

Symposium Title:

Social-emotional intervention programs for refugee and crisis-affected children in low-, middle-, and high-income countries

Chair: Ha Yeon Kim, New York University

Discussant: Sharon Wolf, University of Pennsylvania

Diverse stakeholders are increasingly investing in and implementing SEL programs in humanitarian contexts (USAID, 2017). Despite extensive research providing strong evidence that school-based SEL programs can improve children's cognitive, social-emotional, and academic skills (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011), emerging evidence from crisis contexts have shown mixed evidence at best (Aber, Torrente et al., 2017; Aber, Tubbs et al., 2017b; Education in Emergencies: Evidence for Action, 2017; Tubbs Dolan & Weiss-Yagoda, 2017). Most evaluations in crisis contexts focus on whether the program works for children *on average* (Weiss, Bloom, & Brock, 2014). Little is known whether the program works differently for different groups of children, or how low and/or highly variable dosage and implementation quality of these programs in crisis-affected contexts would affect the impacts.

The papers presented in this symposium explore and examine such actionable evidence in low-, middle-, and high-resource humanitarian contexts: Niger (with children affected by Boko Haram), Sierra Leone (with children affected by Ebola outbreak), Lebanon and Germany (with Syrian refugee children fled from the civil war).

The first paper examines the differential impacts by gender and refugee status of low-cost targeted SEL programs in Niger. The findings provide evidence that such programs can bolster developmental skills for children who may be exposed to high risk due to their gender and migration histories. The second paper examines whether gender, grade level, and attendance predict the change in student social emotional functioning among students participating in a school-based SEL intervention program in Sierra Leone. The third paper unpack the role of variability in dosage at individual and classroom levels by testing variation of a SEL program impacts on Syrian refugee children's prosocial behaviors and behavioral difficulties. Lastly, the fourth paper examines variations in structural and teacher-child interaction quality predicting differences on child development in a transitional child-care program for newly arrived immigrant and refugee children in Germany.

Together, systemic variation in impacts and role of variability in dosage and quality of implementation reported in this symposium provides more nuanced perspectives on the challenges and promises of implementing classroom-based SEL with crisis-affected children in various contexts.

The independent discussant, herself an expert in SEL program design, implementation and impact evaluation in low- and middle-income countries, will further reflect on the growing evidence of variability in impacts and implementation of school-based SEL programs in low-, middle, and high-income contexts inform program design and practice to support social-emotional well-being of crisis-affected population.

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Paper 1:

Promoting Children's Social Emotional Learning in Conflict-Affected Settings: Differential impacts by gender and refugee status in Niger

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Background

In 2015, violent attacks by Boko Haram caused approximately 213,000 Nigerian refugees and internally-displaced Nigeriens to seek protection in Niger's Diffa region. Such local and refugee children affected by violence and conflict have often experienced unspeakable adversities, growing up in an unpredictable and low-resource environment that can hamper their healthy social-emotional development (Shonkoff et al., 2012; Sirin & Roger-Sirin, 2015). Quality education with social-emotional learning (SEL) support has been shown to have measurable effects on improving children's social-emotional and academic outcomes in the US (Durlak et al., 2011). Yet, little research has examined whether such SEL programs can provide much needed support for the most vulnerable population, e.g., girls and refugee children in conflict affected settings. This study reports the differential impacts of low-cost school-based SEL programs designed to support stress reduction and executive function, embedded within a high-quality education program.

Research Questions

Using the data collected for a randomized-controlled trial of two SEL programs (Mindfulness, Brain Games) embedded within an after-school tutoring program in Niger, this study examines the differential impacts by gender and refugee status. Specific research questions are:

- (1) Do the impacts of a Mindfulness intervention (Cycle 1: 3-month) on children's social-emotional outcomes vary by gender and refugee status?
- (2) Do impacts of the full-year implementation of SEL programs (Mindfulness, Brain Games) on children's social-emotional outcomes vary by gender and refugee status?

Setting and Participants

As a part of the humanitarian response to violent attacks by Boko Haram, resulting in a large influx of refugee and internally-displaced persons, an international non-profit organization delivered an after-school tutoring program in the Diffa region of Niger, during the 2016-2017 school year. A total of 1,795 second to fourth graders (52% female, 19% refugee) from 30 schools were selected to participate in the tutoring program based on their eligibility (low literacy and numeracy).

Intervention

All participants attending the tutoring program received Learning in a Healing Classroom (LIHC) literacy and numeracy tutoring lessons developed by the iNGO, two hours per day, three days per week, over 20 weeks. LIHC is an SEL-infused curriculum designed to accommodate the unique learning needs of children exposed to armed conflict. In addition, in 15 randomly-selected treatment schools (900 children), two low-cost targeted SEL programs were sequentially implemented: Mindfulness (Cycle 1), designed to target emotion and stress regulation, and Brain Games (Cycle 2), targeting core executive functioning skills. Both Mindfulness and Brain Games consist of short, daily activities and games implemented during the transition between reading and math tutoring lessons. Mindfulness activities include practices known to buffer physiological, cognitive, and emotional stress responses such as deep breathing exercises and attention to present sensations, thoughts and sounds (Zenner et al., 2014). Brain Games are designed to use movement and playfulness to build core executive functioning skills—working memory, attention, and inhibitory control—that provide the foundation for long-term social competence and academic achievement (Best, Miller, & Naglieri, 2011; Blair & Raver, 2014).

Research Design

Due to the small number of participating schools and large variability in school and student characteristics, a matched-sample cluster-randomization design was used. The participating schools ($n=30$) were matched into 15 school-pairs based on pre-randomization school characteristics (e.g., school location, type, number of teachers, student gender, age, refugee status, academic competence composition). Optimal nonbipartite matching (Zhang & Small, 2009) procedure was conducted using the `nbpMatching` package for R (Lu, Greevy, Xu, & Beck, 2011). Within each pair, one school was randomly assigned into the Tutoring Only condition, and the other was assigned into the Tutoring + SEL condition. The overall characteristics of Tutoring Only and Tutoring + SEL schools were highly comparable.

Data Collection

Students were individually assessed through verbal interviews by trained local assessors three times across the academic year. Data were collected on children's: (1) executive function by child and assessor report (Jones et al., n.d.; Smith-Donald et al., 2007), and by tablet-based direct assessment (Hamoudi & Sheridan, 2016), (2) emotional and behavioral regulation difficulties and prosocial behavior (Goodman, 1997), (3) school-related stress and stress response (Connor-Smith et al., 2000) and (3) scenario-based assessments of hostile attribution bias, emotion dysregulation, and aggression (Dodge et al., 2015; di Guinta et al., 2017).

Results

The preliminary analyses of Cycle 1 main impacts suggest that access to Mindfulness intervention, significantly reduced Nigerian and Nigerien children's dysregulated expression of sadness ($b=-.38$, $p<.01$) and aggression ($b=-.28$, $p<.05$).

The Mindfulness program had differential impacts for boys and girls, as well as for refugees and non-refugees. Specifically, girls benefited more from the Mindfulness intervention than boys, with girls reporting higher levels of school-related stress reduction ($b = -.43$, $p < .05$), decreases in sadness dysregulation ($b = -.61$, $p < .01$) and aggression ($b = -.50$, $p < .01$) compared to boys. Boys in the Mindfulness condition showed significant improvement in numeracy skills compared to girls. Additionally, refugee and non-refugee students benefitted from Mindfulness differentially. That is, refugee children in the Mindfulness condition had higher impacts on cognitive skills such as numeracy ($b = .09$, $p < .05$) and inhibitory control ($b = .52$, $p < .05$) than non-refugee children; while non-refugee children showed higher positive impact on emotional and behavioral functioning such as significant decreases in sadness dysregulation ($b = -.50$, $p < .01$) and aggression ($b = -.49$, $p < .01$), but negative impact on cognitive function including executive function ($b = -.08$, $p < .05$) and inhibitory control ($b = .26$, $p = .08$).

Full-year implementation of SEL programs (Mindfulness and Brain Games) had no significant main impact on children's outcomes. When impacts on boys and girls are compared, mindfulness had a significant positive impact on girls' working memory ($b = .29$, $p > .01$) but a negative impact on boys' ($b = -.15$, $p < .05$). The final presentation will include updated impact estimates with multiply-imputed datasets adjusted for multiple comparisons.

Conclusions

Systemic variation in impacts benefitting girls as well as both refugee and non-refugee children in this conflict-affected Nigerian context provides evidence of whether and for whom classroom-based SEL programs can bolster children's social-emotional development, especially for children who may be exposed to higher levels of risk due to their gender and migration histories. These findings inform adaptation of programs and practice to best support all children's needs in culturally, contextually, and developmentally appropriate ways.

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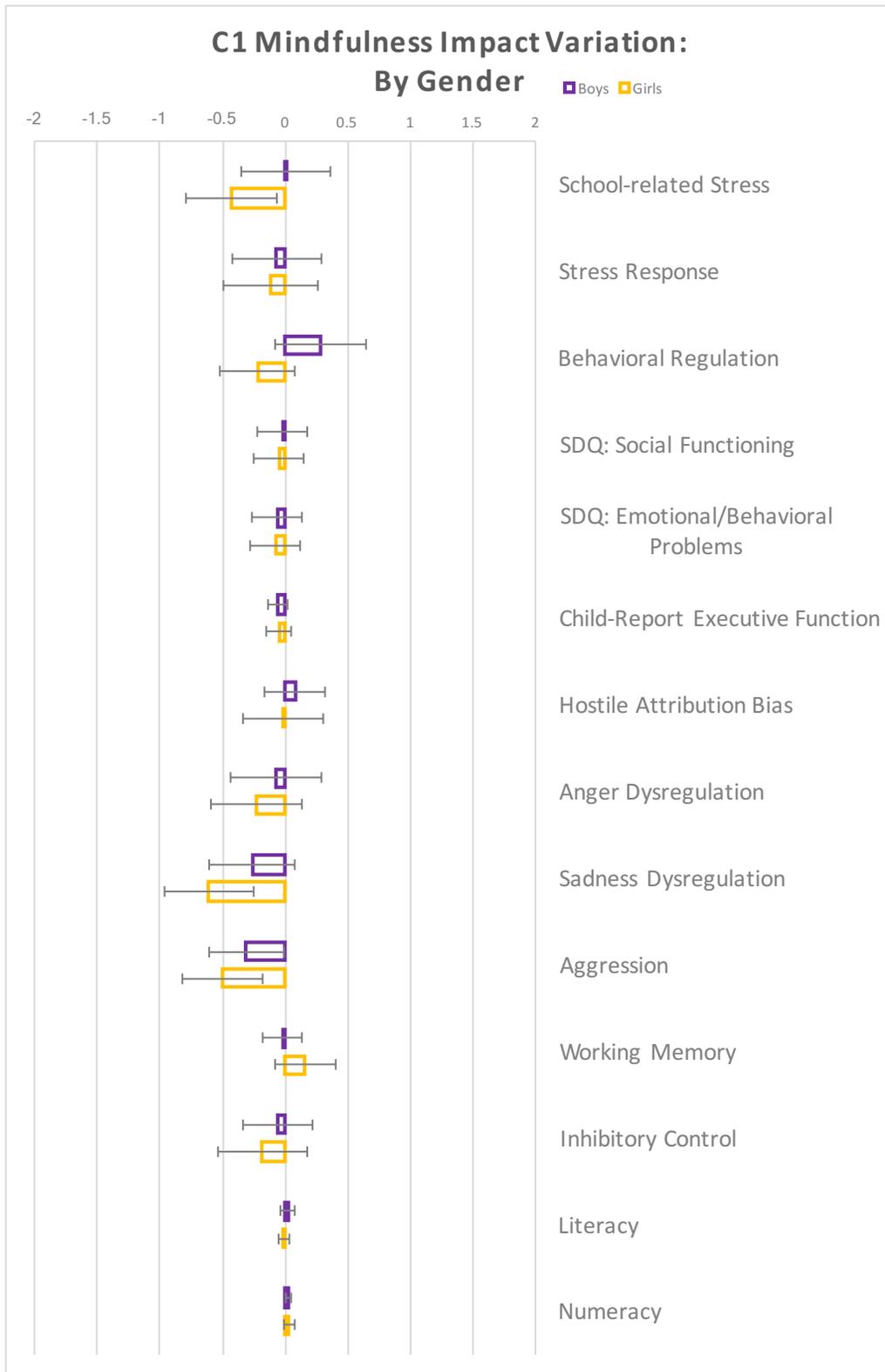


Figure 1. Cycle 1 Mindfulness impacts on boys' and girls' social-emotional outcomes. Bars represent unstandardized impact estimate; and the error bars represent confidence intervals.

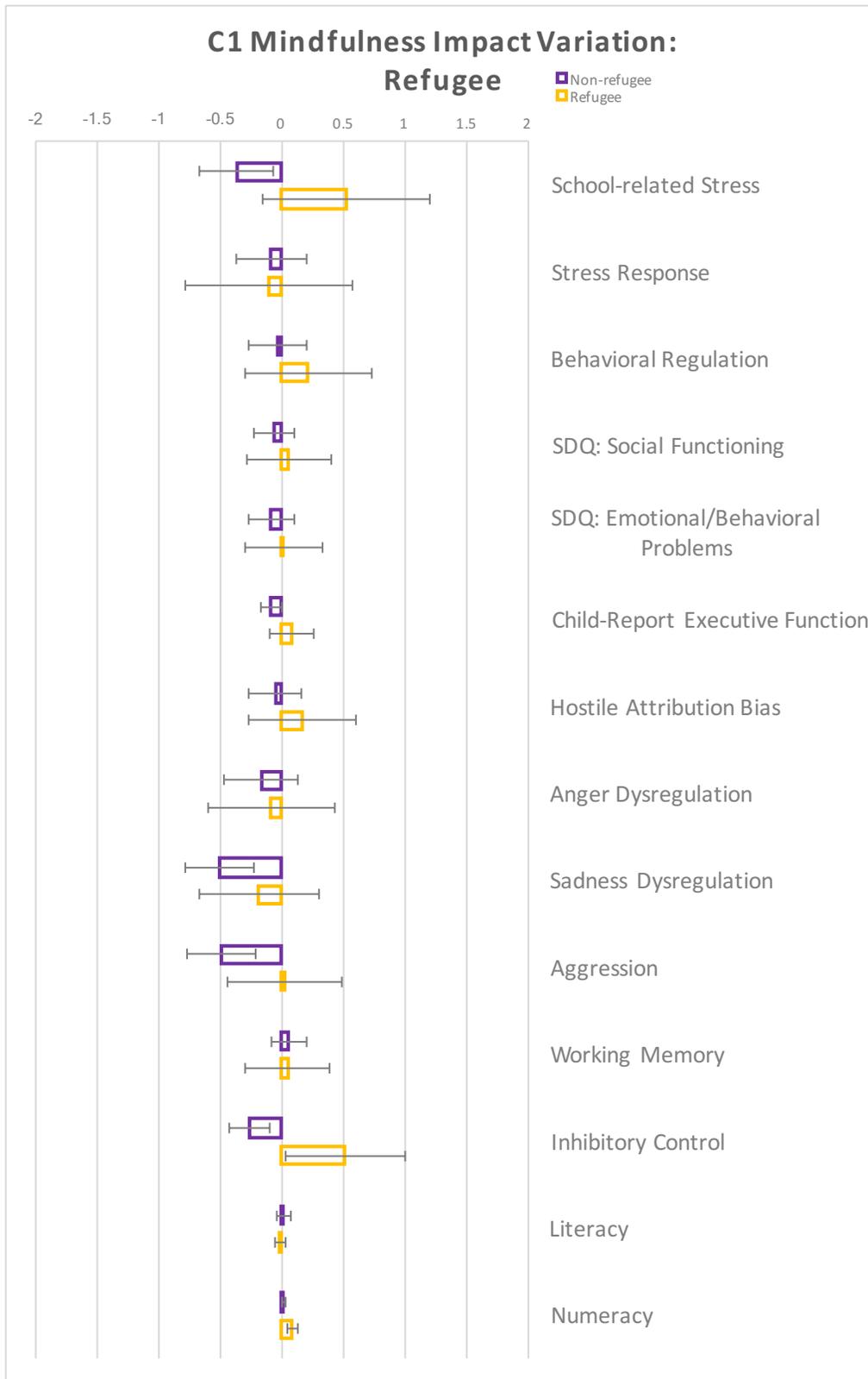


Figure 2. Cycle 1 Mindfulness impacts on non-refugee and refugee children’s social-emotional outcomes. Bars represent unstandardized impact estimate; and the error bars represent confidence intervals.

Paper 2:

SEL Functioning in Crisis-Contexts: Role of Gender, Grade Level, and School Attendance in Sierra Leone

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Background

Brain and behavioral science studies demonstrate that children exposed to the violence and adversity common in crisis-affected contexts have a physiological stress response that can alter healthy brain development, hampering children's ability to learn. However, studies from developed countries also show that children demonstrate remarkable resilience when provided with education opportunities that include social-emotional strategies to reduce the negative effects of adversity and stress (Juster, McEwen, & Lupien, 2010). Similarly-robust evidence is unavailable for crisis-settings – indeed, we know little about how SEL functioning may vary by characteristics of potential program recipients or if change in social-emotional learning occurs. For example, there is evidence of variation of SEL functioning by gender from developed contexts (Putallaz & Bierman, 2004), which may further interact with gendered perceptions of educational and societal norms in Sierra Leone. Students also face increasing demands for labor participation or child care duties as they grow older, potentially affecting both school progression and rate of attendance.

In this paper, I use data from public school classrooms in Sierra Leone —collected as part of an observational implementation study—to examine variation in baseline to end line change in children's social emotional functioning by gender, grade, and rate of attendance.

Setting and Program Design

More than two-thirds of Sierra Leone's six million people live below the poverty line. The Ebola virus wreaked havoc in this environment, deepening human suffering and taking thousands of lives; the unseen mental and emotional trauma placed on children as a result of the outbreak is believed to be significant. Schools in this study are located in the southern province of Bo, the second-most populous district in Sierra Leone and one that was hard-hit by Ebola.

In 2017-2018, the IRC, in collaboration with the Ministry of Education, trained teachers to deliver literacy and SEL support to thousands of children enrolled in public schools in Sierra Leone. All early grade primary teachers (P1-P3) attended a 5-day training on evidence-based early grade literacy strategies and positive classroom management techniques (Aber et. al, 2017). All teachers attended training on and implemented low-cost targeted social-emotional learning

strategies, focused on mindfulness practices and active “brain games” (Jones & Bouffard, 2012) targeting executive functioning skills (working memory, inhibition, and attention).

Samples

This study utilizes primary school data (n=20) from two chiefdoms in Bo district of Sierra Leone; all classrooms in grades one through three (n = 60) were included in the study. Attendance data was collected from all available classrooms for all available students in grades one through three. Ten students per grade level (n=600) were randomly-sampled from classroom attendance registers in October 2017 for teacher report of student SEL. Of them, 522 children who had attendance, demographic, and SEL data available and were included in the analytic sample.

Data Collection

This study relies primarily on attendance data, student SEL competencies, and administrative data.

Attendance data was recorded twice-daily by classroom teachers in IRC-issued government registers. Attendance data was digitized from monthly photos of registers.

Student SEL competencies were measured at the beginning (November 2017) and end (June 2018) of the school year via the Teacher Observation of Classroom Adaptation-Checklist (TOCA-C: Leaf, Schultz, Keys, & Ialongo, 2002; Koth, Bradshaw & Leaf, 2009). Teachers reported the frequency of various student behaviors on 10 randomly-selected students’ during their monthly professional development meeting.

Student administrative data was collected by locally-hired, trained enumerators during baseline academic testing in October of 2017.

Analytic Plan

Attendance data was treated as a continuous variable representing the average rate of attendance. Factor scores for three subscales of ToCA-C (Koth, Bradshaw & Leaf, 2009), *Prosocial Behavior*, *Disruption Problems*, and *Concentration Problems* were estimated separately for Time 1 and Time 2.

First, to describe how grade, attendance, and gender are related to students’ SEL functioning at Time 1, in the beginning of the school year, we examined Pearson correlation coefficients among SEL scores at Time 1 with grade, attendance, and gender. Secondly, to investigate variation in change, we predicted each SEL factor at Time 2, controlling for Time 1, as a function of the demographic variable of interest. Teacher fixed effects were utilized in all regressions. To explore whether the relationship between SEL change and attendance varies by grade level or gender, we ran separate regressions including interactions of attendance by grade and gender. To investigate variation by grade level, we utilize similar regressions with school fixed effects, clustering standard errors at the teacher level.

Preliminary Results

Pair-wise correlations results are presented in Table 1. Semester 1 attendance is negatively correlated with concentration problems. Grade level is negatively associated with prosocial behavior, and being male is positively associated with disruptive behavior and negatively associated with concentration problems.

Student attendance rate is positively associated with increases in students' prosocial behavior ($B = 0.005$, $p = 0.01$) and decrease in students' concentration problems ($B = -0.012$, $p < 0.001$); there is no discernible effect on change in disruptive behavior. Within classrooms, change from Time 1 to Time 2 is not significantly associated with student gender. Within schools, grade level is negatively associated with change in disruptive behavior. Main effects of attendance did not vary by grade or gender.

Conclusion

This paper provides initial evidence that higher attendance to a program that infuses SEL practices into classroom instruction is related to positive changes in students' classroom behaviors across gender and grade level.

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Table 1: Pair-wise Correlations of TOCA-C Factors with Gender, Grade, and Attendance

	PB	DB	CP	Attend	Grade	Male
Prosocial Behavior	1					
Disruptive Behavior	0.00	1				
	-					
Concentration Problems	0.50*	0.07	1			
Semester 1 Attend (%)	-0.03	-0.06	-0.12*	1		
	-					
Grade Level	0.13*	-0.03	0.03	0.12	1	
Male	0.00	0.15*	-0.10*	-0.03	-0.01	1

Paper 3:

Dosage Variability in School-Based Programs: The Roles of Individual- and Classroom-Level Attendance in Refugee Student Intervention Outcomes

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Background:

Since the Syria conflict began in 2011, the Lebanese public school system has faced a growing educational crisis as it struggles to meet the needs of refugee children (Human Rights Watch, 2016). Reports indicate that refugee students enrolled in Lebanese public schools are at high risk for low attendance and dropout (Jalbout, 2015). Inconsistent school attendance at both the student and classroom level may have important implications for the effectiveness of interventions aiming to support these students. Universal interventions targeting student outcomes often also depend on group-level impacts that reinforce individual-level effects over time (Cook et al., 2014). Inconsistent school attendance at the student and classroom levels could therefore interfere with intervention effects beyond the dosage received by individual students.

Objectives:

The present study examines the effect of student attendance on the impact of social-emotional and educational support programs implemented in refugee classrooms. Specific research objectives are:

- 1) Examine the effects of individual- and classroom-level attendance rates and variation in attendance over time.
- 2) Test whether average attendance and attendance variation at the individual and classroom level differentially influences the treatment effects of the LIHC and LIHC + SEL programs.

Setting and Participants:

Data were collected as part of a large-scale randomized control trial for a classroom-based social-emotional learning in Lebanon. Participants were recruited at 21 different research sites located in the Akkar and Bekaa regions of Lebanon. The current analyses use a subset of students in 150 classrooms assigned to implement the LIHC or LIHC + SEL programs. This subset includes 2,991 students (49.8% female) in grades 1-9 in Lebanese public schools whose ages ranged from 6 to 17 years old ($M = 10.7$, $SD = 2.31$).

Intervention:

The International Rescue Committee (IRC) delivered remedial educational support outside of public schools to participating Syrian refugee students. Teachers were trained to use the IRC's Learning in Healing Classrooms (LIHC) curriculum, which integrates social-emotional learning

principles with math and language instruction. Classrooms in the LIHC + SEL group implemented two additional social-emotional learning programs, Mindfulness (Cycle 1) and Brain Games (Cycle 2), which involved brief, daily activities between lessons. Mindfulness exercises targeted students' stress and emotion regulation. Brain Games were designed to build students' executive functioning skills, including working memory, attention, and inhibitory control.

Research Design:

Participating Syrian refugee communities were assigned to one of two intervention groups in the 2016-17 school year: a LIHC group ($N=33$) and a LIHC + SEL group ($N=33$). The intervention was designed to be implemented and evaluated in two stages: Cycle 1 (16 weeks): LIHC vs. LIHC + Mindfulness; and Cycle 2 (16 weeks): LIHC vs. LIHC + Brain Games. Both the LIHC and the LIHC + SEL group had access to three days (8 hours) per week of LIHC curriculum for 2 cycles. In addition, LIHC + SEL group also had access to participate in Mindfulness (Cycle 1) and Brain Games (Cycle 2) activities embedded between academic classes, three 10-minute sessions a day, 90 minutes a week.

Data Collection and Analysis:

Students' monthly attendance was calculated as the percentage of days they attended the program (either LIHC or LIHC + SEL). Preliminary analyses include attendance data from the first cycle of data collection. Individual-level average student attendance was calculated as the mean monthly attendance score. Variation in student attendance was calculated as the standard deviation of student attendance scores across the five months. At the classroom level, average attendance scores and attendance variation were respectively calculated as the mean and standard deviation for all students' monthly attendance across the five-month period. Teachers rated students' prosocial behavior and emotional and behavioral difficulties using the Strengths and Difficulties Questionnaire (SDQ) at three time points across the school year (Goodman, 1997).

Preliminary multilevel models predicted midline (pre-Cycle 2) teacher ratings of students' prosocial behavior and emotional and behavioral difficulties from Cycle 1 individual- and classroom-level attendance and treatment group. Models controlled for baseline teacher ratings of each outcome as well as various student and classroom characteristics. Further analyses will also examine Cycle 2 attendance data. Table 1 lists the unstandardized fixed effects parameters for the two models.

Results:

The preliminary results found that individual-level average attendance predicted greater prosocial behavior ($b = 0.28$, $SE = 0.05$, $p < .001$) and lower reports of social difficulties ($b = -0.26$, $t(1238) = -6.87$, $p < .001$). A significant interaction effect (illustrated in Figure 1) indicates a differential effect of individual-level attendance on prosocial behavior for the two groups ($b = -0.22$, $SE = 0.11$, $p < .05$). Post hoc simple slopes analyses revealed that students' average attendance rates positively predicted prosocial behavior for both groups (p 's $< .01$), but this

effect was stronger for the LIHC group compared to the LIHC + SEL group. There was also a trending interaction effect for treatment group and classroom-level variation in student attendance ($b = -1.33$, $SE = 0.79$, $p = .09$). As shown in Figure 2, higher classroom variation in attendance was associated with greater emotional and behavioral difficulties in the LIHC group. Post hoc simple slopes analyses indicate a marginal effect of classroom-level attendance variation only for the LIHC group ($p = .06$).

Conclusions:

Overall, the preliminary findings suggest that individual-level average attendance may contribute more to student outcomes than individual-level attendance variation and classroom-level attendance. Student attendance also differentially impacted the prosocial behavior and emotional and behavioral difficulties of students in the LIHC and LIHC + SEL programs. Attendance was a stronger predictor for the LIHC group's outcomes compared to the LIHC + SEL group. These findings encouragingly suggest that including the mindfulness exercises may strengthen the LIHC program effects, buffering against the risks associated with low attendance. The preliminary models were limited to Cycle 1 data and therefore cannot assess effects associated with the Brain Games program implemented in Cycle 2. These limited analyses may also have been unable to capture longer term effects of attendance variation and classroom-level processes. Future analyses will include Cycle 2 data to further examine these effects over time.

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Table 1

Fixed Effects Parameters for Preliminary Multilevel Models

	Prosocial Behavior		Emotional and Behavioral Difficulties	
	b	SE	b	SE
Individual Level (L1)				
Average Attendance	0.28 ^{***}	0.05	-0.27 ^{***}	0.04
Attendance Variation	-0.12	0.11	0.14 ⁺	0.08
Female	0.15 ^{***}	0.02	-0.10 ^{***}	0.02
Age for Grade	0.00	0.01	0.02 ^{**}	0.01
Classroom Level (L2)				
Average Attendance	0.44 ⁺	0.25	-0.28	0.17
Attendance Variation	0.74	0.66	0.39	0.44
Treatment Group	-0.02	0.06	0.04	0.04
Grade	0.05 ^{***}	0.01	-0.03 ^{***}	0.01
Tent	-0.17 ^{**}	0.06	-0.01	0.04
Region	-0.01	0.07	-0.16 ^{***}	0.04
Interactions				
L1 Average Attendance*Treatment Group	-0.22 ^{***}	0.11	0.03	0.08
L1 Attendance Variation*Treatment Group	0.01	0.22	-0.04	0.16
L2 Average Attendance*Treatment Group	0.59	0.49	-0.45	0.33
L2 Attendance Variation*Treatment Group	1.56	1.17	-1.33 ⁺	0.79

*** $p < .001$, ** $p < .01$, * $p < .05$, + $p < .1$

Note: Each model also controlled for baseline measures of their respective dependent variables (i.e., prosocial behavior and emotional and behavioral difficulties) not included in this table.

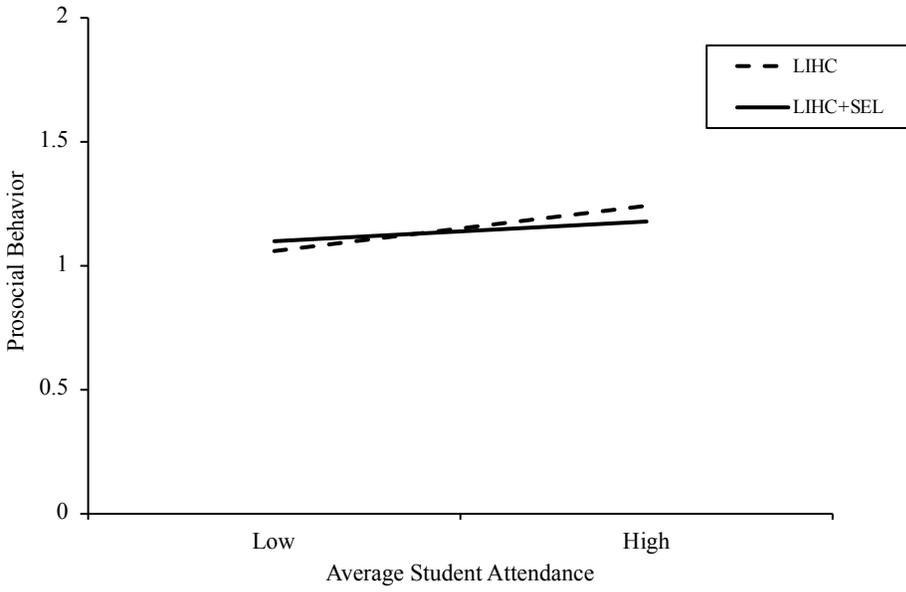


Figure 1. Average individual-level attendance rates differentially influenced the prosocial behavior of students in the LIHC and LIHC + SEL groups.

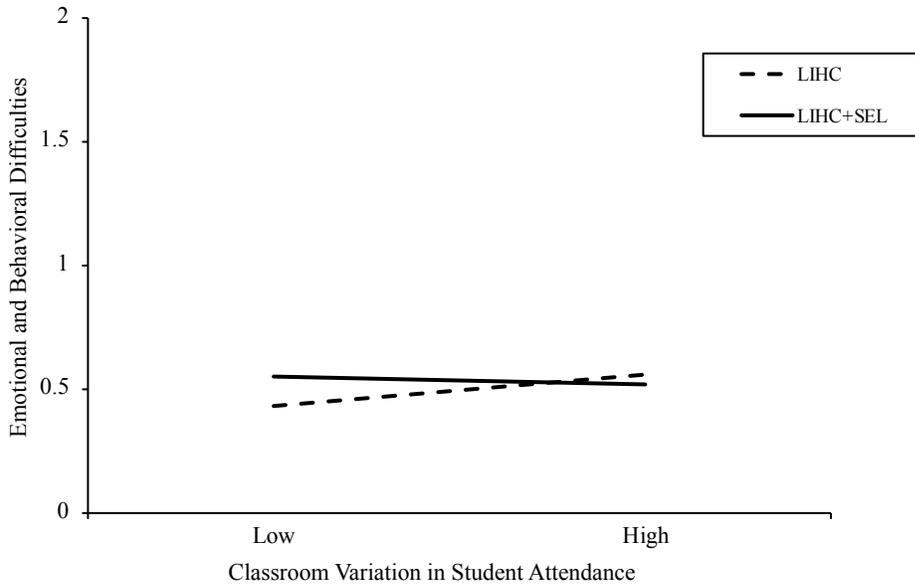


Figure 2. The trending interaction suggests that classroom-level variation in attendance may only moderate intervention effects on emotional and behavioral difficulties for the LIHC group.

Paper 4:

What makes the difference? Assessing the impact of German preschool programs for newly arrived immigrant and refugee children on developmental trajectories

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Background

Between 2016 and 2018 more than one million refugees asked for asylum in Germany. Many of them are children under 6 years of age (German Federal Agency for Migration and Refugees, 2018). Newly arrived immigrant and refugee children are at high risk for mental distress and behavioural problems (Buchmüller et al., 2018). Their discontinuous educational experience puts them in a situation of pronounced difficulties and risks, which emphasizes the need for them to receive special support and care (Hopkins & Hill, 2010; Sirin & Roger-Sirin, 2015). Involvement in early education programs is necessary for children's adjustment, helping them to integrate into the new environment and to prepare them for future academic success. Unfortunately, many of these children do not have the possibility to attend regular preschool kindergartens in Germany due to a scarcity of places (Busch et al., 2018). Thus, the federal state North Rhine Westphalia, which has the highest number of asylum requests in Germany (German Federal Agency for Migration and Refugees, 2018), financed the so-called "Bridging Projects". These are early specialized childhood education and care programs for newly arrived immigrant and refugee children. Studies evaluating the quality and the impact of specialized education and care programs are rare. Our aim is to assess the impact of the Bridging Projects for child development and, moreover, to identify the influential factors of those programs.

Research Questions

This study assesses the impact of the Bridging projects on the change of different skills of newly arrived migrant and refugee children at two times. Specifically, this study aims to answer the following questions:

1. Do children involved in Bridging Projects improve their skills over time?
2. Do the project characteristics (e.g. dosage, teacher-child ratio, emotional-support) predict the trajectories of developmental skills of children in Bridging Projects?
3. Can child variables (e.g. gender, country of origin) contribute to explain these trajectories?

Setting and Participants

The German federal state Nord Rhine Westphalia financed more than one thousand Bridging Projects across the whole state. For this study, we selected Bridging Projects located in the Ruhr metropolitan area ($n = 9$), which has a high number of immigrant and refugee inhabitants and a long history of immigration. We collected data of children in preschool age ($M = 5.47$, $SD = 1.00$) at two times. The first wave of data collection (T1, $n = 100$) was conducted when children entered the Bridging Projects. Wave 2 was collected immediately after these children transited to the elementary school. Data collection of the second wave (T2) will be completed by the end of 2018.

A control group of refugee children, who did not attend an early education and care program, were tested at one point in time immediately after entering the first class of elementary school (n=33).

Intervention

Bridging Projects were implemented in different ways among the cities of the Ruhr metropolitan area. Children attended between two to four hours per day in the morning (M = 3.18, SD = .75) and between two and five days a week (M = 4.45, SD = 1.21). The number of the staff members in the projects varied between 3 and 8 (M = 5.45, SD = 2.12), most of them were childcare workers with 20 hours of practice per week (M = 21.18, SD = 11.91). On average, 10 refugee children attended the Bridging Projects regularly (M = 10.45, SD = 1.75). Each childcare group had a fixed structure and routines, e.g. morning and a goodbye-circles, naming and repeating German words, eating together, free play, drawing and colouring, doing craftworks and learning songs.

Research Design

We analysed the developmental skills of recently arrived refugee and immigrant children after they enrolled in the Bridging Project (T1) and, on average, 150 days later (T2). During that period of time, all children attended a Bridging Project. Firstly, we longitudinally investigated trajectories of developmental skills of refugee children in Bridging Projects, and, in comparison to a control group. Secondly we explored effects of project variables (e. g dosage, teacher-child ratio and emotional support) on the developmental outcomes using mixed design ANOVAs. Thirdly, we explored effects of child variables (e.g. gender and age) on developmental outcomes using a similar statistical approach.

Data Collection

We assessed children's visual-spatial ability (WPSI-III, object assembly subtest), fine motor skills (IDS, psychomotor subtest), and socio-emotional behaviour (SDQ, teacher version) of recently arrived immigrant and refugee children in Bridging Projects. Additionally, we observed emotional support via the Classroom Assessment Scoring System (CLASS-pre-K-3) and collected information about the structural quality of the childcare groups (i.e. dosage, teachers-child ratio) and about the children (i.e. country of origin, age, gender).

Results

Analyses of children's assessments at baseline showed relatively low levels of developmental skills compared to age and gender adjusted norms. Considering assessments at T2, preliminary analyses (figures below) showed improvements on visual-spatial ability (n = 35, $t(34) = -3.028$, $p = .005$), but not in the social-emotional behaviour (n= 30, $t(29) = .250$, $p = .805$) and fine motor skills (n = 44, $t(43) = -1.49$, $p = .143$). On intra-individual level, longitudinal analysis showed that individual trajectories differed remarkably. While some children showed strong gains, others remained on relatively lower levels compared to norm data. After completing the data collection at T2, we will conduct the repeated measure analysis.

Conclusions

So far, our findings highlight the need for newly arrived immigrant and refugee children to be involved in early childhood education and care programs. Bridging Projects might play an important role in the development of skills that are necessary for positive developmental trajectories. However, those factors supporting the development of refugee and immigrant are not sufficiently studied yet. Assessing predictors of children's developmental trajectories helps to identify those features of specialized childcare that are crucial for positive developmental trajectories of refugee and immigrant children. This will be useful for the implementation of future projects that strive to support refugee and immigrant children in their adjustment and integration into the education system.

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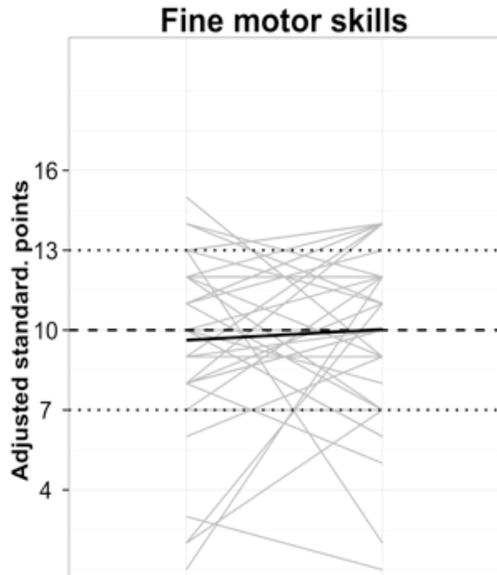


Figure 1. $n_1 = 44$; paired sample t-test on raw scores $t(43) = -1.49$, $p = .143$

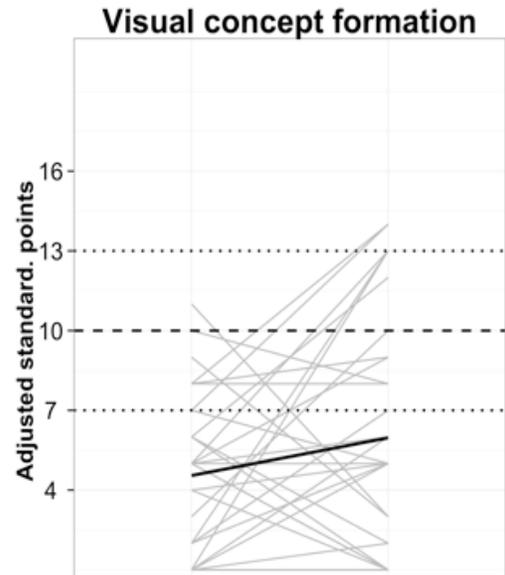


Figure 2. $n_2 = 35$; paired sample t-test on raw scores $t(34) = -3.028$, $p = .005$

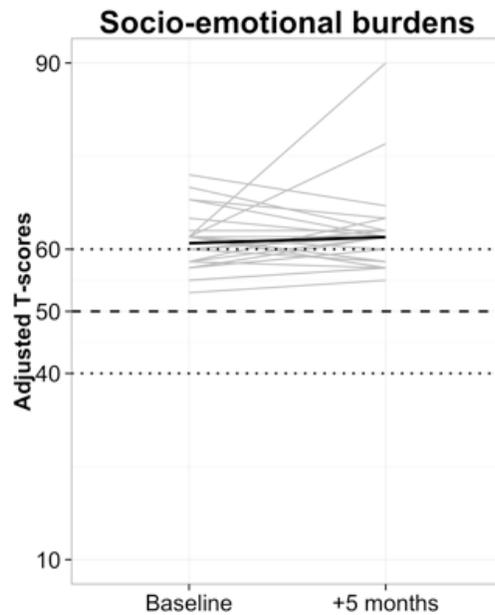


Figure 3. $n_3 = 30$; paired sample t-test on raw scores, $t(29) = .250$, $p = .805$.

Higher T-scores indicate higher level of socio-emotional burdens.