# The Influence of Teacher-guided Mindfulness Practice on Inter and Intra-personal Abilities among Israeli Arab Students

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MINDFULNESS AMONG ARAB ISRAELI STUDENTS

**The Influence of Teacher-guided Mindfulness Practice on Inter and Intra-**

**personal Abilities among Israeli Arab Students**

This study investigates the effects of a mindfulness-based program facilitated by teachers for their primary school students in the Arab sector in Israel. The study included 958 fourth, fifth, and sixth grade students; 659 completed the program, and 299 students served as controls. The programs' effectivity was evaluated using inter and intra-personal questionnaires assessing anxiety, perceived stress, tolerance, wellbeing, teachers' availability and acceptance, mindfulness, and feelings about the classroom. Students filled out questionnaires before and after the program. The effects of the program were manifested by significant interactions between time and group in all assessed measures. The practice of mindfulness, already known to be effective for primary school students in Western societies, is shown to also be effective in at least one collectivist culture, i.e, the Arab society in Israel.

***Keywords***: mindfulness, Arab society, anxiety, prejudice, tolerance

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## Introduction

Mindfulness can be 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). Mindfulness qualities can be cultivated and developed in various ways, the most commonly known being meditation (Bishop et al., 2004). Studies on the neurobiology of mindfulness have shown that mindfulness training can increase emotional self-regulation and cognitive flexibility while also reducing stress and anxiety (Hölzel et al., 2011; Meiklejohn et al., 2012). Accordingly, the number of interventions, based on mindfulness training, aimed at reducing stress and anxiety dramatically increased during the last decade (de Abreu Costa et al., 2019). Hölzel et al. (2011) stated that mindfulness effects on stress and anxiety are mediated through attention-regulation, body awareness, emotion regulation, and change in perspective of the self. Even though the first applications of mindfulness were in medicine, these subsequently expanded to other fields, including psychology, health services, business, military, and education (Meiklejohn et al., 2012; Shapiro et al., 2006).

## Mindfulness Training among Students

Mindfulness-based interventions designed for children in general, and for primary school students in particular, have been extensively studied. Past studies have shown that mindfulness practices among primary school students improve the students' wellbeing and helps them developing a higher awareness of their bodies (Felver et al., 2014, 2017; Meiklejohn et al., 2012), thoughts (Butzer et al., 2016; Harpin et al., 2016; Napoli et al., 2005), and emotions (Ager et al., 2015; Malboeuf-Hurtubise et al., 2017; Mendelson et al., 2010).

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To enable mindfulness-based programs for primary school to be administered not only by external trainers but also by school-teachers, it is important not only to develop programs for students but also for teachers, so that the teaching staff is capable of practicing mindfulness themselves and can later implement these programs for their students. This has both organizational and educational importance. From an organizational perspective, teacher-led training prevents a dependence on external instructors and is more sustainable and scalable. From an educational perspective, teacher-led training turns the training into an integral part of the educational processes and enables the training to be more frequent and adjusted to the needs of the class (Crane et al., 2010).

Mindfulness-based interventions among primary school students serve a variety of purposes, such as increasing emotional self-regulation and in turn improve classroom concentration (Felver et al., 2014; Malboeuf-Hurtubise et al., 2017), reduction of intrusive thoughts, and improvement of students' relationships with their peers and teachers (Mendelson et al., 2010), improvement of students' behavior in class and classroom achievements (Baker, 2006; Felver et al., 2017), improvement of cognitive and emotional development (Schonert-Reichl et al., 2015), improvement of students' mood, mental wellbeing and anxiety reduction (Meiklejohn et al., 2012; Van Petegem et al., 2008), stress relief (Harpin et al., 2016; van de Weijer-Bergsma et al., 2014) and coping with crises (Weinstein, 2007).

In recent years, many classroom mindfulness programs have been developed, implementing mindfulness activities such as relaxation exercises, body awareness, breathing techniques and meditation (Ager et al., 2015). Black and Fernando (2014) showed that mindfulness-based interventions in primary schools are also effective among minorities. They showed an improvement in students' behavior, including

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inattention, self-control, participation in activities and consideration for others. The effects remained at least after the seven-week follow-up period.

As of today, there are almost no studies assessing the effects of mindfulness-based intervention programs for children in the Arab sector in Israel. One of the few studies was conducted among Israeli Bedouin teenagers (Birnbaum, 2005) and reported that mindfulness training helped teenagers to reduce both external and internal aggression. She hypothesized that this effect was mediated by increases in self-awareness, discipline and life purpose that were developed thanks to the training.

**Arabic Society and Education in Israel**

Arabic fundamental culture differs from Western culture in many features, including language, religion, cultural legacy, and family structures (Samoha, 2001). These differences may have implications for the implementation of mindfulness training (Pigni, 2010), though the extent of their impact is not well-researched. Arabic society represents a growing part of the Israel's total population. As of 2019, 20.95% of the total population identified as Arabic (Israel's Central Bureau of Statistics). The Arab Israeli society is extremely heterogeneous in terms of religiosity, lives in various kinds of settlements, and geographic distribution (Shinwell et al., 2015). Furthermore, the Arab society in Israel is characterized by large socioeconomic and cultural gaps, by high levels of religiousness and tradition (Reches & Rudnicki, 2009), and by large (average of 4 to 5 persons) and multi-child households (average of 2.9 children under the age of 17; Shinwell et al., 2015). To-date, education standards in the Arab Israel sector continues to improve, which includes reducing overcrowded classrooms, improving student achievements (Shinwell et al., 2015), increasing graduation rates, and reducing the education gender gap. Nevertheless, despite these positive trends,

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there are still deep educational gaps when compared to the Jewish ethnic population

of Israel (Gera, 2013). Achievements of Arab students remain inferior to those of their

Jewish counterparts, from primary education to matriculation certificate entitlement,

as shown by the 'Growth and Effectiveness Measures for Schools,' PISA tests, and

percentage of matriculation certificate entitlement (Ofek-Shanny, 2020). Although

attempts have been made to introduce alternative teaching methods, such as individual

instruction, active learning, and group learning, such attempts have been hardly

successful (AbuʿAsba, 2007; Magadley et al., 2019). Yet, AbuʿAsba (2007) warned

against direct importing of successful methods from the Jewish educational system

without considering the specific cultural needs of Arab students and teachers first.

Lacking a cardinal change in the interactions between teachers and students, attempts

to introduce alternative teaching methods will be technical and non-successful.

According to Rayan and Ahmad (2017), mindfulness-based interventions

lower stress, anxiety, and depression symptoms among parents in the Arab society.

Their findings showed that on the one hand mindfulness-based interventions are

culturally adjustable, flexible, and effective in the improvement of mental wellbeing

in the Arab society, while on the other hand they indicate that such programs may also

be suitable for primary school students in the Arabic sector.

In this study, we examined the impact of teacher's participation in a

mindfulness and compassion based program on students` mindfulness, anxiety,

perceived stress, tolerance, wellbeing, and attachment to the teacher. Our hypotheses

were that the participation of the teachers in the mindfulness program will reduce the

students' anxiety and perceived stress, and improve their tolerance, wellbeing, and

attachment to the teacher.

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## Method

### Procedure and Sample

Eight primary schools from the Arabic sector in Israel chose to participate in the study. Teachers of six schools were requested to participate in the "Call to Care – Israel" (C2C-I) program, and teachers of two schools participated in a workshop given by the Teaching Personnel Development Center and served as a control group. Between twenty and twenty-five teachers from each school participated in the workshops. Teachers attending the C2C-I workshop, subsequently guided mindfulness practice in their classrooms until the end of the school year. Schools were allocated to the programs by school's principals. One hundred twenty students from each school were sampled using clustered sampling: two classes from each grade (4th to 6th) were randomly selected, and in each class students whose parents signed informed consent filled-up questionnaires. A total of 958 students participated in the study; 659 in the experimental group (68.8%), out of which 211 were fourth graders (32.0%), 228 fifth graders (34.6%), and 220 sixth graders (33.4%). The control group included 299 students, out of which 117 were fourth graders (39.1%), 93 fifth graders (31.1%), and 89 sixth graders (29.8%). The two groups did not differ in their gender composition (*chi* (1) = 0.29, *p* = .590).

### Intervention: The Mindfulness and Compassion-based Workshop for Teachers – A Call to Care-Israel (C2C-I)

To provide teachers with the knowledge required for guiding mindfulness-based practice, they participated in a C2C-I workshop. The program comprised twelve meetings based on the three modes of care: receiving care from others, cultivation of

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self-care and extending care to others. Each mode included four topics. The modes

and their topics are presented in Table 1.

**Table 1:** Call to Care-Israel Mindfulness Program to Train Teachers.

| Week | Mode | Objectives | Skills |
|------|------|-----------|--------|
| 1 | Introduction | Welcoming the teachers. Introducing the program. Setting the rules for the training. Understanding the causes of burnout. Developing burnout prevention strategies. | Diaphragmatic breathing. |
| 2 | Introduction | Introducing the theoretical framework. | "Safe place" imagery. |
| 3 | Receiving Care | Introducing the concept of mindfulness. Enhancing motivation to practice mindfulness. | Vagal breathing. |
| 4 | Receiving Care | Teaching about different attitudes of relation to oneself. Learning the differences between self-esteem and self-compassion. | Brief mindfulness practice. Practice self-affirmation. |
| 5 | Receiving Care | Dealing with destructive feelings. Dealing with barriers to receiving care. Deepening compassion meditation's practice. | Mindfulness practice. Compassion meditation: "Dear person." |
| 6 | Receiving Care | The need to receive care. | Mindfulness practice. Receiving care imagery. |
| 7 | Self-Care | Evaluating levels of self-care. Identifying needs for self-compassion. Designing daily self-compassion practices. | Mindfulness practice. Meditation: Self-compassion, self-affirmation. |
| 8 | Self-Care | Identifying barriers for self-compassion. Practicing self-gratitude. | Meditation: Self-acceptance, self-gratitude. |

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| | | Developing awareness to their self-criticism.<br>Learning ways to combat self-criticism. | |
|---|---|---|---|
| 9 | Extending Care | Introducing the concept of radical compassion.<br>Learning to practice radical compassion.<br>Exploring the benefits of giving to others.<br>Practicing small care gestures toward others. | Meditation:<br>From receiving to giving.<br>Accepting challenging people. |
| 10 | Extending Care | Empathic communication.<br>The basis of human judgement. | Meditation:<br>Empathic communication. |
| 11 | Extending Care | Understanding stereotyping and prejudice.<br>Critical thinking.<br>The bystander effect. | Critical thinking practice. |
| 12 | Extending Care | Designing a students' project focusing on giving to the community.<br>Concluding review of the program. | Applying the tools acquired in the program in daily life. |

During the workshop, teachers were exposed to mindfulness practices aimed at developing the three care modes, received psycho-didactic materials and shared their experiences with other participants. Teachers were asked to practice at home and implement the practice with their students using exercises appropriate for students that were taught in the workshop. All six workshops were administered by the same Arab facilitator who had more than 10 years of experience in contemplative practice. The facilitator received 15 hours of training by one of the researchers, which included lectures, discussion, and simulations of the contemplative practices and the experiential exercises.

Teachers were also instructed with exercises to implement with their students. They were taught how to guide: mindful breathing, body scan, still quiet place,

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mindful walking, focusing on the sole of the feet, mindfulness with focus on body

sensations, "Bubble" mindfulness -learning to let go of feelings & thoughts, "Bus of

thoughts" – letting go of worries, and paying attention to stimuli in the environment

(e.g., sounds, smells). Teachers were asked to implement the practices whenever they

felt necessary. Teachers reported using mindfulness techniques frequently, often daily

or even several times during a class, but the frequency and choice of exercises varied

among teachers, based on their perceived needs of the students and class and personal

preferences.

To ensure the fidelity of the program, the facilitator was observed regularly

throughout the program administration by the second author, who also supervised her

off-site on a weekly basis. The facilitator also observed some of the teachers, while

working with their students, and gave them off-site supervision.

Control teachers participated in a workshop named "The Class as a Learning

Community," focusing on the following topics: organization of teaching processes,

otherness as a value and a learning resource, active learning, teacher-student time,

flexible structures of learning organizations, development of a supportive study

environment, differentiated instruction, variety of teaching methods, variety of

learning methods, students feedback and creation of a significant teacher-student

discourse.

**Study Design**

Students filled out a questionnaire at two time-points, before the beginning of

the teachers' workshop and after the school year ended. The questionnaire included

scales that assessed anxiety, perceived stress, tolerance, mental wellbeing, teachers'

availability and acceptance, mindfulness, and feelings about the classroom.

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**Measures**

*Anxiety*

Anxiety was assessed through the short version of the Spence Children's Anxiety Scale (SCAS), developed by Spence (1998), comprised of eight items on a Likert scale ranging from 0 (never) to 3 (always), to assess the anxiety levels among children, with items such as "I worry about things." The questionnaire's reliability as internal consistency calculated among 8-12-year-old children was $\alpha = 0.92$. In this study, the reliability values at the pre- and post-measures were $\alpha = 0.62$ and 0.70, respectively.

*Stress*

Stress level was assessed using the Perceived Stress Scale for Children, developed by Cohen at al. (1983) and adapted for children by White (2014), aimed at assessing subjective stress, using a Likert scale ranging from 0 (never) to 4 (very often), with items such as "In the last week, how often did you feel angry?" The questionnaire's reliability as internal consistency ranges between $\alpha = 0.82$ and $\alpha = 0.86$. The questionnaire consists of six items and measures the extent to which life situations are experienced as stressful. In this study, the questionnaire's reliabilities were $\alpha = 0.41$ and $\alpha = 0.52$ at the pre- and post-measures, respectively.

*Tolerance*

Tolerance towards outgroups was measured using the Tolerance Questionnaire (Berger et al., 2015). The questionnaire consists of three parts. The first part was *readiness for social contact* (Bar-Tal & Labin, 2001; Teichman et al., 2007). This

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part included five activities (i.e., meeting, playing, studying, inviting to one's home, being one's guest), for each of which the participants indicated the degree of their readiness to engage in it with a child of another ethnicity. The answers ranged on a Likert scale from 0 (not at all) to 4 (very much). The questionnaire's reliability as internal consistency ranges between 0.82 and 0.86 (Berger et al., 2015). In this study, the reliability values at the pre- and post-measures were $\alpha = 0.88$ and $\alpha = 0.90$, respectively. The second part of the questionnaire assessed children's ***positive thoughts about others.*** This part was based on an index used in studies on Arab-Jewish stereotypes (Bar-Tal & Labin, 2001; Teichman et al., 2007). It included word pairs describing possible characteristics of the other ethnicity: smart/stupid, friendly/unfriendly, clean/dirty, pretty/ugly, non-violent/violent. The participants were asked to indicate to what extent each feature is characteristic of the external group, using a Likert scale ranging from 0 to 4, with the higher score indicating a more positive characteristic. The questionnaire's reliability as internal consistency ranges between 0.84 and 0.90 (Berger et al., 2015). In this study, the reliability values at the pre- and post-measures were $\alpha = 0.66$ and $\alpha = 0.80$, respectively. Finally, the third part of the questionnaire tested ***emotional prejudice,*** including five emotions (i.e., hostility, hatred, anger, understanding, indifference). The participants were asked to indicate to what extent they felt each emotion on a Likert scale from 0 (not at all) to 4 (very much). For the 'understanding' item, the score is reversed. The questionnaire's reliability as internal consistency ranges between 0.75 and 0.84 (Berger et al., 2015). In this study, the reliability values at the pre- and post-measures were $\alpha = 0.90$ and $\alpha = 0.95$, respectively.

***Teachers' availability***

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Teachers' availability was examined  using the Teachers' Availability and

Acceptance questionnaire (Al-Yagon & Mikulincer, 2006),  comprised of 17

statements on children's appraisal of their homeroom teacher as a secure base on a

Likert scale ranging from 1 (strongly dis-identified) to 7 (strongly identified). This

questionnaire featured a high reliability ($\alpha = 0.90$). In this study, the reliability values

at the pre- and post-measures were $\alpha = 0.88$ and $\alpha = 0.86$, respectively.

### *Mindfulness*

Mindfulness was measured using the Five Facet Mindfulness Questionnaire,

developed by Baer et al. (2006)  and adapted to children by Ginesin (2013), including

39 statements on a Likert scale ranging from 1 (never or almost never correct) to 5

(very often or always correct), with items like "While walking, I am aware of the

sensations in my body". The subscales reliabilities range between 0.75 and 0.91 (Baer

et al., 2006). In this study, the reliability values at the pre- and post-measures were $\alpha$

$= 0.66$ and $\alpha = 0.76$, respectively.

All questionnaires were translated into Arabic using the double-back

translation method by two independent translators. A third person reviewed the

translations, chose the preferable wording for each statement, and translated the

questionnaires back to Hebrew. A fourth person compared the two versions, and in

cases of discrepancies, the first two translators cooperated in solving them.

### Statistical Analysis

Separately for each dependent measure, a Mixed Linear Model was calculated

with the fixed factors of measurement time (pre/post) group (C2C-I/control) and their

interaction, and the random factors of class nested within grade, nested within school,

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nested within manipulation. Significant interactions were followed by Bonferroni's

corrected post-hoc comparisons.

## Results

To assess whether the two groups differed in the dependent measures at pre-

test, t-tests for independent samples were calculated. The C2C-I group was found to

have significantly higher levels of anxiety ($t(956) = -2.21$, $p < 0.05$), and stress ($t(956)$

$= -2.24$, $p < 0.05$). Mixed linear models yielded significant interactions between group

and time for all the variables assessed. Table 2 summarizes the effects of time, group

and the interaction between time and group for each of the dependent variables.

**Table 2**: Results of Mixed Linear Models performed on all study variables, including

main effects of time (pre vs. post), group and interaction between time and group

| | Main effect of time | Main effect of group | Interaction |
|---|---|---|---|
| Anxiety | $F(1,953) = 654.21$, $p < 0.001$ | $F(1,33) = 6.30$, $p = 0.017$ | $F(1,953) = 397.81$, $p < 0.001$ |
| Stress | $F(1,953) = 212.65$, $p < 0.001$ | $F(1,35) = 5.70$, $p < 0.05$ | $F(1,951) = 268.62$, $p < 0.001$ |
| Readiness for social contact | $F(1,950) = 180.65$, $p < 0.001$ | $(F(1,34) = 1.59$, n.s. | $(F(1,950) = 67.51$, $p < 0.001$ |
| Positive thoughts about the other | $F(1,952) = 233.94$, $p < 0.001$ | $F(1,35) = 13.33$, $p < 0.01$ | $F(1,952) = 118.93$, $p < 0.001$ |
| Emotional prejudice | $F(1,952) = 458.86$, $p < 0.001$ | $F(1,34) = 0.23$, n.s. | $F(1,952) = 21.99$, $p < 0.001$ |
| Teacher' availability and acceptance | $F(1,952) = 28.42$, $p < 0.001$ | $F(1,33) = 1.29$, n.s. | $F(1,952) = 149.95$, $p < 0.001$ |
| Mindfulness | $F(1,951) = 630.22$, $p < 0.001$ | $F(1,34) = 56.43$, $p < 0.001$ | $F(1,951) = 750.62$, $p < 0.001$ |

Figure 1a shows Bonferroni's corrected post-hoc tests, which revealed a

significant reduction in anxiety in the control group (*mean difference* [*m.d.*] = -0.061,

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$p = 0.001$), as well as in the C2C-I group (*m.d.* = -0.495, $p < 0.001$); although the decrease in the C2C-I group was significantly stronger than in the control group.

As presented in Figure 1b, post-hoc analyses revealed a significant reduction in stress in the C2C-I (*m.d.* = -0.391, $p < 0.001$), but not in the control group (*m.d.* = 0.023, n.s.).
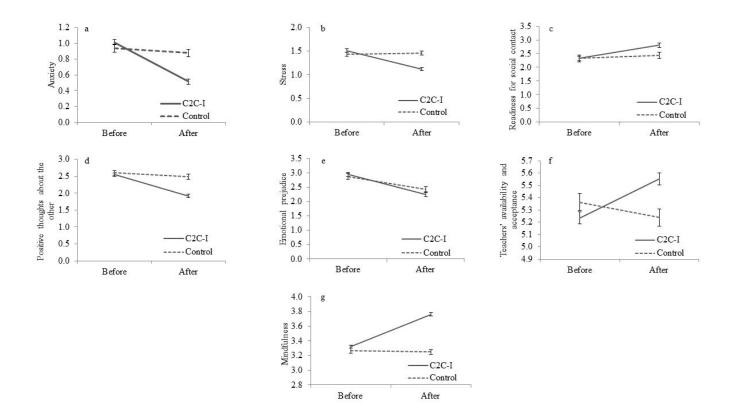
As can be seen in Figure 1c on readiness for social contact, post-hocs revealed a significant increase in both groups, however the increase was larger among the C2C-I participants (*m.d.* = 0.479, $p < 0.001$) when compared to controls (*m.d.* = 0.116, $p < 0.01$).

As shown in Figure 1d on positive thoughts about others, post-hoc analyses revealed a significant decrease in positive thoughts among both groups; however the significant interaction indicates that the decrease in the control group (*m.d.* = -0.105, $p < 0.01$) was slighter than that obtained in the C2C-I group (*m.d.* = -0.629, $p < 0.001$).

Figure 1e presents a significant decrease in prejudice in both groups, while the reduction was more pronounced in the C2C-I (*m.d.* = -0.702, $p < 0.001$) when compared to the control group (*m.d.* = -0.702, $p < 0.001$).

Furthermore, Figure 1f reveals a significant decrease in teachers' availability and acceptance in the control group (*m.d.* = -0.124, $p < 0.001$), whereas an increase was obtained among participants in the C2C-I group (*m.d.* = 0.315, $p < 0.001$).

Finally, Figure 1g depicts a significant increase in mindfulness among participants in the C2C-I group only (*m.d.* = 0.441, $p < 0.001$).

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**Figure 1:** Group averages and SE of the dependent measures before and after the

manipulation among controls and C2C-I participants.

## Discussion

This study assessed the effects of a mindfulness and compassion intervention

program for Arab Israeli primary school students on several psychological measures.

The observed increase in mindfulness in the experimental group serves as a

manipulation check, allowing to infer that maybe differences in other variables were

due to the increase in mindfulness achieved in the experimental group. This study

supports previous studies which showed that teachers are able to become mindfulness

instructors after suitable training (Crane et al., 2010; Napoli, 2004) and that

mindfulness practice increases reported mindfulness levels (Ager et al., 2015; Felver

et al., 2017).

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The finding that mindfulness practice improves mindfulness levels among

children is important, since such increase may help students improve their wellbeing

and develop a higher awareness of their body, thoughts and emotions (Ager et al.,

2015), as reflected in a better quality of life on the one hand and better learning

achievements on the other hand (Felver et al., 2014; Khoury et al., 2015; Malboeuf-

Hurtubise et al., 2017).

In terms of anxiety, the mindfulness group showed a larger decrease than the

control group. This finding is consistent with previous studies, showing, that

mindfulness practice among students helps decreasing intrusive thoughts and anxiety

(Mendelson et al., 2010) and helps improving their ability to cope with crises

(Coholic, 2010). Anxiety reduction has been shown to be related to increased

wellbeing, emotional resilience and concentration (Hoge et al., 2018). Similarly, the

reduction in stress in the C2C-I group only is consistent with previous studies with

students (Harpin et al., 2016; van de Weijer-Bergsma et al., 2014). The reductions in

anxiety and stress in our study suggests that mindfulness practice among Arab Israeli

students acts similarly when compared to study participants in Western societies.

Notably, the most significant results of the presented study are related to

measures of tolerance and prejudice, which are highly relevant to societies in

conflict—as is the case with Arab and Jewish societies in Israel. In our study, we

observed increased tolerance toward Jews in the C2C-I group, as reflected by

increased readiness for social contact, together with a reduction in emotional

prejudice; however, paradoxically this was accompanied by a reduction in positive

thoughts about Jews. The increased readiness for relationships and reduction of

prejudice mirror previous studies, which showed that mindfulness practice by students

improved their relationships (Mendelson et al., 2010), increased their pro-social

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behavior (Harpin et al., 2016), their consideration for others including minorities

(Black & Fernando, 2014), and decreased the expression of aggressiveness among

students in the Israeli Bedouine sector (Birnbaum, 2005). However, our results are

unique as in our study we assessed the readiness for relations from a minority group

toward the majority in a scenario of conflict between the groups. In contrast, the index

of positive thoughts about others showed a significant decrease in the C2C-I group.

This decrease was unexpected and not consistent with previous studies, which showed

that mindfulness practice by students increased positive thoughts (Butzer et al., 2016).

It is important to note that in this study we did not assess positive thoughts in general,

but specifically towards the hegemonic group. One possible explanation for the

decrease in positive thoughts may the attainment of a non-judgmental attitude through

mindfulness practice (Kabat-Zinn, 2003). Specifically, mindfulness practice may have

lowered the judgement of negative thoughts towards the outgroup, and accordingly

reduced the previously reported positivity. In contrast, in a study assessing prejudice

from the majority to the minority group, mindfulness practice showed a reduction in

prejudice together with an increase in positive thoughts (Berger et al., 2018). Future

studies should focus specifically on this issue to shed light on the mechanisms

involved in prejudice reduction among a dominant outgroup.

Our last important finding refers to the relationship between students and

teachers. We found that, throughout the year, children in the control group reported a

decrease in their teachers' availability and acceptance, whereas children in the C2C-I

group showed a significant increase. The improvement in the relationship between

students and teachers and in the students' perception of the teachers' availability and

acceptance is important because good student-teacher relationships contribute to

improved achievements (Thijs & Fleischmann, 2015), better behavior, less bullying

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(Longobardi et al., 2018), moderate the effect of students' emotional problems (Zee & Roorda, 2018), and promote pro-social behavior as well as a positive attitude towards school (Longobardi et al., 2021).

Overall, our findings show that the C2C-I program had a positive effect on the students' psychological and relational skills. The positive effect of the C2C-I program on students' psychological measures could therefore have positive consequences on the educational system. An improvement in the students' wellbeing and their relationship with the teacher can lead to increased motivation and hence to an increase in their achievements. The reduction of stress and anxiety among students can lead to better behavior and a decrease in violence within the school. Improvement in tolerance measures can lead to reclamation of the relationship between the groups in the divided Israeli society. Thus, the ongoing practice of mindfulness by teachers and students has the potential for a more pleasant educational system with higher achievements and a more integrated society.

**Conclusions**

To our knowledge, this is the first study to examine the influence of a mindfulness-based intervention program where teachers themselves conducted the program among primary school students in Israel's Arab sector. Our most important conclusion is that mindfulness practice—which is known to be effective for students across broad age ranges in Western societies—is also effective in improving psychological and interpersonal abilities among primary school students in Israel's Arab sector. Although mindfulness practice can be considered an individualist intervention, Arab society is characterized by a strongly collectivist culture. Yet, our findings suggest that mindfulness practice can also be effective among collectivistic

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cultures. This generates two relevant theoretical implications. Firstly, mindfulness-based interventions are culturally adaptable and relevant for students in Arab society. And secondly, mindfulness practice among Arab students may improve their self-awareness with self-improvement activities, a concept that remains uncommon for this society. The fact that the program was delivered by teachers themselves after being trained in mindfulness, and not by external instructors as was the case in many other studies, opens up a new path for the disseminations of such programs in future research.

**Limitations and Directions for Future Research**

This field study was limited by the fact that participants were not randomly allocated to the groups, as classes were already predetermined by the schools. Future studies should attempt to replicate and validate the experiment outlined in this paper with an opposed majority/minority group representation to assess the differential effects of mindfulness in prejudice towards outgroups. In addition, due to the study's design, it was not possible to distinguish between the direct effect that the students' practice had on the observed measures and the indirect effect of the teachers' practice on how they interacted with their students and therefore affected their behavior.

**Compliance with Ethical Standards**

All procedures performed in this study were in accordance with and received the approval of the XXXX University Ethics Committee and the Office of the Chief Scientist of the Ministry of Education. Informed consent was obtained from the parents of the individual participants included in the study.

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**Data availability statement**

All data are available at: https://data.mendeley.com/datasets/XXXX

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