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Pepperdine University  
Graduate School of Education and Psychology

TF-CBT WITH THE PEDIATRIC MEDICAL POPULATION: A MODIFICATION

A dissertation submitted in partial satisfaction  
of the requirements for the degree of  
Doctor of Psychology

by

Hussah Talal Al-Kharafi

August, 2017

Thema Bryant-Davis, Ph.D. — Dissertation Chairperson

This dissertation, written by

Hussah T. Al-Kharafi

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PSYCHOLOGY

Doctoral Committee:

Thema Bryant-Davis, Ph.D., Chairperson

Carrie Castaneda-Sound, Ph.D.

Sharon H. O'Neil, Ph.D., MHA

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## DEDICATION

The most beautiful people we have known are those who have known defeat, known suffering, known struggle, known loss, and have found their way out of those depths.

-Dr. Elisabeth Kübler-Ross, *Death: The Final Stage of Growth*, 1975

This work is dedicated to all who have bravely faced their fears, remained strong in times of hardship, and came out more powerful on the other side. To those who are struggling, know that your courage does not go unnoticed and you will overcome.

## ACKNOWLEDGMENTS

This project could not have been completed without the help and support of a number of individuals. To my dissertation chairperson, Dr. Thema Bryant-Davis, I can't thank you enough for the time you've dedicated to this project. Your guidance, strength and especially calm and gentle presence over the years have been a great source of comfort and encouragement. Dr. Sharon O'Neil, thank you for cultivating my knowledge of the pediatric population and providing me with the inspiration for this project. Dr. Carrie Castaneda-Sound, thank you for your wisdom and caring support throughout this process. I am eternally grateful for having such a wonderful committee.

To my parents: You may still not know exactly what I do but it's your character, strength, and resolve that has shaped me and provided me with the confidence and drive to be where I am today. Thank you for having the faith to allow me to break the mold and move thousands of miles across the world-alone-to pursue a path that only I could see; I know it has not been easy for you. I am blessed to be so loved.

To my family: Thank you for allowing me to inspire you. Jan B: Thank you for being such a great "godmother" and providing me a home away from home.

To my friends: Thank you for lending an ear throughout this process despite how foreign it is to you, for being so phenomenal that we can pick up where we left off, and for your continued support. Andrew, Xochitl, Amy and Jasmina, I appreciate you so much for the motivation and encouragement to rise above and power through.

VITA

HUSSAH T. AL-KHARAFI

---

**EDUCATION**

**Doctor of Psychology in Clinical Psychology** 2017  
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Graduate School of Education and Psychology, Los Angeles, CA  
Dissertation Title: *TF-CBT with the Pediatric Medical Population: A Modification*  
Advisor: Thema Bryant-Davis, Ph.D.

**Master of Arts in Clinical Psychology** 2008-2010  
Emphasis on Marriage and Family Therapy  
Pepperdine University, Los Angeles, CA

**Bachelor of Science in Psychology** 2001-2005  
Related Field of Study: Neuroscience  
University of Pittsburgh, Pittsburgh, PA

**Language Skills**

Fluent in English and Arabic

**CLINICAL EXPERIENCE**

Expected September 2017-August 2019

*West Virginia University School of Medicine, Morgantown, WV*

Department of Psychiatry and Behavioral Medicine  
(APPCN Member)

**Neuropsychology Postdoctoral Fellow**

July 2016-June 2017

*West Virginia University School of Medicine, Morgantown, WV*

Department of Psychiatry and Behavioral Medicine  
APA Accredited Internship

**Psychology Intern**

**Neuropsychology Concentration**

Kirk Bryant, Ph.D., Marc Haut, Ph.D., ABPP, Stacie Leffard, Ph.D., ABPP, James Mahoney, Ph.D., Liv Miller, Psy.D., ABPP, Christina Wilson, Ph.D.

- Administered neuropsychology measures to patients of all ages (pediatric, adult, geriatric) with neurological, medical, and psychiatric diseases.
- Attended and participated in weekly Neuropsychology case conference, psychology didactics, neurology grand rounds, and behavioral medicine department grand rounds.
- Presented on relevant topics in didactics and department grand rounds.
- Participated in ongoing research, and created and presented own research project to Psychology faculty.
- Attended weekly brain tumor board meetings, when possible.

- Attended and participated in monthly brain cutting course, when possible.
- Participated in individual and group supervision.
- Facilitated weekly Psychiatric Intensive Care Unit (PICU) group therapy and/or geriatric psychiatric group therapy

**Adult Neuropsychology Rotation** July 2016 to November 2016; March 2017 to June 2017  
Kirk Bryant, Ph.D., Liv Miller, Psy.D., ABPP

- Administered neuropsychology measures to primarily adult and geriatric patients with diverse presentations (e.g., psychiatric, TBI, Epilepsy, Parkinson's, Multiple Sclerosis, etc.).
- Administered and interpreted neurobehavioral examination.
- Scored, interpreted and dictated/wrote full reports.

**Pediatric Neuropsychology Rotation** November 2016 to February 2017  
Stacie Leffard, Ph.D., ABPP

- Administered neuropsychology measures to pediatric patients with diverse presentations (e.g., learning disabilities, neurodevelopmental disorders, prenatal substance use exposure, etc.).
- Administered and interpreted pediatric-oriented neurobehavioral examination.
- Scored, interpreted and dictated/wrote full reports.

### **Therapy Minor Rotations**

*Group Psychiatric Inpatient Treatment* July 2016 to December 2016  
Kevin Larkin, Ph.D., ABPP, Stephanie Cox, Ph.D.

- Facilitated group with psychiatric and substance use populations with differing degrees of symptom severity utilizing different techniques (e.g., Progressive Muscle Relaxation, Guided Imagery, Mindfulness).

*Child and Families Multidisciplinary Training Clinic* July 2016 to December 2016  
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- Conducted intakes and provided therapy assessment and evidence-based interventions to complex pediatric patients and families as part of a multi-disciplinary treatment team (1-2 patient caseload).
- Received direct observation through the one-way mirror while also observing faculty and trainees conducting individual and family therapy.

*Adult Outpatient Psychology/ Psychiatry* January 2017 to June 2017  
Cassie Brode, PhD, Stephanie Cox, PhD, or Richard Gross, PhD, ABPP

- Provided assessment and evidence-based treatment to patients with a wide range of presenting problems (e.g., co-morbid medical and psychiatric).
- Conduct intakes and new patient evaluations.
- Supervision is primarily from a Cognitive- Behavioral orientation, although other evidence-based approaches such as Acceptance and Commitment Therapy and Motivational Interviewing may be included.

*Family Medicine Inpatient Rounds/Consultation*  
Kimberly Foley, Ph.D., Alison Vargovich, Ph.D.

January 2017 to March 2017

- Provided consultation regarding psychological or adherence concerns with medically hospitalized primary care patients.
- Delivered brief psychological interventions.
- Participated in medical rounds as part of a multidisciplinary inpatient team.

*Psychiatry Consultation-Liaison*  
Michael Ang-Rabanes, M.D.

April 2017 to June 2017

- Assisted psychiatric consultation and liaison team in the diagnosis and treatment of psychiatric disorders in medically ill patients admitted to the hospital.
- Assisted in managing psychiatric disorders within a medical hospital setting through psychological interventions.
- Participated in psychiatry rounds as part of the consult team.

## **ADDITIONAL CLINICAL EXPERIENCE**

August 2015-May 2016

*Insight Collective, Pasadena, CA*

### **Neuropsychology Trainee**

Oren Boxer, Ph.D., Ani Dillon, Psy.D., Krista Greenfield, Pys.D., Stephanie Kohlman, Psy.D., Christine Rose, Psy.D.

- Administered neuropsychology measures to child, adolescent and adult clients with neurocognitive deficits that affect academic or occupational performance, as well as social emotional and behavioral functioning.
- Work with specialists in other disciplines within the practice (e.g., neuropsychologists, clinical psychologists, educational therapists, speech and language therapists).
- Scored, interpreted, and wrote full, comprehensive neuropsychological reports
- Participated in phone consults, patient feedback sessions.

July 2014-July 2015

*Children's Hospital Los Angeles, Los Angeles, CA*

### **Neuropsychology Trainee- Clinical Trials Unit**

Sharon H. O'Neil, Ph.D., MHA

- Administered neuropsychology measures to child and adult research participants of various clinical studies (e.g., Liver, Optic Nerve Hypoplasia, Sickle Cell Disease, etc.).
- Scored, interpreted and wrote neuropsychology reports.
- Attended and participated in a weekly gross neuropathology (i.e., brain cutting) course.
- Supervised and trained incoming practicum students in assessment administration and scoring.
- Attended and participated in didactics and grand rounds (e.g., stroke, child development, ADHD).
- Attended Neuro-Oncology multidisciplinary treatment team meetings and case conferences.
- Assisted and provided support to facilitators of a social skills group for girls and concurrent parent group that is part of the Division of Plastic and Maxillofacial Surgery.

July 2013-August 2014

*Cedars-Sinai Medical Center, Los Angeles, CA*  
Department of Psychiatry and Behavioral Neurosciences

**Clinical Psychology Trainee**

Enrique Lopez, Psy.D., Waguih W. IsHak, M.D., FAPA

- Provided English and Arabic inpatient consultation liaison services (i.e., individual, couples, or family psychotherapy).
- Administered brief neuropsychology measures to inpatient populations and created brief reports in response to psychiatry referral questions.
- Adjusted tests to address the referral questions and/or patient presentation.
- Participated in weekly Psychiatry multidisciplinary treatment team meetings.
- Collaborated with both interdisciplinary and multidisciplinary medical professionals.
- Administered the SKID and select neuropsychology measures for the Neurology Department's outpatient research study on multiple sclerosis.
- Assisted in drafting and editing research on HIV.
- Assisted and provided child and adult neuropsychology testing and scoring support to the Department of Rehabilitation, outpatient services.
- Attended and participated in didactics and lecture series (e.g., neuropsychology report writing, child assessment interviews, deep brain stimulation, military behavioral health, etc.).
- Participated in departmental research meetings.

August 2012-July 2013

*UCLA Mary S. Easton Center for Alzheimer's Disease Research, Los Angeles, CA*

**Neuropsychology Trainee**

Kathleen D. Tingus, Ph.D.

- Administered a semi-fixed neuropsychological battery to patients primarily referred from the UCLA Neurology Department.
- Adjusted tests to reflect patients' referral questions and/or test-day presentation.
- Participated in structured interviews to assess patient presenting problems.
- Interviewed patients' individual family members, when necessary, to supplement patient information.
- Scored and interpreted test data and wrote neuropsychology reports.
- Presented a clinical neuropsychology assessment case to fellow trainees.
- Attended and participated in a gross neuropathology (i.e., brain cutting) course.
- Participated in didactics and lecture series with various topics (e.g., sports neuropsychology, forensic neuropsychology, epilepsy, traumatic brain injuries, and pediatric neuropsychology).

September 2011-July 2013

*Pepperdine Community Counseling Clinic, Encino, CA*

**Clinical Psychology Therapist Extern**

Anat Cohen, Ph.D., Sepida Sazgar, Psy.D.

- Provided school-based individual therapy to children and at-risk adolescents.
- Provided individual therapy to clients of a residential program for sexually exploited children.
- Provided individual therapy to adult clients.

- Tailored therapeutic techniques and treatment plans to clients.
- Administered diagnostic interviews with adult clients or parents of child clients.
- Administered and interpreted brief diagnostic assessments.
- Maintained thorough progress notes and completed necessary documentation to fulfill ethical and legal requirements.

September 2009-December 2010

*Brotman Hospital- Culver City, CA*

Intensive Outpatient Program

**Marriage and Family Therapy Trainee**

Debra Jan Boczan, LMFT

- Provided individual and group therapy for patients with chronic mental illness, some dually diagnosed, to improve daily living, overall well-being, and quality of life.
- Assisted patients in developing and improving interpersonal and social skills.
- Completing initial evaluations in an inpatient psychiatric rotation.
- Participated in discussions with program supervisor and fellow interns and trainees regarding patient diagnoses, symptoms and treatment planning.
- Ensured proper documentation of session content and interventions.

**RESEARCH EXPERIENCE**

July 2016-June 2017

*West Virginia University School of Medicine, Morgantown, WV*

Department of Psychiatry and Behavioral Medicine

**Researcher**

Kirk Bryant, Ph.D.

- Developed a research project that explored differences between controls, Parkinson's disease and Alzheimer's disease groups on a neurobehavioral screener.
- Entered relevant Parkinson's and Alzheimer's disease research data.
- Data analysis
- Presented findings to Psychology faculty.

July 2013-Present

*Cedars-Sinai Medical Center, Los Angeles, CA*

Department of Psychiatry and Behavioral Neurosciences

**Researcher– Volunteer**

Enrique Lopez, Psy.D., Waguih W. IsHak, M.D., FAPA

- Assist in developing, drafting and editing research for publication or conference presentation.

July 2013-July 2015

*UCLA Semel Institute-Medical Psychology Assessment Center, Los Angeles, CA*

Laboratory of Susan Bookheimer, Ph.D.: Functional Neuroimaging of Language and Memory

**Neuropsychology Trainee and Graduate Student Researcher**

Susan Bookheimer, Ph.D., Patricia Walshaw, Ph.D.

- Created and organized an epilepsy research database.
- Entered, uploaded, managed relevant epilepsy research data.

- Assisted in other projects as necessary (e.g., created and managed a study's participant database, double scored measures).
- Participated in select neuropsychology didactics.

February 2009-July 2009

*UCLA Mary S. Easton Center for Alzheimer's Disease Research, Los Angeles, CA*

**Neuropsychology Research Assistant** – Volunteer

Ellen Woo, Ph.D.

- Trained to administer neuropsychological tests.
- Provided scoring, data entry, and administrative support.

May 2005-April 2006

*UPMC -Pittsburgh Mind-Body Center, Pittsburgh, PA*

**Research Assistant**– Volunteer

Peter Gianaros, Ph.D.

- Developed an individual research project focusing on one aspect of data from a national women's health study.
- Presented research findings at the University of Pittsburgh's Psychology Department's Annual Conference that showed a correlation between perceived stress and ventricle size.
- Recruited, scheduled and oriented research participants to research projects.

## **PRESENTATIONS & PUBLICATIONS**

**Al-Kharafi, H. T.** (June, 2017). *TF-CBT with the Pediatric Medical Population: Recommendations for Application*. Oral Presentation at Grand Rounds at the Department of Psychiatry and Behavioral Medicine, West Virginia University School of Medicine, Morgantown, WV.

**Al-Kharafi, H. T. & Bryant, K.** (June 2017). *The Neurobehavioral Examination: Exploring the Differences Between Controls, Alzheimer's Disease and Parkinson's Disease Groups*. Research Presentation at the Department of Psychiatry and Behavioral Medicine, West Virginia University School of Medicine, Morgantown, WV.

**Al-Kharafi, H. T.** (September, 2016). *Epilepsy and Seizure Disorders*. Oral Presentation at Psychology Didactics, Department of Psychiatry and Behavioral Medicine, West Virginia University School of Medicine, Morgantown, WV.

López, E., Steiner, A. J., Smith, K., Thaler, N. S., Hardy, D. J., Levine, A. J., **Al-Kharafi, H. T.**, Yamakawa, C., & Goodkin, K. (August, 2016). Diagnostic utility of the HIV dementia scale and the international HIV dementia scale in screening for HIV-associated neurocognitive disorders among Spanish-speaking adults. *Applied Neuropsychology: Adult*, pp.1-10. doi:10.1080/23279095.2016.1214835

**Al-Kharafi, H. T.** (May, 2016). *Cerebral Palsy and Neuropsychology*. Oral Presentation at Psychology Didactics, Insight Collective, Pasadena, CA.



IsHak, W. W., Becker, B., Hedrick, R., Solt, A., Lopez, E., **Al-Kharafi, H.**, Smith, K., Peterson, M., Parisi, L., & Danovitch, I. (May, 2015). *Proactive consultations in a general hospital using the Cedars-Sinai psychiatric consultation identification score (CS-PCI)*. Scientific and Clinical Paper accepted at the 168th Annual Meeting of The American Psychiatric Association, Toronto, Canada.

Benji, A., Bellete, N., Kharazi, P., **Al-Kharafi, H.**, Questin, R., Nimmer, M., Cedillo, P., & Lopez, E. (March, 2015). *The utilization of the search function of the scoring website for the Handbook of Normative Data for Neuropsychological Assessment for research of underserved populations*. Poster presentation at the 21st Annual HMO Research Network Conference, Long Beach, California.

**Al-Kharafi, H. T.** (June, 2014). *Introduction to the Cedars-Sinai psychiatry consultation on medical and surgical patient's registry*. Oral Presentation at the 4<sup>th</sup> Clinical Neuropsychiatry Research Meeting, Department of Psychiatry and Behavioral Neurosciences, Cedars-Sinai Medical Center, Los Angeles, CA.

**Al-Kharafi, H. T.**, Kakavand, H., Sloane Alas, R., & Meono, L. (June, 2013). *Traumatic brain injury*. Oral presentation at neuropsychology case conference, University of California Los Angeles, Los Angeles, CA.

**Al-Kharafi, H. T.**, & Gianaros, P. (2005). *Does stress rot your brain?* Poster Presentation at the Annual Undergraduate Psychology Research Poster Conference of the University of Pittsburgh, Pittsburgh, PA.

## **VOLUNTEER EXPERIENCE**

*Canoga Park High School, Canoga Park, CA*

April & May 2012

**Presenter - Volunteer**

- Presented on adolescent stressors and obstacles to at-risk youth in Individualized Education Programs.
- Provided a Question-and-Answer-style interaction on topics such as mental health, mindfulness, post-high school plans, physical health, and social and emotional challenges (e.g., drugs, gangs, teen pregnancy, abuse).

## **LECTURES, WORKSHOPS, AND SEMINARS**

*"Evidence-Based Psychiatric Consultation in Medical and Surgical Settings."* Seminar at the Department of Psychiatry and Behavioral Neurosciences, Cedars-Sinai Medical Center, Los Angeles, CA, February, 2014

## **HONORS AND AWARDS**

Academic Scholarship, Kuwait University	2009-Present
Academic Scholarship, Kuwait Ministry of Higher Education	2001-2005
Psi Chi National Honor Society (University of Pittsburgh)	2001-2005
National Society of Collegiate Scholars	2001-2005
Golden Key National Honor Society	2001-2005

**PROFESSIONAL AFFILIATIONS**

American Psychological Association, Student Affiliate

Society for Clinical Neuropsychology, Division 40, APA, Student Affiliate

International Psychology, Division 52, APA, Student Affiliate

California Association of Marriage and Family Therapists, Member

2009-2011

## ABSTRACT

According to The National Child Traumatic Stress Network (NCTSN, 2004) up to 15-20% of children and their siblings and 20-30% of parents experience persistent traumatic stress related to medical procedures or a life-threatening condition that affects daily functioning and recovery. The literature is limited with regards to efficacious treatment interventions for this population. Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT) is an evidence-based treatment for traumatized children and adolescents (Cohen, Mannarino, & Deblinger, 2006). Its efficacy in reducing PTSD symptoms has been established through the literature (Bisson, Roberts, Andrew, Cooper, & Lewis, 2013; Cary & McMillen, 2012; Silverman et al., 2008), and it has been expanded to treat different types of trauma and with different populations. The recommendations created in this project were meant to supplement the existing TF-CBT manual by expanding its use to include the pediatric medical traumatic stress population. An extensive review of the literature helped develop the recommendations, and a group of 4 experts evaluated the resource and provided relevant feedback. Results indicated that although the resource is easy to understand and useful in providing information on pediatric medical traumatic stress, there is limited understanding of the TF-CBT treatment model. Further limitations, future directions and implications are also discussed.

## **Chapter 1: Introduction**

### **Statement of the Problem**

In the US, an estimated 43% of children are believed to have a chronic health condition that affects their daily functioning (Bethell et al., 2011). Chronic disease is the leading cause of the majority of children's hospitalizations (Centers for Disease Control and Prevention [CDC], n.d.) and is a large cause of pediatric child deaths. Chronic health conditions are often comorbid with mental health problems (CDC, 2012; World Health Organization [WHO] and the Calouste Gulbenkian Foundation, 2014). Together, they are associated with poorer health outcomes (Evans et al., 2005; McVeigh, Sederer, Silver, & Levy, 2006).

An estimated 25-30% of pediatric patients develop posttraumatic stress symptoms (Forgey & Bursch, 2013). It is believed that 10-20% of those patients (Forgey & Bursch, 2013) and nearly 27% to 54% of their parents (Bruce, 2006) meet criteria for posttraumatic stress disorder (PTSD). Medical nonadherence, poorer health outcome, and co-morbid mental health issues are just a few areas that are impacted by posttraumatic stress symptoms (Forgey & Bursch, 2013). The majority of children and their parents will successfully resolve their trauma symptoms without the need for formal psychiatric or psychological interventions (Forgey & Bursch, 2013). However, there are many who do not. Psychotherapeutic treatment focused on trauma interventions with chronically ill children and their families is quite limited.

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) is an evidence-based treatment for traumatized children and adolescents (Cohen et al., 2006). Its efficacy in reducing PTSD symptoms has been established through the literature (Bisson et al., 2013; Cary & McMillen, 2012; Silverman et al., 2008). TF-CBT has been expanded to treat different types of abuse and other traumas, including ongoing trauma. However, the majority of treatment and

associated research has focused on child and adolescent trauma related to maltreatment, namely sexual abuse. Therefore, it is necessary to assess the appropriateness of TF-CBT with the pediatric medical population and determine whether it can enhance use among this particular group. Culturally modified TF-CBT, and adaptations of the treatment in a range of settings and among distinct populations were found to have positive treatment outcomes. Additionally, the TF-CBT model has been utilized to address different trauma types (e.g., witnessing domestic violence, war, natural disasters, emotional abuse, etc.). Thus, adapting TF-CBT to the pediatric medical population would supplement the existing literature and treatments available for medically traumatized children with chronic health conditions.

### **Purpose of the Project**

The purpose of this study is to create recommendations for TF-CBT to more directly address the concerns of the pediatric medical population. Current TF-CBT treatment is implemented by trained mental health professionals who work with traumatized youth, and in which the focus is primarily on interpersonal or witnessed trauma. It is important to explore adapting the existing treatment to populations who experience PTSD or PTSS that are not normally associated with the usual treatment group, yet share similar degrees of symptoms, and are thus equally important.

### **Definition of Key Terms**

*Chronic conditions:* The U.S. Department of Health and Human Services (HHS; 2014) defined chronic conditions as “conditions that last a year or more and require ongoing medical attention and/or limit activities of daily living” (para. 2) and include physical medical conditions, mental health disorders, cognitive disorders, as well as developmental disabilities.

*Effectiveness:* Effectiveness is how well an intervention works in real world settings. The focus is on maximizing a study's external validity while maintaining its internal validity. This can be done by implementing the study in regular clinical settings (Hunsley & Lee, 2007).

*Efficacy:* Efficacy is a measure of the ability of an intervention to treat what it was intended to treat. The focus is on minimizing threats to a study's internal validity. This can be achieved through Randomized Clinical Trials (RCTs), which are used to assess whether the intervention produces the desired clinical outcome under ideal conditions (Hunsley & Lee, 2007).

*Evidence-Based Practice in Psychology (EBPP):* "Evidence-based practice is the integration of the best available research with clinical expertise in the context of patient characteristics, culture and preferences...The purpose...is to promote effective psychological practice and enhance public health by applying empirically supported principles of psychological assessment, case formulation, therapeutic relationship, and intervention" (American Psychological Association, APA Presidential Task Force on Evidence-Based Practice, 2006, p. 273; Wampold, Goodheart, & Levant, 2007).

*Medical trauma:* Pediatric medical traumatic stress, according to The National Child Traumatic Stress Network (NCTSN, n.d.), is defined as the "set of psychological and physiological responses of children and their families to pain, injury, serious illness, medical procedures, and invasive or frightening treatment experiences" (para. 1).

*Pediatric population:* Merriam-Webster dictionary defines pediatric as, "of or relating to the medical care or illnesses of children," therefore for the purpose of this paper, the term pediatric population refers to the population of children and adolescents in medical care.

*Post-traumatic stress disorder (PTSD)*: Post-traumatic stress disorder is a set of symptoms characterized by intrusion, persistent avoidance, negative alterations in mood and cognitions, and marked alterations in arousal and reactivity that develop as a result of exposure to one or more traumatic events, and last for more than one month (American Psychiatric Association, 2013; National Institute of Mental Health, 2016)

*Post-traumatic stress symptoms (PTSS)*: Post-traumatic stress symptoms refer to the symptoms that develop after exposure to one or more traumatic events. They are the same symptoms that characterize PTSD, however, they are at subclinical levels, or subthreshold levels for meeting criteria for PTSD (Tremolada et al., 2013).

### **Questions Guiding the Study**

- In exploring the current trauma literature available in peer-reviewed journals, what treatment approaches have been the most efficacious and effective in working with the medically traumatized pediatric population?
- What do mental health professionals need to know about medical trauma and the pediatric population in order to provide appropriate and population-congruent treatment?
- In what ways can information on pediatric traumatic stress be used to modify TF-CBT?

### **Objectives**

1. Review the current trauma literature related to the pediatric medical population.
  - a. In particular, to understand the prevalence of medical traumatic stress within the pediatric medical population, its effects, and the available treatments for this group.
2. Provide recommendations to modify or adapt the current TF-CBT model to children with medical trauma in order aid clinicians who are working with this population.

3. Utilize the evaluation and critique of expert clinicians in the fields of children and adolescents, TF-CBT, pediatric medical population, and medical traumatic stress in order to bolster the above-mentioned treatment recommendations.



## **Chapter 2: Review of the Literature**

### **Chronic Diseases and Conditions: Overview**

The term chronic disease has no single definition that can be found in the literature. Many different terms have been used (the most frequent being chronic disease, chronic conditions, chronic health conditions, and chronic illness) and over time the definition has evolved to include additional areas that impact one's health functioning (van der Lee, Mokkink, Grootenhuis, Heymans, & Offringa, 2007). The U.S. Department of Health and Human Services (HHS, 2014) defined chronic conditions as “conditions that last a year or more and require ongoing medical attention and/or limit activities of daily living” (para. 2) and include physical medical conditions, mental health disorders, cognitive disorders, as well as developmental disabilities. Asthma, cancer, Alzheimer's disease, heart disease, diabetes, epilepsy, depression, HIV, obesity, and sickle cell anemia are a few examples of chronic diseases and conditions. In general, chronic diseases and conditions are life long and, although they can be controlled, they may require hospitalization and extensive medical care (The Center for Managing Chronic Disease, 2011; University of Michigan Health System, 2015). It is estimated that over half (52%) of people in the US have at least one chronic condition (Gerteis et al., 2014).

Chronic diseases are the leading cause of deaths in the world. Per the WHO (2005) chronic diseases have attributed to 35 million deaths in 2005 and over 60% of all deaths in that year. According to the CDC (2015b, 2015c), in the United States chronic diseases are the nation's leading causes of death and lifelong disability and were reported to have caused 70% of deaths in the general US population (1.7 million yearly). Seven of the top ten causes of mortality in the US in 2010 were a result of chronic disease; two (heart disease and cancer) of which together were responsible for close to 50% of all deaths.

Chronic disease compromises quality of life and creates burgeoning health care costs, with treatment reported to utilize 75% of US health care dollars (CDC, 2012). In 2010, the majority of health care spending (86%) was directed towards individuals with one or more chronic medical conditions (Gerteis et al., 2014). For example, in that year heart disease and stroke costs were estimated to be \$315 billion (Go et al., 2014), and cancer costs were estimated to be \$157 billion (Mariotto, Yabroff, Shao, Feuer, & Brown, 2011).

Individuals with more than one concurrent chronic condition are identified as having multiple chronic conditions (MCC). It is believed that 1 in 3 people in the US (31.5%) have MCC (Gerteis et al., 2014). Multiple chronic conditions lead to a higher risk of mortality and are associated with greater healthcare costs - about 71% of healthcare spending (CDC, 2015d; HHS, 2014). Both chronic conditions and MCC are increasing in prevalence. Reasons are unclear but are believed to be multifactorial; that the increase is mostly a result of improved health technology and an aging population. Between 2006 and 2010 there was an increase in the percentage of people with chronic conditions (49.7% to 51.7%) and MCC (27.5% to 31.5%; Gerteis et al., 2014). The increase in MCCs impact health-related areas such as treatment and planning (Anderson, 2010; Goodman, Posner, Huang, Parekh, & Koh, 2013; HHS, 2010, 2014).

**Pediatric chronic diseases and conditions.** According to the American Academy of Pediatrics (AAP) the term pediatrics is defined as:

The specialty of medical science concerned with the physical, mental, and social health of children from birth to young adulthood. Pediatric care encompasses a broad spectrum of health services ranging from preventive health care to the diagnosis and treatment of acute and chronic diseases. (AAP, 2015d, p. 781)

Per the U.S. Census Bureau there were 74.3 million children under age 18 in 2011 (Laughlin, 2014). An estimated 43% of children are believed to have a chronic health condition that affects their daily functioning, whereas 10 to 20% have severe impairments (Bethell et al., 2011). Chronic childhood diseases include asthma (the most common), diabetes, cancer, congenital heart disease, obesity, cerebral palsy, and cystic fibrosis, among others (Torpy, 2010). The most prevalent for children ages 0-17 range from asthma to chronic diseases of the esophagus to diabetes (U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, 2011). Additionally, 6.8% of children 0-17 years old have MCC (Gerteis et al., 2014). Chronic disease is the leading cause of the majority of children's hospitalizations. There has been a trend in increased number of child hospitalizations over time for children with chronic conditions while those with more complex chronic conditions (CCC) represented the most cumulative increase, as well as need for more hospital resources and greater medical costs (Berry et al., 2013; Gerteis et al., 2014; Simon et al., 2010). Simon et al. (2010) found that in regards to child hospitalizations the most frequent CCC were "cardiovascular (51.5%), congenital (46.9%), neuromuscular (37.1%), respiratory (22.2%), and malignancy (15.9%)" (p. 649).

Chronic conditions, particularly CCCs, are a large cause of pediatric child deaths. Between 1989 and 2003, 22.1% of child deaths were due to CCC (Feudtner, Feinstein, Satchell, Zhao, & Kang, 2007). In 2006, they attributed to 43% of inpatient deaths (Simon et al., 2010). A National Vital Statistics Report (Xu, Murphy, Kochanek, & Bastian, 2016) on US deaths in 2013 measured the number of deaths from selected disease causes that are part of the International Classification of Diseases, Tenth Revision (ICD-10). Based on the report the number of deaths in 2013 from 10 main ICD-10 chronic diseases totaled 8,456 for ages 0-14, and 3,824 for ages 15-

24 (Xu et al., 2016; see Table 1). The top three leading causes of child deaths from chronic diseases are congenital malformations, deformations and chromosomal abnormalities (i.e., birth defects), malignant neoplasms (i.e., cancer), and major cardiovascular diseases.

Table 1

*Summary Number of Child Deaths in 2013 from Chronic Diseases*

Chronic Diseases	Age				
	< 1	1-4	5-14	15-24	0-24
Anemias	15	20	17	93	145
Chronic liver disease and cirrhosis	1	2	1	32	36
Chronic lower respiratory disease	24	64	155	155	398
Congenital malformations, deformations and chromosomal abnormalities	4758	476	340	362	5936
Diabetes mellitus	8	4	24	193	229
HIV	-	-	2	109	111
Major cardiovascular diseases	435	210	273	1170	2088
Malignant neoplasms	64	328	895	1496	2783
Nephritis, nephrotic syndrome and nephrosis	86	5	14	61	166
Total Deaths	5391	1109	1721	3671	11892
Complications of medical and surgical care	11	15	26	37	89
Total Deaths	5402	1124	1747	3708	11981

*Note.* The data in this table were collected and summarized from Table 10 from “Deaths: Final data for 2013,” by J. Xu, S. L. Murphy, K. D. Kochanek, and B. A. Bastian, 2016, *National Vital Statistics Report*, 64(2), pp. 38-42.

***Congenital malformations, deformations and chromosomal abnormalities.*** Birth defects are abnormalities, either structural or functional, that can cause health problems such as developmental, physical, or intellectual disability (AAP, 2015b; CDC, 2015a; The Eunice Kennedy Shriver National Institute of Child Health and Human Development, n.d.; U.S. National Library of Medicine, 2014). They are estimated to occur in 1 in 33 children born in the U.S. (CDC, 2015a). Cleft palate, heart defects, and spina bifida are some examples of structural

defects. Functional birth defects include nervous system problems (e.g., Fragile-X syndrome), sensory problems (e.g., blindness), degenerative disorders (e.g., muscular dystrophy), and metabolic disorders (e.g., hypothyroidism). Some causes of birth defects include chromosomal problems (e.g., Down syndrome), genetic problems (e.g., Cystic fibrosis), and the mother's exposure during pregnancy (e.g., rubella, toxic chemicals, etc.).

*Cystic fibrosis.* Cystic fibrosis (CF) is a hereditary disease that affects many parts of the body, mainly the lungs and digestive system (AAP, 2015c; Boston Children's Hospital, 2011; Mayo Clinic, 2015b). It occurs mainly in Caucasians with Northern European ancestry, although it can occur in Native Americans, African Americans, and Asian Americans. In the U.S. about 30,000 children and adults have CF. Cystic fibrosis affects the cells that produce mucus, digestive juices, and sweat. A defective gene causes the body to produce thick and sticky mucus affecting lung and pancreas functioning. Specifically, in the lungs the thick mucus gradually blocks airways and cysts may develop as a result leading to lung infections and problems with the upper respiratory tract (e.g., nasal polyps, sinus infections). As for the digestive system, the thick digestive juices block ducts leading to less digestive enzymes thus affecting the absorption of nutrients needed by the body. CF can cause diabetes as the pancreatic problems may become severe as to destroy cells, thus leading to glucose intolerance and insulin dependent diabetes. Because CF causes the body to produce saltier sweat, a sweat test used to measure the amount of salt lost in perspiration can aid in the diagnosis of the disease. There is no cure for CF and the current life expectancy is late 30s, however, those with lifelong treatment are expected to live to their 40s and beyond. Children with CF have been able to cope well and lead a productive life with the help of medical and psychosocial support. The aim of treatment is to reduce symptoms and slow the progression of the disease. Treatment includes chest physical therapy to loosen and

clear lung secretions, exercise to loosen mucus, medications such as anti-inflammatory medications, antibiotics to treat infections, management of digestive problems (e.g., pancreatic enzymes, dietary supplements, etc), psychosocial support to address related concerns, and if necessary a lung transplant for those with end-stage lung disease (AAP, 2015c; Boston Children's Hospital, 2011; Mayo Clinic, 2015b).

***Malignant neoplasms.*** According to the American Academy of Pediatrics, 9,000 children a year get cancer (AAP, 2015a). Cancer is a group of diseases in which the body's cells divide chaotically leading to a mass of excess tissue called a tumor. Tumors that do not invade normal tissue are referred to as benign. Tumors that are invasive, meaning they continue to grow and spread to other parts of the body, are referred to as malignant. Cancers are identified based on their original location and cell type. For example, a tumor that began in the kidney and spread to the colon is referred to as kidney cancer metastatic to the colon. It is not the same as colon cancer and so it is treated differently than a cancer that primarily originated in the colon. Cancers that are treated while they are localized have a better chance of being controlled or cured than those that have spread. Information on the size and extent of the tumor can be achieved by a staging system that assigns numbers based on this information. Stages 1 and 2 indicate that the tumor is localized, stage 3 means that it has spread to nearby organs or lymph nodes, and stage 4 means it has spread to distant organs or lymph nodes (AAP, 2015a). Children's cancers tend to be leukemias (cancer of the blood), lymphomas (cancer of the lymphatic system), gliomas (cancer of the glial cells-usually in the brain and spinal cord), and sarcomas (connective or nonepithelial tissue cancer), with leukemias being the majority (see Table 2).

Table 2

*Estimated Percentage Occurrence of Childhood & Adolescent Cancers in 2014*

Type of Cancer	Percentage Occurrence
	Age 0-19
Acute Lymphocytic Leukemia	20%
Brain and CNS	18%
Hodgkin Lymphoma	7%
Non-Hodgkin Lymphoma	7%
Acute Myeloid Leukemia	5%
Bone Tumors <sup>a</sup>	5%
Neuroblastoma (a cancer of the nervous system) <sup>b</sup>	4%
Thyroid Carcinoma	4%
Wilms' Tumor (a cancer of the kidney) <sup>b</sup>	3%
Gonadal Cancers	3%
Rhabdomyosarcoma <sup>b</sup>	2%
Retinoblastoma	2%
Melanoma	2%
Others	18%

*Note.* Synthesized from Figure 1 in “Childhood and adolescent cancer statistics, 2014,” by E. Ward, C. DeSantis, A. Robbins, B. Kohler, & A. Jemal, 2014, *CA: A Cancer Journal for Clinicians*, 64(2), p.85.

<sup>a</sup> Includes osteosarcoma and Ewing's sarcoma. <sup>b</sup> Diseases that are rare in adolescents.

*Leukemia.* Leukemia is the most common form of cancer in childhood and affects about 3,800 U.S. children yearly. Leukemia is cancer of the blood and it develops in the bone marrow. The bone marrow is located in the center of the long bone and which produces the three major blood cells: the red blood cells, white blood cells, and the platelets. The red blood cells carry oxygen, the white blood cells fight infection, and the platelets help clot blood. In leukemia, the body produces immature white blood cells (blasts), which continue to reproduce and crowd out healthy white blood cells in the marrow and blood stream, thereby allowing for the existence of viruses and bacteria that would otherwise be attacked.

Leukemia is classified based on speed of progression (acute or chronic), and the types of white blood cells affected (lymphocytic or myelogenous). In acute leukemia the blasts reproduce rapidly leading to a quick worsening of the disease thereby requiring more aggressive and timely treatment. In chronic leukemia, there are mature blood cells, which can function normally for some time and they reproduce at a slower rate. Chronic leukemias are rarely seen in children. Lymphocytic leukemia affects the lymphocytes, cells that are responsible for forming lymphatic tissue that forms the immune system. Myelogenous leukemia affects the myeloid cells, which are responsible for the development of white blood cells, red blood cells and cells that produce platelets. There are many types of leukemia, the major ones being acute lymphocytic leukemia (ALL), acute myelogenous leukemia (AML), chronic lymphocytic leukemia (CLL), and chronic myelogenous leukemia (CML). ALL is the most common type of leukemia in children, accounting for 75% to 80% of the childhood leukemias. AML is the second most common in children accounting for approximately 20% of childhood leukemias. CLL and CML are more common in adults.

Symptoms of leukemia include anemia, bleeding or bruising, recurrent infections, bone and joint pain, abdominal distress, swollen lymph nodes, and difficulty breathing. General diagnostic procedures include a physical examination, blood tests, and a bone marrow test. Common treatments used include chemotherapy, radiation, bone marrow (stem cell) transplantation, blood transfusions, medications, and antibiotics. Prognosis and long-term survival varies from child to child but greatly depends areas such as response to treatment, extent of disease, any genetic abnormalities of the leukemia, and the child's age and overall health (AAP, 2015a; Boston Children's Hospital, 2017; Mayo Clinic, 2015c).



***Major cardiovascular diseases.*** Cardiovascular disease is heart and blood vessel disease. Childhood cardiovascular conditions include stroke, heart failure, cardiomyopathy, arrhythmia, among others. There are two main types of strokes: ischemic and hemorrhagic. An ischemic stroke is the most common and occurs when blood flow to the brain becomes blocked, usually by a blood clot, leading to the death of brain cells. A hemorrhagic stroke occurs when a blood vessel to the brain bursts, usually due to uncontrolled hypertension. The effects of stroke depend on the amount of brain cell death, namely, the more cells that die, the more permanent the effects. Additionally, some brain cells do not die but are instead injured and require time to self-repair. Heart failure is when the heart is not pumping blood as it should, thereby not meeting the body's need for blood and oxygen. Cardiomyopathy is a disease of the heart muscle that affects the heart's ability to pump properly. Arrhythmia is an abnormal heart rhythm that can affect heart function (American Heart Association, 2015b; Mayo Clinic, 2014).

***Cardiomyopathy.*** Cardiomyopathy is one of the most common forms of heart disease in children. If untreated it can cause heart failure. According to the Pediatric Cardiomyopathy Registry data collected in New England and the Central Southwest found that the incidence of cardiomyopathy for children age 1 to 18 is 0.70 per 100,000 (Go et al., 2014). If the muscle cells are abnormal (most likely due to a gene mutation) then it is considered a primary problem. If the muscle cells are normal but undergo secondary damage through infections, high blood pressure, or low blood oxygen. There is no clear cause in many of the cases of cardiomyopathy, however, it can run in families, and can be caused by another medical condition (e.g., chemotherapy for cancer). The primary forms of cardiomyopathy are dilated cardiomyopathy, hypertrophic cardiomyopathy, arrhythmogenic right ventricular cardiomyopathy, and restrictive cardiomyopathy. Dilated cardiomyopathy makes the heart muscle stretched out or too dilated; it

is the most common type. Hypertrophic cardiomyopathy makes the heart muscle too thick, usually in the left ventricle. Arrhythmogenic right ventricular cardiomyopathy is a rare type and occurs when thick, fatty tissue replaces the muscle of the right ventricle, impacting the heart's electrical signals and affecting the heart's ability to pump blood. Restrictive cardiomyopathy causes stiffness or rigidity of the heart muscle making it difficult for the ventricles to fill up with blood (American Heart Association, 2015a; Boston Children's Hospital, 2010; Mayo Clinic, 2015a).

Symptoms vary by the type of cardiomyopathy but common signs include dizziness, chest pain, breathlessness, fatigue, and irregular heartbeats. Cardiomyopathy can be diagnosed through a number of ways including a physical exam, blood tests, echocardiography, coronary angiography, and a stress test. Treatment also varies by type and includes medication, a reduction in physically strenuous activities, surgeries to improve valve functioning or remove part of the heart muscle, a pacemaker, implantable defibrillator, radiofrequency ablation and in severe cases, a heart transplant (American Heart Association, 2015a; Boston Children's Hospital, 2010; Mayo Clinic, 2015a).

**Mental health and chronic medical diseases.** The literature indicates that mental health and physical health conditions are often comorbid (CDC, 2012; Mitchell et al., 2011; WHO and the Calouste Gulbenkian Foundation, 2014). This co-morbidity is associated with poorer health outcomes, poorer quality of care, and lower treatment adherence (Evans et al., 2005; McVeigh, et al., 2006). Those with physical health conditions, particularly chronic conditions, such as cardiovascular disease and diabetes, have a higher prevalence of mental health disorders (Doherty & Gaughran, 2014). They also experience higher disease burden. Additionally, having a physical health condition complicates mental health treatment. In many locations, the

management of mental health problems in medical settings has become a multidisciplinary and collaborative process that involves managing the comorbidity of the mental and physical health conditions. This has been found to be effective, and outcomes for both biomedical and psychosocial concerns improved. Therefore a joint approach that is multidisciplinary and collaborative in nature is best and necessary (CDC, 2012; Doherty & Gaughran, 2014; Parsonage & Fossey, 2011; WHO and the Calouste Gulbenkian Foundation, 2014).

Medical diseases often go hand-in-hand with medical treatment and care. Children with chronic medical conditions frequent doctors' offices and hospitals and undergo necessary medical treatment and procedures. Many of these procedures (e.g., biopsy, organ transplant, chemotherapy, cardiac catheterization, etc.) are painful and scary. Chronic conditions and their treatment cause a large amount of stress to both children and their parents (Compas, Jaser, Dunn, & Rodriguez, 2012). It is, also, not unusual for these children to have emotional and/or behavioral problems, which can impact adherence to treatment (Compas et al., 2012; Huff, McClanahan, & Omar, 2010).

Treatment of chronic medical diseases is associated with prolonged stress on the children and their families (Compas et al., 2012; Rodriguez et al., 2012). For example, duration of treatment could take months or years, and the child and the family endure uncertainty regarding medical relapses or disease recurrence (e.g., cancer). Furthermore, illness-related procedures as well as hospitalization reactivate a parent's anxiety, as they are traumatic and stressful (Barakat & Alderfer, 2011; Nabors, Kichler, et al., 2013). The burden in managing these diseases is difficult on families leading to poorer family functioning. The parents themselves are at-risk for psychological distress, and the siblings are overwhelmed emotionally and react by internalizing and externalizing their feelings (Barakat & Alderfer, 2011; Knecht, Hellmers & Jun, 2015).

Family communication (e.g., conflict resolution, emotion expression) differed for parents with resolved/unresolved attitudes regarding their children's chronic medical condition diagnosis (Popp, Robinson, Britner, & Blank, 2014).

Literature on evidence-based interventions that target children with chronic medical diseases and their families was somewhat limited. Meta-analyses reviewing psychosocial interventions for children with chronic health conditions and their families found that evidence-based treatments included cognitive behavioral therapies (CBT), family therapy, and problem solving therapy (PST; Beale, 2006; Eccleston, Fisher, Law, Bartlett, & Palermo, 2015). Specifically, CBT, particularly when it includes parents, was found to improve a child's medical symptoms (Scholten et al., 2013), and PST was found to improve a parent's problem-solving abilities and lower their distress (Eccleston et al., 2015). Other studies found family-centered interventions to be effective with chronically ill children and their families (Distelberg, Williams-Reade, Tapanes, Montgomery, & Pandit, 2014; McBroom, & Enriquez, 2009).

## **Trauma**

There are many types of trauma that a child can be exposed to in their life. Domestic violence, natural disasters, and sexual abuse are but a few. One such trauma type is medical trauma. Pediatric medical traumatic stress, according to The National Child Traumatic Stress Network (NCTSN, n.d.), is defined as the "set of psychological and physiological responses of children and their families to pain, injury, serious illness, medical procedures, and invasive or frightening treatment experiences" (para. 1). Medical experiences also include relapse, hospitalization, and for surviving members of the family, death of the patient. Trauma related to medical procedures is referred to as iatrogenic trauma. The stress responses of the children and their families are subjective experiences of the medical event rather than objective statistics or

the clinician's judgment (Dow, Kenardy, Long, & Le Brocque, 2012; Jacobsen et al., 2002; Kazak, 2001; Stuber et al., 1997).

An estimated 25-30% of pediatric patients develop posttraumatic stress symptoms (PTSS; Forgey & Bursch, 2013). It is believed that 10-20% of those patients (Forgey & Bursch, 2013) and nearly 27% to 54% of their parents (Bruce, 2006) meet criteria for posttraumatic stress disorder (PTSD). Posttraumatic stress symptoms (PTSS) are subclinical levels, or subthreshold levels for meeting criteria for PTSD. However, they are well known to be chronic and impair psychosocial functioning (Saxe, Vanderbilt, & Zuckerman, 2003; Stuber, Shemesh, & Saxe, 2003). Research suggests that subclinical PTSS rates were greater than 50% for pediatric cancer survivors and 44% for their parents (Erickson, & Steiner, 2001; Kazak, Alderfer, Rourke, et al., 2004). Medical nonadherence, poorer health outcome and co-morbid mental health issues are just a few areas that are impacted by PTSS thus indicating the importance of evidence-based trauma-focused treatment (Forgey & Bursch, 2013).

**Pediatric medical trauma.** Children with PTSS as a result of medical trauma experience symptoms of arousal, re-experiencing, avoidance and intrusive thoughts. Arousal can be exhibited as an increased startle response or increased physiological response as a result of the trauma trigger (e.g., elevated heart rate at a follow-up appointment). Re-experiencing can be demonstrated through play (e.g., drawing car crashes) or dreams (e.g., nightmares about surgery). Avoidance is seen through nonadherence to medication, refusing to discuss the illness, or even refusing to revisit the hospital. Intrusive thoughts may include thoughts related to the threat of death from the illness.

A substantial prevalence of PTSS and PTSD in chronically ill children was found, even in as young as 8-48 months (Graf, Bergstraesser, & Landolt, 2013; Rodriguez et al., 2012).

Numerous studies have reported on the prevalence of PTSS in parents of children with chronic medical diseases (e.g., cancer, cardiac disease; Landolt, Vollrath, Ribl, Gnehm, & Sennhauser, 2003; Rodriguez et al., 2012; Tremolada et al., 2013) and some were consistent with a diagnosis of acute stress disorder (Franch-Ray et al., 2013). Furthermore, research suggests that children's subjective experience of hospital-related fears may be traumatic enough to affect their overall well-being (Salmela, Aronen, & Salanterä, 2010). Exposure to painful medical procedures and treatments (e.g., chemotherapy, transplants) correlate with traumatic stress symptoms (Balluffi et al., 2004; Connolly, McClowry, Hayman, Mahony, & Artman, 2004; Manne et al., 2002; Mintzer et al., 2005; Pao & Bosk, 2011; Stoddard & Saxe, 2001; Stuber, 1993; Stuber, Christakis, Houskamp, & Kazak, 1996; von Baeyer & Tupper, 2010). Additionally, links between PTSD symptoms and medical treatment nonadherence were found. Specifically, nonadherence to medications was noted among child and adolescent organ transplantation survivors who displayed greater symptoms of posttraumatic stress (McCormick King et al., 2014; Shemesh et al., 2000). Overall, posttraumatic stress is an important component and contributor to psychiatric (Gerson & Rappaport, 2013) and medical functioning of individuals, and could be associated with serious consequences for certain medically ill patients (Stuber et al., 2003).

**Trauma treatment with children.** The majority of children and their parents will successfully resolve their trauma symptoms without the need for formal psychiatric or psychological interventions (Forgey & Bursch, 2013). Evidence-based therapeutic treatments exist for those that remain highly distressed. Different treatment approaches exist among individual, group, and family-based interventions. The use of psychotherapy in childhood trauma populations have been studied with the majority focused on the efficacy of CBT interventions

(Robertson, Humphreys, & Ray, 2004). Trauma-specific and generic therapies used for the treatment of PTSD in children and adolescents include CBT, exposure therapy, narrative therapy, psychodynamic psychotherapy, eye movement de-sensitization and reprocessing (EMDR), and supportive counseling (Gillies, Taylor, Gray, O'Brien, & D'Abrew, 2013).

Meta-analyses found strong evidence on the efficacy of CBT on childhood PTSD treatment (Kowalik, Weller, Venter, & Drachman, 2011; Wetherington et al., 2008). Other studies also found CBT to be efficacious in areas such as procedure-related pain (Powers, 1999; Slifer, Tucker & Dahlquist, 2002), and brief early intervention for reducing PTSD (Kangas, Milross, Taylor, & Bryant, 2013). Existing CBT interventions that are childhood trauma-focused include trauma-focused cognitive therapy (TF-CT), trauma-focused cognitive-behavioral therapy (TF-CBT), cognitive-behavioral intervention for trauma in schools (CBITS), structured psychotherapy for adolescents responding to chronic stress (SPARCS), combined parent-child cognitive-behavioral approach for children and families at-risk for child physical abuse (CPC-CBT), Trauma and grief component therapy (TGCT), Trauma systems therapy (TST), Trauma-focused coping (TFC), Risk reduction through family therapy (RRFT), and Target-A (Cohen et al., 2010; Dorsey, Briggs, & Woods, 2011; Rapp, Dodds, Walkup, & Rynn, 2013).

Further review of the literature was indicated when exploring which CBT interventions are the most efficacious and effective in treating trauma symptoms. Silverman et al. (2008) evaluated 21 psychosocial treatments for trauma exposure and found only two (TF-CBT and CBITS, respectively) that met their criteria for *well-established* and *probably efficacious*. Furthermore, Bisson et al. (2013) evaluated 70 studies involving 4761 adult participants to assess psychological therapies for the treatment of PTSD and found TF-CBT, EMDR, and non-TFCBT

therapies (e.g., stress inoculation training) more effective than other therapies in reducing PTSD symptoms.

**Interventions for pediatric medical trauma.** Literature on specific interventions targeting pediatric traumatic stress is quite limited. However, a few guidelines were found on how to address certain traumas and what intervention strategies are recommended, respectively. Bronfman, Campis, and Koocher (1998) recommended the following strategies for event-related trauma and iatrogenic trauma, respectively. For event-related trauma: (a) review what happened, (b) explore sensory processing of the event, (c) explore and clarify beliefs related to the trauma, (d) use posttraumatic play and drawings, (e) explain medical interventions, and (f) help parents provide support and manage their own feelings. For iatrogenic trauma: (a) review what happened, (b) help the children increase a sense of control over their bodies, (c) address the eight fears common to medical crisis situations, (d) explain medical procedures and interventions, (e) use doll play both to process information and discuss future interventions, and (f) use desensitization, relaxation techniques, and pain management for medical interventions.

Additionally, Stuber et al. (2003) provided the following psychiatric intervention guidelines: (a) develop a strong degree of communication with the child, the parents and the child's medical team in order to gain an understanding of their view regarding the child's medical condition and to facilitate effective communication between them, (b) learn about the child's treatment and procedures and develop interventions with the medical and surgical team to minimize distress, (c) actively encourage the medical team to treat anxiety and pain with medications pretreatment in order to decrease trauma symptoms and treatment avoidance, (d) promote the child and family's strengths and resiliency, and (e) help the child and family identify



traumatic reminders and directly address symptomology associated with the event so as to minimize avoidance.

Furthermore, suggested treatment approaches include family-based treatment, early interventions, psychoeducation for children and families, and coping skills. Family-based treatment aims to provide positive parent-child interactions and to develop and strengthen parent skills. Early interventions' main focus is to develop therapeutic alliance and strong patient engagement. Psychoeducation includes a discussion on the frequency of trauma in medically ill children, of the relationship between ongoing trauma and medication nonadherence, and of the types of trauma symptoms. Finally, the purpose of teaching coping skills is to improve the child's resiliency when facing trauma-related challenges (Cohen et al., 2010; Forgey & Bursch, 2013).

As mentioned earlier, there is a dearth of psychotherapeutic treatment focused on trauma interventions with children with chronic illness and their families. One reported intervention involves play therapy (Gil, 1991). Clark (2003, 2011) found that children cope with stressful medical experiences through medical play, as observed by creating positive outcomes to illness. Further, through unstructured medical play, children with chronic illnesses and their siblings were able to express themselves freely, which was of benefit to them (Nabors, Bartz, et al., 2013). Alternatively, a family-based intervention to reduce PTSS in adolescent cancer survivors and their families is the Surviving Cancer Competently Intervention Program (SCCIP; Kazak et al., 1999). The SCCIP, which combines CBT and family therapy, found statistically significant improvements in PTSS among survivors and their families (Kazak, Alderfer, Streisand, et al., 2004). Additionally, Distelberg et al. (2014) introduced a biopsychosocial program titled Mastering Each New Direction (MEND) for children with chronic illness and their families. The

program's primary goal is medical treatment adherence while stress response patterns was its second goal. The program was reported to be effective in reducing family stress levels (Distelberg et al., 2014).

In summary, the literature is limited on efficacious treatments for traumatized medically ill children and their families. However, research indicates the efficacy and effectiveness of CBT interventions on childhood trauma (Cohen et al., 2010; Kangas et al., 2013; Kowalik et al., 2011; Powers, 1999; Wetherington et al., 2008). Furthermore, research on specific treatments that address trauma support TF-CBT as an efficacious and highly effective treatment of choice (Bisson et al., 2013; California Evidence Based Clearinghouse for Child Welfare [CEBC], 2011; Cary & McMillen, 2012; The Substance Abuse and Mental Health Services Administration [SAMHSA], 2016; Silverman et al., 2008). Therefore, the focus on TF-CBT is established and the move is made to further assess it and its adaptability.

**Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT).** Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT) is an evidence-based, manualized treatment for children and adolescents who have experienced trauma, including traumatic grief (TF-CBT, Cohen et al., 2006), and for youth with ongoing trauma (Cohen, Mannarino, & Murray, 2011; Murray, Cohen, & Mannarino, 2013). It is a joint parent-child treatment that utilizes cognitive-behavioral techniques and exposure to address PTSD symptoms, behavioral problems, anxiety and depression, as well as caregiver difficulties. The model has been tested through at least 22 scientific investigations including 12 randomized controlled trials (RCTs) and has been found to be efficacious in reducing PTSD symptoms (de Arellano et al., 2014), as well as other emotional and behavioral problems (Cohen & Mannarino, 2008; Cohen, Mannarino, & Deblinger, 2012). Its efficacy also has been established through the literature with continuous positive outcomes in

reducing PTSD symptoms and related emotional and behavioral difficulties (Bisson et al., 2013; Silverman et al., 2008). Longitudinal studies found that PTSD symptom reduction through TF-CBT was maintained over 6, 12, and 24-months (Cohen & Mannarino, 1997; Cohen, Mannarino, & Knudsen, 2005; Deblinger, Mannarino, Cohen, & Steer, 2006; Deblinger, Steer, & Lippmann, 1999). A systematic review of TF-CBT by Cary and McMillen (2012) found TF-CBT to be a highly effective treatment. Its value has been recognized by many organizations including the U.S. Department of Justice, SAMHSA's National Registry of Evidence-Based Programs and Practices (NREPP), and the CEBC (Cary & McMillen, 2012). Specifically, NREPP evaluated TF-CBT on its effectiveness and quality of research, and rated it between 3.6 and 3.8 out of 4.0, and 3.6 out of 4.0, respectively (SAMHSA, 2016), while the CEBC gave it the highest ranking indicating it is "strongly supported by research evidence" (CEBC, 2011). Furthermore, the National Child Traumatic Stress Network (NCTSN), a program established in 2000 by Congress in order to provide efficacious and effective resources to traumatized children and their families, supplies much of the promotion and funding for TF-CBT (Cary & McMillen, 2012).

Due to strong empirical evidence to its efficacy and effectiveness, there has been great demand in TF-CBT training. It has been successfully disseminated throughout the U.S. and internationally (Cary & McMillen, 2012; Murray & Skavenski, 2012; Sigel, Benton, et al., 2013; Sigel, Kramer, et al., 2013). There have been at least 17 statewide TF-CBT learning collaboratives (Sigel, Benton, et al., 2013), there are face-to-face clinical trainings through a "Train-the-Trainer" program, and there is a web-based training and consult site created by the developers in collaboration with the Medical University of South Carolina ([www.musc.edu/tfcbt](http://www.musc.edu/tfcbt)) that has over 100,000 registered users from the U.S. and from around the world (Cohen, Mannarino, & Deblinger, 2012).

The TF-CBT model was originally designed to address sexual abuse-related PTSD symptoms. Since then it has been adapted to treat different types of abuse and other traumas (e.g., witnessing domestic violence, war, natural disasters, emotional abuse, etc.). TF-CBT treatment comprises 12-16 sessions and targets children experiencing PTSD symptoms that are between the ages of 3 and 18 years. Treatment components include: Psychoeducation and Parenting skills (P), Relaxation (R), Affective modulation (A), Cognitive coping and processing (C), Trauma narrative (T), In-vivo exposure and mastery of trauma reminders (I), Conjoint caregiver/parent sessions (C), and Enhancing safety and development (E). These components are summarized with the acronym *PRACTICE*. Desensitization/gradual exposure is included in every component as it is one of the key principles guiding TF-CBT. One central focus of the treatment is its skill-building approach: The model is phased by skills developed earlier in the process, which are then needed for later components. Children first learn coping skills to help them manage trauma-related distress and emotional regulation before they participate in the exposure-based component (e.g., the trauma narrative). Conjoint parent-child treatment helps to incorporate the caregiver into the child's recovery process, which helps increase support, family understanding, parent-child communication, and family cohesion (Cohen et al., 2006).

***Modifications and adaptations of TF-CBT.*** The success of an intervention's implementation is related to the extent to which it is delivered as intended (Klein & Knight, 2005; Klein & Sorra, 1996; Rowe et al., 2013), indicating the importance of maintaining fidelity of the treatment. There are many studies evaluating intervention delivery and treatment outcomes, as well as measuring fidelity (Chorpita et al., 2011; Garbacz, Brown, Spee, Polo, & Budd, 2014; Kendall & Beidas, 2007; Schoenwald et al., 2011). Kendall and Beidas (2007) strongly suggest that the flexibility of treatment manuals lead to successful dissemination of the

treatment. Additionally, flexibility while maintaining fidelity is best when introducing and implementing empirically supported treatments. TF-CBT's flexibility and adaptability (e.g., allowing modifications or variations to its components) appears to be a key factor for its successful dissemination throughout the U.S. and the world (Cary & McMillen, 2012; Murray & Skavenski, 2012; Sigel, Benton, et al., 2013; Sigel, Kramer, et al., 2013).

TF-CBT has five core values summarized with the acronym *CRAFTS*, which are: Components based (C), Respectful of cultural values (R), Adaptable and flexible (A), Family focused (F), Therapeutic relationship is central (T), and Self-efficacy is emphasized (S). According to Cohen, Mannarino, and Deblinger (2012) it is important for therapists to be creative and flexible when attempting to motivate the child and to implement treatment components for diverse populations and treatment settings all while maintaining fidelity to the model. Also, with regards to its self-described flexibility TF-CBT has been influenced by theories other than CBT (e.g., humanistic, family systems, attachment, etc.), which has further enhanced its efficacy for different trauma types experienced by children.

In implementing or modifying TF-CBT (e.g., different trauma types, settings, etc.) the *PRACTICE* components generally remain the same with the exception of treatment of children with traumatic grief, which requires additional components (Cohen, Mannarino, & Deblinger, 2012). Revisions to the components and the order of implementation may be necessary, as described by Cohen et al. (2011) in their modification for children with ongoing trauma. Recent efforts show the successful adaptation and modification of TF-CBT, while maintaining fidelity to the model, to include a range of settings, culturally specific interventions, and distinct populations. This provides evidence for TF-CBT's robustness to minor modifications.

In regards to settings, the application of TF-CBT and its successful implementation in schools (Rivera, 2012), and residential treatment centers (Cohen, Mannarino, & Navarro, 2012) have been explored. In response to cultural aspects of treatment, TF-CBT has been successfully culturally adapted for children of Latino descent (de Arellano, Danielson & Felton, 2012), and American Indian and Alaskan Native children (BigFoot & Schmidt, 2010, 2012). Additionally, TF-CBT is being implemented in international settings such as Germany, Zambia, Norway, Sweden, the Netherlands, Italy, Cambodia and other countries, and clinicians are incorporating culturally unique assessment and engaging strategies (Murray & Skavenski, 2012). A randomized controlled trial in the Democratic Republic of Congo (O'Callaghan, McMullen, Shannon, Rafferty, & Black, 2013), and a randomized clinical trial in Norway (Jensen et al., 2014) both reported that the youth treated with TF-CBT experienced lower PTSD symptoms compared to the control group and to youth receiving treatment as usual, respectively. Additionally, positive outcomes were indicated in the reduction of posttraumatic stress symptoms as a result of trauma exposure and/or traumatic grief in foster care youth (Dorsey & Deblinger, 2012) and military children (Cohen & Cozza, 2012; Cohen & Mannarino, 2011). The importance of adapting TF-CBT to children with developmental disabilities was noted due to their risk of victimization, the prevalence of trauma in this population, and the lack of appropriate trauma treatment (Grosso, 2012). Furthermore, TF-CBT has been expanded and modified for youth experiencing ongoing and continuous trauma (e.g., domestic or community violence, war), and those who develop complex trauma (i.e., a constellation of difficulties with cognition, perception, attachment, and regulating affect, behavior, and biology). Studies have found that the incorporation of specific strategies into TF-CBT effectively treat youths with

ongoing trauma (Cohen et al., 2011; Murray, Cohen & Mannarino, 2013), and complex trauma (Cohen, Mannarino, Kliethermes, & Murray, 2012; Kliethermes & Wamser, 2012).

Careful and appropriate adaptations of TF-CBT to specific cultures, settings and populations have been determined to be successful in reducing symptoms. Some modifications to the *PRACTICE* components are necessary to enhance engagement and treatment for different populations. The treatment has been found to be effective when it is appropriate and relevant to the clients. This is demonstrated by the following example modifications on the relaxation, cognitive coping and trauma narrative components for Zambia, the Latino population, and children in foster care, respectively.

In Zambia progressive muscle relaxation was taught using the analogy of the “cooked and uncooked okra” instead of the U.S. analogy of the “cooked and uncooked spaghetti” (Murray, Dorsey, et al., 2013; Murray & Skavenski, 2012). For the Latino population emphasis is made on the family’s existing strategies and their strengths. Also, culturally relevant examples of the cooked spaghetti would include “tortillas and tortilla chips,” instead (de Arellano et al., 2012). Relaxation skills for foster care children were reported by Dorsey and Deblinger (2012) to be potentially useful during specific times that are distressful (e.g., parent court dates, returning from parent visits).

With regards to the cognitive coping component, children and caregivers in Zambia often talked about religion or spirituality (Murray, Dorsey, et al., 2013; Murray & Skavenski, 2012). For Latino children *cuentos*, or folktales, can be used to explain modifying feelings and behaviors by changing one’s thoughts (de Arellano et al., 2012). Foster care children may require cognitive strategies when coping with living arrangements (short or long-term), family visits, and relationships with biological parents (Dorsey & Deblinger, 2012).

In addressing the trauma narrative, multiple traumas were most likely in Zambia and timelines and lists were used to document the different events. Drawings, and dolls were used to help the children create the narratives. Also, the purpose of gradual exposure was explained through the analogy of cooking beans or riding a bicycle, whereas cooking a food staple (nshima) was used as an analogy to help in retrieving details of the trauma (Murray, Dorsey, et al., 2013; Murray & Skavenski, 2012). For the Latino population culturally relevant analogies are encouraged and for those who are bilingual emphasis is made on using the language in which the trauma was encoded (e.g., if the child was traumatized while monolingual Spanish-speaking prior to learning English, the trauma narrative should be elicited in Spanish; de Arellano et al., 2012). For some foster care children, the trauma narrative may include different foster placements, failed reunions or adoptions (Dorsey & Deblinger, 2012).

Finally, with regards to enhancing safety, in Zambia safety issues were raised early in treatment and became a necessary component that was addressed weekly (Murray & Skavenski, 2012). Additionally, due to the high rates of HIV and HIV-affected children in Zambia, psychoeducation on the disease was of a significant focus during treatment (Murray, Dorsey, et al., 2013). Latino children whose families emphasize *respeto* and *simpatia*, namely respecting adults/authority figures, behaving appropriately in social situations and avoiding conflict, the importance of teaching the child appropriate exceptions to these rules is necessary (e.g., touching is never OK even if it is an adult they know; de Arellano et al., 2012). With foster care children telling a trusted adult about the trauma can be complicated by the presence and role, or lack thereof, of the biological and/or foster parent; thus an appropriate adult that is able to provide emotional support would be selected (Dorsey & Deblinger, 2012).



### **Chapter 3: Methodology**

The purpose of this study is to create modification recommendations on the use of Cohen et al.'s (2006) TF-CBT model in order to expand treatment to include the pediatric medical population. The literature is limited with regards to efficacious treatment of children with medical related trauma. Significant numbers of the child medical population and their parents experience posttraumatic stress, and considering the nature of severe chronic diseases this trauma may be ongoing for many.

This chapter focuses on the research methodology that helped develop the recommended adaptations and/or modifications to the TF-CBT manual. An extensive review of the research literature on treatment with the pediatric population was used to aid in the development of the modifications. Additionally, these modifications also will build on the existing diversification of TF-CBT treatment population and settings (e.g., natural disaster trauma, military population, etc.). Next, an expert panel of mental health practitioners evaluated the modifications and provided recommendations to improve the resource.

#### **Development of the Resource**

**Review of the literature.** The literature review is two-fold. First, a brief overview of chronic diseases was provided along with descriptive information on prevalence, incidence, and rates within the United States. This then focused on chronic diseases among children, as well as the comorbidity of chronic medical diseases and mental health. Then comprehensive information on medical trauma was provided along with prevalence among the pediatric population, effects, and interventions for pediatric patients and their parents who suffer from medical posttraumatic stress. Interventions also included existing trauma treatments for children, in general, with particular focus on TF-CBT.

A thorough review of the literature was conducted on Pepperdine's Wavenet database, which provides access to peer-reviewed research articles retrieved from databases such as PsycINFO, PsycARTICLES, and EBSCOHOST. Additionally, literature was obtained through Google Scholar, books in print, internet resources, and national organizations including the National Institute of Mental Health (NIMH), the Centers for Disease Control and Prevention (CDC), the National Child Traumatic Stress Network (NCTSN), American Academy of Pediatrics (AAP), the United States Department of Health and Human Services (HHS), and international organizations such as the World Health Organization (WHO). The search focused on combinations of the following terms related to TF-CBT, pediatric trauma, pediatric trauma treatment, chronic illnesses, and adaptations/modifications of evidence-based treatments: *pediatric, trauma, trauma treatment, posttraumatic stress, PTSD, PTSD treatment, therapy, evidence-based, children, coping, cystic fibrosis, leukemia, cardiomyopathy, chronic illness/disease, prevalence, medical, CBT, manualized treatment, treatment efficacy, adaptation, modification.*

Since modifications were proposed on the content of Cohen et al.'s (2006) manualized TF-CBT treatment, it was referred to continuously throughout the development of this adaptation. However, it is important to note that the intent was to have the modifications remain true to the model and supplement existing content and all components of *PRACTICE*. Additionally, considering that many pediatric trauma patients and their parents or caregivers experience continuous or ongoing trauma due to the nature of complex chronic diseases, TF-CBT strategies developed in context of continuous or ongoing trauma were also supplemented by the proposed modifications.

This modified model targets children and adolescents with a history of complex chronic disease or ongoing treatment for complex chronic diseases (e.g., cancer, heart disease, organ transplantation, etc.) who have presented or are presenting with symptoms of posttraumatic stress regardless of whether they meet full criteria for PTSD. Individuals with significant negative behaviors (e.g., substance use, behavioral problems, defiance, suicidality) were excluded from treatment and will require treatment by an outside provider to address these issues prior to treatment with TF-CBT.

### **Evaluation of Resource**

**Expert panel of evaluators.** A panel of at four expert reviewers were selected to evaluate the proposed modifications and provided feedback and/or recommendations to improve the resource. Selection criteria for these reviewers included (a) be a licensed mental health provider (e.g., MFT, psychologist, LCSW), (b) have a minimum of three years of clinical experience with children and adolescents, and (c) have clinical experience and/or expertise in TF-CBT, CBT, the pediatric population, and/or treating children with medical trauma. Priority was given to evaluators who are currently working in a medical setting and are TF-CBT certified.

**Recruitment strategies and procedures.** A search of evaluators was conducted online at the websites of the American Psychological Association (APA; [www.apa.org](http://www.apa.org)), the National Child Traumatic Stress Network (NCTSN; [www.nctsn.org](http://www.nctsn.org)), Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) Therapist Certification Program ([tfcbt.org](http://tfcbt.org)), as well as local, regional, and national medical centers and/or hospitals (e.g., Children's Hospital Los Angeles; [www.chla.org](http://www.chla.org)). Evaluators were selected through the APA's *Find a Psychologist* tab, through the NCTSN's *About Us/Network Members* tab, through the TF-CBT's *Find a Certified Therapist*

tab, and through the medical center and/or hospital relevant search tab (e.g., CHLA's *Physician Search* tab). Search terms that were used to identify potential evaluators included combinations of terms related to the evaluator's expertise, and training/certification, such as: *trauma, medical, therapy, TF-CBT*. Evaluator location and contact information, including email, can be found at the above-named search sites. In addition, evaluators were recruited through professional recommendations from mental health clinicians.

After obtaining IRB approval (see Appendix B), a questionnaire used to assess these criteria (see Appendix C) was sent via email to the evaluators along with a message (see Appendix D) detailing the nature of the study and inviting them to participate in reviewing the proposed modifications. Once the evaluators agreed to participate (and have fulfilled the above-mentioned selection criteria) they were emailed a cover letter (see Appendix E) along with an informed consent form (see Appendix F) detailing the purpose of the study, privacy and confidentiality issues, potential benefits and risks, as well as the voluntary nature of participation. Once this consent form was signed and returned they were emailed a second cover letter (see Appendix G) with information on the study, the evaluation form (see Appendix H), and a draft of the treatment modifications (see Appendix I) for their review. The evaluation form included questions that allowed for a thorough review of the proposed modifications and also included a section for additional comments or suggestions. It also included a Likert scale related to the applicability of the proposed modifications, as well as open-ended questions on content, accuracy, strengths and limitations.

**Analysis of evaluation.** Once the expert panel completed and returned the evaluation form their responses and feedback were reviewed by this author and discussed in Chapter 4: Results.

## Chapter 4: Results

In this chapter, an overview of the development of the recommendations and a summary of the expert feedback of the resource will be provided. The resource itself can be found in Appendix I. Feedback from four expert evaluators on the recommendations and the resource will be presented.

### **Brief Overview of Recommendations from Literature Review**

A comprehensive review of the literature related to medical traumatic stress, types of medical and mental health interventions, TF-CBT, and resilience and challenges for chronically ill pediatric patients and their families was conducted. The major purpose was to gain an understanding on the impact of medical traumatic stress on children, adolescents and their families, what psychological interventions were efficacious and effective and, in turn, gathering information that can aid mental health clinicians in providing population-congruent treatment. With this knowledge the goal was to create recommendations to the TF-CBT model that can be applied by clinicians when working with pediatric medical traumatic stress. Next, four TF-CBT/CBT experts in medical settings were recruited after completing the Evaluator Questionnaire (see Appendix C) and meeting participant criteria. They were consented (see Appendix F) and tasked to complete an Evaluation Form (see Appendix H) with the purpose of critiquing the resource through actions such as assessing the usefulness of the recommendations, and appropriate application of the TF-CBT model.

The *TF-CBT with the Pediatric Medical Population: A Modification* resource is 45 pages in length comprising TF-CBT's 10 *PRACTICE* components and references. With each component pediatric medical traumatic stress recommendations are provided and some examples of specific medical conditions are used to further describe situations and proposed techniques.

## Summary of the Results

Four experts were consented for this project and completed the evaluation of the manual within a one-week period. All are licensed psychologists in Connecticut, Indiana, Massachusetts, Ohio, Pennsylvania, and West Virginia with a primarily Cognitive Behavioral Therapy (CBT) background (see Table 3). Three of the four are certified TF-CBT therapists. All have had experience working with different trauma types in children and adolescents. All currently work with children and adolescents in a medical setting. Evaluator 1 works at an outpatient behavioral health and pediatric (hospital-based) center. Evaluator 2 works at a hospital based child trauma clinic and supervises individuals with a 100% trauma caseload. Evaluator 3 is employed at an outpatient hospital setting, and Evaluator 4 works at an outpatient medical setting specialty clinic that includes a full range of trauma.

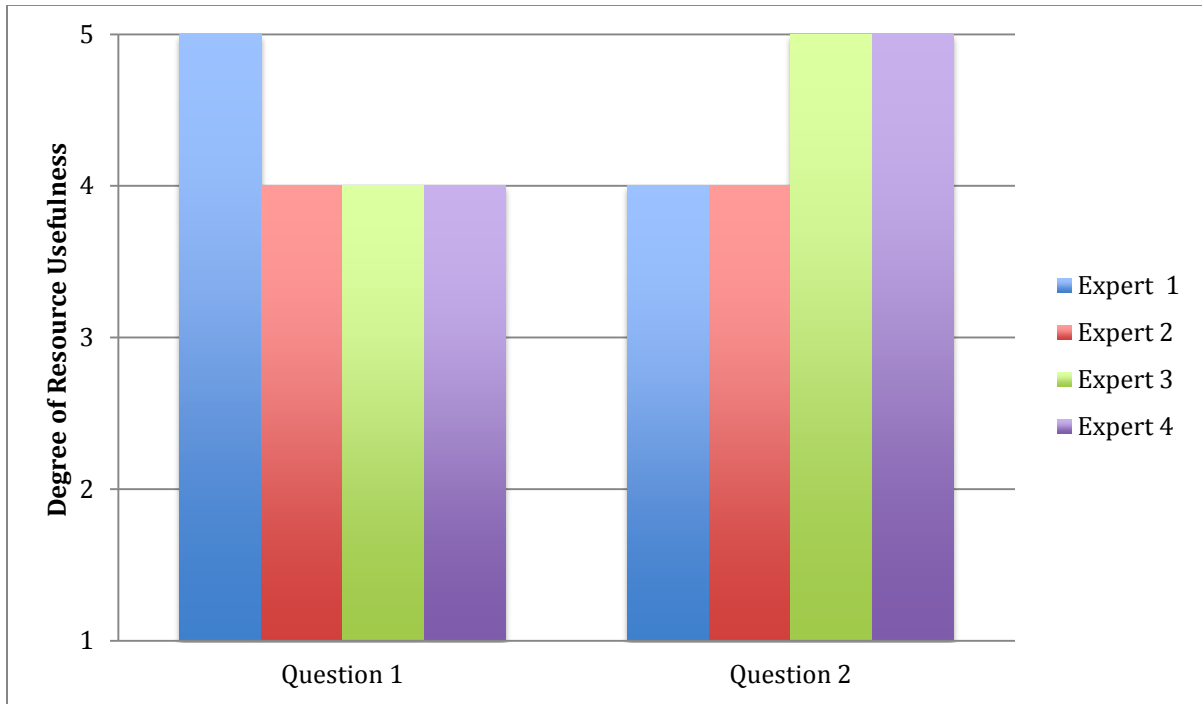
Table 3

### *Evaluators' Characteristics*

Evaluator	Gender	Title	Years of Experience
1	Female	Licensed Psychologist	6+
2	Female	Licensed Psychologist	6+
3	Female	Licensed Psychologist	3-5
4	Male	Licensed Psychologist	6+

A combination of Likert scale and open-ended questions were administered to all experts; two experts also provided feedback in the manual itself. Overall, usefulness of the resource (questions one and two) was an average of 4.38 among evaluators on a Likert scale of one to five, one being “Not at all useful” and five being “Very useful.” On Question 1 (“How useful is this resource in working with medically traumatized chronically ill children?”) Expert 1 rated it

at 5 points, while Experts 2, 3, and 4 were 1 point lower at four points. The average score was 4.25. On Question 2 (“How useful do you find this resource in educating clinicians about medical trauma within the child serious medical illness population?”) both Experts 1 and 2 rated it at 4 points, while Experts 3 and 4 rated it at 5 points. The average score was 4.50. Figure 1 demonstrates each Expert rating for the first two Likert questions on the resource’s usefulness.



*Figure 1.* Experts’ responses on usefulness of resource in working with medically traumatized children (Question 1), and in educating clinicians on medical trauma (Question 2).

On a Likert scale of one to five, one being “Strongly disagree” and five being “Strongly agree,” Experts 1 and 4 rated Question 3’s language (“The language of the resource was easy to understand”) at 5 points, while Experts 2 and 3 rated it 1 point lower. With regards to the second part of this question (“The resource clearly addressed the stated purpose of the modifications”) Experts 1 and 3 rated it at 5 points, Expert 2 rated it 1 point lower, and Expert 4 rated it 2 points

lower. Average scores on each item are 4.50 and 4.00, respectively. Figure 2 illustrates the Experts' ratings for the two parts of Question 3.

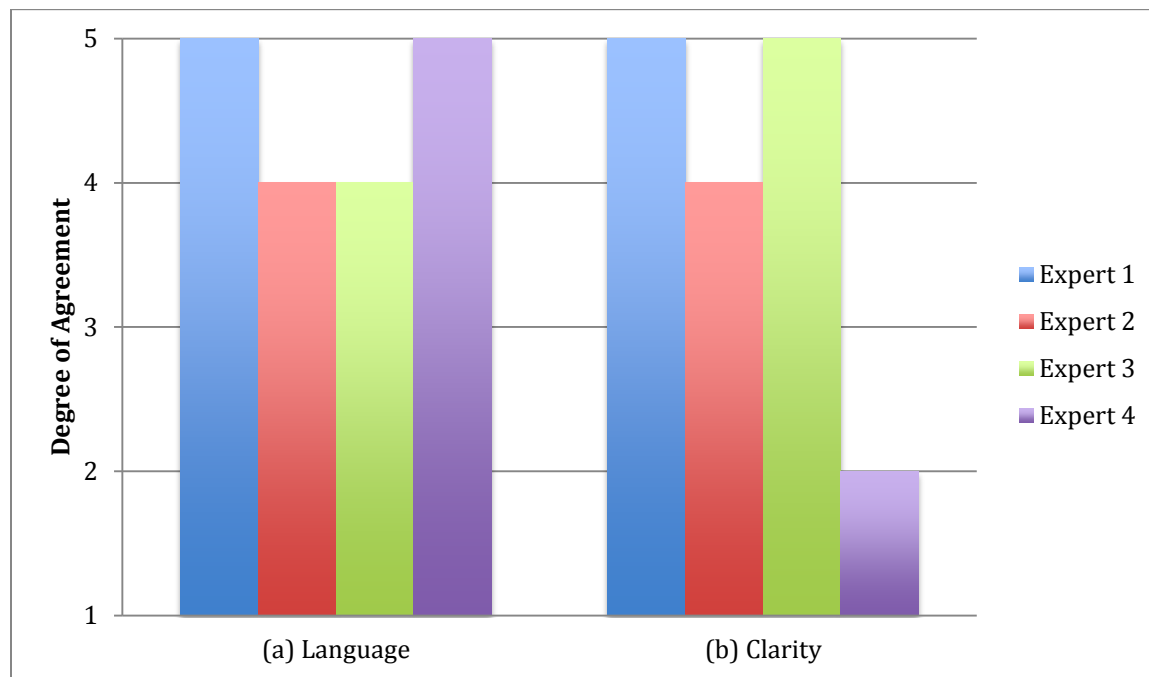


Figure 2. Experts' responses on language (a) and clarity (b) of the resource (Question 3)

On questions four through eight and ten, which were open-ended, experts provided more detailed feedback of the resource. Strengths included the topic of pediatric medical trauma, which is frequently “overlooked,” and the desired applicability of the recommendations across different medical specialties (see Table 4). A limited comprehensive grasp of TF-CBT, organization, and additional examples from the majority of medical specialties were noted as weaknesses by the evaluators (see Table 5). There were ample suggestions to improve the resource including addressing “single incident traumas...vs unpredictable trauma...vs intermittent trigger,” the role of siblings on parenting, parenting styles versus parenting behaviors, further developing the trauma narrative section to “capture the benefit and rationale regarding [its] purpose,” providing main points on the uniqueness of pediatric traumatic stress for those familiar



with TF-CBT, and reviewing the recently updated 2017 edition of the TF-CBT manual (see Table 6, Table 7, and Table 8).

Table 4

*Evaluator Feedback on Strengths of Resource (Question 4)*

What do you consider the strengths of the resource?	
Evaluator	Comments
1	“A significant strength of this model is the potential for application across specialty type. Many interventions are developed for a specific population (e.g. cancer OR diabetes), but a model that is flexibly able to treat trauma across medical specialty is a significant strength.”
2	“It addresses the unique needs of children with medical trauma. This is an important and often overlooked topic.”
3	“Great examples, would be good for someone who needs to do TF-CBT but is not completely familiar with medical trauma.”
4	“Understanding of medical trauma.”

Table 5

*Evaluator Feedback on Weaknesses of the Resource (Question 5)*

What do you consider the weaknesses of the resource?	
Evaluator	Comments
1	“For use by clinicians, a more exhaustive list of referring examples would likely be needed (e.g. how does the principle apply to diabetes trauma? surgical trauma?” pain with known etiology? unknown etiology? etc.). If the resource is truly going to be able to be applied to all traumas, examples from all/most medical specialties will be helpful for clinicians.”

(continued)

Evaluator	Comments
2	“The connection with the TF-CBT and staying true to the rationale behind the various TF-CBT components. Not knowing the writer's background with TF-CBT but it appears that perhaps his area of expertise is medical trauma not necessarily TF-CBT.”
3	“Organization. It was not clear to me if you were trying to put it in order of sessions or just giving information by components.”
4	“Lack of a comprehensive understanding of TF-CBT.”

Table 6

*Evaluator Feedback on Omissions in the Resource (Question 6)*

Are there any areas that you feel were overlooked in the resource? If so, please comment:	
Evaluator	Comments
1	“It would be beneficial to spend increased time addressing the differing courses of illnesses. These issues are briefly referred to, but a clear directive for clinicians about how to address single incident traumas (e.g. ICD implantation after diagnosis of a life-threatening arrhythmia) vs. unpredictable trauma (CF crisis) vs. intermittent trigger (regular IVG infusion) and so on would be worthwhile and would support the cross-cutting nature of this intervention.”
2	“Perhaps how siblings play a piece in parenting and some of the guilt/blame that occurs when there is a ‘healthy’ child and how a parent juggles those needs.”
3	“No.”
4	“I would strongly recommend reviewing the 2017 edition of the TF-CBT treatment manual published by Guilford.”

Table 7

*Evaluator Feedback on Areas for Revisions in the Resource (Question 7)*

Are there section(s) of the resource that need to be omitted, changed, or revised? If so, please explain:	
Evaluator	Comments
1	“The section on parent intervention could use a bit more work, particularly in separating out parenting STYLE vs. parenting BEHAVIORS. As a guideline for clinicians, focusing on interventions is the right approach, but additional information on how parenting style might be influenced by chronic illness, check: Martin Piquart, PhD; Do the Parent–Child Relationship and Parenting Behaviors Differ Between Families With a Child With and Without Chronic Illness? A Meta-Analysis. <i>J Pediatr Psychol</i> 2013; 38 (7): 708-721. doi: 10.1093/jpepsy/jst020.”
2	“The ‘Trauma Narrative’ section is of most concern as I think it does not capture the benefit and rationale regarding the purpose of trauma narration.”
3	“I sent an email with my comments in the document.”
4	“Please see my comments in the manuscript.”

Table 8

*Evaluator Suggestions to Improve the Resource (Question 8)*

What suggestions do you have that can help improve the resource and make it more useful in working with children with serious medical conditions experiencing medical trauma?	
Evaluator	Comments
1	“Perhaps for clinicians who are already familiar with TF-CBT, a crosswalk highlighting the specific changes for a medical population (e.g. a short-cut to "What is different about this population") may be beneficial.”
2	“It looked like the newest edition of the TF-CBT manual was not used, the one published this year. I would suggest using that one as a reference rather than the 2006.”
3	“See attachment.”
4	“Please see my comments in the manuscript.”

Experts' responses were variable on Question 9 ("How likely would you recommend this resource to other clinicians providing services to medically traumatized children with serious medical conditions?") as illustrated in Figure 3. With 1 as Extremely unlikely and 7 as Extremely likely on a Likert scale, Expert 1 rated it at 5 points "only pending demonstration of efficacy across populations...This intervention shows good promise for further study!" Expert 2 rated it 4 points, Expert 3 at 6 points, and Expert 4 at 3 points citing "a comprehensive understanding of TF-CBT is lacking" (see Table 9). The average response was a 3.50.

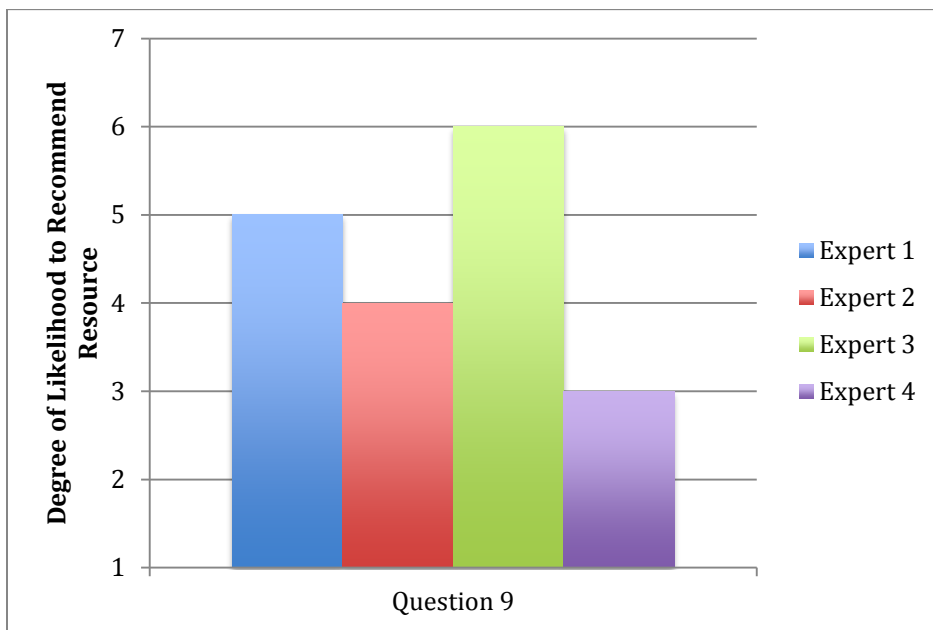


Figure 3. Experts' responses on how likely they would recommend the resource (Question 9)

Table 9

*Additional Comments from Evaluators on Recommendations (Question 10)*

Please feel free to provide additional comments and/or suggestions (including elaborations on earlier items) that you wish to share with me:	
Evaluator	Comments
1	"Above, 'somewhat likely' is only pending demonstration of efficacy across populations. This intervention shows good promise for further study!"

(continued)

Evaluator	Comments
2	(Blank)
3	(Blank)
4	“It is clear that the writer understands pediatric medical trauma but a comprehensive understanding of TF-CBT is lacking.”

Experts 3 and 4 elected to provide their feedback on Questions 7 and 8 within the manuscript itself. The majority of the comments were related to: organization of components, requesting additional examples, providing examples or experiences of their own, and suggestions (see Table 10).

Table 10

*Specific Feedback on Recommendations*

Please feel free to provide additional comments and/or suggestions (including elaborations on earlier items) that you wish to share with me:

Evaluator	Comments
3	<p>“Would have to word carefully if needle or other exposures will need to be done”</p> <p>“Link back to how [specific medical condition/s and associated procedures] applies to treatment”</p> <p>“I would consider this part of the safety component, not psychoeducation. Even though I might do it at the beginning it still is part of safety.”</p> <p>[Physiologic reactions] “not a reaction to PTSD but the trauma”</p> <p>“Add examples of [when it is and is not safe and appropriate to use relaxation skills] related to medical trauma”</p>

(continued)

Evaluator	Comments
3	<p data-bbox="586 268 1312 338">“I don’t think you mean traumatic experiences but rather factors?”</p> <p data-bbox="586 380 1323 485">“This [section on cognitive strategies for intrusive trauma reminders] would be more part of the cognitive coping component”</p> <p data-bbox="586 527 1414 596">“Shouldn’t this be under the enhancing safety component [rather in affective modulation]?”</p> <p data-bbox="586 638 1409 707">“I’m not sure why you included this [problem solving and social skills building] in this component section.”</p> <p data-bbox="586 749 1317 819">“I think I’d include this [parents] section in the Parenting component.”</p> <p data-bbox="586 861 1419 999">“I wouldn’t necessarily use this [adolescent with CF example] as I’m teaching cognitive coping because it is related to the medical trauma. As you stated in the above paragraph, for teaching you want to stick with non related examples.”</p> <p data-bbox="586 1041 1395 1146">“Again I would likely address this [positive coping and acceptance] in the processing of the trauma narrative, not when I’m teaching cognitive coping.”</p> <p data-bbox="586 1188 1414 1257">“This [parent thought reframing] is an appropriate example to do with parents.”</p> <p data-bbox="586 1299 1414 1474">“You might also touch on the complex PTSD literature and adaptations to the trauma narrative for those kids [with physical or neurological challenges]. AKA you might not write out every detail of every trauma if they have many multiple traumas but rather focus on themes.”</p> <p data-bbox="586 1516 1414 1621">“I’m not sure that this would qualify as doing TFCBT to protocol. If someone cannot write or draw or play out a narrative then I would not call it TF-CBT”</p> <p data-bbox="586 1663 1390 1768">“So once the narrative is finished I would share the trauma narrative with the parent before doing the more lengthy in vivo exposures that may be needed.”</p>

(continued)

Evaluator	Comments
4	<p data-bbox="586 310 1419 485">“I think you’ve done a great job with education about medical trauma. But there is a complete absence of education related to TF-CBT [in component 1]. The model needs to be discussed with the family, as well as expectations during treatment, and the importance of hope and resilience.”</p> <p data-bbox="586 527 1419 667">“I think you need to include more on positive parenting (e.g., “catching the child doing something good”, particularly because medically ill children receive lots of attention related to their medical difficulties.”</p> <p data-bbox="586 709 1419 814">“An important part of TF-CBT is the incorporation of gradual exposure into the early PRAC components. You have not addressed this”</p> <p data-bbox="586 856 1419 961">“A good resource for cognitive coping is TF-CBT Triangle of Life. You can purchase this .app for free at the Apple or Google Play stores.”</p> <p data-bbox="586 1003 1419 1108">“Traditional art therapy would not be appropriate as part of TF-CBT. However, a child could use art to make drawings that demonstrate their trauma experiences.”</p> <p data-bbox="586 1150 1419 1213">“There are many ways for children to do trauma narratives. A book or story is just one of them.”</p> <p data-bbox="586 1224 1419 1287">“The trauma narrative and cognitive processing are not separate components; they are integrated together as one component.”</p> <p data-bbox="586 1329 1419 1392">“Socratic questioning is one cognitive reprocessing strategy but there are others as described in the treatment manual.”</p> <p data-bbox="586 1434 1419 1539">“Prior to the conjoint session, the therapist needs to share the TN with the parent first to provide the opportunity for the parent to process his/her reactions without the child present.”</p>

Furthermore, feedback from this author’s dissertation committee included incorporating religious and spiritual coping to the Relaxation component, and adding a preface to the resource in order to provide context.

## **Chapter 5: Discussion**

This project aimed to create recommendations for clinicians on the application of Cohen et al.'s (2006) TF-CBT model with children with medical traumatic stress. Current TF-CBT treatment focus is primarily on interpersonal or witnessed trauma. There have been modifications and adaptations of this model with different cultural populations (e.g., Latino), and it has been broadened to include different trauma types (e.g. natural disaster), but has yet to be expanded to address medical traumatic stress. Significant numbers of the child medical population and their parents experience posttraumatic stress, and considering the nature of severe chronic diseases this trauma may be ongoing for many. The recommendations developed as part of this dissertation project were informed by an extensive literature review on pediatric medical traumatic stress and TF-CBT. The following questions guided the project:

- In exploring the current trauma literature available in peer-reviewed journals, what treatment approaches have been the most efficacious and effective in working with the medically traumatized pediatric population?
- What do mental health professionals need to know about medical trauma and the pediatric population in order to provide appropriate and population-congruent treatment?
- In what ways can information on pediatric traumatic stress be used to modify TF-CBT?

Four clinical experts that fulfilled eligibility criteria evaluated the resource and their feedback was collected and analyzed to assess the usefulness of the recommendations.

### **Strengths of the Resource**

Overall, the four experts agreed that the resource is useful in working with children with medical traumatic stress and in educating clinicians on this population. Strengths also included that it addresses the unique needs of children with medical trauma, has examples that can be



helpful for clinicians who choose to use TF-CBT but have limited knowledge on medical trauma, and that it has the potential to be applied across diverse medical specialties. In addition, it was easy to comprehend, and three of the experts agreed that it is generally clear in addressing the purpose behind the recommendations.

### **Areas for Growth**

Two of the four experts noted that TF-CBT concepts were not thorough and that this writer has a limited understanding of the treatment model. One expert shared that additional clarification on the arrangement of components would have been beneficial. Another expert suggested the development of a list of examples from all or most medical specialties if the resource is to be used with diverse medical conditions and medical traumatic stress. The experts were provided only the components to review, therefore it is speculated that they did not have the author's selected parameters behind the recommendations, which consisted of focusing on particular illnesses. In addition, the author could have further clarified that the original manual was summarized in this resource in order to address material that was previously covered, and should not be considered part of the author's proposed recommendations. In general, these points may have influenced the experts' responding, and perhaps even clarified any ambiguities.

### **Limitations and Future Directions**

The proposed recommendations to TF-CBT for the pediatric medical population aimed to contribute to existing trauma literature by further enhancing and diversifying trauma treatment to include this, somewhat, marginalized group. However, this project is not without limitations. The proposed recommendations are not a result of a controlled randomized trial/s but through results of literature searches and expert evaluator contributions. The dearth of literature in the areas of trauma interventions for children with medical conditions made it challenging to locate

relevant articles. Alternative words and topics (e.g., “anxiety,” “stress”) were needed in order to identify related research. In addition, many of the relevant articles were published more than five and 10 years ago. It should also be noted that there was a small sample size of four evaluators, which are all licensed psychologists, that they are Caucasian, and that they are all employed in a medical setting in the eastern part of the United States. The resource would benefit from a larger sample size and include other mental health professionals (e.g., LCSW, LMFT) from different settings and cultural backgrounds. This would not only help validate the recommendations but also aid in its applicability in various settings.

Further, due to the nature of medical diagnoses and their related procedures and treatments, lack of relevant medical competence or sensitivity on the part of the clinician may effect implementation and overall treatment. The importance of this is so great that the Center for Pediatric Traumatic Stress at The Children’s Hospital of Philadelphia was created within The National Child Traumatic Stress Network and collaborates with nationwide medical and mental health professionals to address pediatric medical traumatic stress. It provides comprehensive information to clinicians and parents through online education, videos, and downloadable materials ([www.healthcaretoolbox.org](http://www.healthcaretoolbox.org)). A pediatric medical traumatic stress guide for mental health providers is an excellent resource (Center for Pediatric Traumatic Stress, 2015).

Additionally, as is usually the case with families with chronically ill children, family scheduling is sensitive to medical appointments/procedures, other family obligations, financial burdens, etc., therefore there may be adherence concerns that clinicians should keep in mind when working with this population. If some parents experience significantly more and/or higher degrees of PTSD and PTS symptoms than their ill child, they could risk hindering the child’s treatment, and may need to seek their own treatment before being involved in the child’s

recovery process. Finally, the topic of grief was not addressed and is a very important one, particularly with this population. For example, a child with a chronic illness may grieve the skills they had prior to the disease and no longer have, feel sad about their limited abilities compared to healthy peers, or even let go of future life goals that they cannot realistically obtain. It is also not unusual for parents to feel the loss of what they imagined their child would have been without the chronic disease.

Future steps to further improve and strengthen the resource would include (a) improving knowledge-base of TF-CBT by attending a two-day training in the model; (b) referencing, reviewing, and incorporating the updated 2017 version of the TF-CBT treatment manual; (c) making suggested edits to the components by the experts and dissertation committee; (d) adding a preface to the components discussing the focus of the resource; (e) providing a clarification of suggested additions by comparing the author's recommendations against a summary of the TF-CBT manual; and (f) and addressing grief with the child and family.

### **Conclusion and Implications**

The recommendations created in this dissertation project were meant to supplement the existing TF-CBT manual by expanding its use to include the pediatric medical traumatic stress population. An extensive review of the literature helped develop the recommendations and a group of four child and adolescent CBT and TF-CBT psychologists evaluated the resource and provided relevant feedback. It is hoped that the resource will bring attention and awareness to the trauma intervention needs of this population. The recommendations would be mostly relevant for children treated in low resource hospitals (it is believed that a higher number of them experience PTSD symptoms) since higher resource pediatric hospitals address potential PTSD symptoms early on in a child's treatment. However, that is not to say that some children at

higher resource hospitals may not be screened for targeted psychological intervention. Through this resource strategies on how to address medical trauma and its sequela will hopefully improve mental health, and increase adherence, among other factors. With improved and advanced medical treatments, possible increase of children's survival of chronic diseases suggest a higher probability of clinicians seeing medically ill children or their families. These recommendations aim to supplement available resources to clinicians, therefore improving quality of care to patients. It can also assist clinicians in understanding the complexities of this population and help them make appropriate referrals to TF-CBT practitioners, as warranted.

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## APPENDIX A

### Summary Table of Selected Literature

Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
American Academy of Pediatrics	2015	Definition of a Pediatrician	Review Article	Pediatrics	Literature search	N/A	N/A	N/A	N/A	The article reviews and defines pediatrics and pediatricians, including care, education, and types of pediatricians. Definition of pediatrics is "the specialty of medical science concerned with the physical, mental, and social health of children from birth to young adulthood.	N/A
American Psychological Association, Presidential Task Force on Evidence Based Practice	2006	Evidence-Based Practice in Psychology	Report	Evidence-Based Practice	N/A	N/A	N/A	N/A	114 articles	Evidence-based practice in psychology (EBPP) is the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences. Best research evidence refers to scientific results related to intervention strategies, assessment, clinical problems, and patient populations in laboratory and field settings as well as to clinically relevant results of basic research in psychology and related fields. Treatment planning involves setting goals/tasks, the nature of the patient's problems/concerns, the likely prognosis/expected benefits, and available resources. Clinical expertise entails the skillful and flexible delivery of treatment, as well as monitoring the patient progress.	N/A

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Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Ayers, S., Muller, I., Mahoney, L., & Seddon, P.	2011	Understanding needle-related distress in children with cystic fibrosis	Empirical	Cystic Fibrosis, Distress, Needs	Qualitative	14 children mean age of 12.4 years (range 7–17); Parents had a mean age of 41.5 years	5 male, 9 female (children); (3 male; 11 female parents)	N/A	Semi-structured interviews	This study analyzed needle-related distress among children with CF. Results of the interviews indicated that over half of the children/parents indicated that pain and previous negative needle experiences were related to their anxiety. Most parents/children agreed that inhaled nitrous oxide gas during needle procedures helped relieve anxiety. Authors note that needle related anxiety in the children could lead to management problems such as refusal of treatment. Psychological and pharmacological interventions to reduce anxiety.	N/A
BigFoot, D. S., & Schmidt, S. R.	2010	Honoring Children, Mending the Circle: Cultural Adaptation of Trauma-Focused Cognitive-Behavioral Therapy for American Indian and Alaska Native Children	Review Article	TF-CBT, Children, Cultural Adaptation, Trauma	Literature Review	N/A	N/A	N/A	N/A	The article reviews a cultural adaptation of TF-CBT, Honoring Children, Mending the Circle (HC-MC), for American Indian and Alaska Native youth. The adaptation uses tribal and cultural traditions and influences in the treatment ~The treatment is being implemented by ICC/TC. The treatment can help bridge the gap between indigenous cultures and science by using tribal-specific cultural practices. The authors used a case illustration in one individual to show how HC-MC can help address trauma (specifically PTSD from sexual abuse)	N/A

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Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Bisson, J. I., Roberts N. P., Andrew, P., Cooper, R., & Lewis, C.	2013	Psychological therapies for chronic PTSD in adults	Review Article	PTSD, Adults	Literature Search	70 studies	N/A	N/A	N/A	TFCBT and EMDR had more positive results in reducing PTSD than those on a waitlist/receiving usual care. Results show that individual TFCBT, EMDR and non-TFCBT were effective immediately post-treatment; some evidence supported TFCBT and EMDR one-four months post-treatment, but not non-TFCBT; however all were found to be effective over other forms of therapy	Methodological variations in the selected studies limit generalizability. Some studies had small sample sizes, and were "underpowered".
Brand, P. L. P., Klok, T., & Kaptein, A. A.	2013	Using communication skills to improve adherence in children with chronic disease: The adherence equation	Review Article	Chronic Disease, Children, Communication, Adherence	Literature Review	N/A	N/A	N/A	N/A	This article reviews interventions to improve adherence. Adherence can be improved and maintained with the following measures: achieving a close follow-up, engaging in constructive dialogue, discussing barriers and beliefs, educate with empathy.	N/A
Bronfman, E. T., Campis, L. B., & Koocher, G. P.	1998	Helping Children to Cope: Clinical Issues for Acutely Injured and Medically Traumatized Children	Review Article	Trauma, Injury,	Literature Search	N/A	N/A	N/A	N/A	The article reviews 2 types of trauma in children, event related and iatrogenic and steps to evaluate and set up intervention progress for both types of trauma. In children who experience event related trauma, mechanism's for the child's processing of the trauma is necessary, whereas in iatrogenic trauma, the development of coping skills is a clinical issue to handle. Both types of trauma can be addressed with the medical crisis counseling model, and specific interventions for each type of trauma is further analyzed in the article.	N/A

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Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Bryant-Davis, T., & Wong, E.	2013	Religious Coping, Spirituality, and Interpersonal Trauma Recovery	Review	Religious/Spiritual Coping; Interpersonal Trauma	Literature Review	N/A	N/A	N/A	N/A	There is a need for the development and evaluation of mental health interventions that address and account for religious and spiritual forms of coping that promote recovery and posttraumatic growth. Underserved communities, which often lack access to treatment, may endorse higher rates of religious/spiritual forms of coping, including seeking out support from religious leaders. Difficulty of measuring spiritual/supernatural encounters beyond beliefs and behaviors.	N/A
Carter, B.	2014	Parenting a sick child: Challenge and resilience	Review Article	Chronic Illness, Parent, Resilience	Literature Review	N/A	N/A	N/A	N/A	This article analyzes how parents lives are impacted when their child requires acute hospitalizations or is chronically ill. Parents often experience overwhelming psychological distress. The author notes that self-efficacy is one way to promote parent self-strength. The author ends the paper by urging other healthcare professionals to provide support, sustain and enhance parental confidence, competence and skills, therefore they can continue to be a healthy parent for their child	N/A

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Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Cary, C. E., & McMillen, J. C.	2012	The data behind the dissemination: A systematic review of TF-CBT for use with children and youth	Review Article	TF-CBT Dissemination, Children	Meta-Analysis	12 articles	N/A	N/A	N/A	This article reviewed evidence in support of TF-CBT for children with symptoms of post-traumatic stress, depression and behavior problems whom have experienced trauma. All meta-analysis had similar results in that TF-CBT was shown to significantly reduce PTSD, depression and behavioral problems in comparison conditions.	N/A
Casier, A., Goubert, L., Huse, D., Theunis, M., Franckx, H., Robberecht, E., Matthys, D., & Crombez, G.	2008	The role of acceptance in psychological functioning in adolescents with cystic fibrosis: A preliminary study	Empirical	Cystic Fibrosis, adolescents, psychological functioning	Quantitative and Qualitative	Thirty-four adolescents	18 females (52.9%) and 16 males (47.1%)	All Caucasian	Illness Cognition Questionnaire (ICQ); The Dutch version of the Hospital Anxiety and Depression Scale (HADS); Functional Disability Inventory (FDI);	This study examined the role of acceptance on anxiety, depression, and disability in adolescents diagnosed with CF. Results suggest that acceptance and readjustment of life after diagnosis has a positive effect of the psychological functioning in adolescents. Authors suggest acceptance based therapies to promote self-well-being among patients diagnosed with CF	N/A
Centers for Disease Control and Prevention	n.d.	Hospital discharges among children	Empirical	Causes, Hospitalization	Quantitative and Descriptive	3.1 million hospital discharges (people aged 1-21 years)	N/A	N/A	Centers for Disease Control and Prevention, National Hospital Discharge Survey	In 2009, over 3.1 million individuals were hospital discharges. Diseases of the respiratory system (including asthma and pneumonia) were the most common causes of hospitalization among children 1-4 and 5-9 years old. Mental disorders were the most common cause of hospitalization for children 10-14 years old. Labor and delivery (among females) was the most common cause of hospitalization resulting in 49.6 and 62.3 percent of discharges for age 15-21 years.	N/A

(continued)



Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Center for Disease Control and Prevention	2012	Mental Health and Chronic Diseases	Empirical	Mental Health	Quantitative and Descriptive	N/A	N/A	N/A	N/A	This report analyzes mental health and chronic conditions in relation to various things such as the relationship between mental health, chronic disease, and injury and how it affects employees in the workplace. Approximately 26% of adults are diagnosed with a mental condition in the US in a given year. The report provides possible solutions for maintaining employee's mental health and chronic disease status.	N/A
Center for Pediatric Traumatic Stress	2015	Medical Events & Traumatic Stress in Children and Families	Review Article	Trauma, Stress, Children	Literature Search	N/A	N/A	N/A	N/A	Pediatric illness/injuries are often traumatic and can lead to PTSS and feelings of being frightened/vulnerable/etc. Various screening methods are examined: Psychosocial Assessment Tool (PAT), Screening Tool for Early Predictors of PTSD (STEPP), Surviving Cancer Competently Intervention Program (SCCIP) is examined as a treatment method.	N/A

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Chorpita, B. F., Daleiden, E. L., Ebesutani, C., Young, J., Becker, K. D., Nakamura, B. J., Phillips, L., Ward, A., Lynch, R., Trent, L., Smith, R. L., Okamura, K., & Starace, N.	2011	Evidence-Based Treatments for Children/Adolescents: An Updated Review of Indicators of Efficacy and Effectiveness	Review Article	Evidence-Based, Services, Children, Dissemination	Literature review	374 studies of psychosocial and combined treatments from 1965 to 2009. 314 of those fell into problem areas and were a focus in the review	N/A	N/A	<ul style="list-style-type: none"> <li>Grading scale uses a five level system</li> <li>The first 2 levels are based on definitions established by the APA Division 12 Task Force for Promotion and Dissemination of Psychological Procedures, with the exception of single subject designs</li> <li>Additional levels were added to the first two as part of the multiyear stakeholder participation process</li> <li>Level four refers to interventions that performed better than waitlist in at least one study</li> <li>Level 5 refers to treatments that have been tested but did not perform significantly better than any controls.</li> <li>The Task Force on Psychological Intervention Guidelines, American Psychological Association (1995)</li> <li>PracticeWise Clinical Coding System</li> </ul>	<p>Anxiety and Avoidance: most studies supported CBT and exposure-based approaches</p> <p>Attention and HyperActivity: The best supports were Self verbalization, and Behavior Therapy plus Medication, as well as Parent Management Training, Autism Spectrum: the best support was Intensive Behavioral Treatment and Intensive Communication Training.</p> <p>Depression and Withdrawal: Cognitive Behavior Therapy (CBT) and its variants were best supported. Only CBT was ranked as "highly trainable." Disruptive Behavior: This area was identified with the greatest number of supported treatments; Parent Management Training was best supported. Substance Abuse: the best support was Family Therapy.</p> <p>Traumatic Stress: the best support was CBT.</p>	Although behavioral and cognitive therapies were among the best supported across various areas, it may be too narrow sighted to call them "clear winners"
Cohen, J. A., Bukstein, O., Walter, H., Benson, R. S., Chrisman, A., & Farchione, T. R.	2010	Practice Parameter for the Assessment and Treatment of Children and Adolescents With Posttraumatic stress disorder	Review Article	PTSD, Children, Trauma	Literature Search	114 articles	N/A	N/A	N/A	The article provides various recommendations for evidence based treatments based on empirical/clinical support. The article provides support for TF-CBT for children with PTSD, as well as psychodynamic trauma-focused psychotherapies	N/A

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Cohen, J., & Mammario, A. P.	1997	A Treatment Study for Sexually Abused Preschool Children: Outcome During a One-Year Follow-up	Empirical	Children, Sexual Abuse, TF-CBT	Quantitative	43 preschool children (average mean=5 yr 9mo) and their parents	56% female; 44 male	56% Caucasian; 44% African American	Child Behavior Checklist (CBCL) Parent Version CSBI WBR	The CBT-SAP group was less symptomatic on the CSBI, the WBR Total Behavior score, and 2 of the 4 broad-band CBCL scales. The 1-yr follow up analysis reported significant changes on all instruments with a main effort of time on all measures. Findings support CBT-SAP over NST in maintaining symptom reduction. These findings suggest that sexually inappropriate behaviors in sexually abused preschool children are more responsive to behavioral interventions than to nondirective therapy.	The design of this study does not allow for evaluation of the independent impact of discrete components of either treatment intervention in decreasing symptomatology. There is a need for further studies with this population of children
Cohen, J. A., & Mammario, A. P.	2008	Trauma-Focused Cognitive Behavioral Therapy for Children and Parents	Empirical	PTSS, Children, CBT	Quantitative and Descriptive	N/A	N/A	N/A	N/A	This article summarizes a TF-CBT model and it's use for effectively treating parents and children. The model can be summarized with the acronym PRACTICE. The model is ongoing and being completed with children aged 3-17 who have experienced trauma such as sexual abuse, traumatic grief, domestic violence, terrorism, disasters, and multiple traumatic events.	N/A
Cohen, J. A., & Mammario, A. P.	2011	TF-CBT for Traumatic Grief in Military Children	Review Article	TF-CBT, Children, grief, Military	Literature Search	N/A	N/A	N/A	N/A	This article reviews the clinical implications of TF-CBT for children who have been affected by traumatic grief. Bereaved military children often experience adaptive grief, and some experience childhood traumatic grief.	N/A

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Cohen, J. A., Mammario, A. P., Kliethermes, M., & Murray, L. K.	2012	Trauma-focused CBT for youth with complex trauma	Empirical	TF-CBT, Youth, Trauma	Quantitative and Descriptive	N/A	N/A	N/A	N/A	This article describes using TF-CBT as a treatment for children who have experienced complex trauma. Authors note the following practical applications of TF-CBT: dedicating more of the TF-CBT model to the coping skills phase, including the TF-CBT safety component early and often in treatment, implementing gradual exposure more slowly, utilizing unifying trauma themes throughout treatment, and extending TF-CBT to include grief components when necessary. All strategies have supporting evidence that they are successful forms of treatment. The authors present practical applications for implementation of the above methods in TF-CBT.	N/A
Cohen, J. A., Mammario, A. P., & Knudsen, K.	2005	Treating sexually abused children: 1 year follow-up of a randomized controlled trial	Empirical	Children, Sexual Abuse, TF-CBT	Quantitative	82 children, 8-15 yrs old and their primary caretakers; mean age=11.4 years (TF-CBT); mean age=10.8 years (NST)	56 females; 26 males	49 (60%) Caucasian; 30 (37%) African American; 2 (2%) Biracial; (1%) Hispanic	Trauma-focused cognitive-behavioral therapy (TF-CBT); Non-directive supportive therapy (NST) The Children's Depression Inventory (CDI); the Trauma Symptom Checklist for Children (TSC-C); the State-Trait Anxiety Inventory for Children (STAI-C); the Child Sexual Behavior Inventory (CSBI); the Child Behavior Checklist (CBCL)	The TF-CBT group showed greater improvements in measures of depression, anxiety, and sexual problems; among treatment completers the group also showed improvements in anxiety, depression, sexual problems and dissociation at the 6-month follow-up and in PTSD and dissociation at the 12-month follow-up. However, most instruments indicated improvements over time, suggesting children improved in both groups. At the 12-month follow-up, medium effect sizes ( $\geq .30$ ) were found for sexual behaviors (CSBI), PTSD, and social competence (CBCL).	An alternative instrument used to measure PTSD would be better suited. Another limitation was the high dropout rate of participants in the study.

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Cohen, J. A., Mammario, A. P., & Murray, L. K.	2011	Trauma-focused CBT for youth who experience ongoing traumas	Review Article	TF-CBT, Children, Trauma	Literature Search	N/A	N/A	N/A	Case studies	The article analyzes strategies to implement TF-CBT for children with ongoing trauma. The strategies included enhancing safety early in the treatment, engaging parents who experience personal ongoing trauma, or during the trauma narrative. Results indicate that with these strategies, youth exposed to trauma have had positive improvements.	N/A
Cohen, L. L.	2008	Behavioral Approaches to Anxiety and Pain Management for Pediatric Venous Access	Review Article	Anxiety, Pediatric Venous Access, Pain	Literature Review	N/A	N/A	N/A	N/A	The author notes specific ways to deal with preparation, procedure, and post venous access. Timing, format, and content of the approach is critical for optimal preparation. During the procedure: importance of secure and comfortable positioning for the patient; adults actively engaging with children in distracting activities. Afterwards, distraction and encouragement of coping should help with recovery.	N/A

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Colletti, C. J. M., Wolfe-Christensen, C., Carpenter, M. Y., Page, M. C., McNall-Knapp, R. Y., Meyer, W. H., Chaney, J. M., & Mullins, L.	2008	The Relationship of Parental Overprotection, Perceived Vulnerability, and Parenting Stress to Behavioral, Emotional, and Social Adjustment in Children With Cancer	Empirical	Pediatric oncology, Parental Coping	Quantitative	Parents of 62 children	Children: 34 boys, 28 girls; Parents: Mothers (85.5%)	Caucasian 79.6%, African American 6.5%, Hispanic 6.5%, Native American 4.8%, Other 1.6%	Demographics Questionnaire; Severity of Illness Scale (SOIS [29]).	The goal of this study was analyze the relationship between parental overprotection, child vulnerability, and parental stress; and parent behavioral, emotional and social adjustments to children with cancer. Poorer parental behavioral and social adjustments were correlated to higher levels of parental stress. Poorer emotional adjustment was independently correlated to higher levels of child vulnerability and parental stress.	The cross sectional design firm conclusions. Future studies would benefit from larger sample sizes and varying demographic characteristics. Lack of control group limits generalizability of results. Only parent-reported measures were used, associations may have resulted from shared method variance.
Compas, B. E., Jaser, S. S., Dunn, M. J., & Rodriguez, E. M.	2012	Coping with Chronic Illness in Childhood and Adolescence	Review Article	Coping, Children, Chronic Illness	Literature Search	18 articles; 4 related to 'coping with diabetes'; 10 related to 'coping with chronic pain'; 4 related to 'coping with cancer'	N/A	N/A	N/A	Stressors are multifaceted and can include stress related to daily role functioning, treatment, and uncertainty. Evidence across chronic childhood illnesses and medical conditions suggests that secondary control coping, or accommodative coping, is related to better adjustment in children and adolescents. Disengagement coping is related to poorer adjustment	Future research should include the usage of multiple informants about coping and its correlates. Prospective studies are needed in the future. Future research is necessary to analyze the influence of parent-child stress associated with the child's chronic illness, & on each other.

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Davydow, D. S., Lease, E. D., & Reyes, J. D.	2015	Posttraumatic stress disorder in organ transplant recipients: a systematic review	Review Article	PTS, Organ transplant	Literature Review	N/A	N/A	N/A	N/A	This article reviewed current literature about PTSD following organ transplant, and related risk factors, and the relationship between PTSD, health-related quality of life (HRQOL) and mortality. Posttransplant PTSD was linked to worse mental (and possibly physical) HRQOL. PTSD impacts a larger number of organ transplant recipients than initially assumed.	Future studies should focus on transplant-specific PTSD and clarify potential risk factors for, and adverse outcomes related to, posttransplant PTSD.
de Arellano, M., Lyman, D., Jobe-Shields, L., George, P., Dougherty, R., Daniels, A., Ghose, S., Huang, L., & Delphin-Rittmon, M.	2014	TF-CBT for Children and Adolescents: Assessing the Evidence	Review Article	TF-CBT, Children, Trauma	Literature Review	10 RCTs	N/A	N/A	N/A	TF-CBT reduced symptoms of PTSD; however, it was less clear how it affected behavioral problems or depression. Results indicate that TF-CBT is a positive treatment for children who have experienced trauma, and should be covered under health plans as a treatment option	Diverse participants with varied racial/ethnic, medical, and trauma backgrounds are necessary.
Deblinger, E., Mannarino, A. P., Cohen, J. A., & Steer, R. A.	2006	A Follow-up Study of a Multisite, Randomized, Controlled Trial for Children With Sexual Abuse Related PTSD Symptoms	Empirical	Children, Sexual Abuse, PTSD	Quantitative	183 children (8-14 years) and their primary caretakers	N/A	N/A	The Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version, PTSD section; The CDI Kovacs; The State-Trait Anxiety Inventory for Children; The Childrens Attributions and Perceptions Scale (CAPS); The Shame Questionnaire; CBCL; The Child Sexual Behavior Inventory; The Beck Depression Inventory-II; The Parents Emotional Reaction Questionnaire (PERQ); The Parental Support Questionnaire (PSQ); The Parenting Practices Questionnaire	Study was designed to determine differences in TF-CBT and CCT for treating PTSD, and if related problems persist following treatment. Results indicated children who treated PTSD and related symptoms with TF-CBT had fewer symptoms at 6 and 12 months post-treatment; caregivers also reported less abuse-related stress at follow-ups. Children also reported fewer symptoms of shame in the TF-CBT group than those being treated with CCT	The sample is not representative of all sexually abused children. Future studies should include larger sample sizes and longer follow-up periods

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Deblinger, E., Steer, R. A., & Lippmann, J.	1999	Two-year follow up study of CBT for sexually abused children suffering PTS symptoms	Empirical	Child sexual abuse, PTSD, CBT	Quantitative	100 children, 7-13 (mean age of 9.89)	83 girls; 17 boys	70 participants (70%) were White, 21 (21%) Black, 7 (7%) Hispanic, and 2 (2%) Other	Structured background interview; Posttraumatic Stress Disorder (PTSD); Child Depression Inventory (CDI); Child Behavior Checklist (CBCL); Parenting Practices Questionnaire (PPQ)	Scores of children's adjusted follow-up scores at 3 months, 6 months, 1 year, and 2 years post-treatment were comparable to the original study, suggesting that improvements in externalizing behavior, depression and PTSD lasted over a 2 year follow up period. The three psychopathology measures were externalizing behavior problems, depression, and PTSD symptoms	There was between 25-32% missing data due to incomplete data measures at the follow-ups
Desmond, K. J., Kindsvatter, A., Stahl, S., & Smith, H.	2015	Using Creative Techniques With Children Who Have Experienced Trauma	Review Article	Art therapy, Children, Trauma	Literature Review	N/A	N/A	N/A	N/A	This article reviews creative therapies for children who have experienced trauma including puppets, sandtray, letter writing, and art. These creative techniques can explore the stories of trauma in young children whom have trouble communicating their trauma. Therapies that combine talking and playing seem to be the most effective to help young patients work through trauma	N/A

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Distelberg, B., Williams-Read, J., Tapanes, D., Montgomer y, S., & Pandit, M.	2014	Evaluation of a Family Systems Intervention for Managing Pediatric Chronic Illness: Mastering Each New Direction (MEND)	Review Article	Chronic Illness, Children	N/A	22 families; children aged 8-18 diagnosed with a chronic illness and their primary families; average age=14	N/A	White (52%), Black and Hispanic (19%) (24%)	Mastering Each New Direction (MEND) program; a 21-session/7 week comprehensive intensive outpatient family therapy-based treatment model; a demographic survey; Pediatric Health-Related Quality of Life (PedsQL 4.0 generic core scales) survey; PedsQL Family Impact Module	Estimates of 13-27% of children have chronic illness in the US, however few psychosocial interventions are available to help families. MEND (a biopsychosocial intensive outpatient program) was created to address this. Indv./peer therapy and peer group/multifamily therapy is conducted over 21 sessions (3/week for 7 weeks). The program is conducted in four phases as follows: Phase I: Orientation, assessment, and language; Phase II: Introception and congruence; Phase III: Meaning and expression of change; Phase IV: Change generalization and reintegration/Mastery and maintenance. MEND improved the overall HRQOL; both in the child report and parent report. It was able to reduce negative impact from chronic illness on the family. The evaluation shows improvement across physical, emotional, social, cognitive, and school functioning.	Future studies are needed with larger sample sizes, and larger/consistent control measures. Future studies should also be longer
Doherty, A., & Gaughran, F.	2014	The interface of physical and mental health	Review Article	Mental health and neurological problems	A literature search of MedLine, Ovid and Psycinfo and identified studies that examined the association between mental illness and physical illness.	92 articles	NA	NA	Epidemiological studies or systematic reviews or meta-analyses and then proceeded to examine the references of these articles.	Physicians and psychiatrists need to be aware of the occurrence of mental and physical health problems and the challenges posed for both general and mental health services. People with mental health conditions are at higher risk of developing physical illness, have those conditions diagnosed later and have much higher mortality rates. When both mental and physical illnesses conditions are present together, there are higher overall rates of morbidity, healthcare utilization, and poorer quality of life.	Mental and physical health are common co-morbidities. Joint services already manage comorbidities and indeed multiple morbidities in the context of liaison psychiatry.

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Dorsey, S., Briggs, E. C., & Woods, B. A.	2011	CBT for PTSD in Children and Adolescents	Review Article	PTSD, CBT, Children, Adolescents	Meta-Analysis	22 studies providing a detailed overview of two CBT approaches; strongest evidence of effectiveness are TF-CBT and CBITS	N/A	N/A	N/A	CBT approaches for PTSD include both individual and group approaches; interventions in the review should many improvements in PTSD, including lifetime improvements (i.e., TF-CBT, CBITS, TGCT) ~Most studies of CBT treating trauma also showed improvements in other co-occurring areas such as depression or anxiety	Future research could examine things such as cultural applicability and responsiveness, better ensuring implementation and dissemination, and enforcing treatment gains over time.
Dow, B., Kenardy, J., Long, D., & Le Brocq, R.	2012	A review of Children's post-traumatic stress and the role of memory following admission to intensive care	Review Article	Post-traumatic stress, children, Pediatric illness, Intensive Care	Literature review of children's PTSD responses following intensive care admission with emphasis on: (1) children's experience of intensive care; (2) the prevalence of PTSD in children following intensive care admission; (c) factors associated with vulnerability to PTSD; and (d) the role of memory and appraisal in the development of children's PTSD.	15 articles with children 2 weeks-18 years	N/A	N/A	CRTI; child report IES; child report Post-traumatic Stress Scale, CBCL; parent, teacher, & child report 6 years +/- K-SADS-IV-R; clinician-administered interview <6 years; parent interview IES; child report DISC; computerized interview, child report CAPS-C; clinician administered interview; IES; child or parent report CIES; child self-report Structured interview (ICU Memory Tool) Semi-structured Field observations, interviews with parents, nurses, and children PICU observations.	A large amount of children experience post-traumatic symptoms following intensive care admission; symptoms may persist for up to 12 months without intervention. Acute PTSD symptoms may be hard to monitor from responses to medical/treatment related events within intensive care; may persist for several months without treatment. It's unclear if PICU admission increases vulnerability to PTSD symptoms relative to general care ward admission and other trauma. Age, gender, objective disease severity, and length of PICU are not consistent risk factors.	Future research should focus on better understanding the prevalence, onset, and course of PTSD and impact on functioning and developmental trajectories. Larger samples and increased usage of developmentally sensitive diagnostic interviews would be beneficial in future studies.

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Edmondson, D.	2014	An Enduring Somatic Threat Model of Posttraumatic Stress Disorder Due to Acute Life-Threatening Medical Events	Review Article	PTSD, Acute life-threatening, medical events	Literature Review	N/A	N/A	N/A	N/A	This article reviews the occurrence of PTSD in patients after acute life-threatening diseases occur such as heart attacks, strokes, and cancer. The author suggests Enduring Somatic Threat (EST) model of PTSD to determine between the two types of PTSD: 1) PTSD due to past or discrete/external events (such as combat) 2) PTSD that is enduring/internal and related to chronic disease. The EST model suggests that both types of PTSD have a basis in fear or mortality. Author suggests a research agenda to test the ETS model and the end of the review.	N/A
Ernst, M., Johnson, M. C., & Stark, L. J.	2010	Developmental and Psychosocial Issues in Cystic Fibrosis	Empirical	Cystic fibrosis, Coping, Chronic Illness	Quantitative and Descriptive	N/A	N/A	N/A	N/A	This article analyzes multiple different life-ages of children with CF in relation to their parents mental health and clinical implications. The stages analyzed are: perinatal, early childhood: preschool, school age, adolescence. Positive psychology may be beneficial in understanding how children with CF still report high quality of life regardless of treatment burden	Authors note that more research needs to be done clarifying the interface between developmental processes, psychosocial variables, and health for the child with CF. Future research should also analyze if children with CF undergo posttraumatic growth.

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Forgey, M., & Bursch, B.	2013	Assessment and Management of Pediatric Iatrogenic Medical Trauma	Review Article	Assessment, Management, PTSD, Children	Literature Search	84 Articles	N/A	N/A	N/A	Approximately 25-30% of medically ill children develop PTSD and 10-20% meet criteria for PTSD. Trauma-focused cognitive-behavioral strategies are effective for traumatized children and their families, and should be considered as first treatment.	N/A
Franch-Ray, C., Bright, M. A., Anderson, V., Northam, E., Cochrane, A., Menahem, S., & Jordan, B.	2013	Trauma Reactions in Mothers and Fathers After Their Infant's Cardiac Surgery	Empirical	PTS, Cardiology, Children	Quantitative	77 mothers (average age= 32.9) and 55 fathers (average age=35.5)	58.3% female; 41.6% male	Mean of mothers: 63 Australian, 9 Other, 5 Missing; Mean of Fathers: 43 Australian, 11 Other, 1 Missing	The Acute Stress Disorder Scale (ASDS);	33.8% of mothers and 18.2% of fathers met requirements for acute stress disorder. Mothers had higher symptoms in all clusters except dissociation. Dissociation was most common among both parents, at least 26% among all parents. Results show the importance of clinical support for parents	N/A
Garbacz, L., Brown, D. M., Spee, G. A., Polo, A. J., & Budd, K. S.	2014	Establishing Treatment Fidelity in Evidence-Based Parent Training Programs for Externalizing Disorders in Children and Adolescents	Review Article	Child, Treatment Fidelity	Searches of PsycInfo and Web of Science databases, which includes the Social Sciences Citation Index, for articles reporting on outcome studies with a parent training component.	65 articles	N/A	N/A	Literature review articles reporting on outcome studies with a parent training component	This article analyzes treatment fidelity in outcome studies of evidence-based parent training interventions for children with behavioral problems. The overall use of treatment fidelity strategies in the evidence based literature had a 75% mean across the studies reviewed. However, only 8% of the sample had fidelity strategies at 80% or higher in all five categories. The mean adherence to fidelity strategies was .73, strategies related to treatment design had the highest adherence, .83, and the training of providers/enactment of treatment skills had the lowest, 0.58.	Inclusion criteria may have missed articles/data that should have been included; data included may have been limited by author bias. Future studies are needed to examine the relationship between parent training and the implementation of treatment fidelity.

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Gerson, R., & Rappaport, N.	2013	Traumatic Stress and Posttraumatic Stress Disorder in Youth: Recent Research Findings on Clinical Impact, Assessment, and Treatment	Review Article	TF-CBT, Youth, Assessment, Treatment	Literature search of PubMed and PsycInfo.	N/A	N/A	N/A	N/A	This article aims to provide a framework for adolescent health professionals to assess traumatic stress and provide recommendations for evidence based treatment. Clinicians should establish safety, educate child/caregivers about treatment options, acknowledge limits of psychopharmacology for PTSD, and recommend trauma focused psychotherapy when possible. Clinicians should also try to identify and promote resilient factors such as family support in traumatized children/adolescents	Future research should focus on modifiable resilience factors such as family and social support, attachment, coping and self-regulation skills, and self-efficacy, that can improve outcome. Future research is also needed to clarify which treatment method is most effective
Gerteis, J., Izrael, D., Deitz, D., LeRoy, L., Ricciardi, R., Miller, T., & Basu, J.	2010	Multiple Chronic Conditions Chartbook	Report	Chronic Condition,	Database Search	N/A	N/A	N/A	N/A	This report analyzed data from the Household Component of the 2010 and 2006 Medical Expenditure Panel Survey (MEPS) to provide policy makes and researchers with current nationally representative information about individuals with multiple chronic conditions. The charts analyze the most common chronic conditions in adults and children, healthcare utilization/costs, the impact on families/patients, and comparisons of 2006:2010 data	N/A

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Gillies, D., Taylor, F., Gray, C., O'Brien, L., & D'Abrew, N.	2012	Psychological therapies for the treatment of PTSD in children and adolescents (Review)	Review Article	PTSD, Children, Trauma	Search of the Cochrane Depression, Anxiety and Neurosis Review Group's Specialised Register (CCDANCTR) to December 2011	14 studies 758 participants	N/A	N/A	Two members of the review group independently extracted data; the odds ratio (OR) for binary outcomes, the standardised mean difference (SMD) for continuous outcomes, and 95% confidence intervals (CI) for both, using a fixed-effect model. If heterogeneity was found we used a random-effects model.	Therapies used in the study were CBT, exposure-based, psychodynamic, narrative, supportive counselling, and eye movement desensitisation and reprocessing (EMDR). Across all therapies, there were significant improvements and lower rates of depression and anxiety compared to the control groups. CBT was found to be most effective; PTSD was found to significantly improve in follow-ups of those who received CBT treatment. There is not enough evidence to conclude that specific types of trauma influence response rate among the children in therapy programs.	Limitations include the small sample size and number of articles included in study. More evidence is required to examine the effectiveness of treatment post one month.
Goodman, R. A., Posner, S. F., Huang, E. S., Parekh, A. K., & Koh, H. K.	2013	Defining and Measuring Chronic Conditions: Imperatives for Research, Policy, Program, and Practice	Empirical	Chronic Condition, Chronic Disease, Policy	Quantitative	N/A	N/A	N/A	5 national databases were selected to study chronic conditions; National Health Interview Survey (NHIS); National Ambulatory Medical Care Survey (NAMCS); Medical Expenditure Panel Survey; Nationwide Inpatient Sample of the Healthcare Cost and Utilization Project; and Medicare beneficiary enrollment and claims administrative data from CMS	This article outlines a model for defining, identifying, and utilizing information about chronic conditions in the U.S. The model has two classification schemes: 1) identifying/specifying conditions of interest 2) understanding the structure of the data system of interest. The criteria for "chronicity" used the definition of "chronic condition" used in the HHS strategic framework on MCC. The model provides a framework for applying list of selected conditions to multiple database systems	N/A

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Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Graf, A., Bergstrass, E., & Landolt, M. A.	2012	PTS in infants and preschoolers with cancer	Empirical	PTSD, Cancer, Children	Quantitative	48 patients, age 8-48 months	N/A	N/A	Posttraumatic Stress Disorder Semi-Structured Interview and Observational Record for Infants and Young Children; Posttraumatic Diagnostic Scale (PDS)	This is the first study to validate PTSD in infants and preschoolers whom have cancer. 9 children met full PTSD criteria, and 20 met partial PTSD criteria. indicate that a higher child age and maternal PTSD symptoms increased the potential risk of PTSD in the child.	The sample size was small and heterogeneous. Maternal distress could have influenced children's symptoms as rated by the mothers. Participants from lower SES were underrepresented
Hernandez-Reif, M., Field, T., Krasnegor, J., Martinez, E., Shwartzman, M., & Mavunda, K.	1999	Children With Cystic Fibrosis Benefit From Massage Therapy	Empirical	Cystic Fibrosis, Massage Therapy, Children	Quantitative and Qualitative	Twenty children (5-12 years old) and their parents	N/A	35% Caucasian, 30% African American, 35% Hispanic	The National Institutes of Health (NIH) clinical scoring for cystic fibrosis (revised) (Sackrider, Swank, Seilheimer & Schildow, 1994); Massage Therapy; State Anxiety Inventory (STAD); State Anxiety Inventory for Children (STAIC; Spielberger, 1973); Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971).	The aim of this study was to measure the effects of massage therapy on children with CF, to reduce anxiety related to CF in the child and their parents, and to improve both the child's mood, and peak air flow reading. The children were split into two groups: a massage therapy group and a control group whom was read to in place of the massage. Results indicated there were reduced levels of anxiety among the massage group than found in the control group. Authors suggest that parent's treating their child with massaging can benefit their anxiety and breathing airways.	N/A

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Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Hildenbrand, A. K., Clawson, K. J., Alderfer, M. A., & Marsac, M. L.	2011	Coping With Pediatric Cancer: Strategies Employed by Children and Their Parents to Manage Cancer-Related Stressors During Treatment	Empirical	Cancer, Pediatric, Stress, Treatment	Qualitative	15 children, 6 to 12 years of age (mean = 8.8) and their parents	8 males, 7 females	Two thirds (n = 10) were Caucasian, African American (20%; n = 3), American Indian/Alaskan Native (6.7%; n = 1), and Hispanic (6.7%; n = 1)	Semistructured interview (child and parent versions)	This study analyzed common stressors in children with cancer and their parents, and analyzed coping mechanisms during treatment. The children and their parents engaged in semi structured interviews. Four main themes came from the results: 1) cancer treatment and side effects 2) distressing emotional reactions 3) disruption in daily routines and activities 4) and social/peer group challenges. Many of the children noted stressors such as pain, hair loss, needle sticks/port access/spinal taps, medicines, and hospitals. Many of the children used approach coping strategies (only 1 avoidance approach reported). Parents used approach coping strategies such as cognitive restructuring, promoting social support, relaxation, among many others. These results indicate the benefits of approach-oriented coping and coping assistance strategies.	Future studies should include a wider range of cancer diagnosis among children. Future research should clarify the types of strategies that may promote positive psychosocial outcomes for specific stressors during and after treatment. This study did not assess change in the duration of treatment, in which future research could also benefit from.
Huff, M. B., McClanahan, K. K., & Omar, H. A.	2010	Mental Health and Chronic Disease	Review Article	Child, Chronic Illness, Mental health	Literature Search	N/A	N/A	N/A	N/A	Authors use a biopsychosocial perspective to examine the relationship between chronic illness and mental health. Authors examine mental health areas such as body image, the development of Independence, relationships with peers, positive mental health, and coping skills	There are some inconsistencies in the data reviewed, limiting results and connections between mental health and chronic illnesses

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Hunsley, J., & Lee, C. M.	2007	Research-Informed Benchmarks for Psychological Treatments: Efficacy Studies, Effectiveness Studies, and Beyond	Review Article	Psychological treatments, Efficacy	Literature Search	35 studies	N/A	N/A	N/A	The goal of the review was to examine the if the results of effectiveness studies match what is obtained on efficacy studies of the same treatment. A comparison of data from the 35 selected studies, w/ benchmarks from reviews of efficacy trials, found comparable treatment completion rates with what was found in the benchmarks. The results support transporting to clinical settings of treatments with already est. efficacy.	N/A
Jensen, T., K., Holt, T., Ormhaug, S. M., Egeland, K., Egeland, L., Hoas, L. C., Hukkelberg, S. S., Indregard, T., & Stormyren, S. D.	2014	A Randomized Effectiveness Study Comparing Trauma-Focused Cognitive Behavioral Therapy With Usual for Youth	Empirical	Trauma Focused, Cognitive Behavioral Therapy	Quantitative	156 children, 10-18 (average age 15.1)	124 girls, 32 boys	Norwegian (73.7%) Asian 17 (10.9%) One parent Norway (8.3%) Western European countries 2 (1.3%) Eastern European countries 2 (1.3%) African countries 3 (1.9%) South=Ce ntral American countries 2 (1.3%) Nordic countries 1 (0.6%), Other 1 (0.6%)	PTSS; the Clinician-Administered PTSD Scale for Children and Adolescents (CAPS-CA), CPSS; Mood and Feelings Questionnaire (MFO); the Screen for Child Anxiety-Related Disorders (SCARED); the Strengths and Difficulties Questionnaire (SDQ)	Only 122 participated in the post-treatment assessment. Results showed trauma influenced daily functioning less in the TF-CBT group than the TAU group. Depressive symptoms were also less in the TF-CBT group at post-assessment than the TAU group. There was no significant difference in anxiety. Fewer participants in the TF-CBT group met the criteria for PTSD posttreatment.	There were more psychologist with postgraduate training in the TF-CBT group than the TAU group, which could have influenced effectiveness. The TF-CBT also received more help and training. Therapists were not randomized

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Jones, P., Blunda, M., Biegel, G., Carlson, L., E., Biel, M., & Wiener, L.	2013	Can mindfulness-based interventions help adolescents with cancer?	Review Article	Cancer, Adolescents, mindfulness based intervention	Literature Review	N/A	N/A	N/A	N/A	This article reviews mindfulness-based interventions (MBIs) as treatments for adult cancer patients, adolescents with anxiety disorders and chronic pain, and clinically healthy teenagers to determine if MBIs would be a successful treatment for adolescents with cancer as well. The authors explore how anxiety can be helped with MBI treatment by learning to observe physical sensations, thoughts, and emotions. Authors note that research of MBIs should include measures that determine stress, PTSD symptoms, anxiety, depression, sleep, connectedness to others, cognitive functioning/cohesiveness, overall well being, and global functioning.	Further control studies need to be designed to determine the effectiveness of MBIs on teenagers with cancer.
Kalapurakkal, S., Carpino, E. A., Lebel, A., & Simons, L. E.	2014	"Pain Can't Stop Me": Examining Pain Self-Efficacy and Acceptance Processes Among Youth With Chronic Headache	Empirical	Chronic Pain, Headaches	Quantitative	209 youth aged 8-17 years	74% female	(89.7%) White, Hispanic (3.4%), Black (3.0%), Asian (2.4%), and multiracial (1.5%).	Demographic and Pain Diagnosis Information Was Collected From Each Patient Medical Record; The Chronic Pain Acceptance Questionnaire (CPAQ-A); The Pain Self-Efficacy Scale; The Functional Disability Inventory (FDI); school subscale of the Pediatric Quality of Life Inventory (PedsQL); The Children's Depression Inventory (CDI); The Multidimensional Anxiety Scale for Children;	This study aimed at looking at the relationship between self-efficacy, pain acceptance, and functioning in children with chronic headaches. Results showed that self-efficacy and acceptance were related to less disability, higher school functioning, and lower depression symptoms. Overall, results indicate that higher levels of pain self-efficacy and pain acceptance were related to more positive outcomes	Authors note that future longitudinal studies would provide more detailed information on how pain self-efficacy and acceptance impact pain-related functioning in the short and long term.

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Kangas, M., Milross, C., Taylor, A., & Bryant, R. A.	2013	Pilot RCT of Early Intervention for Reducing PTSD, Anxiety, Depressive Symptoms in Head and Neck Cancer Patients	Empirical	Head and neck cancer, PTSD, Quality of Life	Quantitative	Thirty-five HNC patients (mean age = 54.8 years;	80% Males	Primarily Caucasian	Clinician Administered PTSD Scale SCID-DSM-IV Posttraumatic Checklist—Stress-specific version State Trait Anxiety Inventory Beck Depression Inventory—Second Edition State Trait Anxiety Inventory Posttraumatic Cognitions Inventory (PTCI) The Functional Assessment of Cancer Therapy-General Scale The Treatment Credibility Scale (TCS)	Efficacy of an early cognitive-behavioral therapy (CBT) program was compared with a non-directive supportive counseling (SC) intervention in reducing PTSD, anxiety and depressive symptoms, and improving quality of life in newly diagnosed HNC patients going through radiotherapy. Both interventions were found to be effective in reducing PTSD and anxiety in short and long terms. However, 67% of patients in the CBT program no longer met clinical or sub-clinical PTSD symptoms after 12-months, compared to 25% of patients who received SC interventions.	Therapy programs were primarily based around English-speaking HNC patients who were primarily Caucasian. Replication is needed with larger sample sizes
Karagozolu, S., Tekvasar, F., & Yilmaz, F. A.	2012	Effects of music therapy and guided visual imagery on chemotherapy-induced anxiety and nausea-vomiting	Empirical	Visual Therapy, music therapy, anxiety, chemotherapy	Quantitative and Qualitative	40 patients	N/A	N/A	State-Trait Anxiety Inventory (STAI); Personal Information Form; Visual Analogue Scale (VAS); and Individual Nausea and Vomiting Evaluation Form	The goal of this study was to analyze the benefits of music and visual imagery therapy on anxiety caused by chemotherapy and other symptoms such as vomiting. Results indicated that both anxiety and vomiting symptoms were reduced with music and visual therapy. 40% didn't have nausea prior to chemotherapy during the third round of treatment, and 55% of patients did not experience vomiting.	N/A

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Kazak, A.	2001	Comprehensive Care for Children With Cancer and Their Families: A Social Ecological Framework Guiding Research, Practice, and Policy	Review Article and Empirical	Childhood Cancer, Oncology, Comprehensive Care	Quantitative	Families of pediatric oncology patients (n = 107) completed the PAT	N/A	N/A	Clinical and research activities in the Psychosocial Services Program at The Children's Hospital of Philadelphia (CHOP) in the Division of Oncology; Psychosocial Assessment Tool (PAT).	This article shows the importance of attending to the reduction of child and parent distress during treatment; which can be done with interventions to reduce pain or addressing parental anxiety. A study of over 300 children/adolescents, data supported the presence of PTS most in mothers and fathers of survivors; and PTS symptoms could promote the avoidance of medical care in survivors in the future. These findings show the importance in reducing symptoms of PTS in families within the family. A pilot study was conducted using PAT; results found 5-30% of families had responses that indicated high-risk.	Research is needed to promote the development and evaluation of interventions that help reduce distress and enhance the functioning of families of children with cancer
Kazak, A. E., Alderfer, M. A., Streisand, R., Simms, S., Rourke, M. T., Barakat, L. P., & Gallagher, P.	2004	Treatment of Adolescent Survivors of Childhood Cancer and Their Families: A RCT	Empirical	PTSS, Cancer, Childhood	Quantitative	150 families (150 teen survivors [10.80 to 19.28 years], 146 mothers [26.89 to 59.36 years], and 106 fathers [21.34 to 58.41])	51% of children=female	White (85%), with 9% Black, 5% Hispanic, 1% Asian	Impact of Events Scale—Revised (IES-R); Post-Traumatic Stress Disorder Reaction Index (PTSD-RI); State-Trait Anxiety Inventory (STAI); Revised Children's Manifest Anxiety Scale (RCMAS).	The Surviving Cancer Competently Intervention Program (SCCIP) is a 4-session, 1-day manualized intervention to lower PTSS in adolescents who survived childhood cancer and their families using a family group model. Results suggest that cognitive-behavioral and family treatments can significantly reduce symptoms of arousal in adolescent survivors of cancer. Fathers in the intervention group showed improvements in arousal in comparison to the control group; however, the most distressed mothers dropped out of the study preliminarily, affecting the results. The intervention influenced arousal and intrusion rather than avoidance symptomatology.	N/A

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Kazak, A. E., Kassam-Adams, N., Schneider, S., Zelikovsky, N., Alderfer, M A., & Rourke, M.	2006	An Integrative Model of Pediatric Medical Traumatic Stress	Review Article	Pediatric, Stress, Model	Literature Review	N/A	N/A	N/A	N/A	This article reviews current literature surrounding PMTS and suggest a model for assessment and treatment. The model has three phases 1) Peritrauma 2) Early, ongoing, and evolving responses 3) longer-term PMTS.	N/A
Kazak, A. E., Simms, S., Barakat, L., Hobbie, W., Foley, F., Golomb, V., & Best, M.	1999	Surviving Cancer Competently Intervention Program (SCCIP): A Cognitive-Behavioral and Family Therapy Intervention for Adolescent Survivors of Childhood Cancer and Their Families	Empirical	Children, Cancer, CBT	Quantitative and Qualitative	19 families (Survivors of childhood cancer were from 10-17 years old M= 13.3 years) 19 mothers, 13 fathers, 4 siblings	13 males, 6 females	18 families were Caucasian and one was Asian-American.	Questionnaires; one-page evaluation form; Post-Traumatic Stress Disorder Reaction Index; Impact of Event Scale (IES); (STAI); Revised Children's Manifest Anxiety Scale (RCMAS); Family Life Scales (FLS)	Results were significantly positive; symptoms of PTS and anxiety decreased among all of the family members. The study used pre and post treatment questionnaires to determine efficacy. The results indicate that SCCIP can be used as an effective psychotherapy treatment for child/adolescent cancer survivors, although CBT and behavioral approaches are often first-line approaches	Sample is small, not random, and lacks ethnic diversity
Kendall, P. C., & Beidas, R. S.	2007	Smoothing the Trail for Dissemination of Evidence-Based Practices for Youth: Flexibility Within Fidelity	Review Article	Evidence-based, Children	Literature Search	N/A	N/A	N/A	N/A	This article reviews the dissemination of evidence-based practice in children/adolescents. Authors noted mediational analyses, treatment process studies, and the continued creation of flexible treatment manuals as important parts of successful dissemination. Authors suggest flexibility within fidelity to assist with the dissemination of empirically supported treatments from research clinics to service clinics	N/A

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Klein, K. J., & Knight, A. P.	2005	Innovation Implementation Overcoming the Challenge	Empirical	Implementation	Quantitative	N/A	N/A	N/A	N/A	This article reviews innovation implementation in the workplace, research of the implementation process, as well as challenges and successes of implementation. Managers must devote a large amount of time to implementation. 6 Key Factors of Innovation Implementation: 1) the package of implementation policies and practices that an organization establishes 2) the team's or organization's climate for innovation implementation 3) Manager's support in the implementation process 4) the availability of financial resources 5) a learning orientation: a set of interrelated practices and beliefs that support and enable employees and organizational skill/development/learning/growth	N/A
Knafl, K. A., Dearrick, J. A., Knafl, G. J., Gallo, A. M., Grey, M., & Dixon, J.	2013	Patterns of Family Management of Childhood Chronic Conditions and Their Relationship to Child and Family Functioning	Empirical	Childhood Chronic Condition, Family Management	Quantitative	414 families, 575 parents; child age between 2-18 years (average=11.2 years)	N/A	87% Caucasian	Family Management Measure (FaMM); The General Functioning Scale of the Family Assessment Device (FAD); the Eyberg Child Behavior Inventory (ECBI); the Functional Status Measure II (FSM-II)	The analysis generated six family management clusters based on the mothers'/father's mean scores on each FaMM scale, compared to mean scores of other families. A 6 rank indicated the most positive perception, while 1 was the lowest. The 6 clusters reflect 4 patterns of response: Family Focused, Somewhat Family Focused, Somewhat Condition Focused, Condition Focused. 57% of families were in the Family Focused or Somewhat Family Focused pattern; these families demonstrated better family/child functioning than those in the other two patterns.	N/A

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Knecht, C., Hellmers, C., & Jun, S. B.	2014	The Perspective of Siblings of Children With Chronic Illness	Review Article	Children, Chronic Illness, Sibling	Literature Search	275 articles	N/A	N/A	N/A	Overview of existing research on sibling's perspective in a family with a child whom has a chronic illness. The author's identified specific themes in the literature reviewed: emotional experiences, somatic complaints as bodily experiences, developmental experiences, family life experiences, and everyday life experiences and experiences in the context of siblings' illness.	The author's note the need for studies specifically from the sibling's perspective.
Kowalik, J., Weller, J., Venter, J., & Drachman, D.	2011	CBT for the treatment of PTSD: a review and meta-analysis	Review	PTSD, CBT, Pediatric	Search of Ovid MEDLINE and PsycINFO databases between 1966 and 2010.	21 studies (pediatric population 0-18 years old)	N/A	N/A	Outcome data from the Child Behavior Checklist (CBCL)	The efficacy of CBT in the treatment of in children with PTSD was supported by the annotated bibliography and the meta-analysis. CBT addressed internalized symptoms more than externalized symptoms	There were methodologica inconsistencies across studies as well as a lack of a randomized control group design
Landolt, M.A., Vollrath, M., Ribi, L., Gnehm, H. E., & Semhauser, F. H.	2003	Incidence and associations of parental and child PTS symptoms in pediatric patients	Empirical	PTSD, child stress, chronic illness, trauma	Quantitative and Qualitative	209 children, 180 mothers, 175 fathers	N/A	N/A	Child PTSD Reaction Index (RI); Posttraumatic Diagnostic Scale (PDS)	Children reported mild PTSS; whereas parents reported higher levels and met PTSD requirements (17% of fathers and 23.9% of mothers). Children reported higher levels of stress associated with accident-related injuries; whereas parents reported it with diagnosis of illness in their child. PTSS scores of the mother/father were related, however child PTSS scores were not related to parents PTSS scores. Fathers, mothers, and children should be assessed separately.	N/A

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Landolt, M. A., Ystrom, E., Sennhauser, F. H., Gnehm, H. E., & Vollrath, M. E.	2012	The mutual prospective influence of child and parental PTSD in pediatric patients	Empirical	PTSD, trauma, Children	Quantitative	287 children (aged 6.5-16 years); mothers (n = 239) and fathers (n = 221)	N/A	N/A	Child PTSD Reaction Index (RI); German version of the Post-traumatic Diagnostic Scale (PDS); PTSD according to DSM-IV and a PTSS severity score.	Moderate to severe PTSS in children was 4.3%-16.5% at 5-6 weeks; 1.6%-17.4% at 1 year. At both points, children with diabetes had lowest rates and those with injuries had highest. Parents had moderate to severe rates of PTSS across all times and diagnostic groups. At 1 year parents in the cancer group still had considerable rates of PTSS (mothers 25.4%; fathers 18.4%). PTSS levels were correlated between parents (mothers and fathers), but not between parent and child. Higher levels of PTSS in parents related to poorer longitudinal recovery of PTSS in the child. Early interventions and family approaches are necessary for the treatment of pediatric patients whom have been traumatized.	Generalization of results to other traumas are unclear. It is also unclear if parents completed their questionnaires separately. Parental PTSD was not assessed by clinical interviews, limiting their interpretation
Laughlin, L.	2014	A Child's Day: Living Arrangements, Nativity, and Family Transitions-2011	Empirical	Child, Well-being, Family	Quantitative and Qualitative	N/A	N/A	N/A	Interviews conducted in the fall of 2011 for the 2008 Survey of Income and Program Participation (SIPP).	This report analyzes data surrounding child well-being from gather interview data. Specifically the data analyzes children's living arrangements, nativity, and family and household transitions. Children's living arrangements and family structure were related to various measures for child well-being (e.g., married versus single parents in relation to reading or television time). The impact of family was most related to academic performance and extracurricular activities in the child.	N/A

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Lee, A., & Rempel, G. R.	2011	Parenting children with hypoplastic left heart syndrome: Finding a balance	Empirical	Hypoplastic left heart syndrome, Children, Parenting	Qualitative	16 parents (Mean=35.2 (22-50))	7 males; 9 females	N/A	30 interviews	This study analyzed how normalization affected parents in relation to their child with hypoplastic left heart syndrome. Three themes emerged: normalization, parental perception of child vulnerability, and optimistic appraisal. Normalization was used as a coping mechanism. Authors suggest nurses collaborating with parents to promote child independence and also parent well-being	N/A
Lin, M., Hsieh, Y., Hsu, Y., Fetzer, S., & Hsu, M.	2010	A randomised controlled trial of the effect of music therapy and verbal relaxation on chemotherapy-induced anxiety	Empirical	Music Therapy, Cancer, Anxiety, Verbal relaxation	Quantitative	98 cancer patients (mean age=53)	65 women; 33 men	Taiwanese	Data Acquisition Computer and ADInstrument Program (Power Lab System; AD Instruments Pty Ltd, Bella Vista, NSW, Australia); Resting Behavioral State Scoring System (RBSS); The STAI (C-STAI); The Emotional Visual Analog Scale (EVAS)	This study examined the effects of music therapy and verbal relaxation on patients before and after chemotherapy. The patients in the study were put into three different groups 1) the music therapy group that received one-hour single relaxation group that received 30 minutes of guided relaxation and 3) the control group that continued to receive normal care. Results indicated that music therapy was the best option to relieve anxiety during chemotherapy and significantly benefited the patient over verbal relaxation. However, both are effective at relieving anxiety symptoms. Authors suggest incorporating music therapy into clinical practices with patients whom have high anxiety before or after chemotherapy.	N/A

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Longhi, E., & Pickett, N.	2008	Music and well-being in long-term hospitalized children	Empirical	Music, Well-Being, Long-term Hospitalization	Quantitative and Qualitative	21 paediatric long term patients (mean age=12.5)	14 boys and 7 girls	N/A	30/min music therapy sessions	The study analyzed the effects of music therapy on long-term hospitalized children. The children listened to a musician play guitar for approximately 30 minutes as treatment, and their heart rates, oxygen levels, and pulse were measured before and after treatment. Results indicated that the music therapy significantly increased the child's oxygen saturation levels. Results suggest that music therapy can improve physiological and psychological well-being in children who are hospitalized long-term.	N/A
Mariotto, A. B., Yabroff, K. R., Yabroff, Y., Feuer, E. J., & Brown, M. L.	2011	Projections of the Cost of Cancer Care in the United States: 2010–2020	Review Article	Healthcare cost, Cancer, Economic Projection	Meta-Analysis	29 cancer survivors	13 men 16 women	N/A	N/A	This article estimates cancer costs in 29 individuals in the US from 2010-2020. Current data at the time the article was published was from 2003 and previously. Results projected 13.8 and 18.1 million cancer survivors in 2010 and 2020, with costs of cancer care of 124.57 and 157.77 billion 2010 US dollars. (27% increase). The largest increases were projected to be in the care of prostate cancer in men and breast cancer in women. If cost increase annually by 2%, the projected cost of cancer care by 2020 is \$173 billion (39% increase from 2010). Population changes will continue to increase costs	N/A

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McCormick King, M. L., Mee, L. L., Gutierrez-Colina, A. M., Eaton, C. K., Lee, J. L., & Blount, R. L.	2014	Emotional Functioning, Barriers, and Medication Adherence in Pediatric Transplant Recipients	Empirical	Chronic Illness, Anxiety, PTSD, health behavior	Quantitative	72 adolescents aged from 12 to 21 years (M=17.8)	56% male	60% Caucasian, 30% African American, and 10% other races/ethnicities	AMBS; Behavior Assessment System for Children- 2nd Edition Self Report of Personality, Adolescent Version; Anxiety and Depression Subscales; Medication Adherence Measure;	Results showed there are correlations between barriers and internalizing symptoms of depression, anxiety, and posttraumatic stress within the participants. In the BASC Anxiety and Depression subscale, girls scored significantly higher than boys; gender was used as a covariate in medical analyses using Anxiety and Depression subscales. R/A/C barriers were more associated with missing medication than other barriers. Results could help guide clinical assessment/focus of future interventions.	The authors call for a replication of the study within a longitudinal context, should include additional measures and forms of data
McRea, K. T., Guthrie, D., & Bulanda, J. J.	2016	When Traumatic Stressors are Not Past, But Now: Psychosocial Treatment to Develop Resilience with Children and Youth Enduring Concurrent, Complex Trauma	Review Article	Stressors, Trauma, Children, Resilience, Psychosocial treatment	Literature Review	N/A	N/A	N/A	N/A	This article reviews resilience-focused treatment model for patients that have complex traumas. In the model they focus on elements such as triggers, re-enactment, avoidance, dissociation and silencing. The included guidelines for treatment including things such as utilizing safe zones, entering client's worlds, frame flexibility, pleasure play, among others.	N/A

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Mullins, L. L., Molzon, E. S., Suorsa, K. I., Tackett, A. P., Pai, A. L. H., & Chaney, J. M.	2015	Models of Resilience: Developing Psychosocial Interventions for Parents of Children with Chronic Health Conditions	Review Article	Child, Chronic Illness, Coping	Literature Search	N/A	N/A	N/A	N/A	3 resilience models (Wallander and Varni's Disability-Stress-Coping Model, Thompson and Gustafson's Transactional Stress and Coping Model, Kazak et al.'s Social Ecological Model) within pediatric psychology are examined. By framing uncertainty as a stressor that the family must cope with, and by providing tools from the models, the families were able to reorganize their stress. Resilience models can be meaningful and efficacious interventions. Results suggest that interventions targeting parents, cognitive appraisal mechanisms previously demonstrated to be strong predictors of adjustment outcomes, and that provide an interdisciplinary team to maximize negotiation of a complex medical system and treatment regimens can reduce stress and maximize resilience. Results also suggest interventions would be best delivered in a medical context.	N/A
Murray, L. K., Cohen, J. A., & Mammarno, A. P.	2013	Trauma-Focused Cognitive Behavioral Therapy for Youth Who Experience Continuous Traumatic Exposure	Review Article	TF-CBT, Children, Trauma	Literature Search	N/A	N/A	N/A	Case studies	This article presents four strategies for implementing TF-CBT with children/families whom have experiencing continuous trauma. 4 strategies: 1) Prioritize Safety 2) Enhancing Engagement 3) Real Danger Versus Trauma Reminder 4) Providing Advocacy. These strategies were able to successfully help improve the mental health in children and families whom have been affected by trauma.	N/A

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Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Murray, L. K., Dorsey, S., Skavenski, S., Kasoma, M., Imasiku, M., Bolton, P., Bolton, J., & Cohen, J. A.	2013	Identification, modification, and implementation of an evidence-based psychotherapy for children in a low-income country: the use of TF-CBT in Zambia	Empirical and Review	Evidence Based Treatment, Child, Trauma	Qualitative, Literature Search	Twenty-two Zambian lay counselors	13 females; 9 males	Zambian	Interviews with local stakeholders,	The goal of this study was to balance flexibility in EBT delivery with fidelity to TF-CBT. Results indicate that the core components of TF-CBT were retained in Zambia, and counselors reported they did not feel anything was inappropriate to the local context, although modifications are necessary. Modifications were primarily on implementation techniques. Cultural modifications were made including the inclusion of religion.	N/A
Nabors, L., Bartz, J., Kichler, J., Sievers, R., Elkins, R., & Pangallo, J.	2013	Play as a Mechanism of Working Through Medical Trauma For Children with Medical illness and their siblings	Empirical	Children, Medical Play, Trauma	Qualitative	~Children with medical illnesses (CMI): 15 children (2-10 yrs old); ~Siblings of Children with Medical Illnesses (SCMI): 14 siblings (3-10 yrs old) ~Children with "Healthy" Family Members (CHFM): 6 children (3-8 yrs old)	CMI: 8 boys, 7 girls; SCMI: 7 boys, 7 girls CHFM: 3 boys, 3 girls	N/A	Non-directive interviews; play groups	The children participated in medical play groups to analyze coping mechanisms and working through stress related to medical experiences. Findings suggest children and their siblings benefit from the medical play to deal with their stress and feelings; they often "replayed" their medical experiences as a coping mechanism. Their play did suggest anger towards doctors, which show that nurses could play a crucial role in helping children cope and employ interventions.	Future studies could have more structured interviews and direct questions. Coders could have had pre-existing opinions, resulting in biased themes in the data

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Nabors, L. A., Kichler, J. C., Brassell, A., Thakkar, S., Bartz, J., Pangallo, J., Van Wassenhove, B., & Lundy, H.	2013	Factors Related to Caregiver State Anxiety and Coping With a Child's Chronic Illness	Empirical	Caregivers, pediatric illnesses	Qualitative and Quantitative	95 primary caregivers and guardians. Caregivers ranged in age: under 20 (n=5), 21-30 (n=31), 31-40 (n=33), and 41-50 (n=17) years. Nine = NA. Mean age of the children was 5.13 years (SD =5.99 years; range less than 1 year to 24 years)	Caregivers: 63=female; 20=male and 12=NA. 4 male and 51 female children	80 caregivers self-identified as being Caucasian, 7 Hispanic, 2 Asian, 3 biracial, and 3=NA; 76 children were Caucasian, 6 were Hispanic, 3 were Asian, 1 was African American, 7 were biracial, and 2 children were in the "other" category	The Family Hardiness Index (FHI); The McMaster Family Assessment Device (FAD); General Functioning Subscale (GFS); The State-Trait Anxiety Inventory-State Anxiety Form (STAI-S; semistructured interviews	The number of positive coping strategies and number of negative coping strategies were not related to caregiver state anxiety or family functioning. Consultation with the medical staff served as another source for comfort, support, and information (e.g., understanding the nature of their child's illness) for caregivers, especially when the relationships' with providers were perceived as being positive. Five factors that negatively affected coping were discovered. Contrary to our expectations, the number of illnesses was not related to family hardness. Several factors were deleterious in terms of caregiver coping. Results supported the link between family resilience and caregiver adjustment, but they did not support a link between number of child illnesses and family.	Future research should focus on developing, implementing, and measuring the effectiveness of interventions to improve caregiver support, such as by holding caregiver support groups at local RMHs, especially during a child's hospitalization
Oliver, K. N., Free, M. L., Bok, C., McCoy, K. S., Lemaneck, K. L., & Emery, C. F.	2014	Stigma and optimism in adolescents and young adults with cystic fibrosis	Empirical	Cystic Fibrosis, Adolescents, stigma, optimism	Quantitative and Qualitative	Seventy-two patients with CF (ages 14 to 25)	N/A	N/A	Medical/health data; Self-report questionnaires assessing stigma, distress, CF-specific quality of life (QoL), and optimism.	The aim of this study was to examine stigma and optimism in patients with CF. Results indicated that greater stigmas were related to lower pulmonary function, QoL, and optimism. Stigma was also positively related to distress. Stigma is correlated to worse lung functioning/psychological health, and higher levels of optimism among the patient can be beneficial.	N/A

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O'Callaghan, P., McMullen, J., Shannon, C., Rafferty, H., & Black, A.	2013	A Randomized Controlled Trial of Trauma-Focused Cognitive Behavioral Therapy for Sexually Exploited, War-Affected Congolese Girls	Empirical	CBT, trauma-focused, sexual abuse	Quantitative	Fifty-two 12- to 17-year-olds	Female	Congolese	A single-center, equal-randomization, single-blind (outcome assessors), parallel-group (active and wait-list control) study	The TF-CBT group showed improvements in trauma symptoms, depression, anxiety, conduct problems, and prosocial behavior compared to the control group. Results suggest a group-based/culturally modified TF-CBT program can significantly reduce trauma symptoms in war-affected and/or sexually abused girls.	More studies needed to compare group interventions. Future studies/interventions should take into account other types of distress in war-affected areas, such as parent loss
Pao, M., & Bosk, A.	2011	Anxiety in Medically Ill Children/Adolescents	Review Article	Chronic Illness, PTSD, Cognitive Behavioral Therapy, Anxiety	Literature Search	N/A	N/A	N/A	N/A	This article reviews anxiety in children specifically with epilepsy, burns, or pain as examples. Epilepsy shows how medical illnesses may cause or worsen anxiety; burns are able to show the relationship between a medical condition and anxiety; and pain shows how repeated exposure to medical procedures can lead to anxiety. Authors examine CBT in relation to anxiety and PTSD, providing examples of previous studies, as well as possible treatments and medications	Future research is necessary to examine the relationship of neurobiology and the development of anxiety/PTSD in children and adolescents
Parsonage, M., & Fossey, M.	2011	Economic evaluation of a liaison psychiatry service	Report	Mental health, discharge, psychiatric services	Data Analysis	N/A	N/A	N/A	N/A	This is an economic report of the Rapid Assessment Interface and Discharge (RAID) psychiatric liaison service in City Hospital, Birmingham. The analysis looked at RAID's ability to promote quicker discharge; thus reducing the days spent in hospital and expenses used. The analysis showed significant cost savings using the program (in the range of £3.4 - £9.5 million a year), compared to the cost of the program (around £0.8 million a year).	Future research with a longer time period would be beneficial. The authors note the distribution of benefits, post-discharge pathways, service design for elderly people, training, and impact in A&E as possible points for further research.

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Picoraro, J. A., Womer, J. W., Kazak, A. E., & Feudtner, C.	2013	Posttraumatic Growth in Parents and Pediatric Patients	Review Article	Posttraumatic growth (PTG), Parents, medical trauma	Literature Search	55 Articles	N/A	N/A	N/A	Parents/children may be able to experience PTG with a combination of cognitive and affective processing of their experience. While the components of remain SPL-PTG, it may include a greater appreciation for life, improvements within their interpersonal relationships, greater personal strength, the ability to recognize improvements in one's life course, spiritual/religious growth, and gaining a more positive body image. SPL-PTG remains understudied, and needs a clearer domains and measuring instruments. A traumatic event is life-threatening or causes a sense of helplessness, or an individual who cares deeply for the victim; the subjective recalling of the event is more important than the objective nature of the event.	The major limitation is the relative dearth of published work on responses to medical trauma among children and their caregivers.
Popp, J., Robinson, J., Britner, P., & Blank, T.	2014	Parent Adaptation and Family Functioning in Relation to Narratives of Children With Chronic Illness	Empirical	Chronic Illness, family, functioning	Qualitative and Quantitative	109 caregivers; Mean age=40; 66 children (37 with diabetes, 29 with asthma; Child mean age was 6.8 years	66 female, 43males	White (76%), Hispanic (11%), Black (7%), and biracial (6%),	Demographic measure; The Reaction to Diagnosis Interview (RDI); The Brief Symptom Inventory (BSI); The Family Environment Scale (FES). Children completed eight stories; six were drawn from the MacArthur Story Stem Battery (MSSSB) (Bretherton & Oppenheim, 2003), one from Shamir et al. (2001), and one created for this study	Forty-one percent of parents were unresolved about their child's diagnosis, regardless of time since diagnosis. Unresolved parents reported lower family functioning, and children in these families had more family conflict themes.	Reliance on parental report of psychological adjustment and family environment. Resolution of the child's diagnosis was assessed only for the primary caregiver. Limited sample size, with participants completing data at one time point

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Powers, S.	1999	Empirically Supported Treatments in Pediatric Psychology: Procedure-Related Pain	Review Article	Children, CBT, Treatments	Literature review using The Chambless criteria	13 treatment outcome studies	N/A	N/A	N/A	This study provides an overview of the Chambless criteria to determine if interventions for procedure-related pain in children and adolescents can be "well established, probably efficacious, or promising." 13 studies are analyzed in detail. Conclusions suggest that CBT is a "well-established treatment" for children/adolescents, as presented in the 13 case examples	N/A
Price, J. P., Kassam-Adams, N., Alderfer, M. A., Christoffersen, J., & Kazak, A. E.	2016	Systematic Review: A Reevaluation and Update of the Integrative Model of Pediatric Medical Traumatic Stress	Review Article	Traumatic stress, Pediatrics, Integrative Model	Literature Review	N/A	N/A	N/A	N/A	The goal of this review article is to update the Integrative Model of Pediatric Medical Traumatic Stress. Results support and expand on the existing model's five assumptions, and includes recommendations for a sixth (PMTS Affects Health Outcomes).	N/A
Quittner, A. L., Goldbeck, L., Abbot, J., Duff, A., Lambrecht, P., Solé, A., Tibosch, M. M., Brucefors, A. B., Yüksel, H., Caustini, P., Blackwell, L., & Barker, D.	2014	Prevalence of depression and anxiety in patients with cystic fibrosis and parent caregivers: results of The International Depression Epidemiological Study across nine countries	Empirical	Depression, Anxiety, Cystic Fibrosis	Quantitative	1286 adolescents (mean age=14.84 years, SD=1.69) and 4739 adults (mean age=28.87 years, SD=9.5)	Adolescents: 53% female, 47% male Adults: 48% female, 52% male	N/A	Hospital Anxiety and Depression Scale; Center for Epidemiologic Studies-Depression scale	This study analyzed depression and anxiety symptoms among patients with cystic fibrosis across nine countries. 6088 patients and 4102 parents indicated have psychological symptoms (depression symptoms were found in 10% of adolescents, 19% of adults, 37% of mothers and 31% of fathers; anxiety symptoms were found in 22% of adolescents, 32% of adults, 48% of mothers and 36% of fathers). Patient age and parent respondent generated the most differences in results. Authors recommend annual screening of patients and parents for psychological symptoms	Results may not be representative of a large international population. Authors note the study was limited because of the cross-sectional design. Future longitudinal studies are needed.

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Rachamim, L., Mirochnik, I., Helpman, L., Nacasch, N., & Yadin, E.	2015	Prolonged Exposure Therapy for Toddlers With Traumas Following Medical Procedures	Review Article	Trauma, Toddler, Exposure Therapy	Literature Review	N/A	N/A	N/A	N/A	This article reviews four cases of PE therapy adapted for toddlers/parents, whom experienced posttraumatic stress symptoms following an invasive medical procedure. Adaptation in the treatment for toddlers included: psychoeducation about trauma, recounting scenes from the traumatic events, and in-vivo exposures to associated feared stimuli and triggers. Cases showed support for PE; in all cases stress symptoms went down following treatment.	Limitations include the small number of cases, parents were assessed clinically but no self-report was collected, and both assessment and treatment in each case were done by the same clinical team, which is a confounding factor. Future research should focus on examining the treatment efficacy of this adaptation with a larger sample under a more stringent experimental design.
Ramirez, L. Y., Huestis, S. E., Yap, T. Y., Zyzanski, S., Drotar, D., & Kodish, E.	2009	Potential Chemotherapy Side Effects: What Do Oncologists Tell Parents?	Empirical	Chemotherapy, physician-parent communication	Quantitative and Qualitative	140 parents of children diagnosed with acute leukemia.	(61% were female	56% of parents were Caucasian and the remaining were ethnic minorities	Informed consent conferences (ICCs); Hollingshead, 5-point index of social position (ISP);	The aim of this study was to examine acute side effects and late effects after the diagnosis of leukemia. Results indicated that there were significantly more acute side effects mentioned rather than late effects (3,173 acute side effects and 242 late effects). Results indicated that the duration of the ICC effected the side effects	N/A
Rapp, R., Dadds, D., Walkup, J. T., & Rynn, M.	2013	Treatment of pediatric anxiety disorders	Review Article	Anxiety, Pediatric	Literature Review	N/A	N/A	N/A	N/A	This article reviews current literature and data on treatments for various anxiety disorders. CBT and psychopharmacological treatments are specifically reviewed as forms of treatment.	Need for future research and studies of other research methods for children whom do not respond to first-line treatments.

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Rodriguez, E. M., Dunn, M. J., Zuckerman, T., Vannatta, K., Gerhardt, C., & Compas, B.	2012	Cancer-Related Sources of Stress for Children With Cancer and Their Parents	Empirical	Cancer and Oncology, Stress, Children	Quantitative	Children (n =106; 10-17 years; on average 10.6 years old) Mothers (n =191; on average 37.9 years old) Fathers (n =95)	191 women, 95 men	56.5% (n=108) male, 86% (n=164) White/Caucasian, 9% (n=17) Black/African-American, 5% (n=9) Hispanic/Latino, 1% (n=2) Asian-American, and 4% (n=7) Other.	Parent provided Demographic and Medical Data. Participants completed the stressor items from the Responses to Stress Questionnaire-Pediatric Cancer Version (parent and child self-reports). Perceived Stress Scale (PSS; Cohen & Williamson, 1988). Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997)	Parent reports were both positively correlated but mothers reported higher levels of stressors than fathers. Child/parent reports of children's stressors were positively correlated but parents rated physical effects as more stressful, but the children rated role-functioning stressors as more stressful. Parents'/children's reports of stressors were positively associated with general perceived stress and PTS symptoms.	Only children aged 10 and up could participate; data cannot be generalized to younger children. Overall sample size could be extended to include group differences related to diagnostic status (e.g., first diagnosis vs. relapse) and diagnosis type (e.g., leukemia vs. brain tumor). Limited racial and ethnic diversity in sample. Future studies would benefit from measuring children's/parents' stressors at multiple time points.
Rowe, C., Rieger, H., Henderson, C., Gantner, A., Mos, K., Nielsen, P., & Phan, O.	2012	Implementation fidelity of Multidimensional Family Therapy in an international trial	Empirical	Family therapy, Drug abuse, Adolescents	Quantitative and Qualitative	450 participants (13-18 years old; average =16.3)	86% male, 14% female	61% Native western European	Multidimensional Family Therapy Intervention Inventory (MIIT); Observational ratings by objective, nonparticipant raters of 16 core MDFT interventions using a seven-point Likert-type scale ranging from 1 (not at all) to 7; Timeline Follow-Back (TLFB); Adolescent Diagnostic Interview-Light; self-reported frequency of substance use and cannabis dependence diagnosis.	When compared with selected US studies, INCANT therapists compared well. Treatment retention rates of at least 3 months were higher in the INCANT trial than in the three US trials averaged together. Overall treatment dose was achieved in each of the domains and were higher than those in IP. ~There were lower patient dropout rates in the MDFT than those in IP.	N/A

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Salmela, M., Aronen, E. T., & Salantera, S.	2010	The experience of hospital-related fears of 4- to 6-year-old children	Empirical	Children, Hospital, Fear	Qualitative	90, 4-6 year old children	N/A	N/A	Semi-structured, tape-recorded interviews; Colaizzi's Method of Phenomenological Analysis	Hospitalization causes anxiety for young children. Most fears were related to nurses, pain, separation from parents, being left alone, not having information, equipment and instruments used in the hospital setting. There were four main clusters of hospital related fear (clusters: insecurity, injury, helplessness, and rejection). Hospital related fear may be so traumatic it influences the child's well-being. Children may deny or express their fear in a contradicting manner.	N/A
Schoenwald, S. K., Garland, A. F., Chapman, J. E., Frazier, S. L., Sheidow, A. J., & Southam-Gerow, M. A.	2011	Toward the Effective and Efficient Implementation of Fidelity	Review Article	Efficacy, Implementation Fidelity	Literature Search	N/A	N/A	N/A	N/A	3 components of treatment fidelity: therapist adherence, therapist competence, and treatment differentiation. The article reviews analyzes the best way to measure treatment fidelity (fidelity instrument development) including establishing the Purpose of a Fidelity Measurement Instrument, defining treatment fidelity, coding treatment fidelity, and scoring treatment fidelity.	N/A

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Scholten, L., Willems, A. M., Last, B. F., Maurice-Stam, H., van Dijk, E. M., Eversink, E., Zandbelt, N., van der Hoop-Mooij, A., Schuengel, C., & Grootenhuis, M. A.	2013	Efficacy of Psychosocial Group Intervention for Children With Chronic Illness and Their Parents	Empirical	Children, Chronic Illness, CBT	Quantitative	194 children and their parents; 2 groups (8-12/12-18 yrs old)	N/A	N/A	The Child Behavior Checklist (Dutch version); Parent Report Form [PRF] 4-18 years and Youth Self-Report (YSR) 11-18 years; 26-item Questionnaire Op Koers for children; Demographic information and a parent rated illness severity using a proxy measure on the occurrence of the following 13 possible consequences of chronic illness in the past year (0 = no, 1 = yes, scale 0-13): doctor visits, hospitalization, surgery, dietary consequences, visible malformations, use of appliances, diet limitations, exercise, hearing, vision and speech, and course of the disease (0 = improving, 1 = stable, 1 = deteriorating, 1 = unstable) were gathered from parents	Primary outcomes were based on parent and self-reported internalizing and externalizing problems. Secondary outcomes were based on child-disease related coping skills. There was an initial assessment, then 6 month and 12 month follow ups. The therapy intervention had overall positive impacts on parent reported internalizing problems, child-reported externalizing problems, information seeking, social competence, and positive thinking. However, during the intervention period 74% of participants sought alternative care. During the follow up period, 29% in child-intervention, 28% in parent-child intervention, and 18% in wait-list control group sought alternative care as well. Child/Parent-reported internalizing problems decreased linearly over time, as well as child/parent-reported externalizing problems	N/A
Schouten, K. A., de Niet, G. J., Knipscheer, J. W., Kleber, R. J., & Hutschemaekers, G. J. M.	2015	The Effectiveness of Art Therapy in the Treatment of Traumatized Adults: A Systematic Review on Art Therapy and Trauma	Review Article	Art therapy, trauma, Adult-treatment	Literature Review	N/A	N/A	N/A	The aim of this review was to analyze the effectiveness of art therapy in adults who have experienced trauma. 6 studies were included in the analysis. In half of the studies, there were decreases in psychological trauma among the trials; one study reported a decrease in depression. Results indicate the potential benefits of art therapy on patients who have experienced trauma. Future research is necessary.	Limitations include the number of included studies, the number of participants, the heterogeneity of included studies, and their methodological quality.	

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Sigel, B. A., Benton, A. H., Lynch, C. E., & Kramer, T. L.	2013	Characteristics of 17 Statewide Initiatives to Disseminate Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT)	Empirical	Trauma Focused, Cognitive-Behavioral Therapy	Quantitative and Qualitative	19 states that had/currently have statewide projects of TF-CBT; a list of 19 project principal investigators, directors, or managers was generated with contact information	N/A	N/A	A semistructured interview was created based on a review of literature	Of the total 19 states disseminating TF-CBT, 17 investigators/principal participated in structured interviews. 82% (n=14) were Doctoral and 18% (n=3) were Master's level professionals. Dissemination projects were TC model (53% n=9), LC model (42% n=7) or community development model (5% n=1). Important findings for guiding future dissemination efforts: 1) the average number of therapists trained over a period of approx. 3-5 years was approx. 250; future plans for dissemination efforts can expect 200-300 can be targeted 2) Several states were able to spend significantly less than \$500,000 per year	Further studies to examine factors such as systems-wide change are necessary. Further studies to explore differences in sustainability over time between LC and TC models. Larger sample size in future studies would show clearer differences in cost and training
Sigel, B. A., Kramer, T. L., Commers-Burrow, N. A., Church, J. K., Worley, K. B., & Mitrani, N. A.	2013	Statewide dissemination of (TF-CBT)	Review Article	TF-CBT, Trauma, Dissemination	N/A	AR BEST targeted MHPs working at or in collaboration with Arkansas's 13 CACs as well as the network of community mental health centers (CMHCs) that serve the entire state.	N/A	N/A	The Strengths and Difficulties Questionnaire; UCLA PTSD Reaction Index for DSM-IV; pre- and post-test evaluation;	This article reviews a statewide dissemination effort of TF-CBT in Arkansas. In the three year span, 139 MHPs were trained in TF-CBT. 70% of all CACs were contracting/collaborating with MHPs. While large scale dissemination is hard to measure, AR BEST was successful in changing the therapeutic care children whom have experienced trauma receive.	Future efforts should focus on sustaining practices, continuing education, etc.

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Silverman, W. K., Ortiz, C. D., Viswesvaran, C. Burns, B. J., Kolkko, D. J., Putnam, F. W., & Amaya-Jackson, L.	2008	Evidence-Based Psychosocial Treatments for Children and Adolescents Exposed to Traumatic Events	Review Article	Child, Trauma, Evidence Based Treatment	Search of child and adolescent psychosocial treatment literature published between the years 1993 and 2007 using the PsycINFO, Medline, and PLOTS databases.	21 treatment studies	N/A	N/A	Criteria from Nathan and Gorman (2002) along a continuum of methodological rigor ranging from Type 1 to Type 6; Criteria from Chambless et al. (1996), and Chambless and Hollon (1998).	TF-CBT met the "well-established criteria". School-based Group CBT met the "probably efficacious" criteria, and all other treatments met the "possibly efficacious or experimental" criteria. Four outcomes (posttraumatic stress, depressive symptoms, anxiety symptoms, and externalizing behavior problems) were used as measurement, and all showed positive improvements in all treatment programs	Future research would benefit from improving measurement, and conducting follow-up research.
Simon, T. D., Berry, J., Feudtner, C., Stone, B., Sheng, X., Bratton, S. L., Dean, J. M., & Srivastava, R.	2010	Children With Complex Chronic Conditions in Inpatient Hospital Settings in the US	Review Article	Complex Chronic Conditions (CCCs), Children, Pediatric Admissions	A retrospective observational study by using longitudinal panel data from the 1997, 2000, 2003, and 2006 Healthcare Cost and Utilization Project Kids Inpatient Databases (HCUP KID).	Included were children's hospitalizations aged 0-18 during study period	N/A	N/A	Attributes of Medical Complexity: Both proportions and total numbers of pediatric hospital admissions, length of stay (LOS), total charges, technology-assistance procedures, and mortality. Technology-assistance procedures were defined by using ICD-9-CM procedure codes for permanent tracheostomy (43.1), gastrostomy (43.1), and extracranial ventricular shunt (02.3x).	In 1997, 2000, 2003, and 2006, the HCUP KID estimated 6.7, 6.6, 6.7, and 6.9 million discharges for children aged 0-18 years. The most frequent CCC's were cardiovascular (51.5%), congenital (46.9%), neuromuscular (37.1%), respiratory (22.2%), malignancy (15.9%), the remaining were seen in <15% of children with multiple CCC's. The proportion of inpatient pediatric admissions, days, and charges increased from 1997 to 2006 in every CCC except hematology. As number of CCC's for given admissions increased, all makers of use increased as well.	Using administrative data (HCUP KID) limits the study to description and inferences about admissions and not the patients. Fourth, ICD-9-CM codes do not characterize patients' functional limitations, and some children may have diagnoses that are not defined under CCC's

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Slifer, K. J., Tucker, C. L., & Dahlquist, L. M.	2002	Helping Children and Caregivers Cope With Repeated Invasive Procedures: How are We Doing?	Review Article	Coping, Invasive Procedure	Literature Review	N/A	N/A	N/A	N/A	The article reviews recent literature and studies relating to child behavioral distress during invasive procedures and treatment of chronic pediatric disorders. Authors cover many areas in the review, including but not limited to: the impact of using implanted subcutaneous intravenous catheters, the decrease in usage of intravenous cannulation, the effects of topical anesthesia, the need for adjunct and nonpharmacological interventions for pain, and recent studies are also described.	Authors note that future research should explore 1) day-to-day behavioral interventions (2) the development of efficient screening measures to identify children and families who are least likely to cope well with repeated procedures,
Smith, B. A., Georgiopoulou, A. M., & Quittner, A. L.	2016	Maintaining Mental Health and Function for the Long Run in Cystic Fibrosis	Review Article	Cystic fibrosis, mental health	Literature Review	N/A	N/A	N/A	N/A	This review analyzes the importance of incorporating mental health treatments in CF treatment. The article specifically reviews depression and anxiety and its effects on CF. Psychological and psychopharmacologic treatments are reviewed. Authors also highlight prevention efforts of depression and anxiety in individuals with CF (Table 5). Authors recommend annual screening of patients with CF for depression and anxiety	N/A

(continued)



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Stuber, M. L., Shemesh, E., & Saxe, G. N.	2003	Posttraumatic stress responses in children with life-threatening illnesses	Review Article	PTS, children, life threatening	Literature Search	N/A	N/A	N/A	N/A	Results suggest children often experience PTSS in response to life-saving medical procedures. Trauma symptoms are also common in caregivers. Developing prevention and treatment for PTSD in medically ill individuals includes increased morbidity and mortality, psychiatric sequelae, and a decreased quality of life	N/A
Supelana, C., Annunziato, R. A., Kaplan, D., Helcer, J., Stuber, M.L., & Shemesh, E.	2016	PTSD in solid organ transplant recipients: Current understanding and future implications	Review Article	PTSD, Organ Transplant	Literature Review	N/A	N/A	N/A	N/A	This article reviews current publications about PTSD/PTSS in pediatric patients who undergo organ transplants. Authors also review current research studies and results, and give suggestions for future research and care.	N/A
Thompson, R. W., Arnkoff, D. B., & Glass, C. R.	2011	Conceptualizing Mindfulness and Acceptance as Components of Psychological Resilience to Trauma	Review Article	PTSD, Mindfulness, Trauma	Literature Review	N/A	N/A	N/A	N/A	This article analyzes how mindfulness and acceptance based theories of psychopathology are related to the risk of and resilience of PTSD. Results show that mindfulness and acceptance are related to greater psychological adjustment following the traumatic event. However, experiential avoidance, persistent dissociation, and coping strategies that involved emotional disengagement were related to higher PTSD severity. Mindfulness and acceptance-based interventions may work best as treatment in the initial weeks following the traumatic event, because these interventions reinforce present moment contact with trauma related emotions, memories, and psychological reactivity.	Future studies would benefit from diverse populations, and those seeking treatment for PTSD. Future research should also consider type of traumatic event experienced and/or the length of time since the trauma occurred.

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Thompson, M., & Gauantlett-Gilbert, J.	2008	Mindfulness with Children and Adolescents: Effective Clinical Application	Review Article	Children, Mindfulness	Literature Review	N/A	N/A	N/A	N/A	The aim of this article is to stage an overview of how mindfulness can be applied in a clinical setting, particularly with children and adolescents. Authors provide general definitions of adult/non-adult, mindfulness, as well as clinical applications, how to monitor/enhance using mindfulness, as well as differences among types of mindfulness.	N/A
Thygeson, M. V., Hooke, M. C., Clapsaddle, J., Robbins, A., & Moquist, K.	2010	Peaceful Play Yoga: Serenity and Balance for Children With Cancer and Their Parents	Empirical	Anxiety, Children, Cancer, Yoga	Quantitative	11 children aged 6 to 12 years, 5 adolescents aged 13 to 18 years, and 33 parents	N/A	N/A	Spielberger State Anxiety Scale.	The participants completed one yoga session and reported their anxiety scores pre and post yoga with the STA1. Results indicated that the children did not report significant change, however the adolescents and adults reported significant decreases in anxiety post-yoga. Authors note that yoga could be a potential option of therapy	Authors note that larger studies are needed to evaluate the influence of yoga on other distressing symptoms such as fatigue, sleep disturbance, pain, and nausea.
Tremolada, M., Bonichini, S., Aloisio, D., Schiavo, S., Carli, M., & Pillon, M.	2013	PTSS among mothers of children with leukemia undergoing treatment: a longitudinal study	Empirical	Cancer, Family Stress, PTSS	Quantitative	76 mothers (mean age = 37.30) of children receiving treatment for acute lymphoblastic (n = 69) or myeloid (n = 7) leukemia.	Female	Italian	The Childhood Cancer Survivor Study (CCSS); The PTSD symptom checklist; Ladder of life; The Brief Symptom Inventory 18 (BSI-18); The Cognitive Problems Scale; Stressful Life Events score (EFLC).	The first acute phase and first 6 months of therapy are the highest risk periods for psychological health. Results indicated a moderate presence of PTSS among the mothers across time points; however, their Brief Symptom Inventory 18 Global score decreased, and life evaluation scores improved. The study identified cognitive functioning early after the diagnosis as the best intervention method for PTSS. Interventions should have early identification of risk factors like cognitive functioning after diagnosis.	Limits include a low number of participants, and it only being mothers. Future studies should include interviews about family, social and cultural factors.

(continued)

Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
van der Lee, J. H., Mokkink, L. B., Grootenhuis, M. A., Heymans, H. S., & Offringa, M.	2007	Definitions and Measurement of Chronic Health Conditions in Childhood: A systematic Review	Review Article	Chronic Condition, Childhood	Two literature searches were performed in MEDLINE using PubMed (complete database through December 2006) on the topic of definitions of chronic conditions in children, and 1 in Web of Science (1988 through December 2006); Searched references by hand for related articles.	64 articles that stated a conceptual definition and/or operationalization of chronic health conditions in children (aged 0-18 years)	N/A	N/A	Articles that fulfilled the following inclusion criteria were included: (1) the main focus of the article was on children (ie, aged 0-18 years); (2) the definition concerned chronic conditions, excluding articles focusing on specified chronic conditions and on disability; and (3) the aim of the article was either to present a definition or to estimate the prevalence of chronic conditions in children.	The article presents definitions that have been applied to measure childhood chronic conditions from 64 articles. The most common definition in the selected article is "A physical, usually nonfatal condition that has lasted longer than 3 mo in a given year or necessitated a period of continuous hospitalization of more than 1 mo; of sufficient severity to interfere with the child's ordinary activities to some degree". The exclusion of so many articles (7188/7252) shows the difficulty in coming to a specific definition.	N/A
van der Riet, P., Jitsaorn, C., Jumlapeeya, P., Dedkhard, S., & Thursby, P.	2014	Nurses' stories of a 'Fairy Garden' healing haven for sick children	Empirical	Nurse Narrative, Children	Qualitative	8 nurses	N/A	N/A	3 interviews	This article analyzed a recent program development in Thailand called "Fairy Garden" that supports formal and informal activities of sick children. Indicate the program was successful in promoting happiness, relaxation, imagination, and spirituality, among other benefits. 'Fairy Garden' was able to expand the hospital experience to include play and social interaction/educational programs and activities. The program helped support acceptance and adherence to treatment among the children.	This could be applied in other clinical settings and hospitals should consider having natural and activity spaces for children. Authors note that because the stories are told through the nurses and researchers and not the children's, this could be limiting.

(continued)

Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Van Dyke, C., Glenwick, D., Ceccero, J., & Kim, S.	2009	Religious/Spiritual coping and psychological distress	Empirical	Religious/Spiritual coping and psychological distress	Quantitative	76; Ages ranged from 11 to 14, with a mean of 12.20 (SD = 0.92)	Forty-two students (55.3%) were female, and 34 (44.7%) were male	Sixty-four students (84.2%) identified as Hispanic, two (2.6%) as African American, one (1.3%) as White, and one (1.3%) as Asian	Self-report measures (The 14-item Brief RCOPE, The 16-item DSES, The BSI-18, The PANAS-C, The five-item SWLS); parent consent/student assent, incentive (raffle); instruments administered in single session during school	Both positive religious coping and daily spiritual experiences were significantly related to positive affect and life satisfaction, while negative religious coping was significantly related to depression, anxiety, somatization, and negative affect. Ethnic and racial minorities of low socioeconomic status are more likely to utilize religiosity and spirituality during times of stress and to experience greater levels of distress.	N/A
von Baeyer, C. L., & Tupper, S. M.	2010	Procedural Pain Management for Children Receiving Physiotherapy	Review Article	Pain management, Children	Literature Search	N/A	N/A	N/A	N/A	This article reviews the prevention and relief of pain/distress during physiotherapy. It is necessary to improve the identification and management caused by physiotherapy in children, which can lead to future fear and avoidance of medical care. Authors urge physiotherapists to recognize pain and fear in patients. Multiple methods are presented for therapists to utilize (Pre-procedure Preparation, Distraction and Intermissions, Deep Breathing and Guided Imagery, Post-procedure Recovery, Reframing, and Reinforcement, Thermal Agents, Pharmacological and Physical Interventions, Positions of Comfort). Physiotherapists should also create preparation plans and pain management techniques previous to administering the painful procedure.	N/A

(continued)

Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Walker, M. S., Kaimal, G., Koffmana, R., & DeGrabaa, T. J.	2016	Art therapy for PTSD and TBI: A senior active duty military service member's therapeutic journey	Review Article	PTSD, senior, military, art therapy	Literature Search	One individual; 50 yrs old	Male	N/A	Data sourced from documented electronic medical records: 1) the documented clinical information at the Medical Center where the patient was treated (first during an intensive four-week outpatient program and then for follow-ups as needed), 2) the patient's own reflections shared with the therapist, 3) therapist notes, 4) patient narratives, and 5) patient artwork to create a comprehensive picture of the process of change through art therapy.	This case study analyzes the success of art therapy, acupuncture, and other integrative therapies can help active duty military service members. The selected case study was of a man who was an active military service member for 35 years, and suffered from PTSD and mTBI for over seven years prior to seeking treatment. He underwent two years of therapy, which were broken down into three "phases" in the article (1: initial expressions (sessions 1 through 4); 2: delving deeper into traumatic incidents (sessions 5 through 9); 3: managing self-care through connecting the therapies (sessions 10 through 14)). After two years of therapy, the patient reported feeling hopeful for continued recovery and health. This article highlights the importance of non-verbal therapies in patients who have trouble expressing themselves in traditional therapy methods.	Future research needs to examine whether the mechanisms of change that were found in this analysis would apply to other patients as well; There is a need to examine whether military-related PTSD and TBI follow similar patterns concerning symptoms and response to treatment across military ranks and severity of illnesses.
Wampold, B. E., Goodheart, C. D., & Levant, R. F.	2007	Clarification and Elaboration on Evidence-Based Practice in Psychology	Review Article	Evidence-Based, Practice	Literature Review	N/A	N/A	N/A	N/A	This article reviews and defines evidence-based practice in psychology. The article reviews and suggest how evidence should be used to benefit patients and assure the public and health care systems that psychologists are providing evidence-based services	Research of clinically relevant evidence and investigations of how such evidence can be used to best benefit those served by psychological interventions is now needed

(continued)

Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Wetherington, H. R., Hahn, R. A., Fuqua-Whitley, D. S., Sipe, T. A., Crosby, A. E., Johnson, R. L., Liberman, A. M., Moscicki, E., Price, L. N., Tuma, F. K., Kalra, G., & Chattopadhyay, S. K.	2008	The Effectiveness of Interventions to Reduce Psychological Harm from Traumatic Events Among Children and Adolescents	Review Article	Trauma, Effectiveness, Children	Literature Search	N/A	N/A	N/A	N/A	The interventions reviewed were individual cognitive-behavioral therapy, group cognitive behavioral therapy, play therapy, art therapy, psychodynamic therapy, and pharmacologic therapy for symptomatic children and adolescents, and psychological debriefing. Results showed strong evidence for CBT decreasing psychological harm. There was not enough evidence to support the effectiveness of play therapy, art therapy, pharmacologic therapy, psychodynamic therapy, or psychological debriefing. Individual or group CBT is the best intervention if possible. Approx. 3/4 of clinicians have reported not using a treatment that has been reviewed; there is a great need for the dissemination of effective treatment approaches.	N/A
Wicksell, R. K., Olsson, G. L., & Hayes, S. C.	2011	Mediators of change in Acceptance and Commitment Therapy for pediatric chronic pain	Review Article	Chronic Pain, Acceptance and Commitment Therapy (ACT), Children	Literature Review	N/A	N/A	N/A	N/A	This article analyzes Acceptance and Commitment Therapy (ACT) as a way to manage pain and distress (psychological flexibility) in chronically ill children. The authors examined a previous RCT examining the effects of ACT on children with chronic pain. Results indicated that pain impairment beliefs and pain reactivity were the only two variables to effect different aspects of treatment on outcomes at the follow-up. The two variables also independently predicted effects that were indicated at the follow-up.	N/A

(continued)

Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Withers, A. L.	2012	Management Issues for Adolescents with Cystic Fibrosis	Review Article	Cystic Fibrosis, Adolescents, Management	Literature Review	N/A	N/A	N/A	N/A	This article reviews how biological, mental and psychosocial health is affected in adolescents with CF. Specifically the article reviews 11 impacts: puberty, body image, risk-taking behaviors, mental health, independence, nonadherence, reproductive health, transition, lung transplantation, and end of life care. Authors specifically note the need for physicians to assist in all areas of health including mental health, medical problems, reproductive health, and preparing the adolescent for adult life.	N/A
Worchel-Prevatt, F. F., Heffer, R. W., Prevatt, B. C., Miner, J., Young-Saleme, T., Horgan, D., Lopez, M. A., Rae, W. A., & Frankel, L.	1998	A School Reentry Program for Chronically Ill Children	Review Article	Chronic illness, Children, school program	Literature Review	N/A	N/A	N/A	N/A	This article provides an overview of a school program designed to reintegrate children who are chronically ill. The model includes stressors to consider, elements to include in the school program, and outcomes to evaluate. The authors examine previous school reintegration models as well, providing reasoning for their model and its benefits.	N/A
World Health Organization and the Calouste Gulbenkian Foundation	2014	Integrating the response to mental disorders and other chronic diseases in health care systems.	Empirical	Mental health, chronic disease	Quantitative and Descriptive	N/A	N/A	N/A	N/A	This article reviews mental disorders and other chronic diseases and reviews prevention models. The authors highlight three principles for an integrated response to mental health disorders: 1) A genuinely public health approach 2) A systems approach 3) A whole-of government, multisectoral approach.	N/A

(continued)

Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Xu, J. Q., Murphy, S. L., Kochanek, K. D., & Bastian, B. A.	2013	Deaths: Final Data for 2013	Empirical	Death Rates, United States	Quantitative and Descriptive	22 data tables	N/A	N/A	N/A	Detailed tables examining death rates by age, race, sex, and other variables in the US and territories from 1940-2013	N/A
Yasinski, C., Hayes, A. M., Cummings, J. A., McCauley, T., Ready, C. B., Berman, I. S., Webb, C., & Deblinger, E.	2016	In-Session Caregiver Behavior Predicts Symptom Change in Youth Receiving Trauma-Focused Cognitive Behavioral Therapy (TF-CBT)	Empirical	TF-CBT, Youth, Symptom Change	Quantitative and Qualitative	81 youth (7-17 yrs old) and their nonoffending caregivers (N = 71 pairs)	Children : female (69%) male 31%; Parents: 90% female 10% male	Children: (56.3% White, 36.6% Black, 4.2% Hispanic/Latino, and 2.8% Biracial);	Trauma-Focused Cognitive Behavioral Therapy (TF-CBT); Child Behavior Checklist (CBCL); UCLA PTSD Reaction Index for DSM-IV (UPIID); Session coding.	This study analyzed the relationship between caregivers and youth cognitive processes and symptoms after participating in TF-CBT. Results indicated that during the trauma narrative phase that in the caregivers cognitive emotional processing of theirs/their child's trauma related reactions, there were decreases in youth internalizing and externalizing symptoms throughout the treatment. Caregiver support also indicated less internalizing symptoms during follow-ups. On the contrary, caregiver avoidance/blame of the child indicated increases of youth internalizing and externalizing symptoms over follow-up. This study shows the importance highlighting these behaviors to improve clinical outcomes.	N/A

(continued)



Authors	Year	Abbreviated Title	Type	Topic areas/Variables	Methodology	Sample-size and age	Sample-gender	Sample-ethnicity	Measures/Data Collection	Summary of Results/Key Points	Critique and Commentary
Yi, J., & Kim, M.	2014	Postcancer Experiences of Childhood Cancer Survivors: How Is Posttraumatic Stress Related to Posttraumatic Growth?	Empirical	PTSD, Posttraumatic growth, Post-cancer	Quantitative	225 Korean adolescents and young adults between 15 years and 39 years of age	58.5% males and 41.5% females	Korean	The Posttraumatic Stress Diagnostic Scale (PDS); The Posttraumatic Growth Inventory;	The study found sociodemographic and medical correlates of PTG and linear effects of PDS on PTGI, however no curvilinear effects were recorded. The linear relationship may be specific to cancer-traumatized victims. Greater levels of PDS were associated with lower levels of PTGI in a linear relationship. Longitudinal research may better detect the curvilinear relationship of PTSD/PTG.	Limitations could include that this may not be a general representation of adolescent cancer survivors because the participants were volunteer based.
Zein El Dein, N., Khalifa, M., & Hassan, G.	2014	Effect of Guided Imagery Relaxation Session and Story-Telling on the Intensity of Nausea and Vomiting Among Children Undergoing Chemotherapy	Empirical	Chemotherapy, Children, Guided Imagery, Relaxation	Quantitative and Qualitative	90 children aged between 4 and 18 years	N/A	N/A	The Morrow Assessment of Nausea and Emesis Questionnaire, the Rhodes Index of Nausea and Vomiting Likert scale, the Katz Index of Independence in Activities of Daily Living checklist, and a self-rating scale.	The aim of this study was to implement guided imagery relaxation and telling stories to reduce nausea and vomiting symptoms among patients undergoing chemotherapy. Results indicated that nearly all of the children in the relaxation/storytelling groups did not have nausea/vomiting compared to the control group. Authors recommend that these treatments be implemented in clinical settings to help with nausea/vomiting symptoms related to chemotherapy.	Authors note that future research is needed to update other forms of relaxation techniques.

APPENDIX B

GPS IRB Exemption Notice



Pepperdine University  
24255 Pacific Coast Highway  
Malibu, CA 90263  
TEL: 310-506-4000

## NOTICE OF APPROVAL FOR HUMAN RESEARCH

Date: February 16, 2016

Protocol Investigator Name: Hussah Al-Kharafi

Protocol #: 15-09-043

Project Title: TF-CBT with the Pediatric Medical Population: A Modification

School: Graduate School of Education and Psychology

Dear Hussah Al-Kharafi:

Thank you for submitting your application for exempt review to Pepperdine University's Institutional Review Board (IRB). We appreciate the work you have done on your proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations 45 CFR 46.101 that govern the protections of human subjects.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit an amendment to the IRB. Since your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite the best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the IRB as soon as possible. We will ask for a complete written explanation of the event and your written response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the IRB and documenting the adverse event can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* at [community.pepperdine.edu/irb](http://community.pepperdine.edu/irb).

Please refer to the protocol number denoted above in all communication or correspondence related to your application and this approval. Should you have additional questions or require clarification of the contents of this letter, please contact the IRB Office. On behalf of the IRB, I wish you success in this scholarly pursuit.

Sincerely,

Judy Ho, Ph.D., IRB Chairperson

cc: Dr. Lee Kats, Vice Provost for Research and Strategic Initiatives

## APPENDIX C

### Evaluator Qualification Questionnaire

**1) Are you currently licensed by the Board of Psychology or the Board of Behavioral Sciences?**

Yes    No

If yes, by which Board? \_\_\_\_\_

**2) Do you currently practice?**

Yes    No

If yes in what city and state? \_\_\_\_\_

**3) Do you have a primary theoretical orientation?**

Yes    No

If yes, which one? \_\_\_\_\_

**4) How many years of licensed clinical experience do you have working with children and/or adolescents?**

0-2 years    3-5 years    6+ years

**5) Do you currently work with children and/or adolescents?**

Yes    No

If yes:

In what type(s) of setting (e.g., private practice, medical setting, etc.)?  
\_\_\_\_\_

In what type of format(s) (e.g., individual, group, etc.)?  
\_\_\_\_\_

**6) How many years of licensed clinical experience do you have in providing treatment for children with trauma?**

0-2 years    3-5 years    6+ years

If so, what type(s) of trauma (e.g., domestic violence, medical trauma, sexual abuse, war, etc.)?  
\_\_\_\_\_

**7) Have you received specialized training and/or certification in Trauma-Focused Cognitive Behavioral Therapy (TF-CBT)?**

Yes    No

**8) How many years of licensed clinical experience do you have in providing TF-CBT?**

- 0-2 years     3-5 years     6+ years

**9) How many years of licensed clinical experience do you have in treating children and/or adolescents with chronic illness (e.g., cancer, heart disease, etc)?**

- 0-2 years     3-5 years     6+ years

If so:

In what type of setting? \_\_\_\_\_

In what type of format? \_\_\_\_\_

What type of treatment models have you used (e.g., family systems, CBT, etc.)?  
\_\_\_\_\_

**10) How many years of licensed clinical experience do you have in treating chronically ill children/adolescents with trauma?**

- 0-2 years     3-5 years     6+ years

If so:

In what type of setting? \_\_\_\_\_

In what type of format? \_\_\_\_\_

What type of treatment models have you used? \_\_\_\_\_

**11) Have you ever provided TF-CBT when treating chronically ill children/adolescents?**

- Yes     No

**12) How familiar are you with the stressors associated with chronic illness or trauma in children/adolescents?**

- Not familiar             Somewhat familiar             Very Familiar

Please explain and, if possible, provide a few examples.

\_\_\_\_\_  
\_\_\_\_\_

## APPENDIX D

### Email Invitation to Potential Evaluators

Dear (name of evaluator),

Hello, my name is Hussah Al-Kharafi, I am a clinical psychology doctoral student at Pepperdine University. Based upon your expertise, I would like to invite you to participate as an expert reviewer and evaluate modifications that I have made for a treatment model. Specifically, under the guidance of Thema Bryant-Davis, Ph.D., Dissertation Chairperson, my dissertation project is focused on developing modifications to Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) for use with chronically ill children with medical traumatic stress. Participation as an evaluator is voluntary and would consist of 1) reading and reviewing the modifications made to the TF-CBT model and 2) providing feedback in the form of revisions, recommendations, suggestions, or comments, which will be considered for incorporation into and used to improve the final resource. General criteria for participation include a minimum of three (3) years as a licensed clinician working with children and adolescents, and have clinical experience and/or expertise in TF-CBT, CBT, the pediatric population, and/or treating children with medical trauma.

If you are interested in participating as an expert reviewer please click on the following link to complete a brief online questionnaire ([LINK](#)).

If you meet criteria you will be emailed a consent form and once it is returned with your signature you will receive the expert reviewer packet via email. The packet will contain the modifications along with an online link to the evaluation form. Your signed Informed Consent form will be sent and received separately from your evaluation to ensure your confidentiality. Participation is voluntary and you are free to withdraw at any time. If you have any questions or would like further information please feel free to contact me. Additionally, please let me know if you prefer to have any or all materials mailed to you rather than emailed (I will also send pre-addressed, pre-stamped envelopes). Thank you for your time and consideration.

Sincerely,

Hussah Al-Kharafi, M.A.  
c/o Pepperdine University  
Graduate School of Education and Psychology, Psy.D. Program  
6100 Center Drive  
Los Angeles, CA 90045



APPENDIX E

Evaluator Cover Letter Email 1

Dear (name of evaluator),

Thank you for your interest in becoming an expert reviewer for my dissertation project. Attached is an Informed Consent form that details the purpose of the study, the nature of your participation, as well as any privacy and confidentiality concerns. Please read and sign the Informed Consent form and resend it to me at your earliest convenience. You are free to keep a copy for your records.

If you have any questions or would like further information please feel free to contact me. Again, please let me know if you prefer to have any or all materials mailed to you rather than emailed (I will also send pre-addressed, pre-stamped envelopes). Thank you for your time and consideration.

Sincerely,

Hussah Al-Kharafi, M.A.  
c/o Pepperdine University  
Graduate School of Education and Psychology, Psy.D. Program  
6100 Center Drive  
Los Angeles, CA 90045

APPENDIX F

Evaluator Consent Form

I authorize Hussah Al-Kharafi, M.A., a doctoral student in clinical psychology at Pepperdine University, Graduate School of Education and Psychology, working under the supervision of Thema Bryant-Davis, Ph.D., to include me in the research project entitled, “TF-CBT with the Pediatric Medical Population: A Modification.” I understand that my participation in this study is strictly voluntary and I am free to withdraw at any time without consequence.

I have been asked to participate in this study that will include proposed modifications of a treatment model for pediatric patients and their parents who suffer from medical posttraumatic stress. I have been asked to volunteer to participate as an evaluator in this study because I am a licensed mental health clinician with expertise in trauma, Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT), CBT, working with children and adolescents, and/or treating children with medical traumatic stress. My participation in this study will require that I review modifications to TF-CBT recommended by Hussah Al-Kharafi, M.A., and complete an evaluation form related to the usefulness, accuracy, and effectiveness of the modifications.

I understand that all information obtained in this study will be kept confidential. The Informed Consent Forms will be stored in a file separate from all other study materials. All data and research materials will remain in a locked filing cabinet for a storage period of five-years, at which time they will be destroyed. I understand that any feedback submitted may be published or presented to a professional audience; however, personal identifying information will be confidential and will not be released.

I understand that possible risks for participating in the study are minimal but may include mild levels of boredom or fatigue in response to reading the resource and completing the evaluation form. In consideration of such factors, I understand that I have the option of writing the answers to questions listed on the evaluation form directly in the manual. It has been suggested that I read the manual and complete the evaluation at a time that is most convenient to me, and taking breaks as necessary. I understand I will not directly benefit from my participation in this study, however, my participation in this study will potentially further the understanding of issues related to, and expand the dialogue on treatment delivery for those with pediatric medical traumatic stress. In addition, I understand that I have the right not answer any particular question listed on the evaluation form and may withdraw from the study at any time without consequence.

I understand that if I have any questions regarding the study procedures, I can contact Hussah Al-Kharafi, M.A. or Thema Bryant-Davis, Ph.D., Dissertation Chairperson, at Pepperdine University, Graduate School of Education and Psychology, 6100 Center Drive, Los Angeles, CA 90045, (310) 568-5600. I have read this form and understand to my satisfaction the statements contained herein. In signing this form, I agree to participate as an expert evaluator in this study on modifying TF-CBT for the pediatric medical population and acknowledge that I have received a copy of this form.

---

Participant’s Name (Printed)

---

Participant’s Signature

---

Date

APPENDIX G

Evaluator Cover Letter Email 2

Dear (name of evaluator),

Thank you again for agreeing to be an expert reviewer for my dissertation project entitled “TF-CBT with the Pediatric Medical Population: A Modification”. Attached in this email is a copy of the proposed modifications and an evaluation form. Your feedback will assist me in providing quality modifications on an existing evidence-based and effective trauma treatment (TF-CBT) to include interventions for another trauma type (i.e., medical trauma).

Please note, if you prefer to answer questions by placing comments throughout the document, please feel free to do so. Also, it is recommended that you complete the evaluation process at your convenience and to take breaks as needed. However, please take no more than two to three weeks to read the modifications, complete the evaluation form, and return it to me.

Your input is greatly appreciated; however, please remember that you are under no obligation to complete the study. Your participation in this study is completely voluntary and you may refuse to participate or complete the evaluation at your own discretion.

If you have any questions or would like further information please feel free to contact me. Again, please let me know if you prefer to have any or all materials mailed to you rather than emailed (I will also send pre-addressed, pre-stamped envelopes). I am very appreciative of your time and effort.

Sincerely,

Hussah Al-Kharafi, M.A.  
c/o Pepperdine University  
Graduate School of Education and Psychology, Psy.D. Program  
6100 Center Drive  
Los Angeles, CA 90045

APPENDIX H

Evaluation Form

Thank you for taking the time to review the proposed modifications. It may be helpful to peruse the questions below before you read the modifications so that you can keep them in mind during your review. Please note that all information provided on the evaluation form will remain strictly confidential.

**1. How useful is this resource in working with medically traumatized chronically ill children?**

Not at all useful	Somewhat not useful	Neutral	Somewhat useful	Very useful
1	2	3	4	5

**2. How useful do you find this resource in educating clinicians about medical trauma within the child serious medical illness population?**

Not at all useful	Somewhat not useful	Neutral	Somewhat useful	Very useful
1	2	3	4	5

**3. To what extent do you agree or disagree with the following statements:**

- The language of the resource was easy to understand.

Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1	2	3	4	5

- The resource clearly addressed the stated purpose of the modifications.

Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1	2	3	4	5

**4. What do you consider the strengths of the manual?**

---

**5. What do you consider the weaknesses of the manual?**

---

**6. Are there any areas that you feel were overlooked in the resource? If so, please comment:**

---

**7. Are there section(s) of the resource that need to be omitted, changed, or revised? If so, please explain:**

---

**8. What suggestions do you have that can help improve the resource and make it more useful for children with serious medical conditions experiencing medical trauma?**

---



**9. How likely would you recommend this resource to other clinicians providing services to medically traumatized children with serious medical conditions?**

Very unlikely	Unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Likely	Very likely
1	2	3	4	5	6	7

**10. Please feel free to provide additional comments and/or suggestions (including elaborations on earlier items) that you wish to share with me:**

---

---

Thank you for your time in reviewing this resource and for your valuable input!

## APPENDIX I

### Resource

### **Component 1: Psychoeducation/Enhancing Safety (As Indicated)**

According to The National Child Traumatic Stress Network (NCTSN, 2004) up to 15-20% of children and their siblings and 20-30% of parents experience persistent traumatic stress related to medical procedures or a life-threatening condition that affects daily functioning and recovery. Medical prognosis uncertainty, treatment setbacks, painful procedures, and parent helplessness, as well as sedation, and exposure to injury and death of others are just a few examples of elements that contribute to the development of medical traumatic stress. What is perceived as traumatic may differ between parent and child (Center for Pediatric Traumatic Stress, 2015). During this component it is important to frame the treatment or intervention approach in a way that is congruent with medical trauma. The clinician should gain an understanding of the child and the family's views on mental health and associated treatments. Consistent with the NCTSN's (2004) recommended D-E-F Protocol (distress, emotional support, family) for a "trauma-informed" healthcare provider, it is also important for the clinician to assess the level of distress (D) the child is experiencing at all stages of their medical treatment and recovery. Identifying existing emotional support (E) is necessary to address the child's emotional needs. And assessing the family (F) and understanding their stressors will be helpful in targeting the appropriate resources and identifying barriers to treatment. Useful clinical measures include the Child Stress Disorders Checklist (CSDC; Saxe et al, 2003) and the Child PTSD Symptom Scale (CPSS; Foa, Johnson, Feeny, & Treadwell, 2001).

The clinician will introduce TF-CBT, its treatment approach, session length and the roles of the therapist, child and parent/family in a typical session. At the outset, an explanation of what sessions are expected to be like and that they will not involve needles or painful procedures is necessary in order to reduce any child and caregiver anxiety. It is important for the therapist to

validate and normalize the child and caregiver's traumatic experience related to the child's medical condition and/or medical procedure/s. It will be necessary for the therapist to be knowledgeable about the medical condition, to understand and appropriately use medical terminology, and focus language to the specific medical condition/s and associated procedures. For example, in a child with cystic fibrosis (CF) the importance of cleanliness, infection prevention, airway clearance, nutrition, pancreatic enzyme supplements and the use of a nebulizer and/or feeding tube is necessary for daily functioning (Cystic Fibrosis Foundation, n.d.). A child with leukemia will most likely be treated with chemotherapy through a small plastic tube (central venous catheter or venous access device [VAD]) that is inserted into a large blood vessel in the chest area or upper arm and is left during treatment. Treatment may involve high-dose chemotherapy and stem cell transplants for those with higher risk leukemia (American Cancer Society, 2016).

Additionally, it will be helpful to incorporate psychoeducation on challenges commonly reported among children and adolescents with serious chronic medical conditions (e.g., medication nonadherence, mood disturbance, risk-taking behaviors). For example, with cystic fibrosis 2 to 3 times higher levels of anxiety and depression were found in patients and their parents compared to the general community (Modi, Driscoll, Montag-Leifling, & Acton, 2011; Quittner et al., 2014). Child depressive symptoms were also found to be associated with lower rates of airway clearance adherence (Smith, Georgiopoulos, & Quittner, 2016; Smith, Modi, Quittner, & Wood, 2010). Children with congenital heart disease, including cardiomyopathy, may have "more medical fear and general fear of the unknown, physiologic anxiety, depression, and delinquent behaviors than the general population" (Gupta, Giuffre, Crawford, & Waters, 1998; Gupta, Mitchell, Giuffre, & Crawford, 2001). Additionally, solid organ transplantation

may be necessary for survival for some of the severe chronic medical conditions. In adult research, 2 to 5 times higher levels of PTSD were reported by recipients post-solid organ transplantation and when taking into account subthreshold PTSD symptoms, over one quarter of recipients may experience symptoms following transplantation (Davydow, Lease, & Reyes, 2015).

Furthermore, due to the nature and chronicity of medical conditions (e.g., life-threatening, recurring), the child will most likely experience ongoing medical care, which if traumatic to the child (NCTSN, 2004) would result in exposure to continuous trauma. In such cases, enhancing the child's safety should be addressed and emphasized early and revisited throughout treatment (Cohen, Mannarino, & Murray, 2011). In the context of medical trauma, safety involves multiple parts. Considerations should include the severity of the child's medical condition, events or situations that would place the child at risk (e.g., medication non-adherence, being alone or without immediate assistance), providing and encouraging the child with the ability to communicate their needs, identifying appropriate adults to whom to reach out for help, and creating a contingency plan upon facing re-traumatizing situations or procedures. A developmentally appropriate, honest and caring conversation with the child on their understanding of their own medical condition, risks, and necessary medical interventions and the role they can play in their own treatment can also provide the child with a sense of control, reduce fears and build self-esteem. Encouraging the parents to be with the child as much as possible during treatments and to talk to and comfort the child about their concerns and fears is helpful in addressing the child's emotional needs (NCTSN, 2004).

A strength-based approach is recommended when dealing with children with medical trauma and their families (Stuber, Shemesh, & Saxe, 2003). This can be attained by discussing

their resilience, and by connecting them with resources (e.g., websites, books) relevant to the child's diagnosis, particularly information from others who have undergone similar experiences. Finally, addressing family challenges to having to manage a chronically ill child such as scheduling difficulties and the ability to consistently attend sessions is crucial to the success of treatment. In order to provide culture-centered treatment to families with pediatric medical traumatic stress, the clinician should refer to the American Psychological Association's (2002) Multicultural Guidelines in recognizing "the broad scope of dimensions of race, ethnicity, language, sexual orientation, gender, age, disability, class status, education, religious/spiritual orientation, and other cultural dimensions" and the existing literature specific to their child and family. This information allows for greater understanding of the child and family's identity, their approach to treatment, as well as how they make meaning of the trauma, and can help guide treatment. Overall, demonstrating knowledge of the difficulties of chronic medical conditions and their effects on child and caregiver, being culturally sensitive, and having a working understanding of relevant medical terminology help to establish and maintain rapport between therapist and caregiver.

## **Component 2: Parenting skills**

Parenting a child with a chronic medical condition can be overwhelming in that the caregiver is balancing many responsibilities involving the family, the ill child's needs, and work. They attend to the child's medical appointments and treatment interventions, manage the child's emotions and behaviors, tend to members of the family, and address their own needs personally and professionally. Additionally, the caregiver may be experiencing his or her own distress or trauma and may benefit from parallel therapy sessions. Therefore, it is necessary to validate and address the caregiver's experience and provide him or her with coping strategies and safety skills, especially since their distress is not conducive to the child's functioning (Murray, Cohen, & Mannarino, 2013).

Consistent with the original TF-CBT model, it is important for the clinician to gain an understanding of the caregiver's parenting style. When working with parents of children with chronic medical conditions, parenting strategies may include authoritative, overprotective or permissive (Lohan, Morawska, & Mitchell, 2015). The authoritative style most balances parenting with child cooperation in illness management, parental overprotection occurs particularly when it comes to health-related behaviors that are necessary for survival (e.g., in cystic fibrosis cases, this may include strict rules involving cleanliness and infection prevention)(Ernst, Johnson, & Stark, 2010). The permissive style may be due to multiple reasons, including guilt (more so if the medical condition is genetic), and the parent's own distress (e.g., parents of children with chronic heart disease wanted their child to have "a struggle-free" life and would allow them to over-indulge (Lee & Rempel, 2011). Therefore, a parent's attitudes and beliefs about their child shape their perception of the child, and contribute to parenting behavior (Hullman, Wolfe-Christensen, Meyer, McNall-Knapp & Mullins, 2010;

Hullman, Wolfe-Christensen, Ryan, et al., 2010; Tillery, Long, & Phipps, 2014). In order to address these parenting behaviors the clinician may need to challenge the parent's unhelpful or inaccurate cognitions. Furthermore, promoting self-care for parents is highly encouraged, as that will assist them to cope with their distress. This includes taking time for themselves, utilizing a support system (e.g., friends, religion, family), and returning to normal routines (Center for Pediatric Traumatic Stress, 2014a).

TF-CBT provides parents with skills in praise, selective attention, time-out techniques and contingency reinforcement schedules when parenting children exhibiting behavior problems due to trauma (Cohen, Mannarino, & Deblinger 2006). Research indicates that families with medically ill children tend to focus on normalization in order to improve adaptation and ensure their child's development is on course (Ernst et al., 2010; Lee & Rempel, 2011). As much as it is difficult to do, setting limits and boundaries while balancing the child's needs are essential to the child's development, the parent's well-being as well as to the family unit as a whole. Therefore, implementing the skills provided by TF-CBT is relevant to this population with evidence suggesting a lack of discipline leads to lower independence and adaptive functioning, lower mood, higher parental stress, higher avoidance and non-adherence to treatment. For example, in cystic fibrosis families, CF-related concerns with eating have been associated with maladaptive behaviors, which were best addressed through behavior modification. This included "active praising of desired eating behaviors, ignoring non-eating behaviors, setting time limits for meals, using successive approximation to determine weekly goals, and providing tangible reinforcement for goal achievement" (Ernst et al., 2010, p. 267). Eventually, engaging the child in a developmentally appropriate involvement in their treatment can create a semblance of



freedom and control and self-management of their treatment, which can aid in keeping them motivated and accountable while allowing parents to continue to closely monitor their situation.

When exploring models of resilience in parents with chronically ill children, the consensus is parent adjustment is a strong predictor for child adjustment- namely, higher parental stress was associated with poorer social and behavioral adjustment in children with cancer, and higher levels of perceived vulnerability corresponded to poorer emotional adjustment (Colletti et al., 2008; Mullins et al., 2015). When parents become knowledgeable in behavioral management techniques it helps positively influence the child's behaviors while also promoting parental self-efficacy and the confidence they need to provide their children with the necessary care and support (Carter, 2014). Therefore, it is necessary for the clinician and the parent to develop a plan to address problematic behaviors (punishment/reward) that are not too overwhelming to interfere with treatment overall (Cohen et al., 2006).

### **Component 3: Relaxation**

This component is helpful in reducing physiologic reactions to PTSD especially when the child begins to experience trauma reminders during the trauma narrative process. Therefore, it is important to develop these skills prior to engaging in clinical interventions focused on the trauma. According to the TF-CBT manual psychoeducation and explanation to the child about stress responses and reactions to triggers is important before introducing relaxation. Children with medical traumatic stress may experience continuous exposure to trauma or trauma reminders due to the chronicity of their illness. Therefore, the clinician must focus on teaching the child when it is safe and appropriate to use relaxation skills and when it is not (Murray et al., 2013). Suggested relaxation techniques for children, as well as parents, include deep breathing, blowing bubbles, mindfulness, meditation, and progressive muscle relaxation (Cohen & Mannarino, 2008; Cohen et al., 2006). The clinician also needs to be mindful of the child's medical diagnosis and condition prior to introducing relaxation skills, as certain techniques may trigger or exacerbate stress symptoms rather than reduce them. For example, progressive muscle relaxation is likely not be beneficial to medically ill children or children experiencing physical pain since it requires them to focus on different parts of their body, which includes the one/s causing them pain.

Medical traumatic stress is unique in that it can be caused by either internal and/or external traumatic experiences. External factors such as medical treatments and procedures (e.g., transplantation, chemotherapy) are “inflicted” by the parent/caregiver, physician or other medical professional (Stuber et al., 2003; Suplena et al., 2016). Internal factors are considered somatic in origin and ongoing (Edmondson, 2014). Somatic complaints include dizziness, fatigue, infections and, most notably, pain (Katz, Heleniak, Kawamura, & Jakubiak, 2015). Thus, it is

imperative to their quality of life for children to learn to manage their reactions to traumatic reminders. Mindfulness and acceptance-based interventions with medically ill populations have been explored with positive outcomes (Casier et al., 2008; Jones et al., 2013; Thompson, Arnkoff, & Glass, 2011; Wicksell, Olsson, & Hayes, 2011).

Mindfulness and acceptance require an individual to fully be in the present moment and attend to both internal and external experiences without judging them. If thoughts wander, they gently bring their attention back to the mindful task. Challenging or intrusive thoughts are accepted for what they are without disrupting the current activity. For example, if an individual was taking a mindful walk along the river they would be aware of the breeze flowing through their hair, their feet touching the path, the feel of the sunshine on their face, and a sense of calmness that comes over them as they continue walking further down the path.

According to Thompson and Gauntlett-Gilbert (2008):

The hope is that when individuals deliberately stay in the present moment, they can respond to current events with a full awareness of their automatic tendencies, but can make choices that are not necessarily constrained by these. A greater non-judgmental awareness of one's own impulses and thought patterns should result in a decreased emotional reactivity and vulnerability. (p. 396)

Therefore, the child will learn to focus less on the past or future and consequently tolerate emotional or physical discomfort (e.g., pain), leading to greater psychological adjustment and quality of life (Jones et al., 2013; Thompson et al., 2011). Acceptance encourages children to face rather than avoid negative reactions and situations since they contribute to lower functioning and quality of life. In order to do that, the child accepts distressing thoughts, emotions, and sensations while continuing with experiences that are meaningful and consistent with their

personal values. They learn to adapt new behavioral responses to activities they previously avoided due to pain or distress. This process was also applied to parents who had trouble effectively coaching their child because of their own negative reactions (Wicksell et al., 2011).

Acceptance was found to play a protective role in adolescents and adults with chronic medical conditions, including chronic pain (Casier et al., 2008; Kalapurakkel, Carpino, Lebel, & Simons, 2015; Thompson et al., 2011). Adults who have exhibited increased awareness and acceptance of their reactions to trauma reminders (e.g., somatic cues) tend to less likely develop symptoms of PTSD. And acceptance of their experiences allowed for greater tolerance of distressing symptoms and no avoidance behaviors (Thompson et al., 2011). Adolescents with cystic fibrosis who were able to accept their disease and its limitations reported better psychological functioning (Casier et al., 2008).

Similarly to children with other types of trauma, children with chronic medical conditions benefit from stress reduction strategies. Van der Riet, Jitsacorn, Junlapeeya, Dedkhard & Thursby (2014) found that a specifically constructed haven titled “Fairy Garden” provided hospitalized children with a healing environment where they interacted with natural gardens and produced narrative threads including relaxation, calmness, and happiness that improved adherence and provided psycho-social support and physical benefits during the hospital stay. A study by Longhi and Pickett (2008) found that among children hospitalized with cardiac and/or respiratory problems music therapy significantly increased the percentage of oxygen in their blood, suggesting it can potentially affect their physical well-being. Relaxation strategies used by cancer patients and their parents during the hospital stay and before surgeries include playing games, painting, and imagery (Hildenbrand, Clawson, Alderfer, & Marsac, 2011). Additional studies of children with cancer found a reduction in anxiety level during chemotherapy treatment

through music therapy as well as guided imagery techniques (Karagozoglu, Tekyasar, & Yilmaz, 2013; Lin, Hsieh, Hsu, Fetzer, & Hsu, 2010; Zein El Dein, Khalifa, & Hassan, 2014).

Considerations can also be made for relaxation strategies that can be utilized by the family outside of therapy. For example, tailored yoga sessions with children and adolescents with cancer and their parents significantly decreased anxiety levels for both groups (Thygeson, Hooke, Clapsaddle, Robbins, & Moquist, 2010). Hernandez-Reif et al. (1999) found that children with CF and their parents experienced less anxiety with massage therapy versus children and parents that read together; the children also exhibited peak airflow. Furthermore, trauma survivors have relied on religious and spiritual coping as a means to alleviate the distress of the traumatic experience (Bryant-Davis & Wong, 2013). Positive religious coping reduces anxiety and depressive symptoms, increases feelings of support, and aids in making meaning of distressing events or situations (Van Dyke, Glenwick, Cecero, & Kim, 2009). In contrast, higher levels of depression in children and adolescents were noted with negative religious coping (e.g., being punished by God). Therefore, the clinician is encouraged to attend to the faith of the individual and family in treatment and, in particular, understand the role it plays in their trauma-related symptoms. Overall, understanding the causes of the stress response and learning techniques to reduce and manage their reaction is beneficial for pediatric patients and their parents. Having multiple relaxation options that can be utilized in different settings allows for greater preparation and self-efficacy for the child.

#### **Component 4: Affective Expression and Modulation**

Children with medical trauma may experience a wide array of emotional reactions and exhibit emotional dysregulation (NCTSN, 2004). This component focuses on providing the child with the skills to effectively identify, express and manage their feelings and responses.

Strategies are tailored to the child's level of development, medical condition and experiences.

Due to the medical nature of the population, the clinician may benefit from learning about the child's diagnosis, procedures and treatments and any medically related terms associated with them.

There are a variety of factors behind a child's response to a traumatic event or reminder including the child's developmental stage, nature of the stressor, severity of the medical condition and associated treatments, parent/caregiver reaction, family functioning, and social support. The child's level of development and cognitive capacity is important as it affects their understanding of the trauma, the differing responses they may have at different ages, and the degree of independence they may have (Stuber, 1993; Supelana et al., 2016). For example, a young child may perceive their parent as a "perpetrator" because the parent restrained the child during treatment or made the medical decisions that lead to the traumatic event, thereby possibly feeling unsafe in expressing their emotions. In contrast, an adolescent may have a better understanding of the medical condition, is involved in decision-making and may be responsible for their medication regimen and adherence and therefore views their parent as an advocate and member of their treatment team. Medical traumatic stress may be caused by internal and/or external factors. Trauma related to a life-threatening chronic medical illness is viewed as related to the child's physiological makeup with ongoing threat that is comprised of illness uncertainty, course, medication regimens, disease management and continued experiences of pain, fear and

vulnerability (Edmondson, 2014; Ernst et al., 2010). For example, children with CF spend a significant, yet necessary, amount of time per day (greater than one hour) on disease management (e.g., airway clearance, nebulizers, infection prevention) that it may intrude into other activities such as time with peers. The continuous, mostly painful and time-intensive routines may negatively affect their ability to cope.

Pediatric medical traumatic stress has been documented in parents (NCTSN, 2004), and their reactions are crucial to both child and family functioning (Kazak et al., 2006). In general, child adjustment is strongly associated with parent adjustment (Colletti et al., 2008; Mullins et al., 2007, 2015). Two-thirds of frequently hospitalized children with chronic medical conditions had secondary psychosocial factors (e.g., somaticizing, parent's psychological issues) that contributed to their admission (Ernst et al., 2010). In addition, chronically ill children may perceive themselves as inadequate as a result of their parents' perception of them as fragile and vulnerable beings. As a result, children may feel guilt/shame for burdening their parents and family and not wish to add further stress by sharing their emotions. Alternatively, the parents may be too distressed to be emotionally available to the child. Children's identity, competence, and psychosocial development are significantly associated with peer relationships. For children with CF, the most stressful daily situation is coping with and managing bullying and peer overprotection. As much as they are tempted to keep their illness a secret from peers, this interferes with building and maintaining strong friendships. Therefore, children may be having a difficult time coping with bullying, and are unable to confide to friends due to a lacking peer support system leading to "higher levels of stress, lower self-efficacy, increased monitoring for [illness]-related cues, and less internal health locus of control" (Ernst et al., 2010, p. 270). Long-term adjustment for children with chronic medical conditions and their families has been

possible through supportive relationships from others such as clergy, mental health professionals (Kazak et al., 2006), extended family, friends, disease-affiliated support groups, and other community leaders/members. Consequently, it is for the child's benefit to learn to build supportive relationships in order to share their experiences, specifically, their thoughts, emotions, and physical sensations. This is particularly true if the child's parents are unable to participate in the trauma narrative sessions and another supportive adult is needed.

Affective modulation sessions involve introducing the child to a wide range of emotions and helping them to develop their ability to identify their own feelings in diverse situations (Cohen et al., 2006). Note that children who are younger tend to express their feelings through play, storytelling or drawing. The child is encouraged to identify feelings related to their medical condition and freely express emotions associated with procedures, treatments or situations (e.g., fears of having a PICC line inserted and visiting the hospital for repeated cleaning). It is not unusual for a child to express conflicted feelings (Bronfman, Campis & Koocher, 1998) such as happy for being in chemotherapy to treat cancer but afraid because the chemotherapy causes nausea, or angry towards the doctor/nurse for hurting them yet grateful for their treatment. Feelings can also extend to situations at home or at school (e.g., teasing by peers).

The clinician should provide the child with appropriate strategies to use when intrusive trauma reminders occur either through thoughts or situations (e.g., hospital visits, certain smells, repeat procedures, etc.). Cohen et al. (2006) suggested techniques of thought interruption (e.g., temporarily stopping a negative thought and replacing it with a positive one), positive imagery (e.g., visualizing a safe place), and positive self-statements (e.g., "I can do this."). Studies in managing procedure-related pain also supported the use of imagery for children with medical



conditions (Cohen, 2008; Powers, 1999). The purpose is to teach the child that they can control their thoughts, thereby strengthening their coping skills. The child is then prepared and confident enough to appropriately manage negative intrusive thoughts or reminders of the trauma that may occur in the future.

### **Enhancing Safety**

When dealing with medical conditions, particularly those that are chronic and may involve continuous care and hospitalization, it is imperative that a child with medical-related trauma understands they may not be danger-free. A conversation that is developmentally appropriate is required to assess the child's basic understanding of their medical condition, as well as treatment decisions that were made by the parents or medical team; this may include involving the medical team or having an early conjoint parent-child session, as warranted, to correct any misconceptions (Chesson, Chisholm, & Zaw, 2004; NCTSN, 2004). Effective communication with a focus on nonjudgmental dialogue on the child or adolescent's (and parents') views on possible barriers, medical illness or psychological beliefs leads to good medication adherence (Brand, Klok, & Kaptein, 2013).

Fears and worries should be explored with the provision of reassurance to their current safe state. Assisting the child in recognizing they are surrounded by people who care about them and who are working together to help them may aid in adapting their future responses to 'unsafe' medical experiences. Children with medical conditions often have adults make decisions about their medical interventions, treatment and general well being. Regardless of their limited choices, children would benefit from articulating their thoughts and decisions on medical treatments and pain management, thereby becoming empowered and increasing their self-efficacy (Chesson et al., 2004).

A safety plan developed by the family should be reviewed (Discussed in Component 1, Psychoeducation). It is recommended that parents assist as best they could in maximizing their child's safety and coping, and minimizing distress. Helpful suggestions are provided for parents of children and teens while at the hospital, and after discharge. These include encouraging the child to make treatment decisions, listening to the child, being with the child during procedures (if possible), comforting the child, and allowing for anticipatory guidance or explanation of what to expect in procedures to help the child gain some control (NTSCN, 2004). Children are also encouraged to generate an additional safety plan of their own in conjunction with the clinician; examples include ways to feel better after undergoing a painful procedure, creating their own hypothetical team to work jointly together to cope with pain, and learning to deal with thoughts that remind the child of the traumatic event (NTSCN, 2004). This eventually leads to positive results such as medication compliance, and improved quality of life.

### **Problem Solving and Social Skills Building**

Many parents of children with medical conditions tend to perceive their child as vulnerable and this may affect the child's perception of themselves and their skills. In addition, this may impact the development of the child's psychosocial skills necessary for adjustment, and their abilities in dealing with novel situations. For instance, a child may not know how to handle uncomfortable social situations with their peers. Providing the child with problem-solving skills allows them the opportunity to learn from their mistakes, thereby progressing at a developmentally appropriate level (Cohen et al., 2006).

For example, Janet is an adolescent girl with CF who recently experienced pneumothorax (collapsed lung) and underwent a thoracostomy (chest tube insertion to drain excess air and lung fluid) followed by a few days hospital stay. As a result, she has been placed on oxygen therapy.

As an individual with CF she has had placement of a port (implanted catheter in the upper chest area) for long-term administration of intravenous antibiotics, and uses a gastrostomy feeding tube (inserted into the stomach) to supplement food intake in order to meet high caloric nutrition needs due to lack of weight gain, a common symptom of CF. Adolescence is a period that involves identity exploration, gaining more independence, increased relations with peers, and conforming. CF affects all parts of the body system and may be embarrassing or distressing (e.g., flatulence, steatorrhea, coughing, digital clubbing). In particular, issues that are visible and can be compared to other peers include delay in puberty and low body mass (Ernst et al., 2010; Withers, 2012). Returning our attention back to Janet, she has developed PTSD from the pneumothorax experience that contributed to thoughts of death and had her think more often about her foreshortened life. She is being bullied by peers at school for carrying around her oxygen tank, she is being called “Frankenstein” because of her surgical scars, and other comments regarding her physical appearance compared to girls her age. In response, Janet’s self-consciousness about her appearance and symptoms increases and she tries to fit in (e.g., tries to suppress her cough, is non-adherent to the required high-fat diet), but unrelenting bullying leads her to retreat and isolate, eventually impacting her school performance and peer relationships. Janet would benefit from identifying and learning possible strategies to address the bullying (e.g., walking away, being assertive, reporting the bullying, responding to the bully) (U.S. Department of Health and Human Services, n.d.). She can create her own action plan in response, which includes exploration of possible outcomes of those strategies, which one she opts to implement, evaluating what worked and what didn’t after implementation and using that information next time she faces a problem (Center for Pediatric Traumatic Stress, 2014b; Cohen et al., 2006).

It is not uncommon for children with medical conditions to have school absenteeism due to their medical illness and associated factors (e.g., doctors appointments, hospitalizations). School provides a sense of normalcy, satisfying peer relationships, increased self-esteem and decreased emotional trauma related to their condition (Worchel-Prevatt et al., 1998). Consistent with the child's development, provide the child with skills to appropriately address and educate other peers about their condition, thereby increasing self-esteem skills. It is encouraged that children with medical conditions have a relatively normal routine, interact with children their age and even receive validation and normalization of their experience by participating in groups/camps with other children suffering similar medical conditions. One main exception to that are children with CF since two patients with expressed CF cannot be at certain proximity from the other for fear of acquiring drug-resistant infections. A successful alternative was observed when segregating patients in a clinic and providing them with video-conferencing, thereby developing a real-time CF patient group (Ernst et al., 2010). Overall, affect modulation skills, once learned, allow the patient to strategically select the best self-soothing option for them considering the circumstances. Most importantly, they will be able to gain enough skills to determine whether they are becoming distressed and then intervene in time to reduce symptoms before being overwhelmed by them (Cohen et al., 2006).

## **Parents**

Each child, family, situation, medical condition and traumatic event is unique. The clinician must keep in mind the child's age and cognitive developmental level, medical condition, stage in the medical illness process (e.g., pre- vs. post-transplantation, early vs. end-stage disease, undergoing chemotherapy vs. in remission, etc.), traumatic stress event, and parent level of distress. Studies have shown that parents also experience PTSS (Landolt, Vollrath, Ribl,

Gnehm, & Sennhauser, 2003; Rodriguez et al., 2012; Tremolada et al., 2013) and PTSD (Bruce, 2006) as a result of the child's traumatic injury or medical condition. Parent and child symptoms are correlated (Landolt, Ystrom, Sennhauser, Gnehm, & Vollrath, 2012). Notably, parent adjustment and child adjustment relationships are reciprocal, and "the single best predictors of child adjustment appears to be parent adjustment" (Mullins et al., 2015, p. 180).

The parent should be able to provide their child with support, comfort, and protection, and demonstrate that they can tolerate difficult discussions of upsetting events with their child. It is imperative that the child feels confident in the parent's security and availability during stressful times so they can feel comfortable talking with their parent when future situations occur. Parents are encouraged to talk with their child, help them share their feelings, listen to them, help them process what happened, ask questions to help clarify any misunderstandings or misperceptions, and normalize responses (e.g., crying, fear)(Cohen et al., 2006; NTSCN, 2004). The degree to which a parent shares their own emotions, thoughts and reactions with their child is primarily dependent on the child's age and cognitive development, although other factors (mentioned above) may also impact the appropriateness of this exchange. In general, the older the child, the more relevant it is for the parent to discuss their feelings with them, albeit cautiously so as to not overwhelm the child with their own distress.

It is important to encourage parents to utilize their own coping resources and undergo self-care in order to model appropriate stress-management to their child (The Center for Pediatric Traumatic Stress, 2014a). If parents are having a difficult time coping, they should reach out to other adults (e.g., friends, family, clergy, counselor) to ask for help or talk through their worries (NTSCN, 2004). It is understandable that parents might report feeling helpless and unable to heal their child. Therefore, when conducting parallel sessions with parents, validate the parent's

feelings, commend them on their hard work and resilience through this difficult process, and encourage them to actively listen, reflect, and reinforce their child's efforts in expressing emotions (NTSCN, 2004).

### **Component 5: Cognitive Coping and Processing I-The Cognitive Triangle**

This step of the components relies on introducing the cognitive triad of thoughts, feelings, and behaviors. Strong evidence exists on the efficacy of Cognitive Behavioral Therapy (CBT) in addressing PTSD in medical conditions, with children, and procedure-related pain (Kangas, Milross, Taylor, & Bryant, 2013; Kowalik, Weller, Venter, & Drachman, 2011; Wetherington et al., 2008; Powers, 1999). The focus is on the interconnectedness of the triad and how it impacts functioning. Unhelpful or inaccurate beliefs are challenged and corrected, eventually leading to desirable positive emotional and behavioral outcomes. It is recommended that initial sample scenarios used in session should not be related to the trauma/s in order to strengthen rapport between the clinician and the child (Cohen, & Mannarino, 2008).

In medical traumatic stress, the clinician should keep in mind that internal and/or external factors are the cause of the trauma and maintain trauma symptoms (Edmondson, 2014). Children with medical conditions are tuned to their bodies and are aware and sensitive to outward signs of illness and how others (e.g., parents, peers) perceive them, thereby impacting their thoughts, feelings, and behaviors (Ernst et al., 2010; Powers, Jones & Jones, 2005). For example, an adolescent with CF is quick to run out of breath, has more frequent coughs, and is often fatigued. Her thoughts may include “People are looking at me,” she would feel “embarrassed,” and consequent behavior could be “cough suppression.” Alternatively, she may think, “I can’t keep up with my friends,” feel “tired” and “sad,” and choose to “stay home/isolate.” As noted earlier, somatic complaints are not uncommon due to the nature of this population; therefore focusing on physiological responses should be highlighted. A discussion between emotions and physical sensations should occur with emphasis on their relationship.

Medications and invasive procedures also play a large role on children's thoughts, feelings and behaviors. Chemotherapy has common side effects including nausea/vomiting, hair loss, and cognitive changes (Ramirez et al., 2009), which are a cause of anxiety for many children with cancer. Children with CF spend a significant amount of time performing airway clearance exercises and tend to wake up hours earlier than peers to complete this treatment before school, which impacts their sleep. Disease management also involves nebulized medications, which requires the child to sit still for a certain period of time. The complexity of CF treatment and its time-intensive interventions have been associated with non-adherence, with barriers including oppositional behaviors, as well as parent and child psychological issues (Ernst et al., 2010).

During this component the basic relationship between thoughts, feelings, and emotions are explored in length, with the child developing a greater awareness of how their responses are a reaction to an event, thought or physical experience and whether they were accurate. They will be able to distinguish thoughts from feelings. They will also learn to identify cognitive distortions/maladaptive/unhelpful thoughts (e.g., "I can't lead a fulfilling life") and challenge thinking mistakes by replacing them with accurate, helpful, and adaptive thoughts. For example, Hildenbrand et al. (2011) documented a 9-year old cancer patient's positive coping with regards to cancer and hair loss:

I think...I'm going to get rid of it and it's going to go by and I'm young, so it's not like I am going to live with it for...the rest of my life...I still have friends and they are still going to think that I am who I am...Even though I don't have hair and I have cancer, [if] I just don't think of it as cancer and don't react to it that much, then my friends won't either. (p. 349)



In certain cases where escape is not an option (e.g., chronic pain, fatal disease, or complex but necessary treatment), acceptance has been beneficial, particularly in achieving meaningful goals (Casier et al., 2008; Jones et al., 2013; Thompson et al., 2011; Wicksell et al., 2011). For instance, an adolescent accepts she is fatigued and in pain but remains involved in her peer social activities.

With regards to parents, introduce the cognitive triad and help them identify feelings and behaviors related to unhelpful thoughts in their daily lives and learn to reframe them (Center for Pediatric Traumatic Stress, 2015). For example, a parent with a child that was recently discharged from the hospital and wants to stay up late to watch a television show may think “He went through a lot; I should make him feel special,” feel “guilt,” and would be tempted to allow him to break the bed time rule. In contrast reframing the unhelpful thought would be “He went through a lot; It’s best for him to maintain limits,” end up feeling “guilt” but also “content” and would refuse the child’s request by instilling the family’s rules. Acceptance has also been useful with parents that have negative reactions that are interfering with their ability to effectively support their child (Wicksell et al., 2011). Overall, the purpose of this component is to show parents and children they are able to control their thinking, emotions and behaviors, have the tools to regulate their reactions in the presence of trauma reminders, and manage emotional instability (Cohen, & Mannarino, 2008; Rapp, Dodds, Walkup, & Rynn, 2013).

## **Component 6: Trauma Narrative**

Research suggests that children's subjective experience of hospital-related fears may be traumatic enough to affect their overall well-being (Salmela, Aronen, & Salanterä, 2010). Exposure to painful medical procedures and treatments (e.g., chemotherapy, transplants) have been found to correlate with traumatic stress symptoms for some individuals (Balluffi et al., 2004; Connolly, McClowry, Hayman, Mahony, & Artman, 2004; Manne et al., 2002; Mintzer et al., 2005; Pao & Bosk, 2011; Stoddard & Saxe, 2001; Stuber, 1993; Stuber, Christakis, Houskamp, & Kazak, 1996; von Baeyer & Tupper, 2010). Children with medical trauma demonstrate arousal (e.g., increased heart rate at a follow-up visit), avoidance (e.g., refusing medications), and re-experiencing (e.g., nightmares of traumatic event). It is important to keep in mind that due to the nature of medical conditions and associated invasive procedures, children may have multiple traumas and they may be ongoing.

In medical traumatic stress considerations should be made as to the nature of the trauma (internal versus external, or both). An in-depth exploration is warranted regarding the child's experiences and whether they are independent and outside of the child or inside of them and a result of their condition. In addition, potential challenges may exist in creating the narrative that may be associated with the medical trauma. For example, a child with limited upper body strength due to a stroke may struggle to write, while a child with a severe traumatic brain injury may have difficulty verbally expressing himself. In those situations, alternative approaches to the narrative should be considered.

During the trauma narrative component, which occurs over multiple sessions, the child writes their own book with details of what happened before, during, and after the traumatic event/s, and shares thoughts, feelings, and physiologic reactions (Dorsey, Briggs, & Woods,

2011). If they are too young, they can draw their experiences and the clinician may write down what the child is verbally sharing. With each session, the child will repeatedly read the narrative and add to it, thereby exposing themselves to the trauma experience and the associated memories, and gradually separating the maladaptive thoughts from the linked traumatic event and reducing physiological symptoms. Maladaptive trauma responses were noted to greatly decrease even when a child is exposed to repeated trauma (Cohen et al., 2011). Cohen et al. (2006) suggest that a “life narrative” or timeline can help capture multiple experiences, including positive ones, thereby helping the child contextualize them into their life. In creating the narrative, the child is encouraged to use adaptive cognitions, include situations of real danger (past and ongoing) and trauma reminders, and share associated thoughts and feelings in the safety of the session. This will allow them to distinguish overgeneralized trauma cues from real danger and reduce avoidance. If they become upset, stress management skills may be used in the session. Once the narrative is fully completed any cognitive distortions are addressed and corrected (Cohen et al., 2006). Safety concerns are validated and safety plans are reviewed.

If physical or neurological challenges resulting from the child’s medical condition make it difficult for the child to verbalize or write his narrative, there are alternative methods (e.g., art, puppets, sculpting, sand tray, etc.) available in helping develop a coherent narrative by focusing on non-verbal, visual memories. Art therapy is one such approach that has been used with persons with trauma. It has been found to assist in emotional expression and externalization of the visual memories by physically separating them in order to process and conceptualize the experience and create new meanings (Desmond, Kindsvatter, Stahl, & Smith, 2015; Schouten, de Niet, Knipscheer, Kleber, & Hutschemaekers, 2015; Walker, Kaimal, Koffman, & DeGraba, 2016).

## **Parents**

Numerous literature discusses that parents of chronically ill children also experience post-traumatic stress (NCTSN, 2004), at times even more than their own child (Forgey & Bursch, 2013). Since children's adjustment is strongly connected with parent adjustment (Colletti et al., 2008; Mullins et al., 2015), the parent's reaction is therefore vital to child and family functioning (Kazak et al., 2006; Price, Kassam-Adams, Alderfer, Christofferson, & Kazak, 2016). For example, a parent may be imposing their own fears onto their child (Mullins et al., 2007). It is essential that the parent is in a state to appropriately participate in parallel sessions, tolerate having their child's narrative shared with them, and process the trauma experience. In parallel sessions, the parent is meeting with the clinician separately and learning about their child's past and ongoing trauma experiences, triggers, and related feelings and behaviors through the child's detailed narrative. The parent is slowly being desensitized to their child's trauma in order to appropriately tolerate the child's sharing and be supportive during the upcoming conjoint sessions. The child should be comfortable sharing their emotions with their parent, fully confident in that they will provide them the security and support they need during stressful times. If parents are too distressed to be emotionally available to their child, they should be referred for their own psychological intervention. Another supportive adult that the child trusts should be involved instead. Research has shown that children in a caring relationship that were valued were found to be resilient in the face of complex and concurrent trauma in poor and violent communities (McRea, Guthrie, & Bulanda, 2016).

## **Component 7: Cognitive Coping and Processing II- Processing the Traumatic Experience**

This second part of Cognitive Coping and Processing focuses on identifying, exploring, and correcting cognitive errors related to the trauma (Bronfman et al., 1998; Cohen et al, 2006; Rapp et al, 2013). Unhelpful thoughts can be either accurate or inaccurate, and generally affect the child's ability to properly and effectively cope. Although ongoing trauma may reinforce unhelpful thoughts, appropriate intervention was found to decrease the child's maladaptive responses to repeated trauma (Cohen et al., 2011). Therefore, creating, reading, and re-reading the child's trauma narrative is necessary to target and correct the maladaptive thoughts, learn the difference between real danger and trauma reminders, appropriately problem-solve, and carry out safety plans (Cohen et al., 2006; Murray et al., 2013).

When reviewing the narrative, the clinician must keep in mind the child's developmental stage when identifying and exploring if expressed thoughts are helpful and accurate. Younger children are more concrete and more likely to partake in behavioral interventions, while open-ended questions are recommended with older children in order to gain an understanding of their knowledge and the information they are misperceiving. With adolescents a focus on the "here and now" should be addressed with work focusing on their expectations of the traumatic event and anticipation of future challenges. As much as it is important to address distortions, it is just as important to assist the child in filling in the gaps by providing realistic information, if possible (Center for Pediatric Traumatic Stress, 2015).

Addressing a child's beliefs about their illness or injury is necessary as that is the crux of the work. The purpose is to identify a maladaptive thought, help the child examine the evidence for and against it, and assist them in correcting it by creating a more helpful thought. In addition, the clinician is encouraged to normalize the child's reactions, acknowledge the bad with a focus

on the good, and reassure the child that he is not at fault for his illness or trauma (Center for Pediatric Traumatic Stress, 2015; Cohen et al., 2006). Through practice the child's adaptive thinking will be reinforced leading to more positive outcomes.

For instance, a child had a stem cell transplant that was scary and painful but also required him to be in isolation both at the hospital and at home for a long period of time because of the high risk of infection. The child reports the inaccurate and unhelpful thought of "I'm being punished with this disease" The clinician explores the child's experience, his thought that he is being punished, challenges the thought by having the child provide evidence for and against it, discusses his belief that he is "bad," and has him share times when he's been good. Towards the end of the conversation, the child responds with "I guess I'm not a bad kid. I am who I am and I'm doing my best to be healthy." With that the clinician reassures the child that he is not being punished for something that occurs randomly (i.e., gene mutation), acknowledges that the experience wasn't pleasant and praises the child's hard work, positive attributes, and resilience. Other cognitive distortions children with medical conditions may have include: "I'm defective" "No one will like me if they knew I'm sick," "I can't do anything," "I'll never be happy," and "It's my fault my parents are arguing."

## **Parents**

Parents might also demonstrate cognitive errors such as: "My child can't be fixed," "It's my fault my child has CF," and "Our family will never be the same." The clinician has the parent share their reaction to their child's traumatic event, and assists them in identifying, modifying and restructuring their maladaptive cognition to one that is more helpful. The clinician would also provide examples of the child's distorted thoughts and the techniques used to change them. She would encourage the parent to practice challenging their child's distorted cognitions in and

outside of session and support their child in modifying and generating adaptive and helpful thoughts (Cohen et al., 2006).

### **Component 8: *In-Vivo* Mastery of Trauma Reminders**

Once the child has shared their trauma narrative and learned to differentiate real danger versus trauma reminders, they are then gradually exposed to the trauma reminders to further address ongoing avoidance behaviors. Children with ongoing trauma will require special attention as to whether their trigger is a real danger or not. When having many repeated procedures, children may develop anticipatory anxiety, which not only cause them distress but also influences medical treatment and adherence (Center for Pediatric Traumatic Stress, 2015). In general, children with repeated trauma demonstrated a reduction in maladaptive responses with targeted interventions (Cohen et al., 2006; Rachamim, Mirochnik, Helpman, Nacasch, Yadin, 2015). During this part of treatment the feared situation/s will be identified and explored, a plan will be developed to slowly introduce the child to the situation, have them use their coping skills to manage any emotional or behavioral dysregulation appropriately before progressively increasing the exposure. The purpose is to be able to tolerate being in the feared situation with minimal or no anxiety or fear.

Pediatric traumatic stress is subjective to the child's perceived life-threat so there are multiple situations that can be traumatic, with just as many trauma reminders. For example, the child with the stem cell transplantation and lengthy isolated hospitalization and home stay mentioned earlier may present with symptoms including (a) separation anxiety and not wanting his mother to leave him at school, and (b) trouble sleeping in his own bed because of nightmares that were scary and involved hospitalization and procedures. In-vivo exposure would involve gradual separation from his mother as well as sleeping in his own bed. In sessions, the mother would gradually move further from the child and leave the room for longer periods of time until the child is able to successfully diminish his fear and be able to fully interact with the clinician.



Outside of session, a plan was created to slowly have the child stay in school for longer periods of time and receive positive reinforcement and rewards for completing the targeted plan and/or exceeding it. Similarly, the child will gradually sleep in his own bed over a longer course until he is able to sleep through the night with no expressed fear or anxiety.

A child with leukemia with needle or procedure related pain and an upcoming lumbar puncture would be exposed to the medical stimuli through behavioral rehearsal in session with the clinician. The child would pretend to be the doctor and perform a lumbar puncture on a doll or plush toy while the toy uses breathing skills and lies still. The child then performs the procedure on the clinician, who will model relaxation strategies before practicing with the child as the patient. Throughout, the child is praised for participating and using learned coping skills. Alternatively, children with chronic pain may need to be reassured the pain does not mean they will die and may benefit from practicing relaxation exercises and acceptance of the pain while continuing activities that they would otherwise have avoided. Having a solid plan with the joint agreement of the child, parent, and other entity (e.g., school, medical team) is crucial to the success of this component. By exposing and gradually desensitizing the child to trauma reminders, helping them problem-solve and prepare for future procedures, and effectively utilizing coping strategies will help decrease maladaptive emotional and behavioral responses leading to increased self-efficacy and improved functioning.

### **Component 9: Conjoint Child-Parent Sessions**

Pediatric medical traumatic stress not only affects the child but the family, too. Parents are at a higher risk of developing PTSS compared to their ill child (Forgey & Bursch, 2013) therefore, their responses are integral to both the child and the family's functioning. Understandably, parents become distressed when their child is sick or injured, and even more so when the illness or injury is chronic and/or life-threatening. In response, they become psychologically distressed, develop the belief that their child is vulnerable, try to exert control in a situation full of uncertainty, and react by being overprotective of their child (Colletti et al., 2008). Higher levels of perceived child vulnerability was associated with greater internalizing problems and illness uncertainty in children and adolescents (Mullins et al., 2007), as well as lower parent reported quality of life in those children (Hullmann et al., 2010). Parental overprotection was found to relate to more externalizing behavior and less autonomy in children (Holmbeck et al., 2002). Overall, parents' high stress was noted to impact the child's symptoms (Landolt et al., 2012), and parent adjustment influences child adjustment (Mullins et al., 2015). Therefore, it is important to not only understand the child but also the parent's beliefs of the traumatic event in order to develop appropriate interventions. The therapist should be encouraging of supportive caregiving by the parent, as well as developmentally appropriate opportunities for child autonomy. Should unhelpful statements or behaviors occur, the therapist is to briefly intervene and redirect the conversation.

During the conjoint child-parent sessions the child shares their trauma narrative with the parent and receives support and reassurance that the parent will protect them and they are safe. The sessions allow for both parties to talk about the distressing experience and correct distorted thinking, discuss concerns or misinterpretations, as well as problem-solve. The purpose is for the

parent and the child to comfortably and openly discuss difficult topics together. Yasinski et al. (2016) studied caregiver and child interactions in conjoint sessions and found that supportive caregiving predicted lower child internalization of symptoms, while avoidant caregiving correlated to worse child externalization and overgeneralization of trauma cues. Example conversations include parents assisting their child in coping with medical procedures and problem-solving:

We did work out a strategy. It came from a birth plan. [The child] wrote out a needle plan, and she talked it through at home and worked it out with the psychotherapist here at the hospital. They did a 7-point plan. She had it written on a card, and every time there was a new nurse or doctor she'd hand the card to them and they had to read it before going near her (Ayers, Muller, Mahoney & Seddon, 2011, pp. 336-337).

We talk about... 'When you're done with your treatments, here's what we're going to do,' and we set goals and things that we're going to do as a family... We try very hard to make life as normal as possible, but understanding that there's a new normal.

(Hildenbrand et al., 2011, pp. 349-350)

Additional topics of discussion during conjoint sessions include reducing risk of drug use in response to mood and anxiety symptoms, as well as peer pressure to fit in, positive peer relationships, self-management of medications and medication adherence (Ernst et al., 2010), and safety planning.

Having strong communication between the child and the parent improves both of their self-concepts. When parents are self-efficacious they are more confident in supporting their child (Carter, 2014). In addition, parents with more positive perceptions of family functioning had lower challenges related to managing the child's condition and its effect on the child and

family. That perspective revealed that they functioned better than families focused on condition management and difficulty of their responsibilities (Knafl et al., 2013). Reported posttraumatic growth (PTG) after certain illnesses suggests the ability to balance experiences and beliefs, acknowledging that both children and parents can overcome the medical illness-related challenges while also being able to discuss them (Picoraro, Womer, Kazak, & Feudtner, 2014).

### **Component 10: Enhancing Future Safety and Development (Reprise)**

Children with chronic conditions are at risk for ongoing medical traumatic stress due to the nature of the chronicity of their medical condition and the need for treatment. It becomes important for clinicians to assess for strong risk of recurring trauma and address safety planning early in treatment and throughout the intervention. Safety-seeking, engaging with helpful others, and learning to differentiate trauma reminders from real danger are strategies that can be used for children with ongoing trauma in order to help develop skills to reduce vigilance and have the tools to face future re-traumatization. Towards the end of TF-CBT treatment the child would learn to become desensitized to feared stimuli, perspective-take, and implement effective coping and problem-solving skills (Cohen et al., 2011; Murray et al., 2013).

With life-threatening illnesses it is not uncommon to have other related potential traumas, and preparing for them can lead to a reduction of associated fears (Stuber et al., 2003). It is not unusual for new fears to develop as a consequence of the traumatic event, or even to new trauma. Understanding that trauma reminders can cause the body to react as if it is in danger when it is not can help in managing emotional triggers. The importance of facing these fears repeatedly (rather than avoiding them) and learning that they do not lead to danger allows for the link between scared feelings and the fear stimuli to weaken (Center for Pediatric Traumatic Stress, 2014c). As such, it is imperative to generate a solid, detailed safety plan while taking into consideration the child's level of development. Although medical traumatic stress is subjective there are degrees of life-threatening medical interventions or events (e.g., PICC placement versus transplant surgery) that should be kept in mind while assisting the child and parent in developing contingency safety plans. Encouraging the continuation of a developmentally appropriate open and caring conversation between the child and parent, as well as the child's involvement in

medical discussions and treatment decisions is imperative as it allows the child to express her concerns, address her emotional needs, increase her sense of control, increase self-efficacy, and reduce fears and uncertainties (Center for Pediatric Traumatic Stress, 2014d; NCTSN, 2004).

A partnership with open communication involving the child's medical team and school allows for collaboration that can increase the child's chances of success in identifying and overcoming challenges related to safety and trauma. Returning to or establishing routines such as school and bedtime, as well as engaging in social activities and spending time with friends and family is beneficial to the child in his recovery from a distressing experience (Center for Pediatric Traumatic Stress, 2014d). Additionally, adolescents may engage in risky behaviors (e.g., drugs, alcohol, smoking) as a means to avoid or numb emotions and physical pain (Ernst et al., 2010). These are potential barriers to recovery and may negatively impact the disease process. The clinician should be mindful of these risks and address them with the child's parent and the child, if developmentally appropriate.

A last session that continues to be strength-based (Stuber et al., 2003) and supportive by focusing on the child and family's resilience and success in overcoming their challenges will provide a positive end to treatment (Cohen et al., 2006). The clinician's confidence in the child and parent's abilities to face future hardships may further increase their level of self-esteem and self-efficacy. Optimism was found to be a protective factor in adolescents with CF (Oliver et al., 2014) and may lead to a positive attitude by the child and parent towards managing ongoing or future difficulties. With continued resilience over medical-illness related challenges the child may learn to balance beliefs and experiences and eventually reach a level of posttraumatic growth (PTG) (Picoraro et al., 2014; Yi & Kim, 2014).

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