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# Evaluating the Facilitating Attuned Interactions (FAN) Approach: Vicarious Trauma, Professional Burnout, and Reflective Practice

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**Abstract**

*Background:* This evaluation examined the use of the Facilitated Attuned Interaction (FAN) approach to reflective practice among child welfare and early childhood professionals working with vulnerable children and families.

*Objective:* The aims of the current evaluation were to test (a) the role of vicarious trauma in predicting professional burnout, (b) the effect of reflective practice quality in decreasing professional burnout, and (c) the ability of reflective practice quality to lessen the relationship between vicarious trauma and professional burnout.

*Participants and Setting:* The sample included sixty-three professionals across diverse professions including child welfare social workers, early childhood educators, and child welfare attorneys.

*Methods:* Child welfare and early childhood professionals participating in reflective practice with consultants trained in the FAN approach to reflective practice completed surveys measuring their vicarious trauma, burnout, and the quality of reflective practice pre-intervention as well as nine months post-intervention.

*Results:* Results indicated that pre-intervention vicarious trauma directly and significantly increased child welfare and early childhood professionals' post-intervention reports of professional burnout,  $\beta = 0.42$ , [95% CI: 0.08, 0.76]. Post-intervention reflective practice quality did not directly nor significantly reduce professionals' post-intervention reports of professional burnout,  $\beta = -0.06$ , [95% CI:  $-0.46$ , 0.36]; however, the relationship between pre-intervention vicarious trauma and post-intervention burnout was significantly diminished by positive perceptions of reflective practice quality,  $\beta = -0.36$ , [95% CI:  $-0.69$ ,  $-0.02$ ].

*Conclusion:* Vicarious trauma was associated with increased rates of professional burnout among child welfare professionals. The current evaluation indicates the potential benefit of receiving high quality reflective practice with the FAN approach.

**1. Introduction**

Although many child welfare and early childhood professionals (e.g., social workers, attorneys, and early childhood educators) find their work with at-risk children and families rewarding, the high rates of turnover among these professionals are difficult to ignore (Grant, Jeon, & Buettner, 2019; Siebert, 2006; Stalker, Mandell, Frensch, Harvey, & Wright, 2007). Child welfare professionals experience extreme workloads with high emotional and cognitive demands (He, Phillips, Lizano, Rienks, & Leake, 2018; Jeon, Buettner, & Grant, 2018; Lizano & Barak, 2015). Inevitably, the emotionally difficult nature of child welfare work (e.g., engaging empathetically with at-risk and traumatized children and families) increases the risk of child welfare professionals experiencing their own form of trauma (Bride, 2007; Bride, Jones, &

MacMaster, 2007). Secondary traumatic exposure among child welfare professionals has been linked with increased intentions to leave the workforce, poor mental and physical health outcomes, and decreased quality of work (Hayes, 2013; Maslach, Schaufeli, & Leiter, 2001; Middleton & Potter, 2015).

In light of the previously identified needs, reflective practice – a relationship-focused approach to supervising professionals – has been identified as a promising method to cultivate and sustain emotional well-being in the presence of occupational stressors. In particular, scholars have found that reflective practice may have the capacity to ameliorate the negative effects of trauma-related work. For example, past research found that professionals more effectively and functionally managed difficult emotions, experienced increased insightfulness, and coped better with job-related stressors after participating in reflective practice (Frosch, Varwani, Mitchell, Caraccioli, & Willoughby, 2018; Many, Kronenberg, & Dickson, 2016; Virmani & Ontai, 2010). The Facilitating Attuned Interactions (FAN) approach is both a conceptual model for understanding and practical tool based on developmental principles for implementing reflective practice and may have important implications for the child welfare workforce (Gilkerson & Imberger, 2016; Gilkerson et al., 2012). Previous research found that, among home visitors, the FAN training fostered reflective capacity and prevented burnout (MacKinnon, 2019) as well as increased mindfulness and sense of self-efficacy (Spielberger, Burkhardt, Winje, & Gouvea, 2017; Spielberger, Burkhardt, Winje, Gouvea, & Barisik, 2016). Despite the potential for reflective practice to have positive benefits for a range of professionals working in child welfare fields, few published studies have examined the potential benefits of participating in the FAN approach among this population (Butler, Carello, & Maguin, 2017; Fansher, Zedaker, & Brady, 2019; Shepard, 2013).

In summary, extant research highlights the importance of identifying malleable ways to decrease vicarious trauma among child welfare professionals to prevent burnout (e.g., Branson, 2019; Shepard, 2013). As it is unlikely that the traumatic nature of these professionals' work will change, the current evaluation sought to examine whether the FAN approach to reflective practice can mitigate the relationship between vicarious trauma and burnout. In other words, professionals may experience consistent levels of vicarious trauma while working with children and families, but reflective practice may help them

better cope with their stress and prevent it from resulting in burnout. Knowledge on how to dampen the relations between vicarious trauma and burnout will likely inform organizational strategies to combat both vicarious trauma and burnout, ultimately improving the quality of services that vulnerable children and families receive from these professionals.

## **1.1 Vicarious trauma and professional burnout**

### *1.1.1 Vicarious trauma: Definition, prevalence, and negative effects*

The child welfare and early childhood workforce faces numerous difficulties in their unique line of work, and one noteworthy work-related obstacle is *vicarious trauma*. Vicarious trauma (also called secondary traumatic stress or compassion fatigue; Branson, 2019; Vrkleviski & Franklin, 2008) refers to a cumulative process of cognitive changes due to exposure to the experiences of traumatized clients that results in disruptions to identity, worldview, and beliefs about trust and safety (Branson, 2019; Canfield, 2005; McCann & Pearlman, 1990). When professionals seek to internally process or make meaning out of traumatic content instead of working out the meaning of difficult work experiences in a structured and safe environment with another professional such as a supervisor, they are more likely to experience vicarious trauma (McCann & Pearlman, 1990; Regehr, Hemsworth, Leslie, Howe, & Chau, 2004; Vrkleviski & Franklin, 2008).

Symptoms of vicarious trauma have been identified among various professionals including social workers, educators, intensive care nurses, criminal defense attorneys, and sexual assault advocates and counselors (Adams, Matto, & Harrington, 2001; Lawson, Caringi, Gottfried, Bride, & Hydon, 2019; Michalopoulos & Aparicio, 2012; Slattery & Goodman, 2009; van Mol, Kompanje, Beniot, Bakker, & Nijkamp, 2015; Vrkleviski & Franklin, 2008). Vicarious trauma results in symptoms similar to post-traumatic stress disorder, including hyper arousal, re-experiencing traumatic content, avoidance of traumatic materials, and depressive symptoms such as social withdrawal (Regehr et al., 2004). Vicarious trauma symptoms are associated with a wide range of negative impacts, including poor physical, emotional, cognitive, and spiritual well-being (Aparicio, Michalopoulos, & Unick, 2013; Dombo & Gray, 2013; Hayes, 2013; Sansbury, Simmelink-McCleary, Im, Becher, &

Brook-Lyon, 2014). Further, vicarious trauma may result in increased cynicism toward traumatized clients as well as the adoption of inappropriate roles with clients (Shepard, 2013). Many child welfare professionals affected by vicarious trauma experience professional burnout as evidenced by missed work, loss of motivation, increased interpersonal distance with their clients and intimate others, and stress-induced medical conditions. Further, many eventually leave the child welfare profession altogether (Branson, 2019; Devilly, Wright, & Varker, 2009). Therefore, the need for reducing the impact of vicarious trauma on child welfare and early childhood professionals is critically important for the professionals and the clients with whom they work.

### *1.1.2. Professional burnout: Definition, links with vicarious trauma, and distinction from vicarious trauma*

Burnout, or the negative outcomes of work-related stress, is characterized by three clusters of symptoms: emotional exhaustion, depersonalization, and cynicism (Maslach & Jackson, 1981; Maslach et al., 2001). Emotional exhaustion is the sense of wearing out and loss of energy for or sense of fatigue around one's work. Depersonalization is detachment and distancing oneself from one's work and the people with whom one works. Finally, cynicism refers to a lack of feelings of personal accomplishment about one's work or a sense of inefficacy about the work (Leiter & Maslach, 2016). Many of these symptoms of professional burnout, such as exhaustion and cynicism, are known to be connected to vicarious trauma, suggesting that vicarious traumatization is a contributing factor to developing burnout (Butler et al., 2017; Fansher et al., 2019). The significant associations between stress, vicarious trauma, and burnout – which are endemic in the child welfare workforce – contribute to heightened and persistent job turnover rates among child welfare professionals, leading to decreased institutional knowledge and increased workplace stress in child welfare organizations as well as compromised quality of services for children and families (Maslach et al., 2001). High job demands, including difficult work content and high workloads, and perceived inadequate organizational social support have long been recognized as predictors of human service workers' work outcomes (including client outcomes, absenteeism, turnover, etc.) due to work-related stress, also known as burnout (Boyas & Wind, 2010; Maslach & Leiter, 2008).

Although vicarious trauma and burnout are sometimes used to refer to the same phenomenon (e.g., Branson, 2019), recent evidence suggests that vicarious trauma is distinct from and specifically precedes burnout (Butler et al., 2017; Fansher et al., 2019). For example, Butler et al. (2017) found that experiencing re-traumatization and vicarious traumatization during a mental health training program predicted burnout among participating students. Similarly, Fansher et al. (2019) found that direct exposure to traumatic content was a significant and robust predictor of burnout among child forensic interviewers. Theoretically, burnout is best understood as a phenomenon that can occur in any profession under high work demands, difficult agency structures, and challenging work content, whereas vicarious trauma is directly derived from attempts to process the difficult content of an individual's work (Newell & MacNeil, 2010). Based on these definitions and previous findings, the current evaluation examines the role of vicarious trauma in predicting burnout.

### ***1.2. Supervision and the FAN approach of reflective practice: Interrupting the vicarious trauma to burnout process.***

Finding innovative solutions to help promote workplace health and resilience among the child welfare and early childhood workforce is critical. One potentially impactful method of bolstering the emotional well-being of trauma-exposed professionals is to integrate reflective practice into their workplace. Engaging in reflection, or intentionally thinking about one's experiences and reactions, has long been purported as an effective and meaningful way to develop professional skills (e.g., Dewey, 1933). Schön (1983) argued that reflection is necessary for professional development and involves critically thinking about thoughts, feelings, and behavior in the moment, after the moment has taken place, and during preparation for future moments (Thompson & Pascal, 2012). Reflective practice is used to engage in thinking about experiences, knowledge, and beliefs about oneself and others with the intention of having deeper understanding and increased awareness (Brandt, 2014).

Reflective practice in the workplace provides the opportunity for professionals to strategically reflect on their work within a safe and trusting relationship, which is a key component of effective reflective practice (Heller & Gilkerson, 2009; Osofsky & Weatherston, 2016).



Reflective practice offers a time to process and explore negative emotions and cognitions elicited through human services work that can facilitate active “meaning making” out of the emotional content of the work (Biggart, Ward, Cook, & Schofield, 2017). When professionals attempt to make sense of the traumatic content of their work on their own, they can increase the level of distress they feel from these experiences (McCann & Pearlman, 1990; Regehr et al., 2004; Vrkleviski & Franklin, 2008). Active meaning making through reflective practice can interrupt this ongoing process of passive meaning making, preventing a rise in vicarious trauma. Professionals engaging in reflective practice in a structured and safe environment can curiously explore thoughts, feelings, challenges, and strengths in order to obtain a more integrated and deeper understanding of the work they do with children and families as well as increase their self-awareness and reflective functioning (Heffron, Reynolds, & Talbot, 2016; Shea, 2019; Tomlin & Heller, 2016;

Weatherston & Tableman, 2015). Although there is scant research measuring reflective practice experiences among child welfare and early childhood professionals, evidence supporting the implementation of reflective practice is steadily growing. For example, a recent study of early childhood interventionists participating in reflective practice found significant increases in participants’ self-efficacy, work satisfaction, and ability to cope with workplace stressors (Frosch et al., 2018). Drawing from critical elements of reflective practice, the Facilitating Attuned Interactions (FAN) approach, developed at the Erikson Institute in 2010, provides a relationship-based framework to aid supervisors and consultants in mitigating the effects of the emotionally taxing nature of human services and early childhood work on the child welfare workforce (Gilkerson & Imberger, 2016; Gilkerson et al., 2012). See Fig. 1 for a diagram. Specifically, the FAN is a structured approach that provides a common language and simple strategies to implement reflective practice (Gilkerson & Heffron, 2016). The FAN approach relies on attunement between the provider and recipient to ensure emotional safety and connection and to serve as a practical tool (Gilkerson & Imberger, 2016). Attunement (i.e., having the feeling of being understood and feeling connected) creates the space to be vulnerable, learn, and experience new ways of relating (Heffron, Gilkerson, et al., 2016). The FAN approach has evidenced promise and utility as a conceptual framework for understanding and a practical

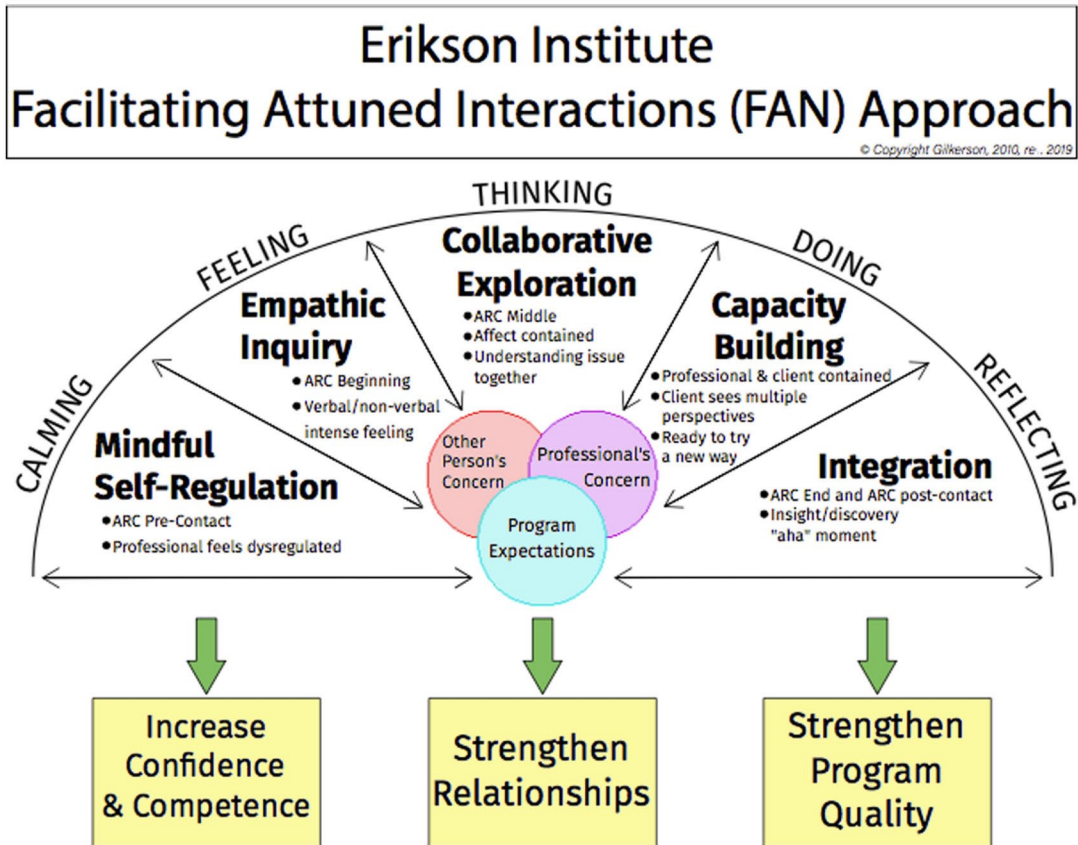


Fig. 1. Facilitating Attunes Interaction (FAN) approach diagram.

tool for implementing reflective practice (Cosgrove et al., 2019; Gilkerson, Barnes, Osta, Pryce, & Justice, 2017; Spielberger et al., 2017, 2019; MacKinnon, 2019). Although more research is needed to fully understand its ability to improve outcomes for the child welfare and early childhood workforce; thus, examining the utility of the FAN approach among this population is the core aim of the current evaluation.

### 1.3. Aims and hypotheses of the current evaluation

The current project leveraged longitudinal data from an evaluation of the FAN approach to reflective practice among a small and diverse group of child welfare and early child s to test the following evaluative research questions:

*1.3.1. Does pre-intervention vicarious trauma predict increased postintervention professional burnout among child welfare and early childhood professionals?*

**rH: 1.** We hypothesized that higher levels of vicarious trauma before the intervention would predict higher levels of professional burnout nine months later.

*1.3.2. Does the quality of reflective practice using the FAN approach predict post-intervention levels of professional burnout among child welfare and early childhood professionals?*

**rH: 2.** We expected that higher reflective practice quality would directly predict lower levels of post-intervention professional burnout.

*1.3.3. Does the quality of reflective practice using the FAN approach diminish the relationship between pre-intervention vicarious trauma and post-intervention professional burnout among child welfare and early childhood professionals?*

**rH: 3.** We also expected that reflective practice quality would reduce the association between vicarious trauma and postintervention professional burnout, thereby preventing heightened experiences of vicarious trauma from leading to increased professional burnout.

## **2. Method**

### *2.1. Training process for FAN*

In the fall of 2016, the Nebraska Center for Reflective Practice collaborated with local university, non-profit, and state-level partners to implement a training of the FAN approach to enhance reflective practice among child welfare and early childhood professionals. These collaborating agencies and programs identified five individuals from their respective systems to be trained to provide reflective practice. The training process included two parts: an initial training and six months of practicing the FAN with mentoring to ensure integration and fidelity.

The initial training provided the theory of change guiding the FAN approach, skills and strategies to use to engage in reflective practice using the conceptual FAN, and time to practice the FAN approach with feedback from the training facilitators. After the training, trainees provided reflective practice using the FAN approach to invited child welfare professionals, including child welfare social workers, child welfare attorneys, and early childhood educators serving low-income families. These reflective practice sessions were conducted approximately twice per month for nine months in either small groups or one on-one settings. The trainees also received monthly mentoring from the creator of the FAN approach via Zoom or telephone for a minimum of eight time support fidelity to the FAN approach.

## **2.2. Sample and procedures**

Sixty-three child welfare professionals were identified by the FAN providers, hereinafter called “consultants,” through their professional networks and from their respective human service systems to receive reflective practice during the training process. Criteria for inclusion in the reflective practice program and the accompanying evaluation were (a) being 19 years of age or older, (b) participating in reflective practice with the consultant that identified them, and (c) currently working professionally with at risk children and/or families. All of the professionals identified by the consultants were invited by email to complete a similar online survey at two time points: approximately two weeks before they began participating in reflective practice (i.e., Time 1) and nine months after starting to participate in reflective practice (i.e., Time 2). Those who did not initially complete the survey received email reminders for two weeks. All data used for the current evaluation were provided by the child welfare and early childhood professionals who participated in reflective practice using the FAN approach. The sample included child welfare caseworkers and mental health providers ( $n = 10$ , 16%), child welfare legal professionals ( $n = 47$ , 75%), and early childhood educators serving families living in low-income environments ( $n = 6$ , 10%). The majority of the sample identified as female (75%) and Caucasian (83%), African-American (5%), or Hispanic (3%). On average, professionals in the sample had been in a child welfare profession for 3.05 years ( $SD = 1.67$ ), were 39.87 years old ( $SD = 13.09$ ), and most had a master’s or professional degree (75%).

## 2.3. Measures

### 2.3.1. Vicarious trauma (Time 1)

Professionals reported their subjective experiences of traumatization due to working with traumatized clients via the Vicarious Trauma Scale (VTS; Vrkleviski & Franklin, 2008). They responded to eight items on a seven-point Likert-type scale (1 = strongly disagree, 4 = neither agree nor disagree, 7 = strongly agree). The VTS assesses subjective levels of distress associated with working with traumatized clients. Example items include “I find myself thinking about distressing material at home,” and “I find it difficult to deal with the content of my work.” This scale has been previously used to detect levels of vicarious trauma among criminal attorneys and social workers (Aparicio et al., 2013; Vrkleviski & Franklin, 2008). For the current evaluation, responses were summed to create scale scores ranging from 8 to 56. Higher scale scores indicated more vicarious trauma symptoms. Scale reliability was excellent (Time 1:  $\alpha = 0.90$ ).<sup>1</sup>

### 2.3.2. Professional burnout (Time 1 & Time 2)

Professionals reported their professional burnout via the Maslach Burnout Inventory – Human Services Survey (Maslach & Jackson, 1986). The MBI-HSS was selected over other measures of professional burnout and work-related stress (such as the ProQoL, the Copenhagen Burnout Inventory, and the Human Services Job Satisfaction Questionnaire; Hertiage, Rees, & Hegney, 2018; Kristensen, Borritz, Villadsen, & Christensen, 2005; Shapiro, Burkey, Borman, & Walker, 1997) for two main reasons: (1) the MBI is widely used in research on child

1. VTS was also measured at Time 2 ( $\alpha = .88$ ). The VTS scores at Time 1 and Time 2 were so highly correlated ( $r = 0.88$ ,  $p < .001$ ) to be indistinguishable. When VTS Time 2 scores were included in the tested path models, the models failed to converge and were therefore not interpretable due to a non-positive definite covariance between VTS at Time 1 and Time 2. The presence and magnitude of the component fit indices for models including VTS at Time 2 did not differ from the final models; however, the global model fit was not interpretable. The non-positive definite covariance was caused by the high correlation between VTS at Time 1 and Time 2 and the number of parameters as compared to the number of variables (Wothke, 1993). Therefore, and based on model building practices that prioritize parsimony (Preacher, 2006), VTS at Time 2 was excluded from the models testing our hypotheses because of the collinearity and because it was not central to our research questions. See the Discussion for further consideration of the implications and limitations.

welfare and early childhood workers (Kristensen et al., 2005), and (2) the MBI measures our conceptualization of burnout as a pattern of symptoms and outcome that does not overlap with vicarious trauma as a process of exposure to traumatic content (Maslach & Jackson, 1986; Vrkleviski & Franklin, 2008). Participants rated the frequency with which they experienced professional burnout via 22 items on a seven point frequency scale (0 = never, 3 = a few times a month, 6 = every day). all day is really a strain for me.”

Responses were then aggregated according to the three subscales that the MBI-HSS measures: emotional exhaustion, depersonalization, and personal accomplishment. The *emotional exhaustion* subscale is comprised of nine items that measure the professionals' feelings of being emotionally overextended and exhausted by work. Scale reliability at each time point was excellent (Time 1:  $\alpha = 0.91$ ; Time 2:  $\alpha = 0.91$ ). The *depersonalization* subscale is comprised of 5 items that measure the professionals' impersonal response towards their clients. Scale reliability at each time point was good (Time 1:  $\alpha = 0.81$ ; Time 2:  $\alpha = 0.81$ ). Higher sum scores on the *emotional exhaustion* and *depersonalization* subscales indicate higher experiences of burnout. The *personal accomplishment* subscale is comprised of eight items that measure the professionals' feelings of competence and successful achievement in their work. Scale reliability at each time point was good (Time 1:  $\alpha = 0.83$ ; Time 2:  $\alpha = 0.82$ ). Lower sum scores on the *personal accomplishment* subscale indicate higher experiences of burnout. For the current study, the *personal accomplishment* subscale was recoded so that higher sum scores indicated higher experiences of burnout so as to facilitate proper estimation in a latent construct of professional burnout. Professional burnout at Time 1 was used as a control variable in all analyses.

### 2.3.3. Reflective practice quality (Time 2)

Professionals reported on the quality of reflective practice via the Reflective Supervision Rating Scale (RSRS; Gallen, Ash, Smith, Franco, & Willford, 2016). The RSRS consists of 17 items, which assess reflective practice quality on four domains: (1) reflective process and skills (six items), (2) mentoring (six items), (3) supervision structure (three items), and (4) mentalization (five items). Some items assess two domains. Each item is measured on a five-point Likert scale (1 =

strongly disagree, 5 = strongly agree). For the current evaluation, a total Reflective Practice Quality score was obtained by summing the responses on the 17 items. Higher scores indicated higher quality reflective practice. The internal reliability for Reflective practice Quality was excellent (Time 2:  $\alpha = 0.98$ ).

#### *2.3.4. Covariates (Time 1 & Time 2)*

Demographic information and the baseline measure of professional burnout (Time 1) were included as control variables in the analyses. Demographic information included minority status, years spent working in child welfare, age (in years), gender (coded: 1 = male, 0 = female), type of profession (coded: 1 = legal, 0 = other), and level of education (with higher values indicating more education). Reflective practice attendance (obtained at Time 2 and coded: 1 = 0–3 sessions, 2 = 4–6 sessions, 3 = 7–9 sessions, 4 = 10–12 sessions, 5 = 15 sessions, and 6 = > 15 sessions) was also used as a covariate.

### **2.4. Analytic plan**

#### *2.4.1. Data inspection procedures*

Data were inspected for normality via SPSS 25 prior to testing study hypotheses. Skewness and kurtosis were examined to determine the need for data transformation to maintain assumptions of normality (Bland & Altman, 1996a, 1996b). Most variables fell within the adequate values of  $-2$  to  $+2$  skewness and kurtosis (Field, Miles, & Field, 2013; Gravetter & Wallnau, 2011; Trochim, 2006). MBI subscales for emotional exhaustion and depersonalization were transformed because they evinced non-normality (Bland & Altman, 1996a, 1996b). Outliers were also examined to ensure data normality. No variables consistently evidenced outliers ( $3 \times SD \geq M$ ) were made to the data to address outliers.

#### *2.4.2. Missing data rates and procedures*

Across time points, 28.57% of data were missing, which is within the approximate threshold for the reliable estimation of missing data (Royston, 2004). Missingness was not significantly related to any

preintervention variables, including reports of vicarious trauma and professional burnout. Number of years in child welfare approached a significant relation to missingness such that those with more years spent in the child welfare field had fewer missing data ( $r = -0.24$ ,  $p = .10$ ). There was no evidence that missingness was related to study variables, which supported a missing-completely-at-random assumption (Little & Rubin, 2002). Missing data were estimated using the full-informative maximum likelihood algorithm (Enders & Bandalos, 2001). Multiple imputation, which involves the creation of multiple datasets based on the existing data and from which parameter estimates are obtained, was used to estimate missing data for models that evinced issues with model convergence by reducing sample bias and increasing data estimation precision (Asparouh 1987; Schafer, 1997; Sterne et al., 2009).

#### *2.4.3. Analytic information*

Structural equation modeling was conducted with Mplus 7.4 (Muthén & Muthén, 2015). Maximum likelihood estimation was used as the model estimator (Fisher, 1934; Yuan & Bentler, 2000). Model fit was evaluated using absolute fit indices such as the Chi-Square Test of Model Fit and relative indices such as the Comparative Fit Index (CFI) (Bentler, 1990), the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990), and the Standardized Root Mean Square Residual (SRMR; Hu & Bentler, 1999). During model building, the results of statistical models were reviewed for offending estimates such as negative residual variances and standardized coefficients larger than one (Brown, 2014), and no offending estimate in the final versions of the models used for this study.

#### *2.4.4. Statistical models*

In all models, the following covariates and controls were used: baseline (Time 1) reports of professional burnout, professionals' demographic information (obtained at Time 1), and reflective practice attendance (obtained at Time 2). Separate models were used for each step of the analyses, and model trimming was conducted independently in each step whereby non-significant covariates/controls were removed



when they revealed no substantial impact on model fit. As recommended by Anderson and Gerbing (1988), preliminary analyses were conducted before testing Aims 1, 2, and 3 to confirm a latent factor of professional burnout. After the latent factor of professional burnout was confirmed, the three study aims were individually examined via direct effects, promotive effects, and protective effects models, respectively. The presence of a direct effect of vicarious trauma on professional burnout would indicate that burnout at Time 2 was predicted by vicarious trauma before reflective practice began. The presence of a promotive effect of quality of reflective practice on professional burnout would indicate that burnout at Time 2 was also predicted by recipients' perceptions of the reflective practice they received over the nine-month period. Direct and promotive effects models were tested via multiple linear regression, and the protective effects model was examined with an observed interaction (i.e., the product term *vicarious trauma*  $\times$  *reflective practice quality*), also called moderation, following leading statistical recommendations (Hayes & Rockwood, 2017). Moderation was deemed significant if professional burnout evinced a significant path regressed onto the observed interaction (i.e., the product term *vicarious trauma*  $\times$  *reflective practice quality*).

### 3. Results

#### 3.1. Bivariate associations

Bivariate correlations revealed that vicarious trauma at Time 1 was positively and significantly correlated with emotional exhaustion at Time 1 ( $r = 0.67, p < .001$ ) and Time 2 ( $r = 0.59, p < .01$ ), and depersonalization at Time 1 ( $r = 0.52, p < .001$ ). Vicarious trauma at Time 1 was also significantly and negatively correlated with personal accomplishment at Time 1 ( $r = -0.39, p < .01$ ). The MBI subscales were strongly and significantly correlated with each other at Time 1 (all  $r_s > 0.50, p < .001$ ) and at Time 2 (all  $r_s > 0.60, p < .01$ ). Reflective practice quality was positively and significantly correlated with reflective practice attendance ( $r = 0.38, p < .05$ ) but not the other variables. More information on correlations as well as descriptive statistics can be found in Table 1.

**Table 1.** Bivariate Correlations, Means, and Standard Deviations (N = 63)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Vicarious trauma <sub>Time1</sub>	—												
2. Emotional exhaustion <sub>Time1</sub>	0.67***	—											
3. Depersonalization <sub>Time1</sub>	0.52***	0.57***	—										
4. Personal accomplishment <sub>Time1</sub>	-0.39**	-0.30*	-0.45**	—									
5. Education <sub>Time2</sub>	0.23	0.13	0.28*	-0.05	—								
6. Years in child welfare <sub>Time2</sub>	-0.01	-0.16	0.01	0.26	0.39**	—							
7. Legal profession <sub>Time2</sub>	0.34**	0.07	0.33*	-0.19	0.62***	0.11	—						
8. Gender <sub>Time2</sub>	0.02	-0.20	0.04	-0.04	0.08	0.12	0.14	—					
9. Attendance <sub>Time2</sub>	0.06	-0.06	0.10	-0.10	0.02	0.04	-0.03	-0.01	—				
10. Reflective practice quality <sub>Time2</sub>	-0.13	-0.15	-0.01	-0.14	0.19	0.18	0.21	0.03	0.38*	—			
11. Emotional exhaustion <sub>Time2</sub>	0.59**	0.70**	0.53*	-0.36	0.16	-0.07	0.39	-0.43	0.33	0.37	—		
12. Depersonalization <sub>Time2</sub>	0.42	0.56*	0.25	-0.41	0.22	-0.08	0.40	-0.41	0.39	0.42	0.83***	—	
13. Personal accomplishment <sub>Time2</sub>	-0.42	-0.24	-0.16	0.37	0.00	0.47	-0.24	0.35	-0.33	-0.00	-0.63**	-0.74**	—
Mean	36.67	21.02	8.93	29.14	5.41	3.05	0.75	0.16	1.58	63.68	18.39	10.00	30.25
SD	9.85	11.20	5.73	6.72	1.04	1.67	0.44	0.37	0.69	11.00	9.59	6.90	5.18

Time 1 = pre-intervention scores; Time 2 = nine months post-intervention

Years in Child Welfare: 1 = less than a year, 2 = 1–3 years, 3 = 4–6 years, 4 = 7–9 years, 5 = 10 + years

Education: 1 = high school, 2 = some college, 3 = bachelors, 4 = some graduate school, 5 = master's, 6 = professional degree, 7 = doctorate

Legal profession: 0 = non-legal, 1 = legal.

Gender: 0 = female, 1 = male

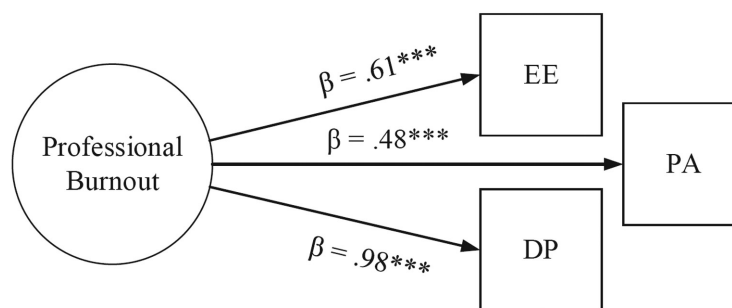
\*  $p < .05$ ; \*\*  $p < .01$ , \*\*\*  $p < .001$

### 3.2. Preliminary analyses

A confirmatory factor analysis was conducted to establish the factor structure of burnout at Time 2. Personal accomplishment was recoded such that higher values indicated greater levels of professional burnout. Emotional exhaustion and depersonalization subscales were logarithmically transformed due to positive skew. Results indicated that the three indicators (i.e., professional burnout subscales) were significantly predicted by a latent construct of burnout (range:  $\lambda = 0.48-0.98$ ,  $p < .001$ ). See Fig. 2 for a diagram of the statistical model as well as Table 2 for the model estimates.

### 3.3. Aim 1: Direct effect of vicarious trauma on professional burnout

The direct link between vicarious trauma at Time 1 and the latent construct of professional burnout at Time 2 was tested. Covariates as well as reports of pre-intervention professional burnout were added to the model. Model trimming was conducted such that paths that were non-significant and did not contribute to model fit were removed. Model fit was good: ( $\chi^2(24) = 8.87$ ,  $p = .23$ ; CFI = 0.92; RMSEA = 0.06; SRMR = 0.13). Professionals' reports of pre-intervention vicarious trauma were positively and significantly predictive of their post-intervention reports of professional burnout obtained nine r ( $\beta = 0.42$ , 95% CI [0.08, 0.76],  $p < .05$ ). See Table 2 for the model estimates.



**Fig. 2.** Preliminary analysis: Confirmatory factor analysis of professional burnout (N = 63). Note. Model fit was just identified. EE = Emotional exhaustion. PA P = Depersonalization.

\*\*\* $p < .001$ .

**Table 2** Parameter Estimates (N = 63).

<i>Preliminary Analyses: Factor Loadings</i>	$\lambda$ (SE)	R <sup>2</sup>	$\lambda - 95\% \text{ CI}$
MBI <sub>Time 2</sub> → Emotional exhaustion <sub>Time 2</sub>	0.58 (0.14) <sup>***</sup>	0.34	[0.32, 0.85]
MBI <sub>Time 2</sub> → Personal achievement <sub>Time 2</sub>	0.46 (0.13) <sup>***</sup>	0.22	[0.21, 0.72]
MBI <sub>Time 2</sub> → Depersonalization <sub>Time 2</sub>	0.98 (0.18) <sup>***</sup>	0.95	[0.63, 1.32]
<i>Aim 1: Direct Effect</i>	B (SE)	$\beta$	$\beta - 95\% \text{ CI}$
VT <sub>Time 1</sub> → MBI <sub>Time 2</sub>	0.02 (0.01) <sup>**</sup>	0.42	[0.01, 0.34]
Education <sub>Time 2</sub> → MBI <sub>Time 2</sub>	-0.33 (0.09) <sup>***</sup>	-0.71	[-0.50, -0.16]
MBI <sub>Time 1</sub> → MBI <sub>Time 2</sub>	-0.06 (0.03) <sup>*</sup>	-0.34	[-0.12, -0.01]
Profession <sub>Time 2</sub> → MBI <sub>Time 2</sub>	0.84 (0.23) <sup>***</sup>	0.80	[0.38, 1.30]
Attendance <sub>Time 2</sub> → MBI <sub>Time 2</sub>	0.18 (0.06) <sup>**</sup>	0.27	[0.06, 0.29]
Gender <sub>Time 2</sub> → MBI <sub>Time 2</sub>	-0.70 (0.16) <sup>***</sup>	-0.34	[-1.01, -0.40]
YCW <sub>Time 2</sub> → MBI <sub>Time 2</sub>	0.06 (0.03) <sup>*</sup>	0.22	[0.01, 0.12]
<i>Aim 2: Promotive Effect</i>	B (SE)	$\beta$	$\beta - 95\% \text{ CI}$
VT <sub>Time 1</sub> → MBI <sub>Time 2</sub>	0.02 (0.01) <sup>**</sup>	0.43	[0.01, 0.03]
Education <sub>Time 2</sub> → MBI <sub>Time 2</sub>	-0.29 (0.12) <sup>*</sup>	-0.64	[-0.53, -0.06]
YCW <sub>Time 1</sub> → MBI <sub>Time 2</sub>	0.06 (0.03) <sup>*</sup>	0.21	[0.00, 0.11]
Profession <sub>Time 2</sub> → MBI <sub>Time 2</sub>	0.76 (0.28) <sup>**</sup>	0.74	[0.21, 1.31]
Gender <sub>Time 2</sub> → MBI <sub>Time 2</sub>	-0.69 (0.16) <sup>***</sup>	-0.57	[-1.00, -0.38]
RSRS <sub>Time 2</sub> → MBI <sub>Time 2</sub>	-0.003 (0.01)	-0.06	[-0.02, 0.02]
Attendance <sub>Time 2</sub> → MBI <sub>Time 2</sub>	0.17 (0.08) <sup>*</sup>	0.26	[0.02, 0.31]
MBI <sub>Time 1</sub> → MBI <sub>Time 2</sub>	-0.05 (0.03)	-0.31	[-0.11, 0.01]
MBI <sub>Time 1</sub> → RSRS <sub>Time 2</sub>	1.75 (0.46) <sup>***</sup>	0.46	[0.85, 2.65]
Profession <sub>Time 2</sub> → RSRS <sub>Time 2</sub>	-17.45 (4.54) <sup>***</sup>	-0.76	[-26.35, -8.54]
Education <sub>Time 2</sub> → RSRS <sub>Time 2</sub>	9.38 (2.08) <sup>***</sup>	0.92	[5.31, 13.45]
Attendance <sub>Time 2</sub> → RSRS <sub>Time 2</sub>	-3.93 (1.90) <sup>*</sup>	-0.27	[-7.65, -0.21]
<i>Aim 3: Protective Effect</i>	B (SE)	$\beta$	$\beta - 95\% \text{ CI}$
VT <sub>Time 1</sub> → MBI <sub>Time 2</sub>	0.07 (0.03) <sup>*</sup>	0.61	[0.08, 1.14]
Education <sub>Time 2</sub> → MBI <sub>Time 2</sub>	-0.60 (0.31)	-0.61	[-1.16, -0.06]
YCW <sub>Time 2</sub> → MBI <sub>Time 2</sub>	0.14 (0.07)	0.22	[0.00, 0.44]
Profession <sub>Time 2</sub> → MBI <sub>Time 2</sub>	1.75 (0.75) <sup>*</sup>	0.74	[0.21, 1.26]
Gender <sub>Time 2</sub> → MBI <sub>Time 2</sub>	-1.81 (0.47) <sup>***</sup>	-0.65	[-0.88, -0.41]
RSRS <sub>Time 2</sub> → MBI <sub>Time 2</sub>	-0.01 (0.02)	-0.13	[-0.61, 0.35]
Attendance <sub>Time 2</sub> → MBI <sub>Time 2</sub>	0.43 (0.19) <sup>*</sup>	0.28	[0.03, 0.53]
MBI <sub>Time 1</sub> → MBI <sub>Time 2</sub>	-0.14 (0.08)	-0.35	[-0.71, 0.00]
VT <sub>Time 1</sub> X RSRS <sub>Time 2</sub> → MBI <sub>Time 2</sub>	-0.00 (0.00) <sup>*</sup>	-0.36	[-0.68, -0.02]
MBI <sub>Time 1</sub> → RSRS <sub>Time 2</sub>	0.98 (0.97)	0.23	[-0.21, 0.66]
Profession <sub>Time 2</sub> → RSRS <sub>Time 2</sub>	-12.76 (4.27) <sup>**</sup>	-0.48	[-0.76, -0.20]
Education <sub>Time 2</sub> → RSRS <sub>Time 2</sub>	8.52 (1.64) <sup>***</sup>	0.79	[0.51, 1.07]
Gender <sub>Time 2</sub> → RSRS <sub>Time 2</sub>	2.12 (4.16)	0.07	[-0.20, 0.33]

Time 1 = pre-intervention scores; Time 2 = nine months post-intervention

MBI = Professional burnout. VT = Vicarious trauma

YCW = Years in child welfare field

RSRS = Reflective practice quality

Attendance = Reflective practice attendance

Gender coded: 1 = male, 0 = female

Profession coded: 1 = legal profession, 0 = other profession

Unstandardized coefficients: \* p < .05; \*\* p < .01; \*\*\* p < .001

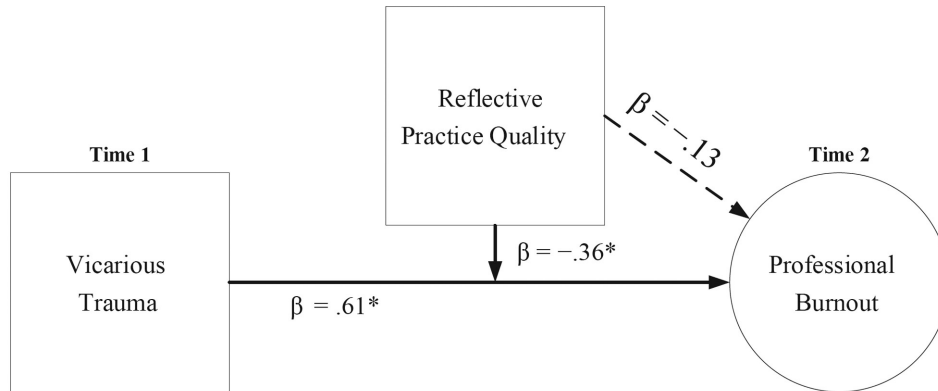
### **3.4. Aim 2: Promotive effect of reflective practice quality**

Reflective practice quality at Time 2 was added to the model to assess for a direct, promotive effect on professional burnout at Time 2 after controlling for the effects of pre-intervention vicarious trauma, reports of pre-intervention professional burnout, reflective practice attendance, and demographic variables on burnout. Model fit was good: ( $\chi^2(29) = 35.98, p = .17$ ; CFI = 0.91; RMSEA = 0.07; SRMR = 0.13). Post-intervention reports of reflective practice quality were not significantly associated with post-intervention reports of professionals' burnout obtained after nine months of reflective practice ( $\beta = -0.06$ , 95% CI [-0.46, 0.36],  $p > .05$ ). See Table 2 for the model estimates.

### **3.5. Aim 3: Protective effect of reflective practice quality**

Contemporary approaches to moderation do not require that a main (i.e., direct, promotive) effect is present between the dependent variable and the moderator to formally test for moderation effects (i.e., crossover interactions; Wu & Zumbo, 2008; Kraemer, Kiernan, Essex, & Kupfer, 2008). Therefore, we proceeded with the test of the protective effect of post-intervention reflective practice quality on the relationship between pre-intervention vicarious trauma and post-intervention professional burnout.

To examine the moderating effect of reflective practice quality on the relationship between vicarious trauma and professional burnout, the *vicarious trauma*  $\times$  *reflective practice quality* product term was added to the model. The model controlled for pre-intervention reports of burnout, number of reflective practice sessions attended by the end of the nine-month intervention period, and demographics variables on post-intervention reports of professional burnout. During the model building phase, issues of model non-convergence were encountered and subsequently were ameliorated with the use of multiple imputation (datasets:  $n = 5$ ), which is unsurprising as multiple imputation is one of the best performing methods for missing data estimation (McNeish, 2017). All five datasets converged successfully and model fit (the indices of which were averaged across the five imputed datasets) was acceptable: ( $\chi^2(20) = 31.49, p = .04$ ; CFI = 0.89; RMSEA = 0.10; SRMR = 0.15). Post-intervention reflective practice quality significantly reduced the strength of the relationship between levels of

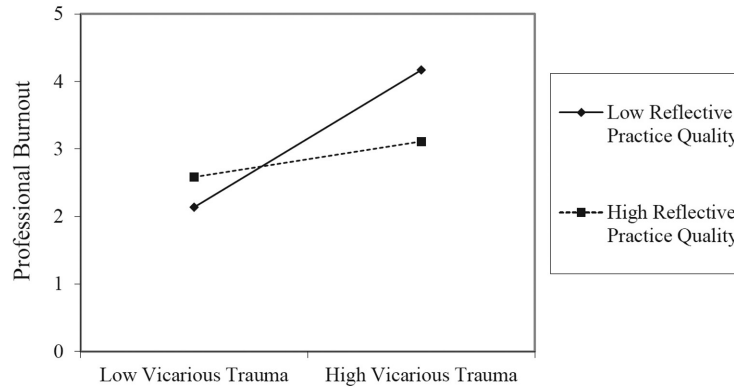


**Fig. 3.** Protective effect of reflective practice quality on the link between vicarious trauma and Professional burnout (N = 63). Note. Model fit was adequate: ( $\chi^2(20) = 31.49, p = .04$ ; CFI = 0.89; RMSEA = 0.10; SRMR = 0.15). Profession, education, gender, years in child welfare field, and reflective practice attendance were included as covariats (not shown y). Dashed line indicates non-significant path. \* $p < .05$ .

pre-intervention vicarious trauma and post-intervention professional burnout after nine months of reflective practice ( $\beta = -0.36$ , 95% CI  $[-0.69, -0.02]$ ,  $p < .05$ ). Receiving high quality reflective practice significantly reduced the relation between vicarious trauma at Time 1 and professional burnout at Time 2. Recipients who reported higher rates of vicarious trauma and received high quality reflective practice reported lower rates of professional burnout as compared to those who reported high vicarious trauma but received low quality reflective practice. There was no difference in professional burnout for those with low vicarious trauma regardless of reflective practice quality. See Figs. 3 and 4 for a diagram of the statistical model and a graph of the moderation results, respectively, as well as Table 2 for the model estimates.

#### 4. Discussion

The present evaluation utilized longitudinal data from an implementation of reflective practice to examine links between vicarious trauma, professional burnout, and reflective practice among a diverse group of child welfare and early childhood professionals. The evaluation provided promising evidence that engagement in high quality reflective practice disrupts the link between vicarious trauma and professional burnout. These findings build on previous research that has found



**Fig. 4.** Protective effect of reflective practice quality on the link between vicarious trauma and professional burnout. *Note.* Latent variable intercept values are set to zero by default; thus, the y-axis values of this graph are arbitrary.

that child welfare and early childhood professionals can benefit from vital supports such as reflective practice, such as increasing self-efficacy and a sense of belonging (Cigala, Venturelli, & Bassetti, 2019), as well as decrease the impact of exposure to negative work-related stressors and potentially leading to healthier and more resilient outcomes (see Biggart et al., 2017).

#### **4.1. Aim 1: Direct effect of vicarious trauma on professional burnout**

The first aim of the current evaluation was to examine the direct effect of vicarious trauma on professional burnout. We anticipated that higher levels of pre-intervention vicarious trauma would lead to significantly higher levels of professional burnout nine months later. This hypothesis was supported by the data, which showed that child welfare professionals' vicarious trauma significantly and positively predicted levels of professional burnout. This finding complements previous research showing that job burnout and distress resulting from traumatic content among individuals working in human service professions are related (see Branson, 2019; Fansher et al., 2019). These data also suggest that there is a need to address the issue of vicarious trauma in order to reduce levels of professional burnout among the child welfare and early childhood workforce. Without evidence-based interventions that can ameliorate professional burnout among child welfare professionals, the negative impacts of workplace stressors

endemic to the child welfare and early childhood fields (e.g., heightened levels of job turnover, low levels of institutional knowledge, increased workplace stress; Maslach et al., 2001) on professionals is unlikely to change. Additionally, our results revealed a need to examine the role of job tenure and job type in the associations between vicarious trauma and professional burnout. Consistent with previous research, we found that more years working in a child welfare and early childhood profession significantly predicted professional burnout (see Table 2; see Fansher et al., 2019). Further research with a larger sample of child welfare professionals is needed to identify if the type of child welfare profession (e.g., early childhood educators, social workers, and attorneys) or individual protective factors (e.g., coping mechanisms, sense of belonging, self-efficacy beliefs, agency, self-care, personal social support) differentially impact the link between vicarious trauma and professional burnout.

#### ***4.2. Aim 2: Promotive effect of reflective practice quality***

The second aim of our study was to examine the promotive impact that reflective practice quality had on levels of professional burnout among child welfare and early childhood professionals. We did not find that greater reflective practice quality was significantly associated with lower professional burnout after nine months. This finding contrasts prior research that found that having more positive appraisals of reflective practice is directly associated with more positive professional outcomes (Priddis & Rogers, 2018). It is possible that receiving reflective practice from a supervisor one already has a working relationship with is more strongly associated with reducing burnout as compared to receiving reflective practice from an outside consultant. All of the professionals in this evaluation received the FAN approach to reflective practice from an outside consultant; therefore, we were unable to test differences in the impact of supervisor-provided reflective practice versus consultant-provided reflective practice. Additionally, future research is needed to understand how consultant characteristics relate to professional outcomes such as burnout. Greater experience providing reflective practice may influence the outcomes for recipients, though this was not a testable hypothesis for the current study as all of the consultants in this project were being trained



to use the FAN approach. Lastly, statistical power may have been an issue in finding a promotive effect such as that a larger sample might have detected a link where we could not.

#### ***4.3. Aim 3: Protective effect of reflective practice quality***

Our third and final aim was to test the protective, moderating capacity of reflective practice quality on the link between vicarious trauma and professional burnout. We found that reflective practice quality significantly moderated the effect of vicarious trauma on professional burnout such that higher quality reflective practice reduced the impact of vicarious trauma on child welfare and early childhood professionals' levels of burnout. This finding is convergent with previous research that highlighted how participating in active meaning making with another professional can mitigate the effects of exposure to traumatic content and vicarious trauma (Biggart et al., 2017) as well as how organizational and emotional support can reduce child welfare professionals' work-related stress (Fansher et al., 2019). These findings represent a crucial step in understanding how to actively intervene among child welfare professionals, suggesting that child welfare organizations can slow the "revolving-door" of professional turnover (Collins-Camargo, 2007) and begin to address the systemic issues that both drive and are a result of high child welfare professionals (Maslach et al., 2001).

While the FAN approach of reflective practice has previously been noted as a promising approach for home visitors, pediatricians, and youth mentors (see Cosgrove et al., 2019; Pryce, Gilkerson, & Barry, 2018; Gilkerson et al., 2017; Spielberger et al., 2017, 2016; MacKinnon, 2019), the current evaluation is the first to offer quantitative evidence as to its potential to ameliorate negative aspects of child welfare and early childhood work such as exposure to traumatic content and high levels of burnout. However, several unanswered questions remain. Future research can examine additional questions regarding reflective practice by examining how fidelity to the FAN approach can influence the effects of reflective practice on recipient outcomes and whether certain aspects of reflective practice are more beneficial for child welfare professionals in mitigating the impact of stressors inherent in this high-demand field. Another potentially fruitful next step

for researchers is to examine how participating in the FAN approach as a recipient affects professionals' motivation and capacity to work with vulnerable children and families. Recipients who feel more supported and understand the reasons behind their emotions, behaviors, and professional roles may experience more fulfillment in their work, greater self-efficacy and agency, which may then lead to positive outcomes for the children and families they serve.

While current study answers some questions about the general role of reflective practice among the child welfare workforce, there are many more questions for future researchers to consider. First, researchers could examine how organizational culture and relationships are impacted by integrating reflective practice at the organization-level as organizational and agency culture is known to contribute significantly to professional burnout (Winnubst, 2017). Second, an important area for future research is to examine how reflective practice amidst individual protective factors (e.g., agency, group cohesion, organizational fit, family adaptability, and supervision) can buffer against the effects of vicarious trauma and burnout (e.g., Li, Early, Mahrer, Klaristenfeld, & Gold, 2014; Kulkarni, Bell, & Hartman, 2013; Stevens & Higgins, 2002; Lloyd, King, & Chenoweth, 2002). For example, sense of agency – a strong belief in one's ability to control what happens to them – and intentionally processing experiences with parents and children has emerged as an important protective factor among early childhood educators to prevent burnout (Howard & Johnson, 2004) and promote the positive aspects of workplace well-being (Cigala et al., 2019). These strategies for overcoming stressful experiences at work are reminiscent of the FAN approach to reflective practice and raise questions about how the FAN approach would work when these protective factors are present and if it could develop these protective factors for others (e.g., Stevens & Higgins, 2002). Lastly, researchers could study what components of high-quality reflective practice are critical for child welfare and early childhood professionals. Some measurable components of high-quality reflective practice include: (1) promoting professionals' emotional growth and skill development, (2) providing a trusting, attentive, and collaborative learning relationship, (3) ensuring there is a consistency in meeting with professionals, and (4) engaging in reflection that helps the professional better understand their behaviors (Gallen et al., 2016).

#### **4.4. Practical implications**

Our finding that the FAN approach to reflective practice is associated with a decrease in the impact of vicarious trauma on professional burnout nine months later has important practical implications for child welfare and early childhood professionals. Given the critical role of supervision in child welfare and early childhood professions, supervisors are a natural choice to receive training on the FAN approach to enhance their supervision. Supervisors are the main source of organizational social support for child welfare and early childhood professionals that can mitigate the effects of difficult work content and heavy work load (Jacquet, Clark, Morazez, & Withers, 2007; Samantrai, 1992). For example, supervisor support was found to be a stronger predictor of worker retention and intention to leave among child welfare caseworkers than was caseload (Jacquet et al., 2007; Samantrai, 1992). Samantrai (1992) found that child welfare caseworkers who left the field were distinguished from those who stayed by their relationship with their supervisor such that those who left reported the same struggles with work content and benefits of job security as those who stayed but also reported that their supervisor did not regard them as a professional and were critical and unsupportive.

Supervisors are perceived as supportive when they commit to regular and consistent supervision, provide personal and professional development, and when supervisors serve as guides or expert consultants rather than managers or monitors (Rycraft, 1994; Shireman, 2013; Wagner, van Reyk, & Spence, 2001). In child welfare and early childhood work, supervisions function not only for management and monitoring but also provide an opportunity for parallel processing to encourage professional develop, organizational support, and structured processing (Lietz & Rounds, 2009). Further, evidence suggests that supervisor support directly predicts not only worker ability but also the availability of resources (Juby & Scannapieco, 2007). The FAN approach provides a clear structure to enhance regular supervision for professionals prone to vicarious trauma and burnout. However, there may be some practical barriers to implementing the FAN approach in various agencies such as office culture and resources for training (i.e., time and money). The widespread adoption of a reflective practice approach at the supervisory level of the child welfare and early

childhood workforce would require additional training and support in light of the often-overwhelming caseloads, increasing workplace demands, and serving children and families of high risk, that many human services departments experience. Additional research could advance the argument that the FAN approach is worth the investment to reduce the impact of making sense of difficult content on emotional exhaustion, cynicism, and personal accomplishment.

#### **4.5. Study strengths and limitations**

The strengths of our evaluation include the use of reliable and well-validated scales as well as the assessment of professionals over time via repeated measures. Additionally, we used data from a unique sample of child welfare and early childhood professionals from different fields, allowing for a broader understanding of the relationships among vicarious trauma, reflective practice, and burnout in professions that interface with vulnerable children and families. Therefore, the generalizability of our findings is not limited to one profession within child welfare or early childhood education. The generalizability, however, is limited by the relatively small and homogenous sample.

Despite the methodological and sample strengths noted above, the current study does have some limitations. The first limitation was the presence of missing data. The impact of missing data on the findings was minimized through the use of multiple imputation, which created multiple datasets based on the existing data and then combined parameter estimates to create the resulting statistical model that was presented in the findings. Multiple imputation has been noted as one of the best performing methods for missing data estimation, particularly when the data that is missing is unrelated to the core constructs of interest, which is the case in the current study (McNeish, 2017). Although we took the recommended steps to account for and address the issue of missing data (e.g., proper diagnoses, inspection of relationships between missing values and baseline data), non-missing data is certainly preferable.

Second and due to the small sample size, we were unable to examine more complex statistical models than those presented here. Although recent literature (e.g., Kock & Hadaya, 2018) has called into question the traditional 10-to-1 sample size benchmark for structural

equation modeling (Hair, Ringle, & Sarstedt, 2011), we were hesitant to test more complex hypotheses that researchers with larger datasets could likely more effectively probe. Future research examining our study questions is needed with larger, more diverse samples.

A third limitation is that we did not have a comparison group of child welfare or early childhood professionals who did not participate in reflective practice and, thus, causal inferences from our findings are limited. To address this, we took steps to maximize our ability to examine the temporal ordering of the findings (e.g., controlling for previous reports of professional burnout) while also limiting our use of causal language in our interpretation. Future researchers can further confirm our findings with more complex and diverse methodology (e.g., randomized controlled trials).

Finally, our findings are limited by the self-report nature of our measures, especially considering the conceptual overlap between vicarious trauma and burnout. Although there is some construct overlap between vicarious trauma and burnout, especially emotional exhaustion, we conceptualized and measured the constructs distinctly. We conceptualized and measured vicarious trauma as a process of exposure to traumatic content and distress associated with that exposure (i.e., thinking about the disturbing content outside of work; Vrkleviski & Franklin, 2008). And we conceptualized burnout as a pattern of beliefs and attitudes toward work that result from difficult content and high work demands (i.e., “working with people all day is a strain;” Maslach constructs were self-reported and, that conceptual and measurement distinction.

#### **4.6. Conclusion**

This evaluation contributes to the limited literature on the role of reflective practice in reducing the impact of vicarious trauma on professional burnout among child welfare and early childhood professionals. This is the first study of its kind to examine the implementation of the FAN approach delivered to early childhood educators, child welfare social workers, and child welfare attorneys. Moreover, the study provides promising findings regarding the reduction of the impact of vicarious trauma on professional burnout via engagement in high quality reflective practice facilitated by reflective consultants using

the FAN approach. These findings can be used to support the positive and beneficial role of reflective practice in promoting emotional resilience among highly professionals working with vulnerable children and families.

#### **Credit authorship contribution statement**

**Katherine P. Hazen:** Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing original draft, Writing review & editing, Project administration. **Matthew W. Carlson:** Conceptualization, Formal analysis, Data curation, Writing original draft, Writing review & editing, Supervision. **Holly Hatton-Bowers:** Writing original draft, Writing review & editing. **Melanie B. Fessinger:** Conceptualization, Methodology, Investigation, Data curation, Writing review & editing. **Jennie Cole-Mossman:** Resources, Writing review & editing, Supervision, Project administration, Funding acquisition. **Jamie Bahm:** Conceptualization, Resources, Writing review & editing, Supervision, Project administration, Funding acquisition. **Kelli Hauptman:** Conceptualization, Methodology, Resources, Writing review & editing, Supervision, Project administration, Funding acquisition. **Eve M. Brank:** Conceptualization, Methodology, Writing review & editing, Funding acquisition. **Linda Gilkerson:** Resources, Writing diting, Funding acquisition.

**Declaration of Competing Interest** – The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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