

EFFECTIVENESS OF COLLABORATIVE PROBLEM SOLVING MODEL IN REDUCING
SECLUSION AND RESTRAINT IN A CHILD PSYCHIATRIC UNIT

by

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Effectiveness of Collaborative Problem Solving Model in Reducing Seclusion and Restraint in a Child Psychiatric Unit

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ABSTRACT

This study examined the impact of the Collaborative Problem Solving (CPS) model on the use of Seclusion and Restraint (S/R) in a child psychiatric population. In addition to demographics and diagnoses, data related to the use of seclusion and restraint were collected for six months prior and subsequent to the implementation of the CPS model in a 12-bed acute inpatient care unit. Both the frequency and duration of S/R (in minutes) were examined. The instances of harm to others were also examined as a secondary measure of the effectiveness of the CPS model as this is a frequently related to the use of S/R. All data was obtained via review of patient records. Results indicated that there was no significant reduction in the frequency of S/R. However, the duration of S/R was significantly reduced after the CPS implementation. In addition, a significantly fewer number of clients were placed in S/R due to harming others post-intervention. Findings support the use of the CPS model in reducing S/R in the child psychiatric population.

The form and content of this abstract are approved. I recommend its publication.

Approved: Franci Crepeau-Hobson

DEDICATED TO
MY PARENTS, WHO INSPIRED ME TO
GET A DOCTORATE DEGREE, AND MY HUSBAND

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CHAPTER I

INTRODUCTION

“To detain maniacs in constant seclusion, and to load them with chains...is...more distinguished for its convenience than for its humanity or its success” (Goshen, 1967, p. 24). For over two hundred and fifty years, reputable descriptions of the inappropriate use of Seclusion and Restraint (S/R) in populations with mental illness have existed (Morrall & Muir-Cochrane 2002; Wakefield, 1814 as cited in Scull, 2009). Pinel in 18th century France was an early but strong advocate for the mentally ill who recognized the pathos of the situation and attempted unsuccessfully to remove the chains from the typically chained, nude or partially clothed in rags, and filthy patients (Weiner, 1992).

While there was some earlier success in Europe and England in reducing the use of S/R, professionals in the United States concluded that S/R might never be eliminated (Knox & Holloman, 2012; Rogers & Bocchino, 1999; Strumpf & Tomes, 1993). A landmark Pulitzer-Prize winning series in Hartford vaulted the issue into America’s national awareness after finding 142 deaths from S/R over a ten-year period (Weiss, 1998). Particularly alarming is 26% of the deaths occurred among children and adolescents (Weiss, 1998). More recent reports by others of patients’ deaths (Berzianovich, Schopfer & Keil, 2013; Rakhmatullina, Taub, & Jacob, 2013) highlight the need for a continued critical examination of the practice and reduction of the incidence (LeBel, Stromberg, Duckworth, et al., 2004; Weiss, 1998).

Numerous organizations and professional associations such as the American Academy of Child and Adolescent Psychiatry (AACAP, 2002), the American Psychological Association (APA, 1985 2003), and the American Psychiatric Nurses Association (APNA, 2014) began, and continue to strongly recommend, or require the reduction of the use of S/R (Knox & Holliman,

2012). Specific concerns about deaths among children and adolescents and other more vulnerable populations, such as the disabled, were especially alarming (Weiss, 1998) and subsequent rules and regulations were enacted (Children's Health Care Act of 2000).

A clamor arose for the development of feasible treatment options and early interventions instead of S/R (APNA, 2014; NASMHPD, 2000). A study by Gaskin, Elsom, and Happell (2007) concluded that mental health staff now typically uses multiple interventions to reduce the incidents of S/R such as state level support, leadership, and improving the treatment environment. Research reveals the influence of the unit philosophy and culture, staff attitudes, staff training, and other variables affect the incidence and disparity of S/R in the psychiatric population (Ashcraft, Bloss & Anthony, 2012; Happell & Koehn 2011). Lewis, Taylor, and Parks (2009) state S/R, "is still the last-resort option when a person is at imminent risk of harming themselves or others after all other interventions have failed" (p. 159). Yet, the risk to the patient or staff can be serious injury or death, which is unacceptable for all, but especially for children and adolescents.

Preventing escalating behavior is a logical and proactive approach to reducing the use of S/R. Dr. Ross Greene developed the Collaborative Problem Solving (CPS) Model as an intervention for children with social, emotional, and behavioral challenges (Greene, 2001; Greene & Ablon, 2006; Greene, 2014; Green 2017). The model has shown success in schools (Greene & Ablon, 2006; Greene, 2011; Greene, 2014) and hospitals (Greene, Ablon & Martin, 2006; Martin, Krieg, Esposito, Stubbe & Cardona, 2008) with both children and adolescents.

Results from an early study by Greene et al. (2006) found CPS could also be effective in a hospital setting. Their initial study showed dramatically reduced rates of S/R in hospitalized adolescent patients after the implementation of CPS training. Martin, Krieg, Esposito, Stubbe, &

Cardona (2008) also specifically examined the effectiveness of CPS in a hospital for children. Their results found the implementation of CPS to be effective in significantly reducing the rates of S/R in children in a hospital setting. “CPS is a promising approach to reducing seclusion and restraint in a child psychiatric inpatient setting” (Martin et al., 2008, p. 1406).

As CPS is a proactive program of preventing problems before they occur, this would be preferential to a more punitive approach, which could ultimately lead to negative consequences and even death. While results of these CPS studies are encouraging, it is still important to conduct additional research on CPS effectiveness in reducing the need for S/R in psychiatric settings and lower the risk of injury or death to both staff and children with serious mental health issues receiving inpatient services (Martin et al., 2008). Future research and replication studies with children and adolescents are especially crucial since this population has nearly double the risk of death when compared with adult cohorts in psychiatric hospitals (Weiss, 1998) and S/R-related deaths still occur (Berzianovich et al., 2013; Ferleger, 2008).

Statement of the Problem

The use of restraints places individuals in psychiatric treatment at risk for injury and death and can be traumatic even without physical injury (Mohr, 2006; Mohr, 2010; Mohr & Nunno, 2011). Research has shown that S/R can lead to severe consequences, both psychological and physical (De Hert, Einfinger, Scherpenberg, Wampers, & Peuskens, 2010; Nunno, Holden, & Tollar, 2006). S/R is a negative response to a problem behavior, teaches the wrong lesson to children and adolescents, and endorses the use of force (Murry & Sefcik, 1992). S/R is reactionary, has been overused and inappropriately used by staff (Millstein & Cotton, 1990), and is dangerous to patients and staff in that injury and death have occurred (Ferleger, 2008; Weiss, 1998).

A survey of 25 child and adolescent treatment units found six-fold higher S/R rates compared to adult services in the same state (LeBel et al., 2004). In one study of psychiatric patients, children and adolescents experienced twice the death rate of adults over a ten-year period (Weiss, 1998). Consequently, it is critical to lower the rates of S/R, especially in children receiving inpatient psychiatric treatment for severe mental health issues and to research more preventative methods of addressing behavioral problems in a hospital setting.

Purpose of the Study

The primary objective of this study is to determine whether the Collaborative Problem Solving (CPS) training program reduces seclusion and restraint (S/R) in a children's inpatient residential unit at a psychiatric hospital. The secondary aim of the study is to examine the reasons why S/R occurs in the first place.

Significance of the Study

The significance of this study lies in the development of the CPS model as an effective preventative and treatment approach to reducing S/R on a child psychiatric unit. This study will provide insight into the implementation of the most feasible version of the CPS model currently offered by the publisher in terms of the length and intensity of training. Unlike previous studies where the CPS model was added to existing approaches to client care, this study allowed for the examination of the effectiveness of the CPS model as the primary approach to managing challenging behaviors because the unit was created with CPS as the governing model of care. As such, this study can serve as a resource for decision-makers in mental health settings considering an effective model of care for inpatient psychiatric units. Finally, this study is the first of its kind to evaluate the effectiveness of the CPS model in a young child inpatient psychiatric population. Young children are most vulnerable to the potential negative consequences of S/R and this study

may support a shift in inpatient practices toward an evidence-based approach to effective care.

Definition of Key Terms

Seclusion: the involuntary confinement of a person in a room or area where the patient is physically prevented from leaving (Policy and Procedure, 2017).

Restraint: the application of physical force without the use of any device, for the purpose of restraining the free movement of a resident's body (Policy and Procedure, 2017).

Collaborative Problem Solving Model: a framework to help parents and staff deal with oppositional and explosive children (Greene & Ablon, 2006).

Research Questions

Research question one (RQ1):

Is the CPS model effective in reducing the frequency and duration of seclusion and restraint in children and youth in an inpatient population?

Research question two (RQ2):

Does the CPS model reduce the instances of clients harming others?

CHAPTER II

REVIEW OF THE LITERATURE

History of Seclusion and Restraint

The use of seclusion and restraint (S/R) is almost synonymous with the deplorable treatment of the mentally ill for hundreds of years as described by Edward Wakefield, activist, in 1814:

One of the side rooms contained ten (female) patients, each chained by one arm to the wall; the chain allowing them merely to stand up by the bench or form fixed to the wall, or sit down on it. The nakedness of each patient was covered by a blanket only... Many other unfortunate women were locked up in their cells, naked and chained on straw... Their nakedness and their mode of confinement gave the room the complete appearance of a dog kennel (as cited in Scull, 2009, p. 113).

Pinel attempted to inform the public of the horrific conditions at asylums and remove chains from the insane as early as the 18th century in France (Weiner, 1992). England started reforming its asylums after hundreds of years of mistreatment of the mentally ill following public exposure of multiple abuses (Tomes as cited in Masters, 2017). English doctors began to care for patients without restraints with trained physicians in a well-operated hospital (Bucknill, 1876).

The first state hospital was established in the U.S. in 1822. The American view of S/R was that these were a benefit to the patient and necessary to reduce violence (Tomes as cited in Masters, 2017). Consequently, America did not follow England's early progress toward reducing the use of S/R (Bucknill, 1876).

Albert Deutsch, a writer and advocate for the mentally ill, devoted decades in the 1940s and 50s to exposing the continuation of problems and abuses involving S/R within American hospitals (Deutsch, 1948/1973). Photographic essays and articles published in the New York Sun, along with Deutsch, appearance in support of the bill, raised public awareness and helped

result in the landmark National Mental Health Act signed by President Truman in 1946. This legislation established funds for the National Institute of Mental Health as described in the National Institute of Health Almanac (2016).

A book by Albert Deutsch in 1948 followed, titled “The Shame of the States” which detailed the continued abuse of S/R on the mentally ill in the US. Deutsch, revealed that in one large city hospital, 25% of patients were restrained during the day and 33% were restrained all night. This occurred despite only a few being violent or dangerous. The book was reprinted in 1973 and the continued use of S/R remains a serious concern almost 50 years later.

Finke (2001) reviewed 30 years of scientific study on the use of seclusion in psychiatric care, and concluded its use is not evidence-based and it may cause additional trauma or harm. “The research has found seclusion to be harmful to patients and not related to positive patient outcomes” (Finke, 2001, p. 186). Finke found there is no research to support the use of S/R with children. Another comprehensive review conducted by Sailas and Fenton (2000) found not one controlled study of seclusion out of 2,155 citations from 1974-1999. Similarly, another review of 36 published articles found there is insufficient evidence to support a relationship between the use of S/R and patient safety in adults (Nelstrop et al., 2006).

Seclusion and Restraint (S/R) have remained in psychiatric practice despite differing opinions about its effectiveness (Rothman, 1971). Some have argued that S/R use in psychiatric treatment is necessary for safety, and is a required component for child and adolescent treatment (Cotton, 1989; Gair, 1984). On the other hand, Morrall and Muir-Cochrane (2002) described S/R as a form of social control over individuals already experiencing exclusion from the community, which can be further traumatizing (Frueh, et al., 2005).

Growing Concern Regarding the Use of Seclusion and Restraint

There is rapidly growing literature on seclusion that indicates it should be reduced, especially with restraint use (Martin et al., 2008). After the 1997 death of a young man from Connecticut received national attention, the public became more aware of the problem. Individuals and groups outside of the psychiatric community who question the continued use of S/R are gaining attention from the media, national accrediting boards, and professional organizations. They all call for a critical examination of the practice (LeBel et al., 2004).

A Pulitzer- Prize-winning series of articles called “*Deadly Restraint: A Nationwide Pattern of Death*” (Weiss, Altimari, Blint, & Megan, 1998) published by the Hartford Courant found 142 deaths of patients restrained over a ten-year period. Alarming, 37 (26%) of these deaths involved children and adolescents (some with developmental disabilities); nearly double the proportion of these cohorts in psychiatric institutions nationwide (Weiss, 1998).

This landmark series led to an outcry of concern and attracted public and governmental attention as it detailed not only deaths, but also induced emotional trauma and serious physical injuries like a broken bone in patients. Ten years later, the professional literature shows that deaths still occur (Ferleger, 2008), including the recent death of a sixteen year-old during a restraint in a hospital setting (Bernhard & Kohler, 2010).

Since S/R can not only cause death but also can result in physical and psychological harm, violations of individual’s rights, and loss of dignity, the practice of S/R has continued to come under attack by the general public. The literature from the professional community shows consensus on concern about its overuse. An early task force of the American Psychiatric Association (APA) published a report discussing regulations, techniques, use of S/R in special

populations, such as minors, the disabled, and the elderly (APA, 1985). This was followed in 2003 when APA published a guide to help administrators and clinicians reduce the use of S/R.

Other organizations continue to issue guidelines (e.g., American Psychiatric Nurses Association; APNA, 2014; National Association of Psychiatric Health Systems & American Hospital Association, 2003). There is now a general consensus that the practice of S/R can be detrimental and the risks generally outweigh the benefits. Huckshorn (2014) recently summarizes contemporary and credible research on the use of S/R that unequivocally concludes that it can cause trauma, physical or emotional injuries to patients and staff, and sabotage the therapeutic milieu.

Concerns Related to the Use of Seclusion and Restraint with Children and Adolescents

Millions of children and adolescents are affected by mental health conditions every year (National Alliance on Mental Illness; NAMI, 2017). In addition, mental health and substance abuse problems occur commonly and begin at a young age (New Freedom Commission on Mental Health, 2003). An estimated 13 to 20% of youth live with a mental health condition (NAMI, 2017). Approximately one in five youth aged 13–18 (21.4%) experience a severe mental disorder at some point during their life, with 10% having a behavioral conduct disorder. For children aged 8–15, the estimate of having a severe mental disorder is 13% (NAMI, 2017). Children in poverty experience greater mental health issues, with 50% of children and youth in the child welfare system having mental health problems (Burns et al., 2004).

Annual expenditure for the United States was estimated to be over \$158 billion for adolescent violent behavior (Children’s Safety Network, 2017) and that was 16 years ago. “Residential and other specialized out-of-home care can cost over \$250,000 a year for one child” (Soni, 2009).

Children who struggle with the most severe mental health challenges often find themselves excluded from school and placed in a psychiatric hospital, without their consent, for treatment where they are subject to S/R. Research examining the use of S/R with children and adolescents has revealed a number of troubling issues, raising many concerns over the years. Miller (1986) was one of the first researchers to examine the effects of S/R on children. Over 40 children drew photos about their experience and conveyed feelings of punishment, crying, and pleading for help. Miller did not find evidence the child was gaining self-control while in S/R. In 1990, Millstein and Cotton examined the use of seclusion with 102 children. The researchers learned that children secluded in a children's psychiatric hospital were likely to have a history of abuse, neurological problems, lower verbal skills, and more suicide attempts than those not secluded. Adverse physical and psychological effects on children including developmental deficiencies in language, speech, motor strength, and body image have also been identified (Selekman & Snyder, 1996). Some research suggests the use of S/R with children and adolescents teaches the wrong lesson and appears to endorse the use of force (Murray & Sefcik, 1992).

Nunno, Holden, and Tollara (2006) reviewed the records of 45 childhood and adolescent deaths in U.S. residential settings from 1993 to 2003. They concluded that 38(84%) of the deaths occurred due to the use of physical restraint. Male children and adolescents were particularly at risk of injury or death. Significantly, the study revealed none of the deaths was caused by the child's behavior; all deaths were directly related to the use of S/R. Unfortunately, deaths of these children and adolescents were actually caused by those expected to nurture them (Weiss et al., 1998). More recently, Pogge, Pappalardo, Buccolo, and Harvey (2013) collected data on 2,411 child and adolescent patients and found 703 (29%) experienced seclusion or restraint. Child

patients had a higher incidence (53%) of S/R than adolescents (19%). “When age was examined as a continuous variable, younger patients had a higher prevalence of restraint and seclusion, significant more restraint and seclusion, and these restraints and seclusion events were significantly shorter than those seen in older patients” (Pogge et al., 2013, p. 224). The authors recommended more research in understanding the determinants of high frequency agitated behavior and developing alternatives to S/R.

There is some evidence that seclusion is used for staff convenience rather than patient needs or patient safety (APNA, 2014; Millstein & Cotton, 1990). Millstein and Cotton found seclusion was more likely to be implemented on Mondays and Wednesdays when staff was the busiest (1990). They also found that the time a child was in seclusion increased with each incident rather than an expected decrease, indicating that the child did not learn new behavior from the seclusion. Notably, the usual response to the enforcement of a restrictive intervention is heightened aggressive behavior (Greene et al., 2006) that may escalate the hostility of both the youth and adult (Mohr et al., 2010).

Mohr, Mahon, and Noone (1998) concluded that in certain instances it may be necessary to use restraint as a legitimate intervention with children with behavioral problems, but only if every other option is exhausted. The researchers recommend other interventions be tested for their effectiveness in reducing the incidence of the most coercive staff activities. Similarly, the National Association of State Mental Health Program Directors (NASMHPD) describe S/R as “safety interventions of last resort...and not treatment interventions noting there are major risk for patients with a psychiatric diagnosis” (2000, p. 41). They recommend the prevention, reduction, and eventual elimination of the use of S/R suggesting treatment cultures based on collaboration rather than control.

APA (1985, 2003) specifically addressed issues regarding the use of S/R for children, adolescents, and those under 21. The American Academy of Child and Adolescent Psychiatry (AACAP, 2002) emphasized treatment planning, staff training, and de-escalation strategies. They also described indications for the safe implementation and monitoring of S/R when required. The Children's Health Act of 2001 restricted the use of S/R with children and adolescents in psychiatric facilities that receive federal funding. The Centers for Medicaid and Medicare Services (CMS) also issued new rules regarding monitoring and limiting the use of S/R endorsed by The Joint Commission (TJC). As a result, there is a strong push to reduce the rates of S/R in the hospital and psychiatric hospitals serving children.

There is some evidence that these calls for reform have resulted in some positive change. Pogge et al. (2013) state the use of S/R is now highly regulated in psychiatric inpatient centers.

Reducing Rates of Seclusion and Restraint

Despite changes in attitudes, ethical principles, and legislation related to the treatment of psychiatric patients in the least restrictive environment, seclusion is still permitted. There are reports that in the first decade of the 21st-century, the rates of S/R use in psychiatric settings remain unchanged from earlier centuries (Mohr & Mohr, 2000). Lewis, Taylor, and Parks (2009) state S/R, "is still the last-resort option when a person is at imminent risk of harming themselves or others and all other interventions have failed" (p. 159). Their argument for S/R's premise rests on the practical implications for taking such measure. However, in recent years, psychological and medical research has provided ample support that there has been a change in awareness that the use of S/R is a high-risk practice and there is a general goal of reducing the use of S/R across all settings (Huckshorn, 2014; Steinert et al., 2008).

Reducing the rates of S/R requires the availability of feasible interventions and alternatives. A study by Gaskin et al. (2007) concluded staff typically used multiple interventions, including state-level support, policy changes, leadership, treatment plan improvement, treating patients as active participants in reduction intervention, and improving the therapeutic environment to reduce incidents of S/R. The “common features of the programs for change at many of the facilities, however, were leadership, the monitoring of seclusion episodes, staff education and changing the therapeutic environment” (Gaskin et al., 2007, p. 11).

One study described how the efforts made by a State Mental Health Authority (SMHA) resulted in reductions in 70 facilities under its jurisdiction (LeBel et al., 2004). Using a public health prevention model at Johns Hopkins, research showed a 75% reduction in the use of S/R with no increase in patient or staff injuries (Lewis et al., 2009). In their program design, staff used knowledge about the patient to plan care and heighten awareness of the patient’s violence risk. Staff also focused on primary prevention and developed a personal safety plan to reduce S/R. More recently, there is also some evidence that an alteration in a unit’s treatment philosophy can lead to improved changes in patient behavior, which will ultimately affect the use of seclusion or restraints (Goetz & Taylor-Trujillo, 2012; Delaney & Johnson, 2012).

The Collaborative Problem Solving Model

The Collaborative Problem Solving (CPS) Model is a framework to help parents and staff deal with oppositional and explosive children (Greene, 2011).

CPS is based on the following themes:

- Kids do well if they can.
- Doing well is preferable to not doing well.
- Challenging behavior must be viewed in context of a child’s development.
- Behind every challenging behavior is a lagging skill and a demand for that skill.
- Problems should be solved collaboratively rather than unilaterally.

Dr. Ross Greene developed the treatment approach in 1993 and later, refined the approach with his colleague Dr. Ablon while working at Massachusetts General Hospital (Greene v. Ablon, 2012). The approach became known as the CPS Model. Greene and Ablon described the model in their book, *Treating Explosive Kids* (2006). The theoretical basis of the CPS model is two pronged. First, the model is built on cognitive-behavior theory and second, it is based on collaboration. Within cognitive-behavior theory, the central theoretical premise behind the model is that, “Kids do well if they can” (Greene, 2014, p .9). According to Greene, “Behaviorally challenging kids are challenging because they’re lacking the skills to not be challenging” (2014, p .9). The model conceptualizes aggressive behavior as the by-product of these lagging cognitive competencies in the areas of flexibility, frustration, tolerance, and problem-solving (Ashworth, Tapsak, & Li, 2012). In this context, being behaviorally challenged is thought of as having a disability much like a struggling learner with a learning disability (Greene, 2014).

CPS is a preventative model that proactively aims to prevent problems before they occur (Wolff & Sironen, 2012). Preventative models have become increasingly popular because they have the benefit of simultaneously reaching many clients (13th Annual Congress on Prevention, 2015). Preventative models also prevent crises and emergencies to the maximum extent possible before they arise and ultimately free up staff, allowing them to focus on better treatment for patients (Min, Lee & Lee, 2013).

A primary goal of CPS training is to assist hospital staff to learn specific cognitive skills that might be contributing to challenging behavior and help staff and adults identify the cognitive factors that might contribute to an aggressive outburst of patients (Greene, Ablon, & Martin,

2006). In addition, CPS lends its support to adults to reframe the reasons for children's externalizing behaviors and offers both parents and staff techniques for effective interventions. The model is grounded in collaboration (Greene, 2017) with an emphasis on teaching the children new skills through collaborative problem solving (Greene et al., 2006).

A primary goal of CPS is to assist staff and adults to become aware of three common options to handle problems and the result of each of the options on children. These options are an imposition of staffs' will, collaborative problem solving, and removal of the expectation along with the impact of these strategies on the adult-child interaction at the hospital. The third goal is to assist staff, adults, and children in gaining proficiency at solving problems collaboratively, which reduces the likelihood of aggressive outbursts (Greene et al., 2006).

The authors hypothesized that the CPS model could be successfully applied to a psychiatric population and designed a study to measure the effectiveness of the model with hospitalized children and adolescents. In the study, CPS implementation yielded significant results in multiple domains of the functioning of hospitalized children (Greene et al., 2004). A later study by Greene and colleagues showed statistically significant decrease in rates of S/R and a significant reduction in duration of holds (Greene et al., 2006).

Podesta et al. (2008) recommended the best cure for a problem is prevention. Administrators should be invested in the use of preventative models such as CPS because of practical implications, such as better strategic planning for the allocation of resources because staff will not have their energies directed elsewhere. Better management of employees ultimately leads to care that is more efficient for patients.

Collaborative Problem Solving Model: An Alternative to Seclusion and Restraint

Results of the foundational study by Greene and colleagues, (Greene et al., 2006) found that the CPS model dramatically reduced the rates of restraint in the hospitalized adolescent population. During the nine months prior to training, 281 episodes of restraint were documented, while only one episode occurred in the 15 months after training. Researchers noted the results would not have occurred without a clear commitment from unit leadership and additional studies were recommended (Greene et al., 2006).

Martin et al., (2008), examined patterns of restraint and seclusion before and after the implementation of CPS in a therapeutic hospital setting for school-age children. Data were collected for three years prior to the implementation, during the implementation, and for one and a half years after implementation. Findings indicated that children from racial-ethnic minority groups were much more likely to be restrained or secluded, especially during the pre-implementation years (Martin et al., 2008). Their results showed a significant reduction in both restraint and seclusion after the implementation of CPS. By the end of the study, the overall rate of restraint use had dropped to within the national range for comparable settings (0.5-2.0 events per 1,000 patient-days). The authors recommended replication and further study in inpatient settings and consideration of adaptation to other relevant facilities.

A later study by Kulkarni, Deshmukh, and Barzman (2010) examined CPS as a primary method of addressing acute pediatric pathological aggression along with other modalities. They found the protocol of implementing CPS did not differ for patients in an acute versus a chronic setting. It was concluded that safety is the first priority when dealing with aggression on child and adolescent psychiatry units. Since the use of restrictive interventions or medications in sedating the patient is not free of adverse consequences, the least restrictive intervention should

be considered first. The use of a less invasive method such as CPS should be universal and proper training of staff and parents must occur. However, if CPS is not useful in managing the aggression and the aggression becomes too severe, then medication and S/R may be necessary for safety purposes (Kulkarni et al., 2010).

A comprehensive literature review of 29 papers by Scanlan (2010) concluded, “behavioral and cognitive-behavioral programs appear to be very useful in child and adolescent services” (p. 416). Yet, in adult settings, broad-based programs appear to be most effective (Greene et al., 2006; Singh, Singh, Davis, Latham, & Ayers, 1999). An analysis of the articles resulted in the identification of seven key strategies which led to a reduction of S/R. These are policy change/leadership, external review, data use, training, consumer/family engagement, increase in staff ratios, and programs such as CPS.

In a 2016 study, researchers examined the effects of a CPS approach on hospitalized adolescents (Ercole-Frick, Fritz, Hill, & Sanders, 2016). The hospital was required to try a different approach as the New York State’s Office of Mental Health disapproved of their strategies of negative behavior modification resulting in negative consequences. The study lasted five years and the results showed a significant decrease in punitive techniques, a reduction in behavior requiring the use of S/R, and a significant decline in self-inflicted injuries, the length of stay, and security. The authors identified elements and methods that can be utilized across the continuum of adolescent care, not only in the hospital, but also in school and community environments as well (Ercole-Fricke et al., 2016).

Collectively, the research has demonstrated that the use of the CPS model can have a positive impact on children and adolescents in psychiatric hospitals. Utilization of CPS can

reduce and potentially eliminate the need for S/R procedures (Ryan, Peterson, Tetreault, & Van Der Hagen, 2008).

Summary and Recommendations

Research examining the use of S/R with children and adolescents has revealed many adverse physical and psychological effects (Selekman & Snyder, 1996) including serious injuries and death. Some research also suggests S/R on children and adolescents teaches the wrong lesson and appears to endorse the use of force (Murray & Sefcik, 1992). In addition, there is data indicating seclusion is used for staff convenience rather than patient need and placing demands on children (APNA, 2014; Millstein & Cotton, 1990). The literature from the professional community shows consensus and concern about the overuse of S/R. Reducing the rates of S/R requires the availability of feasible interventions and alternatives. A study by Gaskin et al. (2007) investigating psychiatric facilities concluded that “common features of the programs for change at many of the facilities were leadership, the monitoring of seclusion episodes, staff education, and changing the therapeutic environment” (p. 11). More recently, there is also some evidence that an alteration in a unit’s treatment philosophy can lead to improved changes in patient behavior, which will ultimately impact the incidence of the use of seclusion or restraints (Delaney & Johnson, 2012).

The Collaborative Problem Solving (CPS) model (Greene, 2011) is a promising framework to help parents and staff support oppositional and explosive children. This approach has shown promise in reducing rates of S/ R in children and adolescents in multiple settings, including schools, institutions, and inpatient and outpatient centers (Pollastri, Epstein, Heath, & Ablon, 2013). However, additional research is needed. Studies with children and adolescents

are recommended to examine the effectiveness of CPS in reducing the incidence of S/R in child acute psychiatric settings.

CHAPTER III

METHODOLOGY

Setting

Data were collected from a private psychiatric hospital in the western United States that serves both child and adult patients. The facility provides both acute and residential inpatient psychiatric treatment, partial hospitalization, and intensive outpatient programs.

Standard Hospital Procedures

As with most psychiatric hospitals, the facility where this study was conducted has detailed policy and procedures on the practice of S/R. “The policy applies to all staff trained in the use of Satori Alternatives to Managing Aggression (SAMA; 2016) and physicians who write orders and do assessments for the use of seclusion/restraint (Policy and Procedure, 2017, p. 1). The purpose of the policy is to protect the patient and others from harm and to protect their rights while also helping the patient during a crisis regain physical and emotional control and ensuring staff act in a therapeutic and humane manner (Policy and Procedure, 2017).

Seclusion involves, “the involuntary confinement of a person in a room or area where the patient is physically prevented from leaving” (Policy and Procedure, 2017, p. 2). A restraint involves, “the application of physical force...for the purpose of restraining the free movement of a resident’s body” (p. 2). The hospital advocates that the use of S/R poses a risk physically and psychologically to the client and staff and mandates “nonphysical low level interventions are the first choice as an intervention unless safety issues demand an immediate physical response” (p. 3). According to the Policy and Procedure manual, an S/R should be terminated as soon as possible and shall be maintained only so long as a patient is exhibiting dangerous behaviors (2017). For seclusions, there is a designated seclusion room.

All S/R procedures are documented in detail at the hospital, as defined by the Seclusion/Restraint Packet. The packet covers the following areas:

Name of patient, date, time of day, staff members involved, how long the procedure lasted, precipitating incidents and the patient's behavior before the procedure occurred. What specific actions were taken to de-escalate the situation and control, calm or contain the patient and the effect of these de-escalating actions upon the patient. A description of the procedure including the patient's physical, emotional and behavioral condition during the procedure. Description of the debriefing and evaluation with the patient and with the staff. The patient's physical condition prior to and following the procedure. The patient's emotional/behavioral condition prior to and following the procedure. (Policy and Procedure, 2017, p. 4).

Initial assessments at the hospital obtain relevant information pertinent to the use of S/R including pre-existing medical conditions, history of abuse, and techniques that work for the client to manage their behavior. Parents are also informed of the hospital's S/R philosophy, and legal guardians are notified as soon as possible after the initiation of the emergency intervention, S/R (Policy and Procedure, 2017). "Staff must be able to recognize how age, developmental considerations, gender issues, ethnicity, and history of sexual or physical abuse may affect the S/R" (Policy and Procedure, 2017, p. 5).

All direct care staff at the hospital receive ongoing training on at least a semi-annual basis and demonstrate competence on various factors related to S/R. Specific factors include education and training on the underlying causes of threatening behaviors and the use of de-escalation, medication, and self-protection. In addition, staff receive training on how their actions can affect the patients and how to recognize signs of physical distress in patients who are under S/R (Policy and Procedure, 2017).

Collaborative Problem Solving Program Implementation

The site of the study opened a new child unit in January 2017. Historically, the hospital had a similar child unit (estimated October 2014-June 2015), which was reportedly “unsuccessful” per staff and was thus closed. Anecdotally, staff did not want a repeat of the unsuccessful unit, which reportedly closed because of “behavioral issues”. Administration wanted to improve the chances of the unit’s success by selecting and investing in a preventative model to reduce inappropriate behaviors which could lead to S/R. Before opening the new unit, they initiated staff training using the Collaborative Problem Solving (CPS) Model, \Lives in the Balance, developed by Dr. Ross Greene (2008, 2017). Designated professional staff assigned to the unit were required to read Dr. Greene’s landmark book, *The Explosive Child* (2014) prior to training.

Training occurred over 15 weeks on Wednesdays for one hour via telephone conference. All staff received at least three weeks of training before the opening of the new unit. According to Greene (2014), at week nine, staff should have a good grasp of the model and be implementing it with the children. This was the rationale behind starting the research at week nine of the training. Additional weeks of training consisted of video critiquing and more specifics related to CPS.

The first two weeks of training consisted of an overview of the CPS model. Next, staff practiced completing assessments of children together. Once staff are competent at engaging in assessments together, they moved on to having conversations with the children and practicing mutual problem solving, defined as “Plan B” discussions (Greene, 2014). Conversations that align with the model were recorded and the instructor provided feedback. Towards the end of training, staff worked on implementation and more specifics (CPS Training Day 1, 2017).

Procedure

The inclusion criteria for the sample were all patients on the unit who received an S/R during the study period. Data were collected via patient record review. Specifically, data related to S/R incidents in the six-month time period prior to staff receiving CPS training (pre-CPS) and six months after the training was collected (post-CPS). The six-month periods consisted of six, 30-day time periods totaling 180 days. Pre-CPS was October 18, 2014 to April 16, 2015. Post-CPS was May 3, 2017 to October 30, 2017.

Data gathered included sex, race, age, grade, frequency of the S/R, date of the S/R, number of staff involved in each S/R, reason for the S/R, time in minutes the patient was escalated immediately before the S/R, total duration of the S/R in minutes, diagnoses, and total number of admits per patient during the period of study.

Participants

Participants were children and adolescents admitted for inpatient treatment. The pre-CPS sample was composed of children and adolescent patients involved in S/R during the six months immediately preceding implementation of CPS training. Children and adolescents involved in S/R after implementation of the CPS model were included in the post-CPS sample.

Analysis

Research question one (RQ1):

Is the Collaborative Problem Solving Model effective in reducing the frequency and duration of seclusion and restraint in children and youth in an inpatient population?

The Chi-Square Goodness of Fit test was conducted to compare the total number of S/R between pre- and post-CPS. Independent Samples *t*-Tests were used to compare the total duration of S/R between pre- and post-CPS.

Research question two (RQ2):

Does the Collaborative Problem Solving model reduce the instances of clients harming others?

Chi-square tests of association were used to examine the instances of harm to others between pre-CPS and post-CPS.

CHAPTER IV

RESULTS

The pre-CPS sample consisted of 18 patients. These individuals were involved in 74 seclusion and restraint (S/R) incidents during 20 different admissions to the hospital. Of the 18 patients, 15 (83.3%) were males and 3 (16.7%) were females. The majority of patients' race was identified as Caucasian. The clients were relatively young ($M = 9.22$ years of age, $SD = 2.37$ years). Diagnoses per admission were dominated by Impulse Control Disorders (75% of patients), Bipolar Disorder (65% of patients), and Psychosis (50%).

In the pre-CPS data, of the 74 incidents of SR, the primary reason for patients being placed in S/R was physical harm to others (97.3%), followed by threats to others (41.9%), and then harm to self (23%). Most of the S/R followed the escalation period of an hour or less, where 40.3% of the S/R followed the escalation period of 0-15 minutes and 29% of the S/R followed the escalation period of 16-60 minutes. The number staff involved in the incidents ranged from one to six, with the majority (55.9%) of the S/R incidents involving two staff members.

The post-CPS sample consisted of 43 patients admitted for inpatient treatment following implementation of the CPS model. These individuals were involved in 133 S/R incidents during 44 different admissions to the hospital. Of the 43 clients, 37 (86.05%) were males and 6 (13.95%) were females. Almost half of the patients' race was identified as Caucasian (48.84%) and the other half identified with a variety of other race/ethnicities (see Table 1). Similar to the pre-CPS sample, the post-CPS patients were fairly young ($M = 8.88$ years, $SD = 2.12$ years). Bipolar, Post-Traumatic Stress Disorder (PTSD), and Depression/Anxiety dominated patient diagnoses in the post-CPS sample.

In the post-CPS data, of the 133 incidents of S/R, the primary reason for clients being placed in S/R was physical harm to others, followed by harm to self, and then threat to others. Most of the S/R followed the escalation period of an hour or less, with approximately 61% of the SR followed the escalation period of 0-15 minutes and 25.3% of the S/R followed the escalation period of 16-60 minutes. The number of staff involved with the incidents ranged from zero to eight, with the highest number (40.7%) of the S/R incidents involving two staff members.

A chi-square goodness-of-fit was performed to determine whether similar numbers of S/R occurred before and after CPS implementation (see Figure 1). A significantly greater proportion of S/R occurred after CPS was implemented ($\chi^2(2, N = 207) = 16.82, p < .01$).

Figure 1. Number of S/R Pre- and Post-CPS

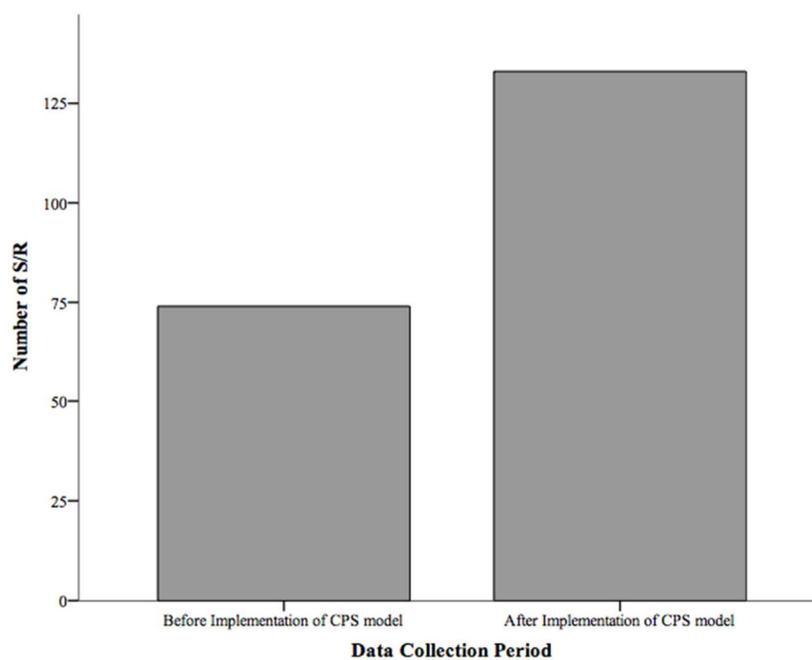


Figure 1. This figure illustrates the number of S/R before and after the implementation of the CPS model.

The total duration of S/R in minutes significantly decreased after the implementation of the CPS model ($M = 12.56$, $SD = 15.95$) compared to before ($M = 22.15$, $SD = 19.07$), $t(129.95) = 3.668$, $p < .01$, 95% CI [4.42, 14.76]. See Figures 2 and 3 for the total duration of S/R pre- and post-CPS.

Figure 2. Total Duration of S/R Pre-CPS

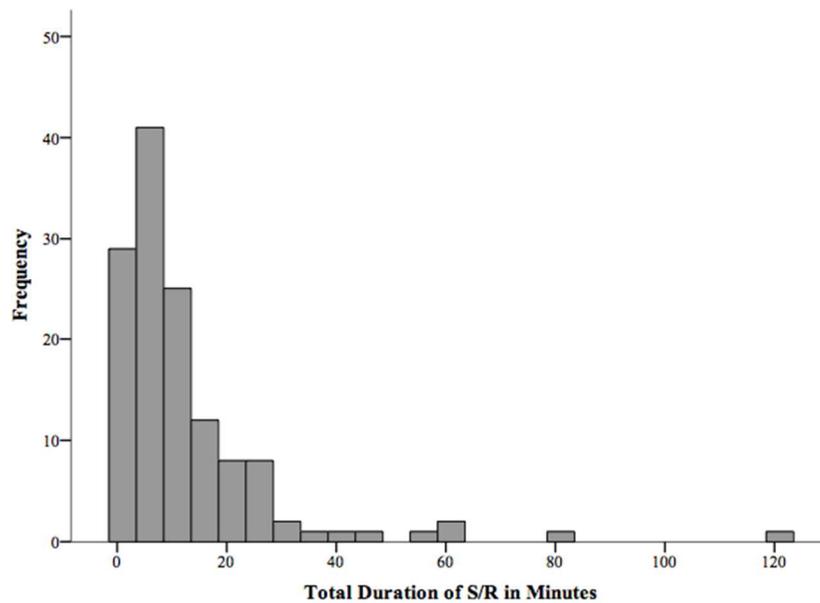


Figure 2. This figure illustrates the total duration of S/R in minutes prior to CPS implementation

Figure 3. Total Duration of S/R Post-CPS

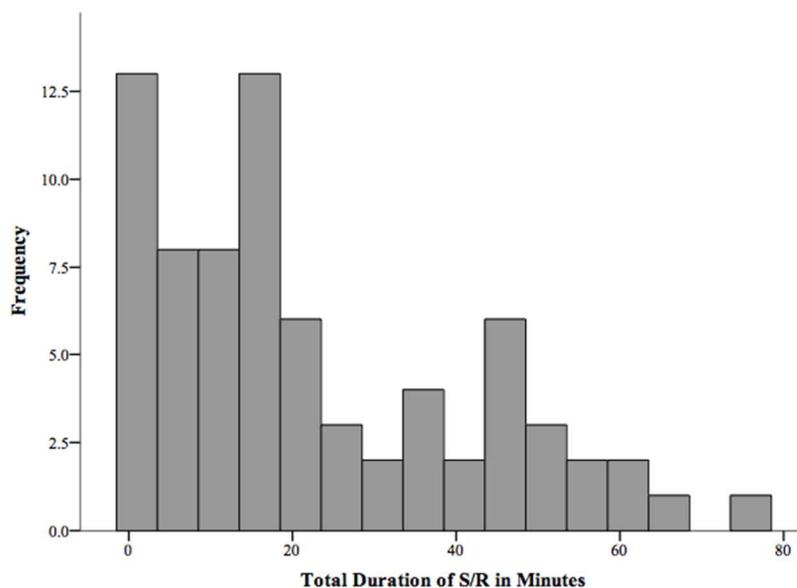


Figure 3. This figure illustrates the total duration of S/R in minutes after CPS implementation.

A chi-square test of independence was performed to examine the relationship between clients harming others and whether the S/R occurred before or after the intervention. The relationship between these variables was significant ($\chi^2(1, N = 207) = 28.03, p < .01$). Clients were less likely to be placed in S/R for harming others after the implementation of CPS.

CHAPTER V

DISCUSSION

This study sought to examine the impact of the Collaborative Problem Solving Model (CPS) model on the use of seclusion and restraint (S/R) with children and adolescents in an inpatient setting. Study results revealed that more S/R occurred after the implementation of the CPS model than before. This was an unexpected finding as previous research had found that the use of CPS contributed to reduced S/R rates (Greene et al., 2006; Martin et al., 2008). The apparent increase in the use of S/R post-CPS may be related to under-reporting of S/R on the unit before the implementation of the CPS model. Prior to the use of the CPS model, a lack of unifying framework for client care may have affected the recording of S/R. Since the new unit was created with the implementation of the CPS model in mind and with the goal of reducing S/R, there was a more organized effort to record the instances of S/R in a separate database for an effective analysis. Thus, in contrast to post-CPS, the recording of S/R was less likely to accurately reflect the actual instances of S/R on the unit prior to CPS implementation.

Results of the present study revealed that on average, clients spent less time in S/R after the implementation of the CPS model than before. This is an important finding as the negative effects of the use of S/R with children have been well established (Finke, 2001; Nunno et al., 2006; Selekman & Snyder, 1996), and there is no evidence that children learn alternative behaviors or gain self-control while in S/R (Miller, 1986).

Finally, there were fewer instances of clients harming others after the implementation of the CPS model than before. This finding is consistent with the theoretical underpinnings of the CPS model as it works by proactively helping clients build skills to regulate their emotions and better tolerate frustrations, preventing dangerous reactions such as harming others (Greene &

Ablon, 2006). Since harming others is one of the primary reasons that warrants S/R, findings support the use of CPS model as an effective preventative approach toward reducing S/R.

Limitations

As with all retrospective studies, this research was limited to the analysis of variables collected and there is no means of determining the accuracy of the data. For example, it is not possible to determine the extent to which the data reported are reflective of all S/R use in the facility during the study periods. In addition, there are some limitations inherent to the study setting. Since the focus of the study was an acute psychiatric inpatient population, the maximum number of available beds and the turnover rate limited the sample size during the data collection period. Further, the generalizability of the results is limited to the acute psychiatric population. Finally, fidelity of implementation of the CPS model was not assessed as part of the current study. Lack of implementation fidelity may have resulted in the program being less effective (Wilder, Atwell, & Wine, 2006) and may have impacted S/R practices.

Conclusions and Future Directions

Given the deleterious effects of S/R on the physical and mental well-being of children and adolescents, an effective treatment approach for children with explosive behaviors should aim to help them manage those behaviors and reduce the need for and time spent in S/R. The CPS model takes a cognitive-behavioral approach to addressing explosive behavior in children and adolescents (Greene, 2014). It is the first framework to view the challenging behavior as a skill deficit related to problem solving and/or managing frustration borne by an inability to solve problems. Conceptualizing explosive behavior as a skill deficit, the treatment prescribed by the model makes both the child and the adults indispensable parts of the collaborative skills building process (Greene, 2014). Clinical reasoning follows that when the client feels like an integral part

of the process, it will lead to a better outcome in terms of both crisis prevention and management. Specifically, once the clients are placed in S/R, this sense of ownership in managing their behavior with the active support of the staff will help them de-escalate quicker, resulting in a quicker release. Thus, the findings support the CPS approach as a more effective crisis management strategy in reducing the duration of S/R.

Since this is the first study of its kind, replication studies in child psychiatric inpatient units are needed to validate the results. Another potential area of investigation includes expanding the study to long-term care facilities. Finally, studies with an additional follow-up period to assess for long-term effects and potential changes in adherence to the model over time can further elucidate the link between the CPS model and reduction in S/R use in delivering more effective care.

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