



# Reducing Israeli-Jewish Pupils' Outgroup Prejudice with a Mindfulness and Compassion-Based Social-Emotional Program

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## Abstract

This study evaluated the effectiveness of a newly developed mindfulness and compassion-based social-emotional intervention, Call to Care-Israel (C2C-I), in reducing prejudiced attitudes of Israeli-Jewish youth toward the Israeli-Palestinian outgroup. The C2C-I combines social-cognitive and social-emotional driven mindfulness and compassion practice into one program to create a community of care and cultivate compassion toward the self and others. Three hundred twenty-four Israeli-Jewish 3rd–5th graders ( $n_{\text{girls}} = 137$ ) from three elementary schools in central Israel were assigned by partial randomization to the C2C-I intervention ( $n_{\text{C2CI}} = 175$ ) or a wait-list control group. Outgroup prejudice was assessed by three measures—stereotyping, affective prejudice, and readiness for social contact—at pre- and post-intervention, as well as at a 6-month follow-up. Results showed that, compared to control group participants, those in the C2C-I intervention significantly reduced affective prejudice toward and negative stereotyping about the Israeli-Palestinian outgroup, while simultaneously increasing their readiness to engage in social contact with Israeli-Palestinian youth. Importantly, the significant effects found in the C2C-I group were maintained at the 6-month follow-up—a period that involved a violent escalation in the Israeli-Palestinian conflict—while further deterioration in intergroup attitudes emerged for the control group. High effect sizes for group differences in all prejudice measures emerged, further highlighting the robust impact of the C2C-I program. These results have significant implications for implementing C2C-I mindfulness and compassion-based practices in order to promote positive intergroup relations in areas characterized by ethnic tension and violent conflict.

**Keywords** Call to Care-Israel · Compassion · Intergroup contact · Mindfulness · Prejudice reduction · Protracted ethnic conflict

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## Introduction

Prejudice is a widespread social phenomenon. It is associated with profound negative outcomes, and its consequences on youth are observed on educational, social, physical, and psychological levels (see Inzlicht et al. 2011; Rutland and Killen 2015; Schmitt et al. 2014). As a result, social, developmental, and educational psychologists have worked for decades on research and program development to identify the best practices in stereotyping and prejudice reduction (SPR) for youth of all ages. Allport (1954) provided one of the seminal definitions of prejudice, asserting that “is an antipathy based on a faulty and inflexible generalization” (p. 9). This definition highlights that prejudice is based on an inaccurate and inflexible process of categorization that can manifest as a negative attitude, emotion, or behavior toward the targeted group (Brown 2010). Allport further conceptualized that intergroup contact with members of targeted outgroups provides a context within which individuals could challenge the rigid and

faulty prejudice-based categorization, reduce intergroup anxiety, and promote positive feelings toward outgroup members (1954; Pettigrew and Tropp 2008).

The field of SPR has long been dominated by intergroup contact-based programs; however, more recently, experts have called for better integration of social-cognitive developmental phenomena in prejudice reduction. Proponents of the social-cognitive developmental model focus on changing children's intergroup attitudes by facilitating social, cognitive, and moral skills including social categorization, perspective taking, empathy, and moral reasoning (Aboud 2008; Bigler and Liben 2007; Rutland and Killen 2015). These scholars have advocated for programs focusing on skill enhancement designed to indirectly help youth change their intergroup attitudes. Because mindfulness and compassion are contemplative practices that challenge the users' perceptions and attitudes, and promote their capacities for perspective taking, empathy, and caring for all sentient beings (Tirch et al. 2016), a program that incorporates these practices is uniquely suited to reduce prejudiced attitudes and affect.

Most commonly, mindfulness is defined as “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment” (Kabat-Zinn 2003, p. 144). Furthermore, there are two important components of mindfulness of particular relevance to SPR. First, a primary goal of mindfulness practice is the recognition of mental constructions, such as sensations, feelings, and thoughts that could be prejudiced, in the present moment (Brach 2004). Second, mindfulness is characterized by openness, acceptance, and curiosity—including toward others (Weare 2013). Mindfulness is conceptualized as a mindful practice, as well as a mindful awareness or a way of “being in the world” (Shapiro and Carlson 2009). Thus, in order to pursue both mindful awareness and practice, one can employ a variety of contemplative and noncontemplative strategies (e.g., social-emotional learning).

Compassion can be defined as “sensitivity to suffering in self and others, with a deep commitment to try to relieve it” (Gilbert 2010, p. 3). In Buddhist tradition, mindfulness and compassion are considered the two inseparable wings of awakening (Brach 2004). Whereas mindfulness allows us to see reality—such as our own biases—with clarity and the stability of attention to combat stereotyped perceptions, compassion helps us to cultivate the drive to counteract suffering through inequality or prejudice (Wallace and Shapiro 2006).

Research on mindfulness meditation and compassion-cultivating practices is just beginning to explore the benefits relevant to SPR. A handful of studies have found that children who were exposed to mindfulness and compassion-based interventions reported greater empathy and perspective taking and developed more prosocial behaviors (Flook et al. 2015; Schonert-Reichl et al. 2015). Still, this body of research has

primarily focused on the benefits of mindfulness and compassion-based interventions on the individual.

Recently, however, studies have begun to explore the impact of these practices on a variety of social benefits, such as decreases in ostracism and discrimination, and prejudice reduction. Hutcherson et al. (2008) explored the impact of a specific form of compassion-based practice, Loving Kindness Meditation (LKM), on social connections. LKM is a contemplative practice in which the practitioner cultivates loving, kind, and compassionate feelings first toward people for whom they care, then toward themselves, and eventually toward others, including people who they dislike (Salzberg 2002). These researchers found that participants who practiced a short (7-min) guided LKM, as compared to participants who meditated on neutral images, increased feelings of social connection and explicit and implicit positivity toward “unacquainted others” (Hutcherson et al. 2008).

Building on this work, Kang et al. (2014) showed positive effect of LKM on explicit and implicit bias toward outgroups (Black ethnicity; homeless). Participants practicing LKM showed significant reductions in implicit bias toward both outgroups after the 6-week study compared to control groups. No effects were found for explicit attitudes (Kang et al. 2014). However, Parks et al. (2014) examined whether a one-time, 8-min LKM practice could change explicit attitudes toward homeless people. Participants who engaged in the short LKM exercise reported more positive explicit attitudes toward and willingness to engage with homeless people than did participants in the control group.

Lueke and Gibson (2015, 2016) recently replicated and extended this work by utilizing brief 10-min mindfulness practices, rather than LKM exercises. Because mindfulness trains people to look at their thoughts and feelings as transient mental events and to develop a nonjudgmental attitude toward self and others (Bishop et al. 2004), Lueke and Gibson hypothesized that mindfulness would significantly reduce negative attitudes toward outgroup members. Indeed, in two studies, they found that the brief mindfulness practices reduced implicit race and age bias (Lueke and Gibson 2015), and decreased racial discrimination (Lueke and Gibson 2016).

Finally, Ramsey and Jones (2015) explored the impact of several mindfulness interventions on the prevention of ostracism. These researchers utilized interventions taken from the Mindfulness-Based Stress Reduction program (Kabat-Zinn 2003) in two studies: one field-based quasi-experiment with elementary and secondary school teachers and, the other, a laboratory-based experiment with college students. Both studies found that mindfulness significantly reduced the propensity to ostracize others, particularly those who were socially excluded.

While the aforementioned studies have demonstrated the positive impact of mindfulness and compassion-based interventions on intergroup attitudes, there has been no unifying

theory that accounts for these SPR results. Two theoretical frameworks can be used to guide the application of mindfulness and compassion to SPR. First, the social-cognitive developmental theory of prejudice asserts that cognitive development in the form of perspective taking is a core mechanism in prejudice reduction (Aboud 2008). Mindfulness facilitates a complex mental shift in perspective, which has been described as “the ability to step outside one’s immediate experience, thereby changing the very nature of the experience” (Safran and Segal 1990, p. 146). As a result, it is likely that mindfulness would enhance participants’ abilities to observe their perception of others nonjudgmentally and, thus, free them from entrenched patterns of thoughts (e.g., stereotyping and prejudices). Additionally, perspective taking, when taught alone, has been found, in certain contexts, to enhance intergroup bias, but is most effective in reducing stereotyping and prejudice when it was accompanied by efforts to highlight positive regard for, shared values with, and shared rights of the outgroup (Abrams 2011). Thus, the second theoretical framework applied is the broaden-and-build theory (Fredrickson 2001). This theory suggests that positive emotions, such as compassion, broaden one’s cognitive abilities in terms of flexibility, open-mindedness, and perspective taking as well as promote empathy for others (Fredrickson 2001). Furthermore, these broadening cognitive capacities facilitate, and even motivate, changes in social interactions, including SPR in intergroup relations (Nelson 2009).

Finally, cultivating mindfulness and compassion provides people the opportunity to re-examine their values and to disengage from societal and cultural norms, which often support stereotyping and prejudiced attitudes (Brenick and Romano 2016). Studies have shown that the development of the capacity to reflect upon one’s attitudes can facilitate adopting positions that are more congruent with one’s values (Brown and Ryan 2003). Thus, another SPR potential of mindfulness and compassion intervention lies in the ability of these practices to enhance the prioritization of moral concerns rather than societal norms about intergroup prejudice (Rutland and Killen 2015).

The potential benefit of utilizing contemplative practices for SPR is well suited for implementation with children in the Middle East. Multiple studies have shown that from a very young age, Israeli-Jewish children hold highly negative stereotypic beliefs and prejudices about Palestinians that become more polarized with age, indicating a significant need for effective SPR programs (Berger et al. 2016a; Brenick et al. 2007, 2010). Furthermore, children living amidst this conflict are also exposed to sporadic escalations in ethnic tension and political violence along with the influence of persisting societal normative beliefs about the ongoing conflict (see Brenick and Romano 2016). Furthermore, these children often lack an essential component for intergroup contact—opportunity (Schachner et al. 2015; Titzmann et al. 2015). Indeed,

Israeli-Palestinian and Israeli-Jewish children still lead primarily segregated lives (Shwed et al. 2014). These reasons, coupled with concerns that contact-based SPR programs in situations of extreme conflict can exacerbate negative intergroup attitudes (Christ and Wagner 2013), have led to the present program implementation and evaluation.

In order to change the outgroup prejudice of Israeli-Jewish pupils, we employed the Call to Care (C2C) program (Dodson-Lavelle et al. 2014). The C2C program is a mindfulness and compassion-based intervention that borrows concepts and practices from the Sustainable Compassion Training (SCT; Makransky 2007) and combines it with social-emotional learning in order to promote pupils’ academic performance and well-being as well as to foster ethical sensitivity (Lavelle-Heineberg 2016). The program was adapted by incorporating skills and experiential exercises derived from the Enhancing Resiliency and Promoting Pro-Social Behavior (ESPS; Berger 2014). The ESPS is a teacher-delivered social-emotional program that incorporates mindfulness and compassion-based practices with somatic, affective, cognitive, and social coping skills. Previously, this program was found to be effective in reducing Israeli-Jewish elementary pupils’ stress and anxiety, and enhancing their pro-social behavior (Berger et al. 2016b). In the current study, we assessed the effectiveness of the 24-week C2C-I program in terms of its immediate and long-term efficacy in reducing negative cognitive, affective, and behavioral components of prejudice among Israeli-Jewish elementary school pupils toward Israeli-Palestinians. We predicted that in comparison to Israeli-Jewish youth in the wait-list control group, Israeli-Jewish youth in the C2C-I program would show (1) increased readiness for contact with, (2) reduced affective prejudice toward, and (3) reduced explicit negative attitudes about the Israeli-Palestinian outgroup. We also predicted that these effects would emerge both immediately upon completion of the program and at the 6-month follow-up assessment.

## Method

### Participants

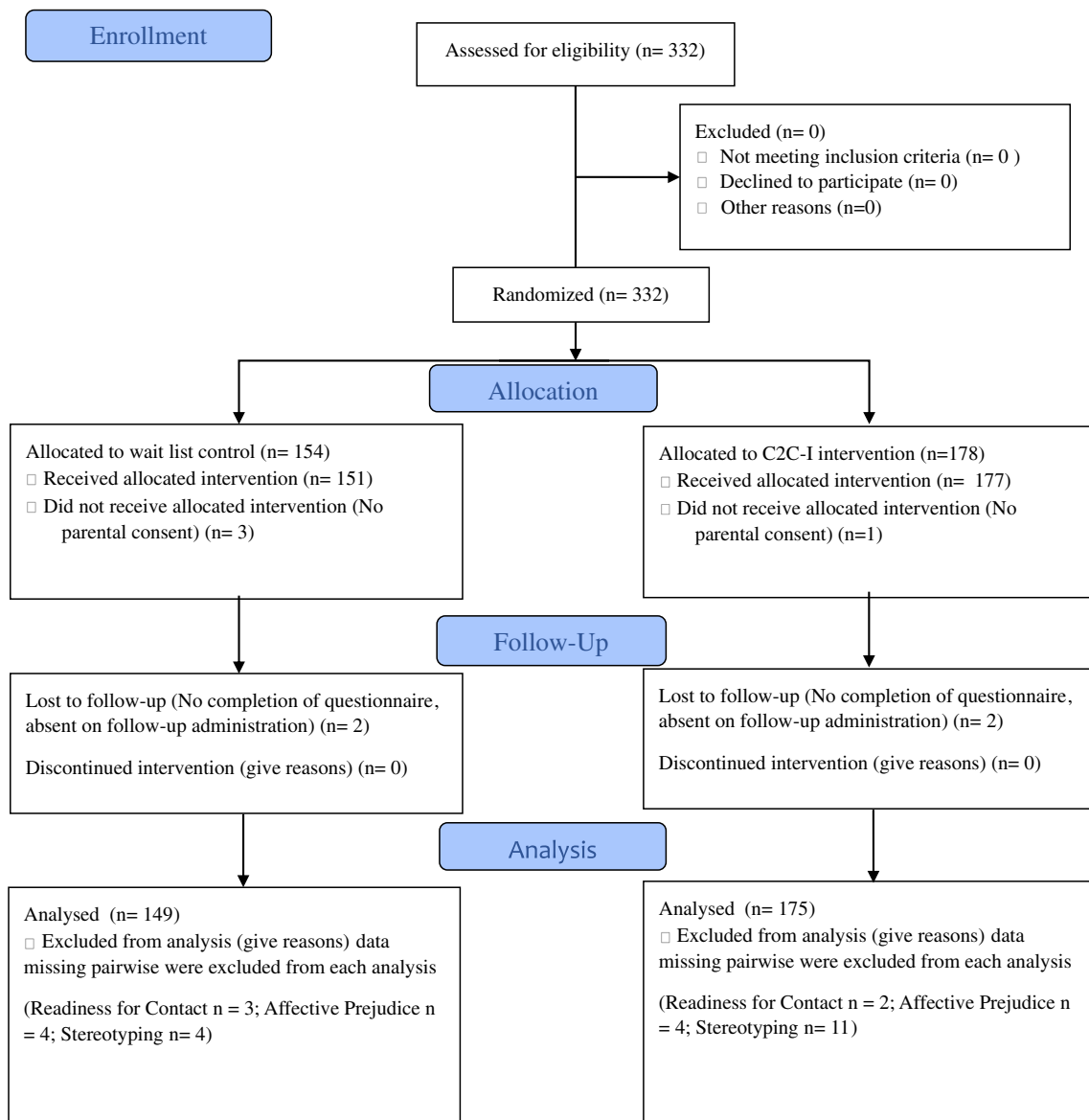
The study was conducted with 324 3rd–5th grade Israeli-Jewish pupils; 178 pupils were in the experimental group and received the C2C-I intervention, while 154 pupils were in the wait-list control group and attended classes as normal. The C2C-I group was comprised of 30 third graders, 75 fourth graders, and 70 fifth graders. The control group was comprised of 29 third graders, 52 fourth graders, and 68 fifth graders. The sample was approximately evenly divided by gender in all grades for both groups (see Table 1 for full sample breakdown). Data were analyzed for 175 C2C-I and 149 control group participants (see Fig. 1).

**Table 1** Breakdown of sample size by grade, gender, and group with mean ages

Grade		C2C-I group	Control group
3rd	<i>n</i> girls	15	15
	<i>n</i> boys	15	14
	<i>M</i> <sub>age</sub> ( <i>SD</i> )	8.51 (0.22)	8.54 (0.25)
4th	<i>n</i> girls	37	27
	<i>n</i> boys	38	25
	<i>M</i> <sub>age</sub> ( <i>SD</i> )	9.39 (0.27)	9.50 (0.31)
5th	<i>n</i> girls	38	35
	<i>n</i> boys	32	33
	<i>M</i> <sub>age</sub> ( <i>SD</i> )	10.37 (0.30)	10.51 (0.30)
Total	<i>M</i> <sub>age</sub> ( <i>SD</i> )	9.77 (0.81)	9.63 (0.73)

**Procedure**

**Recruitment** The participants were recruited from three public elementary schools with similar socio-economic backgrounds (i.e., middle class) in Tel-Aviv and Rishon LeZion—large cities in the center of Israel. The principals of the selected participating schools had previously expressed interest in implementing a mindfulness and compassion-cultivating program in their schools. Pre-tests were administered before class allocation to control or C2C-I groups. Thus, they were approached to determine if they agreed to implement the entire study protocol in the 3rd–5th grade classes. Two of the three schools had two classes in each of the grades, while the third school had two classes in both 3rd and 5th grades, but only one class in the 4th grade. The principals of the first two



**Fig. 1** CONSORT 2010 flow diagram of participant enrollment, allocation, follow-up, and analysis

schools requested that all of their pupils receive the same training program, and thus, the entire 3rd–5th grade student body of these two schools, rather than individual classes, were randomly assigned (by coin toss) to the treatment or control conditions. The first of those two schools served as the experimental group while the second served as a wait-list control group and received the C2C-I program the following year. In the third school, the 3rd and 5th grade classes were randomly assigned to the experimental or control condition. Since there was only one 4th grade class in this school, it was randomly assigned to the experimental group (Fig. 1).

The school administrators presented an overview of C2C-I program including its rationale, goals, and content to the parents of 3rd–5th graders. They also informed the parents about the study procedures. Parents were encouraged to support their children, particularly with the program-related homework assignments. Parents were also asked to sign written consent forms for their children's participation. Only four parents did not consent to have their children participate in the study, and, therefore, these pupils were excluded from the study. Then, four trained and experienced facilitators explained the program to the teachers in the participating schools and, finally, administered the program to the participating pupils who verbally assented to take part in the study.

The study was approved by the chief scientist of the Israeli Ministry of Education and by the Tel Aviv University Human Research Ethics Committee. Parents and pupils were informed that all collected data would remain confidential. Participating pupils' parents provided informed signed consent for their children's participation and pupils assented to their participation in the study. Parents were given contact information so that they could obtain further details about the study at any time.

**Intervention** The C2C-I was a 24-session mindfulness and compassion program that was delivered on a weekly basis (one session per week). However, pupils practiced brief mindfulness or compassion meditations (e.g., 5 min) each morning with exercises led by their homeroom teachers as well as through homework assignments. The program utilized developmentally appropriate contemplative practices and social-emotional skills to cultivate a caring and compassionate school climate, as well as to foster a more productive learning experience among pupils. Below, we will provide an overview of the whole intervention program; however, more detailed information about the content of the sessions can be found in the Online Supplemental Table 1a.

As mentioned above, the C2C-I intervention was based on SCT and ESPS programs. The SCT is a mindfulness and compassion-based intervention that draws from Tibetan Dzogchen and Mahāmudrā practices. It focuses on helping people recognize and cultivate their natural capacity to care for those who are suffering, both the self and others

(Makransky 2007). Participants began by identifying and cherishing daily care moments given by acquaintances and then move toward imagining a stable and significant care person (i.e., a parent, relative, or, in some cases, even pets) who embodies for them the qualities of unconditional care and love. Once they experience themselves as objects of care, they could extend warmth and compassion toward others—first to family members and friends, then to strangers, and eventually to people for whom they hold strong negative feelings. These practices were adapted for children by shortening the contemplative practices and conducting them in a more gradual, skill-building manner. Additionally, to facilitate these practices, we utilized age-appropriate warm-up activities, such as bringing in objects that elicit feelings of safety in the children, drawing pictures of places where the children feel safe, or looking at photos of loved ones, before engaging in the contemplative practices. The parts of the ESPS that were incorporated in the C2C-I were the mindfulness practices in the first eight sessions, including mindfulness with focus on breath, body sensation, walking, and eating. We also added techniques geared to flex rigid thoughts and to practice self-affirmation. Finally, and perhaps most importantly to the research goals, we incorporated strategies from the ESPS to facilitate empathy building, perspective taking, and pro-social behaviors.

The 24 C2C-I sessions were divided equally into three practice areas: receiving care, developing self-care, and extending care. Each practice area was understood to empower the others. The receiving care sessions focused on helping the pupils understand the universal need for care, explore their challenges to receiving care, and teach them to reach out to others when they need care. The core practices and skills developed in this mode included basic mindfulness skills (i.e., focus on breathing, body scan, mindful eating, and walking) and, through compassion meditation, learning to re-experience moments of interconnection, and warmth and inner safety. Pupils also learned to dismantle obstacles to receiving this care by challenging misconceptions, such as “I do not need care from others,” or “Others need care much more than me.”

The self-care mode sessions focused on helping pupils develop an awareness of their needs and their barriers for self-care. Pupils were taught self-soothing techniques and strategies for dealing with stressful experiences. Additionally, this mode aimed to cultivate cognitive flexibility and openness to experience among the participants. Core practices and skills in this mode included mindfulness and contemplation with a focus on soothing care-figures, re-experiencing comforting situations, relaxation strategies (i.e., vagal breathing, muscular relaxation, and safe place imagery), and stress management skills (i.e., stress inoculation and self-affirmation).

Finally, the extending care sessions taught pupils contemplative practices to help direct care toward others, including friends, children they do not know, and even children they

dislike (e.g., find annoying or mean). The development of awareness of constricting thoughts, such as stereotypes and prejudice, had to be coupled with the ability to expand empathy and care to cross ingroup/outgroup boundaries in this context of ongoing intergroup conflict (Abrams 2011). The core practices and skills in this mode included compassion meditation of extending care toward others, developing a compassionate mindset, perspective-taking, empathy skills, and practicing pro-social behaviors.

Each weekly session in the three practice areas lasted 45 min and included mindfulness and compassion contemplative practices (e.g., mindful breath counting, body scan, caring-figure meditation, learning to receive and give social support, or developing perspective-taking and empathy skills) as well as complementary social-emotional skills and concepts to enhance the development of mindfulness and compassion (e.g., identifying and sharing emotions, correlates of social-emotional skills, fixed growth mindsets). Each session included group activities, such as sharing positive and negative feelings with peers or role-playing difficult situations, and homework assignments, such as interviewing family members regarding their ideas about care and compassion or practicing their newly learned skills with family members. Following each session, the facilitators used the school website to teach parents about the concepts that were introduced to their children and to explain the program-related homework assignments. Parents were encouraged to work supportively with their children, particularly when the home assignment required parent participation. Additionally, pupils were given mindfulness dairies in which they were encouraged to document their feelings and thoughts in school, at home, and in the community, as well as their experiences with the contemplative practices and social-emotional skills development.

**Training and Supervision of C2C-I's Facilitators** Facilitators were four graduate research assistants with 3–5 years of experience in contemplative practice and working with children. They received 15 h of training by the first author that included lectures, discussion, and simulations of the contemplative practices and the experiential exercises. In order to ensure the fidelity of the program, the facilitators were observed regularly throughout the program administration by the first author, who also supervised them off-site on a weekly basis. Homeroom teachers attended all program sessions, but were not trained to administer the program. They were instructed to avoid their typical disciplinary roles and instead serve as role models for the pupils by practicing the experiential exercises.

**Assessment** This study utilized a questionnaire with a three-part assessment of outgroup prejudice encompassing behavioral intent (readiness for social contact), emotion (affective prejudice), and cognition (stereotyping). Trained research assistants (RAs) administered all three measures to the

participants at three time points: (1) a week prior to the start of the program (“pre-test”), (2) immediately after its completion (“post-test”), and (3) 6 months after the program completion (“follow-up”). The instruments were pencil and paper, self-report measures. Self-administration of the instruments was overseen by the trained RAs for the 4th and 5th grade classes. The RAs assisted pupils who had difficulty understanding any of the questions. For the 3rd grade classes, the RAs read the questions aloud to ensure student comprehension of the questionnaires. Survey administration took place in the pupils’ classrooms, but without the presence of the teachers.

## Measures

**Readiness for Social Contact** The “Readiness for Social Contact” measure, which was developed and implemented in previous studies (Berger et al. 2015; Teichman et al. 2007), was administered to assess participants’ readiness and willingness to engage socially with Israeli-Palestinian pupils in five different daily activities (i.e., meet with, play, study, invite to one’s house, be a guest in the other’s home). Pupils’ willingness was reported on a 5-point Likert-type scale ranging from “not at all willing” (1) to “willing to a very large degree” (5). Greater readiness to have social contact with members of the Israeli-Palestinian outgroup was indicated by higher scores on this scale. Cronbach’s alpha coefficients of this scale ranged from 0.87 to 0.93 in previous studies (Berger et al. 2015; Teichman et al. 2007). In the current study, Cronbach’s alpha coefficients for this scale were 0.93, 0.94, and 0.93 at the pre-test, post-test, and follow-up assessments, respectively.

**Affective Prejudice** Next, we used the “Affective Prejudice” scale developed by Teichman et al. (2007) to measure the degree to which the pupils felt five different emotions (i.e., secure, relaxed, comfortable, anxious, and threatened) toward members of the Israeli-Palestinian outgroup. Items were scored on a 5-point Likert-type scale ranging from “do not feel at all” (1) to “feel to a very large degree” (5), with three reverse-scored items (i.e., secure, relaxed, and comfortable). Higher scores on this scale indicated stronger negative emotions toward members of the Israeli-Palestinian outgroup. Cronbach’s alpha coefficients of this scale ranged from 0.75 to 0.84 in previous studies (Berger et al. 2015; Teichman et al. 2007). In this study, Cronbach’s alpha coefficients for this scale were 0.81, 0.84, and 0.83 at the pre-test, post-test, and follow-up assessments, respectively.

**Stereotyping** To assess participants’ stereotyping of Israeli-Palestinians, we used the “Stereotyping” measure originally developed by Kaminsky and Bar-Tal (1996) and widely used in a number of studies with children in the Middle East (e.g.,

Bar-Tal and Teichman 2005; Berger et al. 2015; Teichman et al. 2007). Pupils were presented six bipolar traits whose negative poles typically characterized negative stereotypes about the Israeli-Palestinian outgroup (i.e., good-bad, sociable-unsociable, smart-stupid, clean-dirty, beautiful-ugly, and tempered-violent). Pupils were asked to think about these traits in reference to Israeli-Palestinians and rate each on a 5-point scale ranging from the very positive pole to the very negative pole. For example, response ratings ranged from “very smart” (1) to “very stupid” (5) and from “very beautiful” (1) to “very ugly” (5). Each student, thus, rated his or her attitude toward Israeli-Palestinians on each of the six traits. Higher scores indicated more negative stereotyping of the Israeli-Palestinian outgroup. Scores were then averaged across all questions to create a composite stereotype score. Cronbach’s alpha coefficients of this scale ranged from 0.84 to 0.94 in previous studies (Berger et al. 2015; Teichman et al. 2007). In the current study, Cronbach’s alpha coefficients were 0.95, 0.98, and 0.98 at pre-test, post-test, follow-up assessments, respectively.

## Data Analyses

First, preliminary independent sample *t* tests were conducted to determine if, at the pre-test, the C2C-I and control groups differed significantly from one another on any of the dependent variables—readiness for contact, affective prejudice, and stereotyping. Then, primary analyses for the study examined group level differences in the dependent variable mean scores across the three study time points. Repeated measures analyses of variance (ANOVAs) were performed with time of assessment (pre-test, post-test, and follow-up) as a within-subject factor, condition group (C2C-I experimental and control) as a between-subject factor, and age as a covariate. Because there were no theoretically driven hypotheses about the effects of gender, preliminary repeated measures ANOVAs were conducted on the outcome variables with only gender as a between-subject variable. Partial eta-squared values were computed as measures of effect size. Significant effects were followed up by post hoc univariate ANOVAs or pairwise comparisons with Bonferroni adjustments for multiple comparisons, except in the case of significant effects involving age. Given that age is a scaled rather than categorical variable, significant effects with age were followed up with linear regressions. Because there were no theoretically driven hypotheses about the effects of gender, preliminary repeated measures ANOVAs were conducted on the outcome variables with only gender as a between-subject variable. The results—presented below—indicated that gender could be omitted from the primary analyses. Finally, in order to provide a metric for the difference between the groups, Cohen’s *d* indices of effect size (1988) were computed, comparing the differences between the pre- and post-tests, and pre-test and

follow-up between the C2C-I and control groups, using pooled difference standard deviations.

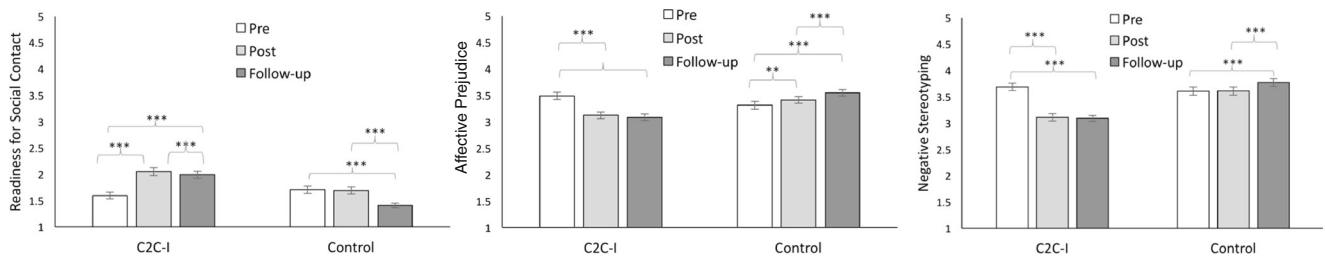
Missing data were minimal for this study ranging from 0.3 to 4%. Closer examination of the missing data indicated that one child did not complete the pre-test measures (5th grade, C2C-I group, male) and two children did not complete the readiness for social contact measure at the post-test (3rd grade, C2C-I, female; and 5th grade, C2C-I, female). These children were eliminated from the specific analyses in which their data were missing.

## Results

The preliminary repeated measures ANOVA, conducted with both the C2C-I experimental group and the control group, indicated no significant effects for gender with any of the dependent measures (readiness for contact  $F(1, 315) = 0.04$ ,  $p = 0.84$ ; affective prejudice  $F(1, 317) = 2.56$ ,  $p = 0.11$ ; stereotyping  $F(1, 308) = 0.00$ ,  $p = 0.99$ ). Accordingly, gender was omitted from all further analyses. Additional preliminary analyses indicated that there were no baseline differences between the C2C-I and control groups; there were no significant group differences at the pre-test for readiness for social contact ( $t(321) = 1.16$ ,  $p = 0.25$ ), affective prejudice ( $t(321) = -1.74$ ,  $p = 0.08$ ), or stereotyping ( $t(321) = -0.53$ ,  $p = 0.59$ ; see Fig. 2 for means). The mean age for the C2C-I group was 9.77 years ( $SD = 0.81$ ), and for the control group was 9.63 years ( $SD = 0.73$ ). Independent sample *t* tests revealed that the two groups did not differ significantly in age ( $t(322) = 1.61$ ,  $p = 0.11$ ).

### Readiness for Social Contact

Results of the primary repeated measures ANOVA yielded significant main effects of time of assessment and group (time;  $F(2, 630) = 4.46$ ,  $p < 0.01$ ,  $\eta_p^2 = 0.01$ , group ( $F(1, 308) = 9.06$ ,  $p < 0.01$ ,  $\eta_p^2 = 0.03$ ; see Table 2 for full ANOVA results of all three dependent variables) for the measure of readiness for social contact; however, a significant time by group higher-order interaction also emerged ( $F(2, 630) = 81.64$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.21$ ; see Fig. 2). Follow-up analyses indicated that even though participants in the C2C-I group were significantly more ready and willing to engage in social contact with the Israeli-Palestinian outgroup at the post-test than the follow-up, readiness for contact at both post-test and follow-up assessments was significantly higher than at the pre-test assessment ( $F(2, 334) = 81.00$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.33$ ; pairwise comparisons: all  $ps < 0.01$ ). In contrast, a significant *decrease* in readiness for social contact from the pre-test and post-test assessments to the follow-up assessment was obtained with the control group ( $F(2, 296) = 38.22$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.21$ ; pairwise comparisons  $ps < 0.001$ ). There was no significant difference from pre-test to post-test in the control group



**Fig. 2** Interactions between time and group plotted with means and standard errors of readiness for social contact, affective prejudice, and stereotyping. Plotted values represent means. Error bars represent standard errors. Readiness for social contact 1 = not at all willing, 5 =

willing to a very large degree; affective prejudice 1 = do not feel at all, 5 = feel to a very large degree; stereotyping 1 = very positive trait, 5 = very negative trait. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

participants’ readiness for social contact (pairwise comparison  $p < 0.001$ . Cohen’s  $d$  values comparing the difference in effect size between the C2C-I and control group averages of readiness for social contact with the Israeli-Palestinian outgroup yielded rather high values between pre-test and post-test assessments ( $d = 1.07$ ) and between pre-test and follow-up assessments ( $d = 1.23$ ). The standards for interpreting Cohen’s  $d$  values indicate that values from 0.80 to 2.00 are considered to be large effect sizes (Cohen 1988).

assessments, as well as from the post-test to the follow-up assessment ( $F(2, 296) = 31.49, p < 0.001, \eta_p^2 = 0.18$ ; pairwise comparisons all  $ps < 0.001$ ). Cohen’s  $d$  values comparing the difference in effect size between the C2C-I and control group averages of affective prejudice yielded rather high values between pre-test and post-test assessments ( $d = 1.09$ ) and pre-test and follow-up assessments ( $d = 1.23$ ).

**Affective Prejudice**

**Stereotyping**

A significant main effect for group ( $F(1, 310) = 5.32, p < 0.05, \eta_p^2 = 0.02$ ; see Table 2) emerged for the affective prejudice measure, but a significant time by group interaction ( $F(2, 620) = 67.62, p < 0.001, \eta_p^2 = 0.18$ ; see Fig. 2) indicated that the effect of time differed across the groups. Participants in the C2C-I group felt less negative affective prejudice toward Israeli-Palestinians at both the post-test and follow-up assessments than at the pre-test assessment ( $F(2, 296) = 31.49, p < 0.001, \eta_p^2 = 0.18$ ; pairwise comparisons all  $ps < 0.001$ ). Conversely, the control group showed significant increases in affective prejudice toward the Israeli-Palestinian outgroup from the pre-test to both the post-test and follow-up

Significant effects emerged for age ( $F(2, 602) = 6.01, p < 0.01, \eta_p^2 = 0.02$ ), group ( $F(1, 301) = 19.07, p < 0.001, \eta_p^2 = 0.06$ ), and time ( $F(1, 301) = 4.06, p < 0.05, \eta_p^2 = 0.01$ ; see Table 2), which must be interpreted through the significant interactions between age and time ( $F(2, 602) = 3.36, p < 0.05, \eta_p^2 = 0.01$ ) and between time and group ( $F(2, 602) = 105.53, p < 0.001, \eta_p^2 = 0.26$ ; see Fig. 2). For the age by time interaction, follow-up analyses revealed that at the pre-test, older participants demonstrated fewer negative stereotypes about Israeli-Palestinians than did younger participants ( $B = -0.18, SE = 0.07, p < 0.01$ ). This effect was nonsignificant at both post-test and follow-up ( $ps > 0.31$ ). Follow-up analyses for the time by group interaction found that participants in the C2C-I group rated the Israeli-Palestinian outgroup as

**Table 2** Results of repeated measures ANOVAs performed on readiness for social contact, affective prejudice, and stereotypes

	Readiness for social contact			Affective prejudice			Stereotypes		
	<i>df</i>	<i>F</i>	$\eta_p^2$	<i>df</i>	<i>F</i>	$\eta_p^2$	<i>df</i>	<i>F</i>	$\eta_p^2$
Within-subject effects									
Time	2	4.46**	0.01	2	1.86	0.01	2	6.01**	0.02
Time × age	2	2.72	0.01	2	1.16	0.00	2	3.36*	0.01
Time × group	2	81.64***	0.21	2	67.62***	0.18	2	105.53***	0.26
Error	630			620			602		
Between-subject effects									
Age	1	0.69	0.00	1	2.19	0.01	1	4.06*	0.01
Group	1	9.06**	0.03	1	5.32*	0.02	1	19.07***	0.06
Error	308			310			301		

Group condition group (C2C-I experimental and control)

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$



significantly less negatively stereotyped at both the post-test and follow-up assessments than at the pre-test assessment ( $F(2, 320) = 145.62, p < 0.001, \eta_p^2 = 0.48$ ; pairwise comparisons all  $ps < 0.001$ ). The control group, however, showed significant increases in negative stereotyping of the Israeli-Palestinian outgroup from the pre-test and post-test assessments to the follow-up assessment ( $F(2, 296) = 14.89, p < 0.001, \eta_p^2 = 0.09$ ; pairwise comparisons all  $ps < 0.001$ ). Cohen's  $d$  values comparing the difference in effect size between the C2C-I and control group averages of negative stereotyping yielded high values between pre-test and post-test assessments ( $d = 0.84$ ) and pre-test and follow-up assessments ( $d = 1.28$ ).

## Discussion

The novel findings of this study demonstrate, in line with our hypotheses, that participation in an extended school-based mindfulness and compassion-based social-emotional program resulted in significant prejudice reduction immediately upon completion of the program—results that were maintained at a 6-month follow-up assessment. More specifically, compared to the pupils in the control group, Israeli-Jewish elementary school pupils in the C2C-I mindfulness and compassion program significantly reduced their expressions of negative feelings toward and negative stereotyping about the Israeli-Palestinian outgroup, while simultaneously increasing their readiness and willingness to engage in social contact with Israeli-Palestinian youth. Notably, these changes reflect the impact of mindful and compassionate contemplation practices in a social-emotional program on reductions across three different manifestations of prejudice: cognition, emotion, and behavioral intent. Equally important, the significant effects were maintained in the 6-month follow-up among the pupils in C2C-I program.

In contrast, the opposite trend was observed among pupils in the wait-list control group who significantly increased negative stereotyping and affective prejudice toward the Israeli-Palestinian outgroup, and decreased their readiness to engage in social contact with the Israeli-Palestinian youth from the pre-test to the follow-up. This significant deterioration in the Israeli-Jewish control group pupils' intergroup attitudes is likely related to the serious escalation in political violence (i.e., what has been named “the third Palestinian intifada,” Beaumont 2015) that took place around the same time as the follow-up assessment. Similar patterns of heightened intergroup tensions among Israeli-Jews and Israeli-Palestinians were observed in a previous study following the 2014 military operation, “Protective Edge” (Berger et al. 2016a). This finding should not be underestimated as prolonged ethnic and violent conflict promulgates fear and hate, resulting in strongly held polarized views about members of the opposing group.

Thus, the C2C-I and control groups' results suggest a promising robustness of the C2C-I program in facilitating long-term positive intergroup attitudes, even in the face of ongoing and violent political conflict.

The obtained Cohen's  $d$  values—calculations of the significant differences between the control and C2C-I group—further highlight the substantial effects of the C2C-I program. Moreover, these results are impressive in comparison to those found with other approaches to prejudice reduction; effect sizes were higher for the C2C-I program than those found in a previous meta-analysis of contact-based programs conducted in real-world settings, including in highly conflictual areas like the Middle East (Lemmer and Wagner 2015). Lemmer and Wagner (2015) assert that the small to medium effect sizes of contact-based programs in contexts of recent conflict warrant the continued implementation of such approaches (an assertion with which the authors agree). However, it is still possible that when protracted, ethnic conflict is mired with *ongoing* heated and often violent confrontation, an indirect approach to prejudice reduction, like the C2C-I program, might be a preferable first step before contact is attempted. This also aligns with Beelmann and Heinmann's (2014) position that prejudice reduction efforts designed to promote positive intergroup relations would benefit greatly from multifaceted and integrative approaches, rather than simply relying on contact-based programs alone. Utilizing an indirect mindfulness and compassion intervention facilitates reflective, nonjudgmental reasoning, empathy, perspective-taking, beliefs about tolerance, and compassion-based contemplative practices—all additional qualities significantly related to positive intergroup relations (see About 2008; Brenick and Killen 2014; Killen and Rutland 2011). At the same time, this approach averts direct confrontation with ongoing volatile intergroup issues that might hinder the positive effects of contact. Similarly, researchers in the Middle East have established that an indirect approach to peace education programs—one that promotes pupils' skills (e.g., reflective thinking, outgroup tolerance, ethno-empathy, human rights, and conflict resolution), rather than addressing the conflict directly—is more effective when conducted during protracted ethnic conflicts (Maoz 2011; Salomon 2006).

The results of this study add not just to the literature on the positive outcomes of mindfulness and compassion practices for the self, but also to the still growing literature on greater social benefits as well (Condon et al. 2013; Lim et al. 2015; the Dalai Lama and Ekman 2008). Recently, a handful of studies have shown that the social benefits of mindfulness and compassion training extend to intergroup tolerance in terms of positive changes in implicit and explicit evaluations and biases (Hutcherson et al. 2008; Kang et al. 2014; Lueke and Gibson 2015, 2016), and in the prevention of ostracism (Ramsey and Jones 2015). This focus on the contribution of mindfulness and compassion training on social issues like

intergroup relationships is a relatively recent advance in the contemplative field, and in addition to bringing these issues to the forefront of research in this area, our findings extend this work in very meaningful ways.

This study demonstrated that a mindfulness and compassion-based social-emotional training program can reduce prejudice in children. Social developmental psychologists have long argued that the time for intervention is in childhood, before prejudice and stereotypes become deeply entrenched (see Killen and Rutland 2011; Raabe and Beelmann 2011). Beyond this, C2C-I was implemented in the schools, not in the laboratory, thus demonstrating a higher degree of ecological validity. Furthermore, taking this work outside of the laboratory brought this intervention directly into the heart of a long-lasting and ongoing protracted conflict. The implications of conducting a mindfulness and compassion-based intervention in such a context reach far beyond the physical and psychological health of an individual, and instead carry the potential of challenging prevailing societal norms of political conflict and violence.

### Limitations and Future Research

Though very promising, the study's findings should be interpreted in light of the following limitations. First, our study was conducted in elementary schools, which impeded our ability to fully randomize the sample; the sample had to be randomized to condition group at the school or class level, rather than by participant. This practice helps to prevent spill-over effects in schools where all classes received the same group assignment, but not where randomization occurred at the class level. Moreover, it is possible that due to randomization at the school level, the significant findings of our study might be an artifact of school-related variables such as differences in curriculum or school climate.

Second, the present sample was recruited from three schools whose principals had previously expressed interest in implementing a mindfulness and compassion cultivating program. Therefore, it is possible that the schools' administrators were especially invested in the successful implementation of the program, whereas principals who are less inclined to run such programs for their pupils might not be as vigilant about implementing the program with fidelity. As a result, the findings may not generalize to settings in which the school administration is not equally dedicated to the practice.

Third, although the current study employed a multi-dimensional assessment of outgroup prejudice, the outcome measures were all assessed through self-report which might present response bias. Fourth, we conducted a 6-month follow-up assessment to determine the long-term impact of the intervention; however, future studies, particularly in contexts of ongoing protracted conflict, should use longer follow-up times to evaluate the extended durability of the intervention

and should examine potential factors that promote or hinder durability (see Lemmer and Wagner 2015). Fifth and finally, the program has the potential for successful implementation in schools to foster mindfulness skills among the pupils as well as cultivate a compassionate school climate. However, given that measures of program feasibility and scalability were not collected in the present study, they should be assessed in future research. More specifically, future research should investigate whether a shorter, less intensive program or a program that does not require trained facilitators could be equally effective.

The primary focus of the current study was to assess the effectiveness of mindfulness and compassion training on prejudice reduction in youth living amidst ongoing protracted conflict. As a result, the study was designed to uncover whether or not such change occurred. The question raised by our positive results, though, is "What are the mechanisms within the C2C-I intervention that led to the intergroup attitudinal changes among the pupils?" The current study was not designed to pinpoint which of the C2C-I's components accounted for the attitudinal changes found among children. Future research should bridge previous work across the fields of mindfulness and compassion training and of prejudice reduction to assess likely mediating variables, such as social anxiety reduction and increased empathy and perspective-taking, given that they are well-established outcomes of mindfulness and compassion practices and well-established predictors of more positive intergroup attitudes (Aboud 2008; Beelmann and Heinmann 2014; Pettigrew and Tropp 2008). Furthermore, future research should not only investigate the mechanisms through which these interventions work, but also look at the effect of integrating multiple approaches (e.g., contact *and* mindfulness and compassion training) or comparing approaches (e.g., contact versus mindfulness and compassion training). In addition, though the C2C-I program was primarily based on the contemplative framework and practices of mindfulness and compassion, it also included aspects of social-emotional learning that might have independently or in conjunction with mindfulness and compassion training contributed to the results. Further research should explore what are relative impacts of each of these individual intervention components. These issues, when addressed by future research, will notably advance both the fields of mindfulness and compassion training and of prejudice reduction.

**Author Contributions** RB: designed and executed the study, trained the facilitators, managed the data collection, and collaborated with the writing of the manuscript. AB: assisted in the conceptualization of the study, analyzed the data, and collaborated with the writing of the manuscript. RT: designed and executed the study, assisted with data collection, analyzed the data, wrote part of the methods and results, and collaborated with the editing of the final manuscript.

## Compliance with Ethical Standards

**Ethical Approval** All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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