1-1-2016

Cognitive Behavioral Therapy and Other Techniques to Reduce Acute Traumatic Stress Symptoms in Parents with Neonates in Intensive Care Settings

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Cognitive Behavioral Therapy and Other Techniques to Reduce Acute Traumatic Stress Symptoms in Parents with Neonates in Intensive Care Settings

A Thesis Submitted to the

University Honors Program

In Partial Fulfillment of the

Requirements of the Baccalaureate Degree

With Upper Division Honors

Department Of

Nursing

By

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DeKalb, Illinois

May 12, 2016

University Honors Program

Capstone Approval Page

Capstone Title: *Cognitive Behavioral Therapy and Other Techniques to Reduce Acute Traumatic Stress Symptoms in Parents with Neonates in Intensive Care Settings*

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Date of Approval: May 12, 2016

HONORS THESIS ABSTRACT

Parents are developing increasing amounts of acute traumatic stress symptoms (ATSS) from overwhelming Neonatal Intensive Care Unit (NICU) experiences upon newborn admissions and a lack of appropriate nursing interventions (Clottey & Dillard, 2013; Bryant, Friedman, Spiegel, Ursano, & Strain, 2010). Parental stress originates from a lack of communication between healthcare team members, feelings of personal guilt and shame, and an inability to participate in complete neonatal care (Mowery, 2011). Most parents are not educated on specialty neonatal care, furthering adding to high stress levels. Witnessing invasive treatments and frightening images of their infant attached to complex machines, fluctuation of neonatal progression during treatment, and unpredictability of the future are other factors of parental stress (Hall 2014). If there is a disconnect between infant-parent attachment, child development can suffer and lead to the possibility of future psychiatric illness among NICU infants (Clottey & Dillard, 2013).

Research shows that if parents do not have their psychological and physiological needs met by healthcare workers and supportive groups, ATSS can quickly develop into a long-term psychological disorder that can negatively impact the quality of life in both infants and parents (Clottey & Dillard, 2013). However cognitive behavioral therapy (CBT) and other techniques have been shown to reduce stress in parents facing traumatic situations (Cohen & Mannarino, 2008). By confronting fearful issues, reconstructing thoughts to become more positive, and proactively participating in care while taking personal responsibility to improve situations, NICU nurses should be urged to implement CBT and other stress reducing techniques in the clinical setting to assist distressed

parents (Cohen & Mannarino, 2008). Daily communication, family-centered care that involves education on infant conditions, and referrals to supportive groups are the main suggestions NICU nurses can utilize strategies that involve components of CBT to improve physical and psychological well-being of new parents (Hynan, Mounts, & Vanderbuilt, 2013).

Research methods included an extensive review of literature and analysis of 15 quantitative and qualitative research articles. Research grids were utilized to obtain major literature findings and to compare data. Three main themes found in this review of literature included the importance of daily, therapeutic communication, family-centered care and education, and support groups among nursing practice.

In conclusion, nurses can have a tremendous influence over stressed parents in clinical settings. Research shows that if trauma-focused CBT (TF-CBT), CBT, and other stress reducing techniques are integrated into nursing interventions, this will prevent the long-term development of serious psychological disorders such as posttraumatic stress disorder (PTSD) and depression, and improve overall child development (Clottey & Dillard, 2013; Cohen & Mannarino, 2008; Hynan, Mounts, & Vanderbilt, 2013). Because there is a limited amount of CBT and TF-CBT involvement in nursing practice, further research needs to focus on the effectiveness of CBT and other stress reducing techniques in nursing interventions to show the positive impact at reducing parental ATSS in NICU parents.

HONORS THESIS ABSTRACT
THESIS SUBMISSION FORM

AUTHOR: *Jeanette Gulczynski*

THESIS TITLE:
Cognitive Behavioral Therapy and Other Techniques to Reduce Acute Traumatic Stress Symptoms in Parents with Neonates in Intensive Care Settings

ADVISORS: *Dr. Kathleen Musker*

ADVISORS' DEPARTMENT: *Nursing*

DISCIPLINE: *Intensive Care Nursing*

YEAR: *Senior capstone project for 2016*

PAGE LENGTH: *42*

BIBLIOGRAPHY: *no*

ILLUSTRATED: *no*

PUBLISHED: *no*

LIST PUBLICATION: *no*

COPIES AVAILABLE (HARD COPY, MICROFILM, DISKETTE): *if requested*

ABSTRACT (100-200 WORDS): *see attachment*

Cognitive Behavioral Therapy and Other Techniques to Reduce Acute Traumatic Stress Symptoms in Parents with Neonates in Intensive Care Settings

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Introduction

Childbirth experiences and parental expectations do not always coincide. Parents anticipate a challenging, yet rewarding, birth of a healthy child with immediate infant-parent bonding experiences. Most parents are not prepared to hear that their child needs emergency, medical attention in the Neonatal Intensive Care Unit (NICU) directly after birth. Focus shifts from the excited parents to the infant in need, leaving parents confused and panicked with this surprising change of circumstances. NICU trauma can leave parents mentally distressed and in despair. Because of these overwhelming experiences and a lack of appropriate, nursing interventions in clinical settings to combat this problem, parents are developing higher amounts of acute traumatic stress symptoms (ATSS) (Hall, 2014). Parental stress results from the lack of communication and attention from healthcare workers, lack of healthcare knowledge, inability to participate in infant care, witnessing invasive treatments and frightening images of their infant attached to complex machines, fluctuation of neonatal progression during treatment, and unpredictability of the future (Hall, 2014). Marital relationships, careers, and personal health can decline in NICU parents from prolonged stress (Clottey & Dillard, 2013). According to McLeod (2016), interrupted emotional bonding and unrecognized parental stress can greatly effect infant attachment styles. Attachment styles are ways which newborns form connections between parents depending on personality traits. Three attachment styles are secure, insecure, ambivalent/disorganized attachments (McLeod, 2016). If there is a disconnect between infant-parent attachment, child development can suffer and lead to the possibility of future psychiatric illness among NICU infants, specifically personality disorders (Clottey & Dillard, 2013).

Secondly, research shows that if parents do not have their psychological and physiological needs met by healthcare workers and supportive groups, ATSS can quickly develop into a long-term psychological disorder that can negatively impact the quality of life in both infants and parents (Clottey & Dillard, 2013). However, there are nursing interventions to address this significant issue.

Cognitive behavioral therapy (CBT) and other techniques have been shown to reduce stress in parents facing traumatic situations with their infant (Cohen & Mannarino, 2008). By confronting fearful issues, reconstructing thoughts to become more positive, and proactively participating in care while taking personal responsibility to improve situations, NICU nurses should be urged to implement CBT and other techniques in the clinical setting to assist distressed parents (Cohen & Mannarino, 2008). Daily communication, family-centered care that involves education on infant conditions, and referrals to supportive groups are the main suggestions NICU nurses can utilize components of CBT strategies to improve physical and psychological well-being of new parents (Hynan, Mounts, & Vanderbuilt, 2013).

Background

Maternal risk factors such as alcohol or tobacco consumption, pregnancy complications and co-morbidities including an incompetent uterus and gestational diabetes, previous miscarriages, and in vitro fertilization methods are leading causes of pre-maturity in infants (Centers for Disease Control and Prevention [CDC], 2015). These infants are admitted to the NICU for close observation and continuous medical treatment because of the inability to adapt to extra-uterine life on their own. On top of witnessing complicated treatments and alarming infant appearances, parents fear for their infant's health and future development (Mowery, 2011). Many parents do not have reliable support systems and are uneducated about special neonatal care

(Hall, 2014). A disconnect of daily, updated communication can happen during NICU treatment among nurses and parents, further increasing acute stress. Witnessing the fragility in their infants can elicit avoidance behaviors and guilt in new parents. These behaviors stem from a lack of control over traumatic situations and the inability to hold complete responsibility over infant care (Hall, 2014). As a result, short and long-term psychological symptoms can appear in parents from traumatic NICU experiences (Hynan et al., 2013).

Psychological symptoms can vary in severity depending on the appearance of specific characteristics and the length of exposure to a crisis (Brynat, Friedman, Spiegel, Ursano, & Strain, 2011). Three main levels of stress include acute stress reactions (ASR), acute stress disorder (ASD), and posttraumatic stress disorder (PTSD) while ATSS (feelings of isolation and disinterest, withdrawn and dissociative characteristics, anxious and fearful thoughts, and over stimulation to traumatic situations) describes acute symptoms experienced in all three stress levels. ASR are the least severe responses in new parents that occur immediately after an exposure up to 48 hours. ASR includes a broad range of responses extending beyond dissociative and anxiety features that are hard to distinguish. Dissociation behaviors include avoidance, confusion, reduced awareness, and depersonalization. Adequate amounts of rest and relaxation mainly resolves ASR (Bryant et al., 2011). According to the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (American Psychiatric Association [APA], 2013), ASD is categorized under Axis 1 disorders and referred to as a trauma and stressor-related disorder. ASD is considered to occur 48 hours up to a month after exposure, having both dissociative and anxiety roots (Bryant et al., 2011). Other ASD symptoms include negative outlooks on life due to traumatic exposures, horrific memories and persistent flashbacks, and arousal characteristics including poor concentration, sleep disturbances, and hypervigilance (Hall, 2014). ASD is a less

intense form of PTSD, the most severe physiological stress level lasting beyond one month to years (National Institute of Mental Health [NIMH], 2016a). The NIMH (2016a) characterizes PTSD by three hallmark symptoms: intrusive thoughts, avoidance behaviors, and hyper arousal tendencies (para. 14). The main difference between ASD and PTSD is the presence of dissociation and length of traumatic exposure (Bryant et al., 2011). In addition to acute stress levels, postpartum depression (PPD) can result from an inability to control anxiety and a lack of available healthcare resources (Hynan et al., 2013). Due to the wide variety of illnesses and symptom presentations, more research needs to be established on ATSS and ASD to assist healthcare workers to accurately assess parental stress and prescribe necessary treatment.

Although there is a lack of current research on ATSS and ASD, national statistics show the prevalence of 1.7-9% of PTSD and 1.0-5.9% of PPD occurring in parents within twelve months after childbirth (Hall, 2014; Hynan et al., 2013). The American Association of Critical-Care Nurses (2013) states that 15% of new mothers and 8% of new fathers develop PTSD after a month of having a newborn in the NICU (Busse, Stromgren, Thorngate, & Thomas, 2013). In another study, mothers reported PTSD symptoms lasting beyond two to three years after experiencing a traumatic birth and NICU hospitalization (Clottey & Dillard, 2013). Interestingly, a smaller percentage of parents (1.5%-6%) who undergo a traumatic birth but do not have an infant admitted to the NICU have lower reports of ASD and PTSD symptoms, while a higher percentage of parents (21%-23%) who have both a traumatic birth and a NICU infant have higher accounts of serious psychological disorders (Mowery, 2011). These astonishing statistics show the desperate need to establish a healthcare practice that facilitates stress reduction in NICU parents.

CBT and other techniques are successful alternatives in stress reduction among new parents (NIMH, 2016b). The NIMH (2016b) reports CBT is one of three forms of psychotherapy that reconstructs positive thinking patterns and establishes proactive, healthy behaviors after exposure to a traumatic situation. CBT incorporates affective (mood), behavioral (actions), and cognitive (thinking) aspects into therapy to improve quality of life among parents (Cohen & Mannarino, 2008). One specific type of CBT is called trauma-focused CBT (TF-CBT) which differs in ways that assist parents to gradually confront fears by using the PRACTICE acronym. PRACTICE stands for "pyschoeducation, parenting skills, relaxation skills, affective modulation skills, cognitive coping skills, trauma narrative and cognitive processing of the traumatic event(s), *in vivo* mastery of trauma reminders, conjoint child-parent sessions, and enhancing safety and future developmental trajectory" (Cohen & Mannarino, 2008, p. 158). TF-CBT is a progressive program that specifically focuses on the traumatic experiences of parents compared to CBT that is generalized to all parents that may have not necessarily been exposed to a crisis. Components that are not formally connected with CBT but do show to be beneficial in reducing ATS include guided imagery, eye movement desensitization and reprocessing (EMDR), deep breathing exercises, muscle relaxation techniques, and scrap booking. Using this knowledge, NICU nurses can influence disconnections between parents and neonates through nursing interventions and family-centered care by providing simple education about complex medical procedures has a major impact in reducing stress in parents (Cohen & Mannarino, 2008; Kurtz & Schmidt, 2016). Positive outcome reinforcements, supportive group referrals, encouraging communication regarding frustration and fears, and applying therapeutic skills such as active listening and silent presence are other interventions nurses practiced in the NICU environment among parents to reduce acute stress levels (Clottey and Dillard, 2013). Research shows that

utilizing CBT, TF-CBT, and other techniques in nursing interventions is not only beneficial to parents in reducing short-term ATSS during NICU hospitalizations, but beneficial in aiding in the prevention of long-term psychological disorders (Cohen & Mannarino, 2008; Kurtz & Schmidt, 2016).

The objective of this review of literature is to portray the effectiveness of programs that involve nursing interventions that utilize CBT and other techniques to help reduce ATSS in NICU parents. Nurses can make a tremendous and lasting impact by encouraging simple tasks and facilitating therapeutic communication between distressed NICU parents while promoting active involvement and family-centered care during infant treatment. The majority of research centers around neonates in the NICU, nursing interventions tailored to infant care, and the aftermath of trauma in future child development. Most literature fails to discuss the parents' perspectives in the NICU environment, the short and long-term effects of parental stress involved in these life-altering events, and the necessary interventions healthcare workers need to assess and treat ATSS in parents. The purpose of this review of literature is to describe stress reducing CBT and other techniques that can be implemented by nurses to reduce possible ATSS in NICU parents.

Methodology

The methodology of this integrated review of literature consisted of identifying primary sources published within the last five years with the exception of two publications. One qualitative study (Barr, 2010) showed a clear distinction relating to how traumatic responses differ between the genders, while a theory article (Cohen & Mannarino, 2008) addressed specific qualities of TF-CBT compared to CBT. Electronic databases such as Cumulative Index to Nursing and Allied Health (CINAHL), PsychoINFO, and other relevant databases were utilized

to obtain research studies during this review of literature. Keywords include *neonates/premature infants/pediatrics, NICU/PICU, parental stress/parental experience, caregiver strain roles, CBT/TF-CBT, nursing interventions/nursing care/nursing education, traumatic births, acute traumatic stress, ASD, PTSD, PPD,* and *anxiety* in general search headings. Research studies met five criteria: documents were written in English and centered around the main topic, professionally published academic journals, primary sources, and published between January 2011 to December 2016 (excluding two works) to assure the validity and accuracy of the content. Information was organized into 15 qualitative and quantitative research studies found in peer reviewed journals. Relevant data was categorized into research grids that were compared and analyzed to look for similarities and differences among literature. Another purpose for analyzing articles was to assess for missing research in the current literature and to highlight areas for future research relating to ATSS and stress reducing nursing interventions in parents of NICU infants.

Data Analysis

All twenty-two publications were found by using the CINAHL database and keywords. Table 1 (see Appendix) summarizes key findings in literature emphasizing nursing interventions and study results. Approximately 32% of all published works were qualitative research studies while approximately 27% were quantitative studies. Two studies (Mouradian, DeGrace, & Thompson, 2013; Trusz, Wagner, Russo, Love, & Zatzick, 2011) had a mixture of both qualitative and quantitative research designs. A variety of research studies (Beheshtipour, Baharlu, Montaseri, & Ardakani, 2014; Bernard et. al, 2011; KynÃ, 2013; Spence et al., 2011; Trusz, Wagner, Russo, Love, & Zatzick, 2011) consisted of five randomized, controlled trials, five exploratory designs (Busse, Stromgren, Thorngate, & Thomas, 2013; Gonçalves Vieira

Fernandes & Batoca Silva, 2015; Hatters Friedman et al., 2013; Kane et al., 2016; Trusz, Wagner, Russo, Love, & Zatzick, 2011) with three studies (Barr, 2010; Hatters Friedman et al., 2013; Kane et al., 2016) listing descriptive statistics, one case study (Kane et al., 2016), two phenomenological hermeneutic studies (Geetanjli, Manju, Paul, Manju, & Srinivas, 2012; Gonçalves Vieira Fernandes & Batoca Silva, 2015), one mixed-method design (Rossman, Greene, & Meier, 2015), and one historical-comparison research design (Lee, Wang, Lin, & Kao, 2013).

The most common instruments that were utilized to record data in these qualitative and quantitative research designs (Busse et al., 2013; Lee et al., 2012; Rossman et al., 2015) included Patient Reported Outcomes Measurement Information System (PROSMIS) to assess for psychological disturbances, Parental Stressor Scale: Neonatal Intensive Care Unit (PSS:NICU), and 5-point Likert scales to record emotional distress. Nurse-parent support tools (NPST) and a neonatal therapeutic intervention scoring system (NTISS) promoted collaboration between nurses, infants, and parents (Beheshtipour et al., 2014; Goncalves Vieira Fernandes & Batoca Silva, 2015). Edinburgh Postnatal Depression Scale (EPDS) and Beck Depression Inventory-Second Edition (BDl-ll) assessed levels of postpartum depression (Bernard et. al, 2011). Davidson Trauma Scale and State-Trait Anxiety Inventory scales predicted acute anxiety and stress (Mouradian, DeGrace, & Thompson, 2013). A quantitative design (Barr, 2010) used five scales to assess physiological distress which included Stressful Life Events Screening Questionnaire-Revised (SLEQ), Stanford Acute Stress Reaction Questionnaire (SASRQ), Test of Self-Conscious Affect-3 (TOSCA) to measure shame, Guilt Inventory (GI), and a Collett-Lester Fear of Death Scale (CLFDS). A CBT readiness assessment tool in a qualitative design (Trusz et al., 2011) was utilized by nurses to determine if patients were willing to begin therapy.

Eleven studies (50%) (Barr, 2010; Beheshtipour et al., 2014; Busse et al., 2013; Geetanjli et al., 2012; Gimenez & Sanchez-Luna, 2015; Goncalves Vieira Fernandes & Batoca Silva, 2015; Kane et al., 2016, Kyno et al., 2013; Mouradian et al., 2013; Spence et al., 2011; Trusz et al., 2011) focused around the infant's biological parents. Three studies (Bernard et al., 2011; Hatters Friedman et al., 2013; Rossman et al., 2015) targeted high-risk mothers and one study (Lee, 2012) primarily centered around the emotional needs of NICU fathers. Six works (Barr, 2010; Goncalves Vieira Fernandes & Batoca Silva, 2015; Kane et al., 2016, Kyno et al., 2013; Spence et al., 2011; Trusz et al., 2011) did not include NICU parents as a sample, but generalized findings to all new parents. Sampling mainly consisted of convenient, randomized measures of voluntary participants.

Three studies (Busse et al., 2013; Gimenez & Sanchez-Luna, 2015; Goncalves Vieira Fernandes & Batoca Silva, 2015) recognized both the psychological and physical needs of NICU parents during hospitalization, four (18%) studies (Barr, 2010; Geetanjli et al., 2012; Hatters Friedman et al., 2013; Trusz et al., 2011) recognized secondary screening measures and assessment tools to help reduce parental stress, and ten (45%) studies (Beheshtipour, et al., 2014; Bernard et. al, 2011; Geetanjli et al., 2012; Hatters Friedman et al., 2013; Kane et al., 2016, Kyno et al., 2013; Lee et al., 2012; Mouradian et al., 2013; Rossman et al., 2015; Spence et al., 2011) discussed the importance of early interventional programs in the NICU environment. Interestingly, one quantitative study (Spence et al., 2011) went a step further to introduce the benefits of informatics in nursing practice to promote CBT. Eighty percent of research studies focused on ways to reduce acute psychological symptoms in parents, how nursing practice can improve in the future, and ways to better the NICU environment as a whole.

When analyzing qualitative and quantitative research studies, three main themes emerged consistently throughout the review of literature. Research studies emphasized theses findings and implied significance to nursing practice. These three themes were as follows: stress-reducing, therapeutic practices; proactive, family-centered care and education; and support groups. Methods used to determine reoccurring themes involved categorizing data information into a table, highlighting key sections discussing nursing interventions among distressed parents, and focusing on review questions to address the concerns related to ATSS in NICU parents.

Stress-reducing, therapeutic practices

The primary means by which NICU nurses can reduce the pressure of stress in parents is by having good communication skills (Geetanjli et al., 2012; Kyno et al., 2013). Four studies (Hatters Friedman et al., 2013; Kyno et al., 2013; Lee et al., 2012; Rossman et al., 2015) defined good communication skills between parents and nurses as being open and honest with parents about the neonate's progression or decline in treatment, establishing rapport by allowing questions and actively listening to concerns, and using silence presence to comfort distressed parents. Two studies (Beheshtipour et al., 2014; Busse et al., 2013) recorded that parental satisfaction levels were high if nurses personally schedule time to visit them, which allowed for open conversations and discussion of worries.

While communication is critical between nurses and parents, knowing the importance of different gender approaches to traumatic exposures is another key aspect when providing nursing care to reduce stress. According to Barr (2010), fear of infant death is the main concern of NICU parents followed up personal guilt and shame. Few parents are actually worried about their own health status or the well-being of their spouse and older children. One research article (Kyno et al., 2013) pointed out the importance of nurse awareness that mothers and fathers handle stress

differently. Mothers have a more psychological outlook, focusing on the emotional aspects of infant; fathers have a more physical outlook on hospitalization, focusing on machines and continuity of care (Kyno et al., 2013). Because of this finding, maternal figures are more at risk to develop PPD and higher levels of anxiety compared to paternal figures (Bernard et al., 2011; Hatters Friedman et al., 2013; Kyno et al., 2013). In one study (Busse et al., 2013), the majority of fathers and mothers experienced anxiety and fatigue, closely followed by depression and sleep disturbances from NICU experiences. According to Lee et al. (2013), fathers felt neglected, distant, and isolated when a lack of nursing guidance was provided to them. Because NICU nurses were unable to recognize fatherly needs and completely focused care on the infant, fathers felt less confident in their parenting abilities and incompetent in infant care. After a supportive program that included education and nursing guidance, fathers in an interventional group reported 9.88% reduction in stress levels (Lee et al., 2013). In another study (Rossman et al., 2015), mothers who were unable to express themselves to staff members felt dissociated and helpless during neonatal care. After consultations with breastfeeding peer consolers, mothers reported feeling more relaxed and appreciative. This was because most lactation consultants were once NICU mothers who held similar experiences. Additionally, NICU mothers found that they could not relate to other mothers simply because of the lack of NICU experience (Bernard et al., 2011; Geetanjli et al., 2012; Rossman et al., 2015).

In addition to understanding parental responses to traumatic situations, there are other stress reducing techniques that are not formally associated with CBT but do aid in reducing ATSS. Two studies (Mouradian et al., 2013; Gimenez & Sanchez-Luna, 2015) reported other therapeutic methods to reduce parental stress such as EMDR, muscle relaxation techniques, and deep breathing exercises. According to Rossman et al. (2015), taking mental and physical breaks

to maintain self-care was another important finding in literature. Mothers and fathers were encouraged to spend time away from the unit or develop a plan to split visitation between their spouse or other relatives. Parents were encouraged to divert attention to other responsibilities such as their careers, children, and spouse (Rosman et al., 2015). Reconstructing positive thinking patterns and the use of guided imagery were major influences among parent (Hatters Friedman et al., 2013). Mothers focused on the positive aspects of care, confronted fears, accepted their situations, and developed resilience and strength utilizing prayer (Rossman et al., 2015). According to Mouradian et al. (2013), scrapbooking was a beneficial measure used to promote distraction among parents and encourage expression of feelings with other NICU parents. On the other side of the spectrum, research studies (Hall, 2014; Trusz et al., 2011) suggested topics or practices to avoid in parents such as judgmental statements, dismissive behaviors, generalization or stereotyping parents, ignoring psychological symptoms, or acts minimizing feelings.

Proactive, family-centered care and education

There are techniques identified in research that nurses can employ to reduce ATSS in NICU parents through the use of encouraging parents to participate in neonatal care and providing family-centered care with healthcare education. According to Trusz et al. (2011), nurses must first assess willingness and compliance in the parents before begin nursing education or components of CBT techniques. Parents are more likely to decline therapeutic measures or avoid consultation if they feel embarrassed or ashamed due to perceived notions of stigma, lack of engagement in care, or in current denial of the situation (Trusz et al., 2011). Three research studies (Kyno et al., 2013; Lee et al., 2015; Rossman et al., 2015) emphasized NICU nurse to encourage mothers and fathers in becoming more actively involved in neonatal care which

promotes not only self-esteem and confidence in parenting abilities after discharge, but also reassurance and control in vulnerable parents. Touch, skin to skin contact, and breastfeeding are main contributors to care that have a huge impact in child development levels, attachment styles, and emotional infant-parent bonds (Rossman et al., 2015). Splitting care responsibilities between distressed parents promote a sense of worth, independency, control, and power (Geetanjli et al., 2012; Rossman et al., 2015). Sixty-seven percent of research studies (Beheshtipour et al., 2014; Kyno et al., 2013; Lee et al., 2012; Rossman et al., 2015; Spence et al., 2011) showed once parents feel motivated and realize their role in care, they are strongly inclined to become constantly involved in care and sacrifice all their personal needs. Family-centered care includes well-established communication and extending nursing care to all relatives by reviewing emergency plans, neonatal plan of care, and options and alternatives to medical treatment (Busse et al., 2013; Geetanjli et al., 2012). In one study (Kyno et al., 2013), the importance of follow-up calls was highlighted when nurses made these simple interventions a priority. These brief, phone conversations were used to assess not only the infant's condition but how parents were adapting to being new parents (Kyno et al., 2013). Another article (Beheshtipour et al., 2014) talked about specific nursing intervention that significantly reduced parental stress was providing parents with information on healthcare. This involved discussing how a premature baby was developing in life, complicated medical machines, the meanings behind medical procedures and diagnoses, and ways parents could become participants in care (Beheshtipour et al., 2014). Two studies (Beheshtipour et al., 2014; Lee et al., 2012) particular discussed the benefit of education during NICU care to promote awareness and healthcare knowledge. According to Beheshtipour et al. (2014), a continuous educational program had drastically decreased parental stress levels after a week after admission from 94.79% to 59.72% in mothers and 76.77% to 61.22% in fathers.

Lastly, a qualitative study (KynÃ et al., 2013) measured stress levels of parents of an interventional group and control group. In response to a continuous program lead by a NICU nurse, parents expressed a high satisfaction rate and lower level of stress after completing a referral booklet on NICU care. Stress only slightly decreased among the control group because a standard of care was provided in the NICU environment. Interestingly, interventional parents reported being "alert and vigilant" to their infant's behavioral cues as opposed to control parents who reported being on edge, "concerned, and worried" whenever a change in infant behavior occurred after discharge. Interventional parents felt more prepared and less nervous about challenges related to infant care, but did have feedback for the educational program that included the need for hour-long, debriefing sessions (Kyna et al., 2013).

Support groups

Current literature revealed the positive impact of psychological support using CBT components for NICU parents because of the high intensity environments, long hours of hospitalization and separation from the infant, stressful news, and fluctuating conditions of the sick child that can lead to emotional turmoil (Barr, 2010; Busse et al., 2013; Geetanjli et al., 2012; Gimenez & Sanchez-Luna, 2015; Goncalves Vieira Fernandes & Batoca Silva, 2015). According to Rossman et al. (2015), breastfeeding consolers or lactation consultants were the main source of relief for new mothers because of the tentative support each woman received during and after discharge. Mothers were able to form a common bond and relate to stressful topics of concern (Rossman et al., 2015). Another study (Hatters Friedman et al, 2013) found that onsite psychologists that were referred for parental figures presenting with psychological distress made a tremendous impact in the NICU environment. Although most parents only needed "short-term psychotherapy", the improvement in thinking and behaviors were clearly

observed by nurses, physicians, and social workers. Psychologists were also utilized by staff nurses when the NICU environment became too overwhelming during work hours. As a result, the hospital saw improvement in nursing attitudes and work ethics (Hatters Friedman et al., 2013). Although support groups are not an official CBT technique, nurses should encourage parents to use these groups to promote positive, cognitive thinking and to affect current behaviors.

Discussion

Data analysis shows that all three research themes relate to establishing healthy nurse-parent bonds and improve quality of life through (1) stress reducing techniques, (2) proactive nursing care, and (3) support group referrals. One clinical implication should involve early interventional programs in NICU settings that assist nurses to assess for initial symptoms of acute stress in new parents (Rossman et al., 2015; Spence et al., 2011). Another clinical implication that should be established in hospitals is mandatory orientations and training programs that include up-to-date education for all nurses regarding component strategies of CBT and TF-CBT. If stress reducing strategies focusing on CBT components are used in all areas of nursing practice, a trend in parental stress will begin to show improvement over time and prevent long-term physiological effects (Bernard et. al, 2011; Geetanjli et al., 2012; Hatters Friedman et al., 2013; Mouradian et al., 2013; Rossman et al., 2015; Spence et al., 2011).

Research study limitations included small, convenient sampling sizes and volunteer participants. As expected, there was a small percentage of parents who had withdrawn from research due to infant mortality, stressful time constraints, and increasing family responsibilities among other reasons. Studies (Busse et al., 2013; Geetanjli et al., 2012; Hatters Friedman et al., 2013; Lee et al., 2012) had strict criteria such as age limitations, nationalities, previous

psychological diagnoses, current participants in CBT, and being a multipara or primipara mothers and father. More than half of studies (Beheshtipour, et al., 2014; Bernard et. al, 2011; Geetanjli et al., 2012; Hatters Friedman et al., 2013; Kane et al., 2016, Kyno et al., 2013; Lee et al., 2012; Mouradian et al., 2013; Rossman et al., 2015; Spence et al., 2011) and four theory articles (Clottey & Dillard, 2013; Cohen & Mannarino, 2008; Hynan et al., 2013; Kurtz & Schmidt, 2016) included English-speaking adults and did not assess other nationalities simply because a translator was not available. In two studies (Bernard et al., 2011; Spence et al., 2011), bias could have been introduced by the usage of other TF-CBT programs that parents could have utilized in outpatient facilities, involvement in other supportive group, additional parental stressors, and other extraneous variables that were accidentally measured in the program design. Study assessments and recordings were implemented at specific time intervals on random days of the week, prohibiting make-up time periods (Kyno et al., 2013; Lee et al., 2015; Rossman et al., 2015).

Further research needs to involve more studies on the effectiveness of continual CBT programs and other stress reducing strategies among NICU parents (Hall, 2014). Implementing new techniques of psychotherapy takes a copious amount of time to reach the clinical settings because of the lack of current knowledge of research in nursing practice (Bernard et al., 2011; Kurtz & Schmidt, 2016). In particular, CBT research needs to focus on less conventional methods of therapy such as art-based therapy, pet therapy, music to assess for usefulness (Mouradian et al., 2013). Information needs to be examined on other appropriate parents and to assess their acute stress levels during NICU care. While most reviews of literature focus on both parents, there is a lack of sufficient amount of paternal studies simply because there is a

perceived notion that mothers need more attention than fathers (Kyno et al., 2013; Lee et al., 2012).

Conclusion

In summary, this review of literature did show the effectiveness of techniques used in nursing interventions help reduce ATSS in NICU parents. Nurses are one of the most influential factors in a NICU parent's life. Nurses have the ability to decrease or increase stress in any situation involving healthcare. Well-established communication between NICU nurses and parents significantly reduces parental stress. Encouraging family involvement in care not only relieves pressures from parents, but educates individuals on healthcare and builds self-control and confidence. Gradual, stepped programs and accurate assessments/screening tools for anxiety, stress, and depression drastically reduce the long-term effects of ATSS and prevent the occurrence of PTSD (Bernard et al., 2011; Kyno et al., 2013). It is important to note that TF-CBT is not for all parents in need of psychological interventions (Cohen & Mannarino, 2008). TF-CBT strictly involves intensive symptoms resulting from traumatic exposures to NICU. Because the majority of traumatic exposures in the NICU is short-lasting, most parents only need short term psychological interventions to get past the initial shock of NICU hospitalization. Lastly, healthcare systems must target ways to improve the NICU system by first examining potential problems, gaining personal testimonies from patients and parents how to improve standards of care, and develop ways to implement change into the clinical setting.

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Appendix - Table 1

Author(s)/Journal/ Pub. year/ Country of origin or N/A	Design	Main focus	Results	Unique key concepts emergent in study findings	CBT techniques
Barr/*Journal Of Loss & Trauma/*2010/Australia-Sydney	Quantitative research Descriptive statistics	To see the correlation between ATSS in the NICU among parents and existential emotional-based personality predispositions	Study questionnaires involved five scales to assess guilt, shame, fear of death, and ATSS Biggest fear among NICU parents is infant death, then personal guilt, acute stress, and shame. Mothers and fathers scored similarly among four categories Guilt was higher in mothers than shame If there is a predisposition to shame and guilt, then there is a greater chance at developing	Personalities can influence how parents react during NICU treatment and crisis situations NICU environments can destroy self-esteem of parents because the insecurities and lack of confidence that strips parents of control Adjustment disorders (long term effect) in relation to acute stress symptoms (short term effect) in children and parent personality development	Accurate nursing assessment tools for diagnosing parents with ATSS and personality complications Assessing willingness to comply with CBT treatment Understanding main stressors in relation to potential psychiatric disorders Express feelings via communication and providing feedback how to solve issues Supportive measures to establish rapport

			ASD		
Beheshtipour, Baharlu, Montaseri, & Ardakani/*International Journal Of Community Based Nursing & Midwifery*/2014/ East Asia-Iran	Quantitative research Double-blinded randomized controlled trial study with pre-test and post-test	Measure if providing healthcare education to NICU parents is beneficial or not? Does this program reduce parental stress so parents are able to spend more quality time with infant rather than learning basic care?	Fathers are more confident in parenting ability; mothers are more cautious and worried Fathers and mothers were split into interventional and control groups to assess if stress decreased after knowledge of NICU babies and what to anticipate (NICU sounds and sights, infant behaviors, appearances, and parental role alterations) After the second NICU admission day, stress kept decreasing in the interventional mother/father groups, while the control groups had barely any significant change in stress	Stress can take a physical and mental toil on both parents, more psychological conflict than physical issues Nurses should follow up after discharge by phone or appointments to give parents a sense of ease, reassurance, and guidance Nurse assessments should continue for at least 12 days and have a 24/7 availability by phone call	Educate new parents about NICU environment Nursing guidance and reassurance Supportive measures Updated communications Receptive to special needs of NICU parents Target main issues that contribute to stress

			While drastic declines in stress occurred in mothers, fathers had a less steep drop in stress levels because of length of time. Fathers were most concerned about severity of infant illness, making interventions difficult to reduce high stress levels		
Bernard, Williams, Storfer Isser, Rhine, Horwitz, Koopman, & Shaw/*Journal Of Traumatic Stress/2011/*US	Quantitative research Randomized controlled pilot study	Determine if CBT was beneficial in decreasing depression and trauma-induced anxiety among mothers after NICU discharge	Continuous, brief psychological sessions might decrease depression but not ATSS in mothers after discharge during follow up calls. Research showed a huge impact in CBT among interventional and control groups shown in a CONSORT diagram Sessions focused on education, relaxation techniques, and	Study focuses on mothers after one month of infant discharge Questionnaires and various scales used to assess depression and anxiety Limitations include cost-effective, short interventions with a small, convenient sample size	Individualistic CBT sessions Education, common thoughts, and strategies to reduce stress in parents Positive, cognitive restructuring and using only "positive self-statements" Relaxation methods including deep breathing and muscle relaxation

			cognitive reconstruction More than half of the participants followed up with phone calls		
Busse, Stromgren, Thorngate, & Thomas/*Critical Care Nurse*/2013/N/A	Qualitative research Exploratory study	Assess the responses of NICU parents during infant hospitalization	Depression, fatigue, anxiety, and sleep disruption are positively correlated with parental stress PROMIS instruments were used to assess 3 primary areas and 7 sub domains Family factors, number of children, responsibilities, and education greatly impacted parental stress levels Parental role alterations related to lack of sleep and fatigue were evident in participants Majority of parents had more anxiety levels than fatigue,	Fathers and mothers experience NICU stress differently Family-centered care and personal involvement should be established in NICU environments to create parental control and decision-making skills NICUs should make accommodations for parents to spend the night to help reduce acute stress and anxiety	Identifying parental stress responses by being receptive to needs Communication skills Counseling referrals Reassurance

			depression, and sleep disturbances that directly related to parental role alterations		
Geetanjli, Manju, Paul, Manju, Srinivas/*International Journal Of Nursing Education/*2012/ India-Delhi	Qualitative research Phenomenological hermeneutic study	Investigates parental grief reactions and losses from NICU experience. and determines if parents need to have certain needs met by healthcare workers and supportive groups	Grief responses were physical and physiological; losses were actual or anticipated Parental needs included nurse-parent communication, open visiting hours, and accurate and updated information on the neonate's progression Parents held many stereotypical fears about the NICU Most parents were self-blaming and felt intense guilt	Cultural considerations when working with non-English speaking parents were discussed A conceptual framework of coping mechanisms was established. This diagram explained the relationship between stress factors, maternal/infant factors, helpful or hindering factors that can lead parents to either effective or ineffective coping skills The biggest thing parents wanted nurses to do was to communicate effectively and not	Identifying special needs in parents including guilt and self-blaming tendencies Communication and honest updates on infant progression to treatments Reassurance and sensitivity in NICU nurses when addressing unfamiliar healthcare issues

				ignore parents during infant treatment. Most parents were eager to be involved in care and hold responsibility	
Gimenez & Sanchez Luna/*Infant*/2015/Spain-Madrid	Quantitative research	Determine how to reduce stress, anxiety, and depression in early intervention program for NICU mothers and fathers	Main stressors were family issues, physician and nurse updates through communication, the infant's illness, prenatal and postnatal experiences, healthcare concerns, altered parental role, and loss of control over unpredictable situations Parents were split into interventional (parents were provided more comprehensive and holistic care) or control (infants and parents were provided standard care) groups to assess the 5 phases of the program effectiveness	Nursing must involve comprehensive care to both parents and not just a "one size fits all" care model Involving siblings can be challenging during care and may lead to stress and guilt when older relatives ask about NICU baby Differences among NICU parental experiences and non-NICU parental experiences were listed, two important variables were not being able to touch the baby and provide total care in NICU settings Intra-collaboration	Role play with parents possible stressful situations so parents are prepared to face obstacles Comprehensive care and nurses must respond to needs

			After one week in NICU, control parents felt more emotionally stressed and depressed while interventional parents were more at ease and relaxed in decision-making	methods were led by a psychologist in the study	
Gonçalves Vieira Fernandes & Batoca Silva/*Revista De Enfermagem Referência/2015/* N/A	Qualitative research Explorative-descriptive and phenomenological study	To understand parents' experiences in the NICU environment and how each parent adapts to stressful situations. Do nursing assessments help to identify inhibiting and facilitating factors in ATSS?	Parents feel a lack of control and were confused about emergency medical procedures 7 themes were discussed relating to parenting styles, emotional turmoil during infant hospitalization, parental support, and personal recommendations that parents addressed to NICU facilities to make the environment less intimidating	Majority of parents indicated fearfulness about possible neonatal death and depression by NICU situations Perceived images were shattered after birth Parents received most support from relatives and healthcare workers, not other NICU parents and friends Parents felt a disrupted emotion attachment and altered parenting style to NICU infants	Understanding and empathy to new NICU parents Humanitarian care must be provided to all parents Good communication skills Establishing interpersonal relationships and maintaining ethical responsibility when helping parents make decisions Encouraging parental involvement in responsibilities

				because of constant separation Parents stated that the NICU should be more parent-friendly with a greater need for inpatient/outpatient resources Touch and breast milk were the most important aspects in neonatal care Continuity of care should involve younger siblings and parental care after discharge	Observation between parents and infants Supportive group referrals Establish good memories in NICU settings with positive cognitive thinking
Hatters Friedman, Kessler, Nagle Yang, Parsons, Friedman, & Martin/*Acta Paediatrica*/2013/US-Ohio	Qualitative research Exploratory and descriptive statistics	Investigates if perinatal psychiatric services are useful in helping reduce parental distress Would on-site certified psychologists benefit new parents with acute stress?	Majority of mothers did not require long-term psychiatric treatment. Most NICU mothers only need psychological interventions during infant hospitalization Short term psychotherapy was beneficial in	Women with pre-existing conditions were included in the study (the study had a less restrictive criteria) Psychologists would be present for staff and parents Staff nurses need to be educated on	Psychiatric referrals after reoccurring, continual observation Understanding and examining pre-existing psychological symptoms

			promoting bonding and developing coping measures More than half of the mothers found theses interventional methods useful The mothers most in need of services did not attend the program and were unable to follow up with healthcare providers/psychologists Nurses must be aware of psychiatric disorders during assessments Mothers were referred to a psychologist by other healthcare workers and were followed up with during hospitalization and after neonatal discharge	resources including social services, home health nurses, and case managers	
Kane, Adaku,	Qualitative	Assess national	Active strategies	Deals with national	Identify problematic

Nakku, Odokonyero, Okello, Musisi, Augustinavicius, Greene, Alderman, & Tol/*Implementation Science/*2016/East Africa-Uganda	research Exploratory-descriptive case study	standard practices in reducing acute stress, bereavement, and PTSD in patients, identifying barriers to implement clinical guidelines, and to summarize strategies how to incorporate guidelines into nursing practice Study was written in healthcare workers point of view and personal experiences	were more effective than passive strategies in intervention and control groups Research listed psychological and pharmacological recommendations for adults and children 25 themes answered 3 objectives that centered around care management, problems with the healthcare system, and strategies how to implement change into nursing	issues relating to stress, not just state and local issues. Research listed an evolving hierarchy that is flexible and relatable to all levels of health systems Discussed the importance of TF-CBT in family-centered care Medications are never a substitute for nursing interventions. Nurses must understand the underlying issues causing ATSS	areas and current practices that need to change, then find ways to implement strategies into clinical setting and how to adapt new policies to different cultures Nurses must assess a need for help and find ways to overcome issues
KynÃ, Ravn, Lindemann, Smeby, Torgersen, & Gundersen/*BMC Nursing/*2013/Norway-Oslo	Qualitative research Randomized controlled trial	To determine the effectiveness of an early intervention program called MITP on intervention and control groups The main purpose of MITP was to prevent negative infant-parent future	Parents in the intervention group stated that social support and emotional guidance made them feel more competent in infant care unlike parents in the control group that stated they felt more worried about infant behavior patterns and	Public health nurses, community health workers, and social workers need to be more knowledgeable in NICU care. NICU specialty nurses were highly valued and were the most trusting support system for NICU parents	Education, assurance, and emotion support must be given to NICU parents to reduce ATSS Identifying fears and limiting separation between parents and infants One hour debriefing

		interactions by promoting emotional bonding, strong attachment styles, and understanding normal infant responses Is there a key variable that causes stress in new parents?	were uncertain of emotion needs Parents stated that NICU environments need to be less stressful Discharge was unpredictable because parents who were in the control group were never taught to recognize infant behavior patterns and interactions NICU nurses taught the interventional parents useful techniques when handling babies that made these them feel more alert and vigilant rather than worried and concerned The key missing variable was a lack of emotional support from nurses and	MITP does not include debriefing but some parents might find talking about current emotions and concerning thoughts regarding being a new parent helpful before discharge Emotional support from nurses (one hour before and after debriefing sessions) need to be incorporated into care. This will make a lasting, positive difference in parents and help regain control and confidence in parenting abilities Separation from baby is another key issue that should be resolved with kangaroo care and skin-to-skin contact	meetings with healthcare team members Answering questions and good communication

			physicians among parents		
Lee, Wang, Lin, & Kao/*Journal Of Advanced Nursing/*2013/East Asia-Taiwan	Quantitative research Historical, comparison study	Shows if an early intervention program for fathers is useful in the clinical setting for reducing paternal stress, increasing parenting abilities/confidence /knowledge in fathers and how nursing support can impact new fathers	Fathers feel forgotten during NICU care and maternal treatment, leading to feelings of confusion, loneliness, isolation, and disconnection between healthcare workers and other relatives Take-home educational materials and personal nursing guidance were significant factors in helping fathers reduce ATSS and regain control and assertiveness Support and guidance showed dramatic decrease in stress among pre-tests and post-tests between intervention and control groups Infant severity of illness effected	Research mentioned nursing interventions specifically tailored to NICU fathers Fathers have multiple, straining roles and generally are more optimistic than mothers. Thus, fathers receive less care because of a perceived notion that they are transitioning well during infant hospitalization Nurses must assist in teaching, providing referrals and materials, and following up with parents who seem distant and uninvolved in care	Education on healthcare measure in NICU environment Encourage fathers to participate in infant care and teaching about normal infant behaviors Booklet and nursing guidance Facilitating and answering questions Confronting fears Establishing unique experiences to remember; positive cognitive reframing

			parental stress more than longer hospital stays or social support (opposite of mothers)		
Mouradian, DeGrace, & Thompson/*American Journal Of Occupational Therapy/2013/*US-Oklahoma	Qualitative and quantitative research Pre/post test design with post-interviews	Determine if another form of relaxation therapy can significantly decrease stress in parents by providing muscle relaxation, distraction, and a sense of unity in traumatic situations This helps therapists gain an understanding of parental experiences in the NICU, personal point of views, and key elements essential to help parents progression through difficult times as new guardians	Stress occurs when demands outweigh public resources Sense of community and story telling were positively impacted NICU groups State anxiety (short term) and trait anxiety (long term) had different levels of stress reduction following art therapy sessions Environmental stressors played a huge role in parental stress	Mothers deal with stress differently than fathers Changing environments might help parents gather thoughts and sort out problems instead of continuously facing the issue and becoming numb to situations Family-centered interventions need to be included in nursing care models Scrap booking was used to reduce ATSS and provide distraction and healing in traumatized NICU parents	Providing distraction and encouraging parents to join supportive NICU groups during/after hospital visitations Journaling or writing down feelings or experiences to look back on and reestablish perspectives Opportunities to participate in creative, stress-reducing activities to reduce isolation and withdrawn tendencies in stressed parents
Rossman,	Qualitative-	Explore how peer	5 primary themes and	Support from	Continuous, daily,

Greene, & Meier/*Journal Of Obstetric, Gynecologic & Neonatal Nursing/*2015/US-Chicago	descriptive research Participants were part of a longitudinal-mixed method	support from other NICU mothers, lactation consultants, and NICU nurses can have a positive effect that can help build resilience and strength in frightened mothers	11 sub themes were loss, stress and anxiety, adapting, resilience, peer support, and "I am a NICU mom" statements. Moms were more focused on what they can do for their child (expressing milk, becoming resilient to fears, optimism during treatment, and splitting responsibilities) instead of feeling depressed and helpless Most perspectives of stressed mothers held were positive than negative images Moms need to discuss feelings about their insecurities before they can begin to properly care for babies Most mothers were	lactation consultants proved to be beneficial to struggling mothers. This made them feel connected to other mothers. A common bond was built that established rapport Resilience and the fighting spirit was portrayed in this study among NICU mothers Religion was a huge part of peace of mind for mothers. One of the most reported acts was constant prayer and faith Barriers and facilitators when communicating with moms were addressed in research Nurses must provide constructive feeding and be observant during infant-parent	therapeutic communication Peer support referrals Encouraging mothers to proactive participate in infant care

			shocked about appearances and fragility of premature infants Most mothers had lower incomes, unmarried or single status, lower education, of African American nationality, and considered primiparas Mothers had to accept the fact of infant mortality before they could begin to form coping strategies	interactions and confront uncomfortable topics to alleviate stress	
Spence, Titov, Dear, Johnston, Solley, Lorian, Wootton, Zou, & Schwenke/*Depression & Anxiety*/2011/Australia	Quantitative research Randomized and controlled	Determine if online CBT was as effective as in-person CBT for PTSD reduction	CONSORT diagram represented study progression and data gathering techniques Psychological disorders and symptoms were assessed before being CBT treatment online. Homework, participation, and	Study shows the multipurpose of internet-based CBT A screening measure and diagnostic test, trauma exposure, primary outcomes, secondary outcomes, and interviews were instruments utilized to assess data	Intra-collaborative team management for crisis interventions Confronting underlying issues during trauma exposure Education online positive

			discussion were encouraged in interventional groups while control groups received standardized care 7 online lessons discussed ASD, PTSD, and CBT to parents to increase education and ultimately decrease stress Therapists would call parents weekly to monitor mood and stress while giving support and undivided attention to them At a 3-month follow up interval, interventional groups did not meet DSM-V criteria for PTSD symptoms while the control groups did meet criteria The intentional group	Many participants enjoyed the convenience and privacy of online CBT while learning new information	reconstruction of perspectives

			had lower pre-test and post-test at 3-month follow up test scores, indicating program usefulness in stress reduction		
Trusz, Wagner, Russo, Love, & Zatzick/*Psychiatry: Interpersonal & Biological Processes/2011* US-Washington	Qualitative and quantitative research Exploratory and descriptive statistics Randomized controlled trials	Assess barriers that hold patients back from receiving full, continuous treatments of CBT and to create an assessment tool for parents to recognize the need for help in victims with ATSS	Research conducted two studies, showing that lack of program engagement with therapists was the biggest barrier to CBT among participants Individuals must be willing to undergo therapy and follow up after discharge for additional care Lack of engagement, additional barriers to care, preferences, remissions, and stigma were main categories to assess for problematic areas that inhibited psychiatric interventions Sub domains	Traditional therapies need to be adaptive, fluent, evolving, and flexible with individual sessions that progress on a continuum of care A gradual stepped, delivery model needs to be constructed in institutions to receive most successful results among patients. Case management should be tied with CBT to provide alternative resources CBT readiness assessment tool (basic survey) in all clinical settings, triage, and disaster centers should be used to combat	Observing for readiness and willingness in parental behaviors before participating in psychological interventions Identifying barriers to receiving CBT Accurate and precise nursing assessment tools

			included clinical and logistic barriers, sobriety, and providers and settings that were the main inhibitors of treatment A readiness assessment tool was beneficial in detecting which factors where most influential and to determine a participant's willingness to comply Most patients held two or three barriers prior to starting treatment Engagement and remissions did not correlate in study findings The patients in most need of CBT interventions were most likely unable to attend/complete	ATSS. Trained individuals can provide services instead of strictly physicians Care management then case management were discussed in study	

			treatment, indicating avoidance behaviors seen in ASD		