ran to test the effectiveness of the behavioral intervention.

Table 2: Treatment Effect on Development Activity Practice Frequency

VARIABLES	(1) Frequency of Practice	(2) Frequency of Practice
Treatment	-0.080	-0.028
	(0.0751)	(0.227)
Constant	3.11***	2.64***
	(0.0564)	(0.313)
Observations	737	107
R-squared	0.001	0.024

*Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*
Specification 1 is without controls, and specification 2 controls number of children and caregiver refugee status.

Due to the small sample size for this test, we cannot truly differentiate any effects from randomness. And, when analyzing the main results of our test for the behavioral intervention period, we do not find any statistically significant effects of the treatment on our key outcome variable. However, while extremely small in magnitude and insignificant, trends suggest that the treatment had no to small negative impacts

on the number of times caregivers reported practicing development activities they learned in class at home with their children (-3%, or -8 percentage point decrease in the frequency of practice). However, it is worth reiterating that these results are not truly distinguishable from randomness due to the small sample size and thus may not be an accurate reflection of the effectiveness of the behavioral designs tested during the intervention.

Additional analyses

Due to the very small sample size of the intervention as well as the insignificant, but negative trending, results of the test, the ideas42 team felt it could be beneficial to conduct some additional analysis of the test. The two figures below display analyses that we ran to try and provide more context on what could be potentially driving the results we saw of the treatment effect on our outcome variable.

Figure 1: Weekly Caregiver Response Rates by Group

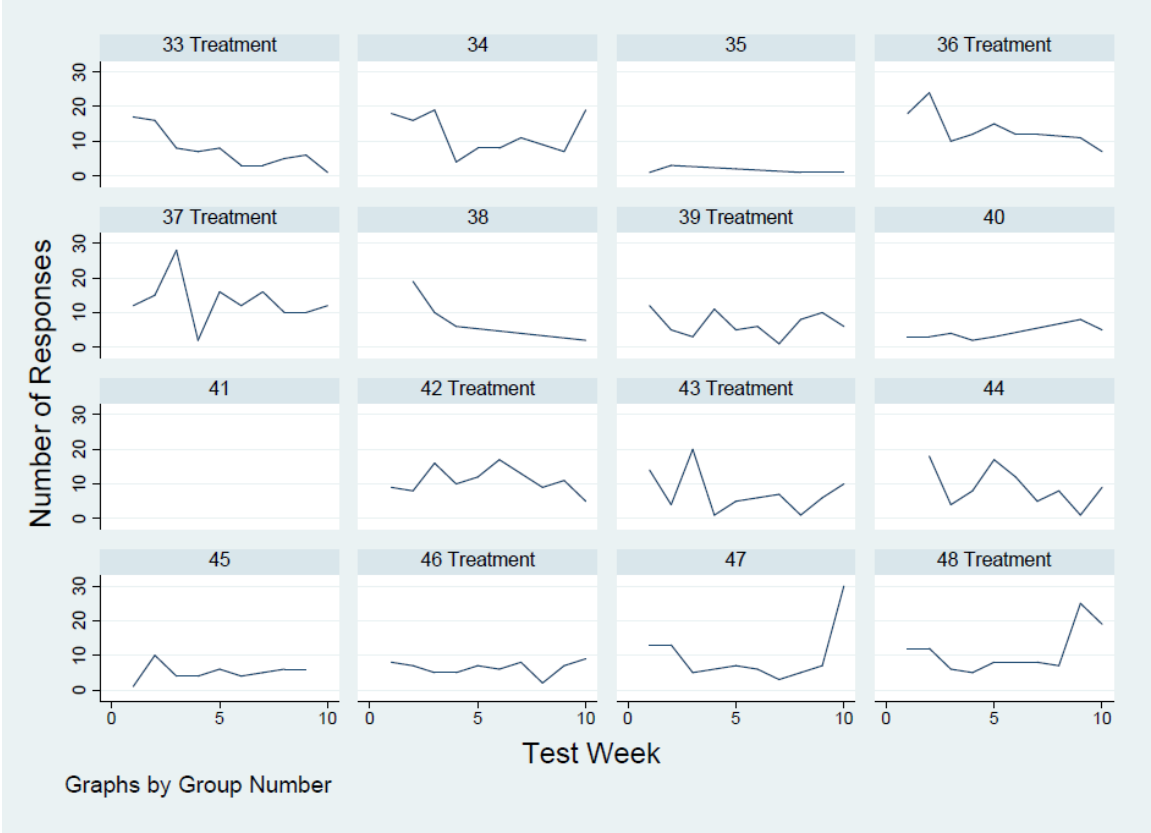


Figure 1 displays how many caregivers in each group from the intervention completed the data collection survey each week. Each of the two pairs of groups in each row received their weekly trainings in the same training center. As can be seen above, the response rates for all groups fluctuated weekly, but in general they remained fairly low. Additionally, due to the random nature of the responses, there are no real discernible trends to conclude from the graphs. However, groups 35 and 41 had either virtually no survey responses from caregivers or extremely low numbers compared to the other groups. Therefore, we decided to drop these two groups from the analysis of the results, as well as their corresponding training center group equivalents (groups 36 and 42), in order to limit imbalance.

Figure 2: Average Number of Development Activities Practiced per Week – Treatment vs Control Groups

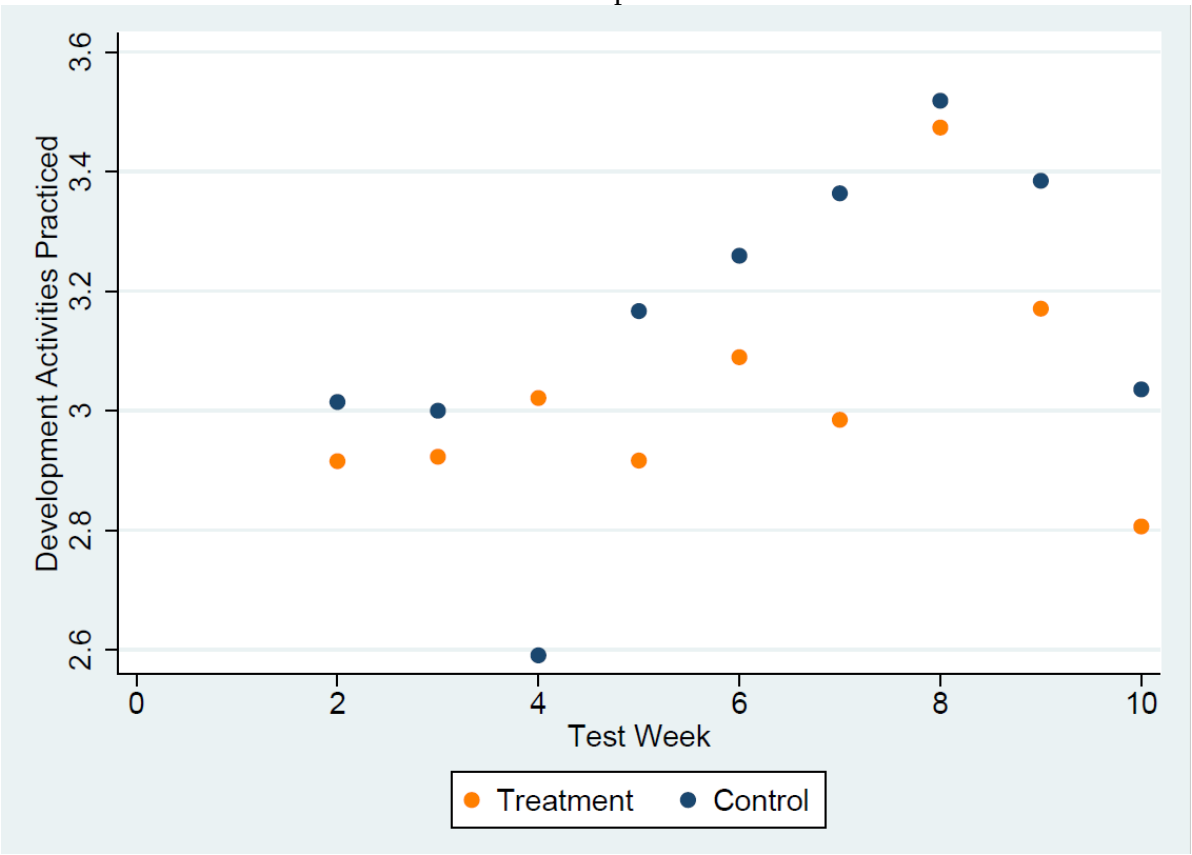


Figure 2 displays the average number of development activities that caregivers in the treatment and control groups reported practicing at home with their children each week. This was the main outcome variable that we were designing for and using to measure the success of our intervention. As displayed in the figure above, for every week except week 4, caregivers in the control group, who did not receive the designed intervention, reported practicing more development activities with their children in a particular week. However, it is worth noting that the difference between the number of activities practiced reported by the treatment and control groups is small – averaged over the ten weeks of the test period, caregivers in the treatment group reported practicing 3.03 activities compared to 3.11 activities reported by the control group. The small difference between these averages, in addition with the fact that the small sample size doesn't allow us to truly differentiate any effects from randomness, we are unfortunately not able to draw solid conclusions from the test about how impactful the interventions were in encouraging caregivers to apply learnings from trainings at home with their young children.

Follow-up interviews with caregivers in the treatment group

After the intervention had concluded, we conducted follow-up interviews with caregivers in the treatment group – 10 mothers from 5 different health centers – to get additional insights about the intervention.

We asked caregivers about their experiences with the components of the intervention, such as whether they had received each design solution, whether they used them and how often, what was helpful, and what was challenging.

Insights: Accountability buddy groups + contract

Of the 10 mothers from the treatment group that we interviewed, 8 were assigned to a buddy group at the beginning of the parenting program (2 of the mothers did not have a young child and were therefore not assigned to a buddy group). However, at the time of the interviews, only 5 of the 8 mothers reported that they had been assigned to a buddy group. Of the 5 caregivers who reported that they had been assigned to a group, all 5 said that the group had communicated, but only 2 said that the group had communicated on a regular basis. The mothers whose groups were consistently active had positive things to say about this intervention component, such as that they liked sharing their experiences with others, found the groups motivating, and that the groups served as a reminder to apply the skills they had learned that week. However, we also learned of challenges related to this intervention component:

- **Implementation:** Only 5 of 8 mothers who had been given a buddy group at the beginning of the parenting program reported that they indeed been assigned to one.
- **Integration:** Because the training took place virtually, all materials for the training were sent via WhatsApp. Buddy groups also communicated via WhatsApp, rather than meeting in person. Mothers reported that it was difficult to keep up with everything happening on WhatsApp; it is possible that even if they were sent the contract, it got lost among all the materials they received. Further, groups were left to their own devices as to whether and when they communicated. For example, facilitators didn't integrate the buddy groups into training by asking them to share what they had discussed that week or by prompting them at the end of each session to decide when they would connect.
- **Adherence:** There was little motivation for caregivers to check-in with their buddy groups: facilitators didn't monitor whether groups were interacting; none of the caregivers remembered committing to meet with their groups by (electronically) signing the accountability contract; and it was common for caregivers to be inactive in their groups, which was demotivating to those who were active.

Insights: Activity tracking calendar

Usage of the calendar was reported to be better than the buddy groups; of the 10 mothers we interviewed, 9 reported receiving the calendar, 8 reported using it, and 6 reported using it weekly. Feedback on the calendar was positive. Caregivers mentioned that it helped them translate what they learned each session into action by prompting them to plan what skills they would apply, how, and when. Further, writing this down served as a commitment to practice these skills each week and as a reminder to do so. However, we also learned about aspects of the calendar that could be improved:

- **Implementation:** Caregivers mentioned that it would have been helpful to have a printed copy of the calendar. Because the calendar was sent via WhatsApp, mothers had to take the additional

step of completing the prompts from the calendar on a separate piece of paper, and it is likely that many did not do this.

- **Integration:** Facilitators didn't integrate the calendar into the training enough. For example, facilitators should encourage use of the calendar by asking participants to take it out at the beginning of each session and share what they have recorded. In addition, facilitators should save the last 5 minutes of each session to allow caregivers to write down the skills they will practice that week.
- **Adherence:** Facilitators didn't monitor whether mothers were using the calendar each week. Therefore, they didn't provide positive feedback to those who were using it, nor did they remind caregivers who weren't using it to do so the following week.

Conclusion

Limitations

The objective of this project and of this study was to test the effectiveness of two behaviorally-designed solutions – an accountability buddy group and contract, as well as an activity tracking calendar – on caregivers' ability to apply learnings from the training with their children at home. Unfortunately, a significant limitation of this study, as outlined in the Testing section, was that it was not fully powered to detect a treatment effect we believe feasible for our outcome of interest. Therefore, it is impossible to know whether we did not find a statistically significant effect of the intervention because we did not have a large enough sample size for the test or because the intervention did not have an impact on caregivers' behavior. As exploratory research, we conducted post-intervention interviews with 10 mothers from the treatment group, to gain more insight as to which parts of the intervention might have worked well vs. less well.

Due to COVID-19, the program, originally held in person, had to be adapted to a virtual setting. As such, ideas42 designed solutions that could be implemented in person or virtually. Besides the fact that the pandemic necessitated this shift to a virtual setting, there are indeed benefits of an online program, such as saving participants transportation costs. However, the mothers we interviewed did raise challenges associated with the virtual setting of the program. For example, mothers expressed that it was difficult to pay attention to everything that was being sent via WhatsApp and that it was hard to build connections with the facilitator and other caregivers in an online program. Based on these interviews, it is also possible that the intervention we designed was less effective in a virtual setting. For example, mothers expressed that they would have preferred a physical copy of the calendar so that they could write on it. In addition, forming and maintaining the buddy groups via WhatsApp seemed challenging.

Next step recommendations

If constraints prevent the program from retuning to in person, we would recommend keeping the activity tracking calendar, as most of the mothers we interviewed reported using it and found it helpful. However, the effectiveness of the calendar could potentially be increased by further integrating it into training. For example, facilitators could save the last 5 minutes of each session to allow caregivers to write down the skills they plan to practice that week on their calendar, provide positive feedback to those who are filling it out each week, and remind those who are not to do so.

Feedback on the accountability buddy groups and contract was more mixed. While only 5 of 8 mothers who had been given a buddy group at the beginning of the program remembered having been assigned to one at the time of the post-intervention interviews, those who did communicate regularly with their buddy group found it helpful. It is possible that with some adjustments, more mothers might meet with their buddy groups. For example, facilitators could further integrate these groups into training by giving them the opportunity each session to share what they discussed that week and to decide when they will meet during the upcoming week. On the other hand, it is possible that this intervention component simply would work better in an in-person setting than a virtual one.

If possible, it might be worth making some adjustments to the intervention components based on the post-intervention qualitative insights and running another randomized controlled trial, one that is fully powered, in order to more definitively determine the effect of the intervention on caregivers' behavior.

Appendix

Surveys used for data collection

Baseline Survey

Question Number	Logic	English Text	Answer Choices
1		What health center conducts your parenting training?	Sakhra HC Rawda HC Altwal HC Waqas HC Mqablin HC Salha HC Adlil HC
2		What is the number of your training group?	Group 33 Group 34 Group 35 Group 36 Group 37 Group 38 Group 39 Group 40 Group 41 Group 42 Group 43 Group 44 Group 45 Group 46 Group 47 Group 48 Group 49

3		What is the name of your facilitator?	Waad Abo Saleim Mayson Momani Ranim Mar'i Batool Ghragher Suzan Bshish Faten Awajneh Rasha Fawares Shouroq Salem Sharifa Mahasneh Mervat Radyan Huda Khlefat Buraq Shamayleh Tamam Mosa Deyala Hamdan Ruqaya Badri Nermin Kherat Ahmad Assaf
4		On average, how many times a week to you engage in play with your child?	0 / 1 / 2 / 3 / 4+
5		On average, how many times a week to you engage in reading with your child?	0 / 1 / 2 / 3 / 4+
6		On average, how many times a week to you engage in singing with your child?	0 / 1 / 2 / 3 / 4+
7		Did you attend the training session this week?	Yes / No
8		How many children do you have?	1 / 2 / 3 / 4 / 5+
9		What is your gender?	Female / Male
10		What is your age?	17-20 21-25 26-30 31-35 36-40 40+
11		What day of the month were you born on?	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
12		What country were you born in?	Jordan Syria Other (please specify)
13		Were you ever in a refugee camp?	Yes / No
14		Are you currently employed?	Yes / No
15		What is your favorite color?	
		Thank you for completing this survey!	

Weekly Survey

Question Number	Logic	English Text	Answer Choices
1		What health center conducts your parenting training?	Sakhra HC Rawda HC Altwal HC Waqas HC Mqablin HC Salha HC Adlil HC
2		What is the number of your training group?	Group 33 Group 34 Group 35 Group 36 Group 37 Group 38 Group 39 Group 40 Group 41 Group 42 Group 43 Group 44 Group 45 Group 46 Group 47 Group 48 Group 49
3		What is the name of your facilitator?	Waad Abo Saleim Mayson Momani Ranim Mar'i Batool Ghragher Suzan Bshish Faten Awajneh Rasha Fawares Shouroq Salem Sharifa Mahasneh Mervat Radyan Huda Khlefat Buraq Shamayleh Tamam Mosa Deyala Hamdan Ruqaya Badri Nermin Kherat Ahmad Assaf
4		Did you attend the training session this week?	Yes / No

5		Did you make a plan to practice the new skills you learned with your child this week?	Yes / No
6		What lesson module did the skills you chose to practice this week come from?	- Introduction& Knowing each other - Physical & Cognitive development - Emotional & Social Development - Commentating with Parents - Behavioral Problems - Equality & Inclusion - Play - Educational skills & intelligence - Disease prevention & Self hygiene - Healthy Nutrition - Preparing for kindergarten & School
7		How many times did you practice these skills with your child this week?	0 / 1 / 2 / 3 / 4+
8	If No to #5	Did you discuss any of your experiences this week with your group?	Yes / No
9		What day of the month were you born on?	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
10		What is your favorite color?	
		Thank you for completing this survey!	

Endline Survey

Question Number	Logic	English Text	Answer Choices
1		What health center conducts your parenting trainings?	Sakhra HC Rawda HC Altwal HC Waqas HC Mqablin HC Salha HC Adlil HC

2		What is the number of your training group?	Group 33 Group 34 Group 35 Group 36 Group 37 Group 38 Group 39 Group 40 Group 41 Group 42 Group 43 Group 44 Group 45 Group 46 Group 47 Group 48 Group 49
3		What is the name of your facilitator?	Waad Abo Saleim Mayson Momani Ranim Mar'i Batool Ghragher Suzan Bshish Faten Awajneh Rasha Fawares Shouroq Salem Sharifa Mahasneh Mervat Radyan Huda Khlefat Buraq Shamayleh Tamam Mosa Deyala Hamdan Ruqaya Badri Nermin Kherat Ahmad Assaf
4		Did you attend the training session this week?	Yes / No
5		Did you make a plan to practice the new skills you learned with your child this week?	Yes / No
6		What lesson module did the skills you chose to practice this week come from?	- Introduction& Knowing each other - Physical & Cognitive development - Emotional & Social Development - Commentating with Parents - Behavioral Problems - Equality & Inclusion - Play - Educational skills & intelligence

			- Disease prevention& Self hygiene - Healthy Nutrition - Preparing for kindergarten & School
7		How many times did you practice these skills with your child this week?	0 / 1 / 2 / 3 / 4+
8	If No to #5	Did you find anything challenging during the weeks of training?	
9		Did you finding anything to be successful during the weeks of training?	
10		On average how many times a week do you engage in play with your child?	0 / 1 / 2 / 3 / 4+
11		On average how many times a week do you engage in reading with your child?	0 / 1 / 2 / 3 / 4+
12		On average how many times a week do you engage in singing with your child?	0 / 1 / 2 / 3 / 4+
13		Did you attend all of the training sessions?	Yes / No
14		How many children do you have?	1 / 2 / 3 / 4 / 5+
15		What is your gender?	Female / Male
16		What is your age?	17-20 21-25 26-30 31-35 36-40 40+
17		What day of the month were you born on?	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
		What country were you born in?	Jordan Syria Other (please specify)
18		Were you ever in a refugee camp?	Yes / No
19		Are you currently employed?	Yes / No
20		What is your favorite color?	
		Thank you for completing this survey!	