



# Lessons and Impacts of *Ahlan Simsim* TV Program in Pre-Primary Classrooms in Jordan on Children's Emotional Development: A Randomized Controlled Trial<sup>1</sup>

This study, led by Global TIES for Children at New York University, is one of the first causal impact evaluations of a mass media program that is: 1) designed for countries in the Middle East and North Africa (MENA) affected by the Syrian conflict and refugee crisis and 2) focused on preschool-age children's emotional development. Sesame Workshop and the International Rescue Committee (IRC) collaborated with NYU on this study. It evaluates the effects of *Ahlan Simsim*, a television show co-produced by Sesame Workshop and Jordan Pioneers that has been viewed by more than 23 million children across the MENA region, including 57% of displaced Syrians across Jordan, Lebanon, and Iraq. Each season of *Ahlan Simsim* ("Welcome Sesame" in Arabic)\* focuses on social-emotional development, including teaching specific emotion words and strategies for managing strong emotions. For the study, a selection of 26 episodes from the first four seasons of *Ahlan Simsim* were shown in Ministry of Education pre-primary classrooms every day for 12 weeks in Jordan. These classrooms consisted largely (97%) of Jordanian host community families. Though the benefits of educational media interventions on children's learning are well-established, there is relatively little research in the MENA region rigorously testing its effectiveness targeting emotional development.

## KEY TAKEAWAYS

- This study **confirms key aspects of the *Ahlan Simsim* television show's theory of change**. We found positive impacts on children's:
  - Knowledge of the *Ahlan Simsim* TV show and characters
  - Expressive emotion recognition (ability to correctly state a pictured emotion)
  - Ability to identify others' emotions in specific social scenarios
  - Mentions of breathing strategies as a way to manage strong emotions, one of six emotion regulation strategies targeted in the curated *Ahlan Simsim* curriculum
- We also found impacts on caregiver reports of viewing the *Ahlan Simsim* TV show at home with their child.



- Effect sizes are small to moderate, comparable in size to those of other in-person programs targeting emotional development in early childhood<sup>2, 3</sup>.
- The study did not find significant effects when it came to:
  - Receptive emotion recognition (ability to correctly select the illustrated facial expression that pictured a named emotion)
  - The other five emotion regulation strategies targeted in the *Ahlan Simsim* curriculum
- **The *Ahlan Simsim* show may provide an effective supplement to the social-emotional component of a national pre-primary curriculum.**
  - Follow-up discussions with teachers, principals, and data collectors suggest that pre-primary teachers were enthusiastic about the program; engaged with the content in a variety of innovative ways (e.g., aligning their lesson plans with the episodes and referring back to topics of the show in classroom activities); and are continuing to show the episodes to their new (2022–2023) classes of children.
  - Preliminary analyses shows that integration of the TV show into school curriculum did not have any unintended negative impacts on teachers' observed practices.
- **Delivering *Ahlan Simsim* television episodes in school classrooms cost \$3 per child<sup>4</sup>.** This cost includes the personnel involved in delivering the program and the adjusted price of equipment (TVs and flash drives) that reflect the length of time these materials were used in each classroom.
- Future directions and considerations for use of *Ahlan Simsim* in the MENA region and in pre-primary education:
  - Additional teacher training could be useful to improve children's learning of emotion vocabulary in region-specific linguistic and cultural application, as some emotion words differed in translation from intended meanings or were used interchangeably with other new emotion words by children.
  - The next step of enacting a range of regulation strategies may require supplementing the TV program with accompanying teacher practices that support coping with emotions in social interactions.



## BACKGROUND

Supports for young children's social-emotional learning (SEL) are critical to child development and likely to be even more so for families facing economic instability, local or global crises, and reduced access to basic needs. Communities hosting large refugee populations tend to experience such disruptions, especially when the communities themselves are already under-resourced<sup>5</sup>. As a result, failure to invest in early childhood development (ECD) in these contexts comes at a substantial cost to the well-being of children and families in both refugee and host communities<sup>6</sup>. Scholars and advocates alike have called for programs and services that are accessible, trauma-informed, and culturally-responsive<sup>7</sup>, and have emphasized SEL specifically as a deeply needed focus for supporting affected populations<sup>8, 9, 10</sup>. Despite this need, there is a dearth of evidence surrounding effective, cost-efficient strategies to support early childhood SEL in under-resourced, conflict-affected settings.

### SEL in early childhood: Emotion knowledge & regulation

Social-emotional competencies are critical for children's development and academic success<sup>11, 12, 13</sup>. Emotion knowledge and emotion regulation are two key

components of social-emotional preparedness that are foundational to young children's ability to form strong relationships, navigate social situations, and successfully solve problems<sup>14</sup>. Emotion knowledge refers to the ability to identify and express emotions with precise vocabulary, which is particularly critical in early childhood when children are learning to engage positively with peers<sup>15</sup>. In this study, we are interested in expressive and receptive emotion recognition and emotion situation knowledge, the ability to understand what emotions might be present in a given situation.

Emotion regulation encompasses the management of emotions: how the child copes with strong emotions in response to different social situations<sup>16</sup>. These skills enable children's positive relationships with family, peers, and teachers; sustained participation in classroom instruction and activities; and positive experiences of school in general<sup>17, 18</sup>. Exposure to significant stressors or traumatic events can disrupt the development of emotion knowledge and regulation, underscoring the need to target these outcomes in under-resourced and conflict-affected contexts, where children and families from both refugee and host communities experience a significant amount of stress<sup>19, 20</sup>.



This includes contexts like Jordan, which, in the last 12 years, has experienced one of the largest refugee flows in recent years, as Syrian refugees flee their civil war. The massive influx of refugees and economic stressors such as inflation and unemployment have put enormous pressure on already strained infrastructure, including schools, hospitals, and housing. The COVID-19 pandemic further exacerbated the challenges faced by refugees and host communities alike, with limited access to healthcare, education, and other essential services<sup>21</sup>. All of this has implications for children's social-emotional development.

### Early childhood SEL interventions

Interventions targeting SEL in young children have been successful in increasing emotion knowledge and regulation skills<sup>22</sup>. The most effective programs feature targeted activities focused on identifying and managing emotions, typically implemented in school settings. Mass media, particularly broadcast television, offers a scalable and accessible means to target these skills because it reaches the vast majority of most countries' families at home<sup>23, 24, 25</sup>. Impact evaluations have found positive effects of television-based interventions on various child outcomes, including literacy, numeracy, inclusion, positive attitudes towards outgroups, and prosocial behaviors<sup>26, 27, 28, 29, 30</sup>. Television-based interventions may

be particularly promising for families who have difficulty accessing other SEL interventions. Co-viewing can also help build children's and parents' understanding of these concepts<sup>31, 32</sup>.

### Sesame Workshop: Background & impact

Sesame Workshop has been at the forefront of leveraging television and other media to support children's development and well-being since 1969. The Sesame Model engages experts in television production, content development, and education research throughout program development, delivery, and evaluation in order to define, achieve, and measure program goals<sup>33</sup>. In the past 50 years, a wide variety of studies have found significant positive effects of exposure to *Sesame Street* on a broad spectrum of child outcomes around the world<sup>34</sup>. Outside of the United States, the show employs a co-production model, working with local production companies and other specialists to adapt the original *Sesame Street* format to local culture, circumstances and educational needs<sup>35</sup>. Studies of *Sesame Street* iterations in 15 countries have indicated significant improvements in a variety of children's early learning outcomes including cognitive, cultural, and social dimensions<sup>36</sup>. Evidence suggests that Sesame Workshop programming has also been effective in promoting SEL skills in young children across countries<sup>37, 38, 39</sup>.



### **Ahlan Simsim: Development & design**

The *Ahlan Simsim* TV program, which means “Welcome Sesame” in Arabic, was developed by Sesame Workshop in collaboration with Jordan Pioneers, a local children’s media nonprofit based in Amman. This study evaluates the effects of exposure to a curated set of 26 *Ahlan Simsim* episodes, which were shown daily in Ministry of Education pre-primary classrooms within the Jordan Valley region for 12 weeks. Outside of this study, the show is broadcast daily across the MENA region.

The *Ahlan Simsim* TV show provides early learning via mass media to young children across the MENA region and represents one element of the overall Ahlan Simsim initiative, a partnership between Sesame Workshop and the International Rescue Committee (IRC) to provide families affected by conflict and crisis in Iraq, Jordan, Lebanon, and Syria with a wide variety of early childhood development programming. From February 2020 through May 2022 over 23 million children in the MENA region watched the *Ahlan Simsim* TV show (including 57% of displaced Syrians across Jordan, Lebanon, and Iraq). A total of eight seasons, each consisting of 26 episodes and a distinct focus and curriculum, will be produced<sup>40</sup>. The present study focuses on seasons 1-4, whose main topics were: emotion identification and regulation (seasons 1 and 2), self-regulation and perspective-taking (season 3) and perseverance, optimism, and hope (season 4).

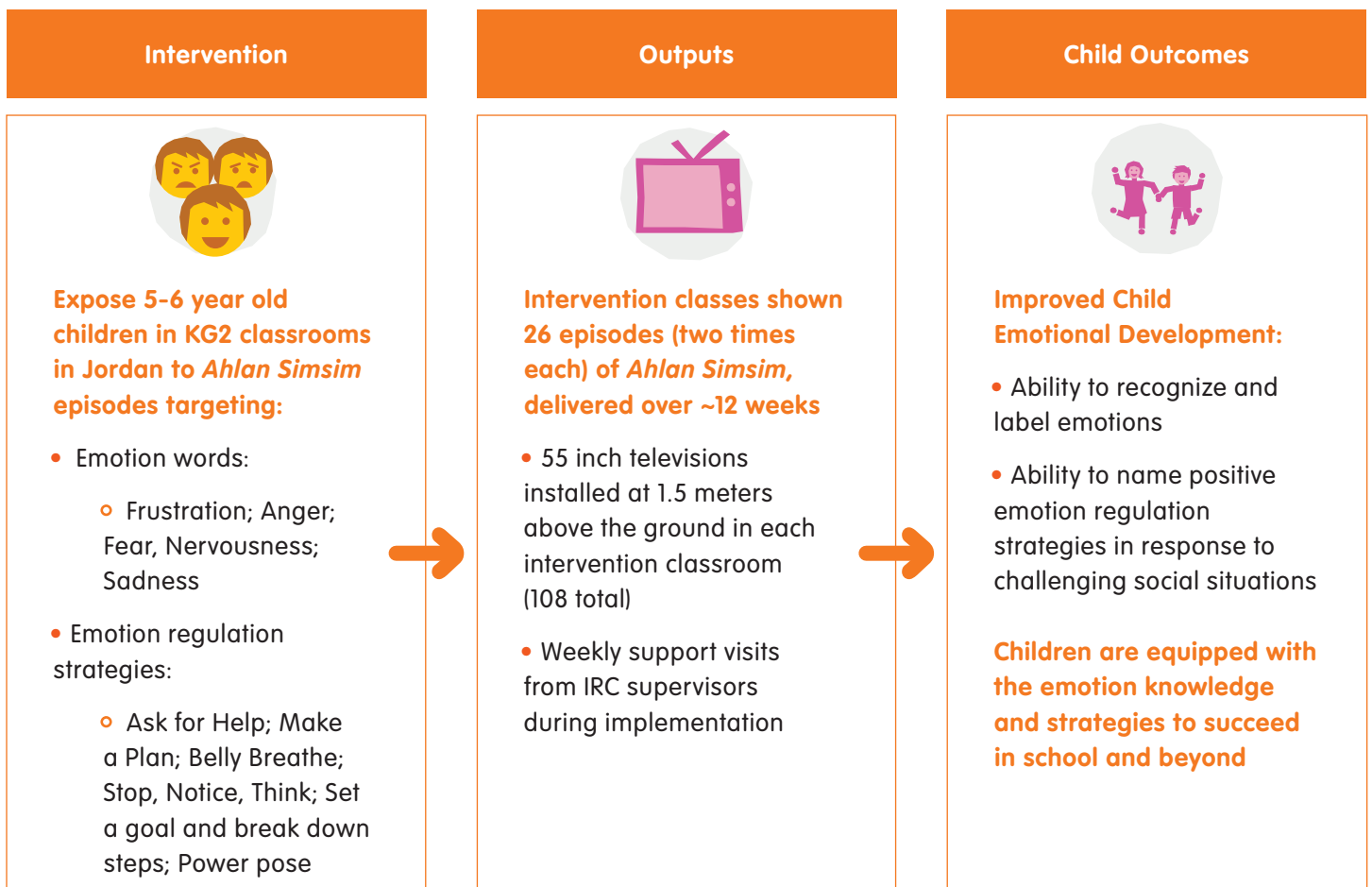
Extensive assessments, consultations, and formative research in Iraq, Jordan, Lebanon, and Syria<sup>41, 42</sup> fed into the design of *Ahlan Simsim* and informed the show’s early focus on children’s emotion vocabulary, which emerged as a priority need for children who have experienced trauma and for all children across the region as well. The show focuses on children’s knowledge of, and strategies for, regulating emotions, aligning with the science on the foundational nature of these skills and addressing likely challenges of children in a region affected by conflict and crisis.

The language used in *Ahlan Simsim* is primarily a range of dialects in Levantine Arabic, with some Modern Standard Arabic (MSA) when teaching key terms and phrases (e.g. some of the emotion words introduced in the program). The use of a variety of dialects, alongside MSA, was intended to support engagement from children and families of different backgrounds, promote conversations about emotions at home, reflect how versions of Arabic are used in reality, model the different contexts in which each is appropriate, and provide more widely understood terms for the key concepts covered in the curriculum. Specific emotion terms were selected in consultation with mental health experts and language advisors in the region, in order to maintain relevance in both MSA and dialect and ensure terms were as neutral and broadly understandable as possible.



## PROGRAM THEORY OF CHANGE

The program posits that exposure to the *Ahlan Simsim* TV show will result in increased emotion recognition, emotion situation knowledge, and emotion regulation, all key components of child social-emotional development that ultimately support their ability to thrive interpersonally and in school.



## RESEARCH DESIGN AND METHODS

In evaluating the effectiveness of the *Ahlan Simsim* television program, we asked the following research questions:

### Research Questions

- What are the impacts of exposure to the *Ahlan Simsim* intervention in school compared with as-usual curriculum on the following:
  - Implementation outcomes (children’s character recognition, responses to characters, home use of key phrases from the program) and caregiver report of viewing *Ahlan Simsim* with their child?
  - Children’s emotion knowledge and emotion regulation?
  - Developmental milestones, and child internalizing, externalizing, and attentional problem behaviors (these outcomes are exploratory in this study)?
- Do effects on child outcomes vary by child gender or age?
- What is the cost of delivering the *Ahlan Simsim* intervention in pre-primary classrooms in Jordan?
- Did the *Ahlan Simism* intervention change teachers’ allocation of time or other resources in treatment classrooms, relative to control classrooms?

### Design and methods

To test the program’s impact, we conducted a cluster-randomized controlled trial in public schools within Irbid, Balqa, and Karak (all in the Jordan valley region) during the second half of the 2021-2022 academic year. A total of 216 schools across the three governorates participated in the study. Half (108) of participating classrooms received 55-inch TVs and flash drives with 26 episodes loaded onto them to show children *Ahlan Simsim* once per day for 12 weeks alongside the Jordan Ministry of Education standard pre-primary curriculum (the

treatment arm). Teachers received technical guidance about how to show the episodes on the TVs, but no specific instructions about how to incorporate *Ahlan Simsim* episodes into their curriculum. The other 108 classrooms (the control arm) continued with their normal curriculum. Each episode was watched twice during the 12-week period. In addition to standard Institutional Review Board (IRB) approval, the study design was also approved by senior staff of the research and early childhood education departments of Jordan’s Ministry of Education.

Findings are primarily based on data collected at two points in time from 4,313 eligible families whose children were students in the participating classrooms. The majority of these families — 97% — were Jordanian; only 3% were Syrian, driven in part by general access challenges for Syrian children to pre-primary education in Jordan overall<sup>43</sup>. Main outcomes are from data collected using a child direct assessment tool that incorporated qualitative and quantitative methods. All the measures incorporated in this evaluation were piloted at least once; the child direct assessment measure was piloted three times. All data for this study was collected by IRC enumerators in collaboration with NYU.

- **Baseline data** were collected between December 2021 and February 2022 and consisted of a caregiver survey conducted over the phone that took approximately 30–45 minutes to complete. In-person data collection was not possible at baseline due to COVID-19 restrictions.
- **Endline data** were collected between May and June 2022. This wave included the same caregiver survey and a child direct assessment, administered in schools, developed by the research team for the specific context and goals of this study.

Additional implementation data were used in analysis, where relevant.

## STUDY FINDINGS

Below we summarize findings for each research question.

### Impacts on engagement with and knowledge of the *Ahlan Simsim* TV show

As an implementation check, we tested children's familiarity with *Ahlan Simsim* characters. Children who were shown *Ahlan Simsim* in their pre-primary classrooms, compared to those who were not, were more likely to recognize the show's seven characters, correctly name these characters, like these characters, and identify that they are from the *Ahlan Simsim* TV show. They were not more likely, however, to use phrases from the show at home, according to their parents.

Caregivers of children who watched the *Ahlan Simsim* episodes in school reported watching *Ahlan Simsim* more at home with their children. This suggests that inclusion of educational children's media content in school contexts may increase home exposure and may do so by increasing co-viewing, the type of viewing most likely to lead to child learning<sup>44, 45</sup>.

### Impacts on children's emotion knowledge and emotion regulation

To analyze the impact of the *Ahlan Simsim* episodes on children's emotion knowledge and emotion regulation, we looked at several components of these two skills. We used responses to facial expression illustrations to assess children's expressive and receptive emotion recognition and responses to a series of short, social scenario vignettes to assess their emotion vocabulary, situation knowledge, and regulation strategies.

#### Effects on children's emotion knowledge

The program positively affected expressive emotion recognition, but not receptive emotion recognition. Expressive emotion recognition is children's ability to state a specific emotion word to represent how they or someone else is feeling (in this case, prompted by an illustration of a facial expression). Receptive emotion recognition, on the other hand, is the ability to identify emotions without stating them (e.g., to point to which illustration is feeling frustrated). Children's ability to produce emotion words (expressive) is typically *more* challenging than identifying the associated facial expression when given the words (receptive), and therefore a higher-order developmental task. Because the

stimuli shown to children as part of the assessment were more targeted in the expressive task (where they were shown one illustrated facial expression) than in the receptive one (where they were shown a set of four), children may have been able to show their increased knowledge of emotion words more readily in the expressive task.

The program introduced multiple Arabic words for emotions associated with discomfort that go beyond anger and sadness, including words for *frustration*, *nervousness*, and *fear*. Children exposed to the *Ahlan Simsim* episodes in school were more likely to use these new advanced emotion words overall (i.e. throughout the assessment), as well as correctly in response to specific social scenarios. This suggests that the intervention both introduced emotion vocabulary and facilitated children's ability to link these terms with certain social situations. However, many of the emotion words used in the program's curriculum were used interchangeably with other emotion words of the same (positive or negative) valence (for example, children mentioning fear for a situation about frustration). This is a common pattern in learning new vocabulary in early childhood — learning more general meanings, or valence, before more specific meanings<sup>46</sup>. In addition, potential discrepancies between intended meanings of specific emotion words within the television programming and their more common use/meaning in the Jordanian Arabic context may explain some of the discrepancies in findings between general valence versus specific word learnings. For example, the Arabic word for *frustration* used in the show and this study — *al'ihbat* — differs in important ways in its meaning from the American English meanings of frustration and might better translate to something closer to despair. This potential translation issue could help explain why children were more likely to have learned the general negative valence of these new emotion words than the specific subtleties of meaning between different words of the same valence.

Some effects were found on emotion words that were not included in the *Ahlan Simsim* curated content, such as *loneliness*. While surprising, one possible explanation is that children were making these gains through increased viewing of the broader *Ahlan Simsim* television program (which does include episodes on these emotion words) at home. This is supported by our finding that children in the treatment group were more likely to watch *Ahlan Simsim* at home at endline, as reported by caregivers.





### Effects on children's emotion regulation skills

To assess emotion regulation skills, we asked children, in response to social situation vignettes, what the character in each story should do as well as what the child would do if faced with the same situation. We used their answers to identify a set of emotion regulation strategies that the children mentioned. To do this, we used open coding to qualitatively analyze children's open-ended responses to these questions. This resulted in a total of 19 emotion regulation strategies, four of which mapped to regulation strategies targeted in the *Ahlan Simsim* episodes<sup>47</sup>. The episodes targeted six strategies in total, two of which did not emerge in children's responses.

We tested effects for these four targeted strategies, as well as the 15 others identified by children in their answers (but not highlighted in the *Ahlan Simsim* episodes), but only found significant differences between the treatment and control arms on one of the (targeted) strategies: positive impacts for *breathing*. This suggests that although other facets of children's emotional development were successfully impacted, applying this emotion knowledge to enacting a range of regulation strategies was not, by and large, an effect of the show. However, though we only found significant positive impacts on one regulation strategy, this finding was robust to multiple hypothesis testing adjustments<sup>48</sup>.

*Breathing*, as an emotion regulation strategy, is quite prominent in the show (for example, in suggestions to use belly breathing when experiencing strong emotions). The technique of turning one's awareness to breathing in the context of strong emotions is central to many social-emotional learning interventions and school-based mindfulness programs, including one implemented in Lebanon for Syrian refugee children<sup>49</sup>. It is relevant to both Western models of emotion regulation that center on refocusing attention, as well as to Eastern and Buddhist models of processing emotion.

### Impacts on developmental milestones and problem behaviors

Foundational emotion skills like emotion recognition are related to developmental outcomes such as more general social development and behavior problems, but these are generally longer-term outcomes. Given the specific focus of the show on foundational emotional skills, we were curious to investigate — but did not expect to see effects on — general developmental milestones and behavior problems as reported by caregivers. We did not find impacts on these outcomes.

### Impacts by demographic characteristics

We found no evidence for differences in effects of exposure to *Ahlan Simsim* across child gender or child age. However, child age was limited to roughly a one-year span, as the evaluation focused on implementation only within pre-primary classrooms in Jordan. A wider age range of children may have revealed differences in impacts.

### Costs of the *Ahlan Simsim* intervention in pre-primary classrooms

The study included a cost-effectiveness analysis led by the Center for Benefit-Cost Studies of Education at University of Pennsylvania and the Best Use of Resources team at IRC, using an ingredients method<sup>50</sup> to estimate the cost of delivering this 12-week classroom mass media intervention as compared to business-as-usual control classrooms. This calculation does not include the cost of creating and producing the television show, instead focusing on the cost of delivering this existing resource in pre-primary classrooms in Jordan. The cost includes personnel involved in delivering the program and equipment purchased. We adjust the full purchase prices for equipment (TVs and flash drives<sup>51</sup>) to reflect the length of time these materials are used for the intervention. This is a standard practice in cost-effectiveness evaluation to accurately reflect the cost of resources used that corresponds to the program effect<sup>52, 53</sup>.



The cost to IRC of showing the *Ahlan Simsim* episodes to 2,120 students in 108 treatment classrooms, compared to the business-as-usual control condition, was \$6,360: approximately \$3 per child. Most of this is the cost of personnel who were involved in the TV procurement and implementation.

### Changes to teachers' allocation of time or classroom practices

During the implementation period (February to May 2022), treatment and control classroom teachers report spending equal time in teaching the national pre-primary curriculum and managing disruptive classroom behaviors. In addition, for a subsample of classrooms (the ones in Irbid), we directly observed teacher practices using a measure of quality of support for learning through play<sup>54</sup>. We found that the quality of teacher-child interactions was not affected by the program; teachers who showed the half-hour episodes daily in their classroom did not show any noticeable changes in the quality of their interactions to support children's learning. This suggests that the program is feasible to implement within the context of a pre-primary national curriculum in public preschools without any unintended negative impacts on teacher practices.

### Limitations

There were several limitations to this study that should be acknowledged and considered when interpreting these findings. First, due to relatively low proportions of Syrian background students in the participating classrooms, the above findings should only be interpreted as impacts on Jordanian host community families; we were not able to examine impacts on Syrian children specifically. Outside of this study, however, *Ahlan Simsim* is available over broadcast television and YouTube, and has reached 57% of displaced Syrians in Jordan, Lebanon and Iraq<sup>55</sup>. While the impacts presented here apply to Jordanian host community families and only evaluate effects of the program when administered in schools, they likely have implications as to the benefit of the show for the wider range of children it has been able to reach in other settings<sup>56</sup>. Second, we were not able to collect child assessment data at baseline due to school closures as a result of COVID-19. Had we been able to conduct direct child assessments at baseline, the precision of our estimates would likely have improved<sup>57</sup>. Third, language-related discrepancies in the intervention between show-usage and more-common-usage of a couple of key emotion words (such as frustration) likely affected our measures and findings around target emotion vocabulary.



## IMPLICATIONS & RECOMMENDATIONS

This study shows the opportunity for an educational television show, designed for and produced in the Middle East, to be implemented in schools and yield positive effects on preschool-age children's emotional knowledge and recognition skills. Reports of follow-up discussions with teachers and principals who participated in this intervention suggest an overall positive experience with incorporating the *Ahlan Simsim* episodes into the classroom as well as a variety of strategies for interacting with and building upon the media content. Such integration demonstrates its potential as an effective and versatile resource for teachers. These anecdotal reports and our impact findings highlight the promise of supplementing existing pre-primary school curriculum with focused educational media content (in this case, focused on emotional development).

### Recommendations for future research

- Future research should assess how different strategies may complement this intervention and address other study limitations discussed above. Unique effects on children who directly experienced displacement and conflict, for instance, need to be understood.
- Use of MSA emotion vocabulary in pre-primary curricula should be explored with data from both school and home settings. Given that use of MSA with children at home may be more common among higher socioeconomic status households compared to others that use primarily local dialects (and therefore do not expose children to MSA until they learn it in primary school), more research should be done to better understand how a program targeting young children using primarily MSA for its emotion words could boost children's use of emotion vocabulary at home<sup>58</sup>.



### Recommendations for future educational mass media programming

- Future educational television show interventions can build on this initiative to facilitate children’s emotional learning in Arabic-speaking school and family contexts. Anecdotally, for example, some teachers reported aligning their lesson plans with the *Ahlan Simsim* episodes and referring back to topics of the show in different classroom activities. Practices like these, put into wider use, could further facilitate children’s learning and application of new emotion words and concepts and might extend the gains observed here to a wider range of emotion regulation strategies and use of emotion words at home.
- Similar interventions targeting children in the MENA region should build on efforts to understand the use of emotion words and concepts in Arabic in the Levant region. Research on the everyday use of and socialization around emotions could greatly benefit the effort to target children’s emotion competencies through educational media. Though Sesame Workshop engaged extensively with a language advisory to select focal terms and phrases in *Ahlan Simsim*, additional

steps might be helpful to better understand the emotion vocabulary and concepts that are most meaningful to children and families in this context. This could help to avoid some of the imprecise translation (such as frustration and caring) identified in the interpretation of our study’s results.

Given continued threats to and uncertainty around children’s stability and well-being worldwide, the development of effective SEL supports in modalities that reach large numbers of children in accessible, cost-effective ways are urgently needed. This evaluation shows that an educational media intervention for pre-primary-age children in Jordan can improve and facilitate foundational aspects of their emotional development. In doing so, the *Ahlan Simsim* TV program contributes to efforts to support children’s social-emotional learning in the Levant region, a region affected by poverty, migration, and displacement in recent years. While questions remain regarding the additional strategies needed for supporting the full spectrum of children’s emotional development needs in this region, this intervention and evaluation represent a strong first step for demonstrating how children’s media interventions can effectively target specific social-emotional skills in this context.

## References

- \* *Ahlan Simsim* is made possible by funding from the MacArthur Foundation.
- <sup>1</sup> The content of this brief is drawn from a longer report authored by Casey Moran<sup>1</sup>, Dennis Hilgendorf<sup>1</sup>, Vicky Yiran Zhao<sup>1</sup>, Dalia Al-Ogaily<sup>1</sup>, Hirokazu Yoshikawa<sup>1</sup>, Kate Schwartz<sup>2</sup>, Joyce Roflfa<sup>1</sup>, Andrés Molano<sup>1</sup>, Kendra Strouf<sup>1</sup>, Mohammad Khanji<sup>2</sup>, Rawan Abu Seriah<sup>2</sup>, Mohammad Al Aabed<sup>2</sup>, Ragheb Fityan<sup>2</sup>, Phoebe Sloane<sup>2</sup>, Laila Hussein<sup>2</sup>, Da'ad Hidayah<sup>2</sup>, Manar Shukri<sup>2</sup>, Tareq Sharawi<sup>2</sup>, Kimberly Foulds<sup>3</sup>, A. Brooks Bowden<sup>4</sup>, Sangyoo Lee<sup>4</sup>, Priyamvada Tiwari<sup>1</sup>, Jere Behrman<sup>4</sup> [where <sup>1</sup>Global TIES for Children at New York University; <sup>2</sup>International Rescue Committee; <sup>3</sup>Sesame Workshop; <sup>4</sup>University of Pennsylvania]
- <sup>2</sup> Luo, L., Reichow, B., Snyder, P., Harrington, J., & Polignano, J. (2022). Systematic review and meta-analysis of classroom-wide social-emotional interventions for preschool children. *Topics in Early Childhood Special Education, 42*(1), 4-19.
- <sup>3</sup> Murano, D., Sawyer, J. E., & Lipnevich, A. A. (2020). A Meta-Analytic Review of Preschool Social and Emotional Learning Interventions. *Review of Educational Research, 90*(2), 227-263
- <sup>4</sup> This cost does not include the fixed costs of creating the programming.
- <sup>5</sup> Jones, N., Baird, S., Abu Hamad, B., Bhutta, Z. A., Oakley, E., Shah, M., ... & Yount, K. M. (2022). Compounding inequalities: Adolescent psychosocial well-being and resilience among refugee and host communities in Jordan during the COVID-19 pandemic. *PLoS one, 17*(2), e0261773.
- <sup>6</sup> Bouchane, K., Yoshikawa, H., Murphy, K.M., & Lombardi, J. (2018). Early Childhood Development and Early Learning for Children in Crisis and Conflict. Background paper prepared for the 2019 Global Education Monitoring Report. <https://nurturing-care.org/wp-content/uploads/2018/12/UNESCO.pdf>.
- <sup>7</sup> Ladson-Billings, G. (2021, July). Three decades of culturally relevant, responsive, & sustaining pedagogy: What lies ahead?. In *The Educational Forum* (Vol. 85, No. 4, pp. 351-354). Routledge.
- <sup>8</sup> Ibáñez, A. M., Moya, A., & Velásquez, A. (2022). Promoting recovery and resilience for internally displaced persons: lessons from Colombia. *Oxford Review of Economic Policy, 38*(3), 595-624.
- <sup>9</sup> Tubbs Dolan, C., Kim, H. Y., Brown, L., Gjicli, K., Borsani, S., Houchaimi, S. E., & Aber, J. L. (2022). Supporting Syrian Refugee children's academic and social-emotional learning in national education systems: A cluster randomized controlled trial of nonformal remedial support and mindfulness programs in Lebanon. *American Educational Research Journal, 59*(3), 419-460.
- <sup>10</sup> Yoshikawa, H., Wuermli, A. J., & Aber, J. L. (2019). Mitigating the impact of forced displacement and refugee unauthorized status on youth. In M. Suarez-Orozco (Ed.), *Humanitarianism and mass migration: Confronting the world crisis* (pp. 186-206).
- <sup>11</sup> Chaux, E., Barrera, M., Molano, A., Velásquez, A. M., Castellanos, M., Chaparro, M. P., & Bustamante, A. (2017). Classrooms in peace within violent contexts: Field evaluation of Aulas en Paz in Colombia. *Prevention science, 18*(7), 828-838.
- <sup>12</sup> Murphy, K. M., Yoshikawa, H., & Wuermli, A. J. (2018). Implementation research for early childhood development programming in humanitarian contexts. *Annals of the New York Academy of Sciences, 1419*(1), 90-101.
- <sup>13</sup> Ndijuye, L. G. (2022). Developing conflict resolution skills among pre-primary children: Views and practices of naturalized refugee parents and teachers in Tanzania. *Global Studies of Childhood, 12*(2), 159-169.
- <sup>14</sup> Izard, C., Fine, S., Schultz, D., Mostow, A., Ackerman, B., & Youngstrom, E. (2001). Emotion knowledge as a predictor of social behavior and academic competence in children at risk. *Psychological science, 12*(1), 18-23.
- <sup>15</sup> Raver, C. C. (2002). Emotions Matter: Making the Case for the Role of Young Children's Emotional Development for Early School Readiness. *Social Policy Report*. Volume 16, Number 3. Society for Research in Child Development.
- <sup>16</sup> Kopp, C. B. (2002). School readiness and regulatory processes. *Social Policy Report, 16*(3), 11-15.
- <sup>17</sup> Ladd, G. W. (1999). Peer relationships and social competence during early and middle childhood. *Annual review of psychology, 50*(1), 333-359.
- <sup>18</sup> Raver, et al., op. cit.
- <sup>19</sup> Jones, N., Baird, S., Abu Hamad, B., Bhutta, Z. A., Oakley, E., Shah, M., ... & Yount, K. M. (2022). Compounding inequalities: Adolescent psychosocial wellbeing and resilience among refugee and host communities in Jordan during the COVID-19 pandemic. *PLoS one, 17*(2), e0261773.
- <sup>20</sup> Umiltà, M. A., Wood, R., Loffredo, F., Ravera, R., & Gallese, V. (2013). Impact of civil war on emotion recognition: the denial of sadness in Sierra Leone. *Frontiers in psychology, 4*, 523.
- <sup>21</sup> Syria refugee crisis explained (n.d.) USA for UNHCR. <https://www.unrefugees.org/news/syria-refugee-crisis-explained/>.
- <sup>22</sup> Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child development, 82*(1), 405-432.
- <sup>23</sup> Baggett, K. M., Davis, B., Feil, E. G., Sheeber, L. L., Landry, S. H., Carta, J. J., & Leve, C. (2010). Technologies for Expanding the Reach of Evidence-Based Interventions: Preliminary Results for Promoting Social-Emotional Development in Early Childhood. *Topics in Early Childhood Special Education, 29*(4), 226-238.
- <sup>24</sup> Engle, P. L., Fernald, L. C., Alderman, H., Behrman, J., O'Gara, C., Yousafzai, A., ... & Global Child Development Steering Group. (2011). Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *The Lancet, 378*(9799), 1339-1353.
- <sup>25</sup> Kohn, et al., op. cit.
- <sup>26</sup> Borzekowski, D. L. (2018). A quasi-experiment examining the impact of educational cartoons on Tanzanian children. *Journal of applied developmental psychology, 54*, 53-59.
- <sup>27</sup> Connolly, P., Fitzpatrick, S., Gallagher, T., & Harris, P. (2006). Addressing diversity and inclusion in the early years in conflict-affected societies: a case study of the Media Initiative for Children—Northern Ireland. *International Journal of Early Years Education, 14*(3), 263-278.
- <sup>28</sup> Engle, et. al., op. cit.
- <sup>29</sup> Mares, M. L., & Pan, Z. (2013). Effects of Sesame Street: A meta-analysis of children's learning in 15 countries. *Journal of Applied Developmental Psychology, 34*(3), 140-151
- <sup>30</sup> Zielinska, I. E., & Chambers, B. (1995). Using group viewing of television to teach preschool children social skills. *Journal of Educational Television, 21*(2), 85-99.
- <sup>31</sup> Fisch, S. M., Akerman, A., Morgenlander, M., McCann Brown, S. K., Fisch, S. R., Schwartz, B. B., & Tobin, P. (2008). Coviewing preschool television in the US: Eliciting parent-child interaction via onscreen prompts. *Journal of Children and Media, 2*(2), 163-173.
- <sup>32</sup> Morgenlander, M. (2010). Adult-child co-viewing of educational television: Enhancing preschoolers' understanding of mathematics shown on "Sesame Street". Columbia University.
- <sup>33</sup> Fisch, S. M., Truglio, R. T., & Cole, C. F. (1999). The impact of Sesame Street on preschool children: A review and synthesis of 30 years' research. *Media Psychology, 1*(2), 165-190.
- <sup>34</sup> Kearney, M. S., & Levine, P. B. (2019). Early childhood education by television: Lessons from Sesame Street. *American Economic Journal: Applied Economics, 11*(1), 318-50.
- <sup>35</sup> Cole, C. F., Richman, B. A., & Brown, S. K. M. (2014). The world of Sesame Street research. In *G Is for Growing* (pp. 169-202). Routledge.; Fisch et al., op. cit.
- <sup>36</sup> Mares, et. al., op. cit.
- <sup>37</sup> Borzekowski, D. L., & Macha, J. E. (2010). The role of Kilimani Sesame in the healthy development of Tanzanian preschool children. *Journal of Applied Developmental Psychology, 31*(4), 298-305.
- <sup>38</sup> Borzekowski, D. L., Singpurwalla, D., Mehrotra, D., & Howard, D. (2019). The impact of Galli Sim Sim on Indian preschoolers. *Journal of Applied Developmental Psychology, 64*, 101054.
- <sup>39</sup> Cole, C., Arafat, C., Tidhar, C., Tafesh, W. Z., Fox, N., Killen, M., ... & Yung, F. (2003). The educational impact of Rechov Sumsum/Shara'a Simsim: A Sesame Street television series to promote respect and understanding among children living in Israel, the West Bank, and Gaza. *International Journal of Behavioral Development, 27*(5), 409-422.
- <sup>40</sup> Sesame Workshop (2022). *Monitoring Reach and Engagement with Ahlan Simsim in MENA: Wave 3*. New York: Sesame Workshop.
- <sup>41</sup> Kohn, et al., op. cit.
- <sup>42</sup> Foulds, K. (2022). Co-Viewing Mass Media to Support Children and Parents' Emotional ABCs: An Evaluation of *Ahlan Simsim*. *Early Childhood Education Journal, 1-10*.
- <sup>43</sup> Unicef. (2020). *The Middle East and North Africa out-of-school children initiative Jordan country report on out-of-school children*.
- <sup>44</sup> Fisch, S. M., Akerman, A., Morgenlander, M., McCann Brown, S. K., Fisch, S. R., Schwartz, B. B., & Tobin, P. (2008). Coviewing preschool television in the US: Eliciting parent-child interaction via onscreen prompts. *Journal of Children and Media, 2*(2), 163-173.
- <sup>45</sup> Morgenlander, M. (2010). Adult-child co-viewing of educational television: Enhancing preschoolers' understanding of mathematics shown on "Sesame Street". Columbia University.
- <sup>46</sup> Carey, S. (2010). Beyond fast mapping. *Language learning and development, 6*(3), 184-205.
- <sup>47</sup> The four strategies that emerged in open coding of the data that map onto those targeted in *Ahlan Simsim* episodes are: *asking for help, finding an alternative/making a plan, breathing, and taking a break*
- <sup>48</sup> Benjamini, Y., & Yekutieli, D. (2001). The control of the false discovery rate in multiple testing under dependency. *Annals of statistics, 11*(6), 1165-1188.
- <sup>49</sup> Tubbs-Dolan et al., 2022
- <sup>50</sup> Levin, H. M., McEwan, P. J., Belfield, C., Bowden, A. B., & Shand, R. (2018). *Economic evaluation in education: Cost-effectiveness and benefit-cost analysis (Third Edition)*. SAGE.
- <sup>51</sup> To inform policy budgetary decisions related to upfront investments related to replicating this intervention elsewhere, IRC's expenditure total to purchase 112 televisions was \$52,113 and 128 flash drives was \$624.
- <sup>52</sup> Levin, H. M., McEwan, P. J., Belfield, C., Bowden, A. B., & Shand, R. (2018). *Economic evaluation in education: Cost-effectiveness and benefit-cost analysis (Third Edition)*. SAGE.
- <sup>53</sup> Shand, R., & Bowden, A. B. (2022). Empirical support for establishing common assumptions in cost research in education. *Journal of Research on Educational Effectiveness, 15*(1), 103-129.
- <sup>54</sup> Moran, C., Yoshikawa, H., Yiran Zhao V., Kim, S., Mahbub, T. (2023, March). Poster presented at Society for Research on Child Development (SRCD), Salt Lake City, UT.
- <sup>55</sup> Sesame Workshop, op. cit.
- <sup>56</sup> Sesame Workshop, op. cit.
- <sup>57</sup> Bloom, H. S., Richburg-Hayes, L., & Black, A. R. (2007). Using covariates to improve precision for studies that randomize schools to evaluate educational interventions. *Educational Evaluation and Policy Analysis, 29*(1), 30-59.
- <sup>58</sup> Korat, O., Arafat, S. H., Aram, D., & Klein, P. (2013). Book reading mediation, SES, home literacy environment, and children's literacy: Evidence from Arabic-speaking families. *First Language, 33*(2), 132-154.