
2022

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Recommended Citation

Frederick, K. (2022). Resilience Development in Children With Adverse Childhood Experiences: The Role of the Occupational Therapist and the Interdisciplinary Team. *Student Journal of Occupational Therapy*, 3(2), 14-29. <https://doi.org/https://doi.org/10.46409/001.YHFA8315>

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To cite this article: Frederick, K. (2021). Resilience development in children with adverse childhood experiences: The role of the occupational therapist and the interdisciplinary team. *Student Journal of Occupational Therapy*, 3(2), 14-29. <https://doi.org/10.46409/001.YHFA8315>

Author conflict statement: The author declares that she has no conflicts of interest in this research.

Acknowledgements: The author would like to acknowledge Dr. Sara Best and Dr. Lesley Love of Huntington University, who provided supervision and served as mentors throughout this study.



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Abstract

Research has revealed adverse childhood experiences (ACEs) can have a negative effect on a child's development and put a child at an increased risk of physical and mental health problems in adulthood (Anda et al., 2006; Felitti et al., 1998; Gilbert et al., 2015; Putamen, 2006). Some children have been able to counteract the negative effects of ACEs and achieve positive life outcomes using a principle called resilience (Zolkoski & Bullock, 2012). The current study utilized a virtual survey to examine current interventions used by occupational therapists (OTs) and other members of the interdisciplinary team to assist children in overcoming the negative effects of ACEs. The results of the study found that occupational therapists and the wider interdisciplinary team have utilized the following interventions to assist children in developing resilience: facilitating the development of self-regulation skills and problem-solving skills, utilizing sensory based interventions, utilizing group therapy, utilizing principles of a trauma-informed approach, and referring the child to other professional services (e.g. social worker or psychological services). While many of these interventions were supported by scholarly research, OTs and members of the interdisciplinary team neglected to address multiple key protective factors in childhood resilience. Professionals working with children with ACEs may benefit from additional training in the area of childhood resilience.

Key Words: Resilience, resiliency, adverse childhood experiences, childhood trauma, occupational therapy

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<https://doi.org/10.46409/001.YHFA8315>

Introduction

Occupational therapists (OTs) strive to assist individuals of all ages in achieving functional independence and participation in meaningful occupations (American Occupational Therapy Association, 2017). When working with children, OTs must be aware of all environmental, physical, and emotional factors that can interfere with a child's participation in daily activities (American Occupational Therapy Association, 2017). The negative effects of early-childhood trauma or adverse childhood experiences (ACEs) interfere with many aspects of a child's daily life (Felitti et al., 1998; Gilbert et al., 2015). Putamen (2006) revealed that ACEs interfere with a child's social participation, academic achievement, emotional development, and neurodevelopment. Without intervention, ACEs continue to affect a child into adulthood. A study by Anda et al. (2006) found that childhood trauma is correlated with many negative effects in adulthood including increased risk of substance use/abuse, memory disturbances, high stress levels, abusing one's partner, difficulty with anger management, panic attacks, depressed affect, anxiety, and hallucinations.

Some children are able to overcome the negative effects of trauma using a principle called resilience (Zolkoski & Bullock, 2012). Researchers have identified a number of characteristics that promote resilience in children and adolescents (Masten and Barnes, 2018; Yule et al., 2019). Experts have begun to research and discuss interventions to promote resilience in children; however currently, the research examining the use of resiliency training interventions in the field of occupational therapy is limited. The purpose of this paper is to examine current interventions utilized by OTs and other members of the interdisciplinary team to assist children in overcoming the negative effects of ACEs and to examine whether these

interventions align with scholarly research on resilience.

Definition of ACE

Adverse Childhood Experiences (ACEs) are broadly defined as traumatic physical and emotional experiences that take place during childhood (Felitti et al., 1998; Gilbert et al., 2015). Throughout this paper, ACEs will be defined to include parent divorce, physical abuse, sexual abuse, emotional abuse, witness to domestic abuse, incarcerated parent(s), parental abuse of drugs/alcohol, or parental diagnosis of mental illness (Gilbert et al., 2015). However, readers should be aware that other researchers have proposed broader definitions of ACEs. For example, Finkelhor et al. (2013) proposed including "parents always arguing, having no good friends, having someone close with a bad illness or accident, peer victimization, property victimization, and exposure to community violence" as an ACE (p. 73). ACEs are prevalent in American society with approximately 60-62% of adults living in the U.S. having experienced one or more ACEs before the age of 18 (Gilbert et al., 2015; Merrick et al., 2018).

Negative Effects of ACE

Individuals who experience adverse childhood experiences (ACEs) are at a greater risk for physical and mental health challenges later in life (Felitti et al., 1998; Anda et al., 2006). Individuals who experience at least one ACE are more likely to develop myocardial infarction, asthma, and diabetes (Gilbert et al., 2015). Moreover, individuals who experience at least one ACE are also more likely to report poor health and mental distress (Gilbert et al., 2015). Children who experience multiple ACEs are at a greater risk for developing physical and mental health problems later in life than children who only experience one ACE (Anda et al., 2006; Felitti et al., 1998, Gilbert

et al., 2015). Anda et al. (2006) found that high numbers of ACEs (four or more) were associated with an increased risk of depressed affect, anxiety, hallucinations, sleep disturbances, drug use, alcohol use, early sexual intercourse, memory disturbances, and anger management problems.

Specific ACEs are also associated with committing violent crimes later in life. For example, Ross and Arsenault (2018) found that individuals "who experienced childhood trauma as both a witness and victim were 15.6% more likely to perpetrate violence later in life" (p. 13). Adolescents who experience ACEs may also be at an increased risk for gang activity. One study found that middle schoolers and high schoolers who experienced physical fights with a parent, witnessed physical fights between parents, or had a parent abuse drugs or alcohol were at an increased risk of joining a gang (Merrin et al., 2015).

Effects of ACE on the Brain

ACEs are associated with several structural changes in the brain and the nervous system. Perry et al. (1995) discussed the negative effects of sensitization in children who experience ACEs. During sensitization, a neural pathway is repeatedly activated increasing the sensitivity of this pathway. Children with ACEs may have hypersensitive pathways resulting from abuse or other forms of trauma. As a result, these children may display emotional reactions that are intensely disproportionate with the current stressor or threat (Perry et al., 1995). More specifically, ACEs are associated with changes in the amygdala, which plays an integral role in one's emotions, behavior, and fear response (Rasia-Filho et al., 2000). Rooij et al. (2020) found that children and adolescents who were exposed to high levels of violence displayed increased activity in the amygdala. In addition, McCrory et al. (2013) revealed that children with a history of maltreatment also

displayed increased activity levels in the right side of the amygdala.

ACEs are also associated with changes in the corpus callosum, which connects the right and left hemispheres of the brain. For example, Teicher and Samson (2016) found childhood abuse was correlated with reduced corpus callosum volume. Research indicates reduced volume of the corpus callosum is associated with increased psychophysiological responses, which may lead to increased sensitivity to daily threats, e.g. adult yelling (Young et al., 2019).

Children with ACEs also display structural changes in the hippocampus, which allows a child to form and store memories (Wible, 2013). Rooij et al. (2020) found that children and adolescents who were exposed to higher levels of trauma (i.e. multiple traumatic events, including various types of trauma) had a smaller left hippocampus than children and adolescents who were exposed to lower levels of trauma. Teicher et al. (2012) found that adults with a history of childhood maltreatment also had decreased volume in the left hippocampus, indicating structural changes in the brain due to trauma may persist into adulthood. Decreases in hippocampus volume is also associated with physical and mental health disorders in adulthood. For example, researchers found that decreased volume of the hippocampus was associated with depression, schizophrenia, schizoaffective disorder, and fibromyalgia (Arnold et al., 2015; McCrae et al., 2015; Saylam et al., 2006).

Resilience

It is important to note that not all children with ACEs develop physical and mental health disorders. Children who are able to overcome the trauma and achieve positive life outcomes (e.g., general physical and mental health, independent living, minimal to no law violations) possess an attribute known as resilience (Zolkoski & Bullock,

2012). According to the American Psychological Association (n.d.), resilience is defined as “the process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands.” Researchers have identified a number of character traits, environmental factors, and skill sets that children with resilience display. Any character attribute or element associated with resilience has been termed by researchers as a protective factor (Zolkoski & Bullock, 2012). A review of scholarly literature reveals a number of protective factors including the development of pro-social skills, self-regulation skills, problem-solving skills, future orientation, and self-efficacy (Cieslak et al., 2008; Hamill, 2003; Masten & Barnes, 2018; Oshri et al., 2018; Yoon, 2018; Yule et al., 2019). In addition, Zolkoski & Bullock (2012) revealed that supportive parents and family cohesion were also associated with higher rates of resilience in children.

Methods

The current study evaluated how often OTs, and other members of the interdisciplinary team work with children and adolescents who have been exposed to ACEs. For the purposes of this study, Gilbert et al.’s (2015) definition of an ACE was used. The study asked participants to reflect on their previous work/volunteer experiences with children and indicate how ACEs affected these children’s daily activities. In addition, the study expanded research on current interventions being used in clinical practice to address the multi-faceted effects of ACEs, as encountered by practitioners. Finally, the study compared current clinical interventions used to assist children in overcoming ACEs to scholarly evidence of the components of resilience development.

The study was conducted utilizing a mixed method approach through an electronic survey collecting both quantitative and qualitative data. The study was reviewed and approved by an institutional review board. Data was collected through SurveyMonkey®, a secure electronic survey platform, enabling anonymous collection (Momentive Inc., 2022). The survey included a consent statement (see Appendix A), which specified the inclusion criteria, the respondent’s rights, and the use of data collected from the survey. The study’s original inclusion criteria included being 18 years of age or older and a history of working with children or adolescents in the state of Indiana.

Due to limited results of this first survey, the inclusion criteria were expanded to include individuals 18 or older working with children or adolescents anywhere in the United States. A new survey (see Appendix B) was created to allow for the change in inclusion criteria.

The survey was directed towards OTs but was open to all members of the interdisciplinary team working with children or adolescents including but not limited to occupational therapy students/interns, physical therapists, speech-language pathologists, developmental therapists, behavioral therapists, teachers, counselors, social workers, case managers, habilitation and respite providers, patient care assistants, camp counselors, adaptive sports coaches, group leaders, and volunteers. Exclusion criteria included being younger than 18 years of age, not having experience working with children or adolescents, and not working with children or adolescents in the United States. Participants were selected through convenience sampling. The survey was distributed through email, Facebook groups, and CommunOT® (an online group for occupational therapists and occupational therapy students). The survey opened on April 6, 2020 and closed on May 4, 2020.

Measures

Participants were asked to indicate the percentage of children on their case load with one or more ACEs. To ensure clarity, participants were provided with the definition of ACEs as defined by Gilbert et al. (2015) including parent divorce, physical abuse, sexual abuse, emotional abuse, witness to domestic abuse, incarcerated parent(s), parent(s) abuses drugs/alcohol, or parent(s) diagnosed with a mental illness.

Effects of ACE

Participants were asked to reflect on their personal experiences working with children and indicate whether or not ACEs affected a child's participation in daily activities. If participants indicated "yes", that a child's daily activities were affected by ACEs, they were asked to select daily activities effected by ACEs. Participants were provided with a list of daily activities to choose from including sleep patterns, eating patterns, school participation, socialization/relationship with peers, socialization/relationships with authority figures outside the home, and participation in hobbies/sports. An open response option was also provided, allowing participants to list other daily activities effected.

Interventions for ACE

Participants were asked to list any techniques they had used to help children overcome ACEs. To facilitate recall of intervention techniques, participants were provided with a sample list: support groups, individual training, teaching specific skill sets like emotional regulation or problem-solving skills.

Need for Education

A final "yes/no" question asked participants to indicate whether or not they would benefit from

further education on assisting children in overcoming ACEs.

Results

The results of the two surveys were combined for data analysis. Quantitative data from the survey was analyzed using Microsoft Excel, and qualitative data was categorized according to common themes and key phrases. A total of 32 participants responded to the survey. Of the 32 participants, three participants were excluded not from the study for either directly stating they did work in the United States or due to ambiguity in location of work.

Demographic Data

The majority, 65.5%, of survey participants were OTs. Other professions represented in the survey included occupational therapy students/occupational therapy interns (6.9%), counselors (3.4%), behavioral therapists (3.4%), habilitation and respite providers (3.4%), patient care assistants (3.4%), camp counselors (3.4%), adaptive sports coaches (3.4%), and volunteers (20.7%). Note, some respondents held multiple positions.

Participants ranged from new professionals (under 1 year of experience) to experienced professionals (ten or more years of experience), with the majority of participants having 1-9 years of experience. The survey results indicated 39.3% of participants had 1-3 years of experience working with children, 17.9% of participants had 4-6 years of experience working with children, and 21.4% of participants had 6-9 years of experience working with children. A total of 15 states were represented in the survey, with 24.1% of participants working in the state of Indiana and 17.2% of participants working in the state of Minnesota.

Effects of ACE

The majority of survey participants, 75.9%, indicated at least 21% of their case load included children with one or more ACEs. Of the 29 participants surveyed, 100% indicated that they believed ACEs affected a child's daily activities.

Participants indicated a variety of childhood occupations that were affected by ACEs in the children they worked with. The majority of participants indicated that ACEs affected a child's socialization/relationships with peers (93.1%). Participants also indicated that ACEs affect a child's school participation (89.7%), sleep patterns (82.8%), and socialization/relationships with authority figures outside of the home (79.3%). In addition to the daily activities listed above, eight participants shared additional activities they believed to be affected by exposure to ACEs: Activities of Daily Living (ADLs) with a focus on toileting and hygiene, socialization with family members, motor skills, sensory processing skills, and self-regulation skills.

Occupational Therapists

According to the survey results, 78.9% of OTs indicated at least 21% of their case load included children with one or more ACEs. Of the 19 OTs surveyed, 100% indicated that exposure to ACEs affected a child's participation in school. OTs also indicated that ACEs affected a child's sleep patterns (94.7%), socialization/relationships with peers (94.7%), eating patterns (84.2%), socialization/relationships with authority figures outside of the home (84.2%), and participation in hobbies/sports (63.2%) (Figure 1a).

Interdisciplinary Team

Ten members of the interdisciplinary team responded to the survey. When asked what percentage of their case load had been exposed to

ACEs, 70% of the interdisciplinary team indicated at least 21% of their case load included children with an ACE. The majority of the interdisciplinary team indicated ACEs affected a child's

socialization/relationships with peers (90%). The interdisciplinary team also indicated ACEs affected a child's participation in school (70%), socialization/relationships with authority figures outside of the home (70%), participation in hobbies/sports (70%), sleep patterns (60%), and eating patterns (40%) (Figure 1b).

Interventions for ACE

When asked to list any interventions they utilized to help children overcome ACEs, 24.1% (26.3% of OTs and 20% of interdisciplinary team members) of the respondents either skipped the question or replied N/A. Out of the remaining responses, six core interventions emerged: teaching self-regulation techniques, utilizing sensory integration techniques, teaching problem-solving skills, utilizing principles of trauma-informed care, utilizing group therapy, and referring the child to another profession.

Self-regulation Techniques

Thirteen respondents (47.4% of OTs and 40% of interdisciplinary team members) addressed self-regulation or emotional regulation in children with ACEs. Respondents mentioned utilizing specific programs to facilitate self-regulation in children including The Zones of Regulation™ and the Alert Program®. The Zones of Regulation™ is a program designed to assist children with identifying and regulating their current emotional state (Kuypers, 2020). The program utilizes different colors to represent each emotional state or "zone". After children have identified the "zone" they are in, they utilize cognitive and sensory-based interventions to return to the desired "zone" (Kuypers, 2020).

Figure 1A
Effects of ACEs on a Child’s Occupation as Encountered by OTs

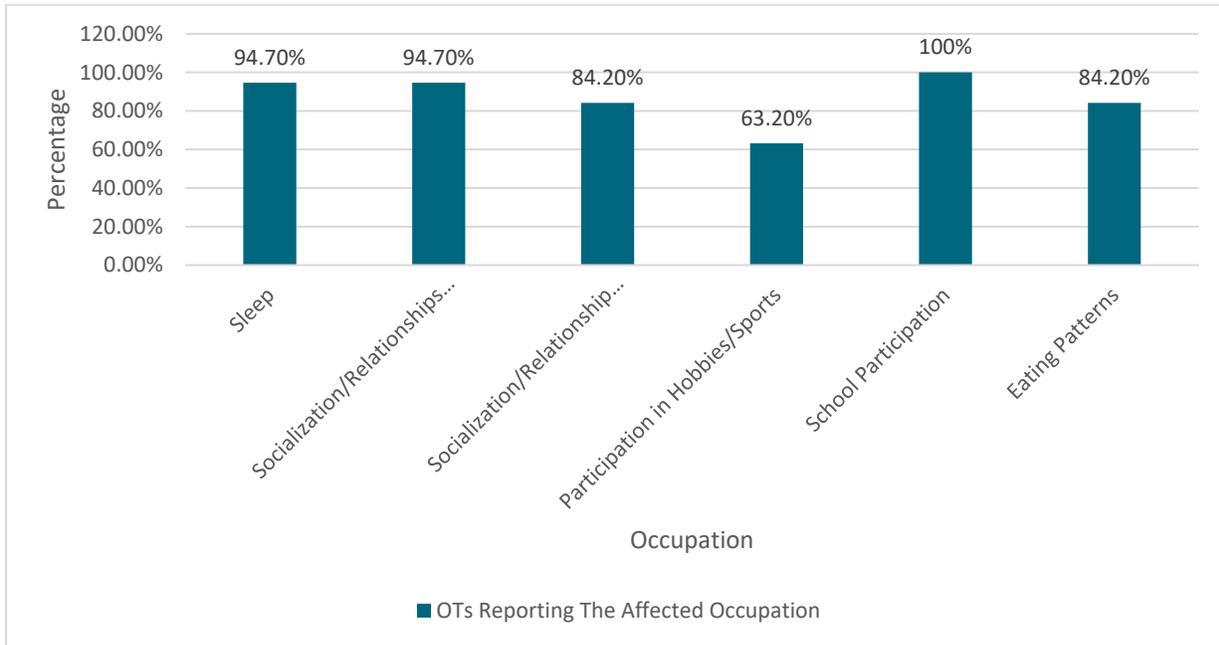
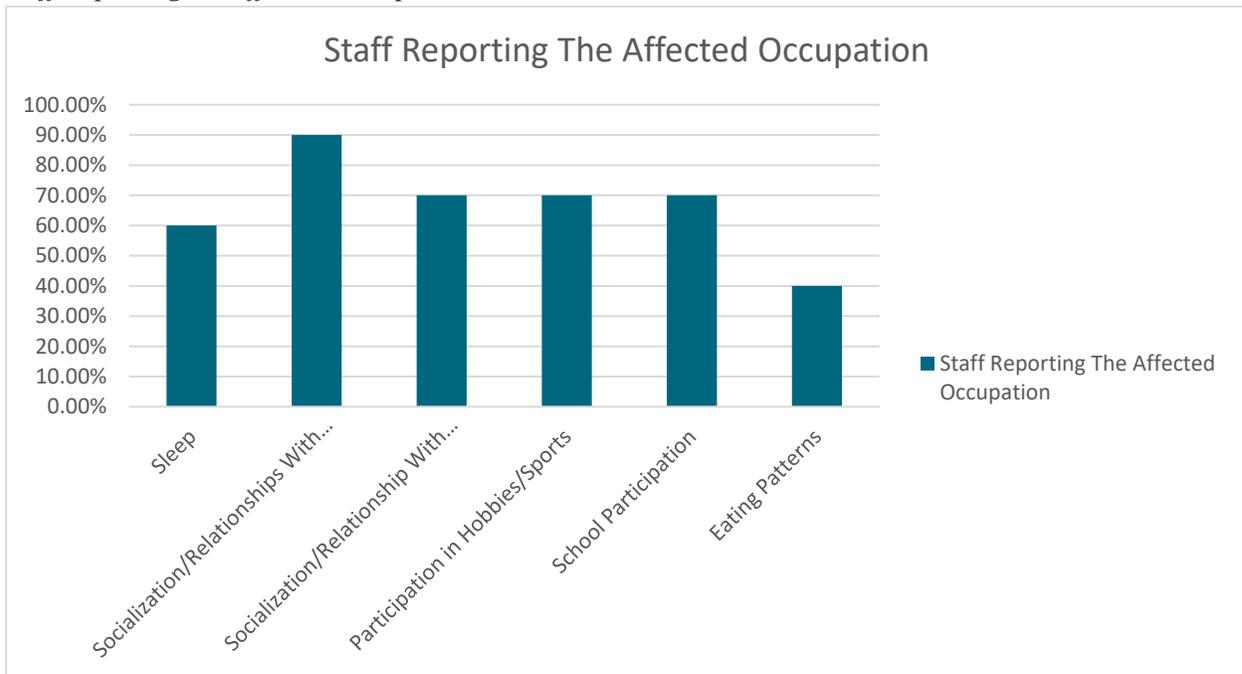


Figure 1B
Staff Reporting the Affected Occupation



The Alert Program® was designed by OTs: Mary Sue Williams and Sherry Shellenberger in 1990 (Williams & Shellenberger, 2016). Similar to the Zones of Regulation™, the Alert Program® also assists children with identifying their current emotional state. The Alert Program® utilizes metaphors (typically an engine metaphor) to allow children to express their current emotional state. The program also provides sensory-based interventions to assist children with reaching the ideal emotional state for the task at hand (Williams & Shellenberger, 2016). Other respondents utilized individual self-regulation interventions including Yoga, guided imagery, and mindfulness.

Sensory Integration Techniques and Problem-Solving Skills

Six respondents (26.3% of OTs and 10% of interdisciplinary team members) mentioned utilizing a sensory integration or sensory-based intervention to help children overcome adverse childhood experiences. While some respondents stated using “sensory integration”, no respondents specified using true Ayres Sensory Integration®. One respondent discussed focusing on integrating three types of sensory information in particular: tactile, proprioceptive, and vestibular.

Eight respondents (21.1% of OTs and 40% of interdisciplinary team members) mentioned addressing problem solving skills or executive functioning skills during treatment sessions. Many respondents kept their answers general, mentioning addressing problem-solving skills but no specific techniques. However, one respondent mentioned utilizing social stories to assist children with developing problem-solving skills.

Principles of Trauma-Informed Care and Referrals to Other Professionals

Eight respondents (31.6% of OTs and 20% of interdisciplinary team members) used interventions

incorporating components of trauma-informed care or general trauma awareness, such as showing empathy or compassion, listening to the child, understanding the child’s point of view, and using safety language. In addition, one respondent educated parents on the effects of trauma on a child’s development and behavior. Other respondents specifically mentioned utilizing a trauma-informed approach. Finally, one respondent used the intervention: “TRE”. TRE® or Tension and Trauma Releasing Exercises are deep muscular relaxation exercises designed to restore the nervous system to a relaxed state after exposure to trauma (Berceci, 2020).

In addition to providing direct services for children, respondents also revealed that they commonly seek outside resources for the child. Two respondents (10.5% of OTs) indicated they refer children with adverse childhood experiences for services from other professionals including social workers, teachers, and psychological services. In addition, a third respondent indicated providing counseling services for a child. The response was unclear on whether this would be a referral, or a direct service provided by the respondent himself/herself.

Group Therapy Services

Two respondents (5.3% of OTs and 10% of interdisciplinary team members) used group therapy services to assist children with overcoming the effects of ACEs. Respondents mentioned using types of support groups (children with ACEs grouped together) and social groups.

Need for Education

Approximately 96.6% of respondents indicated they would benefit from additional education on assisting children in overcoming ACEs.

Discussion

The current study revealed that it is very likely that occupational therapists (OT) and other members of the interdisciplinary team working in the pediatric field will encounter multiple children with adverse childhood experiences (ACEs) over the course of their career. A large percentage (78.9%) of occupational therapists indicated over 20% of their case load included children with one or more ACEs. To put this in perspective, if an occupational therapist treats ten children a day, at least two of those children will likely have been exposed to at least one ACE.

Interestingly, this percentage is actually lower than the average number of ACEs experienced by the general population. Multiple studies of individuals living in the U.S. have revealed prevalence rates of 60-62% of adults had experienced one or more ACEs before the age of 18 (Gilbert et al., 2015; Merrick et al., 2018). This discrepancy between the percentage of individuals in the U.S. living with an ACE and the percentage of children with ACEs receiving therapy services raises the concerning question of whether OTs and the members of the interdisciplinary team are overlooking ACEs in children, or are children with ACEs lacking access to essential therapy services? Further research is needed to identify the reason for this discrepancy.

The current study also revealed that OTs and members of the interdisciplinary team have observed the effects of ACEs on many aspects of a child's daily life including eating patterns, sleep patterns, relationships with others, school participation, participation in hobbies/sports, toileting, hygiene, motor development, sensory processing skills, and self-regulation skills. These findings expand on the existing body of research, which revealed ACEs affect a child's social participation, academic achievement, emotional

development, and neurodevelopment (Putamen, 2006).

This study also revealed a need for increased education on assisting children in overcoming the effects of ACE among OTs and members of the interdisciplinary team, with around 96.6% of respondents indicating they would benefit from additional education. In addition, when asked to list the interventions they used to help children overcome ACEs, 24.1% of the respondents either skipped the question or replied n/a. This lack of response may indicate some OTs and other members of the interdisciplinary team are unaware of intervention strategies to support children who have been exposed to ACEs.

Of the respondents who did list interventions, many of them were supported by scholarly research. For example, 16 respondents mentioned interventions focused on facilitating self-regulation or emotional regulation. Previous research revealed emotional and behavioral regulation skills were associated with resilience in individuals (Luthar and Eisenberg, 2017; Yule et al., 2019). Yule et al. (2019) found that behavioral regulation, emotional-regulation, and impulse control were correlated with resilience in children who had experienced maltreatment or violence. The study found that self-regulation in children was correlated with a child's ability to use adaptive skills and display a positive self-concept. Many specific interventions utilized by respondents were found by researchers to increase self-regulation in children including yoga, mindfulness, and the Alert Program® (Razza et al., 2020; Semple et al., 2010; Barnes et al., 2008; Bertrand, 2009).

In this study, multiple respondents mentioned using The Zones of Regulation™ program. Although research is limited, the Zones of Regulation™ program has been found to improve behaviors in children. For example, one study found that a

combination of the Zones of Regulation program and heart-rate monitoring improved on-task behaviors in a small group of elementary students (Jones, 2019).

Six respondents mentioned using sensory-based interventions to assist children with ACEs in overcoming the effects of trauma. The effects of sensory-based intervention on trauma recovery and resilience development are still being explored, but preliminary evidence suggests a sensory-based treatment model may improve self-regulation of emotion and behavior among adolescents who have experienced various forms of trauma (Warner et al., 2014). In addition, MacLachlan et al. (2017) found sensory-based interventions facilitated occupational adaptation among a small group of adolescents with mental illness.

Another common intervention mentioned by survey respondents was addressing problem solving skills or executive functioning skills. Facilitating the development of executive functioning skills in children is supported by scholarly research. Masten and Barnes (2018) identified a variety of executive functioning skills associated with childhood resilience including planning skills, problem-solving skills, and the ability to problem-solve with one's family.

In addition to teaching problem solving skills, multiple respondents mentioned using elements of a trauma-informed approach. Bartlett et al. (2016) provides a general definition of a trauma-informed approach among health care workers including "awareness of the prevalence of trauma and its impact on health and mental health; recognizes signs and symptoms of trauma in children, families, and staff; responds with evidence-based practices; and, avoids retraumatization" (p.1). Although survey respondents varied in their specific method of a trauma-informed approach, a trauma-informed approach utilizing evidence-based treatments

appears to promote resilience. Bartlett et al. (2016) found that a trauma-informed approach decreased internalizing behavior problems, externalizing behavior problems, and posttraumatic stress symptoms among children. Another intervention mentioned by respondents was group therapy. Group therapy can be an effective intervention to promote resilience in children with ACEs. For example, Saltzman et al. (2001) found a group treatment program reduced posttraumatic stress symptoms and increased overall GPA in adolescents with previous exposure to trauma.

While respondents listed multiple interventions to address ACEs in children that were supported by previous scholarly research, there were a number of protective factors (factors associated with resilience) that were left unaddressed (Zolkoski & Bullock, 2012). Prosocial skills are an important protective factor, known to decrease external behavior problems (Yoon, 2018 and Holmes et al., 2015). However, in the current study, only two survey respondents mentioned interventions addressing social skills. A future-oriented mindset is a protective factor associated with "higher levels of independent living skills, social capital, employment, and income" (Oshri et al., 2018). However, zero respondents mentioned facilitating the development of a future oriented mindset as an intervention strategy for ACE. One respondent did mention addressing a child's perspective but did not specify what that meant. Self-efficacy is a protective factor associated with resilience and reduced posttraumatic distress (Hamill 2003; Cieslak et al., 2008). In the current study, the majority of respondents neglected to mention self-efficacy when listing intervention strategies for ACEs. However, one respondent did mention providing "opportunities for success during functional activities", which is a key strategy to increasing a child's self-efficacy. A research study by Usher and Pajares (2006) found a correlation between successful mastery experiences and

increased self-efficacy for self-regulation in students from the age of 10 to 13 years old.

Study Limitations

One limitation of the current study was a small sample size with only 29 qualified participants. This limited the amount of statistical analysis and statistical significance that could be concluded from this study. In addition, the sample size only represents 15 out of the 50 states in the USA. Future studies may consider partnering with national organizations, like AOTA (American Occupational Therapy Association) to reach a broader audience. Further research is needed to examine whether occupational therapists and the interdisciplinary team working in other states utilize different intervention strategies to treat ACEs.

Another limitation to the current study was the influence of an example list on the survey question evaluating current intervention practices. While the brief example list was designed to facilitate the recall of intervention techniques and encourage written responses, there is the possibility that some therapists felt limited to the intervention strategies on the list.

The study was also limited by survey responses. Many respondents only used one word or a small phrase to describe intervention strategies. This limitation could have been resolved using follow-up interviews with survey respondents to allow for further explanations regarding intervention techniques. Additional studies should encourage respondents to elaborate on intervention procedures to increase standardization of interventions used to treat ACEs.

An additional limitation to this study was the possibility of misinformation given on the online survey. Due to the nature of anonymous online surveys, the survey respondents' professions and years of experience could not be verified. In

addition, it is possible that a survey respondent could have clicked random answers, instead of carefully reading each survey question.

Conclusion

At least within the small sample of this study, it appears to be common for occupational therapists and members of the interdisciplinary team who work with children to encounter children who have been exposed to ACEs. This study also found that many respondents believed that ACEs affect children's participation in daily activities. The current study supported and expanded upon previous research of the effects of ACEs by revealing occupational therapists and members of the interdisciplinary team perceive ACEs may affect a child's participation in eating patterns, sleep patterns, relationships with others, school participation, participation in hobbies/sports, toileting, hygiene, motor development, sensory processing skills, and self-regulation skills.

This study adds new information to literature on facilitating resilience in children with ACEs by offering insight into current intervention practices of OTs and other members of the interdisciplinary team.

Common interventions used by respondents to assist children with adverse childhood experiences included facilitating self-regulation skills, facilitating problem-solving skills, utilizing sensory based interventions, utilizing group therapy, utilizing principles of a trauma-informed approach, and referring the child to other professional services. OTs tended to focus on interventions regarding self-regulation techniques, trauma-informed care/increased trauma awareness, and sensory-based strategies. Members of the interdisciplinary team tended to focus on interventions regarding self-regulation techniques and problem-solving skills/executive functioning skills.

While many of these interventions were supported by scholarly research, OTs and members of the interdisciplinary team neglected to address key protective factors in childhood resilience including prosocial skills, a future oriented mindset, and self-efficacy. New occupational therapists and members of the interdisciplinary team may benefit from additional education and training focused on addressing ACEs and facilitating the development of protective factors and children and adolescents.

Multiple studies of individuals living in the U.S. have revealed 60-62% of adults had experienced one or more ACEs before the age of 18 (Gilbert et al., 2015; Merrick et al., 2018). However, in this study, (78.9%) of occupational therapists indicated only a little over 20% of their case load included children with one or more ACEs. There are multiple possibilities for this discrepancy including lack of screening for ACEs by occupational therapists, lack of reporting of ACEs by parents/caregivers, and study limitations (i.e. small sample size). Future researchers may focus on the development and distribution of effective ACE screening tools for occupational therapy practitioners. This would allow occupational therapists to quickly identify ACEs and begin to address them.

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