

# UNIVERSITY OF INDIANAPOLIS

SCHOOL OF OCCUPATIONAL THERAPY

## **Mindfulness-Based Interventions During Play for Parents of Children with Down Syndrome: Two Case Studies**

Dr. Alison Nichols, OTR, Samantha Trench, Serena Good, Caroline Stone, Marissa Cavanaugh,  
Carissa Anderson, Caitlyn Naghdi, Krystal Scott

December 15, 2023



A research project submitted in partial fulfillment for the requirements of the Doctor of Occupational Therapy degree from the University of Indianapolis, School of Occupational Therapy.

Under the direction of the research advisor:

Alison Nichols, OTR, OTD

# A Research Project Entitled

## **Mindfulness-Based Interventions During Play for Parents of Children with Down Syndrome: Two Case Studies**

---

Submitted to the School of Occupational Therapy at the University of Indianapolis in  
partial fulfillment for the requirements of the Doctor of Occupational Therapy degree.

By

Alison Nichols, OTR, OTD, Samantha Trench, Serena Good, Caroline Stone, Marissa  
Cavanaugh, Carissa Anderson, Caitlyn Naghdi, Krystal Scott

Occupational Therapy Doctorate Students

**Accepted on this date by the OTD Program Director:**



---

**Alison Nichols, OTR, OTD**  
**OTD Program Director**  
**Associate Professor of Occupational Therapy**

12/15/23

---

**Date**

## **Abstract**

Parents of children with disabilities are known to experience stressful or anxious feelings in their role as both parents and caregivers but it is less known about what, if any, effective strategies may be used to reduce these feelings. The following study aimed to explore the use of mindfulness-based interventions (MBI) for parents of a child with a disability and consider the effects these may have on stressful or anxious feelings experienced by those parents during parent-child play interactions. Parents with a child with a disability included in the study met the following inclusion criteria: parents must be at least 18 years of age with a child with a disability between the ages of two and twelve and must be English-speaking. This study was conducted virtually in the format of a researcher-led focus group. To assess the effectiveness of the mindfulness strategies provided, follow-up surveys were conducted six weeks post-intervention, and qualitative data was collected through audio transcripts. One theme identified in the follow-up survey responses was the positive effects of mindfulness techniques during parent-child play in public or private settings. Based on the follow-up survey results, both participants expressed positive experiences and decreased instances of stressful or anxious feelings using mindfulness techniques. Limitations of the study include a limited sample size indicated by only having two participants who both identify as female and mothers to a child with Down syndrome, lack of standardized assessment tools, and participants located in the same geographical location. Implications for future studies and practice include the effects of prolonged use of mindfulness techniques on the anxiety of caregivers and parents of children with diversified diagnoses.

*Keywords:* Down syndrome, play, caregivers, anxiety, mindfulness

## **Mindfulness-Based Interventions During Play for Parents of Children with Down Syndrome: Two Case Studies**

When raising a child, parents typically will encounter physical, emotional, and financial stressors. When raising a child with a disability, these are amplified and may lead to parents experiencing increased anxious feelings. As described by Nichols et al. (2021), parents of a child with a disability experience anxious feelings from “stressors, which may include low socioeconomic status, loss of a family member, or parenting a child with a disability, among many others” (p. 3). These anxious feelings have the potential to penetrate every aspect of the parent’s life, impacting their ability to engage in meaningful occupations and sustain current levels of satisfaction and quality of life. Anxious feelings experienced by parents may also impact playful interactions with their children. Román-Oyola et al. (2018) explained that “playfulness is a relationship-based phenomenon and an important factor for the development of social relationships between children and their main caregivers” (p. 2). The purpose of this study is to address the significant gap in the literature on resources or strategies and their effects on parents who experience stressful or anxious feelings during parent-child play interactions.

### **Play**

Play is the primary occupation of children and is displayed in multiple forms across various settings including imaginative, physical, group, and individual. Play provides critical support for optimal child development. According to Tamm and Skär (2000), “play has been viewed as an all-encompassing activity through which a child develops skills in self-awareness, communications, and socialization” (p.174). Play is recognized by the United Nations High Commission for Human Rights (2022), “as a right of every child” (Article 31.1). Play teaches children important “motor, cognitive, and social skills as well as creativity and self-confidence

which are skills required throughout life” (Román-Oyola et al., 2018, p.1). However, it may be more difficult for children with disabilities to engage in play as their play is often described as skill-based with a focus on therapeutic intervention rather than exploration and discovery (Parham & Fazio, 2007). Due to this focus on therapeutic intervention, these children could be missing out on essential experiences afforded by unstructured free play.

## **Down Syndrome**

According to the Centers for Disease Control and Prevention (CDC, 2023), “Each year, about 6,000 babies born in the United States have Down syndrome. This means that Down syndrome occurs in about 1 in every 700 babies” (“How Many Babies Are Born” section). “Down syndrome is the most common genomic disorder of intellectual disability and is caused by trisomy of *Homo sapiens* chromosome 21” (Antonarakis et al., 2020, p. 2). Like all children, children with Down syndrome (DS) have unique characteristics and individualized needs that may change throughout their lifespan. De Weger et al. (2021) mention that it is common for children with DS to have developmental delays impacting “multiple developmental processes, such as vulnerabilities in motor, cognitive, language, social and attentional domains—all aspects of adaptive behaviour” (pp. 1-2). According to Antonarakis et al. (2020), the social stigma around the diagnosis of DS and the inability to fit within cultural norms are barriers to successful community engagement of individuals with DS. The impact of developmental barriers and social stigmatism surrounding DS not only the well-being and quality of life of the child but also those of their caregiver.

## **Parental Well-Being**

Many parents who care for children with disabilities experience anxiety, stress, and other psychological symptoms (Rani et al., 2014). These low-level feelings of anxiousness, tension,

fear, and distress are caused by the everyday demands and stressors involved in caring for children with disabilities. A study by Hedov et al. (2000) concluded that mothers of children with Down syndrome had much lower self-reported ratings of vitality and mental health than mothers of neurotypically developing children. While numerous parents of children with disabilities seek coping strategies and social support to manage anxious feelings and distress, some parents still experience “clinically significant levels of anxiety and/or depression” (Martin et al., 2019, p. 980). It is crucial to address parental distress experienced by caregivers of a child with a disability because poor parental well-being can have a negative effect on both quality of life and functional performance.

Research indicates that parents of children with disabilities who report having anxious feelings typically have difficulty interacting with their children, particularly through play (Nichols et al., 2021). One research study by Rani et al. (2014) evaluated anxiety levels and coping strategies in mothers of children with cerebral palsy. In the discussion, it was found that “parenting stress was related to the mother’s style of interaction with their children...which means that a high level of maternal stress interferes with the mother’s effectiveness for engaging in quality interaction with their children” (Rani et al., 2014, p. 248). In other words, parental anxiety and stress significantly affected parent-child interactions. Moreover, the study found that there was a “strong association between parenting stress and interaction style suggests the need for therapists to develop and implement interventions to enhance the quality of mother-child interaction along with other rehabilitation services” for children with disabilities (Rani et al., 2014, p. 248). For parents dealing with anxious feelings and stress when interacting with children with disabilities, rehabilitation services may be useful to improve levels of satisfaction and quality of life (Rani et al., 2014). Caregivers experiencing a decrease in well-being resulting

from anxious feelings may benefit from mindfulness-based interventions that are accessible and usable in the home.

## **Mindfulness**

Mindfulness is a psychological practice that allows an individual to become increasingly aware of the internal and external factors that surround them. Keng et al. (2011) also describes mindfulness as “awareness and nonjudgmental acceptance of one’s moment-to-moment experience” (p. 2). The application of mindfulness to psychological health has been proven to be an effective solution in relieving worry, fear, stress, and anxiety in various situations (Keng et al., 2011). Therefore, a strategy that mentally re-engages the parents back to the present moment when playing with their child may be a beneficial approach when taught correctly. A review by Creswell (2017) demonstrates that “mindfulness interventions can improve mental and physical health, cognitive and affective factors, and interpersonal outcomes” (p. 508).

The research indicates there are consistent findings on the benefits of mindfulness-based interventions for parents of children with disabilities. Sarang et al. (2020) demonstrated that mindfulness-based interventions specifically benefited parents of children with ASD, specifically concerning anxiety symptoms and parental stress. Similarly, Burke et al. (2017) and Neece et al. (2019) also demonstrated mindfulness benefits for parents of children with intellectual and developmental disabilities or delays including improvements in personal well-being, advocacy skills, professional relationships, children's services, reactivity, and being present in the moment. Overall, the findings related to Mindfulness-Based Interventions (MBI) have demonstrated a positive effect on the parents to whom they were administered.

As previously described, mindfulness-based practices have become more mainstream in recent decades. Though popular, there is still limited research on the impact of mindfulness-

based practice in occupational therapy. As reported by Nichols et al. (2021), parents of children with disabilities have demonstrated increased parental stress which can present as difficulty with being in the moment with their children, specifically during play. A mindfulness approach would be beneficial to help parents develop strategies to be present in the moment at any point with simple mindfulness-based exercises and tasks. These tools are meant to provide relief from stress, not add to the parent's responsibilities; therefore, it will be imperative to emphasize to parents both the simplicity of mindfulness along with its effectiveness.

## **Model**

The chosen model for this study is the Model of Co-Occupation, created by Pickens and Pizur-Barnekow (2009). This model focuses on three categories of interrelated social occupations: parallel occupations, shared occupations, and co-occupations. Of these three, we will be specifically focusing on co-occupations, which require two or more people to be active agents during the occupation. As mentioned above, play for a child with a disability can look different, often requiring the caregiver to be more actively engaged with the child during play. Pickens and Pizur-Barnekow (2009) talk about the importance of co-occupations between mothers and children as "imperative to the child's growth and development" (p. 151). Play is a critical co-occupation between a child and caregiver, where both are actively engaged.

Pickens and Pizur-Barnekow (2009) also make a proposition specifically toward children with disabilities, writing, "Impairment or disability across the lifespan may influence how co-occupation is manifested and co-occupation has the potential to influence disability outcomes" (p. 154). Understanding that co-occupations for children with disabilities may be different than typically developing children supports the need for understanding what these differences may look like. These understandings can lead to how we can better support caregivers in being



successful in engaging in play with their children. This model provides support for the importance of co-occupations between children and caregivers, along with addressing that these co-occupations can look different due to a disability.

### **Occupational Therapists' Role**

Occupational therapists' primary goal is to help clients engage in their chosen occupations. When aspects of an individual's life, such as activities of daily living (ADL) or instrumental activities of daily living (IADL) are impacted by anxious thoughts and feelings, occupational therapists provide extensive support and treatment to these individuals. While occupational therapists do not diagnose anxiety, occupational therapists play an important role in helping clients with anxious feelings manage their symptoms and minimize the overwhelming impact on the client's occupational performance. In this study, anxious feelings experienced by parents were the predominant barrier identified while participating in the co-occupation of play with their child.

Play has an integral role in the development of children across all developmental domains and is the primary occupation for a child. While the literature indicates that parental anxiety is occurring while parents play with their child with a disability, there are little to no interventions focused on helping reduce anxiety during play. The purpose of this study is to explore the effectiveness of utilizing a mindfulness-based intervention that is focused on the co-occupation of play, specifically when looking at parental coping skills, self-efficacy, and anxious feelings.

## **Method**

### **Participants**

For this study, parents who have a child with a disability were recruited. The parents were required to be at least 18 years old, with a child or children with a disability between the

ages of two and twelve years old. All participants were required to speak English. To recruit participants, we reached out via email, posted flyers at local Indianapolis occupational therapy clinics, and advertised on various social media accounts. We recruited two participants who were each the mother of a child with Down syndrome, ages six and eleven. This study (#10676) was approved by the University of Indianapolis Human Research Protection Program (HRPP).

### **Study Design**

The study was guided by the following questions: Is MBI a useful tool to decrease parents' anxious feelings during play with their child? We hypothesized that MBI will provide effective coping mechanisms for parents and decrease anxious feelings during play. The study design consisted of caregiver recruitment, followed by virtual delivery of mindfulness-based interventions for caregivers, and concluded with a virtual post-intervention survey after six weeks.

### **Measures and Procedures**

Before the session, both participants received a sample mindfulness breathing activity to try with their child and a video discussing the basic concepts of mindfulness. The researcher-led session was completed virtually in a single session format and lasted approximately one hour (see Figure 1). Participants were asked open-ended questions by researchers to gain insight into their levels of stress and anxious feelings experienced during play, how mindfulness activities impacted them and their anxious feelings, and the feasibility of using these techniques during play. Researchers first conducted the 5-4-3-2-1 mindfulness activity (see Appendix) that could be used by participants when playing with their children. This activity incorporated grounding techniques, meant to lower stressful or anxious feelings during play. Follow-up questions

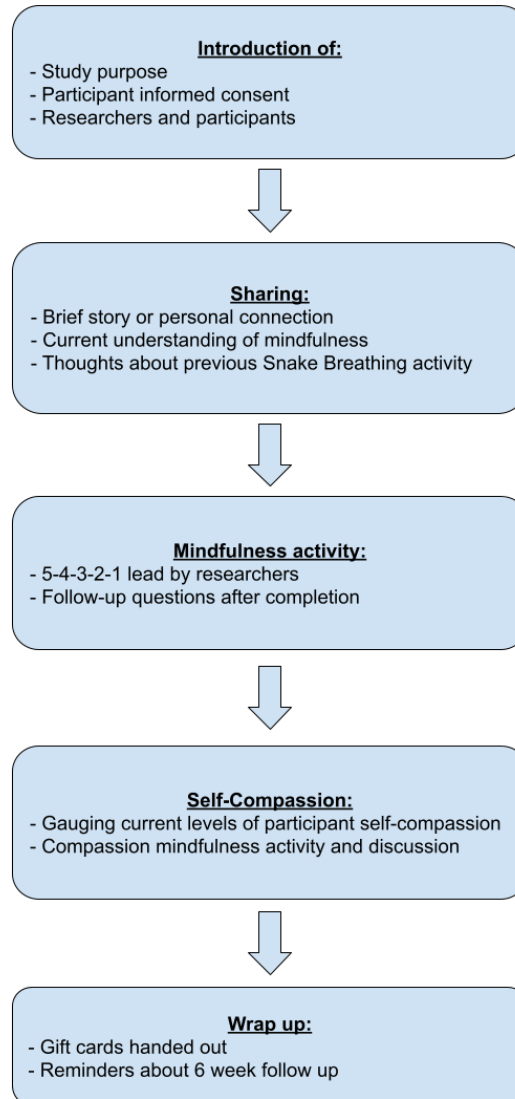
regarding the grounding techniques were asked by the researchers to reflect on how participants could incorporate the mindfulness approach into their everyday routines.

Following this activity, the researchers introduced a self-compassion practice and discussion that allowed participants to reflect on their emotions, recognition, and reflection. At the end of the session, participants reflected on the feelings they experienced while playing with their child, the impact mindfulness has on their stress and anxiety levels, and how these techniques could be incorporated into their daily lives and, more specifically, during play. After the session was complete, the participants were provided with an evidence-based practice journal article called “Healing Parent-Child Relationships Through Mindfulness” (Smith, 2021). This article was provided to the participants as a resource, showing the benefits of mindfulness and several activities that parents can engage in with their children. The participants were also provided with a link to additional mindfulness activities to be used on their own for them to gain more experience with mindfulness-based practices. These activities can be found in the Appendix.

Six weeks after the researcher-led session was completed, participants received a virtual survey to assess the carryover of mindfulness techniques and how mindfulness has since impacted their daily lives. Within the survey, participants were asked about their perspectives on the mindfulness-based exercises that they were requested to complete before the session with their child.

**Figure 1**

*Mindfulness Curriculum for the Virtual Session*



**Data Analysis**

Qualitative data were collected through the transcriptions of the audio recording of the intervention session. Due to the limited number of participants, the research team decided to focus primarily on the responses from one participant. Researchers analyzed her responses to the

semi-structured interview questions provided during the session. After the responses from the first case study were examined, researchers compared them to the responses found in the second case study. Differences between the two participants were then highlighted and described.

The follow-up survey was completed by both participants six weeks after the initial session. Researchers collected qualitative and quantitative data to address the carryover of mindfulness activities in the home and their effectiveness. Once the responses were submitted, researchers analyzed the results to determine similarities and differences between the participant's responses.

## **Findings**

### **Case Study 1 (Sharon & Sabrina):**

Sharon is the mother of Sabrina, an 11-year-old child with Down syndrome. Although Sharon had previous exposure to mindfulness before the intervention session, she expressed her excitement to learn more about how to incorporate mindfulness-based interventions into her and Sabrina's routines. Specifically discussing her play with Sabrina, Sharon stated, "I definitely probably struggle with that more in the area of play and engaging with my child. Like sometimes I really have to think with so much going on. It's hard to stay in the moment." Sharon mentioned being distracted by her phone or cleaning commonly takes attention away from Sabrina while they play. Though these are her more typical distractions, Sharon describes her solution of focusing on Sabrina and, "the pride and joy that I feel with all the stuff that she's doing. That's usually my grounding piece." Sharon described herself as a perfectionist which can be specifically seen in feelings of guilt surrounding play if it's not "therapeutic enough." On the other hand, being a part of a local Down syndrome parent organization has helped Sharon to let go of other unspecified parenting mistakes.

Overall, Sharon responded positively to the mindfulness interventions performed in the session but did not think the pre-session breathing activity was as successful in comparison to other intervention ideas provided. The main issue Sharon addressed was the lack of compliance from Sabrina when attempting the activity together. During the 5-4-3-2-1 activity, Sharon reported “feel[ing] more relaxed and in a better mood.” One aspect of the 5-4-3-2-1 activity Sharon did not like was the five things she saw section because she felt her surroundings were cluttered, and this increased her anxious feelings because she was now thinking of all the other things she should be doing instead. Additionally, Sharon enjoyed the Self-Compassion experience, stating that self-compassion can be used to “create a more positive and mindful environment.”

Sharon is only raising one child, Sabrina, and she explains that she has nothing to compare it to. From years 0-4, she was still coming to terms with the diagnosis, but each year she feels that she experiences an increase in personal growth. Sharon states that she has:

A lot more compassion when it comes to...giving people grace and stopping to smell the roses and just like...enjoying the slow route, I guess. And without Sabrina, I would never have been okay with the pace of my current life...so it makes me a lot more patient with other people and what they're going through.

When asked about self-compassion, Sharon explained that comparing her own family with other families is the hardest thing she deals with.

Because the Down syndrome community is very tight-knit...we have an amazing community especially compared to other disability group(s).... There are families in our...community whose kids are like academically

light years beyond where my daughter is, and they're younger than my daughter and they're doing all of these therapies every single day and their parents don't work and basically homeschool them in addition to all the stuff they do at school.

Regarding play, Sharon feels that she does a great job letting Sabrina participate in play like a typically developing child and does not make play activities therapy-based.

During the self-compassion activity, Sharon and Lola both showed physical signs of emotion during the activity. Sharon explained that she does not give herself enough positive self-talk. There is a lot to balance required as a mother, and for Sharon, her job is a large stressor and distraction. Another instance where Sharon feels she struggles with anxious feelings is out in public. She states, "I think my most anxious and stressful time with Sabrina is when other people are around." She also indicated that, "I want perfection out in public and as a result, that's probably when I look my worst as a parent." Sharon feels the pressure to be "successful and good and put on a good show in public."

Sharon also says there are times that she cannot understand what Sabrina is saying, and this results in frustration for both parties. The guilt Sharon feels from these occurrences ties back to the fear that she did not put her in the right, best, or earliest speech therapies she could have. It is seen through the session results that both participants experience a lot of stress for similar or different reasons.

In the follow-up survey, Sharon marked the following as stressors present during play: (a) thinking about other things I should be doing, (b) wanting to avoid play, and (c) thinking about potential delays of your child. Sharon commented that she used mindfulness techniques once a day, with the 5-4-3-2-1 Exercise, the STOP Exercise, and additional activities from the

mindfulness activities link (see Appendix) being the most beneficial. When asked about the effect on parent-child relationships, Sharon stated, “When I am calm and less stressed, I am a better mom.” Additionally, she stated, “I was amazed at how impactful it was even thinking back to an issue that had happened previously. It helped me realize that taking a moment, in the moment, to give myself grace can be so freeing,” when referring to the value mindfulness has added to her life.

### **Case Study 2 (Lola & Lyle)**

Lola is a single mother to her 6-year-old child Lyle, who has Down syndrome. In comparison to Sharon’s self-perspective, Lola views herself as less emotional. She expresses that like Sharon, she focuses on putting more of her effort into her child rather than into herself. Lola explained to researchers how good it felt to let go of emotions during the activities completed.

There were some notable differences between Sharon and Lola. One of these concerns was that Lola experiences worries about other kids mistreating her son. She gives an example that “there was one boy who was really sweet and another little boy came making fun of Lyle,” and “I was getting anxiety just from really watching the other kids.” Another difference is Lola faces difficulty at home with Lyle’s defiant behavior which causes her to experience anxious feelings as opposed to Sharon’s anxious feelings in public places. Another large concern from Lola is that she cannot “physically manhandle him to do what he needs to do” for fear that she will harm him or herself. Lola lastly expressed that her biggest challenge with her son comes during transitions of activities.

In the follow-up survey, Lola explained that her stressors during play with her child include: (a) hurting or being hurt by her child, (b) feelings of frustration, and (c) thinking about potential delays of her child. Lola stated that she integrated mindfulness-based interventions,



more specifically breathing work and observation activities, once a day. The most impactful intervention completed during the session was the Self-Compassion Exercise. Lola felt it was reaffirming to her as a mother and reminded her of the accomplishments and goals she is meeting every day.

## **Discussion**

### **Impact of Mindfulness on Play and Routines**

Román-Oyola et al. (2018) report that play is the primary occupation for children and interaction influences the parent-child relationship. Promoting these interactions can have a systemic impact on this necessary relationship, reducing the likelihood of anxious feelings experienced by parents during play with their children with a disability. The goal of the researcher-led session was to help parents combat these stressors by incorporating mindfulness activities into their day. Our findings support the use of these mindfulness techniques during play, whether that is in a public or private setting, as it provides the ability to alleviate stressful and anxious feelings experienced by the parents. Based on the follow-up results, both participants practiced mindfulness once a day, adding value to their lives through feelings of being “refreshed” and/or “liberated.”

### **Responses to Specific Mindfulness Activities**

Parents’ perceptions and experiences of mindfulness-based activities determine how effective mindfulness practices will be (Bazzano et al., 2015). In research with children with disabilities, mindfulness-based techniques have shown that parents can intentionally attend to their child's problematic behavior, improve satisfaction with parenting skills and interactions with their children, and reduce the stress associated with caring for their children (Bazzano et al., 2015). Our findings highlight how parents of children with Down syndrome perceive

mindfulness as part of their everyday routine, particularly playing with their children. We propose that to improve interactions during play with their children and decrease caregiver stress, mindfulness-based techniques may enhance intentional awareness in parent-child relationships.

After completing a mindfulness exercise, participants indicated they were “feeling more relaxed and in a better mood.” Incorporating mindfulness-based techniques into a daily routine has been shown to have many benefits, as many parents report that mindfulness practice has helped them “slow down, notice impulses before they act, really listen to their children, and come to a more relaxed and peaceful state of mind when they interact with their children” (Neece et al., 2019, p. 13). As with Neece et al. (2019), participants in our study noted that even though changing their routine to do mindfulness activities with their child throughout the day was different and took more time, it helped parents improve perceptions of their child's behavior and reduce overall stress.

In the follow-up surveys, both participants found the mindfulness exercises helpful and relieving their anxieties during play and interactions with their child. One participant reported that the Self-Compassion exercise was most beneficial to her as it helped to create a relaxing, calm environment, and she was able to fully engage in mindful thinking. Similarly, the other participant exhibited positive feelings after completion of the Self-Compassion activity as it allowed her to “let go of her emotions” throughout the activity. The Self-Compassion activity had the most impact on the participants as it reaffirmed their primary roles as mothers, which allowed them to build compassion for themselves as well as build resilience, equanimity, and determination.

## **Self-Compassion**

Though self-compassion was not originally a focus of this study, it came to be a large barrier that the parents reported facing daily. Self-compassion is defined as “being touched by and open to one’s suffering, not avoiding or disconnecting from it, generating the desire to alleviate one’s suffering and to heal oneself with kindness” (Neff, 2003, p. 87). A lack of self-compassion can cause parents to experience additional anxious feelings. The parents in this study were more worried about themselves and their performance as a parent than they were about their children. Additionally, Stenz et al. (2022) looked at self-compassion in parents who had children with psychological disorders and found that increasing self-compassion can reduce the stress that these parents experience daily.

As demonstrated in the virtual intervention session, mindfulness can be a means for encouraging parents to engage in self-compassion. As noted in the results, there was an obvious emotional release following the self-compassion activity that was viewed by the participants as an overall positive experience. A parent’s internalized expectations can lead to an overwhelming amount of pressure to be successful with little room for error. Self-compassion directly addresses the need for patience and grace for parents for them to have the same attitude of patience and grace toward their children. Willard’s (2017) work guided our self-compassion activity and states, “I work to be a good parent, and I may not be perfect, but I am a good-enough parent” (p. 154). Self-compassion is addressing the root problem of unrealistic expectations in parents to alleviate anxious feelings that may present during play.

## **Anxious Feelings**

Previous research explains that parents of children with disabilities encounter anxious feelings throughout their daily lives from stressors beyond their control (Nichols et al., 2021).

Additionally, Sarang et al. (2020) found that MBI interventions provided benefits to parents of children with disabilities by decreasing anxious feelings. Within our study, the parents reported anxious feelings when trying to enforce appropriate behavior both in the home and in public, as well as play in public settings. The collected qualitative data in our study is supported by the findings of Sarang et al. (2020) as the parents responded positively to the MBI activities by stating feelings of relaxation and improved mood at the conclusion.

### **Limitations**

A limitation of the current study includes a limited sample size indicated by only having two participants who both identify as female and mothers to a child with Down syndrome. By only having mothers participating in the study, limitations in gender differences are present in the responses. Both participants focused on how stress and anxiety impact their psychological view of themselves specifically as mothers. This sample was also narrowed because both children of the participants have a diagnosis of Down syndrome. The participants for the case studies were also from the same geographical area which limits the ability to generalize the results.

Another limitation of this study is the limited follow-up with participants after the conclusion of the initial session. The follow-up survey was provided to participants six weeks after the initial session, limiting this study to a short time frame for mindfulness impacts to influence both the parents and their children. By not gathering data with an extended time frame or through additional follow-up interactions, support for the impacts of mindfulness on play and routines was limited to initial effects. Therefore, generalized effects on the anxious feelings of participants long-term are not fully understood in the scope of this study. Lastly, while gathering the data, researchers did not utilize standardized assessment tools. The data collected was

primarily qualitative self-reporting obtained during the virtual session and through the completion of a researcher-developed follow-up survey. These methods of data collection are limited due to relying on how much the participants are willing to disclose through conversation and self-reporting measures.

There is an underrepresentation in the literature on parents of children with disabilities and how mindfulness interventions provide benefits specifically during play. Future recommendations for assessing this population include a larger, more diverse sample size. This may include fathers or foster parents, children with different diagnoses, caregivers from different locations, and more diversity in race, ethnicity, age, education, and socioeconomic status of parents. Including the children of the participants in a session may provide a view of parent-child interactions and anxious feelings that may arise specifically during play, as well as help participants better understand how to incorporate the child into mindfulness-based activities. It is recommended to continue using a virtual platform to assist with participant recruitment and follow-up interactions including additional sessions and surveys.

## **Conclusion**

The findings of this study indicate that mindfulness-based activities for parents of a child with a disability can decrease anxious feelings during the co-occupation of play. We observed both a positive physical and emotional impact on caregivers during the virtual mindfulness session. Both participants indicated in the follow-up survey that at least three, if not all, of the mindfulness-based activities completed with researchers were advantageous to them. It would be beneficial for future studies to examine mindfulness-based intervention strategies and their effect on anxious feelings experienced by caregivers with a more quantitative measure of anxiety

during play. It may also be beneficial to examine the effects of prolonged use of mindfulness techniques on the anxious feelings of caregivers.

The scope of occupational therapy includes addressing mental health and dimensions of well-being that may negatively impact an individual's everyday roles and task completion. Play is viewed as an important co-occupation between parent and child for both individuals.

Therefore, addressing the influence of anxious feelings on play for parents addresses multiple aspects within the scope of occupational therapy. As practitioners, we play a key role in facilitating, implementing, and providing interventions and resources, which may include mindfulness-based techniques, to caregivers experiencing anxious feelings while playing with their child who has a disability.

## References

- Antonarakis, S. E., Skotko, B. G., Rafii, M. S., Strydom, A., Pape, S. E., Bianchi, D. W., Sherman, S.L., & Reeves, R. H. (2020). Down syndrome. *Nature Reviews Disease Primers*, 6(1), 9. doi:10.1038/s41572-019-0143-7
- Bazzano, A., Wolfe, C., Zylowska, L., Wang, S., Schuster, E., Barrett, C., & Lehrer, D. (2015). Mindfulness based stress reduction (MBSR) for parents and caregivers of individuals with developmental disabilities: A community-based approach. *Journal of Child and Family Studies*, 24(2), 298–308. <https://doi.org/10.1007/s10826-013-9836-9>
- Burke, M. M., Chan, N., & Neece, C.L. (2017). Parent perspectives of applying mindfulness-based stress reduction strategies to special education. *Intellectual & Developmental Disabilities*, 55(3), 167-180. <https://doi.org/10.1352/1934-9556-55.3.167>
- Centers for Disease Control and Prevention. (2023). *Facts about down syndrome*. Centers for Disease Control and Prevention. <https://www.cdc.gov/ncbddd/birthdefects/downsyndrome.html#:~:text=How%20Many%20Babies%20are%20Born,1%20in%20every%20700%20babies>
- Convention on the Rights of the Child 1989, OHCHR § Article 31.1 (1989). <https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child#:~:text=her%20own%20language.-,Article%2031,cultural%20life%20and%20the%20arts>
- Creswell, J. D. (2017). Mindfulness interventions. *Annual Review of Psychology*, 68(1), 491–516. <https://doi.org/10.1146/annurev-psych-042716-051139>

- de Weger, C., Boonstra, F. N., & Goossens, J. (2021). Differences between children with Down syndrome and typically developing children in adaptive behaviour, executive functions and visual acuity. *Scientific Reports*, *11*(1), 1–15. <https://doi.org/10.1038/s41598-021-85037-4>
- Hedov, G., Annerén, G., & Wikblad, K. (2000). Self-perceived health in Swedish parents of children with Down's syndrome. *Quality of Life Research*, *9*, 415–422. <https://doi.org/10.1111/j.1365-2788.2006.00810.x>
- Keng, S. L., Smoski, M. J., & Robins, C. J. (2011). Effects of mindfulness on psychological health: A review of empirical studies. *Clinical Psychology Review*, *31*(6), 1041–1056. <https://doi.org/10.1016/j.cpr.2011.04.006>
- Martin, F., Clyne, W., Pearce, G., & Turner, A. (2019). Self-management support intervention for parents of children with developmental disorders: The role of gratitude and hope. *Journal of Child and Family Studies*, *28*(4), 980–992. <https://doi.org/10.1007/s10826-018-01308-1>
- Neece, C. L., Chan, N., Klein, K., Roberts, L., & Fenning, R. M. (2019). Mindfulness-based stress reduction for parents of children with developmental delays: Understanding the experiences of Latino families. *Mindfulness*, *10*(6), 1017–1030. <https://doi.org/10.1007/s12671-018-1011-3>
- Neff, K. D. (2003). Self-Compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity*, *2*(2), 85–101. <https://doi.org/10.1080/15298860309032>
- Nichols, A., Bernzott, L., Jones, S., Lowe, S., Parrish, M., Roberts, E., (2021). Parental anxiety and its effect on play of children with disabilities. [Unpublished manuscript].



- Parham, L. D., & Fazio, L. S. (2007). *Play in occupational therapy for children* (2nd ed.). St. Louis, MO: Elsevier Mosby.
- Pickens, N. D., & Pizur-Barnekow, K. (2009). Co-occupation: Extending the dialogue. *Journal of Occupational Science*, 16, 151-156. doi: 10.1080/14427591.2009.9686656
- Rani, N., Tripathi, N., & Singh, S. (2014). Maternal stress and mother-child interaction style among the mothers of cerebral palsy children – A qualitative study. *American Journal of Engineering Research*, 3(3), 245-250. <https://doi.org/10.13140/RG.2.2.15056.92161>
- Román-Oyola, R., Figueroa-Feliciano, V., Torres-Martínez, Y., Torres-Vélez, J., Encarnación-Pizarro, K., Fragoso-Pagán, S., & Torres-Colón, L. (2018). Play, playfulness, and self-efficacy: Parental experiences with children on the autism spectrum. *Occupational Therapy International*, 2018(4636780). <https://doi.org/10.1155/2018/4636780>
- Sarang, S.D., Karnam, A., Vanmali, B., & Phulpagar, P. (2020). Effect of mindfulness-based stress reduction occupational therapy program in parents of children with autism spectrum disorder: An interventional study. *The Indian Journal of Occupational Therapy*, 52, 132 - 138. [https://doi.org/10.4103/ijoth.ijoth\\_25\\_20](https://doi.org/10.4103/ijoth.ijoth_25_20)
- Smith, S. (2021). Healing parent-child relationships through mindfulness. *International Journal of Birth & Parent Education*, 8(4), 29–32.
- Stenz, C. F., Breitmeyer, A. M., & Jansen, K. L. (2022). Parenting stress and self-compassion in parents of children with and without psychological disorders. *The Family Journal*, 31(2), 308–313. <https://doi.org/10.1177/10664807221123557>
- Tamm, M., & Skär, L. (2000). How I play: Roles and relations in the play situations of children with restricted mobility. *Scandinavian Journal of Occupational Therapy*, 7(4), 174-182.

Willard, C. (2017). Raising resilience: The wisdom and science of happy families and their thriving children. Sounds True.

## Appendix

### Mindfulness-Based Activities Provided to the Participants

Title of Activity	Description
Self-Compassion Letter to Self	Sit in a comfortable setting and think through the details of a difficult parenting situation, reflecting on that moment. When thinking of this time, remind yourself, you are a good-enough parent and all parents struggle. Take a few more grounding breaths, recognizing any physical or emotional feelings that arise.
Grounding and Centering Exercise	Find a comfortable, quiet space. Stand up and notice the feeling of the ground beneath your feet. Slowly shift your weight back and forth and bring awareness to this sensation. Begin to notice how this shift in weight affects your legs, hips, and lower stomach.
S.T.O.P. Exercise	S.T.O.P. is an acronym standing for Stop what you are doing, Take a few deep breaths, Observe your body's physical and emotional sensations, and Proceed with what you were doing once you feel grounded.
Feel Your Hand Activity	Sit in a comfortable position and close your eyes. Take your right hand and stroke your left hand for a few seconds. Switch hands. Continue to repeat this process for several minutes to help bring yourself to reality.
Name a Goodie	This activity can be completed within a group of individuals or alone. Participants go around the circle naming something that is good or positive in their life (ex. A smell, something they had to eat recently, getting engaged, etc.). Remember what you pick does not have to be positive for everyone.
Adult Coloring	Find an adult mindfulness coloring page or create your own to color. Pay attention to your senses as you are coloring- what you see, hear, smell, feel, and taste. To increase the sensory experience, you may add scented oils or markers, food, beverages, or music.
One Big Mindfulness Day	Set aside one day every week to focus on mindfulness activities that help you feel grounded. These activities can vary from person to person, or even day to day.
Candle Study Exercise	Light your favorite scented or unscented candle and observe how the flame flickers. Complete this for five to ten minutes, allowing your mind to wander and observing the thoughts that drift through.
Gratitude Scavenger	This activity can be completed alone or with your child. During this

Hunt	activity, there are numerous things to be searching for including: something you enjoy first thing in the morning, something that makes you happy, something you enjoy playing with, your favorite game to play, a place you feel the most comfortable, etc.
Walking Meditation	Find a walking path where you will not be disturbed. Take ten-fifteen steps or propel yourself twenty to forty feet and stop, breathing for as long as you need. When ready, repeat this movement and focus on making small, slow movements. During these slow movements, observe one or more sensations that you would normally take for granted. It is okay for your mind to wander during this mediation. Adjustments can be made to this daily walk to fit the individuals needs for that day.
Acceptance of Thoughts and Feelings	Sit in a comfortable place and focus on your breath. Allow your mind to wander, noticing each thought that passes by. Guide your attention back to the sensation of breathing and bring a quality of compassion to your awareness. As you become aware of various bodily sensations that arise, shift your attention to these sensations briefly. Acknowledge the comfort or discomfort that surfaces and begin to differentiate yourself from your thoughts and feelings. Without judgment, label the thought or feeling and move on. Remind yourself you are not what those thoughts or feelings convey to you.
Mindfulness Parenting Tool Kit	The mindfulness tool kit is something you and your family can create together that will include various mindfulness activities you and your family enjoy. There is not a limit on how many activities are needed, just make sure they are meaningful and beneficial.
The Body Scan	Find a comfortable and quiet place to complete this activity. It can last anywhere from five to thirty minutes depending on the style you choose. A typical body scan will have you lying on your back and focusing on different parts of your body at a time, starting from your feet and slowing making its way to your head.
Morning Page	Every morning when you wake up write whatever comes to mind. What you write does not have to be creative or have any structure as long as it is helpful and meaningful to you.
Three-Minute Breathing Space	Find a comfortable and quiet space to help you relax and feel grounded. During these three-minutes, you will start with closing your eyes and thinking about what you are doing. Bring your attention to your breathing, making sure to take deep breaths in through your nose and out through your mouth. Shift your attention to how your body feels and focus on the environment around you.
Who Am I Beyond My	Formatted questions are provided, focusing on self-reflection.

Anxiety Reflection	These questions have you list positive characteristics about yourself, activities you do and do not enjoy, describe which relationships in your life are most important to you and why, and what you feel like you are best at.
--------------------	---