A Survey of Knowledge About Trauma-Informed Care and Speech-Language Pathologists

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Bachelor of Science, 2019
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Submitted to the Graduate Faculty of
Harris College of Nursing and Health Sciences
Texas Christian University
In partial fulfilment for the requirements
For the degree of

Master of Science

May 2021

A SURVEY OF KNOWLEDGE ABOUT TRAUMA-INFORMED CARE AND SPEECH-LANGUAGE PATHOLOGISTS

A Thesis for the Degree

Master of Science

by

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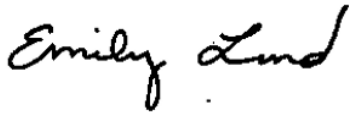
Thesis Approved by:



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Karen Hennington, Committee Member

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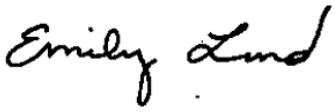

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Dr. Emily Lund, Associate Dean
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May 2021

Abstract

The purpose of this study is to evaluate the extent to which practicing speech-language pathologists are trauma-informed. It is hypothesized that speech-language pathologists have a limited understanding and knowledge of trauma-informed care and why it is important to implement with children who have experienced trauma. School-based speech-language pathologists (n=116, age 18-64) responded to survey questions from the Attitudes Related to Trauma-Informed Care Scale (ARTIC) Version: ARTIC-45 Education survey. Significant differences were found for attending trauma-informed care trainings ($p<.01$ and $p<.05$). Only attending trauma-informed care trainings impact actually having trauma-informed care knowledge. Characteristics such as age, years of experience, foster care experience, and belief of trauma-informed care without training showed no significant differences and therefore do not impact trauma-informed care knowledge. The results of this study support future research on the need to educate SLPs implementing trauma-informed care in their therapy sessions.

Acknowledgements

"And whatever you do, in word or deed, do it all in the name of the Lord Jesus, giving thanks to God the Father through him." - Colossians 3:17

I would like to take the opportunity to acknowledge and thank some important people who made this study possible. First, I would like to thank my principal supervisor, Dr. Emily Lund, who made this project possible. She encouraged me to combine my interests in trauma-informed care and speech-language pathology when I had previously thought of them as separate interests. I have learned so much from her and am thankful for her constant guidance, support, and reassurance throughout the duration of this study. Her passion for research and ability to balance various responsibilities is inspiring, and I am thankful I had the opportunity to learn from her.

I am also very grateful to the Traumatic Stress Institute for allowing me to use their ARTIC-45 Education survey for my project. Without their support, this project would not have been possible. Thank you, as well, to all the speech-language pathologists who completed this survey during summer 2020, even in the midst of a global pandemic.

I would also like to recognize and thank my committee, Dr. Danielle Brimo, Dr. Casey Call, and Mrs. Karen Hennington. Dr. Brimo is the reason I decided to become a speech-language pathologist after taking a Language Development course with her during my undergraduate years. Her passion for speech-language pathology and for helping her students succeed has been instrumental to my success for the last several years, and I am forever grateful for her support. Dr. Call sparked my interest in trauma-informed care. Her kindness and open door to all her students showed me the type of educator I would like to be one day. Additionally, she gave me a passion for helping those who have experienced trauma that I will carry with me

for the rest of my life. Mrs. Hennington's willingness to devote time and feedback to my project last minute is greatly appreciated, and her support throughout my time has meant a great deal.

To my friends and graduate cohort, thank you for supporting me and being there for me when I needed it. I would not have made it throughout graduate school without you all. Finally, thank you to my parents. To my dad, thank you for always pushing me to believe I could do anything I put my mind to and to never accept no as an answer. To my mom, thank you for always supporting me and sacrificing countless hours to help me reach my dreams.

Table of Contents

List of Figures

List of Tables

Literature Review

In the United States, approximately 45% of children have experienced at least one type of Adverse Childhood Experience (Sacks & Murphey, 2018). The most common of those experiences include economic hardship or parent divorce/separation, but adverse childhood experiences also include abuse, neglect, and other events that may affect a child's functioning. Experiences of abuse, neglect, and other types of trauma have been associated with communication difficulties in children (Becker-Weidman, 2009) and often have an impact on a child's academic performance (Howard, 2016). If a child within the school system is suspected of having a communication-based difficulty, he or she is likely at some point to be referred to a speech-language pathologist. However, accreditation standards for training programs for speech-language pathologists do not require programs to teach future practitioners about trauma and its effects (Council on Academic Accreditation in Audiology and Speech-Language Pathology, 2020). This is in contradiction to other health service fields that do recognize the importance of trauma-informed care, which involves understanding trauma and its effects on patients, recognizing the signs of trauma, integrating trauma knowledge into practices, and providing an environment that does not re-traumatize patients (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). Trauma-informed care also adheres to six principles of safety, trustworthiness and transparency, peer support, collaboration and mutuality, patient empowerment, and cultural, historical and gender issues (SAMHSA, 2014). The purpose of this study is to evaluate the extent to which practicing speech-language pathologists (SLPs) are trauma-informed.

Trauma and Behavior

Trauma greatly impacts a child's academic success. Therefore, it is important to understand the prevalence of Adverse Childhood Experiences (ACEs) in school-aged children.

Crouch et al. (2019) conducted a study of 45,287 respondents with children between the ages of 0-17 years to examine exposure to ACEs. In the study, Crouch et al. found 22.5% of children experienced economic hardship, 19.8% of children lived below the federal poverty line, and 21.9% of children experienced parental or guardian divorce. Furthermore, Crouch et al. reported lower household income and poverty were associated with an increased likelihood of exposure to each ACE category. In regards to the ACE of exposure to violence, the authors reported children were more likely to experience violence as they age. This was found to be true for 12.7 % of Non-Hispanic, African American children, 14.8% of children with special healthcare needs, 11.0% of children whose parents had either a high school diploma or less, and 10.0% of rural children (p <.001; Crouch et al., 2019).

Considering a child's trauma history is important for interpreting that child's behavior. A child who suffers from trauma typically displays many maladaptive behaviors. These behaviors include self-regulation problems, aggression problems, attention problems, social and emotional problems, reasoning problems, and language problems (Becker-Weidman, 2009). Some of these difficulties arise from changes to the structure of the brain. For example, the brainstem and prefrontal cortex undergo radical changes when trauma occurs (Howard, 2016). Trauma causes the brainstem to activate for longer periods of times and release additional adrenaline, placing the child's body in an extended fight or flight mode (Howard, 2016). Within the fight or flight mode of survival, a child exhibits aggressive behavior and experiences difficulty with attention (Becker-Weidman, 2009; Howard, 2016). In fact, a child's aggressive behavior and difficulty with attention increase with his or her increased exposure to trauma (Becker-Weidman, 2009). Additionally, when the brainstem activates, the prefrontal cortex suspends activity. The prefrontal cortex controls higher thinking and reasoning, and suspension of this activity leads to

issues with complex thinking and language (Howard, 2016). Consequently, children who experience trauma can exhibit expressive language delays and decreased receptive language abilities (Becker-Weidman, 2009). This means they may use less verbal language and understand less language than their peers. Therefore, even if these children wanted to communicate their frustrations and needs, the effect of trauma on their brains limits their abilities to express themselves. For these reasons, children affected by trauma typically display maladaptive or negative behavior.

In particular, self-regulation is a skill hypothesized to be affected by early traumatic experiences. Self-regulation is defined as a child's ability to control his or her emotions in response to upsetting events (Wyman et al., 2010). Children typically learn self-regulation through their relationships to their caregivers. However, if children lack strong relationships with their caregivers, they fail to develop self-regulation. Instead, these children need explicit instruction and intervention to develop self-regulation (Wyman et al., 2010). Furthermore, children unable to regulate lack control of their bodies and fail to process complex emotions, instructions, or commands (Howard, 2016; Wyman et al., 2010). Children in the fight or flight mode have increases in the release of adrenaline and cortisol (Howard, 2016). These hormones move the child into survival mode and limit his or her complex thinking (Howard, 2016; Wyman et al., 2010). Children who have learned how to regulate are able to move out of this state, and have their hormone levels return to normal. However, children unable to regulate stay in the fight or flight mode and lack the neurological ability to process complex tasks and instructions (Howard, 2016; Wyman et al., 2010). Therefore, therapy intended to help a child may fail to produce progress if the child lacks the ability to self-regulate his or her behavior when upset.

Behavior Management and Speech-Language Pathology

Speech-language pathologists (SLPs) have many different roles and responsibilities in the school system. These roles and responsibilities include but are not limited to prevention, assessment, intervention, program design, data collection and analysis, and compliance in relation to speech sound, language, and other cognitive delays and disorders (Council for Clinical Certification in Audiology and Speech-Language Pathology of the American Speech-Language-Hearing Association, 2018). Additionally, they collaborate with classroom teachers, parents, and other therapists to provide the best service for their students. SLPs can work one-to-one with students or in small group settings utilizing pull-out methods, or they can work directly in the classroom. Furthermore, SLPs advocate for their students in the community, engage in parent training, and conduct research to further knowledge about speech-language disorders (Council for Clinical Certification in Audiology and Speech-Language Pathology of the American Speech-Language-Hearing Association, 2018). However, the American Speech-Language-Hearing Association (2018) does not include or behavior management in its description of roles and responsibilities of a speech-language pathologist. To work as a speech-language pathologist, one must obtain a Certificate of Clinical Competence (CCC) from the American Speech-Language-Hearing Association. The CCC requires a master's degree in speech-language pathology, a passing score on the Praxis exam for speech-language pathology, and the completion of a year of Clinical Fellowship (American Speech-Language-Hearing Association [ASHA], 2018).

In most circumstances, speech-language pathologists who encounter negative behavior from a child typically respond with a traditional behaviorist management strategy (Chow & Wallace, 2019). This strategy relies on concepts such as reprimands, verbal reinforcement, and removal from settings in response to negative behavior (Nelson & Roberts, 2000). However,

these methods fail to work with children who suffer from trauma (Howard, 2016; Nelson & Roberts, 2000). Punitive punishments and reprimands from professionals only further discourage children who suffer from trauma and make them less likely to comply with demands (Nelson & Roberts, 2000). Neurological changes in the brain prevent children affected by trauma from understanding the appropriateness of their actions (Howard, 2016). These children fail to understand why they receive punishment because they believe they acted appropriately (Nelson & Roberts, 2000). Instead, they require a relational approach such as Trust-Based Relational Intervention® (TBRI®) for redirection. TBRI® is a trauma-informed approach consisting of three principles to help caregivers and professionals heal trauma's effects on a child. Success with trauma-informed care interventions such as TBRI® has occurred in a variety of settings such as counseling sessions, residences, and schools.

Unsurprisingly, findings show a significant change in groups receiving TBRI® treatment from the time of pre-test to the time of post-test (Howard et al., 2014; Parris et al., 2015; Purvis et al., 2015). Psychological functioning improved for children affected by trauma who received TBRI® treatment as part of post-adoption counseling in an outpatient setting (Howard et al., 2014). Additionally, adoptive parents trained in TBRI® reported their children's emotional problems, conduct problems, hyperactivity, inattentiveness, and total difficulties decreased while utilizing TBRI® at home (Purvis et al., 2015). A charter school for at-risk youth also reported a 93.5% decrease in referrals for negative behavior incidents over a two-year period of TBRI® implementation (Parris et al., 2015). Because research demonstrates the successful application of TBRI® in a variety of settings, it is possible trauma-informed care could provide benefits in speech-language pathology therapy sessions.

Children with traumatic backgrounds are likely interacting with speech-language pathologists due to potential language delays and cognitive deficits acquired from their traumatic experiences. However, speech-language pathologists often use a behaviorist approach in response to these children's maladaptive behavior, which has been proven to be ineffective. Consequently, these children are likely to be behaviorally dysregulated due to trauma's effects on their bodies and make therapy less productive.

A first step towards improving care for children in school systems who have experienced trauma and who see speech-language pathologists would be acquiring information about the extent to which speech-language pathologists are aware of trauma-informed practices. In particular, it is important to know whether SLPs think about child behavior relative to the potential trauma that a child has encountered. This information could lead to recommendations about the necessity of trauma-based trainings for this group of professionals.

Additionally, research by Menschner and Maul (2016) claims that support from administrations is necessary for successful implementation of trauma-informed care. According to Menschner and Maul, leadership and communication are required to help implement strategies and change in the current system. Furthermore, they state trauma-informed care requires investments for continuous staff training, building modifications, and the need for more resources. Another reason for the importance of support from administrations is to prevent secondary traumatic stress in staff. Menschner and Maul state secondary traumatic stress occurs when staff are constantly hearing about firsthand trauma experiences of others. If support is not provided, the researchers claim staff may experience fatigue, avoidance, poor concentration, emotional detachment and exhaustion, or physical illness. In contrast, they claim providing support can increase staff morale, allow for optimal functioning, and reduce expenses. Ways to

support staff from experiencing secondary traumatic stress include providing trainings to raise awareness of secondary traumatic stress, allowing mental health days for staff, and supporting reflective supervision (Menschner & Maul, 2016).

The Attitudes Related to Trauma-Informed Care Scale (ARTIC) Version: ARTIC-45 Education survey was developed for identifying trauma-informed care knowledge of employees working in schools (Baker et al., 2016). It consists of 45 questions with five core subscales related to trauma-informed care implementation (underlying cause, responses to problem, on-the-job behavior, self-efficacy, and reactions to the work and two supplementary subscales related to trauma-informed care adoption (personal support and system-wide support) for a total of seven subscales.

The purpose of this study is to evaluate the extent to which practicing speech-language pathologists (SLPs) are trauma-informed. We hypothesized that speech-language pathologists have a limited understanding and knowledge of trauma-informed care and why it is important to implement with children who have experienced trauma. The results of this study will help to support future research on the importance of SLPs implementing trauma-informed care in their therapy sessions.

Research Questions

Do demographic characteristics including age, years of work experience in the current setting (schools), years of experience in the field, or specific work setting correlate with trauma-informed care knowledge?

Do speech-language pathologists scores across the ARTIC subscales (underlying causes, responses to problem, on-the-job behavior, self-efficacy, and reactions to the work) correlate highly with each other?

Does self-rating of trauma-informed care familiarity and amount of time spent reading about trauma-informed care correlate with trauma-informed care knowledge?

Do speech-language pathologists who have experience with (a) the foster care system or (b) trauma-informed training programs possess more trauma-informed care knowledge than those without?

Do those speech-language pathologists with training in trauma-informed practice at their work setting feel supported to use their training?

Method

Participants

To be included in the study, participants were required to work in a school as a speech-language pathologist and to give informed consent. In addition, all participants were required to possess a Certificate of Clinical Competence (CCC) from the American Speech-Language-Hearing Association. The CCC requires a master's degree in speech-language pathology, a passing score on the Praxis exam for speech-language pathology, and the completion of a year of Clinical Fellowship (ASHA, 2018).

Study participants included 116 individuals who are public and private school-based SLPs nationwide. Of the 116 participants, 114 participants identified as female, one identified as male, and one identified as other. Five participants were between the ages of 18-24 years old, 45 participants were between the ages of 25-34 years old, 33 participants were between the ages of 35-44 years old, 26 participants were between the ages of 45-54 years old, and four participants were between the ages of 55-64 years old. Initial demographic information was requested from participants (e.g., Are you a speech-language pathologist? How long have you been practicing? What is your race/ethnicity? Have you ever participated in a training about childhood trauma?). Results from the initial demographic information showed the majority of participants (106)

identified as White, five participants identified as Asian, one participant identified as African American, and three participants identified as other. Of the 116 participants, 105 participants identified as Non-Hispanic, and ten participants identified as Hispanic. Results also indicated a majority of participants worked in public schools, with less than 15 years of experience in the field/setting. Additionally, most participants (83) had not participated in a program of trauma-informed care training prior to participating in the study.

Procedures

Participants were invited, via email or social media post, to participate in a survey. The first question of the survey included the confidentiality statement and that participation in the survey was completely voluntary (i.e., "Your identity and answers to the survey questions will remain anonymous and participation in the following survey is voluntary. You are free to refuse to participate in this research project or to withdraw your consent and discontinue participation in the project at any time without penalty or loss of benefits by exiting the survey. Your participation will not affect your relationship with the institution involved in this project."). If the participant chose "yes", the survey continued. If the participant chose "no," the survey terminated with no penalty to the participant.

The participants were not required to take the online survey at any particular location. The setting for these activities required a location with Internet access for the participants' laptops or computers. Participants were informed of this in the email or recruitment social media post.

On opening the survey, participants saw items from the Attitudes Related to Trauma-Informed Care Scale (ARTIC) Version: ARTIC 45-Education (Baker et al., 2016). The survey took approximately 15 minutes to complete and consisted of 45 questions with five core subscales and two supplementary subscales. The subscales consisted of the following items.

Underlying Causes of Problem Behavior and Symptoms

The underlying causes of problem behavior and symptoms core subscale emphasized behavior and symptoms as adaptations and malleable versus behavior and symptoms as intentional and fixed. For example, one statement in this section was "Students' learning and behavior problems are rooted in their history of difficult life events."

Responses to Problem Behavior and Symptoms

The responses to problem behavior and symptoms core subscale emphasized relationships, flexibility, kindness, and safety as the agent of change versus rules, consequences, and accountability as the agent of behavior and symptom changes. For example, one statement in this section was "Focusing on developing healthy, healing relationships is the best approach when working with people with trauma histories."

On-the-Job Behavior

The on-the-job behavior core subscale endorsed empathy-focused staff behavior versus control-focused staff behavior. For example, one statement in this section was "Being very upset is normal for many of the students I serve."

Self-Efficacy at Work

The self-efficacy at work core subscale endorsed feeling able to meet the demands of working with a traumatized population versus feeling unable to meet the demands. For example, one statement in this section was "I have what it takes to help my students."

Reactions to the Work

The reaction to the work core subscale endorsed appreciating the effects of secondary trauma/vicarious traumatization and coping by seeking support versus minimizing the effects of secondary trauma/vicarious traumatization and coping by ignoring or hiding the impact. For

example, one statement in this section was “It’s best if I talk with others about my strong feelings about the work so I don’t have to hold it alone.”

Personal Support of Trauma-Informed Care (TIC)

The personal support of TIC supplementary subscale endorsed being supportive of, and confident about, implementation of TIC versus concerns about implementing TIC. For example, one statement in this section was “I have the skills to help my students.”

System-Wide Support of Trauma-Informed Care (TIC)

The system-wide support of TIC supplementary subscale endorsed feeling system-wide support for TIC versus NOT feeling supported by colleagues, supervisors, and the administration to implement TIC. For example, one statement in this section was “If I told my colleagues how hard my job is, they would support me.”

Data Analysis Plan

To answer our research questions, dependent variables based on the ARTIC Scale scores were calculated (by subcategory). Responses from the ARTIC scale were scored according to procedures described by Baker et al. (2016). Thus, our dependent variables included an overall ARTIC score and a score for each of the subscales

Independent variables included demographic characteristics as reported by participants, self-rating of trauma-informed knowledge, self-report of reading about trauma-informed care, self-report of experience with foster care, and report of participation in a trauma-informed training program. Self-rating of trauma-informed knowledge required participants to respond to the following question [how familiar are you with trauma-informed approaches such as trauma sensitive schools]. Self-report of reading about trauma-informed care required response to the following question [to what extent have you done research on your own (outside of your job

setting) on trauma-informed approaches]. Experiences with the foster system and participation in a trauma-informed training program were answered via a yes/no question.

To answer research questions 1 and 3, a nonparametric correlation analysis was planned. One of the variables used in correlation for each of those questions was from a rating on a scale by participants; therefore, the ratings were not continuous and merited a nonparametric approach. To answer research question two, which had variables that were continuous, a Pearson's correlation was conducted. To answer research question 4, a t-test compared groups with and without foster care experience and groups with and without trauma-informed training. Finally, descriptive analysis (means and ranges) was planned to answer the final research question.

Results

A descriptive account of participant performance can be found in Table 1. On the *underlying causes of problem behavior and symptoms subscale,* the speech-language pathologists had a mean of 5.59 with a standard deviation of 0.70 (range: 2.67 to 6.86). On the *responses to problem behavior and symptoms subscale*, speech-language pathologists had a mean of 5.78 with a standard deviation of 0.74 (range: 3.00 to 7.00). On the *on-the-job behavior subscale,* speech-language pathologists had a mean of 5.75 with a standard deviation of 0.72 (range: 3.00 to 7.00). On the *self-efficacy subscale*, speech-language pathologists had a mean of 5.32 with a standard deviation of 0.96 (range: 2.00 to 7.00). On the *reactions to work subscale*, the speech-language pathologists had a mean of 5.56 with a standard deviation of 0.85 (range: 2.50 to 7.00).

Table 1. *Descriptive Statistics of Speech-Language Pathologists' Responses to ARTIC Subscales*

Statistic	Underlying causes	Responses to problems	On-the-job behavior	Self-efficacy	Reactions to work
M	5.59	5.78	5.75	5.32	5.56
SD	0.70	0.74	0.72	0.96	0.85

Minimum	2.67	3.00	3.00	2.00	2.50
Maximum	6.86	7.00	7.00	7.00	7.00

The first research question asked if demographic characteristics including age, years of work experience in the current setting (schools), or years of experience in the field correlate with trauma-informed care knowledge. To answer the first research question, a non-parametric Kendall's tau-b correlation was conducted to determine relations between demographic characteristics and each of the subscales. A non-parametric analysis was used because the survey asked participants to select a range for their age, years in their current school setting, and years of experience in the field. This variable, therefore, was not continuous. Overall results are in Table 2. The *total ARTIC score* and other subscales (*underlying causes, responses to problems, on-the-job behavior, self-efficacy,* and *reactions to work*) were not significantly correlated with demographics (age, years of experience in schools, and years of experience in field; *r* range: -.09 to .12). Thus, it appears demographic variables related to age and practice experience do not correlate with trauma-informed knowledge.

Table 2. *Correlations of Speech-Language Pathologists' Demographics to ARTIC Subscales*

	Age		Yrs school		Yrs field	
ARTIC subscales	*r*	*p*	*r*	*p*	*r*	*p*
Total ARTIC score	.02	.799	-.02	.730	-.01	.859
Underlying causes	-.05	.503	-.07	.367	-.09	.203
Responses to problems	-.02	.822	-.01	.890	-.07	.332
On-the-job behavior	.05	.470	.002	.977	.03	.648
Self-efficacy	.03	.700	.04	.580	.05	.470
Reactions to work	.12	.114	.001	.985	.09	.221

Note. Yrs school = years of work experience in schools. Yrs field = years of experience in field. *r* = correlation coefficient. *p* = significance (2-tailed).

The second research question asked if the responses of speech-language pathologists

across the ARTIC subscales (*underlying causes, responses to problem, on-the-job behavior, self-efficacy,* and *reactions to work*) correlate highly with each other; that is, do SLPs who score high on one subscale also tend to score high on another. To answer this question a parametric analysis utilizing a Pearson *r* correlation was conducted. Results can be found in Table 3. All correlations were significant. The highest correlation was between the *reactions to work* and *self-efficacy subscales* and the *reactions to work* and *on-the-job behavior subscales* with $r = .71$. Other highly correlated subscales were *underlying causes* and *on-the-job behavior* ($r = .68$) and *responses to problems* and *on-the-job behavior* ($r = .69$). The range of correlation between subscales was from .42 (*responses to problems* and *self-efficacy*) to .71 (*reactions to work* and *self-efficacy,* and *reactions to work* and *on-the-job behavior*). Therefore, it appears speech-language pathologists' scores on the ARTIC subscales were moderately to strongly positively correlated.

Table 3. *Pearson Correlation of Speech-Language Pathologists Across ARTIC Subscales*

ARTIC subscale	1	2	3	4	5
1. Underlying cause	-	.65**	.68**	.43**	.58**
2. Responses to problems		-	.69**	.42**	.50**
3. On-the-job behavior			-	.55**	.71**
4. Self-efficacy				-	.71**
5. Reactions to work					-

Note. **Significant at $p < .01$.

The third research question asked if self-rating of trauma-informed care familiarity and amount of time spent reading about trauma-informed care correlate with trauma-informed care knowledge. To answer this question, a non-parametric analysis utilizing a Kendall's tau-b correlation was conducted. Again, non-parametric correlation was considered because ratings were across a set of four options (not at all familiar or no research, somewhat familiar or some research, quite familiar or a fair amount of research, and very familiar or a lot of research) rather than continuous. Results can be found in Table 4. Trauma-informed care familiarity had a

significant, weak positive correlation with *total ARTIC score* (r = .35, p = .000), *underlying causes* (r = .28, p = .000), *responses to problems* (r = .37, p = .000), *on-the-job behavior* (r = .22, p = .003), *self-efficacy* (r = .25, p = .001), and *reactions to work* (r = .27, p = .000). Additionally, extent of research had a significant, weak positive correlation to *total ARTIC score* (r = .31, p = .000), *underlying causes* (r = .26, p = .001), *responses to problems* (r = .32, p = .000), *on-the-job behavior* (r = .21, p = .005), *self-efficacy* (r = .18, p = .016) and *reactions to work* (r = .18, p = .014). Thus, speech-language pathologists who rated themselves as knowing more about trauma-informed care did sometimes know more about trauma-informed care; however, those correlations were relatively weak.

Table 4. *Correlations of Speech-Language Pathologists' Self-Rating of Trauma-Informed Familiarity and Extent of Research to ARTIC Subscales*

	Familiarity T-I		Extent of research	
ARTIC subscales	*r*	*p*	*r*	*p*
Total ARTIC score	.35**	.000	.31**	.000
Underlying causes	.28**	.000	.26**	.001
Responses to problems	.37**	.000	.32**	.000
On-the-job behavior	.22**	.003	.21**	.005
Self-efficacy	.25**	.001	.18**	.016
Reactions to work	.27**	.000	.18**	.014

Note. T-I = trauma-informed. r = correlation coefficient. p = significance (2-tailed).

**Significant at p <.01.

The fourth research question asked whether speech-language pathologists who have experience with a) the foster care system or b) trauma-informed training programs possess more trauma-informed care knowledge than those without. To answer this question, two group comparison independent sample t-tests were conducted comparing experience with the foster care system or trauma-informed training programs against no experience with the foster care

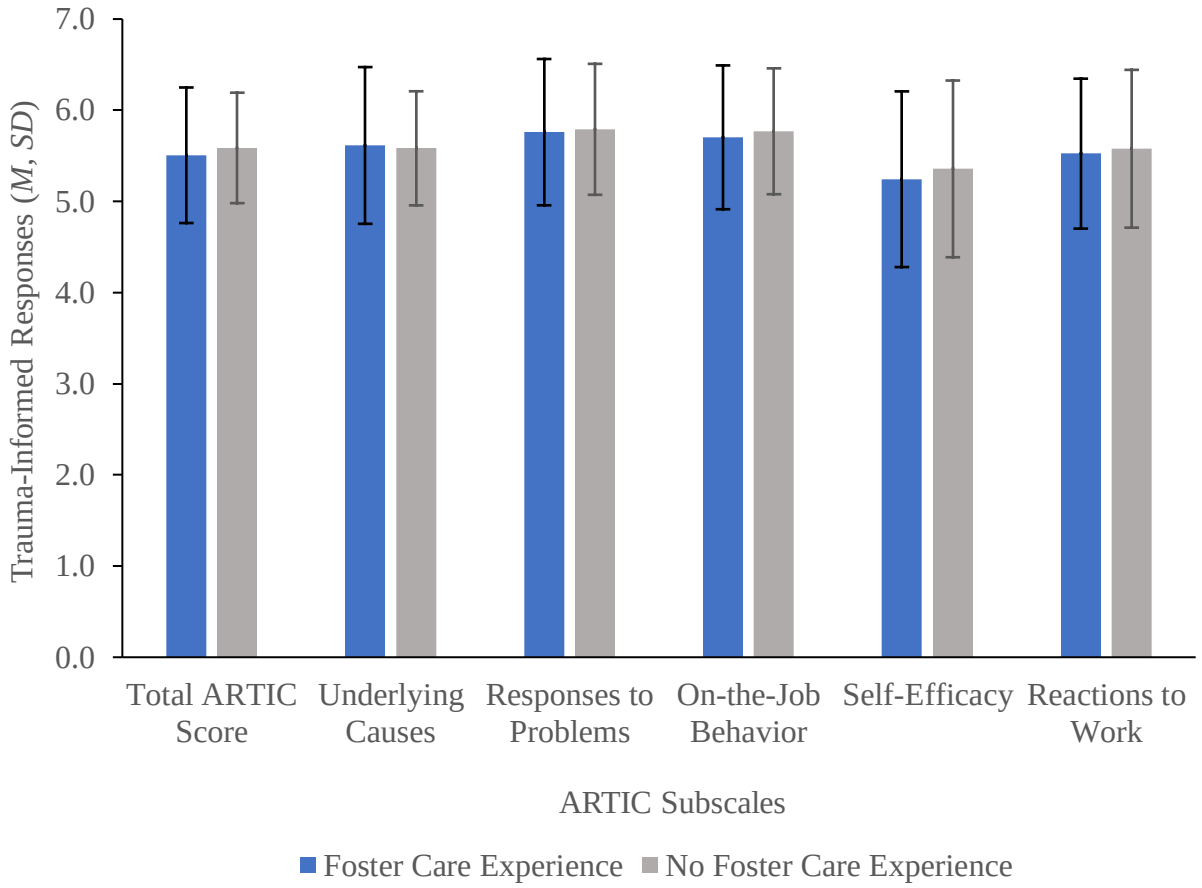
system or trauma-informed training programs. Out of the 114 participants included, only 34 participants reported having foster care experience and only 11 of the 34 participants also participated in trauma-informed care training. For the first sample t-tests comparing scores of SLPs with and without foster care experience, there was no significant difference between the *total ARTIC score* (t(114) = -0.61, p = .544) or the other subscale scores (p range: .083 to .837). Detailed data for the first sample t-test are found in Table 5 and detailed data for the mean and standard deviation are found in Figure 1. Thus, it appears foster care experience did not correlate with possessing more trauma-informed care knowledge than those without.

Table 5. *Comparison of ARTIC Scores of Speech-Language Pathologists With and Without Foster Care Experience*

	Foster care		
ARTIC subscales	t	*p*	df
Total ARTIC score	-0.61	.544	114
Underlying causes	0.22	.083	114
Responses to problems	-0.21	.837	114
On-the-job behavior	-0.45	.652	114
Self-efficacy	-0.58	.565	114
Reactions to work	-0.31	.759	114

Note. t = t-test for equality. p = significance (2-tailed). df = degrees of freedom.

Figure 1. *Trauma-Informed Responses of Speech-Language Pathologists With and Without Foster Care Experience*



The second sample t-tests comparing responses of individuals who had participated in trauma-informed care training versus those who had not did have significant findings for all ARITC subscales. These findings along with means and standard deviations are found in Table 6 and Figure 2. The second set of t-tests showed a significant difference with most *p* values <.01 for trauma-informed training program impact on the following subscales: *total ARTIC score* (t(114) = 3.28, *p* = .001), *underlying causes* (t(114) = 3.16, *p* = .002), *on-the-job behavior* (t(114) = 2.56, *p* = .012), *self-efficacy* (t(114) = 4.12, *p* = .000), and *reactions to work* (t(114) = 2.94, *p* = .004). The t-tests also showed a significant difference for a *p* value <.05 for trauma-informed training program impact on the *responses to problems subscale* (t(114) = 1.96, *p* = .053). There were 17 participants who reported receiving school implemented trauma-informed care training, and 16 participants who reported receiving trauma-informed care training outside of their school

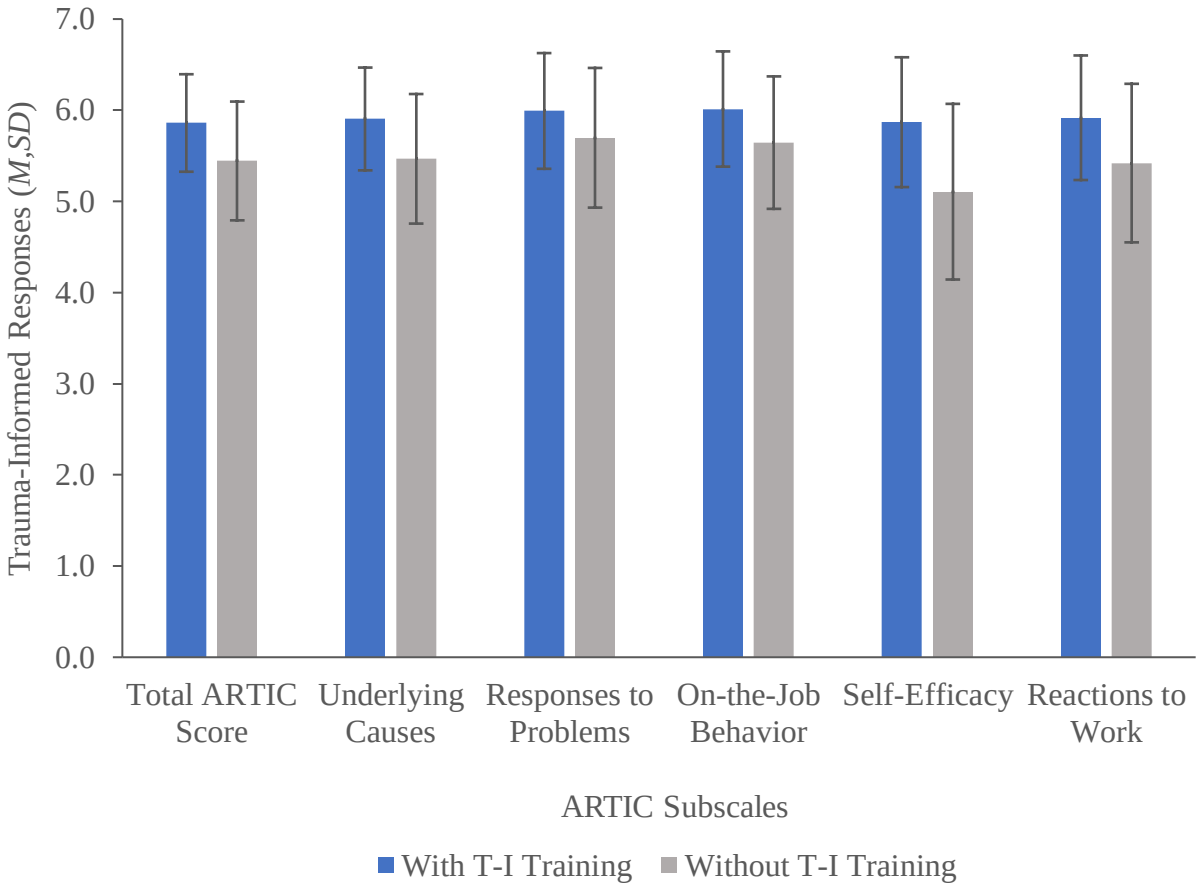
employment. Thus, it appears there was a significant difference on survey results between those that had trauma-informed training and those that did not with those who had training having a higher score.

Table 6. *Comparison of ARTIC Scores of Speech-Language Pathologists With and Without Trauma-Informed Training*

	T-I training	
ARTIC subscales	t	*p*
Total ARTIC score	3.28	.001
Underlying causes	3.16	.002
Responses to problems	1.96	.053
On-the-job behavior	2.56	.012
Self-efficacy	4.12	.000
Reactions to work	2.94	.004

Note. T-I = trauma-informed. t = t-test for equality. *p* = significance (2-tailed). Significant at *p* <.01 and at *p* <.05.

Figure 2. *Trauma-Informed Responses of Speech-Language Pathologists With and Without T-I Training*



Note. T-I = trauma-informed.

The fifth research question considered whether speech-language pathologists who had trauma-informed training in their work setting felt supported in their trauma-informed practice. The ARTIC measure asked additional questions about personal support and system support for practitioners who work in a setting that has implemented trauma-informed training. Thirty-two speech-language pathologists indicated that they had participated in this workplace training. Their average Personal Support rating was 5.30 (*SD* = 0.91) with a range of responses from 3.40 to 7.00. Average System Support rating was 5.03 (*SD* = 1.33) with a range of responses from 2.20 to 7.00. Of the 32 participants who had participated in trauma-informed care training, two participants reported low Personal Support ratings (less than a 4 on a scale from 1-7). Additionally, six participants reported low System Support ratings (less than a 4 on a scale from

1-7). Therefore, even though these participants received trauma-informed care training, they still did not feel confident in either their skills to implement trauma-informed care or did not feel support from their work setting to implement trauma-informed care.

Discussion

This study evaluated the extent to which practicing speech-language pathologists are trauma-informed. Children with traumatic backgrounds often interact with speech-language pathologists due to potential language delays and cognitive deficits often associated with their traumatic experiences. These traumatic experiences affect how the brain develops and leads to a deficit in communication abilities (Howard, 2016). Additionally, a child who suffers from trauma typically displays many maladaptive behaviors due to an inability to express themselves, including problems with self-regulation, aggression, attention, social and emotional skills, reasoning, and language (Becker-Weidman, 2009). Therefore, a first step towards improving care for children in schools who have experienced trauma and who see speech-language pathologists is acquiring information about the extent to which speech-language pathologists are aware of trauma-informed practice. However, accreditation standards for training programs endorsed by the American Speech-Language-Hearing Association (2018) do not currently include behavior management in their description of roles and responsibilities of a speech-language pathologist nor do they require programs to teach future practitioners about trauma and its effects (Council on Academic Accreditation in Audiology and Speech-Language Pathology, 2020).

In regard to data analysis, it appears demographic variables related to age and practice experience did not impact the extent of trauma-informed knowledge a speech-language pathologist possessed. Therefore, even a skilled speech-language pathologist with years of

experience cannot claim to possess trauma-informed knowledge without first completing research or trauma-informed training. Additionally, although speech-language pathologists who rated themselves as knowing more about trauma-informed care did sometimes know more about trauma-informed care, the data presented a weak correlation. Therefore, self-rating might not be the best indicator of actual trauma-informed care knowledge. Furthermore, when assessing foster care experience (an indicator of having spent substantial time with children who are at high risk for trauma experiences), it appeared that there was no difference in the connection between foster care experience and possessing trauma-informed care knowledge as compared to those without foster care experience. Thus, demographic variables, self-ratings of trauma-informed care knowledge, and foster care experience did not present any substantial link to possessing high levels of trauma-informed care knowledge.

However, it appears there was a significant difference on survey results between speech-language pathologists who had experienced targeted trauma-informed training and speech-language pathologists who did not. As expected, those speech-language pathologists who had participated in a training did have a higher score. Therefore, speech-language pathologists who had received trauma-informed care training did possess more trauma-informed care knowledge than those who did not receive trauma-informed care training. Even though these participants received trauma-informed care training and did possess more trauma-informed care knowledge, it is interesting to note that they still did not always feel confident in either their skills to implement trauma-informed care or did not feel support from their work setting to implement trauma-informed care. Thus, more work needs to be done to help speech-language pathologists who have trauma-informed care knowledge feel confident and supported in their abilities to implement trauma-informed care.

When a professional implements trauma-informed care and meets a child's needs, a child is able to learn from his or her mistakes while feeling supported and cared for, and to make more progress in meeting his or her therapy goals. One might predict however, based on these results from the ARTIC-45 Education survey, that managing behavior in a trauma-informed way could be a challenge for speech-language pathologists. A person who subscribes to traditional behavior management strategy would be more likely to agree to statements from the survey like:

- "It reflects badly on me if my students are very upset."
- "Students need to be held accountable for their actions."
- "Students are manipulative so you need to question what they say."
- "It's best to be very strict at first so students learn they can't take advantage of me."
- "If I were good at my job, the work wouldn't affect me so much."
- "Students do the right thing one day but not the next [sic]. This shows that they could control their behavior if they really wanted to."
- "If I don't control student's behavior, bad things will happen to property."

More participants selected these statements than the corresponding trauma-informed statements. Practically, this is concerning due to the potential harmful effects of this perspective on children who have experienced trauma. For example, a SLP who chose statements such as "It reflects badly on me if my students are upset." or "If I don't control student's behavior, bad things will happen to property." may dismiss a child and the validity of his or her experiences. Behavioral management only addresses the outward expression of behavior, and trauma has to first be addressed before managing behavior and expecting any change or progress to happen (Nelson & Roberts, 2000). As a result, the child may not trust the SLP, continue to act out, or use more extreme behaviors because he or she does not understand the SLP's expectations.

Additionally, a SLP who chose statements such as “Students are manipulative so you need to question what they say.” or “Students do the right thing one day but not the next [sic]. This shows that they could control their behavior if they really wanted to.” may ignore a child’s past experiences and instead assume that all children come from the same background. This is detrimental to children who have experienced trauma because they genuinely do not know what is appropriate behavior if it was never modeled for them (Howard, 2016). If children saw their parents manipulating each other or exhibiting unpredictable behavior daily, then those behaviors would be normal and acceptable for these children. Therefore, the SLP’s traditional behavior management strategies would be unproductive as the child would not understand why he or she is being punished due to the child’s belief that he or she has done nothing wrong.

Clinical Implications

The high correlation of certain subscales from the ARTIC-45 Education survey also provides useful insight into school-based speech-language pathologists’ approaches to behavior management. One subscale, *on-the-job behavior*, is highly correlated to three separate subscales: *reactions to work, underlying causes*, and *responses to problems*. These high correlations indicate the degree to which a speech-language pathologist is empathetic (trauma-informed) or controlling (traditional) in managing the behavior of a child affected by trauma relates to the speech-language pathologist’s ability to recognize the need for support, to understand the effects of prior experiences, and to provide relational responses. It is possible that a speech-language pathologist could develop a more empathetic approach to behavior management by receiving trauma-informed training addressing the issues of support, prior experiences, and responses. In addition to its high correlation with the *on-the-job behavior subscale*, the *reactions to work subscale* is also highly correlated with the *self-efficacy subscale*. This correlation stresses the

importance of support for speech-language pathologists to feel confident in appropriately handling the challenges of providing therapy to children with a history of trauma.

Although it may be possible to become trauma-informed through self-motivation or experience, no research has been conducted to determine the efficacy of these methods. However, research has been conducted that validates the efficacy of trauma-based training. Therefore, these trainings are the most common way to become trauma-informed. Trauma-based trainings include information on how to create a safe environment, provide emotional supports, and implement modifications to help identify and resolve trauma (Menschner & Maul, 2016). This highlights the importance of speech-language pathologists attending such trauma-informed trainings to improve their own clinical practice as seen through this research. Furthermore, becoming trauma-informed can help improve relationships with clients and improve the clients' progress.

Additional Limitations and Conclusions

Limitations of this study provide avenues for future research. First and foremost, there is no current research specifically addressing speech-language pathologists and implementation of trauma-informed care despite the knowledge that children who have experienced trauma often possess language deficits (Becker-Weidman, 2009). However, there is research concerning implementation and the benefits of trauma-informed care in schools for teachers, hospital employees, residential homes caregivers, and parents or legal guardians (Howard et al., 2014; Parris et al., 2015; Purvis et al., 2015; Menschner & Maul, 2016). Therefore, there is a need for research concerning implementation of trauma-informed care in a speech-language pathology setting. Another limitation to this study is it is possible that people's beliefs about trauma-informed care do not actually influence their behavior in the therapy room. A study could be done that links the ARTIC-45 Education survey to the actual behavior speech-language

pathologists implement in therapy rooms. Research is also needed to explore the extent to which training actually changes behavior as this study asked general information about training without looking at changed behavior after receiving training. Finally, further things to consider include how other factors and life experiences influence thoughts about behavior management and how clinicians change their thinking about behavior management if they know a child has experienced trauma.

Overall, this work provides preliminary evidence that most speech-language pathologists have the opportunity to improve their knowledge concerning trauma-informed care and implementation. Furthermore, even those speech-language pathologists who do receive trauma-informed care trainings either do not always feel confident in their ability to implement trauma-informed care or do not feel support from their work setting to implement trauma-informed care. However, much more research is needed to assess trauma-informed care knowledge and implementation by speech-language pathologists.

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