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Abstract

Introduction: US child welfare agencies have historically struggled with workforce re-tention and turnover. As part of the Quality Improvement Center for Workforce De-velopment in Child Welfare, we tested an adaptation of the *Resilience Alliance* (RA)

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model in a large, Midwestern state to address workplace stress, burnout and actual workforce turnover. RA is a 24-week, facilitated program designed to mitigate the impact of secondary traumatic stress among child welfare professionals, and to therefore increase job satisfaction, resilience and optimism and to decrease turnover, stress reactivity and burnout.

Methods: Supervisory units of caseworkers and supervisors were randomized to the RA treatment condition (n = 192) or a control condition (no intervention; n = 183).

Hypothesis: We hypothesized that participation in the RA adaptation would cause the workforce to experience lower levels of secondary traumatic stress (STS), burnout and intent to search for work or leave their current position. We hypothesized that RA would lead to higher reported levels of resilience and intent to stay. Furthermore, if hypothesized changes were observed due to participation in RA, then such participation would also lead to decreased actual workforce turnover over a 2.5-year period.

Results: There were no statistically significant effects of the intervention on changes in STS, burnout or resilience between treatment and control groups over a 6-month period. Participation in RA did cause significant differences in 6-month changes for four turnover intention measures. Finally, RA had no statistically significant effect on turnover. Limitations and implications are described.

Keywords: Child welfare workforce, Workforce turnover, Resilience alliance, Secondary traumatic stress, Burnout

1. Introduction

1.1. US child welfare workforce

Caseworkers respond to allegations of child maltreatment received by a public child welfare agency in the United States. Caseworkers may screen in or out initial maltreatment allegations, they may investigate such allegations and/or they may work with families involved with child welfare to assess safety concerns and family needs. They may work to connect a family with needed services. Caseworkers are often trained as social workers but may have other educational backgrounds; they commonly complete on-the-job training before undertaking a full caseload. Their work often requires them to be on the front lines, responding to challenges of child injury, situations of domestic violence and substance use disorders, child sexual abuse and other threats to child and family safety and well-being. The child welfare workforce in the US includes approximately 30,883 caseworkers across 43 states and the District of Columbia; this estimate is based on 2020 data for states which report full-time

equivalent workers (U.S. Department of Health, Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau, 2022) and is an underestimate since 8 states do not report. People enter the child welfare workforce for different reasons: perhaps due to a desire to support children and families, perhaps because they themselves have lived experience with the child welfare system, or perhaps because a caseworker position provides reimbursement for educational costs (Barbee, Antle, Sullivan, Dryden, & Henry, 2012; Colorado Office of Children, Youth and Families, 2019; Zlotnik & Pryce, 2013).

1.2. Secondary traumatic stress, burnout and resilience

Secondary traumatic stress describes the personal impact of hearing about or being exposed to trauma *directly experienced* by another person and/or witnessing the impact of such trauma (Bride, Robinson, Yegidis, & Figley, 2004). The symptoms of secondary traumatic stress (STS) are the same as for those who experience direct trauma with post-traumatic stress disorder (Bride, 2007) including heightened arousal, avoidance, and intrusive thoughts; in the case of STS these symptoms are due to exposure to the trauma of others. The most recent version of the American Psychiatric Association (2013) DSM includes the following as a first criterion for PTSD (together with three symptom sets): experiencing one of four situations including repeated or extreme exposure to aversive details of the traumatic events of others while in the role of a first responder or helper. Thus, an occupational hazard of working with traumatized child welfare clients is STS, which when meeting all clinical diagnostic criteria can be a form of PTSD, although such a diagnosis would only be made if all criteria were met (two criteria not typically assessed for workforce STS are duration of symptoms and impairment due to symptoms). However, Bride (2007) and subsequent researchers do routinely assess whether staff experience clinical levels of PTSD *symptoms* due to exposure to traumatized clients by utilizing formulas to assess whether symptoms exceed clinical symptomatology cut off scores. Clinical levels of STS symptoms are somewhat prevalent among first responders, social workers and victim's advocates whose rates range from 10 % to 33 % (e.g., Berger & Gelkopf, 2011; Bride, 2007; Steinkopf, Reddin, Black, Van Hasselt, &

Couwels, 2018) but are routinely found to be higher among child welfare workers whose rates range between 34 % and 50 % (Bride, Jones, & Macmaster, 2007; Conrad & Kellar-Guenther, 2006; Cornille & Meyers, 1999).

Burnout is a construct distinct from secondary traumatic stress. It is a state of emotional depletion and decreased motivation due to prolonged exposure to chronic job stressors (Leiter, Maslach, & Frame, 2014). Burnout is likely common among child welfare workers; in a study of over 2,000 child welfare workers in a large US urban jurisdiction, 64 % scored above the mid-point for work-related burnout (Leake, Rienks, & Obermann, 2017); in a study of over 500 Norwegian child welfare workers, more than 70 % reported moderate levels of burnout (Baugerud, Vangbaek, & Melinder, 2018), although none self-reported high levels. Kim (2011) found higher levels of three subtypes of burnout (emotional exhaustion, depersonalization and [lack of] personal accomplishment) among a sample of public child welfare workers when compared to social workers in other fields such as mental health. Similarly, Baldschun, Hamalainen, Totto, Rantonen, and Salo (2019) found higher levels of burnout among Finnish social workers with child protection duties, compared to those without. Burnout in the form of depersonalization has been associated with higher levels of exit-seeking behaviors such as actively seeking another job (Travis, Lizano, & Mor Barak, 2016).

Resilience is a quality that allows a person to cope with life stressors and to thrive in the face of adversities (Connor & Davidson, 2003) and has been considered as a lens through which to examine child protection staffing challenges (Russ, Lonne, & Darlington, 2009). It is acknowledged that resilience is a complex and multi-dimensional psychological construct (Rees, Breen, Cusack, & Hegney, 2015), which can be viewed alternately as relatively more dynamic/changeable (Waugh & Koster, 2015) or stable/static (Block & Block, 1980) within an individual. Resilience in a workforce context has been studied in a variety of fields including psychology, engineering and economics (Lim, Hur, Ho, Yoo, & Yoon, 2019). Among human service workers, recent work shows that both burnout and STS are negatively correlated with resilience (Boamah, Barbee, & Cunningham, 2022; Harker, Pidgeon, Klaassen, & King, 2016; McFadden et al., 2017, 2019).

1.3. Child welfare workforce turnover

Child welfare agencies have historically struggled with workforce recruitment, retention, and turnover (Bernotavicz, 2000; USGAO, 2003). The most recent examination of turnover in child welfare agencies across the nation between 2003 and 2015 revealed an average 21 % turnover rate among both frontline staff and supervisors (Edwards & Wildeman, 2018); in small agencies turnover rates may be higher as the loss of a few workers is a higher percentage of the workforce (Fulcher & Smith, 2010). Turnover intentions in child welfare agencies may be prompted by multiple factors such as lack of organizational commitment (Boyas, Wind, & Kang, 2012) or supervisory support (e.g., Yankeelov, Barbee, Sullivan, & Antle, 2009); higher levels of stress or burnout (e.g., Boyas, Wind, & Ruiz, 2013; Kim & Mor Barak, 2015) and/or secondary trauma (Barbee, Rice, Antle, Cunningham, & Henry, 2018). Actual turnover is associated with both child outcomes (Williams & Glisson, 2013) and additional costs to the agency (Dorch, McCarthy, & Denofrio, 2008; Graef & Hill, 2000). Such expenses may reduce funding for services to support children and families in achieving safety, permanency, and well-being.

1.4. Interventions to enhance resilience, reduce stress and turnover

A recent review of the literature on interventions focused on mental health, wellbeing and retention of child and family social workers only uncovered 15 studies (Turley et al., 2022) of varying levels of strength (two RCTs, six longitudinal pre-post quasi-experiments, one interrupted time series quasi-experiment and six cross-sectional post-test quasiexperiments). Three interventions were individual-level interventions to enhance emotional resilience of social workers through journaling (Alford, Malouff, & Osland, 2005) or training in emotional intelligence (Biggart et al., 2016) or meditation, mindfulness, cognitive behavioral skills and reflective practice (Kinman & Grant, 2017). Two of these showed some promise in enhancing job satisfaction and reducing stress, but mixed results in reducing burnout and distress. The 11 organizational interventions and 1 community-based intervention which focused on the provision of interpersonal support from colleagues, participatory organizational approaches and service delivery models were stronger in reducing turnover intentions (e.g., Strand & Bosco Ruggiero, 2011;

Strolin-Goltzman, 2010) and actual turnover (e.g., Barbee & Antle, 2011; Glisson, Dukes, & Green, 2006), but results were mixed regarding satisfaction, burnout, and stress (e.g., Stanley et al., 2012). Thus, the review authors concluded that more research is needed using stronger research designs and implementation but that organizational level interventions may hold the most promise.

1.5. Resilience Alliance

Resilience Alliance (RA) was developed by the New York City Administration of Children's Services-New York University Children's Trauma Institute to foster a better and healthier work environment after recognizing the possible link between STS and turnover (ACS-NYU, 2012). It is designed to help staff develop skills and behaviors that promote physical and psychological well-being, thereby enabling them to do good child welfare practice. The objectives of RA include: recognize work-related stressors and differing responses to stress; use Cognitive Behavioral Therapy strategies to reframe and normalize responses; understand and promote techniques to manage avoidance, control, self-defeating statements, and encourage a sense of hopefulness; enhance the ability to self-regulate thoughts, emotions, and behavior; demonstrate the connection between social support and emotional wellbeing in the context of a stressful environment and advance collaboration among staff. *Resilience Alliance* includes 24 sessions over a 6-month period. It begins with a kickoff session highlighting the core concepts of the program, and the problems *Resilience Alliance* is designed to ameliorate. Then, the first 12 sessions introduce 12 core skills, while the last 12 sessions allow time to review the 12 skills, reinforce their use, and allow staff to process their use in more depth as they continued to practice them. *Resilience Alliance* materials suggest that by addressing STS, resilience will increase, both burnout and STS and will decrease and employee attrition will be reduced (ACS-NYU, 2011).

Resilience Alliance was augmented with two additional features for the current study. First, in addition to group meetings, weekly text messages were sent to participants by the project team (the team is described in the "Setting" section below) to remind participants of key skills and messages from the curriculum. Second, at the end of six months, RA was followed by a monthly Peer Support Group (PSG) which

included the same team members who participated in the RA group. The goal of the PSG was to reinforce the skills taught in RA and provide a positive peer group for workers and supervisors to feel supported for an additional six months.

1.6. Research hypotheses

The study aims were to evaluate (1) how effective is the adapted Resilience Alliance program in addressing 6-month secondary traumatic stress, burnout, resilience and turnover intentions and (2) how effective is adapted RA in addressing turnover at a two-and-a-half-year follow-up. We hypothesized the following outcomes:

1. Participation in *Resilience Alliance* would cause the child welfare workforce to experience <u>lower</u> levels of secondary traumatic stress and burnout after 6 months

2. Participation in *Resilience Alliance* would cause the child welfare workforce to report <u>higher</u> levels of resilience after 6 months

3. Participation in *Resilience Alliance* would cause the child welfare workforce to report <u>lower</u> intent to search for work and/or leave their current position and to report <u>higher</u> intent to stay in their current position after 6 months

4. If changes in STS, burnout, resilience or turnover intentions are associated with participation in *Resilience Alliance*, then RA participation together with the peer support follow-up would also lead to increased actual retention of caseworkers and supervisors over the study period and two-year follow-up period.

2. Materials and methods

2.1. Setting

2.1.1. Quality improvement center for workforce development

In 2016, the federal Administration for Children, Youth and Families, Children's Bureau funded a five-year cooperative agreement, the Quality Improvement Center for Workforce Development (QIC-WD; www.qic-wd.

org), with the primary mission of studying child welfare workforce interventions targeted at reducing workforce turnover. The QIC-WD has supported child welfare agencies with strategies to reduce staff turnover and to build knowledge about reducing turnover by designing, testing and evaluating interventions in eight sites across the country. Since 2016, the sites each conducted a needs assessment process, designed and/or selected an intervention matched to the root causes of turnover as well as staff and organizational needs, and implemented that intervention. Interventions included: revamped workforce selection processes, a redeveloped staff on-boarding program, a frontline job redesign, enhanced mobile technology for frontline staff, telework, an intervention specifically designed to change organizational culture and climate and use of the *Resilience Alliance* (RA) program.[1] The current study focuses on a large, Midwestern state which implemented RA as described above. Appropriate human-subjects research permissions were obtained.

2.1.2. Agency

The state's Department of Health and Human Services (DHHS) is a multiservice agency including the Division of Children and Family Services (DCFS), which is the state's child welfare agency. All DHHS divisions are supported by centralized operations that include Human Resources (HR) & Development. DCFS is organized into five geographically based regions; three which are predominantly rural, and two which are predominately urban, including the state's capital city and largest city. Service areas conduct initial maltreatment assessments/investigations and on-going case management (except that during the study period, one urban service area had privatized on-going case management; private agency caseworkers were not included in the current study). Each service area's administrator is responsible for the delivery and supervision of child welfare case management within their respective geographic areas. In 2017 as the QIC-WD was getting started, DCFS employed approximately 400 caseworkers and 70 casework supervisors. The study team estimated an annualized attrition rate in 2017 among DCFS child welfare workers and supervisors of about 30 %. For example, at the beginning

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1. The other QIC site which implemented *Resilience Alliance* combined it with a mechanism to encourage supportive supervision at all levels of the organization (primarily through use of the ACCWIC Coaching Model).

of November 2016 the cohort of active caseworkers and trainees numbered 388; one year later 120 of these individuals were no longer serving in their prior year's role.

2.1.3. Project team

The implementation and evaluation of *Resilience Alliance* was supported by a Workforce Project Team, formed in 2017. This team included the Division of Child and Family Services director, a site implementation manager (hired half-time for the 5-year duration of the project), a data coordinator (funded 25 % for the duration of the study), an administrative assistant, and representatives from across the Child and Family Services organization at various levels of experience and leadership: service area administrators, casework supervisors, and frontline caseworkers (called Child and Family Service Specialists). Additionally, there was at least one representative from each of DCFS's five service areas. The team was also supported by a workforce specialist, an implementation specialist and an evaluation specialist from the national QIC-WD team.

2.1.4. Needs assessment

After the state agency was selected as a QIC-WD site, the team conducted a needs assessment beginning in late 2017; this was designed to uncover critical workforce needs and possible reasons underlying workforce turnover. Administrative data, perceptions of Project Team members and a survey were used. The needs assessment survey was sent to all frontline workers and supervisors; 36 % of the workforce responded. Data indicated that 53 % of frontline staff were experiencing elevated levels of secondary traumatic stress. Needs assessment data from workers across the state clarified that there was a need to address chronic and acute work-related stress among frontline workers and their supervisors. Staff described a preference to talk with peers about their experiences and feelings instead of supervisors, and a desire for professional resources. They reported a lack of agency-level recognition of the effect of secondary trauma and of organizational and professional supports available to help frontline staff manage STS on an on-going basis. Outside of the new employee training process, few efforts had been introduced in the agency to address STS, and the Project Team wanted

something that went beyond simply additional training. Following the survey, a root cause analysis was also conducted (spring 2018) and in June 2018, it was decided that the QIC intervention for this state would target secondary traumatic stress. During the summer of 2018 the team researched specific interventions and submitted an intervention proposal to agency leadership in the late summer.

2.1.5. Intervention

Based on conclusions from the needs assessment and expectations as a site of the QIC-WD, the Workforce Project Team decided to implement an adaptation of *Resilience Alliance* (RA; ACS-NYU, 2011) to both prevent STS in newer employees and to address cumulative trauma in veteran workers and supervisors. Professional facilitators for *Resilience Alliance* were hired in early 2019, with facilitator training in April 2019 and RA sessions beginning in May 2019 and ending in December 2019. It is worth noting that locating and hiring facilitators was a rather larger challenge than anticipated during the project planning stages.

The RA intervention was adapted from its original format (used in New York City) to address specific needs and to facilitate a randomized trial. The original RA model had frontline staff join groups with staff from across an agency, rather than only with their own unit; supervisors and administrators visited RA groups on a few occasions across the 24- week period, but they were not present weekly. However, in contrast, the current adaptation kept work units together to participate in RA, joining two units together to form an RA group. (This adaptation facilitated the formation of groups geographically close enough to meet in person, given that the state has large rural areas). The unit supervisors also participated weekly in the RA group sessions. The RA groups were between 10 and 15 people in size (i.e., two supervisory units) with 14 RA groups participating statewide. The remaining supervisory units served as controls – as described below. Groups were led by an external facilitator who had experience working with trauma survivors. Facilitators received a one-day training about RA facilitation, monthly technical assistance calls and a *Resilience Alliance* Training Manual. Some of the facilitators had been case workers, which helped in their understanding of the pressures and realities of the job. RA groups met during the workday and staff were strongly encouraged to attend. Meetings

occurred one hour a week, for 24 weeks, and in-person between May 2019 and January 2020. One group met every-other-week for two hours to lessen the burden of driving distance between more rural communities. As an additional slight adaptation of the original model, throughout their participation in RA participants also received weekly 'resiliency reminders' via text messages on their work mobile phone. Messages were structured to remind participants of key RA concepts and included fun images or links to content related to the intervention. **Table 1** summarizes the adaptations.

As noted above, the RA curriculum was also augmented with a follow-up Peer Support Group (PSG). The PSG was peer-led, sometimes on a rotating basis, and each group decided on a meeting length and frequency. Although the original goal of PSG was to meet six times, in person over the six months following RA (January through June 2020), the actual format and frequency of the PSG meetings varied, due to the advent of COVID-19. The groups did start in January 2020, but some groups paused meetings at the initial lockdown and resumed during the summer and fall of 2020; PSG meetings for all but one group had finished by the end of September 2020. Some met virtually throughout the lockdown period. Regardless, the goal of the PSG was to reinforce the skills taught through the formal Resilience Alliance curriculum with the goal of reducing turnover.

Table 1 RA Adaptations

Original Intervention	*Study Version*
Implemented only in an urban setting	Implemented in both urban and rural settings
Led by a facilitator with a co-facilitator	Led by one facilitator
Groups contain staff from teams across agency	Groups contain entire teams
Groups mostly consist of frontline staff; supervisors/managers attend some sessions	Groups include team supervisors; managers/administrators attend only kick-off session
Groups meet 1 h per week	One group in rural area meets 2 h every other week (where drive times are prohibitive)
No reinforcement during RA described	Text messages sent to encourage participation and reinforce key RA messages
No reinforcement after RA described	Participants attended a monthly support group (PSG) based on RA key concepts

2.1.6. Attendance

Mean RA attendance among all participants who were randomized to the experimental group (N = 192) was 14.4 sessions and the median was 17 sessions. Forty eight percent of such participants in the experimental group attended fewer than 70 % of the 24 sessions, 25 % of participants attended 70 %-79 % of the sessions, and 27 % of these participants attended 80 % or more of the sessions. RA attendance dropped noticeably throughout the course of the intervention, with a mean attendance of 4.1 sessions during the first 6 weeks and a mean attendance of 3.0 sessions for the last 6 weeks, $t(191) = 7.4$, $p < .001$. Mean attendance during the second 6-week period was 3.8 and the third period 3.2, demonstrating decreasing attendance throughout, with the largest drop in attendance coming between the second and third 6-week periods. Detailed analyses of RA implementation data remain in progress; suffice it to note here that RA attendance was impacted both by the usual movement of personnel between work units and by the high rates of ongoing turnover.

2.2. Methods

2.2.1. Study design

We employed a cluster randomized control trial (cRCT) to evaluate the effectiveness of participating in RA on changes in secondary traumatic stress, burnout and resilience. The unit of randomization was an entire supervisory unit (supervisor + workers). We first stratified supervisory units by the five DCFS service areas, with units in the largest and most rural service area further stratified into two geographically contiguous groups to form a sixth stratum. Second, within a second predominantly rural service area, we combined four supervisory units into two pairs before randomizing. Finally, we randomly assigned 50 % of supervisory units (or unit pairs) within each of the six strata to the intervention. The additional stratification and pairing within these two rural service areas assured that supervisory units randomized to the intervention would be within a one-hour drive of each other and therefore could feasibly form an RA group meeting with a single facilitator. In the final design, six small supervisory units across the state

were excluded from the study because those units were geographically spread out and/or the unit was too remote to be paired with another supervisory unit within an hour's drive. Following random assignment, we combined units assigned to the intervention into groups of 10–15 employees to form RA groups.

2.2.2. Target population

The target population is frontline child welfare workers and their supervisors. We excluded hotline workers from the study because they had lower levels of STS (based on data from the needs assessment). We also excluded: workers interacting exclusively with older, emancipated youth through a special program, private agency workers contracted in one service area and all adult protection workers.

3. Calculations

3.1. Measures

We invited all workers and supervisors assigned to both the intervention and control groups to complete baseline (pre-intervention) measures in March/April of 2019, as well as 6-month follow-up measures at the end of RA (administered over the final weeks of 2019 and into January 2020, before COVID lockdowns). Given the rollout of the intervention within all service areas, nearly all Child and Family Service Specialists across the state completed the study measures. We collected measures either via pencil and paper survey during staff meetings (prior to the COVID-19 pandemic) or, using the identical measures in electronic format. Some electronic data collection also occurred within a staff meeting, with workers gathering in a computer lab or similar space and using dedicated time to take the Qualtrics surveys. Funding from the QIC-WD provided refreshments for staff, but no individual incentives were provided for the baseline and 6-month follow-up surveys.

3.1.1. Demographics

We collected the following demographic measures for the workforce at baseline: *gender* (male, female, prefer not to say), *race and ethnicity* (Latinx, African American, Indigenous/Pacific Islander, Asian, White, non-Latinx multi-race or other), *sexual orientation* (LGBTQ yes/no), *marital status* (single/never married, cohabitating, married, divorced, remarried, other), *highest level of education* (Bachelors, Masters, Doctorate), *wage earner status* (primary household wage earner, one of multiple earners) and *age* (in years). We also collected *years of child welfare experience* and *human service experience*.

3.1.2. Stress-related measures

We measured *secondary traumatic stress* using the Secondary Traumatic Stress Scale developed by Bride and colleagues (Bride et al., 2004); this is a validated, 17-item scale (items rated 1–5) developed to measure intrusion, avoidance and arousal symptoms associated with indirect exposure to traumatic events through a professional's interactions with traumatized clients (Cronbach's α = 0.937). We measured work-related burnout with a shortened, 9-item version (items rated 1–7) of the Maslach Burnout Inventory (Maslach, Jackson, & Leiter, 1996; Riley, Mohr, & Waddimba, 2018). The nine-item measure has been found to be valid and reliable as a proxy for the longer scale (Riley et al., 2018), with Cronbach's α = 0.761 for the current study. Finally, we collected a measure of resilience with the 10-item (each item rated 0–4) Connor-Davidson Resilience Scale (Connor & Davidson, 2003). Reliability for the current study is α = 0.871.

3.1.3. Turnover intentions

We measured staff turnover intentions with four two-item measures: Thinking about Quitting ("I often think about quitting my job" and "How often do you think about quitting your job?;" α = 0.869), Intent to Search ("I will probably look for a new job in the next six months" and "I will probably look for a new job in the next year;" α = 0.962), Intent to Stay ("I intend to stay at my job in the next six months" and "I intend to stay at my job the next year;" α = 0.966), Intent to Leave ("I intend to leave

my job in the next six months" and "I intend to leave my job in the next year"; α = 0.957). Thinking about quitting is rated on a 1–5 point scale for each of the two items; the other three turnover intention measures are rated on a 1–7 point scale. These constructs regarding turnover intentions follow the work of Hom and Griffeth (1995) and Griffeth, Hom, and Gaertner (2000).

3.1.4. Actual turnover

Administrative human resources (HR) data were used to calculate the actual percentage of employees in each group (experimental and control) who left their positions during the six-month intervention period and/or throughout a two-year follow-up period ending December 31, 2021. For each study participant, the employee's original date of hire was compared to the *Resilience Alliance* program start date (May 14, 2019) to reconfirm employment at the beginning of the intervention. Each employee's separation dates from both (1) a case-carrying role and (2) state DHHS overall were extracted from administrative HR data. Employees were coded as "separated from case carrying role as of 12/ 31/21" (dichotomous, yes/no, measuring both voluntary and involuntary separations) and "separated from DHHS - any role as of 12/31/21" (dichotomous, yes/no). Note that for the case-carrying outcome, the participant may have separated from a case-carrying role but still have been employed in another division of DHHS.

3.2. Analysis

We fit a linear, mixed effects model with (1) a fixed effect for intent-to-treat (ITT) treatment group assignment and (2) a repeated effect of time for the following outcomes: secondary traumatic stress, resilience, burnout, and four turnover intentions subscales. We used MIXED commands in SPSS (UCLA, n.d.) to allow for missing values in either the preintervention or post-intervention measures. A strength of this analytic method is that sample size is better preserved because the MIXED algorithm does not employ listwise deletion of missing data, it can use a participant's responses, even if only the baseline or 6-month survey was completed. Thus, the analytic sample was not limited to only participants who completed both surveys. All analyses were run using an ITT framework with

treatment and control participants analyzed in the group to which they were originally randomized, regardless of the actual amount of RA attendance. (The ITT framework assists in understanding the real-world, agency-wide effect of RA, as some participants randomized to RA did not actually attend regularly while a couple participants assigned to the control condition did). We tested simple effects of change over time within each treatment group for secondary traumatic stress, resilience, burnout, and turnover intentions, using a Bonferroni adjustment for multiple comparisons to adjust for family-wise error rates. Finally, to understand differences in percentage employee turnover by group, we calculated and compared the percentage of study participants who separated from a case carrying role, and the percentage separated from DHHS overall using chi-square tests to compare percentages.

4. Results

4.1. Randomization

Figure 1 demonstrates the assignment of supervisory unit staff to treatment and control, and documents minimal attrition prior to the baseline survey being conducted. Of 421 eligible participants, 31 were in supervisory units not included in the study due to rural location (as described above) and one individual participant declined consent for the study. Fourteen participants were not enrolled in the study because they left the agency after randomization of their unit but before the start of *Resilience Alliance* sessions in mid-May 2019. The intent-to-treat treatment group numbered 192 caseworkers and supervisors and the control group numbered 183. Attrition resulted in 164 treatment and 162 control staff taking the baseline survey (15 % and 11 % attrition, respectively, after randomization), with attrition due to turnover and/or declines to respond to a particular survey. For the 6-month survey, 144 treatment and 135 control staff took the survey (25 % and 26 % attrition, respectively). Note that no supervisory units dropped from the study, only individuals within groups/clusters. After data collection, we tested the resulting randomized groups for similarity of distributions (i.e., "balance") in the following characteristics: gender, race/ethnicity, sexual orientation, marital status, years of education, wage earner status
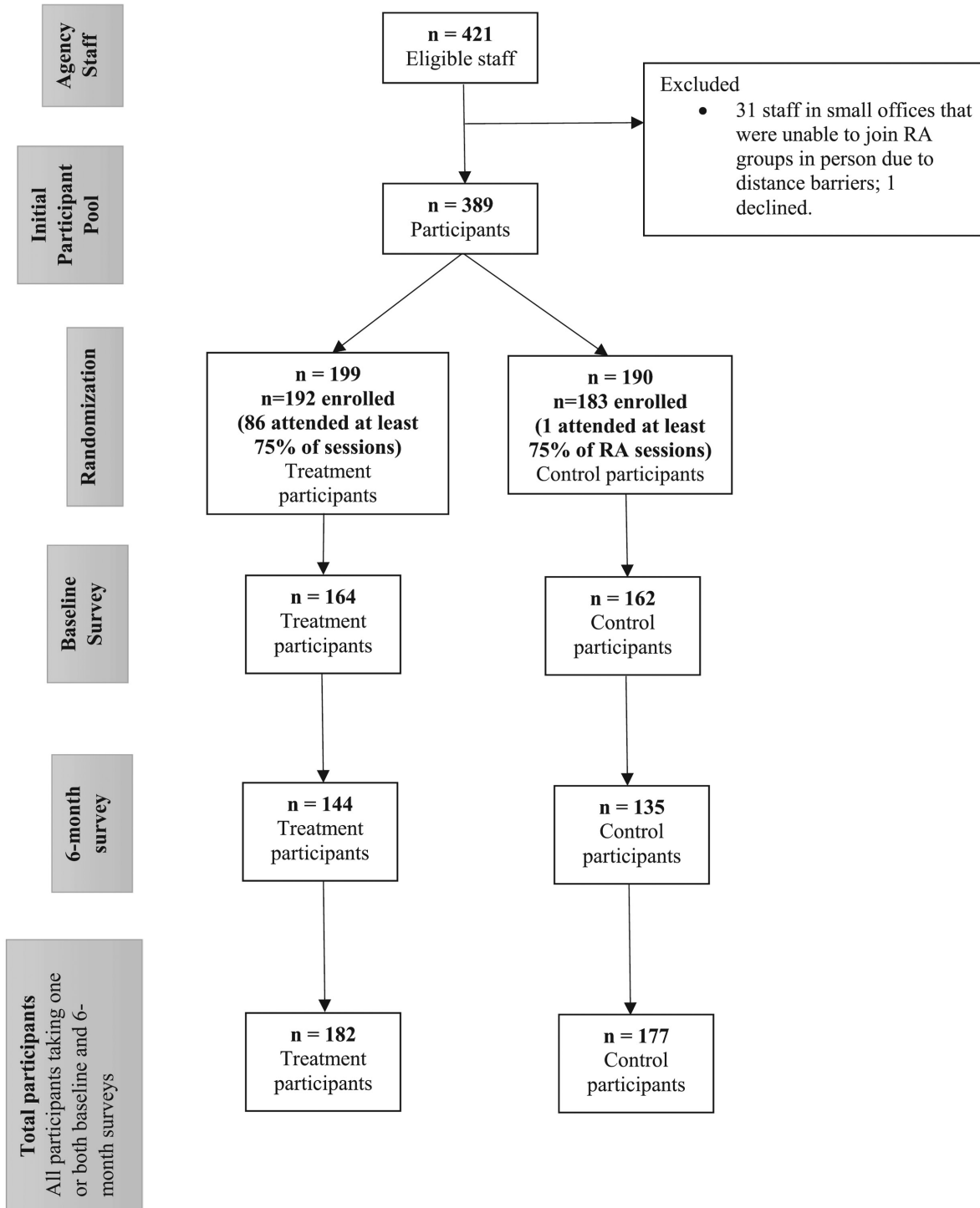
Fig. 1. Randomization.

(primary or not), age and self-reported time worked in both in child and human services. Balance was tested using chi-squared tests for categorical variables and t-tests for continuous variables. None of the statistical tests were significant (see Tables 2 and 3), indicating that the cluster randomization achieved good balance between the treatment and control groups.

4.2. Descriptive analyses

Table 2 displays demographic characteristics at baseline. Note that descriptive sample sizes vary by characteristic, depending on how many survey participants responded to a specific question. Eighty-seven percent of the sample identifies as female and 85 % identifies as White, with

Table 2 Baseline Demographics – Frequencies

	Treatment Percentage	Control Percentage	Total Percentage	Balance Chi-square statistic*
Gender (n = 323)				$\chi^2 = 1.52; p = .51$
Male	14 %	11 %	13 %	
Female	86 %	88 %	87 %	
Prefer not to say	0 %	1 %	0 %	
Race/Ethnicity (n =321)				$\chi^2 = 8.89; p= .18$
Hispanic/Latino/a	7 %	8 %	8 %	
African American	4 %	3 %	3 %	
Indigenous/Pacific Islander	0 %	2 %	1 %	
Asian	1 %	1 %	1 %	
White	88 %	82 %	85 %	
Non-Hispanic, multi-race	1 %	3 %	2 %	
Other	0 %	2 %	1 %	
Sexual Orientation (n= 304)				$\chi^2 = 05; p =.83$
LGBTQ	9 %	8 %	8 %	
Marital Status (n =323)				$\chi^2 = 5.42; p= .35$
Single, never married	31 %	37 %	34 %	
Cohabitating	12 %	8 %	10 %	
Married	43 %	38 %	41 %	
Divorced	11 %	14 %	12 %	
Remarried	0 %	1 %	1 %	
Other	2 %	1 %	2 %	
Highest education (n= 326)				$\chi^2 = 0.42; p= 1.00$
Bachelors	89 %	90 %	89 %	
Masters	10 %	10 %	10 %	
PhD	1 %	1 %	1 %	
Primary wage earner (n = 279)	46 %	50 %	48 %	$\chi^2 = 0.59; p= .44$
Multiple wage earners (n = 287)	71 %	66 %	69 %	$\chi^2 = 0.78; p= .38$

Fisher-Freeman-Halton exact test used for small cell counts.

the next largest group identifying as Hispanic/Latinx at 8 %. Nine percent identify as LGBTQ. A plurality are married (41 %), with 35 % reporting that they are single/never married and 12 % divorced. Eighty-nine percent have a Bachelors' degree as their highest level of education and 48 % report they are the primary wage earner in their household.

Table 3 shows the mean age of the staff in the study is 34 years and mean self-reported years' experience in child welfare is between four and five.

Table 4 displays overall characteristics at baseline for the study outcomes of interest. Workers and supervisors self-reported baseline secondary traumatic stress with Mean = 2.3 and SD = 0.79 (Bride et al., 2004). The mean reported baseline level of burnout was 3.1 with a standard deviation of 0.91 (Riley et al., 2018). Finally, the mean reported level of resilience was 2.9 with a standard deviation of 0.51 (Connor & Davidson, 2003). Baseline stress related measures were balanced across the treatment and control groups, as shown by the nonsignificant t-statistics and p-values in the last column of Table 4. Table 4 also displays descriptive 6-month values for STS, burnout and resilience. Considering the turnover intentions measures (Griffeth et al., 2000) workers report a mean level of "thinking about quitting" of 2.7 (SD = 1.1). Mean reported intent to search is 3.1 (SD = 1.8), mean reported intent to stay is 5.7 (SD = 1.5) and mean reported intent to leave is 2.7 (SD = 1.6). Baseline turnover intention measures were balanced across the treatment and control groups, as shown by the non-significant t-statistics and p-values in the last column of Table 4, along with descriptive 6-month values for the measures of turnover intentions. The response rate for baseline surveys varied between 84 % and 86 %, depending on the outcome measure; the response rate for 6-month surveys varied between 72 % and 73 %.

4.3. Hypothesized results

4.3.1. Change over time moderated by treatment – STS, burnout, resilience (H1, H2)

As noted above, we fit mixed effects models with a fixed treatment group effect and a repeated time effect. For all model runs, we evaluated four variance structures to ensure a strong model fit. We compared Akaike's Information Criterion (AIC) and the Schwartz Bayesian Information

Table 3 Baseline Demographics – Means

	Treatment		Control		Total		Balance
	Mean	S.D.	Mean	S.D.	Mean	S.D.	t-statistic
Age in years (n= 317)	35.3	10.8	34.1	9.3	34.7	10.1	t(315) = 1.05; p =.29
Years in child welfare (n =233)	5.0	6.0	4.3	4.4	4.6	5.3	t(231) =1.03; p =.31
Years in study state Child and Family Services (n =238)	4.1	5.5	3.5	3.5	3.8	4.6	t(236) =1.04; p =.30

Degrees of freedom adjusted when equal variances in each group cannot be assumed.

Table 4 Baseline STS, Resilience, Burnout, Turnover Intentions

		Treatment		Control		Total		Balance
		Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev	t-statistic
STS	Baseline (n = 319)	2.3	0.80	2.4	0.79	2.3	0.79	t(317) = −0.33; p = .75
	6-months (n = 274)	2.3	0.74	2.4	0.83	2.3	0.78	
Burnout	Baseline (n = 316)	3.1	0.91	3.2	0.92	3.1	0.91	t(314) = −0.73; p = .47
	6-months (n = 269)	3.0	0.93	3.2	0.84	3.1	0.89	
Resilience	Baseline (n = 318)	3.0	0.50	2.9	0.51	2.9	0.51	t(316) = 0.73; p = .47
	6-months (n = 269)	2.9	0.50	2.8	0.54	2.9	0.52	
Thinking abt. Quitting	Baseline (n = 323)	2.7	1.1	2.7	1.1	2.7	1.1	t(321) = −0.65; p = .51
	6-months (n = 275)	2.7	1.0	3.0	1.1	2.8	1.1	
Intent to Search	Baseline (n = 321)	3.1	1.7	3.1	1.9	3.1	1.8	t(319) = 0.18; p = .86
	6-months (n = 273)	3.1	1.8	3.7	2.0	3.4	1.9	
Intent to Stay	Baseline (n = 322)	5.7	1.4	5.6	1.6	5.7	1.5	t(320) = 0.63; p = .53
	6-months (n = 273)	5.7	1.4	5.0	1.8	5.4	1.6	
Intent to Leave	Baseline (n = 321)	2.7	1.5	2.7	1.7	2.7	1.6	t(319) = −0.03; p = .98
	6-months (n = 273)	2.8	1.6	3.3	1.9	3.0	1.8	

Table 5 Modeled Results Across Baseline to 6 Months

	Fixed Effect – Treatment Condition		Repeated Effect – Time		Time Effect moderated by Treatment Condition	
	F-statistic	p-value	F-statistic	p-value	F-statistic	p-value
STS (n = 357)	$F(350)$= 0.16	p =.688	$F(271)$= 1.3	p =.250	$F(271)$= 0.01	p =.938
Burnout (n =355)	$F(345)$= 1.5	p =.222	$F(260)$= 1.7	p =.189	$F(260)$= 1.3	p =.250
Resilience (n= 355)	$F(341)$= 1.7	p =.188	$F(276)$= 2.9	p =.089	$F(276)$= 1.4	p =.243
Thinking about Quitting (n= 359)	$F(348)$= 4.0	p =.047*	$F(271)$= 12.5	p <.001*	$F(271)$= 4.4	p =.036*
Intent toSearch (n =358)	$F(344)$= 3.1	p =.079	$F(268)$= 14.2	p <.001*	$F(268)$= 10.1	p =.002*
Intent to Stay(n = 358)	$F(319)$= 5.9	p =.016*	$F(248)$= 26.3	p <.001*	$F(248)$= 7.5	p =.007*
Intent to Leave (n = 358)	$F(322)$= 3.1	p =.08	$F(252)$= 21.2	p <.001*	$F(252)$= 6.0	p =.015*

Asterisk (*) indicates significant test result with α = 0.05.

Criterion (BIC) for compound symmetric (CS), unstructured, first-order auto-regressive (AR1) and diagonal variance structures. Models using the compound symmetric variance matrix showed consistently the lowest AIC and BIC measures, so we report results for the CS variance structure models. For each outcome, **Table 5** displays the results of testing the repeated effect of time (that is, was there a change in the outcome between baseline and 6 months), the fixed effect of treatment (was the outcome different between the two groups averaging across time) and, finally, the moderating effect of treatment on time (were changes in the repeated effect of time from baseline and 6 months different by treatment group). The effective rate of missing data for analyses varied between 4.3 % and 5.3 %, depending on the modeled outcome (as noted above, the SPSS MIXED algorithm does not employ listwise deletion of missing data).

The first hypothesis was not supported. Participation in *Resilience Alliance* did not cause the child welfare workforce to experience a reduction in secondary traumatic stress or burnout over 6 months, as there was neither a significant effect of time on secondary traumatic stress ($F = 1.3$, $p = .250$) nor on burnout ($F = 1.7$, $p = .189$). Furthermore, there was no moderating effect of treatment condition on time for either STS ($F = 0.01$, $p = .938$) or for burnout ($F = 1.3$, $p = .250$). The lack of a moderating effect indicates that, in addition to no overall effect of time, there is not a significantly different effect of time within either group. Similarly,

the second hypothesis was also not supported. Participation in *Resilience Alliance* did not cause the child welfare workforce to report higher levels of resilience after 6 months, as there was not a significant effect of time on reported resilience ($F = 2.9$, $p = .089$). Furthermore, there was no moderating effect of treatment condition on time for resilience ($F = 1.4$, $p = .243$).

4.3.2. Change over time moderated by treatment – Turnover intentions (H3)

The third hypothesis was supported. Significant changes did occur for "Thinking about Quitting," "Intent to Search," "Intent to Stay" and "Intent to Leave" turnover intentions. There were main effects of time for all four turnover intention outcomes: thinking ($F = 12.5$, $p < .001$), searching ($F = 14.2$, $p < .001$), staying ($F = 26.3$, $p < .001$) and leaving ($F = 21.2$, $p < .001$) at the $\alpha = 0.05$ level of significance. There were significant differences in change over time between treatment groups for all four measures: thinking ($F = 4.4$, $p = .036$), searching ($F = 10.1$, $p = .002$), staying ($F = 7.5$, $p = .007$) and leaving ($F = 6.0$, $p = .015$).

To understand whether the direction of differing change between treatment groups was consistent with our hypothesis, we conducted pairwise comparisons within each treatment group, adjusting for multiple comparisons with the Bonferroni correction. The mean difference in "Thinking about Quitting" between baseline and 6 months in the control group was an increase of 0.34 points ($p < .001$) while the mean difference for the for the treatment group was a point increase not significantly different from zero ($p = .310$). For "Intent to Search" between baseline and 6 months in the control group there was an increase of 0.72 points ($p < .001$) while the mean difference in the treatment group was not significantly different from zero ($p = .672$). The mean difference in "Intent to Stay" between baseline and 6 months in the control group was a decrease of 0.723 ($p < .001$) while the mean difference in the treatment group was not significantly different from zero ($p = .090$). Finally, the mean difference in "Intent to Leave" between baseline and 6 months in the control group was an increase of 0.713 ($p < .001$) while the mean difference in the treatment group was not significantly different from zero ($p = .125$).

4.3.3. Actual turnover (H4)

Since hypothesis three was supported, hypothesis four was also tested. **Table 6** displays the percentage of study-participants (workers and supervisors) from the experimental and control groups who had turned over from a case-carrying role and who had turned over from DHHS by end of December 2021. For the case-carrying outcome, a chi-square test shows no difference between groups in the percentage of workers and supervisors who turned over from a case-carrying role by December 2021; 47.5 % in the control group had turned over and 46.9 % in the experimental RA group ($\chi^2 = 0.02$; $p = .897$). For the DHHS outcome, a chi-square test shows no difference between groups in the percentage of workers and supervisors who separated from DHHS by December 2021; 38.8 % in the control group had turned over and 38.5 % in the experimental RA group ($\chi^2 = 0.00$; $p = .959$).

Furthermore, we examined whether these actual turnover percentages differed by turnover intention. The additional question is: "Was RA possibly effective at reducing turnover among those who initially had a stronger intention to search or leave (even given that RA effected no overall change in turnover)? Baseline measures of two turnover intentions – Intent to Stay and Intent to Leave – are significant predictors of turnover from a case-carrying position by the end of December 2021. However, participants in *Resilience Alliance* with higher initial intentions

Table 6 Actual 30-month Turnover Percentages by Group.

Separated from case-carrying employment by Dec 2021 - Yes/No

	No	%	Yes	%	Total
Control group	96	52.5 %	87	47.5 %	183
Experimental group	102	53.1 %	90	46.9 %	192
Total	198	52.8 %	177	47.2 %	375

Pearson $\chi^2 = 0.017$; $p = .897$

Separated from DHHS employment by Dec 2021 - Yes/No

	No	%	Yes	%	Total
Control group	112	61.2 %	71	38.8 %	183
Experimental group	118	61.5 %	74	38.5 %	192
Total	230	61.3 %	145	38.7 %	375

Pearson $\chi^2 = 0.003$; $p = .959$.

(stay or leave) did not actually turnover more or less often than those in the control group. Similarly, intention to stay and intention to leave are also predictors of turning over completely from DHHS, but as above, participants in *Resilience Alliance* with high initial intentions (stay or leave) did not actually turnover more or less often than those in the control group with high initial intent.

5. Discussion

The first hypothesis (RA will cause the child welfare workforce to experience lower levels of secondary traumatic stress and burnout after 6 months) was not supported, as there were no statistically significant differences in STS or burnout changes over the six-month period between treatment and control group. Likewise, the second hypothesis (i.e., participation in *Resilience Alliance* will cause the child welfare workforce to report higher levels of resilience after 6 months) was not supported.

The third hypothesis – participation in *Resilience Alliance* will cause the child welfare workforce to report lower intent to search for work and/or leave their current position and to report higher intent to stay in their current position after 6 months – was supported. Results showed that participation in *Resilience Alliance* did cause significant differences in change over time between groups for all four turnover intentions: "Thinking about Quitting," "Intent to Search," "Intent to Stay" and "Intent to Leave" turnover intentions. Finally, the last hypothesis, that RA would lead to lower case-carrying and DHHS turnover percentages was not supported. The rigorous randomized study and non-significant percentage point differences allow us to conclude that participation in RA did not lead to reductions in turnover over a 30-month period among caseworkers and supervisors.

Conceptually, we expected that regular participation in *Resilience Alliance* would increase resilience and lower burnout and STS. In turn, we expected these improvements in resilience, burnout and STS to facilitate differences in turnover intentions between treatment and control groups. In other words, group differences for change over time in turnover intention would be explained by varying change over time in resilience, burnout and STS. Instead, we observed improvements in all measures of turnover intention, but without any significant effects for

the facilitating factors. Thus, these results lead to the question of what mechanism links participation in *Resilience Alliance* with reduced thinking about quitting and intent to search/leave, and with increased intent to stay in the treatment group compared to controls.

Developers of the *Resilience Alliance* intervention did report reductions in negative emotion and increases in resilience when they implemented RA with child welfare workers in New York City (ACSNYU, 2012). However, they did not publish their results in a peer reviewed article and did not provide thorough numerical evidence in their brief account of results of their study. They also did not randomly assign staff to treatment and control conditions. Our conduct of a cluster randomized controlled trial led to a more rigorous examination of this adapted version of *Resilience Alliance.* However, several factors may have led to our differing results besides the rigor of the research design.

With any intervention study that generates null results for key outcomes, questions arise relating to the implementation of the intervention. First, analyses of fidelity to the RA intervention for each group and overall are needed (Dane & Schneider, 1998). If there was not high enough adherence to the manualized RA intervention, quality of delivery, engagement of participants and sufficient agency-level support for transfer of skills of the intervention to daily practice, any of these could affect outcomes. Attendance data does show that overall RA dosage fell short for the intent-to-treat group. This was affected by turnover during the study period, changes in unit assignment and the fact that, though attendance at RA was highly encouraged, it was not mandatory. A general expectation in public health is that a high percentage of participants need to attend 75 % or more sessions in a curriculum-driven intervention (e.g., see Farb & Margois, 2016). Among the participants assigned to RA in this study, only 43 % met that standard.

Given the above, our follow-up research will examine additional questions such as: Did those with more exposure to *Resilience Alliance* show significant improvements? What was the adherence to the curriculum by facilitators and did most facilitators cover 75–80 %+ of the material? If not, were there differences in outcomes for those groups where adherence was high versus those where adherence was lower? Were there differences in outcome for those groups with high quality facilitators vs low quality facilitators? How engaged were participants in the RA groups? And by taking into consideration all these fidelity variables: to

what extent were those in high fidelity situations better able to benefit and reach desired outcomes? We will examine these questions in detail in our follow-up implementation and treatment-on-the-treated analyses manuscript.

Another possibility for differing results from the New York study (ACS-NYU, 2012) was the fact that we tested an adaptation of *Resilience Alliance* reflecting the state context. In the current study, workers were in *Resilience Alliance* groups with their teammates and supervisors. This may have reduced their willingness to share all the struggles they experience with clients and their emotional reactions to the trauma they are exposed to so as not to appear weak or incompetent in front of supervisors or teammates. In addition, being in a group with their supervisor and teammates likely reduced their ability to share struggles they experience with individuals on their team, with their team as a whole or with their supervisors. Perhaps such sharing and receipt of support from others in the agency but who were on different teams (which was structurally allowed in the NYC version of *Resilience Alliance*) was a key ingredient for ameliorating stress that was missing from the adapted version.

Furthermore, it could be the case that more of the NYC workers experienced higher levels of STS or burnout than the workers in the current study. NYC is an urban environment with very high caseloads. Child welfare staff in NYC may be exposed to more traumatized clients and traumatizing experiences than those in the current study in terms of diversity, volume, and frequency of exposure (Cieslak et al., 2013). What the NYC study does not report is the mean STS score pre- to postintervention, nor the percentage of staff who experienced elevated levels of STS, so these comparisons can't be made with the population of the current study. Measurement of worker burnout is also not included in the study report.

Finally, the *Resilience Alliance* intervention teaches particular skills to help a person become more resilient. These skills included adopting a more optimistic outlook, enhancing feelings of self-efficacy, finding meaning in the mission of child welfare and work with families, enhancing awareness of emotional reactions to the work and strategies for regulating those emotions better, enhancing positive (active) as opposed to negative (passive e.g. drinking, avoidance, suppression) coping skills, learning how to build self-care into one's workday and life and being more deliberate about engaging in self-care, reframing stress as a

challenge rather than a threat, how to better solve problems and how to seek and give effective forms of emotional and tangible social support. Data for some of these skill-based outcomes were collected and will be subsequently analyzed, perhaps showing improvements because of RA. Such change in skills and attitudes may be more predictive of STS and resilience scores than simple participation in RA. For while some staff already had such skills and perhaps had lower STS to begin with, others may have benefitted more from the skills aimed at preventing and managing STS in the future. Further work will also include a look at these more proximal outcomes.

5.1. Limitations

The cluster randomized design of the study is strong and enhances the validity of these results. However, one limitation of the study, which comes from implementing a clustered design in an actual child welfare agency is that movement occurred between treatment and control groups due to natural processes of workers transferring between offices and work groups, whether at the behest of the agency or by their own request. Also, the agency experienced natural turnover across the study timeframe, with some workers resigning and then new workers coming on board. The analyses discussed here are intent-to-treat analyses, with workers always remaining in the randomized groups to which they were originally assigned. Just as we are aware of some workers who were assigned to RA but did not participate due to internal agency transfers; the opposite also occurred, with control workers attending RA in a few cases. These nuances will be explored in later analyses using a treatment-on-the-treated analytic strategy.

A threat to the validity of the design was also "contamination" of the control groups through contact with colleagues who were participating in the intervention. This could have occurred, for example, if case workers or facilitators from RA groups discussed activities or learnings outside the RA meetings, and if such conversations led to control group members also adopting strategies taught in RA. However, this risk was minimized by the fact that the RA groups were led by professional facilitators from outside the agency, so the planning of RA meetings and facilitators' own discussions or reflections would not have occurred in the child welfare offices. Further, RA meetings were always held separate

from other staff meetings. And some smaller offices did not have both treatment and control workers sharing the office; rural offices were often small enough that the entire office either participated in RA or did not; this also limited cross-contact between the two study groups. Finally, since participating workers were indeed discouraged from discussing RA with colleagues (to limit contamination), such lack of conversation could have limited participating staff's ability to reflect on and process the RA material.

6. Conclusion

This study analyzes outcomes from a "real-world" implementation of an adapted *Resilience Alliance* model in a functioning child protective services agency. Thus, the results which show no decreased secondary traumatic stress or burnout over time for the treatment group, and no increased resilience are due not only to the RA intervention itself but incorporate the effects of agency dynamics such as on-going turnover, movement of workers between units, adaptation of RA for a more rural context and success of program implementation. Thus, these results are a reminder that not only is the intervention itself and the research design critical to understanding what works and what doesn't to effect particular workforce outcomes, but so is implementation and understanding who should receive such interventions in the first place. Although the team took an organizational approach to the problem of turnover and uncovered a number of root causes for turnover during the needs assessment, the agency was only willing to examine one area – secondary traumatic stress, while other factors unaddressed by RA may have had more powerful effects on turnover. And, the rigorous cRCT design and agency-wide focus did not allow targeting the intervention for the reduction of STS, burnout and enhancement of resilience only to those with elevated levels of STS and burnout and/or lowered levels of resilience. This study does provide a realistic scenario for how such a program may be supported by leadership (i.e., "don't exclude anyone").

The good news is that, although the adapted RA intervention as implemented in this site may not have impacted STS, burnout and resilience in a straightforward way, it did impact intent to leave – one of the most important (aside from actual turnover) outcomes the intervention was

meant to impact. Other mechanisms may explain why that outcome was impacted by the intervention. The takeaway message for child welfare systems is that the *Resilience Alliance* intervention does lower "thinking about quitting" behaviors and intent to leave the agency across the entire group which participated, more than if no intervention had been undertaken to impact turnover. Thus, this is an intervention that has positive outcomes for making staff feel more inclined to stay with the agency – which is in turn a predictor of actual retention. These relationships between turnover intentions and actual turnover are complex and will be explored in more depth across QIC-WD sites.

In sum, the purpose of the larger QIC-WD was not only to show which workforce interventions reduce turnover in child welfare, but what works for whom under what circumstances. Once an array of interventions have been rigorously evaluated for efficacy across all sites, then administrators facing high turnover among child welfare will be able to adopt interventions tailored for clusters of employees to gradually address all the reasons staff leave agencies (e.g., high stress, poor organizational cultures and climates, problematic supervisors and lack of fit with agency mission and skills needed for the job (Goldstein, Pulakos, Passmore, & Semedo, 2017).

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References

ACS-NYU Children's Trauma Institute. (2011). *The Resilience Alliance: Promoting resilience and reducing secondary trauma among child welfare staff.* New York: NYU Langone Medical Center. Retrieved from: https://www.nctsn.org/resources/resilience-alliance-promoting-resilience-and-reducing-secondary-trauma-among-welfare-0

ACS-NYU Children's Trauma Institute. (2012). *Addressing secondary traumatic stress among child welfare staff: A practice brief.* New York: NYU Langone Medical Center.

Alford, W. K., Malouff, J. M., & Osland, K. S. (2005). Written emotional expression as a coping method in child protective service officers. *International Journal of Stress Management, 12*(2), 177–187.

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author.

Baldschun, A., Hamalainen, J., Totto, P., Rantonen, O., & Salo, P. (2019). Job-strain and well-being among Finnish social workers: Exploring the differences in occupational well-being between child protection social workers and social workers without duties in child protection. *European Journal of Social Work, 22*(1), 43–58. https://doi.org/10.1080/13691457.2017.1357025

Barbee, A. P., & Antle, B. F. (2011). Cost-effectiveness of an integrated service delivery model as measured by worker retention. *Children and Youth Services Review, 33*(9), 1624–1629.

Barbee, A. P., Antle, B. F., Sullivan, D., Dryden, A. A., & Henry, K. (2012). Twenty-five years of the Children's Bureau investment in social work education. *Journal of Public Child Welfare, 6*, 376–389. https://doi.org/10.1080/15548732.2012.705237

Barbee, A. P., Rice, C., Antle, B. F., Cunningham, M. R., & Henry, K. (2018). Factors affecting turnover rates of public child welfare front line workers: Comparing cohorts of Title IV-E Program graduates with regularly hired and trained staff. *Journal of Public Child Welfare: Special Issue on Title IV-E Outcomes, 12*(3), 354–379.

Baugerud, G. A., Vangbaek, S., & Melinder, A. (2018). Secondary traumatic stress, burnout and compassion satisfaction among Norwegian child protection workers: Protective and risk factors. *British Journal of Social Work, 48*, 215–235. https://doi.org/10.1093/bjsw/bcx002

Berger, R., & Gelkopf, M. (2011). An intervention for reducing secondary traumatization and improving professional self-efficacy in well baby clinic nurses following war and terror: A random control trial. *International Journal of Nursing Studies, 48*, 601–610.

Bernotavicz, F. (2000). *Retention of child welfare caseworkers: A report.* Portland, ME: National Child Welfare Resource Center for Organizational Improvement. Retrieved from: http://muskie.usm.maine.edu/helpkids/pubstext/retention.htm

Biggart, L., Ward, E., Cook, L., Stride, C., Schofield, G., Corr, P., … Bailey, S. (2016). *Emotional intelligence and burnout and child and family social work: Implications for policy and practice research briefing.* Norwich: University of East Anglia.

Block, J. H., & Block, J. (1980). The role of ego-control and ego-resiliency in the origination of behavior. In W. A. Collings (Ed.), *The Minnesota Symposia on Child Psychology, 13* (pp. 39–101). Hillsdale, NJ: Erlbaum.

Boamah, D., Barbee, A. P., & Cunningham, M. R. (2022). Risk and protective factors of secondary traumatic stress among direct support professionals working with adults with intellectual or developmental disabilities. *Traumatology*. https://doi.org/10.1037/trm0000414

Boyas, J., Wind, L., & Kang, S. (2012). Exploring the relationship between employment-based social capital, job stress, burnout, and intent to leave among child protection workers: An age-based path analysis model. *Children and Youth Services Review, 34*, 50–62. https://doi.org/10.1016/j.childyouth.2011.08.033

Boyas, J., Wind, L., & Ruiz, E. (2013). Organizational tenure among child welfare workers, burnout, stress and intent to leave: Does employment-based social capital make a difference? *Children and Youth Services Review, 35*(10), 1657–1669. https://doi.org/10.1016/j.childyouth.2013.07.008

Bride, B. E. (2007). Prevalence of Secondary Traumatic Stress among Social Workers. *Social Work, 52*(1), 63–70.

Bride, B. E., Jones, J. L., & Macmaster, S. A. (2007). Correlates of secondary traumatic stress in child protective services workers. *Journal of Evidence-Based Social Work, 4* (3/4), 69–80.

Bride, B. E., Robinson, M. M., Yegidis, B., & Figley, C. R. (2004). Development and Validation of the Secondary Traumatic Stress Scale. *Research on Social Work Practice, 14*(1), 27–35.

Cieslak, R., Anderson, V., Bock, J., Moore, B. A., Peterson, A. L., & Benight, C. C. (2013). Secondary traumatic stress among mental health providers working with the military: Prevalence and its work- and exposure-related correlates. *The Journal of Nervous and Mental Disease, 201*(11), 917–925. https://doi.org/10.1097/NMD.0000000000000034

Colorado Office of Children, Youth and Families. (2019). *Colorado child welfare stipend program pays off.* Retrieved from: https://co4kids.org/community/colorado-child-welfare-stipend-program-pays

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new Resilience Scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety, 18*, 76–82.

Conrad, D., & Kellar-Guenther, Y. (2006). Compassion fatigue, burnout, and compassion satisfaction among Colorado child protection workers. *Child Abuse and Neglect, 30* (10), 1071–1080.

Cornille, T. A., & Meyers, T. W. (1999). Secondary traumatic stress among child protective service workers: Prevalence, severity and predictive factors. *Traumatology, 5*, 15. https://doi.org/10.1177/153476569900500105

Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: are implementation effects out of control? *Clinical Psychology Review, 18* (1), 23–45. https://doi.org/10.1016/s0272-7358(97)00043-3

Dorch, E., McCarthy, M. L., & Denofrio, D. (2008). Calculating child welfare separation, replacement, and training costs. *Social Work in Public Health, 23*(6), 39–54.

Edwards, F. R., & Wildeman, C. (2018). Characteristics of the frontline child welfare workforce. *Children and Youth Services Review, 89*, 13–26.

Farb, A., & Margois, A. (2016). The Teen Pregnancy Prevention Program (2010–2015): Synthesis of impact findings. *American Journal of Public Health, 106*, S9–S15.

Fulcher, G. M., & Smith, R. J. (2010). Environmental correlates of public child welfare worker turnover. *Administration in social work, 34*(5), 442–457. https://doi.org/10.1080/03643107.2010.518530

Glisson, C., Dukes, D., & Green, P. (2006). The effects of the ARC organizational intervention on casework turnover, climate, and culture in children's service systems. *Child Abuse & Neglect, 30*(8), 855–880.

Goldstein, H. W., Pulakos, E. D., Passmore, J., & Semedo, C. (2017). *Handbook of employee recruitment, selection and retention*. New York, NY: Wiley Blackwell.

Graef, M. I., & Hill, E. (2000). Costing child protective services staff turnover. *Child Welfare, 79*(5), 517–533.

Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A Meta-Analysis of Antecedents and Correlates of Employee Turnover: Update, Moderator Tests, and Research Implications for the Next Millennium. *Journal of Management, 26*(3), 463–488.

Harker, R., Pidgeon, A. M., Klaassen, F., & King, S. (2016). Exploring resilience and mindfulness as preventative factors for psychological distress burnout and secondary traumatic stress among human service professionals. *Work, 54*(3), 631–637. https://doi.org/10.3233/WOR-162311

Hom, P. W., & Griffeth, R. W. (1995). *Employee turnover*. Cincinnati, OH: South-Western.

Kim, H. (2011). Job conditions, unmet expectations, and burnout in public child welfare workers: How different from other social workers? *Children and Youth Services Review, 33*(2), 358–367. https://doi.org/10.1016/j.childyouth.2010.10.001

Kim, A., & Mor Barak, M. (2015). The mediating roles of leader-member exchange and perceived organizational support: A longitudinal analysis. *Children and Youth Services Review, 52*, 135–143. https://doi.org/10.1016/j.childyouth.2014.11.009

Kinman, G., & Grant, L. (2017). Building resilience in early-career social workers: Evaluating a multi-modal intervention. *British Journal of Social Work, 47*(7), 1979–1998.

Leake, R., Rienks, S., & Obermann, A. (2017). A deeper look at burnout in the child welfare workforce. *Human service organizations: Management, leadership & governance, 41*(5), 492–502. https://doi.org/10.1080/23303131.2017.1340385

Leiter, M. P., Maslach, C., & Frame, K. (2014). Burnout. In R. L. Cautin, & S. O. Lilienfeld (Eds.), *The Encyclopedia of Clinical Psychology* (p. (pp.).). John Wiley & Sons. https://doi.org/10.1002/9781118625392

Lim, D. H., Hur, H., Ho, Y., Yoo, S., & Yoon, S. W. (2019). Workforce resilience: Integrative review for human resource development. *Performance Improvement Quarterly, 33*(1), 77–101. https://doi.org/10.1002/piq.21318

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press Inc.

McFadden, P., Mallet, J., Campbell, A., & Taylor, B. (2019). Explaining self-reported resilience in child-protection social work: The role of organsational factors, demographic information and job characteristics. *British Journal of Social Work, 49*, 198–216. https://doi.org/10.1093/bjsw/bcy015

McFadden, P., Mallet, J., & Leiter, M. (2017). Extending the two-process model of burnout in child protection workers: The role of resilience in mediating burnout via organizational factors of control, values, fairness, reward, workload, and community relationships. *Stress and Health, 34*, 72–83. https://doi.org/10.1002/smi.2763

Rees, C. S., Breen, L. J., Cusack, L., & Hegney, D. (2015). Understanding individual resilience in the workplace: The international collaboration of workforce resilience model. *Frontiers in Psychology, 6*, 1–7. https://doi.org/10.3389/fpsyg.2015.00073

Riley, M. R., Mohr, D. C., & Waddimba, A. C. (2018). The reliability and validity of three-item screening measures for burnout: Evidence from group-employed health-care practitioners in upstate New York. *Stress and Health, 34*, 187–193.

Russ, E., Lonne, B., & Darlington, Y. (2009). Using resilience to reconceptualise child protection workforce capacity. *Australian Social Work, 62*(3), 324–338. https://doi.org/10.1080/03124070903060042

Stanley, N., Austerberry, H., Bilson, A., Farrelly, N., Hargreaves, K., Hollingworth, K., … Strange, V. (2012). *Social work practices: Report of the National evaluation*. London: Department for Education.

Steinkopf, B., Reddin, R. A., Black, R. A., Van Hasselt, V. B., & Couwels, J. (2018). Assessment of stress and resiliency in emergency dispatchers. *Journal of Police and Criminal Psychology, 33*, 398–411.

Strand, V., & Bosco Ruggiero, S. (2011). Implementing transfer of learning in training and professional development in a U.S. public child welfare agency: What works? *Professional Development in Education, 37*(3), 373–387.

Strolin-Goltzman, J. (2010). Improving turnover in public child welfare: Outcomes from an organizational intervention. *Children and Youth Services Review, 32*(10), 1388–1395.

Travis, D. J., Lizano, E. L., & Mor Barak, M. E. (2016). 'I'm so stressed!': A longitudinal model of stress, burnout and engagement among social workers in child welfare settings. *British Journal of Social Work, 46*, 1076–1095. https://doi.org/10.1093/bjsw/bct205

Turley, R., Roberts, S., Foster, C., Warner, N., El-Banna, A., Evans, R., ... Scourfield, J. (2022). Staff wellbeing and retention in children's social work: Systemic review of interventions. *Research in Social Work Practice, 32*(3), 281–309.

U. S. General Accounting Office. (2003). *Child welfare: HHS could play a greater role in helping child welfare agencies recruit and retain staff.* Washington, DC: Author. Retrieved from: https://www.gao.gov/assets/gao-03-357.pdf

U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2022). *Child Maltreatment 2020*. Available from https://www.acf.hhs.gov/cb/data-research/child-maltreatment

UCLA: Statistical Consulting Group. (n.d.). *Statistical Computing Workshop: Using the SPSS Mixed Command.* Retrieved November 2, 2021 from: https://stats.idre.ucla.edu/spss/seminars/spss-mixed-command/

Waugh, C. E., & Koster, E. H. (2015). A resilience framework for promoting stable remission from depression. *Clinical Psychology Review, 41*, 49–60. https://doi.org/10.1016/j.cpr.2014.05.004

Williams, N. J., & Glisson, C. (2013). Reducing turnover is not enough: The need for proficient organizational cultures to support positive youth outcomes. *Children and Youth Services Review, 35*, 1871–1877.

Yankeelov, P. A., Barbee, A. P., Sullivan, D. J., & Antle, B. (2009). Retention of child welfare workers. *Children and Youth Services Review, 31*, 547–554. https://doi.org/10.1016/j.childyouth.2008.10.014

Zlotnik, J., & Pryce, J. A. (2013). Status of the use of Title IV-E funding in BSW and MSW programs. *Journal of Public Child Welfare, 7*(4), 430–446. https://doi.org/10.1080/15548732.2013.806278