Article

A Randomised Controlled Trial of the I-Deal Life Skills Intervention with Syrian Refugee Adolescents in Northern Lebanon

Kenneth E. Miller[1], Gabriela V. Koppenol-Gonzalez[2], Ali Jawad[3], Frederik Steen[4], Myriam Sassine[5] & Mark J.D. Jordans[6]

[1]PhD, War Child Holland, The Netherlands, [2]PhD, War Child Holland, The Netherlands, [3]BA, War Child Holland, Lebanon, [4]MSc, War Child Holland, The Netherlands, [5]BA, War Child Holland, Lebanon, [6]PhD, Amsterdam Institute of Social Science Research, University of Amsterdam and War Child Holland, The Netherlands

Abstract

Armed conflict and displacement pose threats to children's mental health and psychosocial wellbeing. We report on the findings of an evaluation of I-Deal, a life skills intervention aimed at fostering resilience among early adolescent refugees. We used a parallel group randomised controlled trial to compare I-Deal to a structured recreational activity group (SRA). 325 adolescents in Akkar, Lebanon, 74% of them Syrian, were randomised to I-Deal or SRA. The primary outcome was psychosocial wellbeing; secondary outcomes included psychological distress, prosocial behaviour, hope, self-esteem and social connectedness. Assessments were conducted at baseline, endline and 3-month follow-up. Due to low reliabilities, only wellbeing, distress and hope were included in the analyses. These outcomes showed similar results: no statistically significant changes over time, no significant differences between groups and no significant interaction between group and time. Our findings do not support the effectiveness of I-Deal. Several factors are considered that may help explain the lack of effect, including the aspects of the intervention design, possible measurement error suggested by low reliabilities on several instruments and a ceiling effect on our primary outcome. A replication using rigorously piloted instruments, the selection of outcomes more specifically tailored to the intervention and a nonactive control condition could help provide definitive evidence regarding the effectiveness of the I-Deal intervention.

Key implications for practice

- This study contributes to the growing literature on the effectiveness of life skills interventions for refugee adolescents.
- The lack of any intervention effects in this study raises important questions about the appropriate focus and role of preventive and promotive interventions with refugee adolescents.
- Methodological issues in the study underscore the vital importance of using validated and well piloted measures of appropriately selected intervention outcomes.

Keywords: adolescence, life skills, psychosocial, refugees, resilience, Syrian

Introduction

Armed conflict poses multiple threats to children's mental health and psychosocial wellbeing. In addition to exposing them to experiences of violence and loss, organised violence often results in displacement, disrupting all aspects of children's daily lives. Refugee and internally displaced children must contend with a constellation of ongoing stressors: extreme poverty, overcrowded and unsafe shelter, caregivers whose parenting may be compromised by persistent stress and distress, limited access to safe play and educational spaces and uncertainty regarding their future (Barenbaum et al., 2004; Betancourt & Khan, 2008;

El-Khani et al., 2018; Miller & Jordans, 2016; Sim et al., 2018). They may also experience a loss of hope and agency, as powerful events outside their control shape

How to cite this article: Miller, K. E., Koppenol-Gonzalez, G. V., Jawad, A., Steen, F., Sassine, M., & Jordans, M. J. D. (2020). A Randomised Controlled Trial of the I-Deal Life Skills Intervention with Syrian Refugee Adolescents in Northern Lebanon. *Intervention*, *18*(2), 119-128.

Access this article online

Quick Response Code:

Website:
www.interventionjournal.org

DOI:
10.4103/INTV.INTV_4_20

their lives in powerful and distressing ways (Barenbaum et al., 2004; Ellis et al., 2008; Hinton, 2000). Although rates of distress and psychiatric disorder among refugee children have varied markedly across studies, there is an emerging consensus that children displaced by armed conflict are at increased risk of both short- and long-term psychological difficulties compared to their nonexposed peers (Barenbaum et al., 2004; Fazel et al., 2011; Reed et al., 2012). There is evidence that preventive interventions may play an important role in fostering positive psychosocial adaptation among children in settings of adversity (Heckman & Karapakula, 2019; Yoshikawa et al., 2012). Such interventions are generally premised on the assumption that children may adapt positively despite the adversity they have experienced and continue to face, if they are given access to stable and supportive social environments, strategies for managing difficult emotions and strengthening social relationships and opportunities to play, express themselves creatively and restore their sense of hope and agency. Such interventions are typically group-based, facilitated by trained nonspecialists and implemented in community settings such as schools or child-friendly spaces. A recent review and meta-analysis of life skills interventions for adolescents in low- and middle-income countries (LMICs), of which only a subset focused on conflict-affected communities, yielded a cautiously hopeful picture (Singla et al., 2019). Although most studies were of low to moderate quality, the review found small to medium effect sizes on life skills, with somewhat smaller effects for mental health outcomes. Components of the interventions that were most strongly associated with better outcomes were the involvement of parents/caregivers and a focus on strengthening parent-child relationships, stress management training and a focus on improving social skills and peer relationships.

Unfortunately, prevention programmes aimed at strengthening psychosocial wellbeing specifically among refugee and other conflict-affected children have yielded decidedly mixed results (Bangpan et al., 2017; Jordans et al., 2016; Fazel, 2017). Although several studies *have* found

significant programmes benefits, the quality of the evidence for such effects has been highly variable and effects have often been found only for specific subgroups (Bangpan et al., 2017; Betancourt et al., 2013; Jordans et al., 2016).

This paper reports on the findings of an evaluation of War Child Holland's *I-Deal* intervention with early adolescent Syrian refugees in Lebanon. The war in Syria, now in its ninth year, has specifically targeted civilians and led to the displacement of over 12 million Syrians, half of them children. While the majority of displaced Syrians are still living inside their homeland, at least 5.6 million Syrians have become refugees, primarily in the neighbouring countries of Turkey, Lebanon, Jordan and Iraq (UNHCR, 2018). Lebanon currently hosts an estimated 1.5 million Syrian refugees, comprising roughly 25% of its total population of six million inhabitants (Ismail et al., 2017).

Since its development in 2006, *I-Deal* has gone through several iterations, becoming increasingly thematic and structured. It currently has four organising themes, which are covered in 16 90-minute sessions. The themes include (1) identity, (2) relationships, (3) dealing with feelings and (4) facing the future. Session topics and corresponding themes are listed in Table 1. The intervention uses participatory group activities such as role playing, drawing, games and group discussions, in which participants can relax and have fun, while strengthening key life skills in each of the four thematic areas. Groups are co-facilitated by nonmental health specialists who receive a 7-day training and ongoing supervision. *I-Deal* groups range in size from 15 to 25 participants, ranging in age from 10 to 15 years old.

Several unpublished qualitative assessments of *I-Deal* have been conducted as part of normal monitoring and evaluation process; in addition, two uncontrolled evaluations of *I-Deal* were conducted in Colombia and South Sudan (Eiling & van Diggele-Holtland, 2013; Eiling et al., 2014). Taken together, these findings suggest that the intervention may strengthen early adolescents' social relationships with peers and adults and may improve

Table 1: *I-Deal Sessions and Modules*

Session	Topic	Module
1	Who am I?	Identity
2	Who are we?	Identity
3	What are our strengths and difficulties?	Identity
4	Where are we going?	Identity
5	Important people in my life	Relations
6	Solving problems with peers	Relations
7	Solving problems with adults	Relations
8	Friendship and respect, planning group project	Relations
9	What are emotions?	Dealing with feelings
10	Feeling and reacting	Dealing with feelings
11	Being scared	Dealing with feelings
12	Handling fear	Dealing with feelings
13	Being sad	Dealing with feelings
14	Grief and how to deal with it	Dealing with feelings
15	Looking back, looking forward	Future
16	Group project/celebration	Future

their psychosocial wellbeing. However, the small sample sizes, lack of control groups and high drop out rates in these studies suggest caution in reaching any conclusions about the impact of *I-Deal*. The present study was designed to address these methodological shortcomings by using a randomised controlled design, adequate power to detect intervention effects and a follow-up assessment to track effects over a 3-month period following the intervention.

Our primary hypothesis in the present study was that *I-Deal* would be superior to a lightly structured recreational activity group (SRA) in improving participants' scores on a measure of psychosocial wellbeing immediately postintervention and at a 3-month follow-up. Our secondary hypotheses were that the *I-Deal* intervention would be superior to the SRA in reducing psychological distress and improving key life skills and capacities – self-esteem, social connectedness and hope – immediately postintervention and at 3-month follow-up.

Method

Participants

Participants in the study were 325 early adolescents living in the Akkar governorate, Lebanon. The mean number of siblings of the participants was $M = 5.27$ ($SD = 2.14$, range 1–12) and the mean number of people in their households was $M = 8.05$ ($SD = 2.47$, range 1–20). The participants were 10–15 years old ($M = 11.66$, $SD = 0.92$ years), and roughly 74% were Syrian refugees. War Child Holland has a policy of including host country communities in all of its programming; thus, 26% of the sample in this study was comprised of Lebanese and Palestinian adolescents living in low-income communities in close proximity to the refugee settlements. The sample had roughly an equal number of girls and boys. Demographics can be seen in Table 2. Because *I-Deal* is not a clinical intervention and is normally open to all interested children in the target age range, no clinical screening was applied in the recruitment process.

After completing the baseline assessment, the participants were randomly assigned to either the *I-Deal* or SRA arm of the study. The participant flowchart can be seen in Figure 1.

Sample Size Calculation

The sample size estimations made the following assumptions:

(1) Randomisation would be done at the level of the individual child.
(2) A total of 16 groups, eight groups per arm (I-Deal and SRA) would be conducted, with 20 participants per group.
(3) All groups (*I-Deal* and SRA) would be co-facilitated.
(4) Loss to follow-up of 25% over 5 months.
(5) Equally sized groups (1:1 allocation ratio).

Reliable power analyses for linear mixed-effect models (LMEMs) are impossible without pilot data. However, LMEMs can be conceptualised as a general linear model when conditions in the data are met. These conditions were expected to be met in the data of the current study. As such, power analyses were run for six separate LMEMs (see analysis), corrected for familywise error by a Bonferroni correction.

The power analysis was run using G*Power 3.1. The treatment effect of interest was assumed to be equal to a Cohen's d of 0.3. To reach a power of .95 for this effect, a total sample size of 164 will be necessary. Assuming 25% attrition rate, the total minimum sample size requirement is 219.
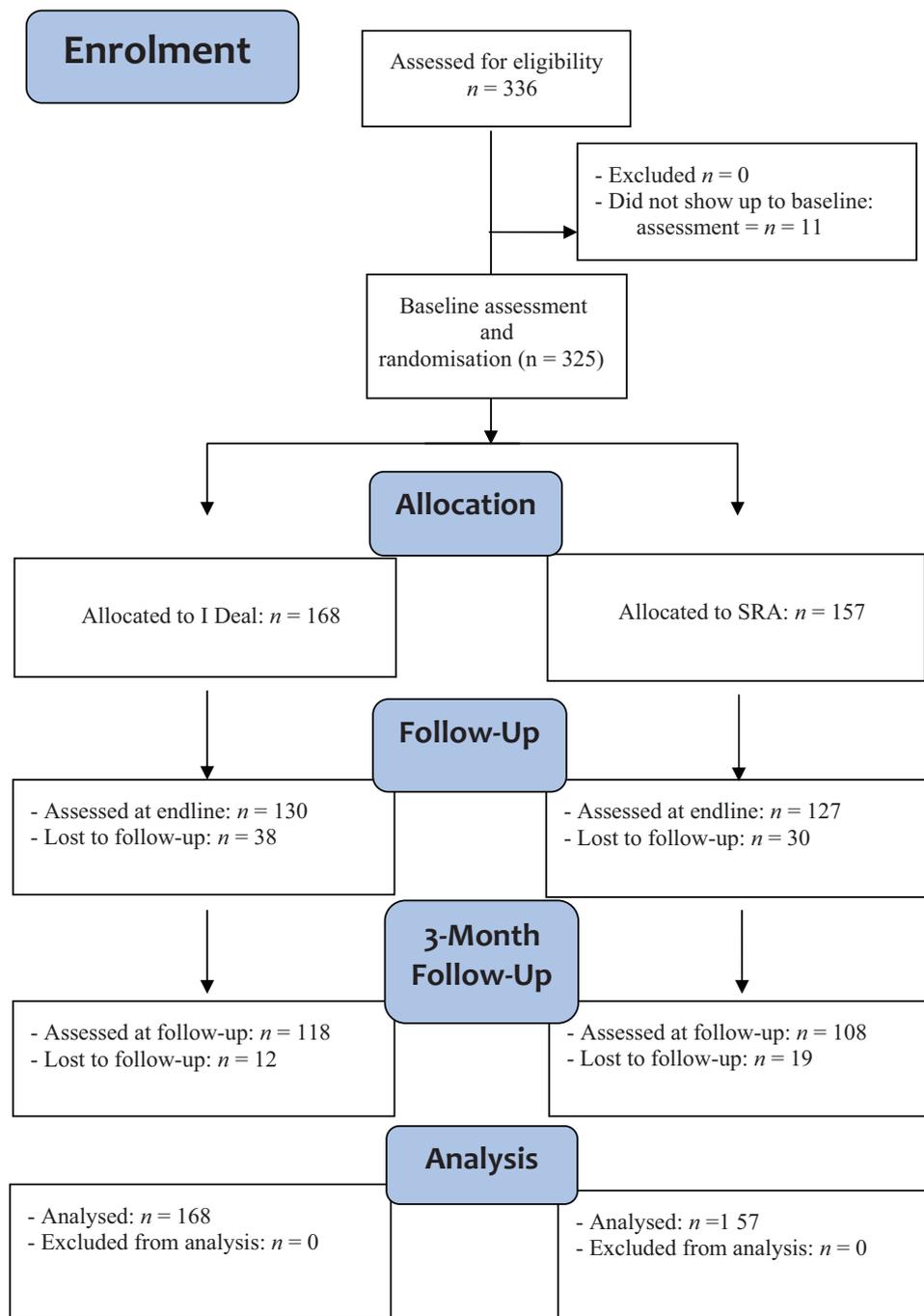
The Interventions

I-Deal is a 16-session thematic, highly structured psychosocial intervention for early adolescents living in adversity. The 90-minute sessions may be implemented weekly or twice weekly, as was done in the present study. Facilitators are selected based on prior experience working with children, emotional maturity as evidenced in interviews with recruitment staff and recommendations from prior employers and level of interest in the project. They had to be at least 18 years old and to have completed at least a high school education. The 7-day training was highly participatory, entailed practice of all sessions and covered various topics such as child psychosocial wellbeing and development, the importance of play, the aims and structure of *I-Deal*, group facilitation and management and child safety.

Table 2: *Demographic Characteristics of the Sample Given in Percentages*

		I-Deal (*n* = 168)	SRA (*n* = 157)	Total (*n* = 325)
Gender	Boy	50	51	50.5
	Girl	50	49	49.5
Nationality	Lebanese	24.4	28.0	26.2
	Syrian	75.6	71.3	73.5
	Palestinian	0	0.6	0.3
Caregiver	Mother and father	70.8	70.1	70.5
	Mother	25.6	24.2	24.9
	Father	3.0	5.1	4.0
	Other relative	0.6	0.6	0.6
Type home	Apartment	18.5	26.8	22.5
	House	33.9	38.2	36.0
	Tent	45.2	31.8	38.8
	Other	5.4	3.2	2.8

Figure 1: *Participant Flow Diagram*

Enrolment

Assessed for eligibility
$n = 336$

- Excluded $n = 0$
- Did not show up to baseline:
  assessment $= n = 11$

Baseline assessment
and
randomisation (n = 325)

Allocation

Allocated to I Deal: $n = 168$

Allocated to SRA: $n = 157$

Follow-Up

- Assessed at endline: $n = 130$
- Lost to follow-up: $n = 38$

- Assessed at endline: $n = 127$
- Lost to follow-up: $n = 30$

3-Month Follow-Up

- Assessed at follow-up: $n = 118$
- Lost to follow-up: $n = 12$

- Assessed at follow-up: $n = 108$
- Lost to follow-up: $n = 19$

Analysis

- Analysed: $n = 168$
- Excluded from analysis: $n = 0$

- Analysed: $n = 1 57$
- Excluded from analysis: $n = 0$

SRA, the comparison condition, is a nonthematic, lightly structured, play-based group in which children engaged in a variety of mid to high-energy play activities. The SRA does not focus on the development of specific life skills or address key issues facing children. In this study, SRA groups met twice weekly for 30 minutes each session. The training of SRA facilitators took place over 3 days, and focused on designing sessions, selecting activities, child safety and group management.

Study Design, Ethical Approval and Informed Consent/Assent

This was a parallel group randomised controlled trial comparing a thematic, highly structured intervention (*I-Deal*) to a nonthematic, lightly structured activity group (SRA), using a 1:1 allocation ratio. This study used an intent to treat design, meaning that all participant data were included in the analyses, including data from any participants who did not complete the interventions, if they were willing to complete the assessments. The study included three assessment points: baseline, endline and 3-month follow-up. Participants were recruited in tented refugee settlements and local villages by project staff. Interested parents provided consent for their early adolescent children to participate, and children provided written or verbal assent. Neither the participants nor their families received any compensation for their participation in this study. Ethical approval for the study was obtained from the

University of Balamand in Lebanon. The trial protocol was registered prospectively with ISRCTN.

Randomisation and Blinding

Randomisation was conducted following baseline data collection by an Amsterdam-based member of the research team, unaffiliated with the study. Participant IDs were randomly assigned to the *I-Deal* or SRA (control) group using a randomisation sequence generated in Microsoft Excel. The principal investigator (PI), co-PI and all research assistants (RAs) remained blind to group assignment throughout the study period.

Measures and Administration

At the time of this study, only one measure, the Strengths and Difficulties Questionnaire, had been used with Syrian children (Cartwright et al., 2015). Other questionnaires were selected based on their relevance to the study's outcomes, their use in similar studies in similar settings, their performance in diverse cultural contexts and their ease of administration.

With the exception of the SDQ, which is available in Arabic and whose authors do not allow any modification, all measures were translated and back-translated by different individuals bilingual in Arabic and English, and all discrepancies were resolved. Arabic versions of the measures were then assessed for ease of comprehension through cognitive interviewing (Willis & Artino, 2013), with young Syrian adolescents who were asked about their understanding of each item on the questionnaires so that we could clarify any confusing wording.

Data were gathered with tablets, using the Kobo data collection software (Harvard Humanitarian Initiative: http://hhi.harvard.edu/research/kobotoolbox), which allows questionnaires to be uploaded and completed without paper and pencil. Data were collected at all three time points – baseline, endline and at 3-month follow-up by trained RAs who administered the measures to children individually, reading items aloud and using graphics with drinking glasses filled to varying levels, corresponding to the answer choices for each questionnaire. Data were collected in the Municipality building of the city of Mhamra, where the *I-Deal* and SRA were groups were also held. Interviews were conducted in three adjacent rooms, with several children interviewed in each room simultaneously. Chairs were spaced several metres apart to increase privacy of responding.

Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS). The WEMWBS (Tennant et al., 2007) is a 14-item measure of positive mental wellbeing. It includes items related to psychological distress, as well indicators of positive psychosocial wellbeing. It has been used extensively in mental health surveys and has shown good psychometrics (high internal consistency, good test-retest reliability and acceptable concurrent validity) in studies with diverse populations, and with adults as well as adolescents (Zadow et al., 2017). Possible scores range from 14 to 70.

Strengths and Difficulties Questionnaire – Child/Adolescent Form (SDQ). The SDQ (Goodman, 2001) is one of the most widely used measures of psychological distress among children and adolescents. The SDQ includes 20 items assessing four dimensions of distress or difficulty: emotional symptoms, conduct problems, hyperactivity/inattention and peer relationship problems. It also includes a five-item scale assessing prosocial behaviour. It has been used in several studies with Arabic speaking populations (El-Keshky & Emam, 2015) and has shown good internal reliability and discriminant validity. Possible scores on the SDQ distress scale range from 0 to 40. On the prosocial subscale, possible scores range from 0 to 10.

Children's Hope Scale (CHS). The six-item CHS (Snyder et al., 1977) assesses children's sense of hope, with a higher score denoting more hopefulness. The scale also includes items assessing a sense of agency, the belief that one is able to act effectively to achieve desired outcomes. The CHS has been used in numerous studies of children in LMICs, including studies of children affected by armed conflict and displacement (Tol et al., 2015). Possible scores range from 6 to 36.

Rosenberg Self-Esteem Scale. Self-esteem was measured with the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965). Originally developed for use with adolescents in the United States, the Rosenberg scale has since been widely used and validated in diverse populations (Farruggia et al., 2004; Zaidi et al., 2015). Possible scores range from 0 to 30.

Social Connectedness Scale – Revised (SCS-R). The SCS-R (Lee et al., 2001) is a widely used, 20-item measure that assesses the extent to which youth feel connected to others in their social environment. It has shown good psychometrics across diverse study populations. In the present study, for the sake of brevity and to minimise the number of negatively worded items, we selected eight items from the SCS-R that included an even number of regular and reverse scored items, as well as those items that seemed easiest to comprehend, given the diverse age range of the sample. Possible scores on the eight-item version ranged from 8 to 48.

Results

Of the 325 participants who completed the baseline assessment, 257 completed the endline assessment and 226 completed the 3-month follow-up assessment, for an attrition rate of 30%. Dropouts were distributed evenly across the two arms of the study, with the *I-Deal* group losing 50 participants and the SRA group losing 49 (see Figure 1).

Only three of the six outcome measures had acceptable reliabilities (Cronbach's alpha) at baseline, immediately postintervention, and at the 3-month follow-up. Internal consistency ranged from .69 to .77 for wellbeing (WEMWBS), .71–.72 for distress (SDQ) and .60–.70 for hope (CHS). Social connectedness was unacceptably low: .36–.53, as were self-esteem (Rosenberg): .44–.52 and prosocial behaviour (SDQ-prosocial): .46–.57. Further analyses therefore concern only the measures of

wellbeing, distress and hope, as these were the only measures with acceptable reliabilities.

Table 3 shows the descriptive statistics of wellbeing, distress and hope over the three time points (baseline, postintervention, 3-month follow-up). At baseline, the I-Deal and SRA groups did not differ in wellbeing scores, $t(323) = 0.714$, $p = .476$ (equal variances assumed), nor in distress scores, $t(323) = 1.445$, $p = .149$ (equal variances assumed), nor in hope scores, $t(323) = -0.279$, $p = .781$ (equal variances assumed). Also, the amount of missing values at T0 for wellbeing, distress and hope did not differ across groups (I-Deals vs SRA), Wilks' $\lambda = .988$, $F(3,322) = 1.30$, $p = .276$. The groups did not differ significantly on any demographic variables.

In order to test the primary hypotheses that the *I-Deal* intervention would be superior to SRA in improving children's scores on measures of psychosocial wellbeing immediately postintervention and at a 3-month follow-up, a multilevel analysis was conducted with fixed effects for intervention type (I-Deal vs. SRA), time (baseline vs. postintervention vs. 3-month follow-up) and the interaction between the two. Fixed effects were also added for demographics of interest (type of house and gender). This model included a random intercept and random slope for time, as well as a random intercept for RA group. There were 23 groups in total, each with a different RA, and, therefore, the scores of the children in each group were checked for dependence. To account for multiple testing (three multilevel analyses; wellbeing, distress and hope), the results were considered significant when their p-value was below .017 (Bonferroni correction). Figures 2, 3 and 4 shows the mean scores and standard deviation at each time point for the I-Deals and SRA groups.

The three outcomes show similar results (see Table 4); there were no statistically significant changes over time, no statistically significant differences between the intervention groups and no significant interaction between group and time. The amount of variance over time (baseline, postintervention, follow-up) was significant, as was the amount of variance in random intercept (large variation at T0). The amount of variance in random slope of time approached significance for two of the three measures and the amount of variance in the outcome measures was not significant across RAs, meaning that the difference in RAs was not related to a significant amount of differences in outcome measures scores among children.

Subsequent analyses were conducted to examine the possible causes of the significant variation in scores for wellbeing, distress and hope between as well as within children. The same analyses as above were conducted for the most distressed children (with SDQ scores at T0 of a clinical cut-off of higher than 17), and per protocol analyses including only the children who attended at least 75% of the session (that is, at least 12 of the 16 sessions). Note that no random intercept for RA group was estimated in these analyses. The results were similar to the results of the intent-to-treat analyses above, indicating that no extra variance was explained and that the fixed effects remained statistically nonsignificant.

Discussion

The results of this evaluation do not support the effectiveness of the *I-Deal* intervention in improving wellbeing,

Table 3: *Mean Scores of the Outcome Measures at the Different Time Points*

		I-Deal	SRA
Wellbeing	T0	53.00 (7.62)	52.39 (7.96)
	T1	52.33 (8.74)	53.70 (7.77)
	T2	53.47 (7.50)	53.66 (6.69)
SDQ	T0	19.57 (6.41)	18.63 (5.12)
	T1	19.57 (5.31)	18.46 (4.95)
	T2	19.23 (5.06)	17.23 (4.95)
Hope	T0	26.77 (5.41)	26.94 (5.48)
	T1	27.65 (5.38)	27.76 (5.64)
	T2	27.64 (5.49)	27.97 (5.07)

Notes. SDs are given between parentheses. T0 = baseline, T1 = postintervention, T2 = 3-month follow-up

Figure 2: *Psychosocial Wellbeing Scores for Both Groups at Baseline, Endline and Follow-up*

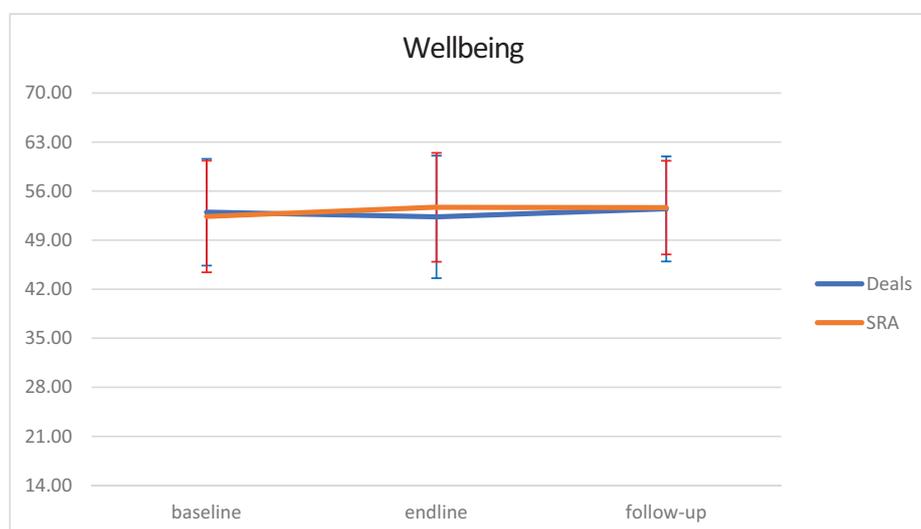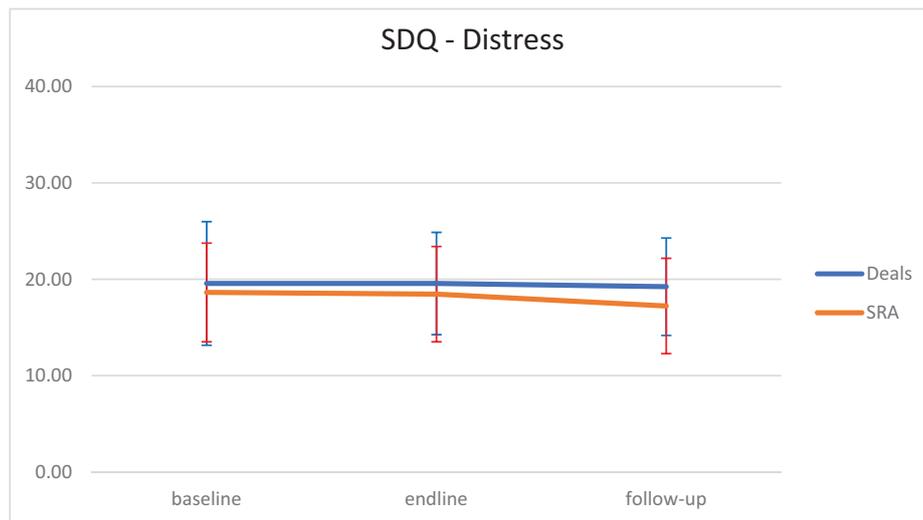**Figure 3:** *Psychological Distress Scores for Both Groups at Baseline, Endline and Follow-up*

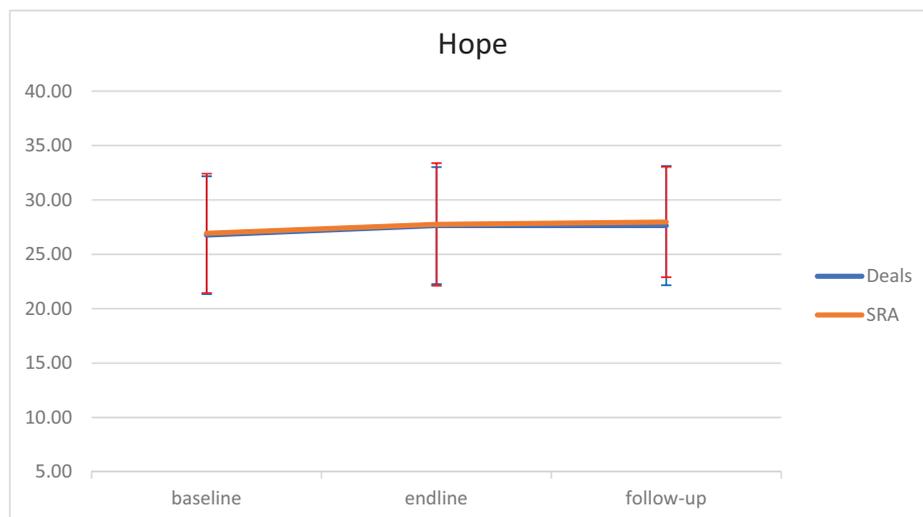**Figure 4:** *Hope Scores for Both Groups at Baseline, Endline and Follow-up*

Table 4: *Fixed Effects Parameter Estimates of the Three Outcome Measures*

	Time	Group	Time*group
Wellbeing	−0.759 (0.79)	−0.232 (0.82)	0.633 (0.51)
SDQ	−0.185 (0.61)	−0.637 (0.59)	−0.384 (0.39)
Hope	0.089 (0.58)	0.133 (0.58)	0.172 (0.37)

Note. SEs are given between parentheses.

reducing distress or increasing hope among Syrian refugee adolescents or their Lebanese and Palestinian peers. Neither our intent-to-treat nor per protocol analysis showed significant change of either *I-Deal* or the SRA on any outcome. We also looked at the subgroup of participants who showed clinically elevated distress on the SDQ, and similarly found no intervention effects.

Interventions aimed at promoting resilience among conflict-affected children have generally shown small or inconsistent effects (Bangpan et al., 2017; Diab et al., 2015) for reasons that remain unclear. It may be that high levels of resilience are the norm rather than the exception among conflict-affected children (Barber, 2013), which would explain the generally small effects in prevention programmes and perhaps argue for the prioritisation of clinically oriented programmes specifically for distressed children. Conversely, implementation challenges (e.g., fidelity of implementation, adequate training and supervision) and methodological shortcomings (e.g., a lack of culturally adapted and validated measures) may also be limiting the impact, as well as the detection of impact, among existing preventive interventions (Bangpan et al., 2017; Jordans et al., 2016; Peltonen & Punamäki, 2010).

It may also be that ongoing stressors in refugee communities and other conflict-affected settings tend to weaken intervention effects by continually exposing children to high levels of ongoing stress (Miller & Jordans, 2016). Family-related stress, particularly related to harsh or unresponsive parenting, has been found to strongly mediate the impact of war and displacement on children's mental health and psychosocial wellbeing (Eltanamly et al., 2019). Consequently, it may be that preventive

interventions for young refugees are more likely to be effective when they include parents or other primary caregivers, and focus on strengthening parent-adolescent relationships. As noted earlier, such a focus was the strongest predictor of effectiveness in the review by Singla et al. (2019) of life skills interventions for adolescents in LMICs. The development of *I-Deal*, from its original inception as an activities group to a more structured and thematic intervention, was not guided by a clearly delineated theory of change (ToC). A well-developed ToC might have helped ensure that the intervention prioritised those themes and activities most clearly linked to positive outcomes in the life skills literature (Botvin & Kantor, 2000; De Silva et al., 2014).

However, we also note that several methodological limitations suggest caution in interpreting our findings of no effect in the present study. First, there may have been confusion among children regarding the different answer choices associated with the various questionnaires, leading to inaccurate responses on several measures. The low internal consistency on several widely used measures, which led to their exclusion in our analyses, is consistent with this possibility, as it may suggest a problem with understanding either the items or the answer choices (or both). Lending further support to this idea is the lack of an expected inverse correlation between our measures of wellbeing (WEMWBS) and distress (SDQ). The WEMWBS, on which higher scores reflect better wellbeing, has been found to correlate negatively with measures of distress in previous research (Hunter et al., 2015; Miller et al., 2020). However, the participants in this study reported moderately high levels of both mental wellbeing and distress, theoretically possible but more plausibly a reflection of measurement error. Although we conducted cognitive interviewing of each individual questionnaire with children prior to baseline data collection, we did not administer the assessment battery as a whole to children to assess their understanding of the shifting answer choices as they progressed through the six questionnaires. Piloting the measures in this way might have allowed us to spot any problems in comprehension caused by the use of questionnaires with very different answer choices and correspondingly different graphic aids (i.e., three, four, five or six drinking glasses, with the meaning of an empty, partially full or full glass changing from one questionnaire to the next). Our experience underscores the essential role of carefully piloting all study methods prior to conducting a fully powered RCT. This is particularly important when using questionnaires that have not been normed and validated for use in the target populations. Unfortunately, we were unable to find validated measures for our specified outcomes; consequently, rigorous pilot testing of all measures would have allowed us to identify difficulties and adapt our measures accordingly.

Second, as suggested earlier, there may have been a ceiling effect on our primary outcome, psychosocial wellbeing. Mean scores on wellbeing in both groups were unexpectedly high at baseline, making significant improvement more difficult to either achieve or detect.

Scores on the WEMWBS suggest a high level of resilience in the sample, 75% of which was comprised of Syrian refugee adolescents living in settings of considerable adversity. Alternatively, it is possible that high wellbeing scores reflect a social desirability effect, with participants minimising their psychosocial difficulties in the presence of the RAs. However, there was no clear evidence of a social desirability bias on the SDQ, with mean distress scores higher than those found among conflict-affected children in other countries, including Syrian refugee children in Turkey (Alsayed & Wildes, 2018) and Afghan children at risk of substance abuse (Momand et al., 2017).

Third, it is also possible that an overly active control condition may have precluded the detection of preventive effects (i.e., the worsening of distress or deterioration of wellbeing in the control relative to the *I-Deal* group – befitting the goals of a preventive intervention such as *I-Deal*). In the absence of a minimal or no-treatment control condition, it is not possible to know whether our activity-based control group, which met twice each week, may have prevented the emergence of distress that might have otherwise appeared.

Fourth, due to low reliabilities on several of our measures of life skills, we were unable to assess the impact of the *I-Deal* on several outcomes the intervention might have been more likely to change: prosocial behaviour, self-esteem and social connectedness. It may be that life skills interventions such as *I-Deal* are more likely to have effects on variables such as these than on traditional mental health outcomes such as those assessed by the WEMWBS and the SDQ. This possibility is consistent with the findings of the review of life skills interventions for adolescents in LMICs by Singla et al. (2019), in which effects on life skills were larger than those for mental health outcomes.

Finally, it is possible that ongoing stress within the families of study participants may have contributed to a lack of intervention effect. Eltenamly and colleagues (2019) found that distress among refugee children is related powerfully to parenting and parental wellbeing. It is possible that significant intervention effects are more likely to be found by addressing multiple levels of children's social ecology, such as the family, in addition to working directly with children themselves (Jordans et al., 2016; Miller et al., 2020).

Conclusion

The results of this study do not support the effectiveness of the *I-Deal* intervention in either strengthening wellbeing or preventing distress. However, methodological limitations preclude a definitive interpretation of our findings. A replication of this study, using validated and carefully piloted instruments, and a nonactive control group, could help provide definitive evidence regarding the effectiveness of the *I-Deal* intervention. Moreover, the use of focus groups with participants following the intervention could provide valuable insight into their

experience of both the programme and the assessment process. So too could focus groups and individual interviews with group facilitators and parents shed light on perceptions of the intervention and its impact on children's psychosocial wellbeing.

Conflicts of interest

There are no conflicts of interest.

References

Alsayed, A., & Wildes, V. J. (2018). Syrian refugee children: A study of strengths and difficulties. *Journal of Human Rights and Social Work*, *3*(2), 81-88. https://doi.org/10.1007/s41134-018-0057-4

Bangpan, M., Dickson, K., Felix, L., & Chiumento, A. (2017). *The impact of mental health and psychosocial support programmes for populations affected by humanitarian emergencies*. https://fic.tufts.edu/publication-item/evidence-brief-mental-health-and-psychosocial-support/

Barber, B. K. (2013). Annual research review: The experience of youth with political conflict – Challenging notions of resilience and encouraging research refinement. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *54*(4), 461-473. https://doi.org/10.1111/jcpp.12056

Barenbaum, J., Ruchkin, V., & Schwab-Stone, M. (2004). The psychosocial aspects of children exposed to war: Practice and policy initiatives. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *45*(1), 45-62. https://doi.org/10.1046/j.0021-9630.2003.00304.x

Betancourt, T. S., Newnham, E. A., McBain, R., & Brennan, R. T. (2013). Post-traumatic stress symptoms among former child soldiers in Sierra Leone: Follow-up study. *British Journal of Psychiatry*, *203*(3), 196-202. https://doi.org/10.1192/bjp.bp.112.113514

Betancourt, T. S., & Khan, K. T. (2008). The mental health of children affected by armed conflict: Protective processes and pathways to resilience. *International Review of Psychiatry*, *20*(3), 317-328. https://doi.org/10.1080/09540260802090363

Botvin, G., & Kantor, L. (2000). Preventing alcohol and tobacco use through life skills training: Theory, methods, and empirical findings. *Alcohol Research: Critical Reviews*, *24*(4), 250-257.

Cartwright, K., El-Khani, A., Subryan, A., & Calam, R. (2015). Establishing the feasibility of assessing the mental health of children displaced by the Syrian conflict. *Global Mental Health*, 2. https://doi:10.1017/gmh.2015.3

Diab, M., Peltonen, K., Qouta, S. R., Palosaari, E., & Punamäki, R. L. (2015). Effectiveness of psychosocial intervention enhancing resilience among war-affected children and the moderating role of family factors. *Child Abuse and Neglect*, *40*, 24-35. https://doi.org/10.1016/j.chiabu.2014.12.002

De Silva, M., Breuer, E., Lee, L., Asher, L., Chowdhary, N., Lund, C., & Patel, V. (2014). Theory of Change: A theory-driven approach to enhance the Medical Research Council's framework for complex interventions. *Trials*, *15*(1), 267-279.

Eiling, E., & van Diggele-Holtland, M. (2013). *I can forgive now: Evaluation study of War Child's Psychosocial Support Intervention I Deal*. https://www.alnap.org/help-library/i-can-forgive-now-evaluation-study-of-war-childs-psychosocial-support-intervention-i

Eiling, E., Van Diggele-Holtland, M., Van Yperen, T., & Boer F. (2014). Psychosocial support for children in the Republic of South Sudan. *Intervention*, *12*(1), 61-75. https://doi.org/10.1097/wtf.0000000000000023

El-Keshky, M., & Emam, M. (2015). Emotional and behavioural difficulties in children referred for learning disabilities from two Arab countries: A cross-cultural examination of the Strengths and Difficulties Questionnaire. *Research in Developmental Disabilities*, *36*, 459-469. https://doi.org/10.1016/j.ridd.2014.10.039

El-Khani, A., Ulph, F., Peters, S., & Calam, R. (2018). Syria: Refugee parents' experiences and need for parenting support in camps and humanitarian settings. *Vulnerable Children and Youth Studies*, *13*(1), 19-29. https://doi.org/10.1080/17450128.2017.1372651

Ellis, B. H., MacDonald, H. Z., Lincoln, A. K., & Cabral, H. J. (2008). Mental health of Somali adolescent refugees: The role of trauma, stress, and perceived discrimination. *Journal of Consulting and Clinical Psychology*, *76*(2), 184-193. https://doi.org/10.1037/0022-006X.76.2.184

Eltanamly, H., Leijten, P., Jak, S., & Overbeek, G. (2019). Parenting in times of war: A meta-analysis and qualitative synthesis of war exposure, parenting, and child adjustment. *Trauma, Violence, and Abuse*. https://doi.org/10.1177/1524838019833001

Farruggia, S. P., Chen, C., Greenberger, E., Dmitrieva, J., & Macek, P. (2004). Adolescent self-esteem in cross-cultural perspective: Testing measurement equivalence and a mediation model. *Journal of Cross-Cultural Psychology*, *35*(6), 719-733. https://doi.org/10.1177/0022022104270114

Fazel, M., Reed, R. V., Panter-Brick, C., & Stein, A. (2011). Mental health of displaced and refugee children resettled in high-income countries: Risk and protective factors. *The Lancet*, *379*, 266-282. https://doi.org/10.1016/S0140-6736(11)60051-2

Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry*, *40*(11), 1337-1345. https://doi.org/10.1097/00004583-200111000-00015

Heckman, J. J., & Karapakula, G. (2019). The perry preschoolers at late midlife: A study in design-specific inference. *National Bureau of Economic Research Working Paper Series*. https://doi.org/10.3386/w25888

Hinton, R. (2000). Seen but not heard: Refugee children and models for intervention. In C. Panter-Brick, & M. Smith (Eds.). *Abandoned children* (pp. 199-212). Cambridge University Press.

Hunter, S. C., Houghton, S., & Wood, L. (2015). Positive mental well-being in Australian adolescents: Evaluating the Warwick-Edinburgh mental well-being scale. *Australian Educational and Developmental Psychologist*, *32*(2). https://doi.org/10.1017/edp.2015.12

Ismail, K., Wilson, C., & Cohen-Fournier, N. (2017). *Syrian refugees in Tripoli, Lebanon. Refugees in towns case study series*. Medford. http://fic.tufts.edu/assets/Tripoli-FINAL-5-July.pdf

Jordans, M. M. J., Pigott, H., & Tol, W. A. (2016). Interventions for children affected by armed conflict: A systematic review of mental health and psychosocial support in low- and middle-income countries. *Current Psychiatry Reports*, *18*(1), 1-15. https://doi.org/10.1007/s11920-015-0648-z

Lee, R. M., Draper, M., & Lee, S. (2001). Social connectedness, dysfunctional interpersonal behaviors, and psychological distress: Testing a mediator model. *Journal of Counseling Psychology*, *48*, 310-318. https://doi.org/10.1037/0022-0167.48.3.310

Miller, K. E., & Jordans, M. J. D. (2016). Determinants of children's mental health in war-torn settings: Translating research into action. *Current Psychiatry Reports*, *18*(6), 6-11. https://doi.org/10.1007/s11920-016-0692-3

Miller, K. E., Koppenol-Gonzalez, G. V., Arnous, M., Tossyeh, F., Chen, A., Nahas, N., & Jordans, M. J. (2020). Supporting families displaced by armed conflict: A pilot randomized controlled trial of the Caregiver Support Intervention. *Child Abuse and Neglect,* 106. https://doi: 10.10.1016/j.chiabu.2020.105512

Momand, A. S., Mattfeld, E., Morales, B., Ul Haq, M., Browne, T., O'Grady, K. E., & Jones, H. E. (2017). Implementation and evaluation of an intervention for children in Afghanistan at risk for substance use or actively using psychoactive substances. *International Journal of Pediatrics*, *17*. https://doi.org/10.1155/2017/2382951

Peltonen, K., & Punamäki, R. L. (2010). Preventive interventions among children exposed to trauma of armed conflict: A literature review. *Aggressive Behavior*, *36*(2), 95-116. https://doi.org/10.1002/ab.20334

Reed, R.V., Fazel, M., Jones, L., Panter-Brick, C., & Stein, A. (2012). Mental health of displaced and refugee children resettled in low-income and middle-income countries: Risk and protective factors. *The Lancet*, *379*, 250-265.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press.

Sim, A., Fazel, M., Bowes, L., & Gardner, F. (2018). Pathways linking war and displacement to parenting and child adjustment: A qualitative study with Syrian refugees in Lebanon. *Social Science and Medicine*, *200*(January), 19-26. https://doi.org/10.1016/j.socscimed.2018.01.009

Singla, D. R., Waqas, A., Hamdani, S. U., Suleman, N., Zafar, S. W., Zill-e-Huma, X. X., Saeed, K., Servili, C., & Rahman, A. (2019). Implementation and effectiveness of adolescent life skills programs in low- and middle-income countries: A critical review and meta-analysis. *Behaviour Research and Therapy*. https://doi.org/10.1016/j.brat.2019.04.010

Snyder, C. R., Hoza, B., Pelham, W. E., Rapoff, M., Ware, L., Danovsky, M., Highberger, L., Ribinstein, H., & Stahl, K. J. (1997). The development and validation of the children's hope scale. *Journal of Pediatric Psychology*, *22*(3), 399-421. https://doi.org/10.1093/jpepsy/22.3.399

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., & Stewart-Brown, S. (2007). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation. *Health and Quality of Life Outcomes*, *5*(63). https://doi.org/10.1186/1477-7525-5-63

Tol, W. A., Komproe, I. H., Jordans, M. J. D. D., Ndayisaba, A., Ntamutumba, P., Sipsma, H., Smallegange, E. S., Macy, R. D., & de Jong, J. T. V. (2015). School-based mental health intervention for children in war-affected Burundi: A cluster randomized trial. *Childhood Adversity and Developmental Effects: International and Cross-Disciplinary Perspectives*, *12*(1), 271-295. https://doi.org/10.1201/b18372

UNHCR. (2018). *Forced displacement in 2017: Global Trends. Global Trends*. https://doi.org/10.1080/09584939308719709

Willis, G., & Artino, A. (2013). What do our respondents think we're asking? Using cognitive interviewing to improve medical education serveys. *Journal of Graduate Medical Education*. https://dx.doi.org/10.4300/JGME-D-13-00154.1

Yoshikawa, H., Aber, J. L., & Beardslee, W. R. (2012). The effects of poverty on the mental, emotional, and behavioral health of children and youth. *American Psychologist*, *67*(4), 272-284. https://doi.org/10.1037/a0028015

Zadow, C., Houghton, S., Hunter, S. C., Rosenberg, M., & Wood, L. (2017). Associations between positive mental wellbeing and depressive symptoms in Australian adolescents. *Educational and Developmental Psychologist*, *34*(2), 95-105. https://doi.org/10.1017/edp.2017.6

Zaidi, U., Awad, S. S., Mortada, E. M., Qasem, H. D., & Kayal, G. F. (2015). Psychometric evaluation of Arabic version of self-esteem, psychological well-being and impact of weight on quality of life questionnaire (IWQOL-Lite) in female student sample of PNU. *European Medical, Health and Pharmaceutical Journal*, *8*(2), 29-33. https://doi.org/10.12955/emhpj.v8i2.703