Psychological Trauma: Theory, Research, Practice, and Policy

Evaluation of Real Life Heroes Treatment for Children with Complex PTSD

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The efficacy of *Real Life Heroes* (RLH) treatment was tested with 119 children in 7 child and family service programs, ranging from home-based family counseling to residential treatment. RLH is a sequential, attachment-centered treatment intervention for children with Complex PTSD that focuses on 3 primary components: affect regulation, emotionally supportive relationships, and life story integration to build resources and skills for resilience. Results included statistically significant decreases from baseline to 6 months in child behavior problems on the CBCL (Internalizing and Total Behavior), the Anger subscale of the TSCC, the UCLA PTSD Index-Parent Version (Reexperiencing, Avoidance, Hyperarousal, and Total Symptoms), and the UCLA PTSD Index-Child Version (Avoidance and Total Symptoms). Significant reductions were also found with repeated measures at 3-month assessments from baseline to 9 months on the CBCL, the UCLA Parent and Child Versions, and the PTSD subscale of the TSCC. Children receiving RLH did not have placements or psychiatric hospitalizations, a positive, but not significant trend, compared with trauma-informed "treatment as usual" provided by RLH-trained practitioners in the same programs. The study supported the efficacy of implementing trauma and resiliency-focused treatment in a wide range of child welfare programs and the importance of providing sequential attachment-centered treatment for children with symptoms of Complex PTSD.

Keywords: PTSD, traumatic stress, Complex PTSD, Real Life Heroes, attachment

Children referred to child and family service programs have often experienced multiple types of traumas including neglect, emotional, physical, and/or sexual abuse, along with losses, changes, or disruptions in their relationships with caregivers and a wide spectrum of developmental delays. Greeson et al. (2011) found that children and adolescents in foster care programs had experienced a mean of 4.7 types of traumas including one caregiver-related trauma (e.g., abuse or neglect). Richardson, Henry, Black-Pond, & Sloane (2008) found that 71% to 88% of children in child welfare programs had moderate to major delays in receptive and expressive language, fine motor skills, sequential abilities, visual processing, and memory functions. Nearly 90% of

the children had significant problems with inattention, as well as high levels of aggression, rule-breaking, social difficulties, and total behavior problems. Greater developmental delays were significantly associated with the number of types of maltreatment events experienced by children.

Multiple exposures to trauma and breakdowns of attachment have been associated with symptoms of Complex PTSD, including difficulties with regulation of affect and impulses, cognitive functioning, dissociation, somatization, relationships, and sense of self (Cook, Blaustein, Spinazzola, & van der Kolk, 2003). For children with Complex PTSD, best practice guidelines (Ford & Cloitre, 2009) recommend use of evidence-supported interventions that build the requisite self-regulation skills and secure attuned relationships between children and caregivers necessary for children to have the safety needed for traumatic memory processing. Recommended practices for treatment of Complex PTSD in children (Ford & Cloitre, 2009) include addressing the following: a) Safety and stability for the child and family; b) a "triadic relational bridge" linking child, primary caretaker, and therapist; c) relational and strengths-based diagnosis, treatment planning, and outcome monitoring; d) self-regulation of emotion, attention, memory, decision-making, information processing, consciousness and motivation, body movements, and relational interaction be enhanced in all phases of treatment; e) a three-phase process for addressing traumatic memories with criteria to determine *with whom*, *when*, and *how* to address traumas and how to adapt interventions for each child, family, and program; and f) preventing and managing relational discontinuities and psychosocial crises. Cloitre et al. (2010) found that treatment for PTSD related to childhood abuse was more effective when treatment was provided sequentially and addressed problems with affect dysregulation and interpersonal relationships followed by trauma-focused exposure rather than providing these components separately.

Behavioral and mental health problems have been reported to markedly increase for school-age children (Griffin et al., 2011). Latency provides a window of opportunity to prevent the increasing incidence of high risk behaviors (aggression to others, self-abuse, and suicide attempts) commonly reported as children in child welfare programs move into adolescence. Child Welfare and mental health services seek to help these children; however, services have often been fragmented and hampered by the lack of availability of mental health practitioners who can provide evidence-supported trauma and attachment-focused treatment. Treatment programs have often focused on behavioral problems and mental health diagnoses, without addressing youth's exposure to traumas, trauma reactions, and how trauma is linked to youth's problems (Kisiel & Lyons, 2001; Kletzka & Siegfried, 2008).

Real Life Heroes (RLH)

RLH (Kagan, 2004, 2007a, 2007b) is a manualized therapy centered on use of a life story workbook and structured activities matched to the phase-based components outlined by the NCTSN Complex Trauma Workgroup (Cook et al., 2003) and recommended practice guidelines (Ford & Cloitre, 2009) for treatment of Complex PTSD in children. The model is listed in the National Registry of Evidence-based Programs and Practices by the Substance Abuse Mental Health Services Administration (SAMHSA) and the SAMHSA National Center for

Trauma-Informed Care "Models for Developing Trauma-Informed Behavioral Health Systems and Trauma-Specific Services" based on previous research (Kagan, Douglas, Hornik, & Kratz, 2008). RLH is also one of several treatment models identified by the National Child Traumatic Stress Network (NCTSN) as an Evidence-supported and Promising Practice specifically for treatment of children with Complex PTSD (Ford & Courtois, 2013). RLH provides practitioners with a structured series of easy-to-use tools including a life storybook, manual, creative arts activities, and psycho education resources designed to engage hard-to-reach children and caregivers in trauma- and resiliency-focused services. Tools and activities were designed for use with children ages 6–12 and have also been adapted and used successfully with adolescents with Complex PTSD functioning at a latency level of social, emotional, or cognitive development. For adolescents, activities incorporate higher level interests, skills, and media, for example, use of keyboards instead of xylophones, greater use of video instead of drawings, and activities matching workbook pages without necessarily using the Life Storybook. Tools and procedures were developed and tested in a wide range of child and family service programs including children with symptoms of Complex PTSD who lacked stable relationships with caregivers they could count on to provide a safe home and work with them in therapy and children referred for high risk behaviors that threatened the safety of children, families, organizations, and communities.

Real Life Heroes focuses on three primary components for strengthening resiliency skills and resources: *Relationships, Emotional Self and Co-Regulation,* and *Life Story Integration.* These components frame an integrated protocol that begins with developmentally based assessments and guides service planning, prioritization of treatment objectives, session structure, fidelity, review of progress, and use of evaluation measures. RLH provides a step by step session structure and promotes creative flexibility to support requisite skills and relationships for the treatment of complex trauma. Interventions and activities are prioritized in service plans and sessions to help children and caregivers progress sequentially along two complementary dimensions (adapted from Saxe et al., 2007) – the child's level of self-regulation, and the strength and availability of emotionally supportive relationships. The session structure is titrated to match prioritization of treatment components. In each session, children learn to recognize clues in their own bodies and how to share these safely. Sessions include sharing feelings nonverbally on thermometers for stress, self-control, and feeling mad, sad, glad, and safe. Magic and centering activities at the beginning of sessions utilize movement, focusing, and mindfulness activities to engage children and caregivers to learn and practice skills and to reduce stress. Children and caregivers then complete pages from the RLH Life Storybook. The Life Storybook helps children share experiences and develop affect modulation skills with art, rhythm, music, movement and theater arts. Practitioners help children (and caregivers) transform their drawings into three-chapter stories (or movies) with a beginning, middle, and an end so children learn they can *move through* both good times and "tough times," and make things better in their lives instead of feeling hopeless, shamed, or overwhelmed. Chapters in the workbook match recommendations (Ford & Cloitre, 2009) for phase-based development of self-regulation, emotionally supportive relationships, desensitization of trauma reminders, and reintegration

of painful memories to foster healing after serial traumatic experiences.

Real Life Heroes helps practitioners reframe referrals based on pathologies and blame into a shared "journey," a "pathway" to healing and recovery focused on restoring (or building) emotionally supportive and enduring relationships and promoting development of affect regulation skills for children and caregivers. To do this, the model utilizes the metaphor of the heroic quest and stresses the importance of engaging caregivers and a collaborative team of caring adults working together with an integrated trauma and resiliency-centered framework to help children with Complex PTSD. Learning about heroes includes sharing stories of how family members and people with the child's ethnic heritage have overcome hard times and encouraging children to develop their own strengths, resources, and coping skills, building on strengths in their family and cultural heritage. Creative arts and shared life story work help children and caregivers develop the safety, attunement, and affect modulation skills needed for reintegration of traumatic memories.

The Current Study

The current study evaluates the efficacy of (RLH) across a wide range of mental health and child welfare programs within a large nonprofit agency and a county mental health clinic in the eastern United States. Programs who elected to participate in training programs were encouraged to send all of their practitioners to participate in an "All-Practitioner" learning collaborative (Kagan, Henry, Richardson, Trinkle, & LaFrenier, 2013), and several program directors required staff to try the model with at least one child. No reimbursements or caseload reductions were provided for participation; however, practitioners were given $50 to spend on creative arts supplies matched to each child enrolled plus use of a digital camera. Practitioners were master's level social workers and counseling psychologists as well as bachelor's level staff and social work interns working under the supervision of certified master's-level staff. Practitioners participated in approximately 12 hours of RLH workshops along with training on systems integration and assessment, and supplemented by monthly consultation group meetings and individualized consultation. The agency had previously provided trauma-informed training across programs and disciplines, instituted principles from the Sanctuary Model (Bloom & Farragher, 2013) organizationally, and provided almost all practitioners with other trauma-informed evidence based training programs including Trauma-Focused Cognitive Behavioral Therapy (Cohen, Deblinger & Mannarino, 2006).

It was hypothesized that children receiving RLH would have a reduction in trauma symptoms, behavior problems, rate of placement, rate of psychiatric hospitalization, and increase in mastery and supportive relationships. As well, it was expected that the extent to which child outcomes were positive would be negatively associated with the number of types of trauma experienced, and positively associated with practitioner fidelity to the model. A final research question considered whether the magnitude of change in outcomes varies according to trauma type experienced.

Method

A repeated measures mixed methods design was used to determine the effectiveness of *Real Life Heroes* in improving child outcomes. Data were collected at baseline and at three-month intervals from children and caregivers after the caregiver consented to participation in the study. Parents received a $20 gift card for participation for each data collection session. Participants were followed up to 15 months, until the end of their participation with RLH, or up to the end of the study.

Study Sample

Study participants were children from 6–18 years old who received services through one of the agency programs – Prevention (High Risk, Home-based Family Counseling), Outpatient Mental Health Clinic, Day Treatment, Foster Family Care, Community Residence, or Residential Treatment programs or the Albany County Children's Mental Health Clinic (ACCMHC) and either had a diagnosis of PTSD or had documented exposure to at least one type of trauma and significant elevation on a measure of traumatic stress, for example, the UCLA PTSD Index administered at baseline. The study was purposefully designed to capture children who demonstrated significant symptoms of complex trauma (Cook et al., 2003), even if they did not necessarily meet the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition, text revision (*DSM–IV*) criteria for PTSD. Complex trauma exposure was assessed by number and type of traumas experienced (interpersonal, traumatic death, or noninterpersonal) and behavioral functioning on baseline measures.

Most of the enrolled children came from programs mandating service participation because of dangerous behaviors or unsafe living conditions with their families. Children were included in the study even if they did not have a safe home or a committed parent or guardian who was able and willing to participate in trauma therapy; 21.2% of the children were living in substitute care (foster family, group care, or residential treatment). Children were also included in the study if they did not have a caregiver, child protective services, or a judge who had validated the child's disclosure of physical, sexual, or emotional abuse and instituted steps to protect the child. Children who were actively homicidal, suicidal, or psychotic, or were living at home with *imminent* risk of severe harm to the child or another family member were excluded. HSIRB approval was received from the Western Michigan University HSIRB as well as from the agency HSIRB. Children had to have at least a month of treatment to be included in outcome analyses. Total number of sessions varied and was based on needs of child and length of time child remained in agency and RLH treatment. Mean number of chapters in the RLH Life Storybook completed was 3.7, which represented a measure of time and treatment progress where data were available. The TI-TAU comparison group included all other children in the same agency programs during the same time period.

Measures

Child Behavior Checklist (CBCL) 6–18 (Achenbach & Rescoria, 2000). This widely used caregiver-completed measure consists of 118 items scored on a 3-point scale ranging from 0 (*not*

true) to 2 (*often true*) and yields scores on two broad scales, Internalizing and Externalizing, and on empirically based syndrome scales that reflect emotional and behavioral problems and symptoms. Scores are reported as standardized *t* scores. Test–retest reliability is very high, with *r* ranging from .93 to 1.00; internal consistency alpha values range from .63 to .79. Criterion validity is supported by multiple regressions, odds ratios, and discriminant analyses all at $p < .01$.

UCLA PTSD Index (parent version and child version - Pynoos et al., 1998). The UCLA screens for exposure to traumatic events and *DSM–IV* PTSD symptoms in school-age children and adolescents. A total score cut-off of 38 has a sensitivity of 0.93 and specificity of 0.87 in detecting PTSD (Rodriguez, Steinberg, Saltzman, & Pynoos, 2001a, 2001b). Reports on internal consistency have found Cronbach's alpha to fall in the range of 0.90, and test–retest reliability has ranged from good to excellent with a reported test–retest reliability coefficient of 0.84 for the *DSM–IV* version (Roussos et al., 2005).

CDS trauma history profile. This portion of the NCTSN Core Data Set (CDS) was derived from the Trauma History Profile (THP) component of the UCLA PTSD Reaction Index (Steinberg & Brymer, 2008). The THP was completed by the provider at intake or early in the course of services. Information about history of trauma, traumatic loss, bereavement, and separation was obtained from multiple informants, including the child or adolescent, parents/caregivers, other relatives/collaterals, or available reports. No independent measures were possible to verify this information. Caregivers were rated as impaired based on CDS definitions of substance abuse, mental health, or physical limitations to caregiving. Definitions were supplied for all trauma types modeled on the National Child Abuse and Neglect Data System (NCANDS) Glossary. For the current study, only confirmed traumas types were used.

Trauma Symptom Checklist for Children (TSCC – Briere, 1996). The TSCC is a standardized self-report tool normed on children from ages 8–16. Children are asked to rate statements reflecting how often they experience a particular emotion or event. Subscale and total scale scores were used in the current analyses. The TSCC scales and subscales show high internal consistency, ranging from .81 to .89, with validity scale alphas of .85 for UND and .66 for HYP. Convergent and discriminant validity have been established through multiple independent studies demonstrating high correlation of the TSCC with other psychometrically sound instruments.

Resiliency Scales for children and adolescents (Prince-Embury, 2006). The Resiliency Scales assess mastery, relatedness, and emotional reactivity in a self-report 64-item format. Internal consistency is good, with alphas ranging from .83–.90. Correlation coefficients for test–retest reliability ranged from .79 to .88. Confirmatory factor analysis supports this three-factor model.

RLH Fidelity Metric. The Fidelity Metric analyzes provision of RLH core components collected from the RLH Progress Notes completed by practitioners and the RLH Chapter Checkpoints completed by consultants working individually with practitioners. Core components included: *Attachments* (emotionally supportive relationships and coregulation), *Self-regulation* (planning, calming, focusing), and *Life Story Integration* including desensitization, leading to development of coping skills and resources for resiliency.

Analysis

Descriptive statistics were run for demographic characteristics, program participation, and trauma exposures. A repeated-measures general linear model was used to determine changes from baseline to the last data point for each of the measures. Correlations were used to analyzed the association between fidelity to the model and magnitude of change in outcomes. Finally, General Linear Model (GLM) was used to determine magnitude of change in outcomes according to type of trauma experienced.

Results

There were 119 children and adolescents enrolled in the study, 60 boys and 59 girls. Demographics are displayed in Table 1. The majority of the children received Prevention services ($n = 44$), 25 in the Outpatient Clinic, 18 in Day Treatment, 7 in Residential Programs, 3 in Community Residences, and 8 in the ACCMHC (community mental health). Enrollment by race included 54 Caucasian/white, 41 African American, 18 multirace, and 6 not reported. Most of the enrollees were ages 6–12 (73%, $n = 87$), with the remaining 32 aged 13–18.

Participants had experienced a mean of 3.65 traumas identified by caregivers in baseline interviews using the NCTSN CDS Trauma History Profile. Table 2 shows the breakdown of participants having experienced specific trauma types documented on the baseline NCTSN CDS Trauma History Profile and the UCLA PTSD Index. Ninety-three percent ($n = 101$) of the sample were found to have had at least one interpersonal, familial trauma, and the remaining 7% ($n = 8$) did not endorse familial maltreatments but had experienced traumatic death. No significant differences were found for child's program, age of child, or gender.

Forty-three children had data collected consecutively at baseline, 3 months, and 6 months. Seventeen of those had consecutive data collected up to 9 months, and eight had consecutive data collected up to 12 months. Data collection was limited as a result of termination of program services for a large number of children

Table 1
*Demographic Characteristics and Program, (*n = *119)*

Characteristic/program	n (%)
Gender	
Male	60 (50)
Female	59 (50)
Race	
African-American/black	41 (34)
Caucasian/white	54 (45)
Multi-race	18 (15)
Age, years	
6–9	42 (35)
10–12	45 (38)
13–15	26 (22)
16–18	6 (5)
Program	
Prevention	44 (37)
Day treatment	18 (15)
Outpatient	25 (21)
ACCMHC	8 (6)
Residential	7 (5)
Community residences	3 (3)

Table 2

Trauma History Profile – Participants Experiencing Specific Trauma Types

Trauma type	*n* (%)
Sexual abuse	19 (18)
Sexual assault	6 (6)
Physical abuse	31 (28)
Physical assault	16 (15)
Neglect	38 (35)
Emotional abuse	45 (41)
Domestic violence	59 (54)
Impaired caregiver	47 (43)
Traumatic grief	61 (56)
Community violence	11 (10)
School violence	22 (20)
Medical trauma	22 (20)
Accident	15 (14)
Other	10 (10)

Table 3

CBCL (n = 39), *UCLA* (n = 34,19), *and TSCC* (n = 26) – *Change From Baseline to 6 Months*

Scale	Baseline *M*	6-month *M*	*t* (*df*)	*p* value
CBCL				
Anxious/depressed	63.0	59.8	2.08 (38)	.052
Withdrawn/depressed	62.7	59.9	2.01 (38)	.045
Somatic	60.3	58.5	1.59 (38)	.120
Social problems	65.4	63.6	1.53 (38)	.135
Thought problems	65.5	61.8	2.89 (38)	.009
Attention	68.1	65.8	2.03 (38)	.049
Aggression	70.7	67.8	1.69 (38)	.098
Rule-breaking	66.7	65.4	1.24 (38)	.221
Internalizing	62.9	58.8	2.75 (38)	.009
Externalizing	68.7	66.7	1.72 (38)	.094
Total CBCL	68.1	64.9	2.81 (38)	.008
UCLA PTSD – parent				
Re-experiencing	8.9	6.4	2.15 (32)	.039
Avoidance	10.4	6.9	3.87 (33)	.001
Hyperarousal	10.6	8.4	2.59 (33)	.014
Total score	29.7	21.1	3.82 (33)	.001
UCLA PTSD – child				
Re-experiencing	8.0	5.5	1.71 (18)	.105
Avoidance	10.9	6.9	2.01 (18)	.025
Hyperarousal	10.2	8.4	1.55 (18)	.138
Total score	29.4	20.6	2.93 (18)	.009
TSCC				
Anxious	49.0	48.3	.403 (42)	.689
Depressed	50.5	49.4	.625 (42)	.535
PTSD	50.9	48.8	1.37 (42)	.179
Anger	54.4	51.0	1.97 (42)	.056
Dissociation	52.4	51.1	.827 (42)	.413

within the first six months, parents refusing to complete follow-up evaluations, missing data from incompletion of measures, and the inability to follow up more than six months for a number of children enrolled in the final year of the project.

Sample differences in follow-up data collection compared with baseline were tested for each of the repeated-measures analyses. No differences were found between groups for age, gender, race, program, or number of types of maltreatment for all parent-completed measures,. The same held true for child-completed measures with two exceptions. Campus-based programs, Day Treatment and Residential, were overrepresented and Foster Care was underrepresented for the TSCC 6 month follow-up and Caucasian children were overrepresented compared with all children of color. Similarly, in the 9-month analysis of the CBCL, the only significant differences found were overrepresentation by Child Guidance and underrepresentation by Prevention.

A survey of practitioners was conducted three months before the end of the Project and found that 78.8% of the 118 children in the study continued RLH treatment until families ended or were no longer eligible for agency services. Of the children who stopped RLH treatment but remained in their agency programs (21.2% of the sample), 12.7% stopped because parents declined to continue, 3.4% because the practitioner stopped work, and 1.7% because the child did not want to continue. A small number (3.4%) continued in program services after completing the RLH Life Storybook. This suggests better than expected client retention compared with norms suggesting that more than 45% of psychotherapy clients stop participation prematurely (Wierzbicki & Pekarik, 1993). Practitioner turnover was also high during the course of the study, with a 34% attrition rate (19 of 56 therapists). Nearly a third (32%) of the children experienced transfers between primary therapists in the course of HEROES treatment. Continuation of RLH was more likely when the child remained in the same program, when HEROES individualized consultation was transferred to the new therapist, and when children were transferred to a HEROES Clinical Coach serving as their new therapist.

Paired sample *t* tests revealed that children in RLH treatment demonstrated statistically significant reductions from baseline to six months (see Table 3) in Internalizing and Total problems on the CBCL and trauma symptoms on all subscales and total scores for

the UCLA PTSD Index Parent Version, the Avoidance subscale and total scores for the UCLA PTSD Index Child Version, and on the TSCC Anger subscale.

A GLM repeated measures analysis was used to determine change in CBCL scores after 9 months of participation with HEROES (see Table 4). There was adequate power to detect a moderate effect size in Internalizing ($\eta^2 = .293$), Externalizing ($\eta^2 = .315$), and Total CBCL behaviors ($\eta^2 = .375$), even with the limited sample size.

A repeated measures GLM was also used to analyze the TSCC for change from baseline to nine months. Using the validity scales in the TSCC reduced the sample size, so only measures at baseline and 9 months were compared. With such small numbers for the TSCC, the outliers in several domains appeared to reduce significance levels and only the PTSD Scale showed significant change with a reduction in symptoms (Baseline Mean: 53.6; Baseline *SD*: 6.7; 9-Month Mean: 46.9; 9-Month *SD*: 6.9; *F*(*df*), $\eta^2 = 9.307$ (10), .482; *p* = .012). GLM was also used to compare baseline to six-month TSCC data in

Table 4

CBCL Repeated Measures Results at 9 Months (4 Data Points; n = 12)

CBCL scale	*M* Baseline	9-month *M*	*F*(*df*), η^2	*p*
Internalizing	63.3	55.7	4.549 (3), .293	.009
Externalizing	69.2	61.9	5.087 (3), .315	.005
Total CBCL	68.1	60.2	6.606 (3), .375	.001

an effort to increase the sample size with 26 valid cases. The Anger domain showed a statistically significant difference in means, with baseline $M = 57.6$ (12.2) and six-month $M = 53.1$ (9.0), $F = 5.557(10)$, $\eta^2 = .182$, $p = .012$. No other domain showed significant results. A significant reduction was found on the UCLA PTSD Index (Parent and Child versions) for posttraumatic stress symptoms after 9 months of RLH (see Table 5).

No significant differences were found from baseline to 9 months for the Resiliency Scales, nor from baseline to 6 months when all child test scores were used. A few participants appeared to have significantly anomalous scores, including markedly different scores from one testing to the next. The Resiliency Scales lack validity scales and these scores were likely a confounding influence. Results may reflect differences in child responses to different data collectors or a challenging time in their lives.

Placements/Psychiatric Hospitalizations: RLH and "Trauma-Informed Treatment as Usual"

Both the RLH and the "trauma-informed treatment as usual" (TI-TAU) groups achieved high rates of prevention of placements and psychiatric hospitalizations, two critical outcome measures for these programs based on analysis of agency records, as shown in Table 6. None of the children provided with RLH treatment in the home-based prevention of placement program were placed into foster care, juvenile justice, or residential programs during the course of treatment. And, none the children provided with RLH treatment in the six PCFC programs had psychiatric hospitalizations during RLH treatment. These outcomes were better, but not with statistical significance, than rates of placement and psychiatric hospitalization for all other youths in the same six agency programs receiving (TI-TAU) by the same practitioners during the same 19-month treatment period. The extent to which there was selection bias in the RLH group is unknown. TI-TAU therapists had previously received trauma training including RLH and TF-CBT, so that the extent to which there was spillover between the two groups is also unknown.

Mediating Factors: Number of Types of Trauma Exposure and Fidelity to Model

Differences in effectiveness of RLH according to types of traumas experienced by children (from baseline interviews) and the CBCL, TSCC, and UCLA outcomes were analyzed. Because RLH is focused on treatment of interpersonal traumas related to development of Complex PTSD, types of trauma exposure analyzed included the following: "impaired caregiver,"[1] grief/loss, sex abuse, physical abuse, emotional abuse, and domestic violence. Differences in CBCL Total baseline scores and outcomes at 9 months are shown in Table 7 according to each trauma type. RLH

treatment showed significantly greater improvement in reducing Internalizing scores for children who did not experience "impaired caregiver," physical abuse, emotional abuse, and traumatic loss, compared with children who had experienced these types of traumas. No significant differences in rates of improvement were found for trauma experiences of domestic violence or sexual abuse, or in analyses of differential impact on CBCL Externalizing or Total Scores.

Also in Table 7 are the rates of improvement according to trauma type based on the UCLA PTSD Index-Parent Version. On this instrument, RLH treatment showed greater impact in reducing traumatic symptoms after physical abuse and emotional abuse as opposed to reduction of symptoms when those two types of abuse were not present.

Fidelity to core components of RLH (Emotional Regulation, Relationships, and Life Story Integration) was tested to discern differences in outcomes on the UCLA Child, UCLA Parent, and CBCL. Fidelity core component domain scores were computed by adding up the 3 or 4 objective components for each core component. The total for each domain was then used as a covariate and also as a grouping variable using the RLH Fidelity Checklist's 3-point scale: $0 = $ *Not done or rarely for relevant chapters = None, to Weak Fidelity*; $1 = $ *Completed but sporadically (<50% of sessions for relevant chapters) = Weak to Moderate Fidelity*; $2 = $ *Completed in over 50% of sessions for relevant chapters = Moderate to Strong Fidelity*.

Statistically significant positive correlations were found between the 6-month change for the UCLA PTSD Parent version total scores and fidelity in Emotional Regulation ($n = 31$; $r = .417$; $p = .020$) and Relationships ($n = 31$; $r = .520$; $p = .003$). No significant correlations were found for Life Story Integration. Contrary to the hypothesis, a significant negative correlation was found for Relationships ($n = 39$; $r = -.346$; $p = .031$).

Discussion

Children receiving RLH treatment demonstrated significant improvements in trauma symptoms and behavior problems. None of the children participating in RLH through the Prevention program required out-of-home placement, and, over all of the seven programs, none of the RLH participants were psychiatrically hospitalized. Treatment gains were found for children who had experienced all of the types of traumas surveyed at baseline, and positive results were not dependent on completion of the RLH workbook to show significant gains. Qualitative appraisals by practitioners are consistent with these results. However, the lack of a control group assessed with study measures and difficulties engaging caregivers to participate in data collection produced a smaller and possibly skewed sample, which limits the scope of conclusions regarding RLH efficacy and suggests caution regarding interpretations.

Challenges to Treatment

Improvement in children's lives took place in real-world child and family service programs facing multiple challenges. The sam-

Table 5

UCLA PTSD Index Total Score Baseline and 9 Months (n = 15)

UCLA scale	Baseline	9 months	$F(df)$, η^2	p value
Parent version	30.7	19.5	8.75 (1), .378	.011
Child version	27.7	16.5	17.06 (1), .608	.002

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[1] "Impaired caregiver" included the following: mental illness, substance abuse, and physical disability of a child's caregiver at any point in their lives as indicated in the baseline interview with the child's primary caregiver at the time of the study.

Table 6
Exploratory Comparison of RLH and Trauma-Informed "Treatment as Usual" Placements and Hospitalizations

Treatment	n	Mean % placement/hospitalization days per month in treatment	Median % placement/hospitalization days per month in treatment
Prevention of placements (home-based prevention program)			
RLH	28	0	0
"Treatment as usual"	540	.61%	.68%
Prevention of psychiatric hospitalizations in six programs			
RLH	63	0	0
"Treatment as usual"	1705	.74%	.79%

ple consisted of children who had experienced complex familial trauma, and also had other risk factors present (lack of invested and/or safe caregiver, unsafe home environment, behavioral problems). Change in therapists occurred for one third of the children in the study over the course of their participation. Practitioners were not screened or selected for motivation, competence, or commitment, nor did they self-select or receive any extra payment for participation in this study. Instead, participation was largely an 'add-on' to ongoing responsibilities and mandated in some programs. Participation was incentivized; however, practitioners were required to adhere to requirements from funding sources for procedures, training, and paperwork, and to maintain utilization rates as priorities over participation in HEROES training and consultation. The study took place during a time when these programs were severely stressed by fiscal cutbacks, reduced service contracts, increased caseloads, and lay-offs in one program.

As was expected, the study found higher levels of problems on baseline assessments associated with the experience of interpersonal traumas, with impaired caregiver and emotional abuse asso-

ciated with the highest trauma symptoms and behavioral problems. Magnitude of improvement was different for different types of trauma, but statistically significant improvement was seen across all trauma types. This suggests that the experience of specific traumas had greater impact than other traumas experienced or that analyzing all interpersonal types of traumas together mitigated the impact for this sample. Children who had caregivers who were not rated as impaired and children who had not experienced emotional or physical abuse showed significant improvements in reducing internalizing and externalizing behavior problems. Conversely, children who had "impaired" caregivers, or experienced emotional or physical abuse, had smaller, although still statistically significant, decreases in behavior problems and trauma symptoms. This finding supports the significance of an emotional bond for children to cope with trauma (Bowlby, 1988) and the importance of strengthening emotionally supportive relationships for children with symptoms of complex trauma (Cook et al., 2003; Ford & Cloitre, 2009).

After six, or in some cases, nine months of treatment, children who had experienced physical and emotional abuse, or had "im-

Table 7
CBCL Total and UCLA Total 9-Month Change According to Trauma Type

Trauma type	Trauma present	Baseline	9 month	$F(df)$ within groups	p value
CBCL total score ($n = 22$)					
Impaired caregiver	Present	72.8	63.8	33.8 (1)	.000
	Not present	66.1	60.1		
Physical abuse	Present	72.3	66.7		
	Not present	67.2	59.7	22.69 (1)	.000
Emotional abuse	Present	71.9	66		
	Not present	65	58	33.0 (1)	.000
Grief/loss	Present	69.3	61.9		
	Not present	66.8	60.3	23.58 (1)	.000
UCLA PTSD total score ($n = 14$)					
Impaired caregiver	Present	41.3	29		
	Not present	25.9	15.3	5.80 (1)	.033
Physical* abuse	Present	46.5	21.8		
	Not present	23.8	18.2	15.48 (1)	.002
Emotional* abuse	Present	43.8	24.3		
	Not present	20.1	15.4	10.30 (1)	.008
Grief/loss	Present	29.2	18.5		
	Not present	33	21	5.72 (1)	.034

* Significant between group differences: Emotional abuse, $F = 3.81$, $p = .075$; Physical abuse, $F = 6.14$, $p = .029$.

paired" caregivers, demonstrated significant improvement but continued to have internalizing and externalizing behavior problems at elevated or significant levels on the CBCL. This reflects the impact of maltreatment by caregivers on children's development of trauma symptoms and behavioral problems. Maltreated children and children with impaired caregivers had to cope with a breakdown in care and protection. Often, these children appeared caught in the paradoxical conflict of seeking nurture, guidance, and protection from parents whom they had learned to fear or see as unavailable. For these children, RLH treatment may have increased emotional support in relationships and reduced the extent of dysregulation and traumatic reactions leading to improvements in behavior and preventing out-of-home placements and psychiatric hospitalizations.

The RLH integrated toolkit appeared to help practitioners engage and treat children with Complex PTSD based on clinician endorsement of survey questions after 12–15 months of implementation citing the practical value of RLH tools for use in treatment and themes from focus groups at the conclusion of the study that indicated how clinicians described the RLH Model as adaptable to the child's and/or family's unique needs while still maintaining fidelity to the model, how the RLH "three-chapter" story-structure provided an exceptional framework to help children organize fragmented memories and share traumatic experiences and how RLH use promoted continued treatment when youths transferred between programs (Kagan et al., 2013). Fidelity measures tracked in the study minimized the risk of outcomes being attributable to practitioners being trained in other evidence-based treatment models. However, this does not limit the risk of confounding effects of previous training.

Fidelity

Fidelity of practitioners' implementation of two of the RLH core components (Emotional regulation and Relationship/Attachment) were found to be significantly correlated with net decreases in total symptom scores on the UCLA PTSD Index-Parent Version from baseline to six months. These results support the hypothesized importance of working on these core components but have to be viewed cautiously given the extent of missing or incomplete fidelity measures. Moreover, fidelity components did not appear to be correlated with other outcome measures with one exception. Children's PTSD scale scores on the TSCC increased along with increased practitioner fidelity in working on emotionally supportive relationships. This may have been a result of children's tendencies to underreport on the TSCC at baseline and then feel safer over the course of treatment with help from their caregivers and therapists to allow themselves to feel and share how they were experiencing generalized PTSD symptoms. The increased ability of these children to openly access and share distress related to traumas may also be associated with their significantly reduced use of Avoidance behaviors, demonstrated over the course of treatment on the UCLA PTSD Index-Child Version.

Most of the children in the study did not complete the RLH workbook. Nevertheless, significant improvements were found at six and nine months reflecting children's resilience and response to core components of the model as well as support for use of the model in treatment programs that did not have the time necessary to complete all chapters of the book. Helping children complete the

first few chapters of the *RLH Life Storybook* was associated with improvements in children's lives. Chapters 1–3 included primary components of the RLH model: emotional regulation/coregulation, development of hero-inspired skills, and strengthening supportive relationships.

In child and family services, limited treatment time and high rates of transition of children between programs and primary therapists are often the norm. Families leave treatment programs for a large number of reasons including moving to another community, termination of funding for program services, or the end of child protective services monitoring. Use of the structured RLH session and workbook format appeared to be an especially valuable toolkit for these programs because children could continue work in the life storybook (and phases of treatment) at a later date, after transfer to a new program, or after transfer to a new practitioner in the same program.

Conclusions

This study supported the importance of providing sequential attachment-centered treatment for children with symptoms of Complex PTSD that address core components in *Real Life Heroes*: affect regulation, emotionally supportive relationships, and life story integration with desensitization to trauma reminders. RLH provided an easy-to-use protocol to help children who had experienced both a breakdown in attachments and interpersonal traumas. Results supported the value of RLH as a toolkit that can be effectively applied in child and family service programs by a wide range of practitioners, leading to significant reductions in trauma symptoms and behavioral problems. Replication studies with comparison groups were recommended including analysis of factors related to engagement and retention of children and caregivers in treatment and increasing participation in follow-up evaluations.

Levels of improvement varied by the types of traumas experienced. Children who had a sustained relationship with a safe, consistent, caregiver improved more than children who appeared to have lost or experienced breakdowns in their primary relationships indicated by emotional abuse, physical abuse, or caregiver impairment, although both groups improved at significant levels. Results supported the need for follow-up services and extended therapy and the value of a structured treatment model that can be continued when children are transferred to new programs or practitioners. Results also supported a central tenet of the RLH treatment model, the need for children with complex trauma and their caregivers to not only build self-regulation skills but to also rebuild trust in enduring, emotionally supportive relationships.

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