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ABSTRACT
Recent efforts to develop residential treatment models have sought to address the need for trauma-informed principles, procedures, and practices. The goal of these efforts is to meet the need for efficient therapeutic residential care that maximizes positive outcomes and minimizes cost for youth and organizations. The article reviews current trauma-informed approaches for residential care, and introduces Building Communities of Care (BCC), a strength-based model that embeds trauma-informed youth capacity building and behavioral management strategies within and across all facets of residential treatment services. Also presented is an evaluation across two programs of the potential contribution of this model to decreased length of stay, utilization of physical restraints, client and personnel injuries, and worker’s compensation claims. The article concludes by highlighting the implications of the BCC model toward more effective residential staff training, youth intervention, and incident reduction, and by discussing future directions for research on trauma-informed program models.

KEYWORDS
Trauma-informed; restraint reduction; behavior management; strength-based; residential treatment of youth

Youth who exhibit severe and persistent emotional and behavioral problems may be placed into residential treatment settings as they may be considered too difficult to manage in less restrictive settings or as other treatment options may not be available (Chadwick Center & Chapin Hall, 2016; Trout et al., 2008). In the United States, over 148,000 children in 2015 and nearly 144,000 children in 2016 who were victims of maltreatment, including domestic violence, physical abuse, and neglect, were removed from their family of origin and placed into substitute care, including foster homes, kinship care, and residential care (U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children’s Bureau, 2017, 2018). Exposure to
traumatic events is common for children placed in out-of-home care. In fact, one study found 92% of children in a residential care setting reported experiencing multiple traumatic events, indicating a particularly vulnerable group (Briggs et al., 2013). With the majority of youth in residential care having histories of trauma exposure, the need to provide treatment targeting trauma is clear, yet empirical evaluation of and support for trauma-informed residential treatment is still in initial phases. This article presents an overview of current approaches for treating trauma utilized in residential settings, and then introduces and presents a preliminary program evaluation of a new trauma-informed residential treatment program model.

In the last decade, residential treatment providers have prioritized providing empirically based practice (EBP). A recent survey completed by 75 residential treatment care agencies investigated EBP implementation. This survey found 88% of agencies implemented client-specific treatments; the second most common being Trauma-Focused Cognitive Behavioral Therapy (TF-CBT; James et al., 2015). A follow-up study found 62.6% of respondents reported utilizing diagnosis-specific interventions for youth, with posttraumatic stress disorder (PTSD) being the most common diagnosis (James, Thompson, & Ringle, 2017). These responses may suggest efforts are being made to address trauma, and that many residential treatment care providers are implementing diagnosis- or client-specific interventions. The focus here is on interventions that utilize counseling techniques to decrease trauma symptoms (i.e., trauma-specific; Bryson et al., 2017).

Recent reviews have identified the most commonly utilized trauma-specific interventions for youth in residential treatment: Trauma-Focused Cognitive Behavior Therapy (TF-CBT; Cohen, Mannarino, Berliner, & Deblinger, 2000), Eye Movement Desensitization and Reprocessing (EMDR), Seeing Safety for Adolescents (Najavits, 2001), Structured Sensory Intervention for Traumatized Children, Adolescents and Parents Trauma Intervention Program for Adjudicated and At-Risk Youth (SITCAP-ART; Jacobs & Steele, 2007), and Trauma Affect Regulation: Guide for Education and Therapy for Adolescents (TARGET-A; Ford & Russo, 2006; James, Alemi, & Zepeda, 2013; James et al., 2017, 2015; Pecora & English, 2016). None of these approaches were expressly designed for use within (nonjuvenile justice) residential settings, but are being translated into these settings nonetheless (James et al., 2017, 2015).

There is mixed evidence for whether these client- and diagnosis-specific interventions are effective in the context of residential care. TF-CBT is considered “well-supported by research” by the California Evidence-Based Clearinghouse for Child Welfare (CEBC, 2018), and one study found that it effectively decreased PTSD symptoms in youth in a residential treatment setting (Cohen, et al., 2016). Similarly, EMDR is considered “well-supported” (CEBC, 2018). Soberman and colleagues (2002) found it decreased problem
behaviors, and evidenced a non-significant trend toward decreasing trauma symptoms. Seeking Safety for Adolescents, TARGET, and SITCAP-ART are considered to have “promising research support” (CEBC, 2018). As compared to treatment as usual, use of TARGET is associated with decreases in youth depression, threat to staff (Marrow, Knudsen, Olafson, & Bucher, 2012); PTSD symptoms (Ford, Steinberg, Hawke, Levine, & Zhang, 2012); and program seclusion and restraint use (Ford & Hawke, 2012). Notably, all three studies were conducted in juvenile detention facilities, which may not be directly comparable to other out-of-home contexts. Similarly, SITCAP-ART is meant for juvenile detention settings where youth are on probation. Raider and colleagues (2008) found SITCAP-ART was associated with significant reductions in trauma symptoms, depression, rule-breaking behaviors, aggressive behaviors, and other psychological distress. No research exists on Seeking Safety’s effectiveness in residential centers for youth with trauma. These client-specific interventions may be effective to varying degrees, but it remains unclear whether they perform as well within a residential treatment context as they do in other settings.

Additionally, the extent to which these trauma-specific interventions translate beyond weekly individual or group therapy into ongoing trauma-informed care across program services is unclear. Trauma-informed care is a “strengths-based service delivery approach...” that understands and attends to the influence of trauma, “…that emphasizes physical, psychological, and emotional safety for both providers and survivors, and that creates opportunities for survivors to rebuild a sense of control and empowerment” (Hopper, Bassuk, & Olivet, 2010). Within trauma-informed care, The Substance Abuse and Mental Health Services Administration (SAMHSA) emphasizes the “four R’s,” stating that caregivers must realize the pervasive impact of trauma and potential for recovery, recognize the signs and symptoms of trauma in clients, families, staff, and others involved with the system, respond with trauma-informed policies, procedures, and practices, and actively resist re-traumatization (Substance Abuse and Mental Health Services Administration, 2014). Residential treatment agencies have the unique opportunity to provide trauma-informed care utilizing the culture of the organization as a therapeutic agent (Rivard, Bloom, McCorkle, & Abramovitz, 2005), though this type of care is more ambitious and may be more resource-intensive than trauma-specific interventions (James et al., 2017). Implementation of trauma-informed care in youth residential treatment settings has been found most effective when aligning policy and programming through involvement of senior leadership, direct care workers, and patients and families (Bryson et al., 2017), suggesting the need for an organizational system approach.

Currently, two evidence-based program models take an overarching organizational approach to residential care and are self-described as trauma informed. The Sanctuary Model (Bloom, 1997) utilizes a whole-system
approach that emphasizes the culture as a context within which trauma-focused interventions can be most effective and has “promising research evidence” to support its effectiveness (CEBC, 2017; Pecora & English, 2016). Specifically, Rivard and colleagues (2005) found that youth with histories of maltreatment improved on measures of coping skills and sense of control. They also found that residential treatment agencies implementing the Sanctuary Model evidenced stronger scores on dimensions of support, autonomy, spontaneity, personal problem orientation, and safety (Rivard et al., 2005). Additionally, this model has been associated with reduction in seclusions, restraints, violent incidents, and costs to organizations (Bills & Bloom, 2000; Esaki, Hopson, & Middleton, 2014; Murphy & Bennington-Davis, 2005).

Comparatively, Children and Residential Experiences (CARE) also has “promising research evidence” to support its effectiveness (CEBC, 2017). CARE uses a trauma-informed ecological approach through staff training and self-reflective practice in order to create an environment that offers developmentally enriching experiences (Holden, 2009; Holden et al., 2010). CARE has been found to decrease youth-to-staff violence, property destruction, and run-away behavior, though effects on peer-to-peer violence and self-harm are inconsistent (Izzo et al., 2016). Another study found decreases in restraint usage in a residential population implementing CARE (Nunno, Martin, Butcher, & Smith, 2017). We found no outcome research on the effect of CARE on trauma symptoms. In sum, The Sanctuary Model and CARE are arguably the most empirically supported trauma-informed program models with their respective bodies of research supporting their positive effects on clients as well as agencies. They represent the first wave of program model proliferation as spurred by various calls to action (AACRC, 2014b; Briggs et al., 2013; Hodgdon, Kinniburgh, Gabowitz, Blaustein, & Spinazzola, 2015; Hummer, Dollard, Robst, & Armstrong, 2010), and serve as examples of how to create a therapeutic environment and community.

New program model development should aim to improve upon these models by addressing empirically identified needs gaps. For example, The Sanctuary Model does not explicitly specify a parent/caregiver component, which is considered part of effective therapeutic residential treatment (Whittaker et al., 2016). Additionally, a review of CARE’s Information Bulletin finds that the term “trauma-informed” is not explicitly operationalized into practices or strategies beyond recognizing and responding sensitively to trauma. This brings into question the extent to which specific trauma-informed principles are integrated across settings and systems. New program models should enhance the integration of systems, including the family.

Furthermore, neither the Sanctuary Model nor CARE has an embedded behavior management system. The absence of embedded behavior
management systems may reflect a partial strength of these models, in the sense that they prioritize relationship building and strength-based care as opposed to other more compliance-driven approaches that have been observed to include coercive and at times punitive measures (American Association of Children’s Residential Centers (AACRC), 2014a; Mohr, 2010). For example, restraint and seclusion have been found to be retraumatizing experiences for many youth (Huckshorn, 2006; SAMHSA, 2014), and are associated with feelings of fear and anger (Smith & Bowman, 2009). These experiences can exacerbate dysregulation, contributing to a cycle of escalation and reactive restraint usage. The act of physically restraining children with histories of trauma has been associated with other negative effects, such as increased feelings of helplessness (AACRC, 2014a) and the reinforcement of negative self-concept (Gillen, 2012). This research suggests that restraints are particularly detrimental for those with trauma histories and that program models should emphasize a culture of nonviolence in an effort to resist retraumatization.

Nevertheless, the lack of an embedded behavior management system also represents a limitation of these models, as it increases the likelihood of “bifurcated” services in programs that adopt these models and implement them alongside traditional behavior management systems. In these instances, programs run the risk of having their trauma-informed policies and procedures for standard program operations collide with or become overridden by antiquated coercive or punitive youth management protocols that are activated in response to incidents and crises. Aligned with initiatives to reduce instances of restraint and seclusion (LeBel, Huckshorn, & Caldwell, 2008; Sailas, & Fenton, 2000; SAMHSA, 2017; Valenkamp, Delaney, & Verheij, 2014) and to implement trauma-informed care with youth in residential programs (Bryson et al., 2017; National Child Traumatic Stress Network, undated), Building Communities of Care (BCC), the model introduced presently, takes a unique approach by incorporating a behavior management system within a trauma-informed framework.

**Building Communities of Care (BCC): A New Trauma-Informed Model**

Our organization established a taskforce that convened over 12-months to assess the degree to which our residential schools, group homes and treatment centers were trauma-informed. Stakeholder interviews with administrators, direct care workers, and consumers across six residential programs suggested inconsistent integration of trauma-informed programming with behavior and crisis response management, which highlighted an important gap in residential programming generally. Consequently, a workgroup was established to develop an evidence-informed care model that integrated trauma-informed principles and behavior management into an
organizational framework. Priorities included adoption of a strength-based approach that prioritizes the cultivation of youth capacities and the proactive anticipation, effective mitigation, and trauma-informed response to youth incidents and conflict. Development was guided by suggestions of leading organizations in residential care implementation (Whittaker et al., 2016) and trauma-informed out-of-home care (National Child Traumatic Stress Network, undated).

Building Communities of Care (BCC; Gervais et al., 2016) was created as a family-involved, strength-based model that is fundamentally trauma-informed, and involves the thoughtful coordination of systems, and procedures to create a restorative community. BCC is broken down into core considerations of trauma-informed care: the environment, clinical treatment, community engagement, and behavioral interventions. These core considerations exist across three ecological systems: individual, community, and external. The individual system consists of personal routines, needs, and habits, while the community system maintains open communication, boundaries, and safety. The external system includes the institutional training of staff members and programmatic policies. Children dynamically engage with all three systems, which strategically coordinate to help them grow from needing external supports and a system of containment to internalization of skills for success.

BCC is grounded in the empirically supported Attachment, Regulation, and Competency (ARC) Model (Blaustein & Kinniburgh, 2010; Hodgdon et al., 2015), which has been cited as a promising strategy for implementing trauma-informed care for children, youth and families impacted by chronic and severe exposure to maltreatment, violence or neglect (Bryson et al., 2017; Menschner & Maul, 2016). The ARC foundation constitutes enhancing children’s caregiver-child relationships (attachment), skills to manage internal, and interpersonal experiences (regulation), and key capacities associated with resilience (competency). ARC primarily supports applying skills associated with attachment, regulation, and competency to the processing of traumatic experiences (Hodgdon et al., 2015). An evaluation of the effectiveness of the implementation of the ARC model in residential settings for youth demonstrated significant reductions in restraint usage at the program level and improved clinical outcomes for youth (Hodgdon et al., 2015). BCC integrates ARC’s goals across systems through strength-based, individualized milieu strategies, and proactive and relationally driven behavior management.

**Integrative**

Fragmented programming and inconsistent systems can reinforce and exacerbate beliefs that the world is unpredictable and unsafe (Hodgdon et al., 2015). BCC intentionally coordinates milieu programming, behavior
management, clinical intervention, and family relationships across systems with a common language. This reduces potential misdirection or disagreement among personnel who engage in clinical decision-making through collaborative creation of unified treatment plans that coordinate client’s therapeutic goals across their activities in psychotherapy, milieu, and educational/scholastic programming whenever feasible. This eliminates switching from standard programming for milieu operations to often contraindicated approaches for behavioral management and incident response. Other models typically require two or more separate trainings (i.e., milieu operations, clinical programming, and behavior management) that differ in language, targeted systems for which fidelity must be maintained, and presence and degree of trauma-informed care. For example, behavior management may retroactively focus on safety through constraint instead of proactively focusing on increasing regulation through competency building. BCC was intentionally designed as a singular package on the premise that trauma-focused interventions are more effective if they are applied in a trauma-informed culture that minimizes uncertainty and unpredictability.

**Individualized**

BCC is predicated upon the notion that trauma-impacted youth display a variety of, often complex, clinical profiles and that when it comes to treatment planning, “one size does not fit all” (Blaustein & Kinniburgh, 2010; Cloitre, 2015). Caregivers maintain routines, policies, and systems upon which they individualize care with a menu-based approach, including collaboratively developing treatment plans, individualizing the environment for maximum predictability, comfort, and safety, and planning youth-selected activities. For example, bedrooms are decorated prior to clients’ arrival with the interests of each client in mind, while simultaneously eliminating possible triggers of dysregulation. Additionally, during intake parents and their children approve the types of non-verbal, verbal, and physical interventions appropriate if necessary. By individualizing behavior management interventions the focus remains on the individual child’s needs; the goal becomes deescalation through minimization of threatening physical positions and maximization of validation as opposed to applying standardized interventions to stop unsafe behavior. Most importantly, caregivers are trained to attune to the unique needs of each youth through a continual practice of reflective listening and supporting client self-regulation.

**Proactive**

Aligned with state and federal goals regarding restraint reduction, BCC was designed to reduce the frequency and intrusiveness of restraints. Milieu staff
members, often the most available caregivers, support client capacity for self-regulation to proactively mitigate behaviors that may necessitate restraint, such as aggression, self-harm, and runaway behaviors. Caregivers are trained to attune to initial signs of dysregulation and respond with validating strategies to deescalate before a negative strategy is needed. Attuning includes remaining aware of how caregiver body language and facial expression affects the situation, and maintaining a nonthreatening approach. In the event a restraint occurs, caregivers utilize the least intrusive, preapproved restraint while remaining attuned to the child’s needs and level of dysregulation so release occurs promptly. Post-restraint a debriefing period involves finding the dysregulation and escalation triggers in order to remove them as well as addressing potential retraumatization. These techniques aim to reduce the need for and negative impact of restraints, while increasing mutual respect and community synchronization.

In sum, the role of BCC caregivers is to collaboratively design, implement, and maintain an environmental culture where instances of client dysregulation and difficulty become a rare occurrence. Application of the BCC model across clinical, milieu and educational programming with a trauma-exposed youth is briefly illustrated in the following case vignette.

Sarah is a 15-year old new student at an adolescent residential treatment facility. On her first day, she arrives to see that staff members already know her name, and have decorated her bedroom area to include “welcome” signs and new art supplies in her favorite colors. Staff members have been briefed on her individual needs and interests, including her love of painting, and have also brainstormed ways to respond to potential problematic behaviors. Sarah has been paired for peer support with a student who has been a member of the program for several months, who will spend extra time with Sarah for her first week.

On her second day, Sarah begins to display behaviors that concern staff, such as leaving recreation areas without permission, calling the other children inappropriate names, and sometimes throwing things when she is upset. In a traditional setting, Sarah might receive frequent consequences, such as being grounded, losing privileges, or going to bed early. Staff members address Sarah in the moment, speaking in calm tones, and attempting to regulate her mood by offering supportive tools, such as the sensory corner in the living room. Staff members observe potential triggers in her environment, such as noticing that Sarah’s behaviors are the most pronounced when other youth are receiving attention. This process of being curious informs decisions that the team makes later that day. In a meeting, all staff members who interact with Sarah, including classroom aides, her therapist, special educators, direct care staff, and even the office staff, share observations.

Following discussion, program personnel come to a shared understanding that Sarah’s behaviors are communicating a need: In this case, it appears that Sarah feels insufficiently cared for, and is likely feeling overwhelmed and unsafe in her new environment. The team agrees on a strategy to implement for one week and then reassess. Staff members will rotate providing Sarah with individual support and positive
encouragement for at least five minutes per hour. All of this information is communicated to Sarah, so that she has a voice in the process, and can share her opinion. Sarah’s family members are also encouraged to participate in the creation of the plan and establishment of a communication system between them and the program. By involving all caregivers in this process, the residential program staff members endeavor to create an authentically supportive community of care.

As such, the current study serves as a first step toward building empirical support for BCC as an effective trauma-informed residential treatment program model. The following are findings from a preliminary program evaluation of two programs investigating whether BCC’s unique approach to embedded behavior management in residential treatment of youth results in reduced incidents of intrusive restraint, harm to clients and staff, and shortened need for a system of containment as evidenced by length of stay.

**Method**

**Description of Residential Care Programs**

Both programs evaluated are intensive residential and educational treatment programs providing clinical services to youth ages 12 through 22 years. Program 1 serves youth presenting with mood, anxiety, or trauma-related symptomatology while Program 2 serves youth with mild to moderate cognitive impairment or developmental delays and concurrent behavioral or mental health problems. Program 1 introduced the BCC curriculum into the milieu in December of 2013 while Program 2 did so in March of 2016. Though initial implementation date varied, the procedure was nearly identical. BCC was implemented via a train-the-trainer model according to the standards of optimal implementation. Trainings took place for eight hours a day over the course of three days and were led by the developers of BCC. Trainees were evaluated and required to correctly complete 80% of the assessment to become certified. Those who did not meet these standards were provided an opportunity to retake the training at a later point.

Fidelity was ensured through the constant presence of at least two trainers in each establishment, with one being a senior trainer. Requirements for senior trainer status include excellent performance during training, nomination by the developers or direct supervisors, and over 100 hours of training. Additionally, the application of the model was continuously monitored through quarterly senior trainer meetings and annual trained trainer meetings. Trainers were recertified yearly by completing eight hours of refresher certification training.
Data-Collection Procedures

This research was reviewed by Justice Resource Institute’s Institutional Review Board and determined to be exempt because the data were preexisting, and deidentified. Retrospective, naturalistic, aggregate data was collected from 2012 (when available) until the third quarter of 2017. Length of stay data was recorded by program directors in months and reported to quality improvement and management personnel monthly. Length of stay was averaged across all clients by year for examination. Number of restraints was routinely collected internally by the agency as part of its critical incidents tracking and risk-reduction efforts. Program directors reported the data in aggregate to quality improvement and management personnel at the end of each quarter. The programs’ insurer provided number and total yearly monetary value of worker’s compensation claims. Total yearly monetary value of worker’s compensations claims was averaged per claim and per quarter for this evaluation.

Data on position of restraints, and number of client and staff restraint-related injuries were collected from annual reports to an overseeing government agency. Position of restraints data was collected immediately after restraint occurrence in a mandatory report of the incident, with the categories including (from most restrictive to least): floor, which involves either lying flat with face downward, or flat with face upward; sitting; and standing. Similarly, data on client restraint-related injury and staff restraint-related injury was collected immediately after the incident, with injuries categorized as either minor (requiring on site medical treatment) or major (requiring further medical assistance). For the purpose of this evaluation, the injuries were not separated by type to depict the overall change in restraint-related harm.

Data on length of stay, number of restraints, and worker’s compensation claims is included beginning in January of 2012 (Q1) and ending in September of 2017 (Q23). Data on position of restraints, number of client restraint-related injury, and number of staff restraint-related injuries are included beginning in January of 2014 when it became available.

Results

Length of Stay

Average length of stay for clients at Program 1 and 2 was depicted graphically by year (see Figure 1). For Program 1, length of stay decreased from 2012 ($M = 19.94$ months) to 2013 ($M = 12.15$) prior to BCC implementation. From 2013 to 2017 ($M = 12.85$) length of stay remained relatively stable with an overall decreasing trend line. For Program 2, length of stay fluctuated widely during the four years prior to BCC implementation. Length of stay then decreased from 2015 to 2016 ($M = 24.84$ months), and then slightly increased in 2017 ($M = 28.80$ months).
Restraint Usage

Number of restraints per quarter was depicted graphically for both programs (see Figure 2). Results indicated that preimplementation of BCC (Q1–Q8), Program 1 staff utilized an average of 112.63 restraints per quarter. However, there was an observable decrease in restraint utilization at Program 1 throughout 2013 (Q5–Q8), with rates reaching a yearly low (57 restraints) in Q8. There was then a rebound in restraint usage immediately following BCC implementation over Q9–Q11. This period was then followed by a period from Q12 to Q16 of declining restraint use, with the number of restraints per quarter at Program 1 reaching an overall low in Q16 (27 restraints). Restraint usage spiked again in Q20 but decreased again in Q21 and remained of similar number for Q22 and Q23. Overall, the linear trend for Program 1 depicts a considerable and progressive decrease in restraint usage post-BCC implementation. During the period post-BCC implementation (Q9–Q23) an average of 68.80 restraints was utilized per quarter. For
program 2, from Q1 to Q17 (onset of BCC implementation) there was highly variable usage of restraints. During this period staff was utilizing on average 62.47 restraints per quarter. Restraints reached an overall high in Q17 with 117 restraints utilized (immediately prior to BCC implementation). Then there was a considerable reduction in restraint usage after BCC implementation from Q17 to Q23 when restraint usage reached an overall low (18 restraints). Overall, the linear trend for Program 2 depicts a slight decrease in the use of restraints post-BCC implementation.

**Position of Physical Restraints**

At Program 1, on average during 2014 staff were using floor restraints 68.8%, seated 2.5%, and standing-two-person 28.7% of the time. In 2015, this was relatively unchanged with floor restraint being utilized 68.1%, seated 0%, and standing-two-person 31.9% of the time. In 2016, floor restraint utilization increased to 86.4% of the time, with seated restraints occurring 0% of the time, and standing-two-person occurring 13.6% of the time. This increase in the use of floor restraints was maintained in 2017 with floor restraints occurring 81.8% of the time, seated reemerging at 4.9% of the time, and standing-two-person occurring 13.3% of the time.

For Program 2, during 2014 staff were on average using floor restraints 54.2%, seated 1.8%, and standing-two-person 44.0% of the time. In 2015, this was relatively unchanged with floor restraint being utilized 50.8%, seated 1.6%, and standing-two-person 47.5% of the time. In 2016, floor restraint utilization increased to 65.2% of the time, with seated restraints occurring 3.3% of the time, and standing-two-person occurring 31.5% of the time. This increase in the use of floor restraints was maintained in 2017 with floor restraints occurring 62.3% of the time, seated reaching 0% of the time, and standing-two-person occurring 37.6% of the time.

**Staff and Client Restraint-Related Injuries**

Number of staff and client restraint-related injuries for both programs is presented in Figure 3. For program 1, on average during 2014 there were 6.25 injuries to staff per quarter, then a sharp decrease to 0.50 injuries per quarter during 2015, a slight increase during 2016 when there were 3 injuries per quarter, and a final decrease during 2017 when there was 1.67 injuries per quarter. For Program 2, on average during 2014 there were 2.50 injuries to staff per quarter, and a slight increase to 2.75 injuries per quarter in 2015, which remained the same during 2016. Finally, there was a decrease to 1.33 restraints per quarter during 2017, which immediately followed BCC implementation.
In Program 1, during 2014 there were a total of 11 injuries to clients, which decreased to a single injury to client during 2015. Similarly, during 2016 and 2017 there were only two injuries, and 1 injury, respectively. The largest number of client restraint-related injuries overall occurred during Q12 when there were five recorded injuries. Notably, there were no client restraint-related injuries during 7 of the 15 quarters presented. For program 2, during 2014 there were a total of 13 injuries to clients, which decreased to a single injury to client during 2015. During 2016, there were no injuries to clients, and during 2017 there were only three injuries. The largest number of client restraint-related injuries overall occurred during Q12 when there were seven recorded injuries. Notably, there were no client restraint-related injuries during 8 of the 15 quarters presented.

**Worker’s Compensation Claims**

Finally, we examined the impact of BCC implementation on the number of and average dollar cost per year associated with worker’s compensation claims resulting from restraint-related injury for both programs (see Table 1). To do so, we examined information on the number and average dollar payout cost of workers compensation claims filed by staff from 2012 through 2017. Average total yearly monetary value of worker’s compensation claims was not available for 2017 due to the policy on data release. This information indicated that Program 1 has experienced considerable, progressive reductions in the number of worker’s compensation claims filed per year since the implementation of BCC, from 13 claims in 2012 (pre-BCC), to 19 claims in 2013 (immediately before implementation), then to 16 claims in 2014 (immediately following implementation), and 4 claims in 2017 (4 years
post-BCC implementation). Additionally, after removing an outlier of $19,167.44 in 2015, there was a reduction in the average monetary worker’s compensation paid out from 2012 ($4,089.92) to 2016 ($1,108.66). Similarly, Program 2 experienced reductions in the number of worker’s compensation claims filed per year since the implementation of BCC in March of 2016 from 6 claims in 2015, to 5 claims in 2016, and 1 claim in 2017 (post-BCC). Since BCC was implemented half way through 2016 and average total yearly monetary values of worker’s compensation claims were not available for 2017, examination of this data was not possible.

**Discussion**

Several promising findings emerged from this program evaluation, providing preliminary support for the potential effectiveness of the BCC model in enhancing a culture of safety and nonviolence in residential treatment settings. The two residential programs evaluated demonstrated considerable, progressive decreases in restraint use following the implementation of BCC. Additionally, there were notable, maintained decreases in both staff restraint-related injuries and number of, and average payout of worker’s compensation claims, which are likely correlated. Similarly, there were observed decreases in client restraint-related injuries per quarter in both programs after implementation of BCC. These outcomes provide early empirical support for BCC as a trauma-informed organizational model.

Evaluation results suggest several potential benefits to clients involved with residential programs utilizing BCC. Decline of restraint usage was expected given that BCC emphasizes proactively addressing signs of dysregulation, and the use of other de-escalation strategies (i.e., verbal) before moving to use of physical restraints. Nevertheless, the unexpected variability in restraint usage during and following BCC implementation may attributable to confounding circumstances, such as a particularly dysregulated child entering treatment during particular time periods; staff turnover; or staff training cycles. Reduction in the use of restraints is not the primary goal of trauma-informed

<table>
<thead>
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<th>Year</th>
<th>Program 1 $ (#)</th>
<th>Program 2 $ (#)</th>
</tr>
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<tbody>
<tr>
<td>2012</td>
<td>4,089.92 (13)</td>
<td>2,528.98 (3)</td>
</tr>
<tr>
<td>2013</td>
<td>5,633.84 (19)*</td>
<td>7,104.62 (9)</td>
</tr>
<tr>
<td>2014</td>
<td>1,261.63 (16)</td>
<td>352.63 (5)</td>
</tr>
<tr>
<td>2015</td>
<td>5,213.58 (11)</td>
<td>301.52 (6)</td>
</tr>
<tr>
<td>2016</td>
<td>1,108.66 (5)</td>
<td>457.71 (5)*</td>
</tr>
<tr>
<td>2017</td>
<td>N/A (4)</td>
<td>N/A (1)</td>
</tr>
</tbody>
</table>

Note: An outlier of $19,167.44 in 2015 was removed from the total monetary pay out in 2015. Asterix* indicates implementation of BCC.
models generally nor is it the primary goal of BCC; however, supporting a culture of nonviolence is in line with a trauma-informed framework. Additionally, restraint reduction has been considered a positive outcome of other trauma-informed models (Bills & Bloom, 2000; Esaki et al., 2014; Murphy & Bennington-Davis, 2005; Nunno et al., 2017).

Second, the reduction in restraint-related injury among clients further supports the use of a trauma-informed approach in order to transition the therapeutic milieu to a culture of safety. It is of note that there were no client restraint-related injuries reported in seven quarters at Program 1 and four in Program 2 post BCC implementation. These decreases in client restraint-related injuries suggest that the proactive deescalation practices outlined in the BCC manual may have effectively improved milieu safety. It is also important to recognize that minimal client restraint-related injuries occurred prior to BCC implementation, highlighting the importance of client safety and well-being in program practices irrespective of BCC. Also worth noting is the fact that these positive outcomes were seen in two distinct populations: youth with mood, anxiety, or trauma-related symptomatology, and youth with cognitive impairment or developmental delays and concurrent behavioral or mental health problems.

Findings from Program 1 demonstrated that subsequent to BCC implementation, there was a decrease in the average length of stay for youth. This result suggests that BCC strategies may have contributed to quicker resolution of clinical symptoms and/or reductions in high-risk behaviors (e.g., aggression toward self or others) that are critical “drivers” of residential placement. However, in Program 2 average length of stay increased slightly the year following BCC implementation. This may indicate that the population at Program 1 was affected more than Program 2 by the curriculum. An alternative explanation is that effects on average length of stay require a longer period of data collection to observe.

Benefits of the BCC curriculum were also observed for the residential treatment agencies, including a reduction in injuries to staff and number and average amount of workers compensation claims. The use of BCC techniques may help reduce the potential negative physical impact of restraint use on staff members, thereby increasing both the psychological and physical safety of staff working in the milieu. A safer job and more supportive organizational environment could contribute to decreases in staff burnout, which is common in youth residential settings (Barford & Whelton, 2010; Lakin, Leon, & Miller, 2008; Seti, 2008). It is important to prevent burnout to decrease staff turnover, which can negatively affect client well-being and agency finances (Seti, 2008).

These results also serve as a self-reflective catalyst for improvement. Use of BCC did not affect the types of restraints used. Floor restraint remained the most common hold at both programs. There are several potential
explanations for this unexpected finding. There may be a need for more emphasis in training on the use of the least intrusive holds. Alternatively, BCC requires restraint positions be approved by the family prior to youth’s admittance, so it is also possible that in this sample of youth floor restraints were the most commonly approved holds. In addition to the lack of change in rate of restraint type used, there were observed spikes in staff restraint-related injuries around the time of implementation in both programs. These spikes may be due to the paradigm shift of implementing a new program model. This shift is then successfully integrated and leads to the adoption of an approach corresponding with lengthy periods of considerable reduction. Also observed were spikes in restraint use at Program 1 postimplementation. Factors like staff turnover leading to differences in level of training, or complacency can lead to re-emergence of these issues, which indicates that efforts should be made to routinely enhance motivation and engagement with the model through booster trainings on top of current fidelity practices. In sum, this analysis produced a wealth of knowledge on potential positive outcomes for clients, staff, and the organization, and areas for improvement.

It was the intention of the developers that the BCC model would build upon the contributions of preexisting trauma-informed models, such as CARE and The Sanctuary Model, by demonstrating a reduction in both program- and client-level indicators such as the use of restraints, use of invasive restraints, and restraint-related injuries to clients and staff, while also supporting capacity building, such that clients require a decreased amount of time utilizing external supports and containment. Other behavior management models exist to handle unsafe situations, such as Crisis, Aggression, Limitation and Management System (CALS) (Perkins & Leadbetter, 2002), and Nonviolent Crisis Intervention Training Program (NCI) (Crisis Prevention Institutes’ Nonviolent Crisis Intervention® Training Program, 2018), which focus on managing disruptive behaviors to decrease restraint usage (Calabro, Mackey, & Williams, 2002; Jonikas, Cook, Rosen, Laris, & Km, 2002). However, research has found the effects of NCI to be short-lived (Beaulieu et al., 2008), and further, these behavioral management-specific models are not embedded within comprehensive system- and clinical-level trauma-informed interventions. BCC represents an effort to bridge trauma-informed organizational-level change, clinical interventions, and milieu programming with tangible and operationalized behavior management strategies, practices and skills.

The presented program evaluation should be considered naturalistic, descriptive and preliminary. It is premature to make claims about causality or draw conclusions about mechanisms of action on the basis of this initial program evaluation. There are several methodological limitations to our design, yet findings are sufficiently encouraging to warrant further investigation. First, this program evaluation utilized a retrospective, naturalistic design
and as such there was no random assignment to either program or treatment type. We cannot necessarily determine if these outcomes are greater than would be seen if the program engaged in “treatment as usual.” Additionally, there was no control for possible confounding variables, such as stage of stay during the implementation of BCC. It is likely that some youth were in the program long before BCC was implemented, while some were admitted as the transition was being made, and still others may have been admitted after the transition. This difference in stay may have affected the likelihood of certain youth to respond positively to BCC programming. Similarly, staff turnover was not controlled for, but may have affected staff expertise with BCC programming. Additionally, this study is limited by the fact that some data only became available after the implementation of BCC and there were only six quarters of data available post-implementation for Program 2, which makes it difficult to draw comparisons, and conclusions. Another limitation is the fact this data was collected in aggregate, which prohibits nuanced analysis. The primary clinical limitation of our program evaluation is that trauma symptoms and diagnoses were not assessed. Without these measures we cannot directly assess the whether this trauma-informed model decreases trauma-specific symptoms. Trauma symptoms are currently being measured in programs utilizing BCC with the intention of enhancing future model evaluation efforts. Finally, it remains unknown what populations may benefit from this model in regards to age, race and ethnicity, gender identity, sexual orientation, and many other important aspects of identity.

This article serves to clarify the need for a trauma-informed residential treatment program that integrates clinical interventions, milieu programming, and behavior management into one cohesive package to create a system-wide community of care that maximizes client growth and capacity for self-regulation while minimizing violent incidents and costs for the organization.

To establish this promising practice as an evidence-based intervention, BCC will need to be studied utilizing routine and rigorous data collection strategies and experimental methodology. Specifically, future research must prospectively study whether trauma symptoms improve from admittance to discharge from a residential treatment center implementing BCC, potentially with a comparison group. Ultimately, our field must continue to strive to more accurately recognize and more effectively respond to the needs of youth whose lives have been derailed by chronic and severe experiences of trauma, violence, neglect and other life adversity. For all children and adolescents, especially those who are our society’s most vulnerable, deserve to be raised and nurtured within true communities of care.
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Conflict of Interest

The authors declare that they have no conflicts of interest associated with the research or products described in this article.

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