Adolescent Trauma Treatment in Integrated Primary Care: A Modified Delphi Study

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Abstract

Early stressors like trauma can lead to developmental changes that have life-long negative health consequences (Merikangas et al., 2010; Anda et al., 2006). Approximately 1 in 4 youth experience substantial trauma during their developmental years (Merikangas et al., 2010; Duke, Pettingell, McMorris, & Borowsky, 2010). Such findings suggest the need for early intervention and treatment for adolescents exposed to traumatic events and adversity. Ideally, adolescents could be treated within primary care settings where parents overwhelmingly seek services for their children. Primary care settings are sought out at a 94% to 97% rate of services as compared to only a 4% to 33% rate of parents seeking out mental health services (Guevara et al., 2001). Unfortunately, no adolescent trauma-informed interventions have yet been adapted for use in primary care (Glowa, Olson, & Johnson, 2016). This study aimed to fill this critical gap between adolescent mental health issues associated with trauma and adverse childhood experiences and the lack of treatment in integrated primary care settings. The need for trauma-informed treatment for adolescents who have experienced trauma and adverse experiences is especially salient as evidence-based treatment for adolescents in this setting is limited. A modified Delphi approach was employed to address this gap in the research. Two rounds of questionnaires and focus groups were utilized with a panel of experts and youth stakeholders to gain consensus on treatment recommendations. Ultimately, expert panelists and youth stakeholders identified 59 recommendations for adolescent trauma treatment to be delivered in integrated primary care settings.

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General Audience Abstract

Childhood trauma can have negative health, social, and educational outcomes that extend into adulthood and over one's lifespan (Black, Woodworth, Tremblay, & Carpenter, 2012; Merikangas et al., 2010). Approximately 1 in 4 youth today experience trauma (Duke et al., 2010). Trauma can include a variety of things such as physical, sexual, or emotional abuse; being the victim of a crime; witnessing violence in the home; living through a natural disaster or experiencing an accident (Anda et al., 2006; APA, 2017). The frequency of trauma in adolescence suggests the need for early intervention and treatment. Ideally, adolescents could be treated within primary care settings where parents and adolescents frequently seek care services. Unfortunately, no adolescent trauma interventions have been created for this setting (Glowa, Olson, & Johnson, 2016). This study was designed to improve the treatment of adolescent trauma in primary care settings. For this research study a modified Delphi technique was used. Two rounds of questionnaires and focus groups were utilized with participants that consisted of a panel of experts from the field and youth aged 14-18 years old. Ultimately, the study participants made 59 recommendations for adolescent trauma treatment to be delivered in primary care settings.

Dedication

To my grandparents who collectively taught me the value of hard work and the pursuit of happiness. Thank you for providing me the love and confidence to pursue my dreams while staying grounded and true. I am eternally grateful to you.

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To my family near and far. Thank you for supporting my dreams that always take me away from you. Please know that we are never far apart.

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Lastly, for the loved ones I have lost you are and continue to be the wind beneath my wings…

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Chapter 1: Introduction

Background and Significance

This study was designed to advance the understanding of treating adolescent trauma and adverse childhood experiences in integrated primary care settings. The following section provides the background and significance of why a study on adolescent trauma treatment within integrated primary care settings is warranted.

Adolescent mental health. Mental health problems account for a significant and increasing worldwide burden of illness (Murray & Lopez, 2013). Because of this, adolescent mental health is of interest. Adolescents are young people between 12 and 19 years old going through a physical and psychological developmental stage that occurs between childhood and adulthood. This developmental period is one of the most rapid phases of development, where biological maturity precedes psychosocial maturity (The World Health Organization (WHO), 2017). Many mental health problems, such as depression and substance abuse develop during adolescence, a time when youth are still developing physically, mentally, and emotionally (National Institute of Mental Health (NIMH), 2011). Mental health concerns can have a detrimental impact on adolescent’s well-being, education, and health (Collishaw, 2014). Longitudinal studies highlight the connection between adolescent and adult mental health, reporting that over half of mental health disorders in young adulthood are preceded by a mental health disorder in adolescence (Kim-Cohen, Caspi, Moffitt, Harrington, Milne, & Poulton, 2003).

In 2010, research at the National Institute of Mental Health (NIMH) found that nationally approximately 20% of youth suffered from mental health disorders such as mood, anxiety, and behavior disorders significant enough to affect their daily lives (Merikangas, He, Burstein, Swanson, Avenevoli, Cu, … Benjet, 2010). Furthermore, 40% of adolescents with a mental health disorder also met the criteria for another lifetime disorder. However, primary care doctors (PCP) typically do not detect mental health disorders in approximately 75% of affected adolescents, who subsequently do not receive treatment (Sayal & Taylor, 2004). More youth suffer from mental health disorders in a given year than the most frequently diagnosed physical illnesses in adolescence, including asthma and diabetes (Merikangas et al., 2010). The potential consequences of untreated mental illness in adolescents can result in developmental delay, chronic illness, juvenile incarceration, and suicide (Merikangas et al., 2011). In 2014, the estimated cost of lost productivity and crime spending related to untreated mental illness in youth under the age of 24 was over $200 billion in the US (Lowry, Michael, Demissie, Kann, & Galuska, 2015).

Adverse childhood experiences, trauma, and psychosocial risk. A growing body of research suggests adolescent mental illness is primarily influenced by adverse childhood experiences (ACEs), psychosocial risk factors, and the effects of trauma (Anda et al., 2006; Merikangas et al., 2010).

Adverse childhood experiences. Adverse childhood experiences are stressful or traumatic event(s) that occur during childhood or under the age of 18 and are defined by three broad categories of abuse, neglect, and household dysfunction (Centers for Disease Control and Prevention (CDC), 2016). Overall, 10 specific types of adverse childhood experiences have been identified. A few examples of an ACE would include: having a parent who’s an alcoholic or a victim of domestic violence, losing a parent, as well as experiencing abuse (CDC, 2016b). ACEs can be chronic events and occur during one’s developmental years and have the potential to cause harm. The impact of this harm disrupts health and development (Bick, Nelson, Fox, & Zeanah, 2015; Nelson & Charles, 2015; Szilagyi & Halfon, 2015).

Trauma. The Substance Abuse and Mental Health Services Administration (SAMHSA, 2014) defines trauma as "an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects" (p.1). Experiencing trauma during childhood often has a variety of severe consequences that has the potential to follow an adolescent into adulthood and over their lifespan (Black, Woodworth, Tremblay, & Carpenter, 2012; Merikangas et al., 2010). Unfortunately, approximately 1 in 4 youth will experience substantial trauma during their developmental years (Merikangas et al., 2010; Duke, Pettingell, McMorris, & Borowsky, 2010). Examples of traumatic events include being the victim of physical, sexual, or emotional abuse; being a victim of crime; witnessing violence in the home and living with someone who uses or abuses substances (Anda et al., 2006; American Psychological Association (APA), 2017). Because the experience of trauma is unique to each person and its interpretation subjective, it would be impossible to identify and define the full spectrum of potentially traumatic events. What one person finds traumatic may not be traumatic to another. However, if an adolescent experiences overwhelming stress that exceeds their ability to cope with traumatic events, they may experience on-going adverse effects associated with the trauma (APA, 2017).

Psychosocial risks. Psychosocial risk factors are associated with mental health disorders in youth and can compound or create traumatic effects (Sameroff, 2000; Rutter & Quinton, 1977). Psychosocial risk factors can include socioeconomic disadvantage, non-nuclear family structure (e.g., divorce or grand-parent headed homes), parental risk characteristics (e.g., mental illness and substance use), family dysfunction (including abuse), stressful life events (including childhood trauma), and peer-related activities (e.g., social isolation or bullying).

How these factors influence development is best understood through Bronfenbrenner's ecological model, which outlines how the environment influences development (Gerring & Wade, 2012). Use of the ecological model helps us understand adolescent development as a series of evolving interactions, in which children and adolescents develop by interacting with immediate and distal environments (Gerring & Wade, 2012). In this sense, home, school, and social influences can be conceptualized as potential risk factors for adolescent mental health disorders (Gerring & Wade, 2012).

Child and adolescent developmentalists have interpreted risk variables as having a cumulative risk effect (Rutter & Quinton, 1977; Turner & Lloyd, 1995). Cumulative risk theory suggests that a variety of psychosocial risk factors would have an additive effect on adolescent mental health. Furthermore, cumulative risks, such as co-occurring psychosocial risk factors (e.g., parental mental illness and peer isolation) are used to describe the relationship between variables and outcomes that affect the adolescent's development and recovery from illness (Gerring & Wade, 2012). To reduce adolescent morbidity and mortality rates related to trauma and adverse childhood experiences it is vital for providers to collect thorough psychosocial histories and to connect adolescents to treatment (Gerring & Wade, 2012).

Experiencing a traumatic event during adolescence has been associated with increased risk of mood disorders, alcoholism and drug abuse, early initiation of sexual activity, and antisocial behavior (Duke et al., 2010; Chapman, Dube, & Anda, 2007; Anda et al., 2006; Felitti et al., 1998). Mental health problems during adolescence is associated with risk for suicide, a leading cause of death in adolescents (Windfuhr & Kapur, 2011; NIMH, 2011) as well as with chronic illness and early mortality (NIMH, 2011; Windfuhr & Kapur, 2011; Dube, Felitti, Dong, Giles, & Anda, 2003). Evidence also supports the link between experiencing abuse or adverse events and an increased risk of engaging in self-harming behaviors (Kaplan, Pelcovitz, & Labruna, 1999). Thus, the relationship between ACEs, trauma, and health illustrates that adolescence is a vulnerable time for youth development, which highlights the importance of early identification of risk factors that may contribute to the cumulative effects of trauma and long-term negative health outcomes.

Such findings suggest a need for early intervention and treatment for adolescents exposed to traumatic events. From the developmental and biological perspectives, adolescence sets the stage for life-long health outcomes, making it important to intervene and treat an adolescent early on when they experience trauma to prevent long-term adverse outcomes (Dube et al., 2003; NIMH, 2011). As it stands now, most ACE screenings are given retroactively in adulthood. Therefore, treatment is provided later in life instead of the critical developmental period during adolescence, when the trauma has occurred (Kim-Cohen et al., 2003; Purewal, Marques, Koita, & Bucci, 2016). Treatment provided in adolescence has the potential to create change during a critical time and prevent long-term adverse trauma effects compared to treatment provide later in life.

Primary and Integrated Care. According to the APA (2018), integrated health care, is an approach that utilizes a high degree of collaboration among healthcare professionals typically working in a shared setting. An interprofessional healthcare team includes a diverse group of members (e.g., physicians, behavioral health providers, nurses, and other health professionals), depending on the needs of the patient. A high level of communication and information sharing related to patient care and the establishment of a comprehensive treatment plan to address the biopsychosocial needs of the patient among team members is what makes integrated care unique (APA, 2018). In traditional medical care settings, primary care is an entry point into the medical system. Often primary care is the first point of care contact for patients with a health concern. A primary care provider (PCP) has the responsibility for coordinating other needed health services related to the patient's care. Integrated Primary Care (IPC) is as its title eludes, is an integrated primary care setting where physical health, mental health, and other health providers (e.g., nutritionists, pain specialists, care coordinators, peer support specialists) collaborate in the primary care setting. For this study, Integrated Primary Care (IPC) will be the setting in which the studied adolescent treatment program will be proposed. Thus, it will be critical that the limitations and strengths of the setting are kept in mind during the development of the treatment.

There are compelling reasons for primary care settings to provide adolescents with a mental health home. First, research indicates that parents (94%–96%) overwhelmingly seek services through primary care settings, compared to only 4% to 33% of parents directly accessing mental health services for their children (Guevara et al., 2001). Second, over 47% of all children under the age of 18 saw a primary care provider in 2016 (CDC, 2017) and nearly 70% of all mental health diagnoses are treated within the primary care setting (Campbell et al., 2000). Hence, integrated primary care could offer a unique opportunity to bridge mental and physical health services for adolescents. The use of a brief assessment to screen for a history of adverse childhood experiences or trauma-related symptoms would increase the likelihood that adolescents are identified as having trauma history and could get them referred for further evaluation and treatment (Briggs, Fairbank, & Greeson, 2012; Cohen, Kelleher, & Mannarino, 2008; Felitti et al., 1998).

Statement of the Problem

A national service utilization study of over 6,000 adolescents between the ages of 13 and 18, found that only 25% to 33% of youth who met the criteria for a mental health diagnosis received treatment (Merikangas et al., 2011). These findings have been consistent across multiple service utilization studies, suggesting that approximately only 20% of adolescents with mental health needs receive treatment (Merikangas et al., 2010; Zuckerbrot, Maxon, Pagar, Davies, Fisher, & Shaffer, 2007). The lack of treatment adolescents with mental health concerns receive is troubling, especially as it relates to trauma and adverse childhood experiences. Early stressors such as trauma can cause long-term development changes and have life-long negative consequences (Anda et al., 2006; Merikangas et al., 2010). Moreover, no trauma-informed interventions have yet been adapted for use in primary care for adolescents (Glowa, Olson, & Johnson, 2016).

Therefore, this study aimed to fill the critical gap between adolescent mental health issues associated with trauma and adverse childhood experiences and the lack of treatment for such concerns in integrated primary care settings. The need for trauma-informed treatment for adolescents who screen positive for trauma and adverse childhood experiences in primary care settings is especially salient as evidence-based treatment (EBT) for adolescents in this setting is limited and critical.

Purpose and Research Questions

Using a modified Delphi approach, this study examined healthcare providers’, educators’, and adolescents’ perspectives on trauma-informed treatment to inform an adolescent integrated care program for adolescents who have experienced trauma. The overarching research question guiding this study:

1. What is the consensus view on developing adolescent trauma treatment for implementation in an integrated primary care setting?

The secondary research questions include:

1. What should be the goals and objectives of an adolescent trauma treatment in primary care?
2. What should be the inclusion and exclusion criteria for adolescent trauma treatment in primary care?
3. What is the appropriate treatment constellation and session structure for adolescent trauma treatment in primary care?
4. What intervention components are essential for an adolescent trauma treatment in primary care?
5. How should a successful adolescent trauma treatment be measured in primary care?

Definition of Terms

The following establishes a common understanding of the terms used throughout this dissertation.

Abuse. Conceptualized as words and actions that cause harm, potential harm, or the threat of harm. Abuse can be deliberate; however, harm may be unintended. Three forms of abuse include physical, sexual, and psychological abuse. Additionally, abuse includes acts of omission, which is the fourth form of abuse, known as neglect (CDC, 2016b).

Adolescence. A developmental stage between childhood and adulthood marked by the ages of 12 through 19 years of age (CDC, 2017). It includes one of the most rapid phases of human development (WHO, 2017).

Adolescent(s). Young people ages 12 to 19 years old going through a physical and psychological development stage that occurs between the onset of puberty and adulthood. Adolescents is the plural form of the word adolescent.

Adverse Childhood Experiences. Stressful or traumatic event(s) that occur during childhood or under the age of 18. Adverse Childhood Experiences (ACEs) are defined by three broad categories of abuse, neglect, and household dysfunction (CDC, 2016b). Overall, 10 specific types of childhood trauma have been identified. Examples include: having a parent who is a victim of domestic violence, losing a parent, and experiencing abuse (CDC, 2016b).

Community-Based Participatory Research. An approach to research that emerges from a community problem and involves community members or stakeholders and researchers in the research process. In Community-Based Participatory Research all partners share decision-making and contribute expertise throughout the process (Robinson, Olson, Bischoff, Springer, & Geske, 2014).

Cumulative Risk Theory. Risk accumulated over a period of time or a number of risks, where risk increases with exposure to adversity or trauma (Prinstein, Boergers, & Spirito, 2001).

Evidence-Based Practice or Evidence-Based Treatment. An interdisciplinary approach to clinical practice that is both conscientious and based in science. It is a problem-solving approach to practice that incorporates the best evidence from research, patient values, and clinical expertise in making decisions about patient care (Samonte & Vallente, 2018).

Ecological Systems Theory. A model constructed by Bronfenbrenner in the 1970s consisting of four environmental levels: the microsystem, the mesosystem, the exosystem, and the macrosystem, which was later expanded. According to Bronfenbrenner’s framework, each level has an impact on the individual, and the levels are nested within a concentric structure, starting with the microsystem (Onwuegbuzie, Collins, & Frels, 2013).

Experts or Expert Panel. A sample or panel of experts in a given field that attempt to capture the collective knowledge and experience of that field to influence, create, or predict something in the future (Gupta & Clarke, 1996).

Household Dysfunction. A family who experiences instability. Household dysfunction could include non-nuclear family structure, parental risk characteristics, violence, and substance abuse (Anda et al., 2006).

Integrated Primary Care. Combines primary care and mental health care in one setting to meet patients’ health needs (NIMH, 2017).

Intervention Components or Treatment Components. A variety of practices that mental health practitioners implement to help reduce the effects and symptoms of trauma and other mental illness. Examples include mindfulness, psychoeducation, cognitive coping, and developing a trauma narrative.

Mental Health Treatment. A range of services to treat mental and emotional disorders. Often this is achieved through various types of psychotherapy which can be conducted individually, with couples, families, or in groups. Examples of psychotherapy include Cognitive Behavioral Therapy, Narrative Therapy, and Dialectical Behavior Therapy. Treatment is often designed to encourage communication and insight into problems, change behaviors, and improve functioning with the goal of symptom reduction.

Mental Illness. The Center for Disease Control and Prevention (CDC, 2013), defines mental illness as, “all diagnosable mental disorders and health conditions characterized by alterations in thinking, mood, or behavior or a combination thereof, associated with distress or impaired functioning” (p.5).

Physical Illness. Illness conceptualized as a disease, poor health, or suffering from a sickness that may be short or long-term (CDC, 2013).

Positive Stress or Positive Stress Response. Occurs when a person perceives a stressful situation as an opportunity that will lead to a good outcome. A positive stress response is illustrated by brief increases in heart rate and mild elevations in hormone levels. Moreover, it is an essential part of healthy development (Shonkoff et al., 2011).

Primary Care. A level of care or setting, an entry point to the medical system. Primary care is the first-contact care point for patients with a health concern and has responsibility for coordinating other health services related to the patient's care.

Psychosocial Risk Factors. Are best understood through children and adolescents’ interactions with their immediate and distant environments (Gerring & Wade, 2012). Risk factors could include home, school, and social influences. Specifically, such risk factors may fall within the following domains: socioeconomic disadvantage, parental risk characteristics, family dysfunction, stressful life events (including childhood trauma), substance use, and peer-related activities.

Resiliency. The “complex interaction of child characteristics, such as demeanor and physical appearance, and external supports including positive relationships, supportive family members and mentors, that buffer the effects of adverse situations that place children at risk of maladjustment and imbalanced emotional reactivity” (Prince-Embury, 2015, p. 56).

Stakeholders or Stakeholder Panel. A sample of informants who have experienced the study’s topic and can share their collective knowledge and experience to provide an insider perspective, offer meaning, and share resources. For this study, the stakeholders are adolescents.

Tolerable Stress or Tolerable Stress Response. A tolerable stress response activates the body’s alert system as a result of more severe, longer-lasting difficulties, such as an accident, the loss of a loved one, or a natural disaster (Shonkoff et al., 2011).

Toxic Stress or Toxic Stress Response. A “toxic stress response can occur when one experiences strong, frequent, or prolonged adversity, such as physical or emotional abuse, chronic neglect, caregiver substance abuse or mental illness, exposure to violence, or the accumulated burdens of family economic hardship without adequate adult support,” (Shonkoff et al., 2011, p.234).

Trauma. An emotional response to a terrible event (APA, 2017). Moreover, “trauma is often the result of overwhelming stress that exceeds one's ability to cope or integrate the emotions involved with the experience” (p.1). Trauma highlights how ACEs and psychosocial risk are understood throughout this study; therefore, trauma is often used interchangeably or to describe each of those concepts.

Warm Hand-Off. An in-person referral or handoff between a medical doctor and a behavioral health specialist made during a patient’s primary care medical visit (NIMH, 2017).

Summary

Chapter 1 provides the introduction and background of the problem, the significance of the problem, the purpose of the current study and research questions, and definition of key terms. Chapter 2 includes a review and synthesis of the relevant literature. Chapter 3 contains a description of the methodology. Chapter 4 presents the research results including the analysis and summary of the data. Chapter 5 provides discussion and implications for future research.

Chapter 2: Literature Review

Introduction

This literature review will provide a basis of understanding for the current study by illustrating previous research on related topics. This chapter will provide the reader with an understanding of why early intervention is critical due to the lasting impact trauma can have. Further, it will advance understanding of the study that follows, as it illustrates the relationship that exists between trauma and adolescent health and development. In this chapter, I discuss current research on adolescent mental health and the impact of adverse childhood experiences, psychosocial risk, and trauma on adolescent health and development. Furthermore, advances in trauma-informed care will be examined as will the treatment of trauma in the context of integrated primary care. Building on previous research, I highlight gaps in this area of study and emphasize how this study can contribute to the creation of vital adolescent trauma treatment. I conclude the review by presenting the theoretical frameworks that guide this study.

Trauma, Adverse Childhood Experiences, and Psychosocial Risk

A growing body of research suggests adolescent mental illness is primarily influenced by adverse childhood experiences (ACE), psychosocial risk factors, and the effects of trauma (Anda et al., 2006; Merikangas et al., 2010). SAMHSA (SAMHSA; 2014) defines trauma as “an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects” (p.1). Moreover, trauma is often the result of “overwhelming stress that exceeds one's ability to cope or integrate the emotions involved with the experience,” (American Psychological Association (APA), 2017).

Childhood trauma and adversity can have severe negative consequences with the potential to extend not only into adulthood but over the lifespan (Black, Woodworth, Tremblay,

& Carpenter, 2012; Merikangas et al., 2010). Unfortunately, approximately 1 in 4 youth today experience substantial trauma during their developmental years (Duke et al., 2010; Merikangas et al., 2010). Traumatic events can include physical, sexual, or emotional abuse; being the victim of a crime; witnessing violence in the home; living through a natural disaster or an accident (Anda et al., 2006; APA, 2017). While these are some examples of trauma, because the experience of trauma is unique to each person, it would be impossible to define the full spectrum of potentially traumatic experiences. Moreover, research has shown that there is unpredictability in the recovery and cumulative effects from trauma. Current literature provides few indications of the key factors related to trauma recover outside of resiliency and early treatment (APA, 2017). If an adolescent experiences overwhelming stress that exceeds their ability to cope with traumatic events, they may experience on-going adverse effects associated with the trauma (APA, 2017).

Adverse childhood experiences are stressful or traumatic event(s) that occur during childhood or under the age of 18 and are defined by three broad categories of abuse, neglect, and household dysfunction (CDC, 2016b). Overall, 10 specific types of childhood trauma have been identified. A few examples of an ACE would include: having a parent with a substance use disorder or a victim of domestic violence, losing a parent, as well as experiencing any type of abuse (CDC, 2016b). ACEs can be chronic events, occur during one’s developmental years, and have the potential to cause harm. The impact of this harm disrupts health and development (Bick et al., 2015; Nelson & Charles, 2015; Szilagyi & Halfon, 2015).

Psychosocial risk factors can compound or create traumatic effects and are also linked to detrimental outcomes and mental health disorders in youth (Sameroff, 2000; Rutter & Quinton, 1977). Psychosocial risk factors can include socioeconomic disadvantage, non-nuclear family structure (e.g., divorce or grand-parent headed homes), parental risk characteristics (e.g., mental illness and substance use), family dysfunction (including abuse), stressful life events (including childhood trauma), and peer-related activities (e.g., social isolation or bullying). More recently, the effects of psychosocial risk factors on health have received considerable attention (Copeland, Shanahan, Jane Costello, & Angold, 2009). For example, peer isolation during adolescence can lead to adverse outcomes on both physical and mental health. A recent study of over 4,000 youth found that when youth did not endorse having someone their age to confide in or a close friend, depressive symptoms were 1 to 3 times more likely (Szilagyi & Halfon, 2015).

How psychosocial risk factors and trauma influence development is best understood through Bronfenbrenner’s ecological model, which outlines how environment influences development (Gerring & Wade, 2012). The ecological model understands adolescent development as evolving interactions, in which children and adolescents develop with their immediate and distant environments (Gerring & Wade, 2012). In this sense, home, school, and social influences are conceptualized as potential risk factors for adolescent mental health disorders (Gerring & Wade, 2012). Psychosocial epidemiology research explores the way in which people’s interactions with their social environments may influence health either directly or indirectly through risk factors and environment (Copeland et al., 2009). Researchers have found that adolescents may “face a daunting array of psychosocial and physical conditions” (Copeland et al., 2009, p. 457), that interact in complex ways, contributing to the development of disease and developmental complications. The ecological model will be further explored at the end of the chapter.

Past research studies. The leading causes of illness and death during adolescence are largely preventable (suicide and accidental death), with 75% of deaths that occur during adolescence related to psychosocial risk and behavioral factors (Chapman, Dube, & Anda, 2007;

Felitti et al., 1998). As these factors are largely preventable, researchers set out to explore what causes individuals to engage in unsafe practices that lead to decreased life expectancy. The landmark 1995 ACE research study illustrated the relationship between childhood trauma and illness later in life. The original ACE research study was conducted by Kaiser Permanente and the CDC. The ACE study consisted of over 17,000 adult members of the Kaiser Permanente health maintenance organization as participants. The screening tool used to measure adverse child experiences was the ACE questionnaire, a ten-item “yes” or “no” dichotomous self-report tool. The ACE questionnaire assesses for the experience of abuse, household dysfunction and neglect retrospectively (Felitti & Anda, 2009). For example, a negative score would indicate the absence of adverse childhood experiences, while a score of 10 would indicate the participant had experienced each of the adverse events. The ACE screening tool assesses for the following types of trauma and adversity: physical, emotional and sexual abuse, witness of domestic violence, presence of a substance using household member, incarceration of a household member, presence of a mentally ill household member, loss of one or both parents, and physical or emotional neglect (CDC, 2016b; Felitti & Anda, 2009).

Approximately 11,000 (two-thirds) participants reported having experienced at least one ACE after completing the questionnaire and more than one in five reported experiencing three or more (CDC, 2016b; Felitti & Anda, 2009). The participants’ raw scores were later compared against visits to the emergency department and healthcare providers, sexual behaviors, addiction issues, disabilities and health issues, healthcare costs and age of death (if applicable). The findings of the study demonstrated a relationship between ACE scores and psychological and physical health markers (Felitti & Anda, 2009).

Felitti and Anda (2009) proposed that the results of the ACE study required a major paradigm shift in the way healthcare was provided. At that time the medical model's tendency was to treat a patient's presenting problem, however, these early ACE study findings suggested that an integrated trauma-informed, whole person approach was indicated. This paradigm shift led to an increase in integrated care centers and trauma-informed care programs, however there is still little available research on trauma-informed treatment for adolescents in integrated primary care settings. As such, the current study explores expert and stakeholder perspectives to develop an intervention program for adolescents who have experienced trauma for use in such settings. Moreover, health problems and increased spending are often the result of behaviors used to self-medicate post-trauma, therefore it would be worthwhile to treat trauma during adolescence versus retroactively in adulthood to prevent further complications over the lifespan (Dube et al., 2001; Felitti & Anda, 2009).

A follow-up study analyzed data of over 17,000 adults regarding their experiences of childhood trauma and suicide attempts (Dube et al., 2001). Researchers discovered that the presence of any adverse childhood experience put adults at a two to five times greater risk for self-harm and further increased suicide attempts in adulthood (Dube et al., 2001). Participants who had experienced seven or more adverse childhood experiences, had an approximately 30% greater risk for a suicide attempt (Dube et al., 2001). However, when controlling for substance use concerns, researchers found that ACE scores had less of an influence on suicidality; suggesting that substance use factors might mediate this relationship. Since suicide is a leading cause of death in the U.S., particularly for the adolescent population, it is important to capitalize on this research to minimize suicide risk in the future and create interventions to prevent this (Dube et al., 2001).

In an associated ACE study, Chapman, Whitfield, Felitti, Dube, Edwards, & Anda (2004) explored the relationship between the quantity of adverse events and the risk of depression diagnosed in adulthood. Over 9,000 adults were examined in the study which utilized the ACE questionnaire and standardized measures for depressive disorders. Findings suggested that participants who had experienced emotional abuse during childhood were at a 2.5 to 2.7 times greater risk for experiencing depression in their lifetime (Chapman et al., 2004). Consequently, as ACE scores increased, so did the probability of lifetime depression and recent depressive episodes (Chapman et al., 2004). This research reinforces the importance of both early intervention and integrated trauma-informed care to properly address the etiology of their mental health concerns. Early treatment is pertinent as a preventative measure regarding the risks associated with depression, like decreased functioning and suicidality in adolescents.

Around the same time as the original ACE study, psychosocial and environmental factors started to gain attention as contributors to both physical and mental health conditions (Gould, Fisher, Parides, Flory & Shaffer,1996; Felitti & Anda, 2009; CDC, 2016b). Gould et al. (1996) studied 120 adolescents postmortem suicide completion and found that psychosocial risk profiles of youth, as well as their diagnostic profiles, are a necessary component of a suicide risk assessment. Psychosocial risk profiles of adolescents likely to complete suicide include those experiencing school problems (e.g., social isolation), who have had interpersonal losses (e.g., a recent break-up or divorced parents), had poor parent-child communication, or a family history of suicidal behavior. Gould et al. (1996) found that psychosocial risk can significantly add to an adolescent’s risk of suicide. This study highlights the importance of considering psychosocial factors when assessing for risk and mental illness in adolescents. Addressing psychosocial factors during adolescence is critical for a couple of reasons during this important developmental period. First, the prevalence of psychosocial risk and associated behavior that emerges during adolescence is enough to merit classifying adolescent health as a high-priority (CDC, 2016b; SAMHSA, 2012; NIMH, 2011). Second, mental health concerns that emerge during adolescence foreshadow long-term risk for chronic disease (WHO, 2018). For these reasons, adolescence has been described as “the first barrier to health promotion” (Walsh, 2011, p. 585). The growing awareness of the bidirectional relationships among psychosocial risk factors, mental health, and physical health underscores the need for early trauma-informed care. Early adolescence is a key time for health promotion efforts (CDC, 2016a; NIMH, 2011; SAMHSA, 2012).

Independent of the ACE studies, Clark, Thatcher, & Martin (2009) explored the effects of child abuse on health and alcohol use after collecting data regarding trauma history, health-related symptoms, and alcohol use from 668 adolescents. Each adolescent was interviewed and assigned to a specific trauma class as follows: witness to violence, experience of physical abuse, or experience of sexual abuse (Clark et al., 2009). Participant health symptoms were evaluated at a one-year follow-up and again during young adulthood. Findings indicated that as the severity of the trauma class increased (the adolescents’ experience with trauma), health issues such as stress response functioning, immune system functioning, and body mass worsened (Clark et al., 2009). Moreover, signs of liver disease were reported with the early onset of alcohol use and found to be associated with severe trauma (Clark et al., 2009). The findings of this study highlight the connection between child abuse and trauma, and how such a relationship can likely predict mental and physical health problems that continue into adulthood, as seen in the previously mentioned studies.

Prevalence and negative outcomes. Adverse childhood experiences and trauma pose a significant public health concern. As a result, the WHO, CDC, and National Center for Chronic

Disease Prevention and Health Promotion began collaborative efforts to define the global health burden of adverse childhood experiences and trauma (Anda, Butchart, Felitti, & Brown, 2010). Consequently, many researchers have set out to examine the prevalence and outcomes of ACEs and trauma. One study conducted from 2005 to 2006 found that more than 1.25 million children in the United States experienced maltreatment (Sedlak et al., 2010). The majority (61%) of the incidents were neglect (Sedlak et al., 2010). An estimated 44% of children experienced abuse, with the majority (58%) having experienced physical abuse, one-fourth experienced sexual abuse, and 27% experienced emotional abuse (Clarkson Freeman, 2014; Sedlak et al., 2010).

According to Perry and Szalavitz (2008), approximately 40% of American children will have at least one potentially traumatizing experience by the age of 18. In fact, a survey revealed that about 13% of children under the age of 17 reported they had experienced some form of serious maltreatment by adults within the past year (Perry & Szalavitz, 2008). The most moderate estimates suggest that at any given time, more than eight million American children suffer from serious, diagnosable trauma-related psychiatric problems alone (Perry & Szalavitz, 2008). Forty-eight percent of American children have been found to have at least one ACE based on data collected from the National Survey of Children's Health (Bethell et al., 2014). That translates into an estimated 34,825,978 children and adolescents nationwide (Bethell et al., 2014).

Throughout the nation, 22.6% of children and adolescents from the ages of 0–17 were found to have two or more ACEs (Bethell et al., 2014), with occurrences increasing with age. Most alarmingly, 30.5% of adolescents ages 12 to 17 had two or more ACEs (Bethell et al., 2014). Children or adolescents who did not have ACEs were often found to demonstrate resilience or were part family-centered medical homes, as compared to those who have had

ACEs (Bethell et al., 2014). Adolescents who had two or more adverse events were 2.67 times more likely to be retained in a grade during school (Bethell et al., 2014). Further, those who did not have ACEs were 2.59 times more engaged in school, as compared to those who did have ACEs (Bethell et al., 2014). In an urban study conducted by Burke et al. (2011), over 65% of the youth sample was found to have one or more ACEs. Startlingly, nearly 12% had experienced at least four or more ACEs (Burke et al., 2011).

One study found that by age six, approximately 70% of children have experienced at least three or more ACEs (Clarkson Freeman, 2014). Experiencing three or more ACEs increases risk for negative long-term health outcomes (Sacks et al., 2014; Felitti et al., 1998). Negative outcomes related to experiencing an ACE can include increased risk of mood disorders, alcoholism and drug abuse, and early initiation of sexual activity (Chapman et al., 2007; Felitti et al., 1998). Furthermore, experiencing an ACE early in life can also lead to crime, substance use, and unemployment later in life (Chapman et al., 2007; Felitti et al., 1998). Unfortunately, many of these underlying risk factors go undiagnosed. Mental health disorders go unidentified and untreated in the adolescent population, and consequently, can become lifelong chronic concerns that may lead to suicide (Chapman et al. 2007; Felitti et al.1998).

Prior research suggests that the prevalence of ACEs varies along socioeconomic (SES) lines and location, but it is uncertain whether there are also racial and ethnic differences in ACEs rates among populations. There has been limited research on such topics thus far, but a new body of work is starting to be developed on this topic. One study examined ACEs exposure and parenting distress in both low and middle SES mothers. They found ACEs and parenting distress to be significantly higher in the low SES group, yet ACEs were present in both groups (Szilagyi et al., 2016). Despite the limited research available on SES and race, it has been established that people of all classes and walks of life can be and are affected by ACEs and trauma (Felitti et al., 1998; Dube et al., 2001).

Development and stress. Trauma produces varying effects on the brain structure of developing youth (Glaser, 2000). When an adolescent experiences trauma changes often occur to their stress response system, releasing hormones. A stress response occurs in the hypothalamic-pituitary adrenal (HPA) axis of the brain, where cortisol, a stress hormone is secreted (Glaser, 2000). When an individual is traumatized, this process is altered, resulting in an overload of cortisol. Subsequently, the excess cortisol works against the body, causing further mental and physical health concerns (Glaser, 2000). It is valuable to further explore how stress can affect adolescent development based on research findings that childhood trauma can affect adolescent cognitive, emotional, behavioral, social and physical functioning.

The systems in the brain that are used often develop what Perry (2006) referred to as use dependency (Duerden & Witt, 2010). This repeated use has a significant impact on the brain’s operating systems. If there is an imbalance in the use of certain areas over others, the one that is used the most often is the one the system relies on for responses to stress. For example, if an adolescent is in a constant state of flight, fight, or freeze based on fear then their brain stem, or amygdala, is constantly in use. This over-arousal creates a dysfunction in their response system, which is triggered by over 14,000 response chemicals flowing through the body upon the initiation of any perceived or real threat (Bailey, 2011; Nakazawa, 2015; Walker et al., 2011). While all these chemicals are necessary for survival, the main chemicals are common and very useful in times of stress. Cortisol, catecholamine, and endorphin all act as a catalyst for a person’s most primitive safety function (Bailey, 2011). In fact, these chemicals create reactions that serve to protect a person in times of danger and stress. However, adolescents who experience a constant assault on their systems due to chronic stress have an overabundance of these chemicals pulsing through their systems, oftentimes rewiring connections, disconnecting the conversations between the brain stem and the prefrontal cortex, and creating misfires between signals in the brain (Bailey, 2011; Teicher & Samson, 2016). This constant flood of stress chemicals will develop an instant readiness or over-reactiveness. This can lead to emotional, behavioral, cognitive, and physical health problems including death (Bick et al., 2015). For example, an inability to pay attention, anxiety and depression, or self-harming behaviors are common when the response system has been repeatedly activated over time.

According to Perry and Szalavitz (2008), if adolescents experience constant chaos and threat during their developmental years, the brain's stress response systems and those areas of the brain responsible for reading threat-related social cues will grow at a faster rate than the other areas of the brain. For example, those raised in settings determined to be in or below poverty experience environments that create challenges where it can be difficult for their most basic needs to be met. Therefore, they adapt and quickly learn to focus on the "now" to meet the immediate need at the cost of planning for future needs (Walker et al., 2011; Evans & Pilyoung, 2013). For example, they may be more focused on their immediate needs like food, shelter, and safety rather than longer-term concerns such as educational needs and healthcare.

Unfortunately, poverty has been found to create an environment that amplifies vulnerabilities in which children and youth are exposed to disadvantages that create a physiological response in the immune system (Evans & Pilyoung, 2013). The physiological response creates faulty wiring in the immune system. This faulty wiring is due to the aggressive and constant attacks caused by chronic stressors from living in poverty (Evans & Pilyoung, 2013). Chronic cumulative stressors associated with living in poverty have been found to cause disruption or barriers between the systems that help adolescents cope with external demands (Evans & Pilyoung, 2013). Exposure to chronic stress and impacts of low-income living also causes physical mutation of the brain. There is “reduced hippocampal volume, exaggerated amygdala responses, altered prefrontal cortex activity and structural changes in the brain, such as reduction in the physical structures of the brain” (Bick et al., 2015, p. 144). Living in poverty is one example of chronic stress.

There are three distinct types of stress responses: positive, tolerable, and toxic (Shonkoff et al., 2011). These describe how the body’s stress system reacts to a stressful event. A positive stress response is a normal and essential part of healthy development, characterized by brief increases in heart rate and mild elevations in hormone levels (Shonkoff et al., 2011). A situation that might trigger a positive stress response for an adolescent is spending the first day with a new romantic love interest. A tolerable stress response activates the body’s alert system to a greater degree as a result of more severe, longer-lasting difficulties, such as the loss of a loved one, a natural disaster, or an accident (Shonkoff et al., 2011). However, if the tolerable stress response is buffered by positive relationships and is time limited, this can help the adolescent adapt. Further, the brain can recover from what might otherwise have been a damaging event. A toxic stress response can occur when an adolescent experiences strong, frequent, or prolonged adversities. For example, exposure to violence, physical or emotional abuse, chronic neglect, caregiver substance-abuse or mental illness, or the accumulated burdens of family economic hardship could all trigger a toxic or repeated toxic stress response (Shonkoff et al., 2011). When one’s stress response system is activated for prolonged periods it can disrupt brain development and effect other organ systems. Moreover, this activation increases the risk for stress-related disease and impairment into adulthood (Teicher & Samson, 2016; Bick et al., 2015; Nelson & Charles, 2015).

When a toxic stress response occurs continually or is triggered by multiple sources it can have a cumulative effect on physical and mental health over the lifespan (Center on the Developing Child at Harvard University (COCD), 2015; Carrión et al., 2010;). The more adverse experiences are in childhood, the greater the likelihood of developmental delays and later health problems including substance abuse, mood disorders, and chronic disease (Larkin, Felitti, & Anda, 2014; Bethell et al., 2014; Bynum et al., 2011).

The relationships between ACEs and trauma experienced in childhood and adolescence and its effect on health and development have been described. One of the most interesting research findings of the landmark1995 ACE study is that although risk behaviors add to the problem related to early death or disease, it is not the sole cause of poor health in the adult life of children who have experienced adversity during their childhood (Felitti et al., 1998). The associations between ACEs and trauma and various components of mental and physical health highlight the importance of early intervention and prevention when dealing with trauma treatment. Despite knowing that adverse events and trauma cause neurological and development changes like the stress response, the fact remains that treatment methods continue to lag and fail to be timely (Shonkoff et al., 2011). The odds of successful outcomes for adolescents who have experienced trauma when treated are strongly predicted by the degree to which interventions were implemented in a timely fashion (Glaser, 2000). Integrated care can help facilitate early intervention and decrease the likelihood of long-lasting negative impacts on development (Glaser, 2000). Further, early intervention for adolescents is essential, as experiences that occur during such a prime developmental period can affect brain development and functioning moving forward (Perry, Pollard, Blakely, Baker, & Vigilante, 1995). Due to the severe consequences of trauma, adverse events, and toxic stress, it is imperative to implement evidence-based trauma-informed treatment interventions swiftly and to conduct research on the efficacy of said interventions.

Trauma-Informed Care

Approximately 25 years ago Maxine Harris and Roger Fallot first conceptualized a new way to respond to trauma providing a shift in the field from trauma-specific services to trauma-informed care (Hendricks, Conradi, & Wilson, 2011). Since then trauma-informed care approaches have grown from a variety of sources, which include research on trauma and health outcomes, the emergence of evidence-based treatment, social and political action to prevent and respond more effectively to trauma, and stories of survivors. Fifteen years ago, SAMHSA (2015) created the National Center for Trauma-Informed Care (NCTIC) to provide public health programs and funding to those interested in using the trauma-informed paradigm to guide the development of programs and service delivery. According to the Substance Abuse and Mental Health Services Administration (SAMHSA) (2015), "trauma-informed care is considered a comprehensive multilevel approach that shifts the way organizations view and approach to trauma" (15). Further, SAMHSA (2015) states that a "system that is trauma-informed realizes the widespread impact of trauma and understands potential paths for recovery; recognizes signs and symptoms of trauma…responds by fully integrating knowledge about trauma into policies, procedures, and practices, and seeks to actively resist re-traumatization" (15).

Despite far reaching endorsements for trauma-informed care from the organizational level down to individual from the APA, WHO, SAMHSA, and the American Academy of Pediatrics (AAP), healthcare systems are often missing essential pieces to follow through on the trauma-informed care model. A few essential components of a trauma-informed care model include: the implementation of screening, assessment, and trauma treatment services to identify adolescents who have experienced adversity (Harris & Falllot, 2001; SAMHSA, 2015). Further, the adoption of trauma screening procedures should be coupled with screening for resiliency, family functioning, behavioral and psychological assessments, and interventions for trauma and community-based resources (Harris & Fallot, 2001).

Trauma-informed care organizations must adopt trauma-specific interventions that work in concert with the screenings utilized to assess for trauma. Unfortunately, even though SAMHSA provides a list of known trauma-specific interventions, most based upon psychosocial educational principles, none are currently being endorsed for use in concert for trauma-informed care with adolescents (SAMHSA, 2015). Others are debating the need for integrating specific evidence-based strategies such as parent-child interaction therapy and child-parent therapy into trauma-informed systems that service youth who may have histories of trauma (AAP, 2015; SAMHSA, 2015). There is a clear need for trauma-informed interventions that can be used in primary care settings with adolescents. However, organizations are still working to transform themselves into trauma-informed systems, which entails organizational changes and the development of culturally sensitive infrastructure that is responsive to the needs of traumatized individuals.

Creating an integrated trauma-informed healthcare system is a process that must start from the top-down. To do so it is essential that the entire organization is sensitive to trauma and its effects. This is achievable by viewing trauma as an all-encompassing category that anyone and much of the population falls within and therefore the population organization serves (SAMHSA, 2015; Rosenberg, 2011). For example, when we expect our patients have a history of trauma, then we can be prepared to assess this history in a sensitive way and are adequately prepared to handle their responses. Trauma-informed systems are value based, providing services based on principles of safety and empowerment, recognizing patients' strengths and weaknesses, including the patient in treatment planning, and are culturally competent. These values can be seen across various levels of care including primary care, behavioral health care, and specialty treatment (Rosenberg, 2011). Practitioners can incorporate these values by encouraging screening at the onset of treatment, educating all staff in the organization on the importance of trauma recognition and sensitivity, prevent re-traumatization, and allowing patients and stakeholders to become involved in the development of clinic programs (SAMHSA, 2015; Rosenberg, 2011).

The Substance Abuse and Mental Health Services Administration (2015), have identified 10 principles of trauma-informed care essential to providing this model, suggesting that trauma-informed care should:

- Help patients develop coping skills
- Develop treatment with the goal of recovering from trauma
- Empower patients
- Allow patients to have autonomy, control, and make their own choices over the treatment and recovery process
- Utilize a collaborative treatment model
- Allow treatment to be respectful, while creating a sense of safety and acceptance
- Identify patient's strengths in order to build resiliency
- Be mindful to not re-traumatize patients
- Provide culturally competent care

These principles highlight the importance of involving stakeholders in the process when creating trauma-informed programs and treatments. A critical part of recovery comes from empowerment, collaboration, and resiliency. A trauma-informed approach would engage stakeholders, gather input, and utilize peer support (SAMHSA, 2015).

According to the research, most mental health disorders start during adolescence and early adulthood (WHO, 2018; Walsh, 2011). However, critical gaps exist in how to best respond to adolescent trauma and risk factors that contribute to mental and physical health risks during adolescence. Further, how this response would work in integrated primary care is still unknown. Gaps in our knowledge about the global prevalence and cultural differences in response to adverse childhood experiences and trauma also hamper intervention creation and justify a Delphi study. We can start from the knowledge base of trauma-informed care to start creating programs to reduce the lifetime effects of early trauma.

Trauma-informed care interventions and research. Over the years various treatments and interventions have been utilized in treating trauma; some include art and play therapy, role-playing, and storytelling (Schwartz and Perry, 1994). As research has evolved, we have learned that the treatment of ACEs and trauma needs to be flexible and grounded in evidence-based practice (Hodas, 2006). Further, it is key that trauma treatment is tailored to the adolescent’s own experiences and developmental level. The need for evidence-based practice and individualized treatment has perhaps been a barrier to the development of trauma treatment for adolescents, particularly within primary care settings.

There are many limitations within the current body of research related to trauma-specific treatments for adolescents and even more limitations when exploring treatments within an integrated primary care setting. One limitation within the current body of research is that trauma-specific treatments have typically been created for and studied within adult patient populations and not adolescent populations. Moreover, there are even treatments explicitly designed for children below adolescent age and their families. The lack of adolescent specific treatments and adaptions of treatments is glaring. Further, few treatments have been explored with adverse childhood experiences but rather created to treat the diagnosis of PTSD in younger populations, which doesn't necessarily mean treating all traumatic and adverse experiences.

In 2014, SAMHSA published a trauma-informed care guide for behavioral health services outlining evidence-based and best practices for treating trauma. Various treatment modalities and interventions from cognitive behavioral therapies (CBT) to mindfulness (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) were discussed in relation to their efficacy and practicality in treating trauma. The following is a review of their recommendations and current and past research on trauma-informed treatments.

Cognitive behavioral therapies aim to extinguish unhealthy thought patterns and behaviors by challenging unhelpful cognitions, improving emotion regulation, and increasing coping capacity (SAMHSA, 2014). CBT is effective for a wide range of clinical problems including trauma (SAMHSA, 2014). Over the years CBT has been adapted into various models, including trauma specific models. Notably, various evidence-based treatment models for children who experienced post-traumatic stress disorder (PTSD) and substance abuse have been created (Mahoney, 2004). Perrin, Smith, & Yule assert there is "consensus among trauma experts" that CBT for children and adolescents constitutes "the 'first-line' treatment for PTSD" (2000, p. 286).

An offshoot of CBT, trauma-focused cognitive behavioral therapy (TF-CBT) was developed approximately 25 years ago by Anthony Mannarino, Judith Cohen, and Esther Deblinger. Trauma-focused cognitive behavioral therapy is an evidence-based therapy specifically designed to target children and adolescents who have experienced trauma and PTSD (Cohen, Mannarino & Deblinger, 2006). Components of TF-CBT include psychoeducation, relaxation skills and parent skills training (Cohen et al., 2006).

CBT and TF-CBT are the few types of evidence-based treatments that have been researched with the adolescent population. However, many of the studies have been conducted on adolescents with PTSD from sexual trauma (Deblinger, Mannarino, Cohen, & Steer, 2006; Cohen, Mannarino, & Knudsen, 2005; Cohen & Mannarino, 1997; Deblinger, Lippmann, & Steer, 1996). For example, several randomized controlled clinical trials for children with sexual abuse-related PTSD symptoms have shown TF-CBT to decrease symptoms related to PTSD, depression, behavior problems, and interpersonal trust. Further, parents who participated in TF-CBT reported greater improvement in their depression, abuse-related distress, parental support, and parenting practices (Cohen et al., 2006). Despite these positive findings, it is important to note that not all traumatic and adverse childhood experiences have to result in a diagnosis of PTSD to cause long-lasting harm or other adverse effects like anxiety, substance use and chronic illness (Deblinger, Mannarino, Cohen, Runyon, & Steer, 2011).

Exposure therapy for trauma is another specific type of cognitive behavioral therapy that teaches individuals to gradually approach trauma-related memories, feelings, and situations (Foa, Hembree, & Rothbaum, 2007). Exposure therapy asks patients to directly describe and explore trauma-related memories, objects, emotions, or places. Intense emotions are initially evoked but eventually decrease through the process of desensitization. Careful monitoring of the pace and appropriateness of exposure-based therapies is necessary to prevent re-traumatization during exposure therapy. Practitioners of exposure therapy need comprehensive training prior to implementation (Karlin et al., 2010); an unskilled practitioner in this treatment model can not only fail to help the patient but also cause their symptoms to worsen.

The need for practitioners to have additional training and practice could be a potential barrier to exposure therapy being utilized with adolescents, particularly in an integrated primary care setting. Further, limited studies have shown its efficacy for such uses. Gilboa-Schechtman et al. (2010) conducted a pilot study utilizing a modified exposure therapy modality with TF-CBT and psychoeducation in one of the first researched attempts at applying this modality with youth. The study yielded positive results at reducing the effects of PTSD similar to that of utilizing TF-CBT and other cognitive behavioral therapies.

Eye movement desensitization and reprocessing (EMDR) (Shapiro, 2001) is one of the most commonly used therapies for PTSD and trauma. It has been found to be an effective treatment for PTSD (Seidler & Wagner, 2006) and is accepted as an evidence-based practice by the U.S. Department of Veterans Affairs (VA) and the International Society for Traumatic Stress Studies (Najavits, 2007); numerous studies support its effectiveness (Mills et al., 2012). However, studies examining the use of EMDR with the adolescent population are scarce. To date, there are no controlled studies of this approach with adolescents, and many regard it as controversial, despite it being applied broadly for trauma treatment (Perrin et al., 2000, p. 284). Some hope that this evidence-based treatment will be expanded to the younger population. For example, the first Summit of EMDR therapy with children and adolescents was held in November 2018 in New York for mental health professionals and EMDR-trained clinicians to learn more about the latest research and practices by the EMDR Research Foundation. The summit was conducted in the hopes of expanding the uses and practices of EMDR.

Several other techniques are often utilized to improve outcomes when working with patients experiencing trauma. Relaxation training, breathing techniques, and biofeedback strategies may help some patients cope and regulate their emotions. However, no research studies support the use of relaxation techniques or biofeedback as effective standalone treatment for trauma or PTSD symptoms (Cahill, Rothbaum, Resick, & Follete, 2009).

Mindfulness is a technique that challenges unhelpful beliefs and alleviates anxiety that results from trauma. Jon Kabat-Zinn (2003) defines mindfulness as, “the process of learning to be present in the moment and observing one’s internal and external experience in a nonjudgmental way” (p.145). Mindfulness can play an important role in helping patients who have been traumatized observe their experiences, increase awareness, and tolerate uncomfortable emotions and thoughts. Karlin et al. (2010) and Baer et al. (2006) found value in combining mindfulness-based interventions with other trauma-specific interventions. Mindfulness may also help patients tolerate discomfort during exposure-oriented interventions for trauma (Karlin et al., 2010). Overall, mindfulness practices can assist clients in managing traumatic stress, coping, and resilience.

In one study of emergency responders, mindfulness was associated with fewer depressive symptoms, PTSD symptoms, physical symptoms, and substance use problems (Smith et al., 2011). It is likely that mindfulness practices can benefit adolescents who have experienced trauma. However, there have been minimal studies on their effectiveness on reducing the effects of trauma. A benefit of mindfulness-based treatments is that they can often be added to other therapies. For example, CBT, TF-CBT, dialectical behavior therapy (DBT), acceptance and commitment therapy (ACT), and other brief interventions that can easily be adapted for primary care can utilize mindfulness-based techniques (Green et al., 2015).

Although the treatment approaches developed for youth are few, a therapeutic approach for trauma that has been used with adolescents is DBT. Dialectical Behavior Therapy is an evidenced-based treatment designed to help people manage overwhelming feelings, painful emotions, and self-destructive behaviors that are related to trauma. DBT allows clients to gain understanding of their emotions and then learn to tolerate unwanted feelings. DBT boasts its applications for the adolescent population. A search of literature discovered that when DBT is utilized with the adolescent population it is often modified, or instead of being used in entirety as a model, rather components of DBT are used. For example, it appears that mindfulness, distress tolerance, and emotional regulation are the key skills that are taught in combination with other treatment modalities for adolescents specifically. For example, one study adapted DBT by combining its treatment invention with CBT for improved outcomes (Welch, Shaw & Kim, 2012). Another study in a residential treatment facility reported adding recovery and psychoeducational components, which found significant effects when using distress tolerance with adolescents who had experienced trauma (Gallone, Kim & Pelletier, 2018).

Several evidence-based programs for co-occurring concerns (substance use and trauma) have been created to reduce the effects of trauma. For example, models like seeking safety, TREM, and substance dependence PTSD therapy were designed to help clients cope with a wide-range of traumas and substance use concerns (SAMHSA, 2015; Triffleman, 2000). Typically, these models are empirically validated, present-focused treatments that assist clients in regaining safety from trauma and recovering from substance abuse while covering a variety of health topics. These models were developed for and utilized with adult patients. It is unclear how group models like these could benefit adolescents experiencing co-occurring substance use and trauma effects.

Recently, Murphy (2016) made the argument that primary care providers should be providing intergenerational adverse childhood experience screening and treatment. They suggest that primary care providers are well suited to catch potential intergenerational trauma and briefly treat it from an attachment lens. They recommend utilizing one of the following evidenced-based approaches; attachment and bi-directional catch-up therapy or group attachment intervention. Despite good evidence for both types of therapy they were created from children 24 months and younger and 11 years and younger respectively. Neither model has been adapted for adolescents, this is often the case.

The World Health Organization has identified the crucial role of an effective primary care system in early intervention and recovery from trauma (Garcia-Moreno et al., 2014). Primary care practitioners are well-placed to identify and respond to trauma as patients regularly access their services due to on-going health concerns. Primary care services are ideal for interventions that assist with the recovery and healing of trauma. Despite the recommendation for primary care being the place to identify and treat trauma, well adapted and available treatments for adolescents in this setting continues to be a barrier (Green et al., 2015).

Integrated Primary Care

Integrated primary care can better address the holistic needs of patients with mental and physical health conditions, versus patients seen only in specialty mental health or primary care settings. It is important to differentiate between the levels of integration within a healthcare system. Typically, healthcare settings are described as falling into one of four settings: co-location or co-located service, embedded service, collaborative care, or integrated care depending on the level of integration.

In a co-located service, a behavioral health provider (BHP) and a primary care provider (PCP) offer services within the same physical structure but maintain their own standards of care and separate records. PCPs typically refer patients to BHPs to receive specialty behavioral health services (Blount, 2003). In an embedded service, a BHP works as a member of a primary care mental health (PCMH) team, seeing patients in the primary care mental health (PCMH) clinic, documenting patient screenings, assessments, and interventions in the medical record while maintaining the PCMH standards of care. PCPs may take patients directly to the BHP (i.e., a "warm handoff") for assessment and clinical consultation.

Collaborative care is used to describe the way of interacting (relationships) between clinicians (e.g., BHPs and PCPs) over time for the purpose of developing treatment plans, providing clinical services and coordinating care to meet the physical and behavioral health needs of patients (Doherty, McDaniel, & Baird, 1996). Integrated care is a model in which BHPs and PCPs systematically interact to meet the behavioral and medical health needs of their patients through the collaborative development of treatment plans, provision of clinical services, and coordination of care. Integrated care is not a specific model of care but refers to the range of models falling under this overarching term.

The integrated primary care model is especially important when dealing with complex issues related to development and trauma concerns of adolescents. In 2013, a national strategy group assembled in Washington, DC to create a framework for trauma-informed primary care (TIPC; Machtinger, Cuca, Khanna, Rose, & Kimberg, 2015). This group was motivated by an increasing body of research that has revealed it is difficult to treat most health conditions without addressing the underlying trauma that perpetrates them (Machtinger et al., 2015). Despite still being in its early stages of development, the call for TIPC has sparked federal initiatives through

SAMHSA and other agencies to advocate for integrating a trauma-informed approach throughout health and related systems to reduce the harmful effects of trauma and violence on individuals, families, and communities (Machtinger et al., 2015; SAMHSA, 2013).

Integrated primary care settings not only have the potential to embed a trauma-informed approach in their day to day operations but to also remove many of the perceived barriers to care. For example, by increasing the size of the support care team, the primary care provider will have more time and resources available to them. For example, other team members can perform screening and treatment functions, lessening the PCPs burden. In this scenario, the mental health provider (MHP) or behavioral health specialist is onsite for consultation, warm-hand-offs, treatment planning, and visits. Further, medical assistants and nurses are also trained in screening techniques and TIC practices. Additional team members are also available to bolster confidence and competence of the office when everyone is trained in TIC practices. Further, patients' charts are shared with the entire team allowing for continuity of care on a variety of health concerns.

Integrated primary care research. Walker and Collins (2009) reported that integrated healthcare can "reduce medical costs, improve patient and provider satisfaction, and enhance clinical outcomes" (p. 268). However, despite the potential benefits they highlight the fact that integrated programs are uncommon practice. Integrated programs are likely rare since potential collaborators are frequently not members of the same healthcare system (insurance providers, HMOs, PPOs, etc.). Moreover, integration is difficult to setup because care systems are spread out across different locations, providers and facilities with inconsistent policies and structures (Walker & Collins, 2009).

Nardi (2011) studied the process involved in implementing integrated healthcare at a nurse managed clinic. This research revealed that integrated models are not without challenges and require organizational and financial support and multiple contributors to be effective. However, Nardi's (2011) research indicated that once a top-down model is brought to fruition and stakeholders become fully invested, an integrated nurse-managed clinic could be a cost-effective model. Further, it can be most beneficial to its patients, especially those who are underserved and underinsured. (Nardi's, 2011).

Overall, research on integrated care shows that despite the initial costs and organizational growing pains it is more cost-effective and provides a better medical home and outcomes for its patients (Craven & Bland, 2006; Dewa, Hoch, Carmen, Guscott, & Anderson, 2009; Van Orden, Hoffman, Haffmans, Spinhoven, & Hoencamp, 2009; Schmit, Watson, & Fernandez, 2018). However, despite integrated care's past efficacy studies and the push for trauma-informed approaches in integrated care, it is still a relatively new. Further efficacy research is needed on integrated trauma-informed treatments and how they can improve patient outcomes. Further, expansion of trauma-informed care models is needed to meet the needs of more populations, like adolescents.

Efficacy of trauma-informed integrated care models. Research has demonstrated that adversity and childhood trauma often result in poorer health outcomes in adulthood. Therefore, the paradigm shift from the medical model to the trauma-informed care model, which embraces treating the "whole person," by attending to both physical and mental health needs is essential. The "whole person" paradigm shift takes the philosophical position that one's trauma history plays a role in present day physical and mental health conditions.

In one project, Community Mental Health Centers (CMHC) looked to increase access to primary care for patients through integration. The project placed a nurse practitioner onsite to provide primary care services to selected patients (Abrahams, Alder, & Bartels, 2006). Findings demonstrated that patient participants who had seen the nurse practitioner reported 42% fewer emergency department (ED) visits, a 70% increase in physical exams, and reported 50% improved rapport with their provider over the control group (Abrahams, Alder, & Bartels, 2006). In a related service utilization study, one integrated primary care setting evaluated their services. Perkins et al. (2010) examined patient utilization data, clinic activity data, practitioner views of service effectiveness, potential improvements, and sustainability data using a mixed methods approach with 15 practitioners and 120 patients. The researchers found the integrated program to be successful, citing one highlight as the fact that 40% of patients offered specialty services opted to utilize the specialty practitioner when needed (Perkins et al., 2010). Findings like these offer support for integration efforts at additional primary care and behavioral health centers.

Integrated trauma-informed care models are typically evaluated for their effectiveness when working with adult patients or within family medicine practices, which offers limited research on adolescents specifically. The studies outlined below demonstrate the efficacy of trauma-informed models in adult populations. Amaro, Chernoff, Brown, Arévalo, and Gatz (2007) researched the efficacy of an integrated trauma-informed substance abuse treatment program for racially diverse populations. They studied 342 women in the program, collecting data at baseline, then at a six-month follow-up and later at a 12-month follow-up. Findings suggested that participants in the program had higher rates of abstinence from substances and improved outcomes with PTSD and mental health compared to those in the control group. Moreover, they found that the integrated trauma-informed treatment program was effective across all racial groups with no significant differences. These results suggest that integrated trauma-informed substance use treatment can be effectively implemented with diverse populations (Amaro et al., 2007).

Seeking Safety is an evidence-based program designed for women experiencing co-occurring disorders. For example, a woman who has a diagnosis of depression or history of trauma and a substance use diagnosis (Gatz et al., 2007). To determine the efficacy of the treatment, researchers collected data prior to treatment and at 12-months post-treatment with 136 women enrolled in the program. Researchers assessed mental health, PTSD, and substance use symptoms and basic coping skills. Participants enrolled in the Seeking Safety program showed greater improvements in PTSD symptoms, increased coping, and had higher rates of retention when compared to those in the control group (Gatz et al., 2007). Such results warrant the use of integrated trauma-informed care models, as well as substance use treatment by the same treatment team in the same location. This study would suggest that trauma-informed practices and integrated approaches lead to favorable outcomes.

Strengths and barriers of treatment in integrated primary care. There are compelling reasons for primary care settings to provide adolescents with mental health homes, such as the case in integrated care. First, research indicates that more parents (94%–96%) seek services for their children through primary care settings, compared to only 4% to 33% of parents directly seeking mental health services (Guevara et al., 2001). Second, over 47% of all children under the age of 18 saw a primary care provider in 2016 (CDC, 2017). In fact, up to 70% of all diagnosed mental health cases are treated within the primary care setting (Campbell et al., 2000). Thus, primary care settings can offer a unique opportunity to bridge mental and physical health services. The use of a brief instrument to screen for a history of adverse childhood experiences or trauma-related symptoms increases the likelihood that adolescents are identified and can be referred for further evaluation and treatment (Briggs et al., 2012; Cohen et al., 2008; Felitti et al., 1998). Yet, screening instruments are often not used, and PCPs do not recognize mental health disorders in approximately 75% of affected adolescents, and subsequently adolescents in need of treatment do not receive services (Sayal & Taylor, 2004). Further, there is a scarcity of literature available regarding trauma treatment for the adolescent population post-universal screening in primary care, indicating further research is needed. There is a clear gap between the occurrence of adolescent mental health disorders and current trauma treatment practices for adolescents (Briggs, 2009; Merikangas et al., 2010; Merikangas et al., 2011).

Despite the overwhelming evidence indicating mental illness is significant during adolescence, likely continuing into adulthood, and that primary care is uniquely equipped to help in this area, regular screening and treatment practices in primary care may still be limited (Williams, O'Connor, Eder, & Whitlock, 2009). Several co-contributing factors influence the current lack of adolescent trauma treatment practices. First, there can be a question regarding whose responsibility it is to treat an adolescent for mental health concerns (Zuckerbrot et al., 2007). Should they see a primary care provider, a pediatrician, a psychiatrist, or another practitioner? Pediatricians reported at a 90% rate that screening adolescents for mental illness was their responsibility. However, approximately 50% of those same pediatricians lacked the confidence to do so (Zuckerbrot et al., 2007). Further, competing aspects of preventative healthcare and managed health plans can limit access to behavioral health specialists. Health plans can create the need for short appointment times and a lack of reimbursement regarding mental health services for primary care doctors (Zuckerbrot et al., 2007). Health plans imposing strict guidelines can leave doctors with little flexibility while creating competing demands. Moreover, lack of training and understanding of the developmental and psychosocial aspects affecting adolescent mental health creates a barrier to screening and treatment (Williams, O'Connor, Eder, & Whitlock, 2009; Zuckerbrot et al., 2007).

Perhaps the most significant barrier to treatment stems from the lack of consensus regarding mental health screening within the greater healthcare system. The United States Preventative Services Task Force (USPSTF, 2016) has called for universal depression screening, stating that screening should only be, “implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up” (p. 380). The American Academy of Family Physicians (AAFP; 2016) has adopted the USPSFT’s recommendations for depression screening, further promoting routine psychosocial risk factor and adverse childhood experience screening in adults. However, The USPSTF has not provided specific recommendations on ACE screening in primary care for adults or adolescents. The USPSTF does not believe that universal screening should occur if adequate systems are not in place for treatment post-screening. Nevertheless, calls for implementing ACE screening persist, for example, recently a bill (e.g., H.299) was put before the Vermont General Assembly proposing the widespread use of universal ACE screening (Vermont Government Legislature, 2016). Additionally, The World Health Organization (WHO; 2016) currently promotes the evaluation of an international version of the ACE screening instrument despite the limited treatment options for adolescents experiencing trauma in primary care. As additional validated screening instruments have become available for adolescents and adults for ACEs as well as for trauma, the calls for screening and treatment grow (Purewal, Marques, Koita, & Bucci, 2016). The push for screening has been further driven by the growing body of research that highlights the role ACEs plays in predicting later adverse health outcomes (Anda et al., 2006; Chapman et al., 2007; Duke, Pettingell, McMorris, & Borowsky, 2010; & Felitti et al., 1998).

The lack of consensus surrounding universal screening for ACEs and trauma for adolescents in primary care is not due to the lack of validated screening tools but due to inadequate means of treating adolescent trauma in primary care settings. Glowa, Olson, and Johnson (2016) found that despite treatment for ACEs being feasible in primary care, no current specific trauma-informed interventions have been adapted from mental health settings for use in primary care.

Theory

Ecological and bioecological models. This research is situated well within the framework of Bronfenbrenner's ecological model (Bronfenbrenner, 1977). In Bronfenbrenner's model, behavior is viewed as being affected by, and effecting, multiple levels of environmental influence. Specifically, Bronfenbrenner divides environmental influences into micro-, meso-, exo-, and macrosystems (McLeroy, Bibeau, Steckler, & Glanz, 1988; Bronfenbrenner, 1977). The microsystem refers to face-to-face influences in specific settings, such as interactions within one's immediate family or school (Bronfenbrenner, 1977). The mesosystem refers to the interrelations among the various settings in which the adolescent is involved (McLeroy et al., 1988). These may include family, school, and peer groups; therefore, the mesosystem is a system of microsystems.

The exosystem extends the mesosystem and contains the social structures within the larger society where the adolescent is embedded. These can be formal or informal structures like mass media, government, and transportation facilities (Bronfenbrenner, 1977). An example in the exosystem might include unemployment rates which effect economic stability, and thereafter can have a trickle-down effect within the adolescent's family and affect health. The macrosystem refers to cultural beliefs and values that influence both the microsystem and the macrosystem (Bronfenbrenner, 1977). An example of this would include cultural beliefs about mental health, such as those promoted by the 'pull yourself up by your bootstraps' mentality. Not only do each of these subsystems affect behavior, but the subsystems themselves may change as their members are replaced or altered. Thus, an ecological perspective implies reciprocal causation between the individual and the environment, sometimes also referred to as a transactional model (McLeroy et al., 1988; Bronfenbrenner, 1977).

Later Bronfenbrenner advanced the ecological model by adding the chronosystem. The chronosystem refers to how an adolescent and the environment change over time. He also placed greater emphasis on processes and role of the biological person. From his newer work came the process–person–context–time model (PPCT), the foundation of the evolved bioecological model (Bronfenbrenner, 1995). The interactions between these concepts form the basis for the model. First, Bronfenbrenner viewed proximal processes as the primary mechanism for development, featuring them in two central propositions. According to the first proposition in Bronfenbrenner's ecological systems theory and recent bioecological paradigm (Bronfenbrenner,1986; Bronfenbrenner, 1995), human development takes place through reciprocal interactions between individuals as well as the symbols and objects in their immediate environment (Bronfenbrenner & Evans, 2000). Some of these interactions are fleeting but others endure and become more complex over time. Enduring interactions, such as between a parent and their child or adolescent, are referred to as proximal processes or the "engines of development" (Bronfenbrenner & Evans, 2000, p. 118). A second proposition of this paradigm is that proximal processes "vary systematically as a joint function of the biopsychological characteristics of the developing person; of the environment, both immediate and more remote, in which the processes are taking place; and the nature of the developmental outcomes under consideration" (Bronfenbrenner, 1995, p. 621).

Bronfenbrenner next added how personal characteristics of individuals influence social interactions to the Ecological model. He identified three specific personal characteristics that can significantly influence the proximal processes across the lifespan; demand, resource, and force characteristics (Bronfenbrenner & Morris, 2006). The subsequent concept of the model, context, involves Bronfenbrenner's five interconnected systems, based on the original ecological systems theory. Context includes the previously described micro-, meso-, exo-, and macrosystems plus the new chronosystem (Bronfenbrenner & Morris, 2006). The chronosystem describes historical circumstances that affect contexts at all other levels. Time is important in this new paradigm shift and is established at three levels: micro, meso, and macro (Bronfenbrenner & Morris, 2006).

In terms of Bronfenbrenner's ecological model and mental health treatment, the model can address the importance of interventions directed at impacting interpersonal, organizational, community, and public policy, factors that both support and maintain unhelpful behaviors. The model assumes that changes in the outside environment will produce changes in individual. Therefore, support for individual with external organizations is essential for implementing changes (McLeroy et al., 1988). Such changes are necessary from the exosystem down to the microsystem to alter current treatment practices from an organizational standpoint to the individual standpoint.

Risk and resiliency model. The risk and resilience model suggests that if a child possesses positive protective factors, the negative effects of risks associated with ACEs and trauma can be buffered (Powers, 2010). Research focused on the risk and resilience framework has provided substantial evidence that people are able to overcome a variety of risk factors, and with enough protective factors, problems developing from that adversity can be interrupted or prevented (Greene et al., 2003). If a child or adolescent has one ACE they are more likely to experience additional adverse experiences (Clarkson Freeman, 2014), which may lead to residual restricted outcomes later in life (Bynner, 2001). Bronfenbrenner’s ecological theory describes the influence of outside environments on the effectiveness of functioning and adaptations of the individual (Powers, 2010). According to Bronfenbrenner’s theory, individuals are never independent of the systems within the social–environmental sphere; instead, they are a product of the interaction between and among these systems (Bronfenbrenner, 1977; Powers, 2010).

Combining Bronfenbrenner’s ecological systems theory and the risk and resilience model allows us to expand the focus of the research to the system’s positive or negative impact on the individual (Corcoran & Nichols-Casebolt, 2004). It is necessary to understand how the adolescent exists across all systems within the ecological systems theory, especially because of the impact each system has on the individual (Duerden & Witt, 2010; Neal, 2013; Onwuegbuzie et al., 2013). By addressing and intervening on each ecological system, protective factors can effectively ameliorate the effects of cumulative risks and appropriate treatment can be implemented (Powers, 2010). For example, it is imperative to look beyond the individual adolescent and address the lack of parenting knowledge (or resources) and skill through interventions of increased parent involvement and home support in order to strengthen the adolescents’ mesosystem (Brooks, 1994). Exosystems should also be addressed by focusing on the impact they have on the individual adolescents, providing appropriate changes in school climate, and addressing the lack of the system’s capacity to meet the individual needs through policy and funding decisions (Powers, 2010). Poverty is a common component in social exclusion (Bynner, 2001). The connection of poverty and social exclusion is not only a lack of resources but includes familial relationship breakdowns (Bynner, 2001). These familial relationship breakdowns are integral to understanding the microsystems within Bronfenbrenner's ecological systems theory.

Cumulative risk theory. Cumulative risk has been mentioned throughout this literature review and is the basis for understanding ACEs, as such it will be briefly reviewed here again. Research has demonstrated that a cumulative effect of ACEs is associated with the leading causes of death (e.g., cancer, heart disease; Felitti et al., 1998) and depressive disorders in adulthood (Chapman et al., 2004). Evidence supports the use of cumulative risk theory in the developmental literature by demonstrating that increased risk factor exposure leads to poorer outcomes (Trentacosta et al., 2008; Prinstein, Boergers, & Spirito, 2001; Appleyard, Egeland, Bagner, Graziano van Dulmen, & Sroufe, 2005). For instance, Forehand et al (1998) established that the number of risk factors, regardless of type, predicted both short and long-term difficulties. Moreover, after the number of risks increased from three to four there was a steep increase in adjustment to difficulties. This was consistent with the groups' previous work, which suggests there may be a "trigger point" where the accumulation of risk factors has a detrimental effect (Rutter, 1979, p.178).

Cumulative risk theory suggests that a variety of risk factors would have an additive effect on adolescent mental health. Furthermore, cumulative risks, such as co-occurring psychosocial risk factors (e.g., parental mental illness and peer isolation) are used to describe the relationship between variables and outcomes that affect the adolescent's development and recovery from illness (Gerring & Wade, 2012). To reduce adolescent morbidity and mortality rates related to trauma and adverse childhood experiences, it is vital for providers to collect thorough psychosocial histories to help identify potential risk and connect adolescents to treatment (Gerring & Wade, 2012).

Summary and Purpose

After reviewing the literature, it is evident that childhood trauma can have a detrimental impact on physical and psychological health and well-being over the life span. The 1995 landmark ACE study (Felitti et al., 1998) produced a wealth of information on how the experience of trauma during childhood and adolescence can to lead to a vast array of complications later in life. That study has led to a paradigm shift and a recent movement in the medical field to provide both integrated and trauma-informed care to address these concerns simultaneously. However, research has outlined the need for established trauma-informed adolescent treatment to be used in integrated primary care settings. Informed by the theoretical frameworks of ecological systems, risk and resilience, and cumulative risks, the purpose of this study was to explore expert and stakeholder perspectives to inform a treatment program for adolescents who have experienced trauma to be implemented in integrated primary care settings.

Chapter Three: Methods

This chapter contains the structure of the study the rationale for choosing the Delphi method, the design of the research and details regarding the research study.

Purpose of the Study

The purpose of this study was to use expert and stakeholder opinions to identify essential elements for a successful adolescent trauma treatment program to be implemented in integrated primary care settings. This study aims to determine expert and stakeholder consensus regarding program logistics such as treatment goals, treatment constellation and session structure, and modality. Stakeholders and experts engaged in two rounds of evaluation to inform an adolescent trauma treatment program based on group consensus. As stated in chapter one, the overarching research question guiding this study:

1. What is the consensus view on developing adolescent trauma treatment for implementation in an integrated primary care setting?

The secondary research questions include:

2. What should be the goals and objectives of an adolescent trauma treatment in primary care?
3. What should be the inclusion and exclusion criteria for adolescent trauma treatment in primary care?
4. What is the appropriate treatment constellation and session structure for adolescent trauma treatment in primary care?
5. What intervention components are essential for an adolescent trauma treatment in primary care?
6. How should a successful adolescent trauma treatment be measured in primary care?

Design of the Study

The methodology used for this study was a modified Delphi technique. The original Delphi approach was modified by including a Community-Based Participatory Research (CBPR) component. The Delphi method is utilized as a way to build consensus with the input of leading researchers and experts in the field of mental health. The CBPR component was used to provide stakeholder perspectives, through the use of adolescent focus groups with youth ages 14-18.

Community-based participatory research is utilized in this study to engage stakeholders as collaborators in the research process. The approach is used to maximize research benefits for the community or in this case the stakeholders for whom the treatment is being created. CBPR is not as much of a method in and of itself but rather a process, a paradigm, and an orientation to research (Creswell, 2007; Robinson, Olson, Bischoff, Springer, & Geske, 2014). CBPR principles suggest that researchers and stakeholders working together can make meaningful change and their engagement with the community aligns with the problem at hand. One key strategy utilized by CBPR is the use of focus groups. As such, the present study engaged adolescent stakeholders in focus groups to elicit feedback (Piercy & Hertlein, 2005; Robinson et al., 2014). CBPR often uses both qualitative and quantitative data on multiple levels, which makes it a good pairing with the Delphi technique.

Delphi studies contribute to both theory and practice as practitioners will have available to them lists of critical components, generated by experts, which they can use in their specific situations (Okoli & Pawlowski, 2004). This technique builds group consensus on a difficult and challenging topic, facilitates a way to gather input from leaders in the field without having to initiate cost prohibitive and time-consuming meetings of these people, and eliminates the potential influence of participants hearing each other's thoughts and opinions before providing input (Gupta & Clarke, 1996; Linstone & Turoff, 1975).

The Delphi method. The Delphi method is a technique employed exclusively for collecting group data with the goal of reaching consensus from a panel of experts (Okoli & Pawlowski, 2004; Gupta & Clarke, 1996; Linstone & Turoff, 1975). Delphi studies are often utilized when researchers are interested gathering the opinions of experts in the field on a specific topic (Fish & Busby, 2005). This method allows researchers to collect data without gathering participants together or having to have face-to-face interaction to gain consensus. There are several advantages to using the Delphi method including the anonymity it assures its participants and the absence of pressure to conform to the group. Unlike traditional research methods, this approach does not simply gather expert opinions, it also allows for the exchanging of ideas through feedback and a multi-layered engagement process. Recently, modified Delphi methods have been applied to minimize panelist attrition through the use of fewer reviewing rounds (Keeney, Hasson, & McKenna, 2011; Fish & Busby, 1996). Due to the exploratory nature of this research and an adolescent trauma treatment program in integrated primary care, the Delphi Method was chosen to gather consensus on a treatment model suitable for primary care settings. The current research study used a modified Delphi approach in which youth stakeholders and experts participated in two rounds of questioning. Experts engaged in open-ended and scaled questionnaires in which they could respond and comment throughout on evolving data until consensus was achieved, while youth participated in focus groups.

Philosophical underpinnings. The Delphi method is grounded in the philosophical "assumption of synergy, two heads are better than one" (Fish & Busby, 2005, p. 231). The Delphi method utilizes a panel of experts to start the communication process about complex problems that need further investigation (Linstone & Turoff, 1975). How the Delphi method is executed is not as critical as understanding the philosophical assumption that it is valuable to reach consensus through an intellectual process (Linstone & Turoff, 1975). The Delphi method holds the postmodern perspective that the "truth is relative" (Fish & Busby, 2005, p. 231). Fish and Busby (2005) concurred that the technique "attempts to negotiate a reality that can then be useful in moving a particular field forward" (p. 238).

Building on the traditional Delphi technique which engages experts, Benninger and Savahl (2016) proposed the use of children as stakeholders in the Delphi process. The importance of the child stakeholder in the Delphi framework is based on the epistemological position that children and adolescents are knowledgeable experts and authorities on matters relating to their own lives and well-being (Noble-Carr, Barker & McArthur, 2014; Benninger & Savahl, 2016). That epistemological position is also consistent with the principles of CBPR, which involves active collaboration between researchers and stakeholders to eliminate hierarchies in the process of creating change (Mendenhall & Doherty, 2005). In the current study, the modified Delphi framework includes a panel of experts and focus groups of adolescent stakeholders who engaged in the research process. The adolescent stakeholders offered their knowledge and insight regarding trauma-informed care and the development of adolescent trauma treatment programs.

History. The Delphi method emerged in the 1950s from researchers at the RAND Corporation. They set out to collect expert opinions on the future direction and long-range trends of specific fields (Dawson & Brucker, 2001; Linstone & Turoff, 1975). This technique was specifically developed to provide a workable framework and structure to data collection while being able to hone a vast quantity of information. Such an achievement allowed researchers to achieve consensus and move forward with decision-making (Dawson & Brucker, 2001; Linstone & Turoff, 1975). Traditionally, the Delphi approach includes three rounds of questionnaires or surveys, which start broadly and become more refined throughout each round of data collection. Often data from the first round is qualitative moving to quantitative data in later rounds. After the data from each round are summarized, the findings are used to generate a new series of questions to further explore the identified issues.

Advantages of the Delphi method. There are several key advantages to using the Delphi method. Collecting data from expert participants from differing areas to achieve consensus, is one of them. Further, each panelists' contribution or data is equal as no expert participant is perceived to hold more expert or power than another. Another advantage of the Delphi method is that experts can view other panelists' responses and recommendations. Receiving feedback from other panelists allows participants to engage in dialogue without having to meet in one location, which saves both time and money. This can lead to a more enriched participant experience and provide them with additional background information for future recommendations (Keeney, 2011; Hasson, & McKenna, 2006; Dawson & Brucker, 2001). Moreover, due to the anonymity panelists have throughout this process, a dissenting view can be shared without fear of disapproval or negative criticism (Keeney, 2011; Sori & Sprenkle, 2004).

The Delphi method is well positioned to bridge the gap between research and practice. This technique does not demand significant statistical expertise, large sample sizes, or financial resources, which makes it a viable method for many. For these reasons, practitioners and researcher alike can use the Delphi method to explore a variety of topics. Participant experts may be patients, staff, educators, or other groups whose opinions are considered significant. This model is readily available for clinicians and healthcare providers with the advantage of participant responses reflecting their own words, ensurig an accurate understanding of personal experiences and background for the researcher (Fish & Busby, 2005).

A modified Delphi study allows stakeholders and experts to engage with one another in multiple ways through the data analysis process without meeting face to face. This type of engagement can remove barriers, like unbalanced power dynamics. A recent study of adolescents in Australia enrolled in youth support services found that it was critical to include them to best understand their needs when developing new programming for them (Noble-Carr et al., 2014). Further, the inclusion of stakeholder's perspectives on subjects related to their own well-being is increasingly supported by current research, as acknowledged by Casas (2016), "Children are slowly being recognized as key informants and competent informers on their own lives" (p.6). Additionally, including stakeholder data with expert data creates richer findings and the potential to create a more accurate treatment program. Together, CBPR and the Delphi technique create a forum where co-learning and co-production can occur as members interact and work together to synthesize the data.

Limitations of the Delphi method. Despite the many advantages the Delphi method has to offer there are also a few limitations associated with this approach. First, regression towards the mean may occur, which is the inclination for participants to alter responses to be closer to consensus. However, during the coding process the researcher can address this by identifying response clustering, regression towards the mean can be a threat to validity. Another limitation of using the Delphi method is the potential for starting with a narrow viewpoint or perspective of the expert panelists, a result of specified and refined selection criteria. The third limitation for participants can be the amount of time required to complete the study. This can be dependent on the topic and structure of the study. Researchers must be aware and sensitive to the potential for panelist fatigue (Keeney, 2011; Dawson & Brucker, 2001). Fatigue can lead to dropout and dropout can influence a false sense of consensus and weaken the findings.

Special considerations for including adolescent stakeholders in a modified Delphi study were undertaken. A sensitive topic such as trauma and ACEs can lead to dropout due to fatigue, resulting in regression towards the mean when analyzing focus group data. Past research studies examining trauma research attrition rates have reported high dropout rates, although determining a cause has been difficult (Matthieu & Ivanoff, 2006). It may be due to increased trauma symptomology possibly triggered by the research or other factors. Given the aims of this study, the researcher did not ask youth participants directly about their own traumatic experiences. Further, to buffer this potential effect the researcher utilized debriefing and member checking at the end of all focus groups. In addition, the researcher had community resources and referrals available to adolescents and their families.

Sampling and Recruitment

Delphi panel selection. A critical component of the Delphi method is the selection of the expert panelists. The selection of participants is directly linked to the validity of the study. The actual level of knowledge and expertise of the panelists and their contributions during data collection directly affects the credibility and validity of study findings (Okoli & Pawlowski, 2004). Moreover, the initial and subsequent questionnaires must be carefully crafted, and the content must be relevant to the panelists' area of expertise. If it is not, the validity of the findings will be threatened. In contrast to other research designs, random selection of participants is not warranted in a Delphi study as panelists selection is not determined by statistical means (Dawson & Brucker, 2001; Linstone & Turoff, 1975).

In terms of sample size, Keeney et al. (2006) report that there is “no magic formula to help researchers decide on who are the experts and how many there should be” (p.208). The decision regarding sample size is often based on “funding, logistics and rigorous inclusion and exclusion criteria” (p.208). A sample size of 15-20 will likely result in expertise saturation due to high level expertise and strict participation requirements (Khanna, McDowell, Perumbilly, &Titus, 2009).

Selection and recruitment of expert panelists. Purposive sampling was utilized for recruitment. The expert sample of panelists represented various professions and scholars from the healthcare arena who have worked with adolescents, in integrated primary care and have experienced with trauma-informed care. Among them were behavioral health specialists who worked in integrated primary care settings, ran adolescent groups, and others who worked as researchers and scholars in the field of trauma-informed care. The names of 40 expert participants were identified through a search of professional membership directories of the following organizations: (i.e., AAMFT, CFHA, APA), professional websites (Trauma-Informed Services at the National Council for Behavioral Health), and by recommendations from colleagues (Godfrey, Haddock, Fisher & Lund, 2006). Twenty experts both meet the criteria for participation in this study and agreed to participate. To qualify, panelists had to meet the following criteria: 1) have five years’ or more experience in the field of trauma-informed care or a related field; 2) have one of the following licenses or credentials: MD, DO, MPH, LMFT, LCSW, LPC, PsyD, or PhD and 3) meet one of the following criteria: (a) have at least three years’ of experience teaching topics related to trauma-informed care, the treatment of adolescents, and/or the practice of integrated care; or (b) have experience or extensive knowledge related to the practice of integrated health care (Sori & Sprenkle, 2004).

For the current research study invitations were sent to 40 potential expert panelists (Appendix B) via email. The email invitation explained the purpose of the study, panelists' criteria for participation, requirements of participation, and assigned them a unique identifier number. Panelists were informed that their unique identifier number was to ensure their confidentiality and to match data across questionnaires. Included with the email invitation was a consent form explaining in further detail their participation requirements and rights (Appendix C). Moreover, the email explained that by completing the first questionnaire they were providing their consent to participate as an expert in the study. The email provided potential panelists with a website to a Virginia Tech driven Qualtrics questionnaire where they could complete the round one questionnaire (Q1, Appendix D). The potential participants were informed that there was no compensation for their participation in the study and their participation was voluntary and confidential.

Of the 40 potential panelists, 10 did not reply, five reported scheduling conflicts due to the timing of the study, four did not qualify as experts, and one responded after the deadline. A total of 20 panelists agreed to participate in the study, representing 50% of the initial expert panelist pool. However, only 19 panelists completed the full questionnaire within the requested time period. Seventeen panelists completed both phases of the study, with 11% attrition of experts in round two. To curb attrition, email reminders were sent to participants as questionnaire deadlines were approaching (Appendix E).

Expert panel demographics. The final expert panel was comprised from diverse professional backgrounds, experiences, and settings. The panelists ranged in age from 25 to 61 years old and older with a mean age of 41-45 years old (SD=2.40). Professionally, there were two expert Doctors of Medicine (MD), three panelists with Masters of Social work degrees

(MSW), one licensed Professional Counselor (LPC), two licensed Marriage and Family Therapists (LMFT), six experts with a Doctor of Philosophy degree (PhD) of these, three were also LMFT, and five Doctors of Psychology (PsyD). Eight experts were in urban areas, eight in suburban areas, while three were in rural areas. The panelists' experience in the field ranged from five plus years of experience to 30 plus years of experience with a mean of approximately 15 years of experience, while over 10% of the expert panel had 30 plus years of experience. All expert panelists met the inclusion criteria of having at least five years of experience in the field of trauma-informed care or a closely related field. Further, they also had at least three years of experience teaching topics related to trauma-informed care, the treatment of adolescents, and or the practice of integrated care or had expertise or extensive knowledge pertaining to the practice of integrated health care. Moreover, the expert panelists' boosted distinguished experience in the field representing numerous Research I Universities, National Trauma-Informed and Behavioral Health Organizations, and Veteran Affair Organizations. SPSS software (version 24) was used to analyze demographic data and Excel was utilized to create all tables. Demographics pertaining to age, credentials, gender, setting, and experience can be seen in Table 1.

Selection and recruitment of stakeholder panelists. The stakeholder sample consisted of adolescents ages 14-18 years old. Purposive sampling was utilized as it is critical to use information-rich cases for focus groups (Patton, 1990). Community leaders and resources (e.g., church leaders, school counselors, parent-teacher organizations) known to the researcher and her colleagues were utilized to identify and refer potential participants. Online advertising campaigns were employed to recruit adolescents from across the United States by using Facebook and Twitter (Appendix F). Most youth participants responded to the advertisements placed on Facebook. This type of advertising allowed you to set an age demographic, choose the time of day for the advertisement to run, and select a targeted group and area. Flyer campaigns at local adolescent centers were also added to boost recruitment. To qualify for participation, stakeholder youth had to be between the ages of 14 and 18 years of age, provide assent or consent to participate, and have parental consent to participate if under 18 or the majority age in their state.

After sampling identification was completed through community resources and advertisements, potential youth participants or their parents contacted the researcher via email. At that time, zoom meetings for consent with a parent were conducted, and youth were sent an email asking them to participate as stakeholders in the study (see Appendices G and H). The email explained the purpose of the research study, participant requirements and criteria, and listed potential times and dates for focus group interviews. Attached to the email was a consent/assent form (see Appendices I-K) for the adolescent and parent. Stakeholders were informed that their participation was voluntary, confidential, and that a $20 gift card would be provided for each focus group in terms of compensation for their participation.

Ultimately, two focus groups were held two times with a total of 13 youth. One adolescent could not make the second focus group reporting, leading to an attrition rate of 8%.

Stakeholder panel demographics. The stakeholder youth panel was comprised of six females, six males, and one transgender male youth from diverse backgrounds across the country. The youth ranged in age from 14 to 18 years old with a mean age of 15.46, (SD=1.22). The youth represented various education levels; three were in the ninth grade, two were in the tenth grade, one was in eleventh grade, six were in twelfth grade, and one was just starting college. Four youth resided in urban areas, three in suburban areas, and six in rural areas across eight different US states. While most youth participants identified as Caucasian, one youth identified as Hispanic or Latino, three as multiracial, and another declined to disclose. All stakeholders met the inclusion criteria of being between the ages of 14-18 years of age and provided assent and parental consent or just consent depending on their age and the majority again within their state. Demographics pertaining to age, grade, gender, setting, and race can be seen in Table 2.

Data Collection and Analysis

The multiple phases of data collection and analysis in the Delphi method and CBPR are intertwined. One benefit of using the Delphi method is its flexibility in data collection, allowing the researcher to modify the method, as they see fit. For example, often the method is modified from three to two rounds of data collection when necessary (Keeney et al., 2011; Sori & Sprenkle, 2004). In this study, a modified Delphi approach was utilized, as two rounds of questionnaires were completed with the addition of stakeholder focus groups. Two rounds of questionnaires were sent to the expert panelists, both of which were completed via Qualtrics. This modified approach was utilized to limit attrition due to survey fatigue and increase the likelihood of participation. To further prevent attrition email reminders were sent to experts as deadlines were approaching for questionnaire completion (see Figure 1 for methods).

The first step of the data collection process was the distribution of the expert questionnaire (Q1) in Qualtrics and the first stakeholder focus groups. The stakeholder focus groups were conducted on an online platform called itracks (version 2.5.3), allowing the focus groups to be automatically be transcribed for accuracy. Further, member checking was utilized following the focus groups to ensure trustworthiness. This was accomplished by sharing researcher interpretations with the focus group members before they were dismissed and by allowing for participants to clarify or elaborate on their answers. Immediately following the sessions, notes and impressions were reviewed, per Sprenkle and Piercy (2005).

Thematic analysis was used to analyze the expert and stakeholder data. Questionnaire responses were read through and emergent themes were identified. During this process, an audit trail was kept noting key decisions to help establish rigor and trustworthiness. During the coding process a search for patterns and themes in the responses was conducted, responses were categorized and like responses were eliminated. Further, efforts were taken to preserve the stakeholders' and experts' original words and meanings (Clarke & Braun, 2013; Creswell, 2007; Godfrey et al., 2006). By the nature of this study design, the input of each participant is equally and fully valued, considered and analyzed.

Clarke and Braun (2013) define thematic analysis as, "a theoretically flexible, analytic approach to qualitative research where researchers identify and analyze patterns within a qualitative dataset (p. 121)." As a method, it applies to many theoretical frameworks and is useful when working with data related to participant experiences. Thematic analysis allows researchers to explore general themes within the data. Data analysis followed phases of the recursive process of as outlined by Braun and Clarke (2006): familiarization or immersion in the data; coding, generation of meaningful labels; searching for themes based on initial coding; and reviewing, defining and naming themes, and documenting the results.

Following the distribution of the first questionnaire to the experts and the completion of the first stakeholder focus groups the data were analyzed and assessed for themes. First, expert and stakeholder data were examined separately and then their data were mixed and assessed together. In the first round, qualitative methods were employed to analyze the expert panelists' responses to the questions listed in questionnaire one and the stakeholders focus group one interviews. The data from the open-ended questions was first read over several times to increase familiarization and then grouped into themes. Then the information was consolidated into specific themes (Godfrey et al., 2006).

Specifically, the coder analyzed the questionnaire data and focus group interviews respectively: using representative quotes for each theme to generate initial codes, using analytic induction (Patton, 2002) and constant comparative techniques (Glaser & Strauss, 1967; Strauss & Corbin, 1990), based on the two criteria of participants' written responses and researcher observations of participant process during the interview. Over time, codes were further reviewed and refined.

Based on the data collected in the first round, a second questionnaire and focus group interview (Appendices S and W) were developed using the emergent themes with more specific questions for all participants to answer. A second email letter was sent to convene the focus groups and advise the panelists that the second and final questionnaire was generated (Appendices R and T). That email let the panelists know that the second questionnaire and interview was informed by recommendations for treatment identified from the first round of surveying. Stakeholders and experts received summary results of round one (see Appendix Q and Table 3). For the experts, the second email provided a direct weblink to the second questionnaire (Qualtrics) and included the expert panelist's unique identifier number.

In the second questionnaire (Appendix S), expert panelists were asked to rate the importance or how essential items were on a 5-point Likert-scale pertaining to adolescent trauma treatment. This method allowed for data analysis by calculating medians and interquartile ranges for each item (Fish & Busby, 2005). In the Delphi method consensus can be examined by calculating medians, which points to the central tendency of respondents. If panelists give a particular question item a low rating (e.g. unimportant) a low median score would result.

Interquartile ranges (IQR) are generally utilized to measure variability and were computed in this study to explore extreme scores (Godfrey et al., 2006). However, because recession towards the mean must be accounted for, percentage ratings were utilized for final analysis. Therefore, to determine consensus, percentage of panelists that rated an item as either essential or strongly agree or important or somewhat agree was used to determine consensus among items.

Panelists were reminded of the minimal risk to participate in the study and that their involvement is voluntary. Panelists were thanked for their participation and received a summary of the study findings. Stakeholders were sent a similar email that included times for the second focus group and then later also received a summary of the final study findings.

Similar to the data analysis process after the first round, the stakeholder focus group data and all commentary by expert panelists was analyzed by the researcher and utilized to provide further input, detail, and context regarding panelists' rationale for the rating of treatment recommendations (Godfrey et al., 2006). Items that met the criteria for expert and stakeholder consensus were carried over as final recommendations for inclusion in a potential proposed program. All participants were sent a summary of the final findings (see Appendix X).

Rigor

The debate over establishing rigor of the Delphi method is ongoing. However, that does not mean rigorous methodological standards should be ignored. Rigorous qualitative research involves procedures to ensure trustworthiness, such as cross-coders and member checks. There are four main strategies to establish trustworthiness: credibility, dependability, confirmability and transferability (Lincoln & Guba, 1985). The credibility of a Delphi study can be enhanced by ongoing repetition and feedback given to participants, which can be viewed as member checking and by undertaking additional research methods. In this study, participants were given feedback at the end of each round of data collection.

Further, member-checks were conducted throughout and at the end of focus groups to ensure accuracy. Dependability can be achieved, by including both a range and a representative sample of experts in a Delphi study (Powell, 2003). For example, experts in this study had a range of experiences from serving in the US capital on the Trauma-Informed Care National Services Council to VA medical doctors in specialty care. In this modified study, CBPR enhances the sample by including stakeholders as well as experts. Youth participating in this study come from states across the country with varied experiences. Confirmability can be assessed by maintaining a detailed description of the data collection and analysis process, while transferability can be established through the use of the applicability of findings (Powell, 2003). During the data collection process in this study, cross-coding and audit trails were utilized to ensure confirmability and overall rigor for the study.

Chapter Four: Results

This chapter contains the results of both rounds of expert questionnaires and stakeholder focus groups. Decisions made throughout the data collection process and between rounds are also discussed.

Introduction

Using a modified Delphi technique combined with a CBPR approach consensus was identified among items related to treatment structure, therapeutic treatment plan, and integration in primary care for creating an adolescent trauma treatment program. A panel of 17 national scholars and practitioners along with 12 youth stakeholders participated in two rounds of data collection and focus groups to help generate a list of items within each treatment area to facilitate in the development of a trauma treatment program for adolescents in an integrated primary care setting while utilizing the framework of trauma-informed practices.

Results: Round I

Expert panel questionnaire I. Expert panelists were emailed a Qualtrics questionnaire to collect demographic and round one data. Expert panelists were asked 12 open-ended questions regarding key characteristics and recommendations for adolescent trauma treatment (Appendix D). Experts could expand or add any additional thoughts after each open-ended question. Panelists were specifically asked about recommended treatment constellations, session structure, modalities, and other treatment aspects. Panelists identified key elements of working with adolescents who have experienced trauma in integrated primary care. They included their perspective on treatment goals, creating an environment where treatment can be successful, and their recommendations and guidelines for treatment. Panelists provided both long and short responses that varied in length from one or two words to several paragraphs in length. From the thematic analysis of these responses, themes were generated under each major topic areas or questions with the exception of three. Questions 1, 6, and 12 were ultimately thrown out due to the repetitive nature of the answers or that the responses could be categorized under other questions or because often questions 6 and 12 were left blank as panelists felt they had already answered these questions throughout the questionnaire. For example, question 5 asked about session structure and question 6 asked about the relationship between session structure and treatment constellation, however experts felt they had already addressed that in the previous questions. Ultimately, 152 follow-up questions were generated under three main themes and nine subthemes. These themes were reviewed, and clustered into categories of treatment; treatment structure, therapeutic treatment plan, and the integration of treatment in primary care (Godfrey, Haddock, Fisher & Lund, 2006). The nine subthemes were generated based on the questions, which included: (1) age of patients participating, (2) structure of treatment sessions, (3) constellation of treatment, (4) goals of treatment, (5) choice of treatment modality, (6) choice of treatment interventions, (7) outcome measures utilized to examine effectiveness of treatment, (8) barriers to treatment in primary care settings and, (9) benefits of care in primary care settings (see Table 3). Listed below are themes along with detailed results from questionnaire one and the development of questions for questionnaire two.

Treatment structure.

Age. Within potential age groups for adolescent treatment, 10 follow-up age groups were generated. These varied from as much as 10-19 years of age but were also as restrictive as 14-18 years of age and allowed for flexibility in ages based on patient needs, maturity, and developmental level. Generally, experts felt that treatment should be flexible when it comes to age as adolescents mature and develop at different rates. For example, one expert shared, “brain development is along a continuum and there should be flexibility in who is allowed to participate.” However, another mentions how difficult it is to define adolescence, as the WHO defines it as 10-19 and others start adolescence at age 12 or later.

Treatment constellation. Within treatment constellations, 11 follow-up questions were generated of sub-constellations. These varied from including individual, family, and group work to only group therapy, to the adolescent having full autonomy over the treatment structure. Many experts mentioned that the individual adolescent and their context should be taken into consideration when determining the treatment constellation. Experts were very split on whether or not families should have involvement and to what degree. This is not surprising as trauma can occur within the family (Sameroff, 2000). As one panelist explained, “it may depend on what type of trauma the adolescent has endured, and care should be taken to not re-traumatize the teen.”

Session structure. Within the session structure theme, 11 follow-up question items were generated. Session structure items varied from four 30-minute primary care appointments with a behavioral health consultant to intensive outpatient groups that meet 2-4 days per week for 2-5 hours per day. The variation that emerged from responses to this question can likely be attributed to the numerous options for session structure and research on this topic shows varied outcomes (Murphy, 2016; SAMHSA, 2015). Positive outcomes can be found with a variety of session structures; therefore, the key that experts often noted was finding the optimal session structure for both the adolescent and the integrated primary care system. As one expert notes, “all staff need to be trained in trauma-informed principles and approaches.”

Therapeutic treatment plan.

Goals. Expert panelists identified 14 treatment goal items critical to successful treatment for follow-up. These varied from promoting resiliency skills to reducing symptoms of trauma, increasing peer support, and fostering peer interactions. Overall, most experts felt that the initial goal was to provide a safe space for adolescents to heal. “Safety must be first,” reported one expert. This sentiment was echoed by others throughout round one.

Treatment modality. Nineteen potential treatment modalities were generated from round one. These varied from established evidenced-based treatments like CBT to less established modalities like adventure-based therapies and pet-assisted therapies. Some experts commented that the modality choice was of less importance than building rapport and individualized interventions used with patients. “Any modality will help achieve the goals, however the adolescent’s individual needs, strengths, weaknesses, and family dynamics need to be taken into consideration when treatment planning,” reported one expert in terms of modality choice.

Interventions. Experts identified 22 different potential interventions to be utilized with adolescents in an integrated primary care setting. A few interventions suggested included mindfulness exercises, grounding techniques, and bilateral stimulation and tapping. Experts had many overlapping opinions regarding interventions for treatment. All interventions mentioned in round one were carried over to the round two questionnaire like the rest of the themes generated within questionnaire one.

Integration in primary care.

Scales. Within potential outcome measures and ways to examine whether or not the treatment had been successful 18 follow-up scales and measurement techniques were generated. Examples included the Pediatric Symptom Checklist, the newer ACE-Q, and the PTSD Symptom Scale for DSM5 (CPSS-V). Additional methods such as examining pre and post healthcare utilization and participant satisfaction scores were also suggested. There was a lot of variation in this question with little commentary provided. Most participants suggested one or two different measures that they were most familiar using.

Challenges. Expert panelists identified 21 potential barriers to providing trauma treatment for youth within a primary care setting. Some of the challenges included difficulties with consistent screening, coordination between mental health providers and physicians, and complications with the electronic health record (EHR) system. Barriers consistently brought up were limited time, space, and money in primary care settings. Moreover, there was some concern about reimbursement plans for treatment and the space to provide treatment in this setting. Despite these barriers most experts agreed it was an ideal place to identify needs for mental health and trauma treatment.

Benefits. Expert responses resulted in 18 potential benefits to providing treatment within one medical home. These varied from overall increased fidelity, improvements in staff satisfaction, and the ability to provide treatment in an integrated medical home. Experts generally all felt that despite the barriers, both staff and patient satisfaction would increase. For example, one expert said, “This is a totally needed service and would reach patients that would not go to specialty mental health.” Further, another expert reported, “Patient outcomes would vastly improve because correct diagnosis would be given and proper management of treatment would be provided.”

Stakeholder focus groups I. Stakeholder focus groups were conducted online with itracks software (version 2.5.3), where youth signed into the online platform to join a texting chat room. Two groups were created for the stakeholder focus groups interviews (FG1 and FG2). Participants were divided into two groups to ensure that the group size would create an environment conducive for sharing (Sprenkle and Piercy, 2005). Both groups remained consistent for each round, meaning the youth participants remained in the initially assigned groups (FG1 or FG2) for both rounds one and two.

The stakeholder focus group interview guide was constructed by utilizing the 10 principles of trauma-informed care discussed in the literature reviewed (Appendix P). For example, the first principle of trauma-informed care is related to helping patients develop skills for coping. Therefore, stakeholders were asked questions regarding types of coping skills and how they developed coping. Further, another principle of TIC is that care services should be respectful, and should create a sense of safety, respect and acceptance. Stakeholders were asked to think about ways they had experienced respect and acceptance and what that should look like at the doctor's office. The 10 principles provided a framework in which the youth were asked open-ended questions about topics like adolescent coping, resiliency, and treatment. Each principle area had several prompting questions prepared depending on how the group responded to the initial question. Each focus groups' answers were first individually analyzed, and then the focus groups' results were compared and reassessed for similar themes. After this was complete, the data was compared to the expert panelists' results from questionnaire one to see if any new themes had emerged. From these results, both the expert questionnaire two and the second focus groups interview guide were created. The results of the first round of focus groups follow.

Coping. The first principle of trauma-informed care (TIC) states that care services should acknowledge the ways in which trauma or adversity influences one's ability to develop tools and skills for coping. Participants reported several strategies that helped them deal with stress and adversity: writing, journaling, listening to music, playing sports or exercising, taking breaks or having time alone, connecting with friends and peers, and talking with parents. These strategies although explained in different terms were often consistent with the expert panelists’ ideas for treatment interventions and modalities. For example, one participant explained that her dad taught her, “not to feed the trolls.” When prompted further, she reported that was a way not to “feed into negative thoughts” and replace them with something else. This example of changing one’s thinking is very similar to strategies emphasized by cognitive behavioral therapy. Another participant talked about sharing stories as a coping strategy, and that is technique often used in narrative modalities.

Recovery. Participants were asked what has helped them solve problems in the past to help gauge potential recovery solutions. They reported various strategies that included talking to people they trust, faith, meditation, exploring their own role in the situation, and an overall theme that emerged for recovery was to find a level of self-awareness. They further reported that family, friends, teachers, church, and therapists have been helpful to them when they have had to solve problems in the past. When asked how a primary care doctor could promote recovery in youth patients, they responded with the overwhelming answer of by listening and asking questions. They felt it would be helpful if doctors would ask mental health questions, provide them with resources, and help them set-up mental health services. However, they noted it is critical for the doctor to get to know them and be trustworthy to achieve this. One youth said it is important that doctors, “talk with them (youth) and get to know them on a personal level and learn about their interests and make them seem like a friend or family member they can share with or talk to at any time.”

Empowerment. For the trauma-informed care principle regarding empowerment, participants were asked what comes to mind when they think of empowerment, whether or not it is important to healing, how primary care doctors can promote it in youth patients, and how others have empowered them in the past. They shared that empowerment was critical to the healing process because it creates confidence, autonomy, control, and choice. They again felt it was critical for doctors to listen to youth patients for them to feel empowered. They also said that involving youth in treatment planning (i.e., shared decision making) is important. One youth said, “Empowerment is important to a healing process. They can promote empowerment by allowing the adolescents to make some of their own decisions and them supporting most of their actions.”

Patient autonomy, choice, and control over treatment. The fourth principle of trauma-informed care framed questions about patient autonomy, choice, and control over treatment options. Participants identified doctors as being respectful, listening, providing empathy, and allowing patients different treatment options to choose from as the critical aspects of this principle for youth. The transgender male youth participant in the study he reported that being able to present as himself to the doctor is critical for his care. He reports, “finally being allow to present how I want and use the names that I identify with…has been super helpful with my own sense of self and care.”

Collaborative care services. Stakeholders were asked about a time when they have collaborated with others, the benefits and challenges of that collaboration, whether it would have been different if it had been a hierarchical versus a collaborative model, and which model would be best for a primary care office. The youth had various collaborative experiences typically on past school projects but also in sports, band, and other groups. They felt collaborative work could be challenging if one person does all the work. However, overall groups provide more benefits than challenges. They also reported that a collaborative model would work well for primary care; however, a few hierarchy components could be helpful. One youth shared a quote during the focus group from Ender's Shadow, "One mind can think only of its own questions; it rarely surprises itself." This spoke to the importance of collaborations and integrated care.

Services should be respectful and create safety and acceptance. The sixth principle of TIC is that care services should be respectful, and create a sense of safety, respect, and acceptance. Participants were asked when they have felt safe and respected and what this should like at a doctor's office. They reported they have felt most safe with friends, family, and at school. Additionally, they reported knowing they are accepted and respected when they can be themselves, people care about their opinions, and they are treated like an equal. They hope that doctors would not judge youth, be genuinely interested in them, and let them have time to get comfortable with them. Doctors can show respect by engaging in these skills. If this occurs, they report trust will be built and they will be more open and honest. Importantly, they reported they felt that respect affects self-esteem, which will carry over into adulthood. Specifically, one youth said that, "adolescences are transitioning to adulthood so that's very important in shaping and self-esteem."

Resiliency. Resiliency is perhaps one of the most essential principles of trauma-informed care. It was highlighted throughout the literature review as it is closely linked to treatment and outcomes. Stakeholders were asked what came to mind when hearing the term resiliency. A few named the U.S. Supreme Court justice Ruth Bader Ginsberg, and others said superheroes, being responsible, being self-assured, optimism, and always bouncing back and getting back up. They reported that when others pointed out their strengths or ways in which they had been resilient, it helped them to feel confident, cared about, and increased their self-esteem. Another youth used a quote here from Winston Churchill, "Success has been defined as the ability to go from failure to failure without losing enthusiasm."

No re-traumatization. The eighth principle of trauma-informed care states that it is critical not to re-traumatize patients during the care process. For this principle, participants were asked to think about a time a friend or family member was experiencing a tough time and what they thought was helpful to that person during their difficult time. Youth explained that listening without judgment was by far the best support they could provide but also helping to distract them, providing comfort, and therapy. They also discussed not bringing up the difficult topic unless the person wanted to. One youth said, “I think just being there without pushing…whatever support they need.” The overall themes identified here speak to common factors of psychotherapy, which will be discussed further in Chapter 5.

Cultural competency. The ninth principle of TIC states services should be culturally competent. Stakeholders were asked what culturally competency looks like generally, in the doctor’s office, and how one could be culturally competent when planning a new program. Youth reported that cultural competency is understanding the person first, being respectful, asking questions and not making assumptions, and being open-minded. They explained that in the doctor’s office this would mean doctors would learn the patient’s health and treatment goals, be open-minded, work within one’s cultural beliefs, keep a one-to-one approach, be willing to learn from the patient, ask questions and get to know them. When creating a program, they felt it was important to create a bond with team members, learn about one another, keep up morale, and be respectful of others. One participant said, “I think one needs to be fully open-minded and not pass judgement, also instead of making assumptions, ask questions.”

Patient-centered and created care. The tenth principle of TIC is that treatment should be based on patient input and developed in part by the patient or patients like them. Participants were asked if they had ever been given a chance to provide input on a program or activity developed for themselves and whether they think it is important to include the population’s input when creating a program for them. They responded that they had rarely been given such opportunities in the past, however, when they had, they felt empowered and like their voice mattered. Overwhelmingly, they thought programs should be developed this way because they know themselves what works, it gives them ownership in the program, and makes them feel more comfortable in the program and environment. A few even felt that it was unethical not to include youth in planning programs developed for them. One youth shared, “it is really empowering for me knowing that I have a say in all this. Imagine how empowered teens will feel who are actually getting the treatment if they are asked questions and truly listened to!”

Round I summary. The themes and recommendations identified in the expert panelists’ questionnaire one were continued to questionnaire two. Many of these themes can be seen throughout the literature review. In addition to the themes summarized in the results section above a general category emerged as “what should” all trauma treatment programs for adolescents in primary care do, essentially resulting in a set of principles. Within this category, seven reoccurring themes were identified that were consistent with the stakeholders’ views that will be discussed below. The seven subthemes included that adolescent trauma treatment should: (a) conduct services in a trauma-informed environment and culture, (b) train all staff trained in trauma-informed care practices, (c) be mindful of the environment of integrated care in planning, (d) remain flexible, (e) define the program or treatment’s mission and purpose in clear and understandable language, (f) realize treatment is not one size fits all and, (g) involve the entire team of providers.

Overall, there were many parallels from the expert panelists’ and stakeholder’s round one results. The youth expressed the importance of respect, acceptance, resiliency, others being willing to listen, being treated as an equal, and having a voice (see Table 4). Results from both first round focus groups were compared to the expert's results from questionnaire one. Expert questionnaire and the second focus group interview guide were created from that analysis.

Results: Round II

Expert panel questionnaire II. The Delphi round two questionnaire is based on the data analysis from the round one expert panelist questionnaire and stakeholder focus groups. Qualtrics (available through Virginia Tech) was used to create the online questionnaire, which was linked in an email sent to the expert panelists. Questionnaire two consisted of 10 overall thematic areas with three subareas and 152 questions items for evaluation. Panelists completed the questionnaire by rating the degree of importance for each questionnaire item. Items were in no particular order on the questionnaire. Experts responded based on the following two five-point Likert response scales: (a) essential; (b) important; (c) do not know/unsure; (d) unimportant; (e) should not be included; and (a) strongly agree or (b) somewhat agree; (c) neither agree nor disagree; (d) disagree somewhat; (e) strongly disagree. The round two questionnaire was sent to all panelists who had responded during round one (19 experts). Of these 17 experts completed the round two questionnaire.

All data from the expert questionnaire returned from round two was entered into SPSS (version 24) for analysis, including frequency and descriptive analysis. Each question was analyzed by the percent of panelists rating it as either essential or strongly agree or important or somewhat agree on the Likert scale. SPSS (version 24) was also used to generate the mean for each question item. Tables were created in Excel. Questions responses were coded as follows:

- should not be included or strongly disagree = 5
- unimportant or disagree somewhat = 4

- do not know/unsure or neither agree nor disagree = 3
- important or agree somewhat= 2
- essential or strongly agree = 1

Gaining consensus. The goal of this research study, as well as the primary goal of using the Delphi method, was to gain consensus among the expert panelists and youth stakeholder participants (Keeney et al., 2011; Okoli & Pawlowski, 2004). “It is apparent that there is no universal agreement on what the level of consensus for a Delphi study should be, or how this level of consensus should be decided” (Keeney et al., 2011, p.82). Two of the most common ways to define consensus is to use the statistical approach or percentage levels. In this research study, the percentage of expert rating items as either essential or strongly agree or important or somewhat agree was utilized to determine the level of consensus. Keeney et al. (2011) indicated that there are varying opinions and no standard threshold for consensus in the literature, therefore the most critical determinant in whether an item has reached consensus is determined by the level chosen by the researcher or research team. However, a recent meta-analysis of Delphi studies has shown that researchers will typically set an initial threshold of 70-75% as the bar for expert consensus (Diamond et al., 2014).

Based on the recommendations described above, a threshold of 80% of the expert panel rating an item as essential or strongly agree or important or somewhat agree was deemed to reach consensus for this study. If less than 80% of the panel rated an item essential or strongly agree or important or somewhat agree, then it was considered too far from consensus. When utilizing a study method that does not allow for discussion or debate among the participants, this was considered to be too far away from consensus to include. For this study, 80% meant that roughly 14 or more of the panelists rated the item as essential or strongly agree or important or somewhat agree. Table 5 shows that overall, 53 of the 152 items had reached consensus by the expert panel. This does not mean that those items are the highest priority items, it simply means that those items have reached consensus by the expert panel (Keeney et al., 2011). Table 5 shows that 99 out of 152 items were considered too far from consensus. The 99 items would not be included for recommendation for an adolescent trauma treatment in an integrated primary care setting based on the discussed criteria alone.

Treatment structure.

Age. Expert panelists were asked to rate their level of agreement with 10 identified treatment age groups from round one. Experts rated the previous items on a Likert scale from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree’. They were reminded that the youth stakeholders in this study were 14-18 years of age. Of the 10 items generated from round one, three items reached consensus. Experts reached consensus on the following items: appropriate ages for treatment 14-18 years old, adolescents should be grouped by 14-16 and 17-18 years of age, and treatment should have flexibility in ages based on patient needs, maturity, and developmental level. If the consensus level was set at 70%, five of 10 items would have met consensus, expanding potential age groups for trauma treatment in primary care.

Session structure. Experts were asked what appointment or session structure (number of appointments and appointment length) an adolescent trauma treatment program in primary care should include and were given the 11 items generated in round one. Experts rated their level of agreement with the 11 items from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree’. One of the 11 potential items met consensus by the panelists. Only the option of having the number and length of appointments being flexible and based on the adolescents’ needs and intellectual and psychosocial development met consensus. Having flexibility and being based on the adolescents' needs reached 100% agreement. If the consensus level were set at 70%, two of 11 items would have met consensus expanding the recommendation to also base session structure on the adolescents' symptoms.

Treatment constellation. Experts rated their level of agreement with treatment constellations generated in round one. Their agreement was rated from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree' by answering the question, what should treatment constellations for an adolescent trauma treatment program in primary care include? Two of 11 items met consensus for treatment constellation. Experts agreed that a combination of individual, family, and group work should be included with treatment being flexible, all constellations possible but not required and that individual or family modalities should be utilized as clinically appropriate. Interestingly, no experts felt that group therapy alone would be an appropriate treatment constellation.

Therapeutic treatment plan.

Goals. Experts were asked to rate goals which may effect change in adolescents in primary care who have experienced adverse childhood experiences and trauma based on the round one results where 14 items were generated. Experts rated goals at the program level on a scale of 1 to 5, with 1 representing 'essential' to 5 representing 'should not be included'. Experts reached consensus on most goal items, 12 of 14. Only the items of providing resources and including families did not reach consensus, which many experts reported being unsure of while no expert disagreed with these options. At a 70% threshold all 14 of the goal items met consensus.

Treatment modality. Expert panelists rated treatment modalities which may effect change in adolescents in primary care who have experienced adverse childhood experiences and trauma based on survey one findings where 19 items were generated. Experts rated treatment modalities from 1 to 5, with 1 representing 'essential' to 5 representing 'should not be included’. Only one item for treatment modality reached consensus at the 80% threshold, psychoeducation. If expanded to a 70% threshold six items would have met consensus. The additional modalities that would have met consensus were trauma-focused cognitive behavioral therapy, motivational interviewing, Seeking Safety, compassion-focused therapy, and acceptance and commitment therapy.

Treatment interventions. Listed below are interventions and program components which may effect change in adolescents receiving trauma treatment based on round one, which generated 22 items. Interventions were rated on a scale from 1 to 5, with 1 representing 'essential' to 5 representing 'should not be included’. Consensus was gained on eight of 22 items. Of those items, three of them met consensus at a 100% level; these included emotion regulation skills, resiliency skills, and mindfulness. The other five interventions that met consensus were meditation, grounding techniques, shared decision making, belly breathing, and self-soothing skills. At a 70% consensus, 12 of 22 items would have reached consensus.

Integration of treatment in primary care.

Scales. Experts were asked to rate scales and outcome measures for program effectiveness for an adolescent treatment in primary care based on round one results that generated 18 items. Experts rated their level of agreement with the following types of measures for program effectiveness from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree’. Experts gained consensus on five of the 18 items from round one. The WHO-Quality of Life-BREF measure, by measuring healthcare utilization pre and post-treatment, the Patient Health Questionnaire (PHQ-9), by measuring behavioral changes longitudinally, and by asking adolescents’ and their families’ their opinions of treatment effectiveness and perceptions of the program. Expanding to a 70% threshold, would have led to eight of 18 measures and scales gaining consensus.

Challenges. Experts identified 21 items that may be potential barriers to providing adolescent trauma treatment in integrated primary care. Experts rated their level of agreement with the types of challenges there may be for an adolescent treatment in primary care from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree’. Experts reached consensus on four of the 21 items at the 80% threshold. The consensus items included time constraints, appropriate means for billing and how to get reimbursed, transportation for adolescents and families, and getting consistent participation. At the 70% threshold seven of 21 items met consensus. This threshold would have also added funding concerns, difficulty with coordination between mental health providers and physicians, and lack of buy-in.

Benefits. Expert panelists identified 18 benefit items related to conducting adolescent trauma treatment in integrated primary care. Consensus was gained on 10 of the 18 items. Of the 10 consensus items six reached consensus at a 100% level, these items included: cause lasting change, improved mental health, reduced substance use, decreased stigma, increased safety, and provide treatment in an integrated medical home. The other four items that reached consensus were: reduced adult health complications, improved treatment reach, improved diagnosis and treatment, and to normalize trauma experiences. If the threshold were 70%, 12 items would have been considered to have reached consensus.

General principles of adolescent treatment in primary care. Experts also gained consensus on seven of seven general principles for adolescent treatment generated from round one. Experts and stakeholders (youth) reported that adolescent trauma treatment in integrated primary care should: (a) conduct services in a trauma-informed environment and culture, (b) train all staff trained in trauma-informed care practices, (c) be mindful of the environment of integrated care in planning, (d) remain flexible, (e) define the program or treatment's mission and purpose in clear and understandable language, (f) realize treatment is not one size fits all and, (g) involve the entire team of providers. The 53 items that gained consensus in round two will be brought forward for inclusion in treatment recommendations.

Stakeholder focus groups II. The second set of stakeholder focus groups were also conducted online with itracks (version 2.5.3) software, where youth signed into the online platform to join the texting chat room. Twelve of the original 13 participants were able to attend with one having a last-minute emergency. The focus groups started by reviewing the results from both focus groups (FG1 and FG2) from the first focus group sessions in order to gain consensus (see Appendix W). Next, youth stakeholders were asked about the results of the experts' questionnaire. Below are the results of the second set of youth focus groups.

Youth discuss and evaluate round I findings.

Key impressions. To open the discussion, summarized results from round one were shared with the stakeholders. Key results and topics of acceptance, respect, agency, being willing to listen, resiliency, and being treated as an equal were shared. Youth were asked if they still agree that these were the most important topics from focus group one and asked why these topics or components are essential to youth getting treatment or help. Youth overwhelming still agreed with those responses and felt they were critical to treatment. One youth reported, "Being willing to listen, caring, respect, and being treated equal helps people speak up at their doctors and makes them more willing to listen to their advice. Agency and resiliency help them move on in life and be better off."

Critical treatment components. Next, critical components of treatment from focus group one was reviewed. Youth had previously responded that it was important that doctors get to know them, for youth to feel understood, to build self-esteem and confidence, for youth to spend time with other youth, for youth voices to be heard and believed, and for youth to feel important. Again, youth participants still found this to be true and felt it would be impossible to help someone if you did not understand them. One stakeholder said, "listening equals respect, control equals empowerment, autonomy, and builds confidence in time."

Youth discuss and evaluate treatment program results.

Constellation. Stakeholders were asked their opinion about treatment constellations. Overall, youth felt that flexibility and choice were important for adolescents participating in treatment. They commented that different options were beneficial depending on the circumstances. They also felt that small group size like four to six was most beneficial and no more than eight would be best. One youth said,

> "Here's a random thought I had: individual therapy to meet one on one to discuss, group therapy to help build up other people and help them not feel alone, family therapy (talk to parents) to help improve when at home, online to connect with other people (video and chat approach)."

Although another youth noted, "I don't think I would want my parents there."

Benefits. Participants were asked their opinion about what the benefits of offering a treatment program at the doctor's office might be. The most prevalent response from youth was that by providing treatment at the doctor's office treatment will be more accessible and more youth would be able to receive treatment. They also reported that youth would be able to get introduced to therapy and adolescent patients may already have a trusting relationship with their

PCP, which could lead to increased disclosure. One stakeholder said, “it makes it more accessible. Youth who did not know they might need to go to a therapist might have a ah ha moment and it could introduce it to them.”

Challenges. Participants were asked about potential challenges of having an adolescent treatment program located at their primary care doctor’s office. The biggest concern raised by youth was a non-trusting relationship with the primary care doctor, but they also mentioned youth not speaking up or understanding what’s going on with themselves, transportation difficulties, stigma, costs, and time. One youth reported, “I think the biggest barriers could be cost, not feeling trust, and transportation.”

Goals. The treatment goals generated by the experts from round one were shared with the stakeholder youth. Stakeholder youth reported being in full agreement with the goals and general principles generated by the panelists. Stakeholders also reported being heard, building connections, and healing trauma would be important goals to them. A youth said in response to what the goal should be, “to heal the past, rebuild trust and peace, help them know they’re not the only one, and there’s always hope.”

Interventions. Expert panelists’ interventions from round one were shared with the youth stakeholders. They reported agreeing with the interventions generated and added that journaling, exercise, meditation, art, dance, and yoga were among their top activities and interventions for treatment and help. One youth said, “journal writing is important to let it out.”

Synthesis of findings. Expert panelists came to consensus on 53 of 152 items (see Table 5 and Table 6). The treatment structure category of age, session structure, and treatment constellation had six items reach consensus. The therapeutic category of goals, treatment modality, and interventions had 21 items reach consensus by the experts. The third category of integration of treatment in primary care comprised of outcome measures, challenges, and benefits of treatment had 19 items reach consensus. In addition, the general principles of what an adolescent trauma treatment in primary care should include reached consensus on all seven of seven items.

The 99 items that did not meet consensus were mostly excluded from the final treatment recommendations after the data were compared to the stakeholder focus group two results. Stakeholders were in agreement with the expert consensus results with a few exceptions. For example, the youth reported that utilizing a journal or writing was an important outlet and critical to healing. However, this item did not reach expert consensus, only achieving 76% agreement from expert panelists. Based on the two groups of participants combined journaling was added to the final treatment recommendations (see Table 6). Further, many youth stakeholder comments regarding modalities or interventions could be coded to modalities like trauma-focused cognitive behavioral therapy and acceptance and commitment therapy. For this reason, the treatment modality component was expanded to include all six items at the 70% threshold. The additional modalities included: trauma-focused cognitive behavioral therapy, motivational interviewing, Seeking Safety, compassion-focused therapy, and acceptance and commitment therapy. Despite, a few stakeholders mentioning yoga as a treatment intervention, experts rated yoga at a 59% agreement level. There was not enough consensus within and between groups to include yoga. A summary of treatment recommendations can be seen in Table 6.

Chapter 5: Discussion and Implications

This study aimed to reach expert and stakeholder consensus on a trauma-informed treatment program for adolescents to be delivered in integrated primary care. This chapter contains a summary of a two-round Delphi study on the critical aspects of treatment for adolescents who have experienced trauma and adverse events when delivered in primary care. It includes a discussion on the findings of the study by connecting consensus items to the literature. This chapter also includes a discussion of the implications for practice, recommendations for further research, and limitations of the study.

Results Related to the Literature

General principles. Experts and stakeholders identified seven general principles and guidelines for adolescent trauma treatment in integrated primary care:

- Conduct treatment in a trauma-informed environment and culture
- Have all staff trained in trauma-informed care practices
- Consider the environment of integrated care in planning
- Be flexible with as aspects of care
- Clearly define the program or treatment’s mission and purpose
- Treatment is not one size fits all
- Get everyone on the team involved

The outlined principles and guidelines have clear roots in trauma-informed care principles as laid out by SAMHSA (2015) and others (Elliott et al., 2005). The first three principles align well with SAMHSA’s (2015) stance that TIC is an approach that shifts the way an entire organization views and treats trauma, those same sentiments are echoed in the principles set by this study.

The sixth principle to realize treatment is not one size fits all stood out in both rounds of the study with experts and stakeholders alike speaking to the work of Harris and Fallot (2001) who reported that trauma screening and treatment needs to be coupled with trauma-specific interventions to fit the individual's needs. Further, TIC should be coupled with other resources to promote resiliency, family functioning, provide community-based resources, behavioral and psychological assessments and interventions for trauma as needed (Harris & Fallot, 2001).

Treatment structure. Within the therapeutic structure age range for treatment, session or appointment structure, and treatment constellation was considered. Of the 32 items identified initially for treatment structure during round one, ultimately only six items met consensus and were included in the final program recommendations. Experts recommended that the appropriate ages for trauma treatment included youth ages 14-18, adolescents grouped by ages 14-16 and 17-18 and that treatment should have flexibility in ages based on patient needs, maturity, and developmental level. This last point is consistent with the finding for session structure having flexibility and being based on the adolescents' needs, which reached 100% agreement. For treatment constellation experts and stakeholders agreed that a combination of individual, family, and group work should be included with treatment being flexible and all constellations possible but not required and that individual or family modalities should be utilized as clinically appropriate. The findings in this study area are consistent with the evolving research, which has indicated the treatment of trauma and adverse experiences needs to be flexible and rely on evidence-based practice (Hodas, 2006). Additionally, it is key that trauma treatment is tailored to the adolescent's own experiences and developmental level.

Interestingly, no experts felt that group therapy alone would be an appropriate treatment constellation and that family involvement got mixed reviews. Of the type of therapies or modalities conducted with adolescents group therapy is one of the most commonly conducted types for a variety of reasons. Group therapy can be a successful format for teaching coping skills, promoting socialization and communication skills, while being budget friendly. However, it is important to note that research shows similar results for adolescents who attended individual and group therapy alike (Weisz et al., 2017; O'Shea, Spence, & Donovan, 2015). Experts and stakeholders in this study noted that group therapy alone would not be as effective as possible in treating trauma.

The literature has outlined that adverse childhood experiences and trauma can occur at home and within families. For example, having a parent with a substance use disorder or witnessing domestic violence or experiencing any abuse could result in trauma (CDC, 2016b; Anda et al., 2006). As such events can harm health and development, as well as disrupt family relationships, it is not surprising that there was some hesitancy to include families in treatment and differences in opinion regarding to what degree it would be appropriate (Bick et al., 2015; Nelson & Charles, 2015; Szilagyi & Halfon, 2015). Although some experts and stakeholders felt it would be critical to include families it is clear that a proper trauma-informed assessment before treatment would be necessary. Based on the results of this study and previous research, including families should be considered if it is possible to include them without causing re-traumatization.

Therapeutic treatment plan. Within the therapeutic treatment plan treatment goals, treatment modality, and treatment inventions were explored. Minimal treatment modalities and interventions items reached consensus in this study compared to the number initially generated in round one. At the 80% threshold, only one item for treatment modality and eight items for interventions reached consensus despite a combined 41 items being generated. The lack of consensus can likely be attributed to the lack of research directly related to treatments for adolescents who have experienced trauma and adversity. The lack of evidence-based trauma treatments explicitly developed for adolescents has been a barrier to care (Hodas, 2006). This was evident in Shonkoff's et al., (2011) work that highlighted that treatment methods for childhood trauma continue to lag and fail to reach youth promptly, despite the knowledge that it causes neurological changes and mental health concerns.

Ultimately, after lowering the threshold and re-evaluating the stakeholder's input, six treatment modalities were included on the final program recommendations. The final recommended treatment recommendations included trauma-focused cognitive behavioral therapy, acceptance and commitment therapy, motivational interviewing, Seeking Safety, compassion-focused therapy, and psychoeducation. Some of these models like Seeking Safety are designed to help clients cope with a variety of traumas and co-occurring substance use concerns, which does not make it surprising that experts endorsed their potential to help adolescents heal from trauma in a structured setting (SAMHSA, 2015b; Triffleman, 2000).

Overall, nine treatment interventions items were included with the final treatment recommendations. Of those, three met consensus at a 100% level: emotion regulation skills, resiliency skills, and mindfulness. Five other interventions that met consensus were meditation, grounding techniques, shared decision making, belly breathing, and self-soothing skills. Also, journaling was added after examining the stakeholders' input.

Interestingly, modalities like DBT, CBT, narrative therapy and Bowen Family Systems were excluded from consensus. Further, biofeedback was also excluded despite emotion regulation and mindfulness interventions reaching consensus at a 100% level. Biofeedback is an evidence-based intervention shown to be effective in teaching such skills. However, there may have been concerns in using resources to purchase the materials for biofeedback, training for behavioral health specialists in biofeedback, or its efficacy with adolescents specifically.

In the literature review, various modalities and interventions from CBT to mindfulness were discussed concerning their efficacy in treating trauma (Baer, 2006). Despite CBT not specifically meeting consensus, many components of CBT did meet consensus and were ultimately included in the final recommendations, which aligns well with the previous research. Cognitive behavioral therapies aim to extinguish unhealthy thought patterns and behaviors by challenging unhelpful cognitions, improving emotion regulation, and increasing coping capacity. Further, CBT has been adapted into various models, including trauma specific models like TF-CBT, which was a modality included in the final program recommendations (SAMHSA, 2014b; Mahoney, 2004). As previously noted, elements of TF-CBT include psychoeducation, mindfulness, relaxation skills, and parent training skills (Cohen et al., 2006), many of which were recognized by experts and stakeholders alike in this study.

Integration in primary care. When considering how to integrate an adolescent trauma treatment program into primary care outcomes measures, benefits, and challenges were explored. Initially, experts identified 21 potential barriers to adolescent treatment in primary care. However, only four items ended up reaching consensus, which included time constraints, appropriate means for billing and how to get reimbursed, transportation for adolescents and families, and getting consistent participation. Eighteen items were initially identified as potential benefits of having an adolescent treatment program in integrated primary care. Of the 18 items, 10 reached consensus, while six reached consensus at a 100% level. Those items included: cause lasting change, improved mental health, reduced substance use, decreased stigma, increased safety, and provide treatment in an integrated medical home. The other four items that reached consensus were: reduced adult health complications, improved treatment reach, improved diagnosis and treatment, and to normalize trauma experiences. Ultimately, it is clear to see that the experts and stakeholders identified more benefits than barriers to having an adolescent trauma treatment program in an integrated primary care setting.

Nearly 50% of all adolescents are seen in primary care each year and that parents overwhelmingly seek services for them at primary care offices versus specialty mental health offices at nearly a 3:1 ratio (CDC, 2017; Guevara et al., 2001). This study highlights many of the known benefits of providing treatment in primary care, such as having one integrated medical home and improved treatment reach.

Many of the items that reached a 100% consensus are evidenced in the existing literature such as the goal of causing lasting change, improved mental health, reduced substance use, decreased stigma, and increased safety. Further, early intervention allows for a decreased likelihood of future negative impacts on development and improved brain structure for adolescents in treatment going forward (Perry et al., 1995; Glaser, 2000). Early research pointed out that successful outcomes for adolescents who have experienced trauma are strongly predicted by the degree to which interventions are implemented in a timely fashion (Glaser, 2000). This adolescent trauma treatment program in primary care could provide a promising start to achieving just that.

Recommendations and Implications for Treatment

Clinical implications. The results of the current research study have several implications for primary care doctors and behavioral health specialists in primary care settings as they work with adolescents who have experienced trauma or adverse events. First, stakeholders (youth) provided rich data relevant for primary care doctors' clinical work. They reported that a doctor's ability to listen, be respectful, and let the youth know they were heard were critical aspects to being able to provide treatment and create a trusting and open relationship. Additionally, they pointed out the importance that they are acknowledged in the room and included in decisions about their care.

Next, experts and stakeholders agreed that steps should be taken to assure safety before beginning trauma treatment work. This advice is pertinent across the spectrum of modalities and interventions and would be applicable whether the practitioner was working with one adolescent, an adolescent group, or family systems. Repeatedly, experts and prior research discussed recommendations to ensure the therapeutic environment is appropriate for an adolescent who has experienced trauma or an adverse event.

Another valuable clinical implication which arose from this study is the consideration that treatment should be tailored to the adolescent’s specific needs and be flexible. Therefore, utilizing the recommended treatment modalities and interventions within a menu of services could allow for each adolescent’s needs to be met within a trauma program’s design. However, this would require a throughout initial assessment before entry into the treatment program to ensure that the proper treatment plan is assigned.

Common factors. The fact that only a few modalities were identified with a consensus combined with the re-occurring theme and importance of designing treatment based on specific needs and to be flexible brings up the concept of common factors. Common factors references a body of research that suggests that certain specific factors account for some of the therapeutic effectiveness across all therapeutic modalities and interventions (Blow & Sprenkle, 2001).

Findings from this study correlate well with established MFT common factors found across therapeutic models such as empathy, acceptance and the therapeutic relationship which are critical to healing, taking priority over anyone specific intervention, or modality (Lebow, 2013; Blow, Sprenkle, & Davis, 2012; Sprenkle & Blow, 2004a; Sprenkle & Blow, 2004b; Blow & Sprenkle, 2001;). Common factors theorists believe that the therapeutic relationship accounts for approximately 30% of the variance of therapeutic outcomes (Blow & Sprenkle, 2001). Further, they believe that therapy models work through the therapist and not vice versa (Blow & Sprenkle, 2007). Therefore, it becomes evident that the impact of well-trained trauma-informed therapist would be vital to the therapeutic process as a means and catalysis for the therapeutic alliance when working with adolescents in primary care (Hick & Bien, 2008; Sprenkle & Blow, 2004a). The therapeutic relationship may be a central tenant of these prized factors, essentially operating as a "core process" found across modalities.

Organizational implications. In order for organizations like primary care offices to be successful in treating trauma, it is critical that they take a comprehensive top-down approach to trauma-informed care (SAMHSA, 2015). The findings from this study further enhanced the previously noted principles of trauma-informed care by identifying similar guidelines for care.

A critical organizational implication which arose from the results of this study is the need for training in trauma-informed care settings when considering clinic-wide applications of this model. Training creates the possibility of having a trauma-informed healthcare system that is sensitive to trauma and its effects. In such a system trauma is seen as a umbrella that includes a large part of the population that the organization serves (SAMHSA, 2015; Rosenberg, 2011). Trauma-informed care systems recognize the strengths and weaknesses of patients by providing services based on safety and empowerment while involving the patient in treatment. Trauma-informed values should be seen across various systems of care including, primary care, behavioral health care, and frontline staff within one office (Rosenberg, 2011).

Implications for Future Research

Further research could strengthen and validate the importance and relevance of the initial findings related to adolescent treatment recommendations. First, a replication of this study using the Delphi method with a different panel of experts and stakeholders could provide important verification of this initial study. By comparing the data from this study with data from a replicated study, findings could either be strengthened or different consensus items might be identified. Further, this study should also be conducted with a more diverse and globally representative expert and stakeholder panel to discover if the findings would still be valid.

Due to the exploratory nature of the Delphi method, there are many questions which remain unanswered regarding a designed treatment program for adolescents who have experienced trauma to be delivered in primary care settings. Thus, there is a need for continued research to gain a more in-depth understanding of this topic. It would be beneficial to gain expert and stakeholder consensus on specific modalities recommended other than psychoeducation to be included in treatment in this setting. It could also be helpful to gather expert and stakeholder consensus on how to balance treatment that provides enough structure, yet also allows for enough flexibility for adolescents, a question not asked within this study.

Although there is a good deal of research on trauma treatments, there is a shortage of studies on trauma-informed care and treatments for adolescents, particularly in integrated primary care settings. The results from this study indicated through expert and stakeholder agreement that such efforts would be warranted and appropriate for adolescents in a primary care setting. Therefore, a pilot study measuring the effects of an adolescent trauma treatment program in integrated primary care utilizing the findings from this study is recommended. As recommended by the expert panelists, pre and post treatment assessments and interviews could provide valuable insight into the effectiveness of providing such a treatment for adolescents within this setting and guide the direction for further research.

A final implication for future research includes the recommendation that youth stakeholders be utilized in future studies pertaining to matters that directly affect their well-being. The youth stakeholders proved to be invaluable in this study providing insight that would not have otherwise been available to the researcher and expert panelists. Further, their insight helps to inform clinical applications, specifically related to doctor-patient care and helped to expand the treatment program. A recent growing body of research indicates that it is best practice to include stakeholders in research when possible (Benninger & Savahl, 2016; Noble-Carr et al., 2014; Mendenhall & Doherty, 2005).

Limitations of this Study

Inevitably there are limitations in modified Delphi studies and CBPR. The most significant limitation of this method, and therefore of this study is that validity is dependent on the selection of the participants (Keeney et al., 2006; Fish & Busby, 2005; Okoli & Pawlowski, 2004). The current study was limited by the racial and ethnic diversity of the expert sample, despite attempts by the researcher to recruit a diverse sample. However, the researcher was able to recruit 19 experts with varying professional backgrounds, holding different licenses, unfortunately, the panelists that met participation criteria and had enough time, or chose to participate identified as being Caucasian or White, which limited diversity within this study. Similarly, the majority of stakeholder participants also identified as Caucasian or White. However, three youth participants identified as multiracial, another identified as Hispanic or Latino, and one declined to disclose. Further, one youth participant identified as a transgender male. Therefore, although there was diversity represented in the participants' backgrounds and geographical locations, there is potential that the results are not representative of all people who are experts and stakeholders in this field.

Moreover, the Delphi method is primarily based on the expert panelists' experiences in their field study and their opinions, and this too can be a limitation. Although the expert panelists in this study had significant and distinguished experiences, it is notable that several times when they did not endorse an item, they reported "I can't endorse it due to lack of experience with it" as the reason why.

Questions remained unanswered after two rounds of data collection, which is another limitation to this study. This modified study did not include a third questionnaire or focus group to validate the final recommendations for treatment further. Following the suggestions of previous scholars this study was limited to two rounds of data collection to prevent participant attrition due to panelist fatigue. Participants did not note survey fatigue, which was evident by the low attrition rates during this study. However, because of the two round structure panelists' final remarks during the second round could not be further clarified (Fish & Busby, 2005; Sori & Sprenkle, 2004). In hindsight, it may have been helpful to obtain participants' views regarding items that were on the bubble of consensus, like basing session structure on the adolescents' symptoms. A third round also may have allowed testing for more specificity. Similarly to the example above, if a particular item had received ratings of 70% to 80%, the panel could have had a chance to re-rate it or provide commentary in the third round. Lastly, feedback was not received on the final treatment recommendations that were sent out. This may have been further helpful in designing a program. However, each of the limitations noted could be the basis for launching future studies.

Conclusion

The present modified Delphi study sought to identify treatment recommendations for adolescents who had experienced trauma and adverse experiences to be delivered in an integrated primary care setting. Experts and youth stakeholders identified a total of 59 treatment recommendations to be utilized. Many of these recommendations matched those found in relevant literature. However, the recommendations also expanded upon the relevant literature by including stakeholder’s views on this topic, which was not previously found. The hope is that this study will advance therapeutic practice in integrated primary care settings, expand the reach of mental health treatment for adolescents who have experienced trauma, and generally inform therapeutic practice, future research, and increase academic knowledge regarding treatment practices for adolescent trauma treatment and integrated primary care.

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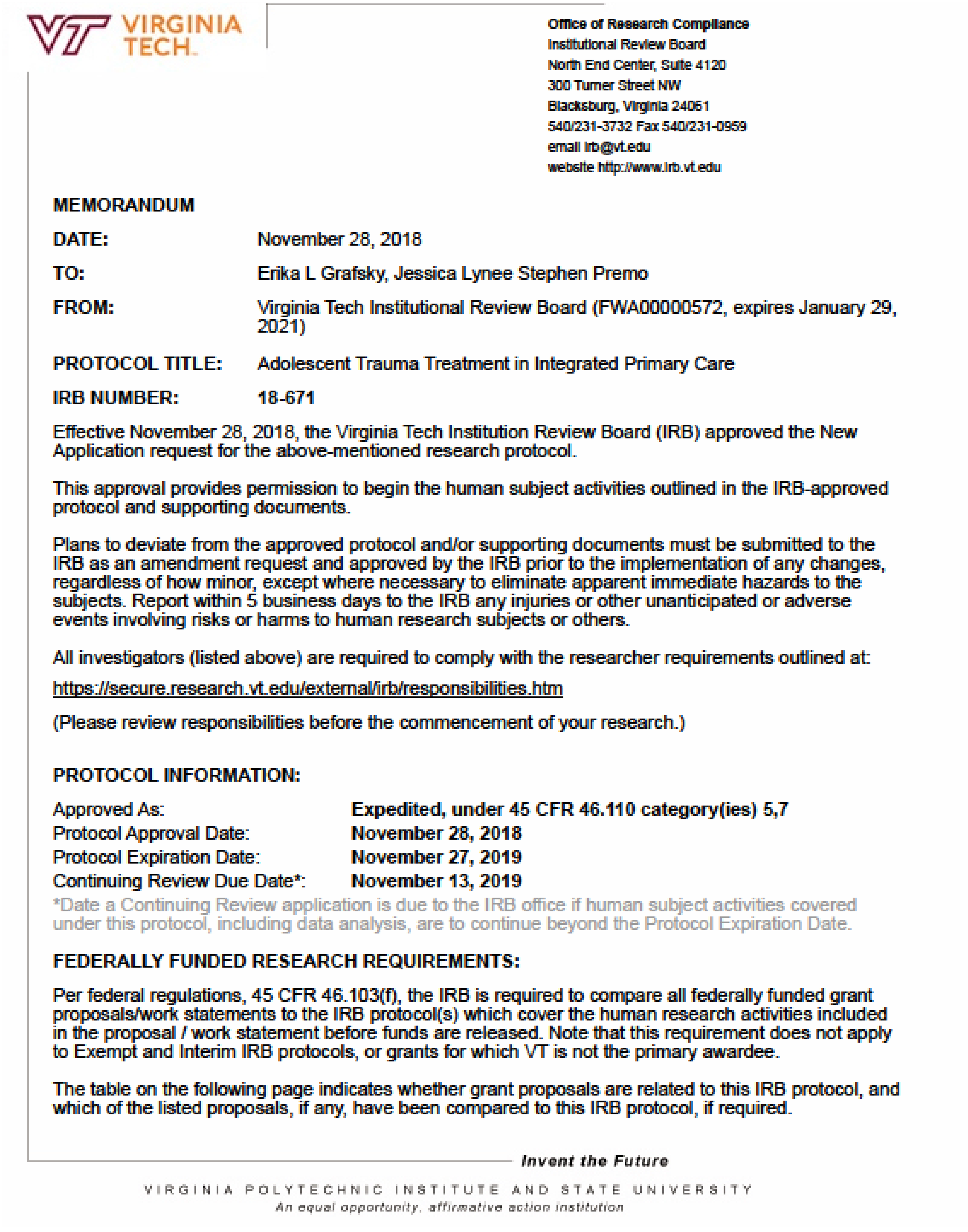
Appendix A

IRB Approval



VIRGINIA TECH.

Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120
300 Turner Street NW
Blacksburg, Virginia 24061
540/231-3732 Fax 540/231-0959
email irb@vt.edu
website http://www.irb.vt.edu

MEMORANDUM

DATE: November 28, 2018

TO: Erika L Grafsky, Jessica Lynee Stephen Premo

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires January 29, 2021)

PROTOCOL TITLE: Adolescent Trauma Treatment in Integrated Primary Care

IRB NUMBER: **18-671**

Effective November 28, 2018, the Virginia Tech Institution Review Board (IRB) approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

https://secure.research.vt.edu/external/irb/responsibilities.htm

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As:	**Expedited, under 45 CFR 46.110 category(ies) 5,7**
Protocol Approval Date:	**November 28, 2018**
Protocol Expiration Date:	**November 27, 2019**
Continuing Review Due Date*:	**November 13, 2019**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
An equal opportunity, affirmative action institution

Appendix B

Expert First Round Recruitment Email

Dear ______

My name is Jessica Stephen Premo and I am a doctoral candidate at Virginia Polytechnic Institute and State University (Virginia Tech) and a Marriage and Family Therapist. I am contacting you to request your participation in my dissertation study as one of only 20 expert panelists across the country. I have selected you based on your expertise and knowledge of adolescent trauma treatment. The potential panel of 15-20 is a blend of clinicians, medical doctors, professors, researchers, and national leaders.

My research study will utilize expert and adolescent stakeholder perspectives to develop a trauma-informed intervention program for adolescents in primary care settings. For the purposes of this study stakeholders are youth ages 14-18 years old. I believe they can be authorities on matters pertaining to their own health and well-being and paired with experts can make the study more robust. The goal is to reach consensus on critical aspects of treatment for trauma and adverse childhood experiences including the modality, program, goals and interventions. Due to the exploratory nature of the research, the Delphi Method is being used to gather data between the groups, gain consensus, and propose a treatment program.

I would like to invite you to participate as an expert for the study. To qualify as an expert evaluator, you must meet the following criteria:
1) Have at least five years' experience in the field of trauma-informed care or a closely related field
2) Have one of the following licenses or credentials: MD, DO, MPH, LMFT, LPC, LCSW, PhD or PsyD and
3) Meet <u>one</u> criteria from the following list: (a) at least three years' of experience teaching topics related to trauma-informed care, the treatment of adolescents, and/or the practice of integrated care; or (b) have experience or extensive knowledge related to the practice of integrated health care.

The study will require you to complete two questionnaires. The first questionnaire will take approximately 45 minutes to complete. You are free to complete the survey at your own pace and convenience. However, all questionnaires need to be completed by (DATE). I will develop a second questionnaire based on your and the stakeholders feedback and will send the second questionnaire for you to complete approximately three weeks after the first questionnaire. It will take approximately 30 minutes to complete.

Your involvement in the study is completely voluntary and you may withdraw from the study at any time without facing adverse consequences. Your ID number is __. You will be asked to enter this number in both questionnaires. All data will be anonymous, meaning that I will not link your name to your responses. The ID number will allow me to group responses from both questionnaires together appropriately for data analysis. Participants will receive a copy of the study's final analysis.

If you meet the above criteria and are interested in serving on the expert panel, please read the attached consent form. Then, click on this link:
https://virginiatech.qualtrics.com/jfe/form/SV_0H4oBR69BGJMCON
or copy the link to your web browser and the survey will appear. By completing the questionnaire, your consent to participate will be implied.

Thank you for your consideration of this request. I would be honored to have someone of your stature participate in this study. Please let me know if I can answer any questions you may have about the study or your time commitment.

Thank you,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu

Appendix C

Expert Consent

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants
in Research Projects Involving Human Subjects

Title of Project:	Adolescent Trauma Treatment in Integrated Primary Care	
Investigator(s):	(PI) Erika Grafsky	erikagrafsky@vt.edu 540-231-6782
	Jessica Stephen Premo	jpremo@vt.edu 989-615-6946

I. Purpose of this Research Project

The purpose of this research study is to develop a treatment program for adolescents who have experienced adverse childhood experiences and/or trauma to be used in a primary care setting. We are interested in learning about what you think should be included in such a treatment for adolescents ages 14-18. We are also interested in learning your thoughts about how the program should define its session structure, goals, and interventions. Findings will be used for dissertation completion and may also be presented at professional conferences and published in scientific peer-reviewed journals.

II. Procedures

This study includes two rounds of online questionnaires. You will be sent the questionnaires via email and the first questionnaire should take about 45 minutes to complete. You will use an assigned ID on the questionnaires to keep your information and answers confidential. After you complete the first questionnaire, you will be asked to complete a second questionnaire approximately two weeks later. You will be sent the results of the first questionnaire in combination with the first youth focus group results for your review prior to completing the second questionnaire. Similarly, the youth will also be sent the same summary of results including your answers from the first questionnaire. The second questionnaire will take about 30 minutes to complete. Your participation in this study is completely voluntary. If you wish to discontinue your participation in this study at any time, you may do so without facing any consequences.

III. Risks

Risks of participating in this study are minimal.

IV. Benefits

No promise or guarantee of benefits has been made to encourage you to participate. If you choose to participate, your responses will help us develop a treatment program to improve support for adolescents who have experienced adverse childhood experiences and/or trauma. As a participant in the study, you will receive a description of the findings

V. Extent of Anonymity and Confidentiality

Strict confidentiality of information will be preserved. You will be assigned an identification number (ID) that will be kept separate from any identifying information, and your questionnaires will contain only this ID number. Only the members of the research team will have access to the research materials. Only the ID code or pseudonym will be used on reports or publications that are developed from the results of this study, names will not be used.

The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

Data retention and destroying will follow the American Psychological Association guidelines, that state materials will be kept for a minium of seven years after the study has concluded or data analysis and reporting has concluded.

VI. Compensation

There is no compensation for participating in these surveys.

VII. Freedom to Withdraw

It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

VIII. Questions or Concerns

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

IX. Consent

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my consent for participation.

Appendix D

Expert Questionnaire One

Qualtrics Link: https://virginiatech.qualtrics.com/jfe/form/SV_0H4oBR69BGJMCON

Informed Consent:

Dear Expert Participant,
Please review the informed consent below before proceeding. You were previously sent the informed consent as an attachment in your email.

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants
in Research Projects Involving Human Subjects

Title of Project:	Adolescent Trauma Treatment in Integrated Primary Care
Investigator(s):	(PI) Erika Grafsky; Contact at erikagrafsky@vt.edu or 540-231-6782 Jessica Stephen Premo; Contact at jpremo@vt.edu or 970-298-6453

I. Purpose of this Research Project
The purpose of this research study is to develop a treatment program for adolescents who have experienced adverse childhood experiences and/or trauma to be used in a primary care setting. We are interested in learning about what you think should be included in such a treatment for adolescents ages 14-18. We are also interested in learning your thoughts about how the program should define its session structure, goals, and interventions. Findings will be used for dissertation completion and may also be presented at professional conferences and published in scientific peer-reviewed journals.

II. Procedures
This study includes two rounds of online questionnaires. You will be sent the questionnaires via email and the first questionnaire should take about 45 minutes to complete. You will use an assigned ID on the questionnaires to keep your information and answers confidential. After you complete the first questionnaire, you will be asked to complete a second questionnaire approximately two weeks later. You will be sent the results of the first questionnaire in combination with the first youth focus group results for your review prior to completing the second questionnaire. Similarly, the youth will also be sent the same summary of results including your answers from the first questionnaire. The second questionnaire will take about 30 minutes to complete. Your participation in this study is completely voluntary. If you wish to discontinue your participation in this study at any time, you may do so without facing any consequences.

III. Risks
Risks of participating in this study are minimal.

IV. Benefits

No promise or guarantee of benefits has been made to encourage you to participate. If you choose to participate, your responses will help us develop a treatment program to improve support for adolescents who have experienced adverse childhood experiences and/or trauma. As a participant in the study, you will receive a description of the findings

V. Extent of Anonymity and Confidentiality

Strict confidentiality of information will be preserved. You will be assigned an identification number (ID) that will be kept separate from any identifying information, and your questionnaires will contain only this ID number. Only the members of the research team will have access to the research materials. Only the ID code or pseudonym will be used on reports or publications that are developed from the results of this study, names will not be used.

The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

Data retention and destroying will follow the American Psychological Association guidelines, that state materials will be kept for a minium of seven years after the study has concluded or data analysis and reporting has concluded.

VI. Compensation

There is no compensation for participating in these surveys.

VII. Freedom to Withdraw

It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

VIII. Questions or Concerns

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

IX. Consent

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my consent for participation.

Introduction:

Dear Expert Participant,

Thank you for your interest in our study! The purpose of this study is to develop a trauma-informed treatment program for adolescents to be used in a primary care.

This study includes two rounds of online questionnaires for experts and two rounds of online adolescent stakeholder focus group interviews. The survey will take approximately 60 minutes and your participation is strictly voluntary. You can choose not to answer questions. Your consent to participate will be implied from the submission of the questionnaire. If you wish to discontinue your participation in this study at any time, you may do so without facing any consequences.

Strict confidentiality of information will be preserved. Only the members of the research team will have access to the research materials. Only ID numbers will be used on reports or publications that are developed from the results of this study, names will not be used.

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of the consent form document and at the end of this survey. Should you have any questions or concerns about the study's conduct or your rights as a research subject or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

You are free to complete the survey at your own pace and at your own convenience. However, we would like all surveys to be completed by (DATE, TIME).

Thank you in advance for your help!
You can begin the survey by entering your ID number and clicking the arrow.

Demographics Questions:

1. Please enter your assigned ID number. You can find this on the email your were sent with the Qualtrics link for this survey. (enter the ID number provided to you in the initial email you received)
2. Which one of the following credentials do you hold? Check all that apply.

☐ MD

☐ DO

☐ LMFT

☐ LPC

☐ LCSW

☐ PhD

☐ PsyD

☐ MPH

3. Do you have at least five years of experience in the field of trauma-informed care or a field closely related?

○ Yes

○ No

4. Do you have (a) at least three years of experience teaching topics related to trauma-informed care, the treatment of adolescents, and/or the practice of integrated care; OR (b) have experience or extensive knowledge related to the practice of integrated health care.

○ Yes

○ No

5. How many years of experience do you have in the field of trauma-informed care, integrated care or a field closely related?

6. How old are you?

○ 25-30

○ 31-35

○ 36-40

○ 41-50

○ 51-55

○ 56-60

○ 61 or older

7. Please describe your gender:
   a. Female
   b. Male
   c. Transgender Female
   d. Transgendered Male
   e. Gender Variant/Non-Conforming
   f. Prefer not to answer
   g. Not listed___________________

8. How would you describe the geographic setting you live in?
   a. Urban
   b. Suburban
   c. Rural
   d. Not listed________________

9. What state do you live in?

10. Have you ever participated in a prior research study?
    a. Yes
    b. No
    c. Unsure _____________________

8) What is your race or ethnicity?
   a) White
   b) Black
   c) Hispanic/Latino
   d) Asian
   e) American Indian/Alaska Native (AIAN)
   f) Hawaiian or other Pacific Islander (HPI)
   g) Multiracial
   h) Not listed__________________________

Treatment Program Questions:

Directions: Please answer the open-ended questions as completely as you wish. Feel free to add additional thoughts as necessary. Individual quotes will not be attributed to you specifically, however may be used as part of reporting data. Please use space below each question to answer. Answers may be in any form you wish (narrative, list, etc.).

1. Please describe key characteristics and elements of working with adolescents who have experienced adverse childhood experiences or trauma.
2. What should be the goals of an adolescent trauma treatment program in primary care (i.e., reduction of symptoms, effect change, family treatment, provide resources, skill acquisition, increase peer support, etc.)? Please list and provide a brief explanation.
3. What should be the treatment modality for an adolescent trauma treatment program in primary care consist of (i.e. DBT, TF-CBT, psychoeducation, Narrative Therapy, ACT, neurofeedback)?
4. What should the treatment constellation or potential options of treatment constellations include for an adolescent trauma treatment program in primary care be (i.e., group, individual, or family sessions)? For example, should families' participant the entire time in treatment or should the program be designed to have individual time for parents and adolescents and a later time for conjoint systemic sessions? Or should adolescents receive treatment alone?
5. What should be the session structure for an adolescent trauma treatment program in primary care consist of (i.e. length, duration, and layout).

6. Please provide a brief statement and comment on how the elements of treatment modality, treatment constellation, and session structure might be connected.
7. The stakeholders in this study are adolescents aged 14-18 years old. Do you feel this is an appropriate target age for the program or should this be expanded or collapsed? Please explain.
8. What are the essential models, components, and interventions that should be use in an adolescent trauma treatment program in primary care (i.e., psychoeducation, mindfulness, TF-CBT, experiential activities, narrative, roles play, etc.)? Please list and provide an explanation.
9. What measures or data should be used in an adolescent trauma treatment program in primary care to judge the effectiveness of the program?
10. What challenges or obstacles might you expect to encounter in running such a treatment program in primary care?
11. What benefits do you anticipate could occur from offering such a treatment program in primary care?
12. Please provide any other additional thoughts or information you feel may be valuable to the development of an adolescent trauma treatment program in primary care.

Thank you for taking the time to fill out this questionnaire. Your input is invaluable. In approximately 3 weeks you will receive the results of this questionnaire along with the stakeholders' input and a link to the second questionnaire, which will be multiple choice. If you have any questions, feel free to contact Jessica at jpremo@vt.edu.

Thank you!

Appendix E

Expert Follow-up Recruitment Email

Hello ______________,

On (DATE), I sent the attached email asking you to consider an invitation to be a panelist on my dissertation research study regarding trauma-informed treatment for adolescents in primary care.

I specifically selected you based on your expertise and knowledge in this area. Please consider the attached request. Thank you very much for your time.

Sincerely,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu

Appendix F

Recruitment Materials

Facebook/LinkedIn Recruitment

Youth participants wanted for an adolescent treatment research study

VOICES FOR
Youth

(Youth focused, 2017)

Are you a teen who has an interest in making their voice heard and want a say in the care of other teens? Are you interested in sharing your thoughts, ideas, and reactions to potential treatments and solutions? We are recruiting youth to participate in a project exploring trauma-informed treatment programs for adolescents to be used in a primary care setting. We are in the process of developing a program to help youth get needed care at their doctor's office.

Participants will engage in two 1-hour online focus group interviews with other youth, from around the country and a researcher. A $20 Amazon.com gift card will be provided for participation in each focus group. Participation is confidential and voluntary, and the study results may be published or presented with non-identifying information disclosed. All youth ages 14-18 are eligible to participate, no trauma experience desired or necessary, and must have parental permission to participate if under the age of 18 or majority age.

Please email me or have your parent email me so they can be sent a copy of the informed consent and sent up a time for parental permission if you wish to participate.

Contact: Jessica Stephen Premo at jpremo@vt.edu or 970-298-6453.

Twitter Recruitment

Recruiting youth for a research study on trauma-informed treatment in primary care. We are interested in what you think should be included in such a treatment. Online focus groups will take 1-hour. Participants receive a $20 gift card per group. For interest contact jpremo@vt.edu

Email recruitment

Dear _______________,

I am the co-investigator for a research study exploring trauma-informed care for adolescents. I wanted to reach out because _______________ was identified as a possible youth resource regarding this topic and as someone who could share their thoughts and ideas about potential treatments and solutions. We are in the process of developing a treatment program to help youth gain access to care at their doctor's office; this research will help inform that project. Below is some info related to participant eligibility for the present study. I've also attached information to this email; a consent for the study. I'm wondering if you would be able to forward this information on to ____________ or any youth that may be interested.

"Participants will engage in two 1-hour online focus group interviews with other youth, anywhere from 4 to 7 others from around the country and a researcher. A $20 Amazon.com gift card will be provided for participation for each focus group. Participation is confidential and voluntary, and the study results may be published or presented with non-identifying information disclosed. All youth ages 14-18 are eligible to participate, no trauma experience desired or necessary, and must have parental permission to participate if under the age of 18 or majority age.

Please email me or have your parent email me so they can be sent a copy of the informed consent and sent up a time for parental permission if you wish to participate.

If interested, contact Jessica Stephen Premo at jpremo@vt.edu or 989-615-6946."

Warm regards,

Jessica Stephen Premo

Jessica L. Stephen Premo, M.A., LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu

Appendix G

Stakeholder and Parent Round One Initial Recruitment Email

Dear ______

My name is Jessica Stephen Premo and I am a doctoral candidate at Virginia Tech and a Marriage and Family Therapist. I am following-up regarding your teen's potential participation in my research study as a youth participant.

This research study will utilize both expert and youth perspectives to develop a trauma-informed intervention program for adolescents in primary care settings. I believe adolescents are knowledgeable authorities on matters pertaining to their own lives and well-being. This study aims to explore critical aspects of treatment including the approach, program, goals and interventions. However, it itself is not an intervention providing direct mental health services to youth. We are seeking youth, to provide knowledge and insight regarding potential treatments.

The study will require youth to complete one brief online demographic questionnaire and two online focus group interviews. Each focus group will have approximately eight youth participants and will take approximately one hour. They will be compensated with a $20 Amzaon.com gift card per focus group. Participation in the study is completely voluntary and participants may withdraw from the study at any time without facing consequences. There is minimal risk to participate in the study.

To qualify, youth must meet the following criteria:

1) be between the ages of 14 and 18 years old <u>and</u>
2) have parental permission to participate if under the age of 18 or majority age and
3) living in the US; NO trauma experience desired or necessary to participate

If they meet the above criteria and are interested in participating, please read the attached consent form and share it with your teen. To provide parental permission, you must participate in a10 minute online ZOOM meeting. This will provide me an opportunity to share the consent process with you further and answer any question you may have.

Please respond to this email with which of the following dates and times would be convenient for a brief Zoom meeting for parental consent:

1. (DATE, TIME)
2. (DATE, TIME)
3. (DATE, TIME)
4. Suggest an alternative date and time

Once we have a confirmed meeting time you will be sent a ZOOM email that will allow you to join our Zoom meeting. The ways to join the meeting are also listed below for your convenience.

You may join the Zoom meeting from a PC, Mac, Linux, iOS or Android at:
https://virginiatech.zoom.us/j/7551187678

By phone:
Or iPhone one-tap :
US: +16699006833, 7551187678# or +19294362866, 7551187678#
Or Telephone:
Dial (for higher quality, dial a number based on your current location):
US: +1 669 900 6833 or +1 929 436 2866
Meeting ID: 755 118 7678

Thank you for your consideration of your youth's participation. Please let me know if I can answer any questions you may have about the study or your time commitment.

Thank you,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu
970-298-6453

Appendix H

Stakeholders Round One Initial Recruitment Email

Dear ______

My name is Jessica Stephen Premo and I am a doctoral candidate at Virginia Tech and a Marriage and Family Therapist. I am following-up regarding your potential participation in my research study as a youth participant.

This research study hopes to develop a trauma-informed intervention program for adolescents in primary care settings. I believe adolescents are knowledgeable authorities on matters pertaining to their own well-being. This study aims to explore critical aspects of treatment including the approach, program, goals and interventions. However, it is not an intervention providing direct mental health services to youth. We are seeking youth, to provide knowledge and insight regarding potential treatments.

The study will require you to complete one brief online demographic questionnaire and two online focus group interviews. Each focus group will have approximately eight youth participants and will take approximately one hour. You will be compensated with a $20 Amzaon.com gift card per focus group. Participation in the study is completely voluntary and participants may withdraw from the study at any time without facing consequences. There is minimal risk to participate in the study.

To qualify, you must meet the following criteria:

1) be between the ages of 14 and 18 years old and
2) have parental permission to participate if under the age of 18 or majority age and
3) living in the US; NO trauma experience desired or necessary to participate

If you meet the above criteria and are interested in participating, please read the attached consent form and share it with your parent if you are under the majority age. To provide parental permission, your parent must participate in a 10-minute online ZOOM meeting. This will provide me an opportunity to share the consent process with them further. You can have them email me to set up a time and date for the ZOOM meeting.

After parental permission is provided you will be sent a Qualtrics Survey. If you are 18 and of majority age and do not need parental permission, please rely to this email and a Qualtrics survey will be sent to you. By completing the online Qualtrics questionnaire, you will provide consent or assent to participate.

Thank you for your consideration of your youth's participation. Please let me know if I can answer any questions you may have about the study or your time commitment.

Thank you,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu
970-298-6453

Appendix I

Stakeholder Informed Consent

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants
in Research Projects Involving Human Subjects

Title of Project:	Adolescent Trauma Treatment in Integrated Primary Care	
Investigator(s):	(PI) Erika Grafsky	erikagrafsky@vt.edu 540-231-6782
	Jessica Stephen Premo	jpremo@vt.edu 989-615-6946

I. Purpose of this Research Project

The purpose of this research study is to develop a treatment program for adolescents who have experienced adverse childhood experiences and/or trauma to be used in a primary care setting. We are interested in learning about what you think should be included in such a treatment for adolescents ages 14-18. We are also interested in learning your thoughts about how the program should define its session structure, goals, and interventions. Findings will be used for dissertation completion and may also be presented at professional conferences and published in scientific peer-reviewed journals.

II. Procedures

This study includes two rounds of online questionnaires. You will be sent the questionnaires via email and the first questionnaire should take about 45 minutes to complete. You will use an assigned ID on the questionnaires to keep your information and answers confidential. After you complete the first questionnaire, you will be asked to complete a second questionnaire approximately two weeks later. You will be sent the results of the first questionnaire in combination with the first youth focus group results for your review prior to completing the second questionnaire. Similarly, the youth will also be sent the same summary of results including your answers from the first questionnaire. The second questionnaire will take about 30 minutes to complete. Your participation in this study is completely voluntary. If you wish to discontinue your participation in this study at any time, you may do so without facing any consequences.

III. Risks

Risks of participating in this study are minimal.

IV. Benefits

No promise or guarantee of benefits has been made to encourage you to participate. If you choose to participate, your responses will help us develop a treatment program to improve support for adolescents who have experienced adverse childhood experiences and/or trauma. As a participant in the study, you will receive a description of the findings

V. Extent of Anonymity and Confidentiality

Strict confidentiality of information will be preserved. You will be assigned an identification number (ID) that will be kept separate from any identifying information, and your questionnaires will contain only this ID number. Only the members of the research team will have access to the research materials. Only the ID code or pseudonym will be used on reports or publications that are developed from the results of this study, names will not be used.

The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

Data retention and destroying will follow the American Psychological Association guidelines, that state materials will be kept for a minium of seven years after the study has concluded or data analysis and reporting has concluded.

VI. Compensation

There is no compensation for participating in these surveys.

VII. Freedom to Withdraw

It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

VIII. Questions or Concerns

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

IX. Consent

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my consent for participation.

Appendix J

Stakeholder Assent for Minors and Consent for those of Majority Age

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Assent for Minors and Consent for those who are the age of Majority
For Participants in Research Projects Involving Human Subjects

Title of Project:	Adolescent Trauma Treatment in Integrated Primary Care	
Investigator(s):	(PI) Erika Grafsky	erikagrafsky@vt.edu 540-231-6782
	Jessica Stephen Premo	jpremo@vt.edu 970-298-6453

I. Purpose of this Research Project
The purpose of this research study is to develop a trauma-informed treatment program for adolescents to be used in a primary care setting. We are interested in learning about what you think should be included in such a treatment for youth ages 14-18. We are also interested in learning your ideas about how the program should define its session structure, goals, and interventions. This research study is not an intervention providing direct mental health services to adolescents. Findings will be used for dissertation completion and may also be presented at professional conferences and published in scientific peer-reviewed journals.

II. Procedures
This study includes one brief online demographic survey and two rounds of online focus group interviews. You will be emailed a link to a Qualtrics survey and asked to complete a brief demographic questionnaire after you reach out about the research study and parental permission is obtained. On the demographic survey you will choose a time for your first focus group interview. Each focus group will have approximately eight participants and take one hour to complete. The focus groups will use the website go.itracks.com so participants can answer questions about creating a treatment program that promotes resiliency, empowerment, and coping while interacting with one another. You may choose a pseudonym for the focus groups interviews and no video will be taken or used during the focus groups.

After you complete the first focus group, you will receive a summary of the ideas collected from the first youth focus groups and surveys filled out by experts in the field (doctors, therapists, professors etc.). The expert group will also get a summary of their ideas and those collected from the youth focus groups. This first feedback will help to inform questions for the second focus group. Next you will be asked to participate in another focus group a few weeks later. The second online focus group will follow the steps of the first group on go.itracks.com and take approximately one hours to complete. Your participation in this study is voluntary. If you wish to discontinue your participation in this study at any time, you may do so without facing any consequences.

III. Risks
Risks of participating in this study are minimal. Mild discomfort may arise when discussing trauma-informed care related to adolescents. Researchers will discourage you from sharing personal experiences of trauma. However, if this comes out during a focus group, researchers are prepared to offer you several resources. Additionally, if reports of child abuse are disclosed they will be reported to the appropriate child and family department state authorities. All participation is voluntary, and participants can stop at any time.

IV. Benefits
If you choose to participate, your responses will help us develop a treatment program to improve support for adolescents who have experienced trauma. As a participant in the study, you will receive a description of the findings.

V. Extent of Anonymity and Confidentiality
Strict confidentiality of information will be maintained. Only the members of the research team will have access to the research materials. Only pseudonym or ID numbers will be used on reports or publications that are developed from the results of this study, names will not be used. The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

Data retention and destroying will follow the American Psychological Association guidelines, that state materials will be kept for a minium of seven years after the study has concluded or data analysis and reporting has concluded.

VI. Compensation
There will be a $20 Amazon.com gift card provided per focus group interview.

VII. Freedom to Withdraw
It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

VIII. Questions or Concerns
Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

IX. Consent
I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my consent for participation.

Appendix K

Stakeholder Parental Consent for Minors

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Parent Permission for Minors
For Participants in Research Projects Involving Human Subjects

Title of Project: Adolescent Trauma Treatment in Integrated Primary Care

Investigator(s):
(PI) Erika Grafsky erikagrafsky@vt.edu
540-231-6782
Jessica Stephen Premo jpremo@vt.edu
970-298-6453

I. Purpose of this Research Project

The purpose of this research study is to develop a trauma-informed treatment program for adolescents to be used in a primary care setting. We are interested in learning about what your child thinks should be included in such a treatment for youth ages 14-18. We are also interested in learning your child's ideas about how the program should define its session structure, goals, and interventions. This research study is not an intervention providing direct mental health services to adolescents. Findings will be used for dissertation completion and may also be presented at professional conferences and published in scientific peer-reviewed journals.

II. Procedures

This study includes one brief online demographic survey and two rounds of online focus group interviews. Your child will be emailed a link to a Qualtrics survey and asked to complete a brief demographic questionnaire after reaching out about the research study and your parental permission is obtained. They will choose a time for their first focus group interview on the demographic questionnaire. Each focus group will have approximately eight participants and take one hour to complete. The focus groups will use the website go.itracks.com so participants can answer questions about creating a treatment program that promotes resiliency, empowerment, and coping while interacting with one another. Your child may choose a pseudonym for the focus groups interviews and no video will be taken or used during the focus groups.

After your child completes the first focus group, they will receive a summary of the ideas collected from the first youth focus groups and surveys filled out by experts in the field (doctors, therapists, professors etc.). The expert group will also get a summary of their ideas and those collected from the youth focus groups. This first feedback will help to inform questions for the second focus group. Next your child will be asked to participate in another focus group a few weeks later. The second online focus group will follow the steps of the first group on go.itracks.com and take approximately one hours to complete. Your child's participation in this study is voluntary. If they wish to discontinue their participation in this study at any time, they may do so without facing any consequences.

III. Risks

Risks of participating in this study are minimal. Mild discomfort may arise when discussing trauma-informed care related to adolescents. Researchers will discourage your child from sharing personal experiences of trauma. However, if this comes out during a focus group, researchers are prepared to offer your child several resources. Additionally, if reports of child abuse are disclosed they will be reported to the appropriate child and family department state authorities. All participation is voluntary, and participants can stop at any time.

IV. Benefits

If your child chooses to participate, their responses will help us develop a treatment program to improve support for adolescents who have experienced trauma. As a participant in the study, your child will receive a description of the findings.

V. Extent of Anonymity and Confidentiality

Strict confidentiality of information will be maintained. Only the members of the research team will have access to the research materials. Only pseudonym or ID numbers will be used on reports or publications that are developed from the results of this study, names will not be used. The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

Data retention and destroying will follow the American Psychological Association guidelines, that state materials will be kept for a minium of seven years after the study has concluded or data analysis and reporting has concluded.

VI. Compensation

There will be a $20 Amazon.com gift card provided to your child per focus group interview.

VII. Freedom to Withdraw

It is important for your child to know that they are free to withdraw from this study at any time without penalty. Your child is free not to answer any questions that they choose or respond to what is being asked without penalty.

VIII. Questions or Concerns

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your child's rights as a research subject, or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

IX. Consent

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my permission for my child to participate in this research study.

Appendix L

Stakeholder Demographic Questionnaire Email

Dear (NAME),

Thank you again for agreeing to participant as a youth participant in my research study. Please make sure you have read the attached consent form and share it with your parent prior to starting the survey.

To start the Qualtrics demographic survey click on this link:
https://virginiatech.qualtrics.com/jfe/form/SV_2bseF9muMmGyivr
or copy the link to your web browser and the survey will appear. By completing the questionnaire, your consent or assent to participate will be implied. The Survey will give you several options to choose a date and time for your follow-up focus group interview.

As a reminder the study will require you to complete one brief online demographic questionnaire (above) and two focus group interviews. Each focus group will have approximately eight participants and will take approximately one hour. You will be compensated $20 per focus group. Your involvement in the study is completely voluntary and you may withdraw from the study at any time without facing consequences. There is minimal risk to participate in the study.

Thank you for your consideration of participation. Please let me know if I can answer any questions you may have about the study or your time commitment.

Thank you,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu

Appendix M

Stakeholder Online Consent/Assent and Demographic Questionnaire

Stakeholder Demographics & Consent/Assent Questionnaire
For Qualtrics: https://virginiatech.qualtrics.com/jfe/form/SV_2bseF9muMmGyivr

Informed Consent & Assent:
Dear youth participant please review the consent and assent form before continuing to the survey. You were previously emailed a copy of this form.

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Assent for Minors and Consent for those who are the age of Majority
For Participants in Research Projects Involving Human Subjects

Title of Project:	Adolescent Trauma Treatment in Integrated Primary Care
Investigator(s):	(PI) Erika Grafsky; Contact erikagrafsky@vt.edu or 540-231-6782
	Jessica Stephen Premo; Contact jpremo@vt.edu or 970-298-6453

I. Purpose of this Research Project

The purpose of this research study is to develop a trauma-informed treatment program for adolescents to be used in a primary care setting. We are interested in learning about what you think should be included in such a treatment for youth ages 14-18. We are also interested in learning your ideas about how the program should define its session structure, goals, and interventions. This research study is not an intervention providing direct mental health services to adolescents. Findings will be used for dissertation completion and may also be presented at professional conferences and published in scientific peer-reviewed journals.

II. Procedures

This study includes one brief online demographic survey and two rounds of online focus group interviews. You will be emailed a link to a Qualtrics survey and asked to complete a brief demographic questionnaire after you reach out about the research study and parental permission is obtained. On the demographic survey you will choose a time for your first focus group interview. Each focus group will have approximately eight participants and take one hour to complete. The focus groups will use the website go.itracks.com so participants can answer questions about creating a treatment program that promotes resiliency, empowerment, and coping while interacting with one another. You may choose a pseudonym for the focus groups interviews and no video will be taken or used during the focus groups.

After you complete the first focus group, you will receive a summary of the ideas collected from the first youth focus groups and surveys filled out by experts in the field (doctors, therapists, professors etc.). The expert group will also get a summary of their ideas and those collected from the youth focus groups. This first feedback will help to inform questions for the second focus group. Next you will be asked to participate in another focus group a few weeks later. The second online focus group will follow the steps of the first group on go.itracks.com and take approximately one hours to complete. Your participation in this study is voluntary. If you wish to discontinue your participation in this study at any time, you may do so without facing any consequences.

III. Risks

Risks of participating in this study are minimal. Mild discomfort may arise when discussing trauma-informed care related to adolescents. Researchers will discourage you from sharing personal experiences of trauma. However, if this comes out during a focus group, researchers are prepared to offer you several resources. Additionally, if reports of child abuse are disclosed they will be reported to the appropriate child and family department state authorities. All participation is voluntary, and participants can stop at any time.

IV. Benefits

If you choose to participate, your responses will help us develop a treatment program to improve support for adolescents who have experienced trauma. As a participant in the study, you will receive a description of the findings.

V. Extent of Anonymity and Confidentiality

Strict confidentiality of information will be maintained. Only the members of the research team will have access to the research materials. Only pseudonym or ID numbers will be used on reports or publications that are developed from the results of this study, names will not be used. The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

Data retention and destroying will follow the American Psychological Association guidelines, that state materials will be kept for a minium of seven years after the study has concluded or data analysis and reporting has concluded.

VI. Compensation

There will be a $20 Amazon.com gift card provided per focus group interview.

VII. Freedom to Withdraw

It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

VIII. Questions or Concerns

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

IX. Consent
I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my consent for participation.

Intro:
Thank you for your interest in our study!

The purpose of this study is to develop a trauma-informed treatment program for adolescents to be used in a primary care. We are interested in learning about what you think should be included in such a treatment program.

This study includes two rounds of online focus group interviews. Each focus group will have approximately eight youth participants and take one hour to complete. Your participation in this study is completely voluntary. Your consent or assent to participate will be implied from the submission of the questionnaire. If you wish to discontinue your participation in this study at any time, you may do so without facing any consequences. You will receive a $20 gift card per focus group interview.

Strict confidentiality of information will be preserved. Only the members of the research team will have access to the research materials. Only pseudonym or ID numbers will be used on reports or publications that are developed from the results of this study, names will not be used.

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of the consent form document and at the end of this survey. Should you have any questions or concerns about the study's conduct or your rights as a research subject or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

Below you will first find a question regarding age to confirm if parental permission is needed. Then if that has been satisfied next there are 8 demographic questions for the you to complete and 1 question regarding dates and times for your focus group availability.

Thank you in advance for your help!

Age Confirmation:

- Are you 18 years old AND of majority age for the state you live in? Y/N
  If Yes: (get question below; if no parental permission obtained prior)
- Do you live in any of the following states: Alabama, Nebraska, or Mississippi? Y/N
  If Yes: Parental Permission is required as majority age is higher than 18 years old

Questions:
1) How old are you?
   a) 14

- b) 15
- c) 16
- d) 17
- e) 18

2) What is your current grade?
   - a) 9th
   - b) 10th
   - c) 11th
   - d) 12th
   - e) College
   - f) Not listed ____________________________

3) Please describe your gender:
   - a) Female
   - b) Male
   - c) Transgender Female
   - d) Transgendered Male
   - e) Gender Variant/Non-Conforming
   - f) Prefer not to answer
   - g) Not listed___________________

4) How would you describe the geographic setting you live in?
   - a) Urban
   - b) Suburban
   - c) Rural
   - d) Not listed________________

5) What state do you live in?

6) What city do you live in?

7) Have you ever participated in a prior research study?
   - a) Yes
   - b) No
   - c) Unsure _____________________

8) What is your race or ethnicity?
   - a) White
   - b) Black
   - c) Hispanic/Latino
   - d) Asian
   - e) American Indian/Alaska Native (AIAN)
   - f) Hawaiian or other Pacific Islander (HPI)
   - g) Multiracial
   - h) Not listed__________________________

Below Please rank the dates and times you would be available for the first online focus group. This online focus group should take approximately one hour to complete. If you are unable to make any of these times, please email me at jpremo@vt.edu.

- (DATE, TIME)
- (DATE, TIME)
- (DATE, TIME)
- (DATE, TIME)
- (DATE, TIME)

Please enter your preferred first name, nick name or pseudonym to be used during the online focus groups. This will be visible to other youth participating in the online focus group. Last names and email addresses will not be visible to other participants during the groups. You may choose any "name" you prefer, which will be the name your online account will be registered under.

____

Thank you!

Appendix N

Stakeholder Follow-up Recruitment Email

Hello _____________,

On (DATE), you sent me an email asking to be consider for my research study regarding trauma-informed treatment for adolescents in primary care.

Please let me know if you are still interested in participating in this study. Consider the attached request with information regarding the study. Thank you very much for your time.

Sincerely,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu

Appendix O

Stakeholder Focus Group One Confirmation Email

Good Morning,

Thank you for participating in this research study to explore expert and youth perspectives in developing a trauma-informed intervention program.

Based on feedback from you and the other youth your first online focus group will be held on: (DATE, TIME). The focus group will take approximately one hour to complete, and you will be compensated with a $20 Amazon.com gift card.

To join the focus group please go to: https://go.itracks.com. Here you will enter the following information to join the ichat focus group:
Email Address: _________________
Password: Stakeholder (standardized)
Project ID: 001TTPC (standardized per group/per session)

Your involvement in the study is completely voluntary and you may withdraw from the study at any time. All data will be confidential, meaning that I will not share your name in publications or presentations.

Please let me know if I can answer any questions you may have about the study.

Thank you,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu
970-298-6453

Appendix P

Stakeholder Focus Group One Interview Guide

Welcome & Introduction:

Hello, good afternoon. Welcome to our group and thank you for taking the time to talk to me today. My name is Jessica Stephen Premo. I am from Virginia Tech and am looking for your input on how we can take the ten principles of trauma-informed care and create a treatment program that would work for adolescents in a primary care setting.

You were invited to this group because you were both interested and have something valuable to offer. You were interested in sharing your thoughts, ideas, feelings and reactions to potential treatments and solutions and we value that.

Focus Group Ground Rules & Information:

During this focus group there are no right or wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said. Our group session will not be video or audio recorded, but I will take notes because we don't want to miss any of your comments. We will be on a first name basis today; however, we won't use any names in our research after our second focus group interview. You may be assured of complete confidentiality. We also ask that you each keep the information shared and names confidential after we leave here today. I am going to explain a little bit more about the project and then we will get started.

Research Study Topic Introduction & Focus Group Framework:

The Substance Abuse and Mental Health Systems Administration defines trauma as “an event, series of events, or set of circumstances (e.g., childhood and adult physical, sexual, and emotional abuse, neglect, loss, and community and structural violence) that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects.” Often, trauma is the result of stress that exceeds one's ability to cope with the emotions involved with the trauma experience(s/d). Examples of traumatic events include being the victim of physical, sexual, or emotional abuse; divorced parents; being a victim of crime; witnessing violence in the home and living with someone who uses or abuses substances. Trauma is an emotional response to terrible events likes these. Often treatment is given in the form of therapy or counseling to help people overcome any problems associated with the trauma or trauma experience. Therapy is a type of treatment intended to relieve or heal.

We are interested in creating a treatment that can be given at the doctor’s office known as your primary care provider by a behavioral specialist or therapist who works on a team with the doctor at his/her office. This focus group will look to your expertise and opinions in order to help create a treatment program for adolescences who have experienced trauma.

You will not be asked to share about your personal experiences with this topic, rather asked your input on overall general potential treatments based on the principles of trauma-informed care.

There are ten suggested principles of trauma-informed care. I am looking for your input in how we can take the ten principles of trauma-informed care and create a treatment program that would work for adolescents in a primary care setting. I am going to share with you each of the 10 principles and ask a few questions about how we might be able to achieve that principle in our treatment program.

Please share as much or as little as you like for each question. Also, feel free to ask questions at any time.

Focus groups are often used as a way for people to expand on others ideas or provide further clarification of ideas. Please feel free to discuss each other's ideas further, expand them or take them in new directions throughout this process.

Does anyone have any questions before we begin?

Interview Questions with potential prompts:

1. The first principle of Trauma Focused Care is that care services should acknowledge the ways in which trauma or adversity influences one's ability to develop tools and skills for coping.

- Think back to how have you developed coping skills in the face of problems or adversities (i.e. difficulty with school work, conflict with a friend, NOT trauma)?
- How do you cope with stress?
- How did you learn to cope with stress, who helped you with that?
- Throw out some coping skills you use when things get tough.

2. The second principle is that care services should be built around the goal of recovering from trauma.

- Think back to a past problem or adversity you faced, you don't have to share this problem with the group but have it in your mind, as you reflect on solving problems and recovery: (i.e. difficulty with school work, conflict with a friend, NOT trauma).
- What has helped you solve problems in the past?
- Have any services (community groups, organizations, doctors etc.) helped you solve problem in the past? If so what about them was helpful (i.e. if church was it the group setting, sharing your story etc.)
- How do you think primary care doctors can promote recovery in adolescents?

3. The third principle is that care services should empower patients. Empowerment means to make someone feel stronger and more confident. When someone is empowered they are more likely to have authority over their own life.

- What comes to mind when you think of the word empowered?
- Do you think empowerment is important to healing and if so why?
- How do you think primary care doctors and/or doctors' offices can promote empowerment in adolescents?

- How have you empowered others or seen other youth or adults empower others? What did you think/notice about that experience?

4. The fourth principle is that care services should allow patients to make choices and control the treatment and recovery process.

- Think back, in what ways have you had autonomy over decision making in the past (i.e. related to school, work, relationships, NOT trauma). Has that been helpful or not?
- What could choice/autonomy look like for adolescent care treatment in primary care?
- Do you think this is important, why or why not?

5. The fifth principle is that care services should be based upon collaboration and should avoid hierarchical models. Collaboration and collaborative models are built on teams that work together where hierarchical models are based on a ranking order and system rather than the entire team pitching in.

- Can you think of time when you collaborated with someone (i.e. related to school or work)?
- What did you enjoy or not enjoy about that experience?
- What could have been better?
- What would have been different if it had been a hierarchical model versus a collaboration?
- What type of model do you think primary care offices should utilize and why?

6. The sixth principle is that care services should be respectful, and should create a sense of safety, respect and acceptance.

- Think back, in what ways have you have felt or seen respect and acceptance (i.e. related to school, work, relationships, NOT trauma).
- Describe being accepted and respected, what does this look like?
- What should this look like at the doctor’s office?
- In general?
- Do you think this important to adolescents, why or why not?

7. The seventh principle is that care services should be strength based and focus on resilience. Resilience is the capacity to recovery quickly from perceived difficulties.

- Who comes to mind when you hear the word resilience? Why? What about them makes them resilient?
- Do you think those individual traits would be helpful or not in running a program/treatment program?
- How do you think those individual traits could be utilized or applied to a treatment program/program?
- Think back to a time when someone identified your strengths or pointed out a positive attribute of yours, was that helpful or not? How did it influence you going forward?

8. The eighth principle is that services should not re-traumatize patients. Re-traumatize means to cause new or to cause trauma again, something doctors and providers should avoid when providing treatment.

- Think back, have you ever had a friend or family member go through a tough time (i.e. maybe a break up, difficulties at school, NOT trauma etc.)?
- How were you able to help your friend or family member during this time?
- What do you think they found helpful or not helpful?
- Did you noticing others helping or see them getting help from others or other places? How so?

9. The ninth principle is that services should be culturally competent. Cultural competence is the ability to interact effectively with people of different cultures and to be respectful and responsive to others beliefs and practices.

- Describe cultural competence, what does this look like?
- What should this look like at the doctor's office?
- If you were inviting a friend to participate in a new program, how would you be sure to be culturally competent when planning the program?
- Do you think cultural competence is important (to adolescents), why or why not?

10. The tenth principle is that care services should be based upon patient input and should be developed in part by the patient or people like them (Elliott et al., 2005; SAMHSA, 2015).

- In the past have you ever been asked to give input on a project that was being developed for you or people like for (i.e. school curriculum, school activity like a dance/club, etc.)? If so, what was helpful/what did you like of not like about that? How was that overall experience?
- Do you think it is important to include the population whom a program is being created for input when creating the program? Why or why not?
- What are your thoughts about giving input like this about adolescent trauma treatment?

11. Of all the things we discussed, what to you is the most important?

- Suppose that you were in charge and could make one change or create one thing that would make this adolescent trauma treatment program better. What would you do?

*To end the focus group, I will offer a menu of follow-up times in approximately two weeks for the second focus group. The times offered will depend on the date of the first focus group.

Member Checking Summary:

At the end I will summarize the focus group responses to ensure that I understand their answers and have accurately captured their responses. Further, throughout clarification will be done as necessary. This will be done to improve the accuracy, credibility, validity, and transferability of the focus group and overall study.

Debriefing and Resources:

The co-investigator will provide all members of the focus group with the following resources in their local area, in the event they would like to reach out to someone after the group concludes:

1. Nami: National Alliance on Mental Illness
    a. https://www.nami.org/Find-Support/Teens-and-Young-Adults
2. SAMHSA, Substance Abuse and Mental health Administration
    a. https://www.samhsa.gov/find-help
3. Teen Mental Health:
    a. http://teenmentalhealth.org/

Appendix Q

Expert and Stakeholder Round One Summary Results Email

Good Morning,

Thank you for participating in my research study to explore expert and youth perspectives in developing a trauma-informed intervention program for adolescents.

As promised, I have attached a summary of the round one findings for you to review before beginning round two. This includes the findings from both the expert panel questionnaire and the youth stakeholder focus groups.

Again, thank you for your assistance in this project. Please let me know if I can answer any questions you have about the results of the project thus far.

Warm regards,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu

Appendix R

Expert Second Round Initial Email

Good Morning,

Thank you for participating as an expert in my research study to explore expert and stakeholder perspectives to develop a trauma-informed intervention program for adolescents.

Based on feedback from you and the other expert and stakeholder reviewers, a second questionnaire has been developed. This questionnaire asks you to rate the importance of items pertaining to initial questions from the first questionnaire, in an effort to reach consensus on critical aspects of the constructed treatment manual including the modality, program, goals and interventions.

To complete the second questionnaire, click on this link:
https://virginiatech.qualtrics.com/jfe/form/SV_9mNRn9xRqyN2Qhn
or copy the link to your web browser and the survey will appear. You are free to complete the survey at your own pace and convenience. However, all questionnaires need to be completed by (DATE). It will take approximately 30 minutes to complete.

Your involvement in the study is completely voluntary and you may withdraw from the study at any time without facing adverse consequences. Once again your ID number is__ and you will be asked to enter this number in the questionnaire. All data will be anonymous, meaning that I will not link your name to your responses. There is minimal risk to participate in the study. Participants will receive a copy of the study's final analysis.

Thank you for your consideration of this request. Please let me know if I can answer any questions you may have about the study.

Thank you,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu

Appendix S

Expert Questionnaire Round Two

Dear Expert Participant,

Thank you for your continued interest in our Delphi study! The purpose of this study is to develop a trauma-informed treatment program for adolescents to be used in primary care.

The following round two survey has been created based on the aggregate results of panel members' responses found in round one, as well as adolescent focus group feedback. As a reminder, the Delphi method seeks to poll experts in a particular field to identify grouped responses and find consensus.

The survey will take approximately 20 minutes, and your participation is strictly voluntary. If you wish to discontinue your participation in this study at any time, you may do so without facing any consequences.

Strict confidentiality of information will be preserved. Only the members of the research team will have access to the research materials. Only ID numbers will be used on reports or publications that are developed from the results of this study.

Should you have any questions about this study, you may contact the co-investigator. Should you have any questions or concerns about the study's conduct or your rights as a research subject or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

You are free to complete the survey at your own pace and your convenience. However, we would like all surveys to be completed by Wednesday, February 6th.

Thank you in advance for your help!

You can begin the survey by entering your ID number and clicking the arrow.

Please enter your assigned ID number. You can find this on the email your were sent with the Qualtrics link for this survey. _______

1. Listed below are goals which may effect change in adolescents in primary care who have experienced adverse childhood experiences and trauma based on survey one findings.

Please rate the following goals at the program level on a scale from 1 to 5, with 1 representing 'essential' to 5 representing 'should not be included'. Goals of an adolescent trauma treatment program in primary care should:

Essential (1)	Important (2)	Do not know/unsure (3)	Unimportant (4)	Should not be included (5)

- be client-centered
- promote resiliency skills
- educate about trauma and health
- teach emotion regulation skills
- provide strong support and education for parents
- normalize adolescents’ experiences and help them feel less isolated
- reduce the symptoms of trauma
- increasing peer support and foster peer interaction
- establish safety
- include families
- provide resources
- improve functioning
- be value informed
- improve self-image and self-esteem

Please provide any additional thoughts or feedback you have regarding the above question.

2. Listed below are treatment modalities which may effect change based on survey one findings.

Please rate the following treatment modalities from 1 to 5, with 1 representing 'essential' to 5 representing 'should not be included’. Treatment modalities for an adolescent trauma treatment program in primary care should include:

Essential (1)	Important (2)	Do not know/unsure (3)	Unimportant (4)	Should not be included (5)

- Psychoeducation
- Dialectical Behavior Therapy
- Cognitive Behavioral Therapy
- Acceptance and Commitment Therapy
- Narrative Therapies
- Creative Therapies (Art & Music)
- Trauma Focused-Cognitive Behavioral Therapy
- Seeking Safety
- Eye Movement Desensitization and Reprocessing Therapy
- Motivational Interviewing
- Solution Focused Therapy

- Bowen Family Systems
- Neuro-sequential Model of Therapeutics
- Humanistic Therapies; Carl Rogers
- Compassion Focused Therapy
- Adventured based therapies
- Sensorimotor Psychotherapy
- Trust Based Relationship Intervention
- Pet Assisted Therapies

Please provide any additional thoughts or feedback you have regarding the above question:

3. Listed below are interventions and program components which may effect change in adolescents in primary care who have experienced adverse childhood experiences and trauma based on survey one findings.

Please rate the following interventions on a scale from 1 to 5, with 1 representing 'essential' to 5 representing 'should not be included’. Treatment interventions for an adolescent trauma treatment program in primary care should include:

Essential (1)	Important (2)	Do not know/unsure (3)	Unimportant (4)	Should not be included (5)

- Experiential group activities
- Psychodrama
- Sports and exercise
- Meditation
- Mindfulness
- Grounding techniques
- Resiliency skills
- Shared decision making
- Biofeedback
- Neurofeedback
- Acupuncture
- Bilateral stimulation and tapping
- Journaling
- Role play
- Belly breathing
- Yoga
- Workbooks and worksheets
- Contextual interviews
- Self-soothing skills
- Emotion regulation skill
- Cognitive defusion
- WRAP (wellness, recovery, action planning

Please provide any additional thoughts or feedback you have regarding the above question:

4. The stakeholder youth surveyed in online focus groups for this study were aged 14-18 years old.

Please rate your level of agreement with the following age groups for an adolescent treatment program in primary care from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree'.

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

- Ages 14-18
- Ages 12-18
- Ages 12-19
- Ages 13-19
- Ages 10-19
- Ages 12-21
- Adolescents should be grouped: 14-16; 17-18
- Adolescents should be grouped: Ages 13-15 and 16-18
- Adolescents should be grouped: 12-14, 15-17, 18-22
- Have flexibility in ages based on patient needs, maturity, and developmental level

Please provide any additional thoughts or feedback you have regarding the above question:

5. Listed below are potential treatment constellations for an adolescent trauma treatment in primary care based on survey one findings.

Please rate your level of agreement with the following treatment constellations from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree'. Treatment constellations for an adolescent trauma treatment program in primary care should include:

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

- individual, family, and group work; with the treatment being flexible and all constellations possible but not required
- individual, family, and group work; with a comprehensive set program that must include all constellations
- provide individual and group sessions for the adolescents first, while parents attend education and parenting appointments, then have conjoint family appointments
- individual or family appointments as clinically appropriate

- provide individual appointments for adolescents and parents first, then family appointments and conclude with groups
- treat the adolescent alone in confidence
- individual appointments with one or both parents
- split appointments 50/50 between individual and family time
- group therapy only
- individual appointments and psychoeducational classes
- adolescent should choose what treatment constellation occurs

Please provide any additional thoughts or feedback you have regarding the above question:

6. Listed below are potential appointment/session structures (number of appointments and appointment length) for an adolescent treatment in primary care based on survey one findings.

Please rate your level of agreement with the following appointment structures from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree'. Appointments structures for an adolescent trauma treatment program in primary care should include:

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

- A longer intake assessment appointment followed by 1-2 weekly appointments
- Appointments should vary from brief to a few to hours and having 1 or many appointments
- 45-minute session duration
- Intensive outpatient groups that meet 2-4 days per week for 2-5 hrs per day
- 12 appointments; 1-hour intake assessment then 30-45-minute follow-ups
- Based on symptoms
- 1-4 appointments no longer than 30 minutes
- Number and length of appointments should be flexible and based on the adolescents' needs and development
- Up to 45 minutes with visits as brief as 20 minutes
- Four 30-minute appointments
- Be less than an hour long

Please provide any additional thoughts or feedback you have regarding the above question:

7. Listed below are measures for program effectiveness for an adolescent trauma treatment in primary care based on survey one findings.

Please rate your level of agreement with the following types of measures for program effectiveness from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree'.

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

- ○ ACE-Q
- ○ Sleep Rating Scales
- ○ Quality of Life Measures; WHO-BREF
- ○ DUKE Health Measure
- ○ The Mindful Attention Awareness Scale (MAAS)
- ○ APA_DSM5_Level 1 Measure Parent or Guardian Of Child Age 6 to 17 Child
- ○ Pediatric Symptom Checklist
- ○ GAD-7
- ○ PHQ-9/A
- ○ Behavioral Health Measure (BHM-20)
- ○ PTSD Symptom Scale for DSM5 (CPSS-V)
- ○ Safety Risk Assessment Resiliency Measure (CYRM)
- ○ The Child and Youth Resilience Measure
- ○ Measure behavioral changes longitudinally
- ○ Ask adolescents' and families' their opinion of treatment effectiveness and perceptions of the program
- ○ Collect personal narratives and conduct pre/post interviews
- ○ Measure adolescents' satisfaction of their relationship with the treating clinician
- ○ Measure healthcare utilization pre/post

Please provide any additional thoughts or feedback you have regarding the above question:

8. Listed below are challenges and barriers to providing an adolescent trauma treatment in primary care based on survey one findings.

Please rate your level of agreement with the following types of challenges there may be for an adolescent treatment program in primary care from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree'.

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

- ○ An inability to establish a program
- ○ Time constraints
- ○ Funding concerns
- ○ Limited Behavioral Health Consultants
- ○ A need to refer out
- ○ Appropriate billing and reimbursement
- ○ Coordination between mental health providers and physicians
- ○ Lack of buy-in
- ○ Noise, interruptions, and the primary care environment

- Getting family involvement
- Peer conflict
- Transportation for adolescents and families
- Getting consistent participation
- Office space for the program and interventions
- Lack of care managers to assist
- Lack of collaboration
- Primary care clinic not being open outside school hours
- Difficult to build a flexible program
- Lack of comprehension on why the program is offered and important
- Screening
- EHR setup

Please provide any additional thoughts or feedback you have regarding the above question:

9. Listed below are benefits to providing adolescent trauma treatment in primary care based on survey one findings.

Please rate your level of agreement with the following types of benefits there may be for adolescent treatment in primary care from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree'.

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

- Cause lasting change
- Reduce adult health complications
- Improve mental health
- Reduce substance use
- Improve staff satisfaction
- Improve work environment
- Improve staff performance
- Improve staff communication
- Improve workflow through collaborative efforts
- Improve treatment reach
- Normalize trauma experiences
- Increase fidelity
- Provide treatment in an integrated medical home
- Improve diagnosis and treatment
- Increase referrals
- Increase revenue
- Decrease stigma
- Increase safety

Please provide any additional thoughts or feedback you have regarding the above question:

10. Listed below are items generally related to adolescent treatment in primary care based on survey one findings.

Please rate your level of agreement with the following from 1 to 5, with 1 representing 'strongly agree' to 5 representing 'strongly disagree’. Adolescent trauma treatment in primary care should…

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

○ be conducted in a trauma informed culture
○ have all staffed trained in trauma informed care
○ consider the environment of integrated care in planning
○ be flexible
○ clearly define the treatment mission and purpose
○ realize treatment is not one size fits all
○ get everyone on the team involved

Please provide any additional thoughts or feedback you have regarding the above question:

Please provide any other additional thoughts or information you feel may be valuable to the development of an adolescent trauma treatment program in primary care.

Thank you for taking the time to fill out this questionnaire. Your input has been invaluable.
If you have any questions, feel free to contact Jessica at jpremo@vt.edu.
Thank you!

Appendix T

Stakeholder Second Round Email

Good Morning,

Again, thank you for participating in my research study to develop a trauma-informed intervention program for adolescents.

Based on participant feedback, questions for a second focus group have been developed. In the second focus group we will rate the importance of critical aspects of the proposed treatment including the modality, program, goals and interventions. Additionally, I have attached a summary of findings to this point for you.

Based on feedback from you and other youth your second online focus group will be held on: (DATE,TIME). The focus group will take approximately one hour to complete, and you will be compensated with a $20 Amazon.com gift card.

To join the focus group please go to: https://go.itracks.com. Here you will enter the following information to join the ichat focus group:
Email Address: __________________
Password: Stakeholder (standardized)
Project ID: 001TTPC (standardized per group/per session)

Your involvement in the study is completely voluntary and you may withdraw from the study at any time without facing adverse consequences. All data will be confidential, meaning that I will not share your name in publications or presentations. You will receive a copy of the research study's results.

Thank you for your time. Please let me know if I can answer any questions you may have.

Thank you,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu
970-298-6453

Appendix U

Stakeholder Focus Group Two Confirmation Email

Good Morning,

Thank you again for participating in this research study to explore expert and youth perspectives in developing a trauma-informed intervention program.

Based on feedback from you and the other youth the second focus group will be held on: (DATE, TIME). The focus group will take approximately one hour to complete, and you will be compensated with a $20 Amazon.com gift card.

To join the focus group please go to: https://go.itracks.com. Here you will enter the following information to join the ichat focus group:
Email Address: _________________
Password: Stakeholder (standardized)
Project ID: 001TTPC (standardized per group/per session)

Your involvement in the study is completely voluntary and you may withdraw from the study at any time. All data will be confidential, meaning that I will not share your name in publications or presentations.

Please let me know if I can answer any questions you may have about the study.

Thank you,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu
970-298-6453

Appendix V

Sample itracks Stakeholder Focus Group Email

Dear…,

Thank you for agreeing to participate in our upcoming Chat focus group on 1/12/2019 10:00 AM Mountain Time (US & Canada).

Accessing your Study
Click here to register and login: Registration and Login Page.

When you log in for the first time, you will be asked to create a password. After the initial registration, you must enter your Email Address, Password and Project ID when clicking on the registration and login link.

If you forget your password, click the 'I can't access my account' link on the login page to reset your password.

Your Project ID for this study is 00710.

About this Study
This is an online text based focus group that is set to start at 1/12/2019 10:00 AM Mountain Time (US & Canada) and is scheduled for a predetermined length. Please be sure to allocate enough time in your schedule to accommodate the entire session. Once enough participants log in, your group Moderator will begin the Chat. Please respond to the questions the moderator posts first and then feel free to reply to other participant's responses.

Need Further Assistance?
If you have any questions or problems entering the study software, please email help@itracks.com, or call Technical Support toll free at 1-888-525-5026 and select option 2 Monday through Friday, 1-888-525-5026 option 7 Saturday and Sunday.

Appendix W

Stakeholder Focus Group Two Interview Guide

Welcome & Introduction:

Hello, good afternoon. Welcome to our second focus group and thank you for taking the time to talk to me again today. As you may remember my name is Jessica Stephen Premo. I am from Virginia Tech and am looking for your input on how we can take the ten principles of trauma-informed care that we discussed last time and create a treatment program that would work for adolescents in a primary care setting.

Focus Group Ground Rules & Information:

Let’s quickly review the ground rules from our last focus group. During this focus group there are no right or wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said. Our group session will not be recorded, but I will be taking notes. We will be on a first name basis today; however, we won't use any names in our research after today. You may be assured of complete confidentiality. We also ask that you each keep the information shared and names confidential after we leave here today. I will review the project and briefly summarize what we have discovered so far, and then we will get started.

Research Study Topic Refresher & Focus Group 2 Framework:

The Substance Abuse and Mental Health Systems Administration defines trauma as “an event, series of events, or set of circumstances (e.g., childhood and adult physical, sexual, and emotional abuse, neglect, loss, and community and structural violence) that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects.” Often, trauma is the result of stress that exceeds one's ability to cope with the emotions involved with the trauma experience(s/d). Examples of traumatic events include being the victim of physical, sexual, or emotional abuse; divorced parents; being a victim of crime; witnessing violence in the home and living with someone who uses or abuses substances. Often treatment is given in the form of therapy or counseling to help people overcome any problems associated with the trauma or trauma experience. Therapy is a type of treatment intended to relieve or heal.

We are interested in creating a treatment that can be given at the doctor’s office known as your primary care provider by a behavioral specialist or therapist who works on a team with the doctor at his/her office. You will not be asked to share about your personal experiences with this topic, rather asked your input on overall general potential treatments based on the principles of trauma-informed care and potential treatment elements discovered from our first groups and interviews.

Last time we discussed how we could take the ten principles of trauma-informed care and create a treatment program that would work for adolescents in a primary care setting. This time with your feedback and the experts we are going to try to accomplish 2 things. First, we will be discussing the findings of the first study. Second, you will be presented with the potential treatment options and evaluate if you think they will be successful.

Please share as much or as little as you like for each question. Also, feel free to ask questions at any time.

Focus groups are often used as a way for people to expand on others ideas or provide further clarification of ideas. Please feel free to discuss each other's ideas further, expand them or take them in new directions throughout this process.

Does anyone have any questions before we begin?

Interview Questions with potential prompts: **

- Discuss/outline the findings of the first study:
    - Do they agree/disagree with the results?
    - Does anything stand out to them? Why?
    - Are they surprised?
    - What do they thinking is missing?
- Next review potential treatment options/plan of care and evaluate:
    - Share what stands out to them, what they like and dislike about the potential plan of care.
    - Have them rank the components/options and explain and discuss together.
    - Discuss pros and cons and/or any barriers they see to potential components of care working.
    - Summaries our discussion and ask if they would like to add anything else before we close.

***This all contingent on the findings from the first set of focus groups and expert questionnaires but will follow this format. I am unable to assume what the components suggested from the data will be right now.*

To end the focus group, I will thank the participants and let them know that they will receive the study results in approximately one month.

Member Checking Summary:

At the end I will summarize the focus group responses to ensure that I understand their answers and have accurately captured their responses. Further, throughout clarification will be done as necessary. This will be done to improve the accuracy, credibility, validity, and transferability of the focus group and overall study.

Debriefing and Resources:

The co-investigator will provide all members of the focus group with the following resources in their local area, in the event they would like to reach out to someone after the group concludes:

4. Nami: National Alliance on Mental Illness
    a. https://www.nami.org/Find-Support/Teens-and-Young-Adults

5. SAMHSA, Substance Abuse and Mental health Administration
    a. https://www.samhsa.gov/find-help
6. Teen Mental Health:
    a. http://teenmentalhealth.org/

Appendix X

Expert and Stakeholder Final Results Email

Good Morning,

Thank you again for participating in my research study to explore expert and youth perspectives in developing a trauma-informed intervention program for adolescents.

As promised, I have attached a summary of the study's results for you. I hope you found this to be a constructive experience. We valued your input!

Again, thank you for your assistance in this project. Please let me know if I can answer any questions you have about the results.

Best wishes,

Jessica L. Stephen Premo, M.A, LMFT
Doctoral Candidate, Marriage and Family Therapy
Department of Human Development and Family Science
Virginia Tech
jpremo@vt.edu

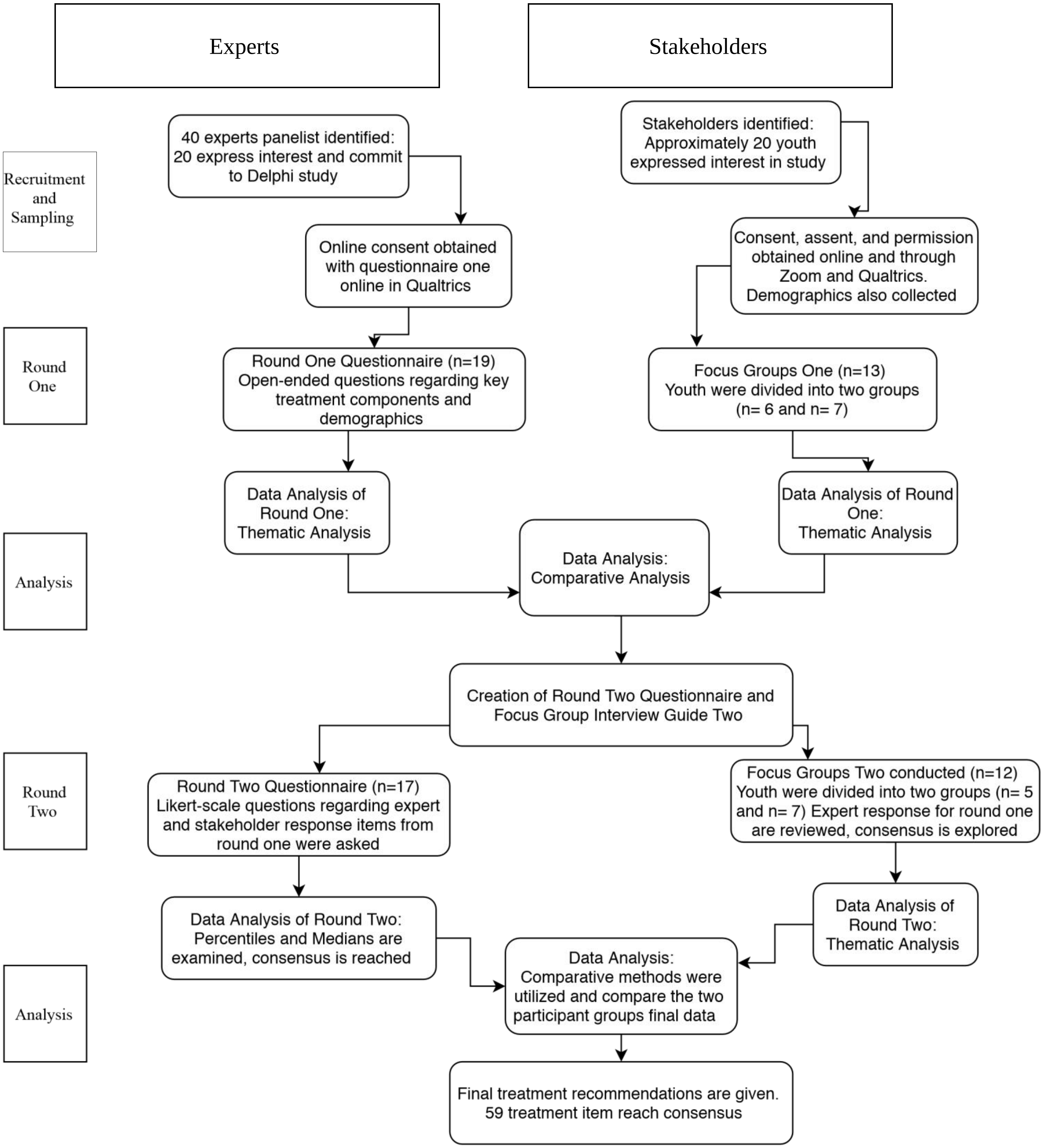

Experts
Stakeholders
Recruitment and Sampling
40 experts panelist identified: 20 express interest and commit to Delphi study
Stakeholders identified: Approximately 20 youth expressed interest in study
Online consent obtained with questionnaire one online in Qualtrics
Consent, assent, and permission obtained online and through Zoom and Qualtrics. Demographics also collected
Round One
Round One Questionnaire (n=19) Open-ended questions regarding key treatment components and demographics
Focus Groups One (n=13) Youth were divided into two groups (n= 6 and n= 7)
Data Analysis of Round One: Thematic Analysis
Data Analysis of Round One: Thematic Analysis
Analysis
Data Analysis: Comparative Analysis
Creation of Round Two Questionnaire and Focus Group Interview Guide Two
Round Two
Round Two Questionnaire (n=17) Likert-scale questions regarding expert and stakeholder response items from round one were asked
Focus Groups Two conducted (n=12) Youth were divided into two groups (n= 5 and n= 7) Expert response for round one are reviewed, consensus is explored
Data Analysis of Round Two: Percentiles and Medians are examined, consensus is reached
Data Analysis of Round Two: Thematic Analysis
Analysis
Data Analysis: Comparative methods were utilized and compare the two participant groups final data
Final treatment recommendations are given. 59 treatment item reach consensus

Figure 1. Data collection and analysis.

Table 1

Expert Demographics

Characteristics	*n*	%
Credential		
MD	2	10.5
LMFT	2	10.5
LPC	1	5.3
LCSW	2	10.5
PhD	6	31.6
PsyD	5	26.3
Other	1	5.3
Experience		
5 years	2	10.5
6-10 years	7	36.8
11-15 years	2	10.5
16-20 years	5	26.3
26-30 years	1	5.3
30+ years	2	10.5
Age		
25-30	1	5.3
31-35	5	26.3
36-40	2	10.5
41-45	3	15.8
46-50	3	15.8
56-60	1	5.3
60+	4	21.1
Gender		
Male	8	42.1
Female	11	57.9
Setting		
Urban	8	42.1
Suburban	8	42.1
Rural	3	15.8
Race		
Caucasian/White	19	100.0

**Note:* Categories with zero participate characteristics were excluded from the table.

Table 2

Stakeholder Demographics

Characteristics	*n*	%
Age		
14	1	7.7
15	4	30.8
16	1	7.7
18	7	53.9
Grade		
9th	3	23.1
10th	2	15.4
11th	1	7.7
12th	6	46.2
College	1	7.7
Gender		
Male	6	46.2
Female	6	46.2
Transgender Male	1	7.7
Race		
Caucasian/White	8	61.5
Hispanic	1	7.7
Multiracial	3	23.1
Not listed	1	7.7
Setting		
Urban	4	30.8
Suburban	3	23.1
Rural	6	46.2
State		
California	4	30.8
Colorado	1	7.7
Florida	1	7.7
Kentucky	1	7.7
Michigan	1	7.7
Oregon	2	15.4
Virginia	1	7.7
Washington	2	15.4

**Note:* Categories with zero participate characteristics were excluded from the table.

Table 3

Results of Round One Expert Questionnaire

Themes

- Treatment Structure
  - Age
    - Ages 14-18 is appropriate
    - Ages 12-18 is appropriate
    - Ages 12-19 appropriate
    - Ages 13-19 appropriate
    - Ages 10-19 appropriate
    - Ages 12-21 appropriate
    - Adolescents should be grouped as follows: 14-16; 17-18
    - Adolescents should be grouped: Ages 13-15 and 16-18
    - Adolescents should be grouped as follows: 12-14, 15-17, 18-22
    - Have flexibility in ages based on patient needs, maturity, and developmental level
  - Treatment Constellations
    - Individual, family, and group work; with the treatment being be flexible and all constellations possible but not required
    - Individual, family, and group work; with a comprehensive set program that must include all constellations
    - First provide individual and group sessions for the adolescents, while parents attend education and parenting appointments, then have conjoint family appointments.
    - Individual or family modality as clinically appropriate
    - First provide individual appointments for adolescents while including individual parent appointments, then provide family appointments and conclude with groups
    - Treatment of the teen alone in confidence
    - Individual appointments with one or both parents
    - Appointments split 50/50 between individual and family time
    - Group therapy only
    - Individual appointments and psychoeducational classes
    - Adolescent should choose what treatment constellation occurs
  - Treatment Session Structure
    - A longer intake and assessment appointment followed by 1-2 weekly appointments
    - Appointments should vary from brief to a few to hours and having 1 or many 45-minute session duration
    - Intensive outpatient groups that meet 2-4 days per week for 2-5 hrs per day
    - 12 session or 6 months max; 1-hour intake assessment then 30-45 minute with f/u sessions
    - Be based on symptoms
    - 1-4 appointments no longer than 30 minutes

        Number and length of appointments should be flexible and based on the adolescents’ needs and intellectual and psychosocial development
        Up to 45 minutes with subsequent visits as brief as 20 minutes and up to 40 minutes
        Four 30-minute primary care appointments with a behavioral health consultant
        Be less than an hour long, based on brain development with a break

Therapeutic Treatment Plan

- Goals
    - Be client-centered
    - Promote resiliency skills
    - Education about trauma and health
    - Teach emotion regulation skills
    - Provide strong support and education for parents
    - Normalize adolescents’ experiences and help them feel less isolated
    - Reduce the symptoms of trauma
    - Increasing peer support and fostering peer interactions
    - Establish safety
    - Include families
    - Provide resources
    - Improve functioning
    - Be Informed by patient’s values
    - Improve self-image and self-esteem
- Treatment Modality
    - Psychoeducation
    - Dialectical Behavior Therapy
    - Cognitive Behavioral Therapy
    - Acceptance and Commitment Therapy
    - Narrative Therapies
    - Creative therapies (Art therapy & Music therapy)
    - Trauma Focused-Cognitive Behavioral Therapy
    - Seeking Safety
    - Eye Movement Desensitization and Reprocessing Therapy
    - Motivational Interviewing
    - Solution Focused Therapy
    - Bowen Family Systems
    - Neuro-sequential Model of Therapeutics
    - Humanistic Therapies; Carl Rogers
    - Compassion focused Therapy
    - Adventured based therapies
    - Sensorimotor Psychotherapy
    - Trust Based Relationship Intervention
    - Pet Assisted Therapies
- Treatment Interventions
    - Experiential group activities
    - Psychodrama
    - Sports and exercise

    - Meditation
    - Mindfulness
    - Grounding techniques
    - Resiliency skills
    - Shared decision making
    - Biofeedback
    - Neurofeedback
    - Acupuncture
    - Bilateral stimulation and tapping
    - Journaling
    - Role play
    - Belly breathing
    - Yoga
    - Workbooks and worksheets
    - Contextual interview
    - Self-soothing skills
    - Emotion regulation skills
    - Cognitive diffusion
    - WRAP (wellness, recovery, action planning)

- <u>Integration in Primary Care</u>
  - <u>Outcome Measures</u>
    - Sleep Rating Scales
    - Quality of Life Measures; WHO-BREF
    - DUKE Health Measure
    - The Mindful Attention Awareness Scale (MAAS)
    - Measure behavioral changes longitudinally
    - Ask adolescents' and families' their opinion of treatment effectiveness and perceptions of the program
    - Collect personal narratives and conduct pre/post interviews
    - APA_DSM5_Level 1 Measure Parent Or Guardian Of Child Age 6 to 17 Child PTSD Symptom Scale for DSM5 (CPSS-V)
    - Pediatric Symptom Checklist
    - ACE-Q
    - Measure the adolescent's satisfaction of their relationship with the treating clinician
    - Measure healthcare utilization pre/post
    - PHQ-9/A
    - GAD-7
    - The Child and Youth Resilience Measure
    - Safety risk assessment Resiliency Measure (CYRM)
    - Behavioral Health Measure (BHM-20)
  - <u>Challenges</u>
    - An inability to establish a program
    - Time constraints
    - Funding concerns
    - Limited Behavioral Health Consultants

    - A need to refer out
    - Appropriate billing and how to get reimbursed
    - Coordination between mental health providers and physicians
    - Lack of buy-in
    - Noise, interruptions, and the primary care environment itself
    - Getting family involvement
    - Peer conflict
    - Transportation for adolescents and families
    - Getting consistent participation
    - Office space for the program and interventions
    - Lack of care managers to assist
    - Lack of collaboration
    - Primary Care Clinic not being open outside of school hours
    - Difficult to build a flexible program
    - Lack of comprehension on why the program is offered and important
    - Screening
    - EHR setup
  - <u>Benefits</u>
    - Cause lasting change
    - Reduce adult health complications
    - Improve mental health
    - Reduce substance use
    - Improve staff satisfaction
    - Create an improved work environment
    - Improve staff performance
    - Improve staff communication
    - Improve workflow through collaborative efforts
    - Improve treatment reach
    - Normalize trauma experiences
    - Increase fidelity
    - Provide treatment in an integrated medical home
    - Improve diagnosis and treatment
    - Increase referrals
    - Increase revenue
    - Decrease stigma
    - Increase safety
- <u>Guidelines</u>
  - <u>General Principles</u>
    - Be conducted in a trauma informed environment and culture
    - Have all staffed trained in trauma informed care practices
    - Must consider the environment of integrated care in planning
    - Must be flexible
    - Clearly define the program or treatment’s mission and purpose
    - Realize treatment is not one size fits all
    - Get everyone on the team involved

Note. Themes established from round one thematic analysis.

Table 4

Results of Round Two Expert Questionnaire

Question Items	*n*	Valid % E/SA	*n*	Valid % I/SWA	*n*	Cumulative %	M	IQR
Age								
Ages 14-18 is appropriate	17	64.7	11	29.4	5	94.1	1.6	1
Ages 12-18 is appropriate	17	17.6	3	23.5	4	41.2	3	3
Ages 12-19 appropriate	17	11.8	2	29.4	5	41.2	3.4	3
Ages 13-19 appropriate	17	11.8	2	35.3	6	47.1	3.3	3
Ages 10-19 appropriate	17	17.6	3	11.8	2	29.4	4.2	1
Ages 12-21 appropriate	16	18.5	3	12.5	2	31.3	4.1	2
Adolescents should be grouped as follows: 14-16; 17-18	15	33.3	5	46.7	7	80	2	1
Adolescents should be grouped: Ages 13-15 and 16-18	17	23.5	4	52.9	9	76.5	2.2	0
Adolescents should be grouped as follows: 12-14, 15-17, 18-22	17	41.2	7	29.4	5	70.6	2.1	2
Have flexibility in ages based on patient needs, maturity, and developmental level	17	58.8	10	29.4	5	88.2	1.7	1
Treatment Constellations								
Individual, family, and group work; with the treatment being be flexible and all constellations possible but not required	17	64.7	11	35.3	6	100	1.3	1
Individual, family, and group work; with a comprehensive set program that must include all constellations	16	12.5	2	18.8	3	31.3	3.9	2
First provide individual and group sessions for the adolescents, while parents attend education and parenting appointments, then have conjoint family appointments.	16	12.5	2	50	8	62.5	2.6	1
Individual or family modality as clinically appropriate	16	43.8	7	43.8	7	87.5	1.7	1
First provide individual appointments for adolescents while including individual parent appointments, then provide family appointments and conclude with groups	17	11.8	2	17.6	3	29.4	3.1	2
Treatment of the teen alone in confidence	17	5.9	1	35.3	6	70.6	2.7	1

Individual appointments with one or both parents	17	11.8	2	35.3	6	47.1	2.8	1
Appointments split 50/50 between individual and family time	17	23.5	4	52.9	9	76.5	3.1	0
Group therapy only	17	0	0	0	0	0	3.9	2
Individual appointments and psychoeducational classes	17	11.8	2	41.2	7	52.9	2.4	1
Adolescent should choose what treatment constellation occurs	17	29.4	5	35.3	6	64.7	2.4	1
<u>Treatment Session Structure</u>								
A longer intake and assessment appointment followed by 1-2 weekly appointments	17	11.8	2	41.2	7	52.9	3	2
Appointments should vary from brief to a few to hours and having 1 or many	17	17.6	3	23.5	4	41.2	3	1
45-minute session duration	17	0	0	35.3	6	35.3	3.3	2
Intensive outpatient groups that meet 2-4 days per week for 2-5 hrs per day	17	5.9	1	5.9	1	11.8	3.6	2
12 session or 6 months max; 1-hour intake assessment then 30-45 minute with f/u sessions	16	6.3	1	25	4	31.3	3.5	3
Be based on symptoms	17	52.9	9	17.6	3	70.6	2.1	2
1-4 appointments no longer than 30 minutes	17	5.9	1	11.8	2	17.6	3	1
Number and length of appointments should be flexible and based on the adolescents’ needs and intellectual and psychosocial development	17	76.5	13	23.5	4	100	1.2	0
Up to 45 minutes with subsequent visits as brief as 20 minutes and up to 40 minutes	17	29.4	5	35.3	6	64.7	2.1	2
Four 30-minute primary care appointments with a behavioral health consultant	16	6.3	1	12.5	2	18.8	3.1	1
Be less than an hour long, based on brain development with a break	16	18.8	3	43.8	7	62.5	2	2
<u>Goals</u>	17	76.5	13	23.5	4	100	1.2	0
Be client-centered	17	88.2	15	11.8	2	100	1.1	1
Promote resiliency skills	16	50	8	50	8	100	1.5	1
Education about trauma and health	17	70.6	12	29.4	5	100	1.4	1
Teach emotion regulation skills	17	52.9	9	41.2	7	94.1	1.7	1

Provide strong support and education for parents	17	70.6	12	29.4	5	100	1.4	1
Normalize adolescents’ experiences and help them feel less isolated	17	70.6	12	5.9	1	81.3	1.9	2
Reduce the symptoms of trauma	17	29.4	5	58.8	10	88.2	2	1
Increasing peer support and fostering peer interactions	17	76.5	13	11.8	2	88.2	1.4	1
Establish safety	17	41.2	7	29.4	5	70.6	2.3	1
Include families	17	23.5	4	52.9	9	76.5	2	2
Provide resources	17	76.5	13	17.6	3	94.1	1.3	0
Improve functioning	17	52.9	9	53.3	6	88.2	1.6	1
Be Informed by patient’s values	17	47.1	8	47.1	8	94.4	1.7	1
Improve self-image and self-esteem	17	76.5	13	23.5	4	100	1.2	0
<u>Treatment Modality</u>								
Psychoeducation	17	47.1	8	47.1	8	97.1	1.5	1
Dialectical Behavior Therapy	17	23.5	4	23.5	4	47.1	2.6	1
Cognitive Behavioral Therapy	17	29.4	5	35.3	6	64.7	2.1	2
Acceptance and Commitment Therapy	17	29.4	5	41.2	7	70.6	2	2
Narrative Therapies	17	17.6	3	47.1	8	64.7	2.3	1
Creative therapies (Art therapy & Music therapy)	17	23.5	4	29.4	5	52.9	2.8	1
Trauma Focused-Cognitive Behavioral Therapy	17	52.9	9	17.6	3	70.6	2.1	2
Seeking Safety	17	64.7	11	5.9	1	70.6	2	2
Eye Movement Desensitization and Reprocessing Therapy	17	11.8	2	29.4	5	41.2	3.4	3
Motivational Interviewing	17	29.4	5	47.1	8	76.5	2.1	2
Solution Focused Therapy	17	29.4	5	35.3	6	64.7	2	2
Bowen Family Systems	17	18.8	3	18.8	3	37.5	2.7	1
Neuro-sequential Model of Therapeutics	17	5.9	1	23.5	4	29.4	2.8	0
Humanistic Therapies; Carl Rogers	17	23.5	4	41.2	7	64.7	2.3	1
Compassion focused Therapy	17	41.2	7	35.3	6	76.5	2.1	1
Adventured based therapies	17	5.9	1	5.9	1	11.8	3.4	1
Sensorimotor Psychotherapy	17	17.6	3	23.5	4	41.2	2.7	1
Trust Based Relationship Intervention	17	23.5	4	17.6	3	41.2	2.8	1
Pet Assisted Therapies	17	5.9	1	5.9	1	11.8	3.2	1

Treatment Interventions								
Experiential group activities	17	29.4	5	35.3	6	24	2.5	2
Psychodrama	17	11.8	2	47.1	8	58.8	3.6	1
Sports and exercise	17	29.4	5	53.3	6	64.7	2.3	2
Meditation	17	29.4	5	52.9	9	82.4	1.9	1
Mindfulness	17	35.3	6	64.7	11	100	1.7	1
Grounding techniques	17	52.9	9	41.2	7	94.1	1.6	1
Resiliency skills	17	76.5	13	23.5	4	100	1.2	0
Shared decision making	17	47.1	8	35.3	6	82.4	1.6	1
Biofeedback	17	5.9	1	35.3	6	41.2	3	1
Neurofeedback	17	5.9	1	17.6	3	23.5	3.2	1
Acupuncture	17	11.8	2	35.3	6	47.1	3.8	2
Bilateral stimulation and tapping	17	5.9	1	23.5	4	76.5	3.5	2
Journaling	17	35.3	6	41.2	7	76.3	1.9	2
Role play	17	23.5	4	23.5	4	47.1	2.6	1
Belly breathing	17	35.3	6	47.1	8	82.4	2.1	1
Yoga	17	17.6	3	41.2	7	58.8	2.5	1
Workbooks and worksheets	17	5.9	1	64.7	11	70.6	2.3	1
Contextual interview	16	25	4	25	4	50	2.2	2
Self-soothing skills	17	64.7	11	29.4	5	94.1	1.5	1
Emotion regulation skills	17	58.5	10	41.2	7	100	1.6	1
Cognitive diffusion	17	35.3	6	35.3	6	70.6	2.1	2
WRAP (wellness, recovery, action planning)	17	29.4	5	41.2	7	70.6	2.2	1
Outcome Measures								
Sleep Rating Scales	16	12.5	2	43.8	7	56.3	2.6	1
Quality of Life Measures; WHO-BREF	16	31.3	5	50	8	81.3	2	1
DUKE Health Measure	16	37.5	6	6.3	1	43.8	2.3	2
The Mindful Attention Awareness Scale (MAAS)	15	13.3	2	20	3	33.3	2.6	1
Measure behavioral changes longitudinally	16	37.5	6	43.8	7	81.3	2	2
Ask adolescents' and families' their opinion of treatment effectiveness and perceptions of the program	17	64.7	11	35.3	6	100	1.3	1
Collect personal narratives and conduct pre/post interviews	17	58.8	10	17.6	3	75.5	1.9	2

APA_DSM5_Level 1 Measure Parent Or Guardian Of Child Age 6 to 17 Child	16	6.3	1	6.3	1	12.5	3.2	2
PTSD Symptom Scale for DSM5 (CPSS-V)	16	31.3	5	37.5	6	68.6	2.4	2
Pediatric Symptom Checklist	16	0	0	68.8	11	68.8	2.3	1
ACE-Q	16	25	4	25	4	50	2.8	1
Measure the adolescent's satisfaction of their relationship with the treating clinician	17	58.5	10	17.6	3	76.5	1.8	2
Measure healthcare utilization pre/post	17	29.4	5	58.8	10	88.2	1.9	0
PHQ-9/A	16	25	4	56.3	9	81.3	2.1	0
GAD-7	16	25	4	50	8	75	2.1	0
The Child and Youth Resilience Measure	16	25	4	18.8	3	43.8	2.4	1
Safety risk assessment Resiliency Measure (CYRM)	16	18.8	3	50	8	68.8	2.3	1
Behavioral Health Measure (BHM-20)	16	12.5	2	25	4	37.5	3	2
<u>Challenges</u>								
An inability to establish a program	17	17.6	3	47.1	8	64.7	2.2	2
Time constraints	17	64.7	11	29.4	5	94.1	1.8	1
Funding concerns	17	47.1	8	29.4	5	76.5	2.2	2
Limited Behavioral Health Consultants	17	17.6	3	41.2	7	58.3	2.4	1
A need to refer out	17	23.5	4	35.3	6	58.8	2.7	2
Appropriate billing and how to get reimbursed	17	29.4	5	64.7	11	94.1	1.7	1
Coordination between mental health providers and physicians	17	23.5	4	47.1	8	70.6	2.5	2
Lack of buy-in	17	23.5	4	47.1	8	70.6	2.4	2
Noise, interruptions, and the primary care environment itself	17	5.9	1	23.5	4	29.4	3	2
Getting family involvement	17	11.8	2	35.3	6	47.1	2.7	2
Peer conflict	17	23.5	4	41.2	7	64.7	3.4	2
Transportation for adolescents and families	17	17.6	3	64.7	11	82.4	2	1
Getting consistent participation	17	23.5	4	64.7	11	88.2	1.7	1
Office space for the program and interventions	17	17.6	3	29.4	5	47.1	2.4	1
Lack of care managers to assist	17	17.6	3	29.4	5	47.1	2.8	1
Lack of collaboration	17	5.9	1	29.4	5	35.3	2.9	1

Primary Care Clinic not being open outside of school hours	17	35.3	6	29.4	5	64.7	2.2	2
Difficult to build a flexible program	16	12.5	2	50	5	62.5	2.4	2
Lack of comprehension on why the program is offered and important	17	41.2	7	35.3	6	76.5	2.7	1
Screening	17	35.3	6	23.5	4	58.8	2.9	2
EHR setup	17	5.9	1	23.5	4	29.4	3.4	2
Benefits								
Cause lasting change	17	58.8	10	41.2	7	100	1.5	1
Reduce adult health complications	17	52.9	9	41.2	7	94.1	1.6	1
Improve mental health	17	76.5	13	23.5	4	100	1.4	1
Reduce substance use	17	47.1	8	52.9	9	100	1.5	1
Improve staff satisfaction	17	35.3	6	29.4	5	64.7	2.1	2
Create an improved work environment	17	29.4	5	29.4	5	58.8	2.2	2
Improve staff performance	17	17.6	3	52.9	9	70.6	2.1	1
Improve staff communication	17	17.6	3	41.2	7	58.8	2.3	1
Improve workflow through collaborative efforts	17	23.5	4	47.1	8	70.6	2.1	1
Improve treatment reach	17	41.2	7	47.1	8	88.2	1.7	1
Normalize trauma experiences	17	64.7	11	29.4	5	94.1	1.6	1
Increase fidelity	17	23.5	4	41.2	7	64.7	2.4	1
Provide treatment in an integrated medical home	17	47.1	8	52.9	9	100	1.6	1
Improve diagnosis and treatment	17	41.2	7	41.2	7	82.4	1.9	1
Increase referrals	17	17.6	3	47.1	8	64.7	2.3	1
Increase revenue	17	5.9	1	35.3	6	41.2	2.9	2
Decrease stigma	17	58.8	10	41.2	7	100	1.6	1
Increase safety	17	70.6	12	29.4	5	100	1.4	1
General Principles								
Be conducted in a trauma informed environment and culture	17	64.7	11	35.3	6	100	1.5	1
Have all staffed trained in trauma informed care practices	17	64.7	11	29.4	5	94.1	1.6	1
Must consider the environment of integrated care in planning	17	64.7	11	35.3	6	100	1.4	1
Must be flexible	17	82.4	14	17.6	3	100	1.2	0

Clearly define the program or treatment’s mission and purpose	17	64.7	11	29.4	5	94.1	1.5	1
Realize treatment is not one size fits all	17	94.1	16	5.9	1	100	1.1	0
Get everyone on the team involved	17	52.9	9	29.4	5	82.4	1.7	1

Note. E/SA= essential/strongly agree, I/SWA=important/somewhat agree

Table 5

Results of Round One Stakeholder Focus Groups

Themes

Recovery

Talking to them, getting to know them on a personal level. Talk about their interests and make them seem like a friend or family member that they can talk to them at any time.
Just having someone to listen would be great. Its nice to be able to vent.

By listening to teens

Coping

I try and focus on something else that brings me joy and in the back of my mind the stress goes down and allows me to think more clearly. I like to listen to music or play video games to bring down stress.
If I am overwhelmed as mentioned above, I love listening to music, dancing it off or talking to someone. After this I usually am reminded that I need to take it one step at a time or use inch pebbles (instead of milestones). So I have to ask myself what he next step is, and just focus on that.
I learned by myself and what calmed me down the most. Sometimes in study groups the members would get stressed and we'd either talk about the problem to see if another peer has an answer and if not just go on to see if you can get further without over-stressing.
Empowerment

Empowerment (for me) means being able to get past that wall.

And also when someone else makes you feel like you can do it. Builds your confidence

Empowerment is important to a healing process. They can promote empowerment by allowing the adolescents to make some of their own decisions and them supporting most of their actions.
My mentor (mentioned earlier) believes in me even when I don't. I think that just believing in the patient and saying so often and sincerely is essential.
Patient control and choice

I really think that talking to teens (instead of only parents) and realizing that they can answer for themselves for most things
I do think its important because that's the most self-fulfilling/gratifying and it makes you feel like you can eventually do things on your own which is the ultimate goal right? it's a subtle principle that can be re-taught almost, and worked into the recovery process...
Collaboration

A really great quote from the book Ender's Shadow "One mind can think only of it's own questions; it rarely surprises itself
Its hard to cope when it doesn't work out but that could be an opportunity to learn to deal with those situations

I enjoyed working in groups for projects or studying because I'm in a group of people trying to reach the same goal as me and I can ask questions and they know what I'm talking about.
The doctor should do a research on the patient knowing their interests and hobby's so get closer to them.

Respect and acceptance

I think a lot of times people have the ability to do what they really want to do, they just are mentally blocked from doing so. Maybe they have doubts or something like that that stops them from being their best.
It makes a big difference when you're in a new or uncomfortable situation if people are just nice to you and talk to you as a person. Not as the mistakes you've made or the great things you've done
I'm sort of afraid to tell my doctor the truth or not to the fullest extent because I don't really know them except when I see them once every few months. I feel like they should have at least an hour of them getting to know you
Doctors being genuinely interested in you, asking you questions and listening to the responses. Being engaged with us not just our parents.

Resilience

I love this quote from Winston Churchill "Success has been defined as the ability to go from failure to failure without losing enthusiasm."
Yes, being responsible or taking responsibility and also strength

Avoid re-traumatization

I think one of the most important things is understanding them. If you don't understand them they are definitely not going to like any advice from you

Helping them gently approach it and help them (personalized) eventually heal from it

Always believing and sincerely listening to them, and gently pushing them to success on a personalized route

Cultural competency

I think being open minded to something you're not familiar with then going from there

Learning why they believe in such practices and asking questions to better understand why they do so
FOR SURE, that means understanding where they're coming from not just pushing your ideas on them

Advocacy

Giving feedback to the creator of such project is very helpful. They can use their knowledge from previous project to do better. (Constructive criticism)
And it is really empowering for me knowing that I have a say in all this. Imagine how empowered teens will feel who are actually getting the treatment if they are asked questions and truly listened to!

Note. Direct quotes were taken from the itracks stakeholder focus group transcripts.

Table 6

Final Treatment Recommendations

Treatment Categories
Age
Ages 14-18 is appropriate
Adolescents should be grouped as follows: 14-16; 17-18
Have flexibility in ages based on patient needs, maturity, and developmental level
Treatment Constellations
Individual, family, and group work; with the treatment being be flexible and all constellations possible but not required
Individual or family modality as clinically appropriate
Treatment Session Structure
Number and length of appointments should be flexible and based on the adolescents' needs and intellectual and psychosocial development
Goals
Be client-centered
Promote resiliency skills
Education about trauma and health
Teach emotion regulation skills
Provide strong support and education for parents
Normalize adolescents' experiences and help them feel less isolated
Reduce the symptoms of trauma
Increasing peer support and fostering peer interactions
Establish safety
Improve functioning
Be Informed by patient's values
Improve self-image and self-esteem
Treatment Modality
Psychoeducation
Dialectical Behavior Therapy
Cognitive Behavioral Therapy
Acceptance and Commitment Therapy
Trauma Focused-Cognitive Behavioral Therapy
Seeking Safety
Motivational Interviewing
Treatment Interventions
Meditation
Mindfulness
Grounding techniques
Resiliency skills
Shared decision making
Journaling
Belly breathing
Self-soothing skills

- Emotion regulation skills

- Outcome Measures
  - Quality of Life Measures; WHO-BREF
  - Measure behavioral changes longitudinally
  - Ask adolescents' and families' their opinion of treatment effectiveness and perceptions of the program
  - Measure healthcare utilization pre/post
  - PHQ-9/A
- Challenges
  - Time constraints
  - Funding concerns
  - Appropriate billing and how to get reimbursed
  - Transportation for adolescents and families
  - Getting consistent participation
- Benefits
  - Cause lasting change
  - Reduce adult health complications
  - Improve mental health
  - Reduce substance use
  - Improve treatment reach
  - Normalize trauma experiences
  - Provide treatment in an integrated medical home
  - Improve diagnosis and treatment
  - Decrease stigma
  - Increase safety
- General Principles
  - Be conducted in a trauma-informed environment and culture
  - Have all staffed trained in trauma informed care practices
  - Must consider the environment of integrated care in planning
  - Must be flexible
  - Clearly define the program or treatment's mission and purpose
  - Realize treatment is not one size fits all
  - Get everyone on the team involved

Note. *Developed from round two expert and stakeholder data.*