

## Original Article

# The effect of mindfulness-based group skill training for mothers who have children with intellectual disabilities during the COVID-19 pandemic: A feasibility study

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### Abstract

**Objectives:** This study aimed to assess the effects of mindfulness-based skill training on stress, cognitive emotion regulation (CER), and mindfulness levels in these mothers.

**Methods:** The study was conducted in Türkiye and is a single-arm, mixed-method feasibility study. Thirty-one mothers were given a 6-week online mindfulness-based group skill training. Although the study started with 43 mothers, it was completed with 31 mothers due to drop-outs (5) and a lack of follow-up (7) measurements and analyses were made. Perceived stress scale (PSS), mindfulness attention awareness scale and CER scale were used in the study.

**Results:** The study had a strong recruitment rate of 71.66%. A statistically significant difference was found in the PSS scores of the participants at the pretest and post-test. There was no statistically significant difference between baseline and follow-ups in the Mindful attention awareness scale score and CER questionnaire score.

**Conclusion:** It can be noted that the mindfulness-based skill training program given online during the COVID-19 period is effective in reducing the stress levels of mothers of children with intellectual disabilities.

**Keywords:** COVID-19; intellectual disability; mindfulness; mother; stress.

The mother, who is primarily responsible for the care of the child, is the most affected individual in the family and is more sensitive than other family members in terms of mental health.<sup>[1]</sup> According to a study on family structure conducted in Türkiye, mothers were responsible for 85.6% of childcare.<sup>[2]</sup> Mothers of children with a disability stated that they could not get enough support from their relatives, they were bothered by society's attitudes toward their children, and they experienced intense stress.<sup>[3,4]</sup> Earlier studies have shown that the levels of psychotic illnesses<sup>[5]</sup> and exposure to stress in mothers of children with intellectual disabilities were high.<sup>[1-6]</sup> When the stress levels between parents were examined, it was seen that the stress level of the mother was higher than that of the

father.<sup>[7]</sup> Stress, physical function, anxiety, and depression levels of mothers who have children with intellectual disability were significantly higher than mothers who have children with normal development.<sup>[8-11]</sup> The COVID-19 pandemic made the already stressful lives of parents with children with intellectual disabilities even more stressful, and the increase in a child's personal needs made the parents feel unsupported and overwhelmed.<sup>[12]</sup> Many precautions, such as online education for students, working from home for employees, and lockdowns, were taken to prevent the spread of the COVID-19 pandemic. In addition, the lockdowns also prevented children with special needs from receiving education.<sup>[13]</sup> In Türkiye, the closure of special education institutions due to the pandemic

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adversely affected both children and their families. Behavior problems started to emerge in children, and parents also emphasized that they had difficulties in this process.<sup>[14]</sup> The pandemic period showed that the quarantine process increased the workload of the mothers,<sup>[15]</sup> and in parallel, their burnout, hopelessness, and stress levels increased.<sup>[16]</sup> In a study conducted in Türkiye, mothers reported having concerns about their children's health and education during the closure and controlled socialization processes, feeling anxious, helpless, and sad, and being unable to receive social support, particularly during the closure process.<sup>[17]</sup> It was decided to open special education institutions in Türkiye on 15 June 2020;<sup>[18]</sup> however, pandemic rules (mask, distance, hygiene) had to be maintained. Mothers stated that their children receiving special education had difficulty adapting to these rules.<sup>[17]</sup>

Scientific studies examine the psychological processes that may affect the stress level of parents. As mindfulness has become a popular field in recent years, the examination of mindfulness as one of these psychological processes has shown a rising trend.<sup>[19,20]</sup> Although there are various definitions of mindfulness, it has been defined as "the quality of consciousness or awareness that arises through deliberate participation in the present experience in a non-judgmental and accepting way."<sup>[21]</sup> Mindfulness-based interventions include awareness of the breath, thoughts, bodily sensations, sounds, and daily activities. High-quality studies in the literature shown that mindfulness-based interventions may be effective in reducing many psychological problems, including anxiety,<sup>[22,23]</sup> the risk for recurrence of depression,<sup>[24,25]</sup> existing depressive symptoms,<sup>[26]</sup> chronic pain,<sup>[27]</sup> and stress.<sup>[28]</sup> The mindfulness-based stress reduction (MBSR) program works by improving self-control, flexibility in emotion and thought, and improving an individual's ability to cope with stressors in their life.<sup>[29]</sup> Studies conducted on parents of children with developmental/intellectual disabilities indicate that mindfulness-based approaches were effective in reducing parental stress,<sup>[30-32]</sup> and general stress.<sup>[33]</sup> In addition to these studies, virtual mindfulness-based studies conducted during the COVID-19 pandemic are effective in reducing stress and reduction in anxiety.<sup>[34,35]</sup> Virtual mindfulness-based therapies have been shown to be successful in a variety of samples.<sup>[36-38]</sup> Online mindfulness-based therapies for caregivers have also been shown to improve positive affect/well-being, physical and emotional health, and reduce depression, anxiety, and caregiver burden.<sup>[39]</sup>

Considering the studies conducted with mothers of children with intellectual disabilities, it is presented that mothers using positive emotion-regulation strategies have better psychosocial well-being than mothers using negative emotion-regulation strategies.<sup>[40]</sup> Cognitive emotion regulation (CER) is defined as "the conscious, mental strategies that individuals use to cope with receiving emotionally stimulating informa-

#### What is presently known on this subject?

- The already stressful lives of parents having children with intellectual disabilities became even more stressful with the COVID-19 pandemic.
- The mother, who was primarily responsible for the care of the child, was the person most affected by this situation in the family.

#### What does this article add to the existing knowledge?

- It was stated that during the pandemic period, mothers had extra work and responsibilities, and their levels of burnout, hopelessness, and stress increased.

#### What are the implications for practice?

- This study shows the results of the first mindfulness-based training given to mothers of children with intellectual disabilities in Türkiye.

tion."<sup>[41]</sup> Regulating emotions through thoughts provides support to individuals to manage their emotions after daily or stressful life events.<sup>[42]</sup>

In summary, mindfulness-based approaches in the mentioned studies can reduce stress. Moreover, these approaches can increase the well-being of mothers of children with intellectual disabilities.

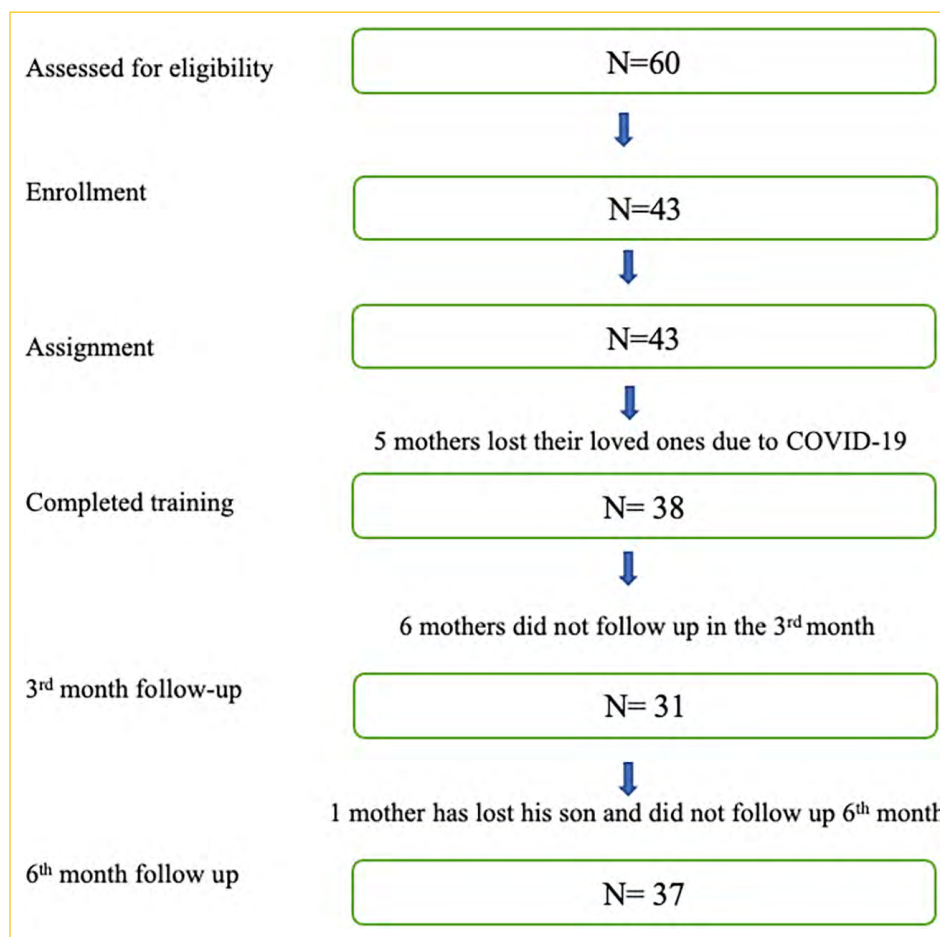
Therefore, this study aimed to investigate the effectiveness of mindfulness-based group skill training on the psychological well-being of Turkish mothers with children with intellectual disabilities. The authors hypothesized that mindfulness-based group skill training may increase mindfulness and CER skills while diminishing the perceived stress of mothers with children with intellectual disabilities.

## Materials and Method

This was a single-arm, mixed-methods, feasibility study. Feasibility studies are conducted to determine whether the intervention being implemented should be tested further. The researchers establish whether the findings can be implemented in a way that is relevant and sustainable.<sup>[43]</sup> Ethical approval was obtained from the Ethics Committee of the Faculty of Medicine, Marmara University, dated April 30, 2020, and numbered 70737436-050.01.04-E.2000139852 to carry out this research. The research was conducted in accordance with the Helsinki Declaration.

## Participants and Settings

Participants had at least one child with intellectual disabilities for whom they were primarily responsible. The mothers had no prior exposure to any mindfulness-based interventions. Furthermore, they did not receive any other psychotherapeutic or mindfulness-based services during the study. At the same time, the participants did not have intellectual disabilities/severe mental illness and were not taking any psychotropic drugs. Mothers also could use technology (being able to fill out Google forms and use Zoom or Google Meet). All of the mothers who applied were able to use technology and those who could not use it with the support of their families. No par-



**Figure 1.** Flow of participants through each stage of the study.

participant was excluded from the study due to not being able to use technology. In order to carry out the research, an invitation e-mail was sent to the special education centers for intellectually disabled children. The special education centers that we could connect directed the mothers to us for education. In addition, an invitation to research was made through social media platforms. Mothers who wanted to participate in the study from various regions of Türkiye were called by phone and their verbal consent was obtained. They were informed of the research and training processes. Sociodemographic forms and scales were sent to the mothers through Google forms. Before beginning the training, the researcher organized a meeting for all participants through the Zoom program. At this meeting, mothers could also get answers to their questions. The mothers who agreed to participate in the study were divided into three chat groups on WhatsApp ( $n=43$ ) to determine the days and hours of the training they would receive. Most of the mothers stated that they were busy since all family members were at home during the pandemic period and they wanted the training to start after 8 p.m. There was no facilitator in the training. The number of participants was divided into three according to the day and time they requested. Training hours

and days were determined by the participants. Mothers completed all measurement tools through Google forms. The pre-tests were filled before the training, the post-tests were filled within the week after the training, the 3<sup>rd</sup>-month follow-ups were filled 3<sup>rd</sup>-months after the training, and the 6<sup>th</sup>-month follow-ups were filled 6 months after the training.

### Sample Size

Forty-three mothers started the study, 38 mothers completed the training, five mothers dropped out during training, and seven mothers dropped out in the follow-up measurements. In total 12 mothers withdrew from this study. Reasons for withdrawing included the loss of a family member during the COVID-19 pandemic. As a result, 31 participants completed the study (Fig. 1). According to the reference study results,<sup>[44]</sup> they had a large effect size at stress levels of intervention group 1<sup>st</sup> and 5<sup>th</sup>-week results ( $d_z=0.64$ ). With the assumption that an effect size of this level could be obtained, a power analysis was performed before the study. Accordingly, when at least 22 participants were included in the study, it would result in 80% power with a 95% confidence level (5% type 1% error rate).

## Intervention

The intervention was created in the light of “Mindfulness-Based Parent Training” developed by Ferraioli and Harris (2013). The first author (M.İ.B.) had MBSR and cognitive behavioral therapy (CBT) training and had previously worked with mothers of children with intellectual disabilities.<sup>[45]</sup> Supervision processes will continue. It is the first mindfulness-based training of the author, who has done many group training before. The evaluation of the training in terms of content and scope was made by the second author (G.Ü.), who has a CBT certification and experience in the field. Mothers attend training programs on Wednesdays, Thursdays, and Fridays, depending on the times they have free. Wednesday group was 11 mothers, Thursday group was 15 mothers, and Friday group was 17 mothers. During all sessions, the mothers’ cameras were on and there was interaction within the group. Each session began with a breathing exercise recorded on voice. Following the breathing exercise some questions were asked before starting the training session (How was the previous week, were you able to do the mindful practices? etc.) They were given an opportunity to express their own experiences. The topic of the week was introduced and the sessions began following the exercise and sharing. Mindfulness and its components were introduced in the initial session. The topic of the subsequent sessions was based on mindfulness. The following topics were contextualized: “Emotion, Thought, and Behavior,” “Mindfulness and Stress,” “Challenging Emotions in Parenting,” “Self-compassion,” and “Communication.” The content of the training is presented in Table 1. The average of all sessions times approximately 90 min was conducted online (zoom) by the first author. The training language was Turkish because of being the mother’s primary language. The children of the participants were receiving education in special education institutions. The training was carried out in March–May 2021 and was led by practitioners as online group training. Due to the density of mothers, retreat day was not held in this study. Participants were not charged before or after the training.

Every 3<sup>rd</sup> day after the training, a message reminding the mindfulness practices was sent to the WhatsApp groups. These messages served as a reminder to do mindfulness exercises and homework. Homeworks were also given in the 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup> weeks (Table 1). At the end of some training days, questions were asked to mothers via the Mentimeter application, and their answers were shown to them. For instance: “What is the most stressful situation for you?”, “What beauty did you notice that you did not notice last week?”, “What was the easiest mindfulness practice you did?”, “What was the most difficult mindfulness practice you did?”, etc. (Figs. 2, 3). Our aim was to improve training effectiveness and ensure mothers’ adherence to training.

## Outcome Measures

### Socio-demographic Form

Information about the mothers’ age, marital status, income, education, employment status, and the degree of disability of the child was questioned through a form created by the researchers.

### Perceived Stress Scale (PSS)

PSS was developed by Cohen, Kamarck and Mermelste in 1983 (Cronbach’s Alpha=0.86).<sup>[46]</sup> An increase in the scale total score means that the stress level is increased. The scale was adapted into Turkish by Bilge et al.<sup>[47]</sup> (2009) (Cronbach’s Alpha= 0.81).

### Mindful Attention Awareness Scale (MAAS)

MAAS is a 15-item scale that measures the general tendency to be aware of and attentive to momentary experiences in daily life. It has a single-factor structure and produces a single total score. The internal consistency coefficient of the scale is 0.82.<sup>[48]</sup> The higher score on the scale is considered positive. The scale was adapted to Turkish by Özyeşil et al.<sup>[49]</sup> (2011) and the authors confirmed that MAAS had a one-dimensional model (Cronbach’s Alpha=0.80).

### CER Questionnaire (CERQ)

It was developed by Garnefski, Kraaij, and Spinhoven (2001) to measure the emotion regulation skills of adults.<sup>[50]</sup> While the decrease in the score of the maladaptive sub-dimensions is positive, the decrease in the score of the adaptive sub-dimensions is negative. Its Turkish adaptation, validity, and reliability were carried out by Onat and Otrar (2010).<sup>[51]</sup> (Cronbach’s Alpha=0.784).

### Feasibility Outcome

The feasibility section was evaluated by rate calculations of adherence to the intervention, attendance to the sessions, and satisfaction with the intervention, and the mothers’ thoughts on this training were evaluated by focus group interviews conducted at the end of the intervention.

### Analyses

All statistical analyses were performed using SPSS 25.0 software (IBM SPSS Statistics 25 software (Armonk, NY: IBM Corp.). Continuous variables were expressed as mean±standard deviation, median (interquartile range, 25<sup>th</sup>–75<sup>th</sup> percentiles), minimum-maximum values, and categorical variables as number and percent. For testing normality, the pairwise difference values obtained from the 4 measurements were calculated and the conformity of these values to the normal distribution was examined with the Shapiro-Wilk test. For pairwise comparisons; if parametric test conditions were satisfied Repeated Measures analysis of variance (*post hoc*: Bonferroni test); and

**Table 1. The training program and homework**

Training program	Homework
Meeting and sharing, pre-intervention assessments	
Mindfulness and Components of Mindfulness	Informal practices: Taking mindful actions during the day after waking up: making the bed, brushing teeth, having breakfast,
Breathing meditation	Breaking habits- Change where you usually sit at your dinner table
Intention - choosing to cultivate your awareness.	Informal practices: Notice when you go on autopilot when you take a shower and gently focus your mind on the moment.
Attention - to the present moment, sensations, and thoughts.	If you have to plan for a certain amount of time at that time, consciously focus on planning that time.
Attitude - being kind, curious, and non-judgmental	Informal practices: Do an activity with your child by being aware of it.
Raisin meditation	Do the body scan and breathing meditation twice a day.
Emotion, Thought, and Behavior	Continue breaking habits- Walking with awareness
Sitting meditation	Body scan meditation, 2 times a day
Acceptance without prejudice, non-reactivity to inner experience	Continuing mindful activities – choosing a different routine than we did last week
Body scan exercise	In the last week, you may have noticed the beauties that you did not notice and missed before.
Sharing thoughts about having a special child	10 finger exercises - this week, list 10 things you are grateful for that are good for you, once a day.
Mindfulness and Stress	1-day sitting meditation
Stress	1-day body scan meditation
Our responses to stress	Three-minute breathing zone exercise - 2 times a day
The most stressful life events	Breaking habits: Television
Mindfulness and stress	Eating at least 1 meal with awareness
movement awareness exercise	Filling the “calendar for pleasant moments”
Breath and body awareness exercise	
Challenging emotions in parenting	Do the sitting and body awareness exercises one day apart.
Breathing meditation	Trying to stay aware of the moment during the day with informal applications
Dealing with challenging emotions	Planting a seed or tending a plant this week
Be aware of the body	Filling the “calendar for unpleasant moments”
Anchor	
What is parent awareness?	Breaking habits: Doing someone a favor for no reason
Self-compassion	Continuing informal activities
Breathing meditation	Making plans to gradually bring it into our lives towards the end
Compassion	Continuing body scans and sitting meditations
What is self-compassion?	
Components of self-compassion	
What is not self-compassion?	
Compassion meditation	
Communication	Practice gentle speaking
What is communication?	Mindful listening without worrying about responding to the other person during communication
Clear and understandable communication	Continuing body scans and sitting meditations
Mindful communication	Filling out the communication exercise form
Just “listening” while listening	
Just “talking” while talking	
Summary of the program, feedback from the mothers, and post-intervention assessments.	

Due to the density of mothers, retreat day was not held in this study.

if parametric test conditions were not satisfied Friedman test (*post hoc*: Wilcoxon Signed rank test with Bonferroni Correction) was used.  $p < 0.05$  was considered statistically significant.

Content analysis method was used for qualitative analysis. In qualitative content analyses, some categories are formed from the themes seen as important in the text and descrip-



They experienced difficulties with crowded houses and finding a quiet place to study sometimes. A father refused to allow the mother to attend the training because he did not want to be taking care of the child. Talking to the father figured out the problem, and the mother continued the training. They received support from their families in dealing with the challenges brought by the usage of technology. Some mothers fell asleep during training sessions, especially during extended meditation exercises, and it was difficult to wake them up.

There was no problem in checking the homework. However, mothers that they were having difficulties with the meditation exercises. Some meditations were lengthy, and it was occasionally difficult to locate a quiet room due to the crowded houses.

The mothers definitely provided comments at the end of each training day.

### Participants Characteristics

All participants have a child with an intellectual disability. The sociodemographic variables are presented in Table 2 (n=31). Of 60 participants who were eligible for the study, 43 were recruited and completed the pre-intervention survey with a recruitment rate of 71.66%. Among the 43 participants who were enrolled, five completed pre-intervention surveys but dropped out during training sessions and did not finish post-intervention data collection; seven attended at least five intervention sessions and completed pre-intervention surveys but not completed post-intervention surveys. Thus, the overall attrition rate was 27.9%.

The sociodemographic variables are presented in Table 2 (n=31).

### Intervention Adherence and Session Attendance

Among the 43 participants who attended at least one session, 69.76% (n=30), attended all sessions; the adherence rate (i.e., attended at least five sessions) was 81.39%.

### Intervention Satisfaction

Based on the qualitative interview of 37 participants, most indicated that their overall experience with the intervention was positive (94.59%, n=35). Several themes emerged in the qualitative data. These are "training," "challenges," "advice," "Myself," and "Communications." All participants were satisfied with the 6-week mindfulness-based group skills training (100%, n=37). They were satisfied with the audio recordings shared about the training (67.56% n=25), the fact that the training was a group training (94.59% n=35), especially the self-compassion session in the training sessions (100% n=37), the activities (i.e., mentimeter) (54.05%) and the trainer's approach (83.78% n=31).

**Table 2. Sociodemographic characteristics of the study participants**

	n	%
Marital status		
Married	31	100.0
Level of education		
Primary school	5	16.1
Middle school	4	12.9
High school	6	19.4
University	15	48.4
Post graduate	1	3.2
Employment		
Currently employed	7	22.6
Quit after the birth of the child	8	25.8
Quit after the disability of the child	4	12.9
Never worked	12	38.7
Income status		
Income equal to expense	17	54.8
Income more than expenses	4	12.9
Income less than expense	10	32.3
The disability level of the children		
Mild	9	29.0
Moderate	5	16.1
Profound	17	54.8

Age of children. Mean 11.09, SD±6.45. SD: Standard deviation.

### Theme 1: Training

*"I can say that doing the instructions in the audio recordings was good for me psychologically and even for some of my pains."* (Mother 5)

*"I think especially the fact that it was a group training was good not only for me but for all the mothers because the wounds of the people here are the same and we understand each other. Therefore, we behaved comfortably in the group."* (Mother 26)

*"The applications (mentimeter) you used felt like a game to us and even if we were distracted, we refocused by answering them."* (Mother 13)

*"Sometimes we were late, sometimes our children made noise during the sessions, but you were always supportive. Until I attended your training I thought we were forgotten and that no one cared about us anymore."* (Mother 9)

*"I was especially impressed by the session on self-compassion. I realized that I never patted myself on the back."* (Mother 15)

*"I was especially impressed by the session on self-compassion. I realized that I never patted myself on the back."* (Mother 7)

However, it was difficult to do the homework because their homes were crowded due to the pandemic (89.18% n=33). They stated that they encountered this training at a time when they were in a very difficult situation for themselves and they

were satisfied with it (97.29% n=36). Body scan exercise and sitting meditation were difficult and therefore there was a mother who did not (89.18% n=33). Only two mothers stated that they were satisfied with the body screening exercise (%5.26 n=2).

**Theme 2: Challenges**

*“Due to the pandemic, the whole household was locked at home. Of course, this is difficult for everyone. However, it was more difficult for mothers like me because we could not go to special education and this caused me stress. Of course, I also had difficulty attending trainings.”* (Mother 22)

*“Obviously, I could not find time to do the homework and I had difficulty in doing the homework because everything was left to me.”* (Mother 14)

They mentioned that they told and recommended what they learned in the training to others (72.97% n=27). Most mothers stated that until now they had always done things for their children and others around them, but now they were taking action for themselves.

**Theme 3: Advice**

*“I have never participated in such a program before and I wondered why I had not participated until now.”* (Mother 3)

*“I recommend this training to mothers like me because we never think about ourselves, we always live for our children.”* (Mother 6)

*“I told mothers with special children to attend this training. It was good for me and I think it will be good for them too. If we are good, our children will be good.”* (Mother 1)

Most of the mothers stated that they were aware of their emotions and made controlled choices in their behavior after training (72.97% n=27). The most prominent emotions were anxiety (45.94% n=17) and anger (54.05% n=20), and they stated that they had learned to accept their emotions. “Myself” was a prominent theme (94.59% n=35).

**Theme 4: Myself**

*“I learned not to cope with my emotions but to take them by the hand and carry on.”* (Mother 12)

*“I was having a hard time managing my anger and now I know that it won't stay for long.”* (Mother 6)

*“What can I say, I realized myself, I realized what I live, what I need, what I do, who I am.”* (Mother 21)

**Table 3. PSS, MAAS and CERQ scores (n=31)**

	Pre-intervention (mean±SD) median (IQR) min-max	Post-intervention (mean±SD) median (IQR) min-max	3 <sup>rd</sup> -month (mean±SD) median (IQR) min-max	6 <sup>th</sup> -month (mean±SD) median (IQR) min-max	P
PSS	16.17±3.84 17 (14-18) 7-26	13.63±4.32 13.5 (10.75-16.25) 3-23	14.83±4.76 15.5 (11.75-18) 6-26	14.93±4.72 15.5 (12-18.25) 5-24	0.01* (fr=11.377; df=3) <sup>a</sup>
Perceived stress (subscale of PSS)	10.43±2.87 10 (9-12) 3-16	8.97±3.16 8.5 (7-11.25) 2-15	10.1±3.29 10.5 (7.75-12) 3-18	9.93±3.37 10 (8-12) 4-16	0.035* (fr=8.636; df=3) <sup>d</sup>
Perceived coping (subscale of PSS)	5.73±1.91 5.5 (4-7) 1-10	4.67±1.83 4 (4-6) 1-9	4.73±1.87 5 (3-6.25) 0-8	5±1.93 5 (3.75-6) 1-9	0.005* (fr=12.704; df=3) <sup>ab</sup>
MAAS total score	52.73±15.2 48.5 (41.75-66.25) 30-86	56.23±14.13 54.5 (45.5-68) 35-86	55.8±13.99 51.5 (46.75-62.5) 26-87	57±14.09 57 (46.75-70.25) 35-84	0.116 (fr=5.165; df=3)
CERQ total	107.67±10.3 110.5 (99.5-115.25) 85-121	104.8±13.71 108 (96.75-115.75) 72-126	105.9±12.8 108 (99.75-116.25) 70-128	105.9±14.65 107 (93-119) 67-126	0.667 (F=0.524; df=3)

\*; p<0.05; <sup>a</sup>: Significant difference between pre- and post-intervention; <sup>b</sup>: Significant difference between pre-intervention and 3<sup>rd</sup> month; <sup>c</sup>: Significant difference between post-intervention and 3<sup>rd</sup> month. All descriptive statistics were defined as mean±Standard Deviation, Median (IQR: 25<sup>th</sup>-75<sup>th</sup> percentiles), PSS: Perceived stress scale, MAAS: Mindful attention awareness scale; CERQ: Cognitive emotion regulation questionnaire; SD: Standard deviation; IQR: Interquartile range; Min-max: Minimum- maximum values; fr: Friedman test; df: Degrees of Freedom; F: Repeated Measures analysis of variance.



*"The people around me are also aware of the change in me, I no longer have difficulties in caring for my child. My tolerance level has increased." (Mother 13)*

Mothers stated that they now do their work and communication with mindfulness and try to use mindfulness practices in their lives, and they have changed the way they face life. They mentioned that the change in themselves is also reflected in their surroundings and that this is noticed by the people around them (72.97% n=27). Their communication styles have changed, and they now use open communication when communicating (86.48% n=32). They wanted the training to be face-to-face (75.67% n=28).

### Theme 5: Communications

*"I now use open communication, if I have a problem, I express it openly without implying it." (Mother 28)*

*"I no longer sweep my problems under the carpet and talk about them." (Mother 23)*

### Changes of Outcome Measurements

A statistically significant difference was found in the PSS scores of the participants between the pre-test and post-test scores. It was observed that the pre-test of coping scores were higher than the post-scores and the third-month follow-ups (Table 3). When the differences between the measurements of the total MAAS scores of the participants were examined, it was seen that there was no statistically significant difference between the pre-test, post-test, and 3<sup>rd</sup> and 6<sup>th</sup> month follow-ups (Table 3).

When the differences between the measurements of the participants' total CERQ scores and the scores obtained in the sub-dimensions of this scale were examined, it was seen that there was no statistically significant difference between the pre-test, post-test, 3<sup>rd</sup>, and 6<sup>th</sup> month follow-ups (Table 3).

### Discussion

In this study, we examined the feasibility of a 6-week mindfulness-based group skills training for mothers with children with intellectual disabilities. We had a strong recruitment rate with 71.66% of eligible participants enrolling. The training lasted 8 weeks with introductory and evaluation sessions. Among those who attended at least one session, there were more who attended at least five sessions and this showed us a high retention rate of 81.39%. The attrition rate among all registered participants was 27.9%. In general, they were all satisfied with the training but found it difficult to do the homework, i.e., the meditations. Especially the body exercise meditation.

Although it is difficult to compare the results of our study with the results of other feasibility studies, mothers who participated in our study were satisfied with the training, like other

studies in the literature.<sup>[30,31,39,45,53]</sup> In the study conducted by Juberg and colleagues, it was reported that parents who participated in the training recommended the training to other parents.<sup>[39]</sup> In our study, it was found that the mothers who participated in the training recommended such training to other mothers of children with special needs. In this context, it can be stated that mothers found the training useful.

In our study, mothers stated that there was a change in their emotions and communication styles thanks to the training. When the studies in the literature were examined, it was stated that the lives of the parents who participated in the training became easier.<sup>[45,53]</sup> The result of our study is in parallel with the literature. It can be stated that these studies provide a facilitating effect on the lives of parents.

Studies have shown that, parents stated that they took better care of themselves, were satisfied with being together with other caring parents and had less difficulty in caring for their children.<sup>[39,45]</sup> In our study, mothers also stated that they realized that they should be well. They were also pleased that the other mothers in the group had similar characteristics. They stated that they were better at childcare. In this context, we obtained similar findings. It can be stated that mindfulness-based trainings positively affect the communication, care, and interaction areas of parents.

Finally, although we found changes in PSS, MAAS, and CERQ measurements compared to pre-intervention, the only statistical difference was in PSS scores.

A standard MBSR intervention is 8 weeks in total. Sessions last on average 2.5 h, with a retreat program between weeks 6 and 7. This MBSR intervention requires a significant time commitment from the participants and there may be some problems with attendance.

Although it was a bit tiring for mothers of children with intellectual disabilities to allocate time for this training, especially during the pandemic period when the houses were crowded, it facilitated attendance thanks to keeping the training hours at a reasonable level. In a study conducted by Bazzano et al.<sup>[32]</sup> with caregivers and parents of individuals with developmental disabilities, 87% of the participants completed the training. In our study, the training was completed at a similar rate (88.37%). In the study conducted by Robert and Neece (2015), the rate of parents completing the research was 84.3%, and the attrition rate of 15.7%.<sup>[53]</sup> In addition, the mean completion rate of 85% was reported by Baer (2003) in a review of mindfulness-based interventions.<sup>[54]</sup> The lives of mothers of children with disability have become even more difficult.

The lives of mothers of children with disabilities have become even more difficult. Restrictions imposed during the epidemic made access to the service difficult, exacerbating mothers' existing concerns. The resources of children and families were restricted. Families tried to provide their needs with their own

resources, causing mothers to feel exhausted and inadequate. Spending time with all family members and accessing digital resources, on the other hand, was a positive component of the process for mothers.<sup>[12]</sup> We provided training for the mothers of children with intellectual disabilities, who are one of the vulnerable populations. There were significant drops due to the loss of one of their loves, but we were able to complete the study. This is the first study to evaluate mindfulness-based training given to Turkish mothers having children with intellectual disabilities. This training was performed at the time of lockdown in Türkiye. Due to the epidemic, the training had to be conducted online rather than in person. The research team had some problems with online training. Some mothers had connection issues because they were receiving online education for the 1<sup>st</sup> time, they had support from other family members, internet disconnections caused some sessions to be repeated, crowded houses were a factor, and they occasionally had problems due to family members. Some mothers could not get social support from their relatives and wanted to quit training.

When the outcome of the measurement is examined, it was found that the total score averages of the PSS were statistically decreased in the post-test compared to the pre-test. Similarly, the studies including online training<sup>[55]</sup> or face-to-face<sup>[31–33]</sup> showed that mindfulness-based intervention programs significantly reduced stress levels. In this context, it may be stated that the results of the current study are in parallel with the literature. There was statistical significance between the post-test and 3<sup>rd</sup>-month follow-up total score averages of the PSS, and likewise between the pre-test and third-month follow-up total score averages of the perceived coping stress. Furthermore, there was no statistically significant increase in total score averages of the third and sixth months in either subscale.

Second, while the mean CERQ and MAAS scores increased in this study, it was not statistically significant. The mothers' meditation practices may have also influenced the statistical significance of the findings. Because according to Jones (2018), individuals can learn emotion regulation strategies through mindfulness meditations.<sup>[56]</sup> In addition, individuals who did not regularly practice mindfulness meditation had lower MAAS total score averages than those who did.<sup>[57]</sup> In this context, we can see that Keune and Perczel Forintos compare results with a control group in their studies. However, due to the insufficient data obtained from the control group in our study, it was not possible to make a comparison between the groups. Although specialized meditation time is required, in extreme situations such as the COVID-19 pandemic, short-term meditations can be integrated into daily life.

Although the results of the mindfulness-based group skills training are promising, we believe that the use of a control group for future studies may better demonstrate the effec-

tiveness of the intervention. Recruitment, adherence, and attrition rates are reasonable considering a pandemic period. Training intervention programs that are cost-effective and easy to access can be planned for challenging periods such as COVID-19. This research is essential since it is the first mindfulness-based training given to Turkish mothers of children with intellectual disabilities.

### Limitation

The lack of a control group and the small sample size, problems experienced in the effectiveness of homework assignments due to conducting the study online.

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