

ADVERSE CHILDHOOD EXPERIENCES AMONG COLLEGE STUDENTS: BEST-  
PRACTICE RECOMMENDATIONS FOR STUDENT HEALTH CLINICIANS

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**Title**

ADVERSE CHILDHOOD EXPERIENCES AMONG COLLEGE  
STUDENTS: BEST-PRACTICE RECOMMENDATIONS FOR  
STUDENT HEALTH CLINICIANS

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## ABSTRACT

Adverse childhood experiences (ACEs) are highly prevalent and considered a global public health crisis (Forgash, 2015). ACEs are associated with toxic stress resulting in severe impairment of the cardiovascular, endocrine, and immune systems (Asmussen et al., 2020). Consequently, the ten categories of ACEs have been linked to multiple risk factors for unhealthy behaviors and nine of the 10 leading causes of death in adults (Asmussen et al., 2020). A crucial component to mitigating the effects of ACEs is through identification of those exposed. Ideally, screening for ACEs occurs after the age of 18 years and prior to the onset of disease. Thus, the college setting is an opportune time to address ACEs given the prevalence of ACEs and the high rate of unhealthy behaviors occurring among college students (Karatekin, 2017). Many evidence-based practices have been established to address ACEs; however, there remains a gap in specific guidance for the student health setting. Therefore, a needs assessment was conducted to assess existing strengths and resources and identify needs for student health clinicians to address ACEs among college students. A two-phase mixed method design was utilized to obtain data from six clinicians at North Dakota State University Student Health Services clinic using an electronic survey, an informational guide, individual interviews, and a presentation of the results to stakeholders. Findings from the needs assessment informed best-practice recommendations for student health clinicians to address ACEs among college students. Recommendations include the following: 1) enhance clinician understanding of ACEs and trauma-informed care; 2) provide specific guidance for student health clinicians; 3) address barriers to utilizing the ACE screening tool; 4) incorporate the ACE screening tool in the student health setting; 5) identify students with ACEs based on ACE-associated symptoms; 6) assess risk for toxic stress; 7) develop therapeutic relationships; 8) provide evidence-based interventions to regulate the stress response; 9) assist in

building resilience; 10) promote protective factors; 11) encourage positive coping mechanisms; 12) educate patients on ACEs, toxic stress, risk for ACE-associated health conditions, and signs of distress; 13) offer referrals as indicated.

## **ACKNOWLEDGMENTS**

First and foremost, I wish to recognize my remarkable husband, Aaron Ostlund, for his patience, compassion, and unwavering support. Aaron devoted many hours caring for me while I fervently pored over this dissertation. He is the ultimate cheerleader. Next, I cannot thank my committee chair and advisor, Dr. Mykell Barnacle, enough for her guidance and encouragement. Lastly, I would like to acknowledge the members of my committee, Dr. Molly Secor-Turner, Dr. Heidi Saarinen, and Dr. Clayton Hilmert for their exemplary contribution to the success of this dissertation.

## **DEDICATION**

Ralph Waldo Emerson, an American transcendentalist poet once said, “the only person you are destined to become is the person you decide to be.” Mr. Emerson points to the infinite potential

everyone has to chase their dreams and his quote summarizes the trajectory of my life.

Emboldened by two kind and nurturing caretakers, I found the courage to be vulnerable and

confront my personal ACE score of nine. Jeanne Beare and Dr. Barrie March have been

instrumental in my emotional healing and my pursuit of continued education; thus, this

dissertation is dedicated to them. Thank you, Jeanne and Barrie, for guiding me over the past

decade to become the person I am destined to be.

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## LIST OF ABBREVIATIONS

|              |  |
|--------------|--|
| AAFP .....   | American Academy of Family Physicians.                                 |
| AAHCs.....   | ACE-associated health conditions.                                      |
| ACEs.....    | Adverse Childhood Experiences.   |
| ACTH.....    | Adrenocorticotropin hormone.   |
| CDC .....    | Centers for Disease Control and Prevention.                            |
| CSDT .....   | Constructivist Self Development Theory.                                |
| CINAHL ..... | Cumulative Index to Nursing and Allied Health Literature.              |
| DSGI .....   | Development Services Group, Inc., & Child Welfare Information Gateway. |
| EMDR.....    | Eye movement desensitization and reprocessing.                         |
| GAD-7.....   | Generalized Anxiety Disorder-7.  |
| HPA.....     | Hypothalamic pituitary adrenal.  |
| IRB .....    | Institutional Review Board.  |
| NDSU.....    | North Dakota State University.   |
| NDUS.....    | North Dakota University Systems.                                       |
| NP .....     | Nurse practitioner.  |
| PCDC .....   | Primary Care Development Corporation.                                  |
| PDSA .....   | Plan-Do-Study-Act.   |
| PHQ-2 .....  | Patient Health Questionnaire-2.  |
| PTSD.....    | Post-traumatic stress disorder.  |
| SHS .....    | Student Health Services.   |
| TF-CBT.....  | Trauma-Focused Cognitive-Behavioral Therapy.                           |
| TIC .....    | Trauma-informed Care.  |
| TST .....    | Trauma and the Self.   |

SAMHSA.....Substance Abuse and Mental Health Services  
Administration.

SCDHCS.....State of California Department of Health Care  
Services.

## **CHAPTER 1: INTRODUCTION**

### **Background and Significance**

Adverse childhood experiences (ACEs) are potentially traumatic events or circumstances often in the form of extended or prolonged stress exposure experienced prior to the age of 18 years (Centers for Disease Control and Prevention [CDC], 2019). ACEs are classified by abuse, neglect, and household dysfunction. The ten specific categories of ACEs include the following:

- physical abuse
- emotional abuse
- sexual abuse
- physical neglect
- emotional neglect
- domestic violence in the household
- an incarcerated household member
- a mentally ill household member
- a substance dependent household member
- an absent household member due to divorce or separation (CDC, 2019)

ACEs are considered a global public health crisis and highly prevalent among adults, children in the tri-state area, North Dakota, South Dakota, and Minnesota, and college students (CDC, 2019; Forgash, 2015; Karatekin, 2018; McGavock & Spratt, 2012; Novoa & Morissey, 2020). Years of research has established a dose-response relationship between ACEs and multiple risk factors for nine of the ten leading causes of death in adults (CDC, 2019; Felitti et al., 1998). Additionally, ACEs have been associated with increased rates of alcoholism, drug abuse, depression, and suicide attempts (Felitti et al., 1998). Predominantly in the early stages of

brain development, ACE exposure results in neurobiological, genetic, and epigenetic alterations (Lee et al., 2018). As a result, ACEs cause a dysregulated stress response, otherwise known as toxic stress (Asmussen et al., 2020; CDC, 2019; State of California Department of Health Care Services [SCDHCS], 2020e). Over time, toxic stress burdens several body systems, such as the cardiovascular, endocrine, immune, and nervous systems (Asmussen et al., 2020; CDC, 2019; SCDHCS, 2020d). Other deleterious effects of toxic stress include impaired decision-making and issues with learning, attention, and behavior (CDC, 2019; Soleimanpour et al., 2017). Consequently, ACEs and toxic stress make an individual vulnerable to adopt maladaptive coping mechanisms (Ahmed et al., 2015).

Maladaptive coping mechanisms in the form of risk-taking behavior, such as alcohol, tobacco, and drug use are closely related to increased morbidity and mortality in adolescence (CDC, 2019; Cheney et al., 2014; Duke, 2018; Felitti et al., 1998; Hale et al., 2014; Keyes et al., 2011; Lee et al., 2018; Sartor et al., 2013). Early initiation of risk-taking behaviors among young people is strongly associated with symptoms of anxiety and depression, inadequate refusal skills, and peer use and pressure (Schwinn et al., 2016). Often, risk-taking behavior extends into adulthood with emerging adults having some of the highest rates of alcohol and illicit substance use, episodes of binge-drinking, and cooccurring mental health conditions and substance use disorders (Lambert et al., 2008; Substance Abuse and Mental Health Services Administration [SAMHSA], 2019a). Also, when compared to other age groups, emerging adults are less likely to perceive substance use, weekly binge drinking, and smoking marijuana monthly or weekly as harmful (U.S. Department of Health and Human Services [USDHHS], 2019). Researchers contribute increased risk-taking behaviors during emerging adulthood to the ongoing

development of the human brain until the mid-20s (Giedd, 2008). Thus, emerging adults are particularly at risk for impaired judgment and substance misuse (Casey & Jones, 2010).

For emerging adults enrolled in college, engagement in risk-taking behaviors may be utilized to cope with stressors experienced in college, such as changes in sleeping and eating habits, increased coursework, and new responsibilities, and changes in social activities (Khrapatina & Berman, 2017). Moreover, for those exposed to ACEs, the compounding challenges associated with college, history of adversity, and toxic stress may increase the use of maladaptive coping mechanisms. Further, evidence indicates students with ACEs are at risk for substandard academic performance and they are more likely than their unexposed peers to drop out of college by the end of their freshman year (Amnie, 2018; Boyraz et al., 2016; Duncan, 2000; Keyes et al., 2011; White & Hingson, 2014; Windle et al., 2018). Therefore, addressing ACEs among college students is a high priority. Clinicians in the student health setting are well-positioned to mitigate ACE-associated health conditions (AAHCs) for students with ACEs through the three best-practice, evidence-based approaches of awareness, identification, and intervention (Khrapatina & Berman, 2017).

While evidence-based practices exist for addressing ACEs, there remains a gap in specific guidance for the student health setting. Despite inconsistent and varying efforts based on practice setting, strategies to address ACEs are evolving and becoming more streamlined. For example, the first-in-the-nation initiative for addressing ACEs was launched in the beginning of 2020 in the state of California. The initiative, named ACEs Aware, equips clinicians with the knowledge, tools, and resources to address ACEs in the clinical setting (SCDHCS, 2020b). Encouragingly, data from the first nine months prodigiously supports the efficacy and success of the ACE Aware initiative.



Identification of those exposed to ACEs is at the foreground of ameliorating AAHCs (Glowa et al., 2016). However, there continues to be a lack of ACE screening in healthcare settings (Bodendorfer et al., 2019). Barriers to ACE screening have been identified as a lack of knowledge regarding ACEs including the prevalence and associated effects, a misunderstanding of how to proceed with information garnered by ACE screening, limited time for office visits, and a lack of incentive to conduct screenings (Marsicek et al., 2019; Soleimanpour et al., 2017). Despite the unequivocal evidence supporting the association between ACEs and poor health outcomes, clinicians remain hesitant to utilize the ACE screening tool and incorporate best practices for addressing ACEs. Thus, there is a need for healthcare professionals to increase their awareness of ACEs, overcome barriers to ACE screening, and enhance efforts to mitigate AAHCs.

### **Problem Statement**

Adverse childhood experiences (ACEs) result in neurobiological alterations and toxic stress, instigate the use of maladaptive coping mechanisms, result in poor economic productivity, and lead to healthcare disparities (Garner et al., 2015). Consequently, ACEs have been linked to multiple risk factors for nine of the 10 leading causes of death in adults including obesity, cardiovascular disease, and diabetes. Further, ACEs increase rates of alcoholism, drug abuse, and depression. Efforts to cope with the effects of ACEs in the form of risk-taking behavior, such as alcohol, tobacco, and drug use are often initiated early in life. The use of these maladaptive coping mechanisms may be exacerbated by challenges experienced in emerging adulthood, especially among college students. Thus, understanding the prevalence of ACEs among college students is crucial as evidence has shown ACEs contribute to substandard academic and social performance and increase risk for dropping out of school (Duncan, 2000; Windle et al., 2018).

Further, the result of ACEs among college students leads to poor mental health, higher rates of substance use, and unhealthy lifestyle habits (Windle et al., 2018). While evidence-based practices exist for addressing ACEs, there remains a gap in specific guidance for the student health setting. Clinicians in the student health setting are a vital contributor to mitigating AAHCs among college students through what is known to be the three best-practice, evidence-based approaches of awareness, identification, and intervention (Karatekin, 2017).

### **Purpose**

The purpose of the community needs assessment was to identify needs and assess existing strengths and resources for student health clinicians to address ACEs among college students. Further, the overall goal of the needs assessment was to generate best-practice recommendations for addressing ACEs among college students.

### **Objectives**

1. Assess clinician awareness of ACEs, identification of ACEs in the student health setting, and clinician willingness to offer ACE-related interventions through a survey of student health clinicians by September 2020
2. Develop and disseminate an informational guide to enhance clinician awareness regarding ACEs and the impact and prevalence of ACEs among college students by September 2020
3. Identify the impact of clinician awareness and identification of ACEs on a student health clinician's practice and identify suggestions for ACE-related interventions through participant interviews by October 2020
4. Develop best-practice recommendations for addressing ACEs in the student health setting and present findings to participants and key stakeholders by January 2021

## **CHAPTER 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

### **Literature Review**

#### **Adverse Childhood Experiences**

Adverse childhood experiences (ACEs) are potentially traumatic events or circumstances often in the form of extended or prolonged stress exposure experienced prior to the age of 18 years (Centers for Disease Control and Prevention [CDC], 2019). ACEs are classified by abuse, neglect, and household dysfunction. The ten specific categories of ACEs include the following:

- physical abuse
- emotional abuse
- sexual abuse
- physical neglect
- emotional neglect
- domestic violence in the household
- an incarcerated household member
- a mentally ill household member
- a substance dependent household member
- an absent household member due to divorce or separation (CDC, 2019)

Pioneered by Dr. Vincent Felitti, ACE research spans over 30 years. Dr. Felitti, a California physician, came across the concept of ACEs through findings from a weight loss program he managed in the 1980s. Upon identifying a patient dropout rate of greater than 50% he became curious if there was a shared reason for the lack of success. Subsequently, he invited more than 200 of the unsuccessful patients to participate in an interview which included asking them to recall early childhood memories. While interviewing one of the patients, he misspoke by asking

for her weight rather than her age when she first became sexually active. Dr. Felitti was astounded when the patient answered 40 pounds when she was molested by her father at the age of four years. As he proceeded with the interviews, he began asking the other patients the same question. He started to see a trend of childhood sexual abuse in about half of the patients. Unexpectedly, many of the patients were grateful to be asked about their past experiences beyond the standard questions regarding their diet and weight. Intrigued by these findings, Dr. Felitti collaborated with Dr. Robert Anda from the CDC and the Department of Preventive Medicine at Kaiser Permanente in San Diego to conduct the original ACE study published in 1998.

## **Prevalence**

The original ACE study conducted by Felitti et al. (1998) asked more than 17,000 Kaiser Permanente Health Plan members to complete a questionnaire regarding traumatic childhood experiences (now titled the ACE screening questionnaire). Study participants were mostly white (75%), over the age of 50 years (66.3%), and college educated (95%). Findings concluded two out of three participants had been exposed to one ACE, one in five had experienced two or three ACEs, and one in six had equal to or greater than four ACEs. Further, 22% of participants had experienced sexual abuse as a child (Felitti et al., 1998).

ACEs are considered a global public health crisis and highly prevalent among adults, children in the tri-state area, North Dakota, South Dakota, and Minnesota, and college students (CDC, 2019; Forgash, 2015; Karatekin, 2018; McGavock & Spratt, 2012; Novoa & Morissey, 2020). In 2019, approximately one in six adults had been exposed to four or more ACEs (CDC, 2019). Further, based on an analysis of national and state data from 2016 to 2018 regarding ACEs, North Dakota and South Dakota were in the top third and Minnesota in the top half of the

nation for children with one ACE exposure. Additionally, when compared to other states, rates of children with two or more ACEs in the tri-state area is also relatively high (Novoa & Morissey, 2020). Lastly, regarding college students, approximately one third of undergraduate college students report ACE scores of two or higher (Karatekin, 2018; McGavock & Spratt, 2012).-From a sample of 2,412 students from 18 post-secondary Minnesota colleges, more than two out of three students (68.4%) reported at least one ACE (Lust, 2018). In other areas of the country, a sample of 2,969 racially and ethnically diverse college students from seven Georgia colleges and universities, 21.3% reported at least one ACE and 12.4% reported an ACE score of four (Windle et al., 2018). Further, among 2,953 college students surveyed in California, more than half of students reported one ACE and 23% reported multiple ACEs (Forster et al., 2018).

### **Health Outcomes**

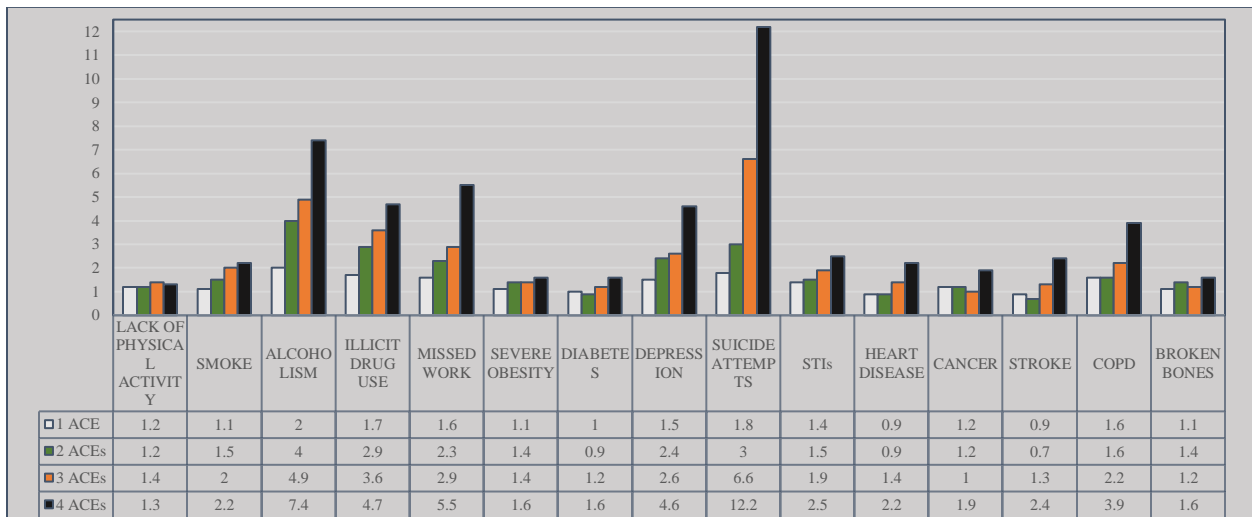
ACEs have a strong and cumulative effect on human health and wellbeing (Amnie, 2018; CDC, 2019; Garner et al., 2015). Results from the original ACE study found a graded, dose-response relationship between multiple ACEs, the extent of ACE exposure, and multiple risk factors for nine of the 10 leading causes of death in adults (CDC, 2019; Felitti et al., 1998). Further, results indicated if an individual had exposure to one ACE, they were 87% more likely to have an additional ACE exposure (Felitti et al., 1998). Additionally, the study compared individuals with an ACE score of four or more to those with an ACE score of zero. Individuals with four or more ACEs were found to be 390% more likely to develop chronic obstructive pulmonary disease, 460% more likely to be depressed, and 1,220% more likely to attempt suicide when compared to someone without ACEs (Felitti et al., 1998).

Several other researchers have corroborated the findings from the original ACE study conducted over 30 years ago. Through a systematic review and meta-analysis of ACEs and type

2 diabetes, Huang et al. (2015) found the risk for type 2 diabetes increases by 32% for an ACE score of one. Additionally, Deschenes et al., (2018) found odds of diabetes increase by approximately 11% for each additional ACE. Further, a large-scale cohort study of 17,412 adults concluded an ACE score of three or more is associated with an increased risk for dementia (Tani et al., 2020). A score of four or more has been found to increase the risk for cardiovascular disease, cancer, and stroke (Amanpour and Company, 2019; Bellis et al., 2015). The same appears to be true for other health conditions and behaviors. When compared to an ACE score of zero, the likelihood certain health conditions and behaviors will occur increases with each additional ACE. For example, someone with an ACE score of four is 12.2 times more likely to attempt suicide and 7.4 times more likely to be an alcoholic than an unexposed individual (see Figure 1 for a graphical illustration).

**Figure 1**

*ACE-associated Health Conditions & Behaviors*



*Note.* This figure was adapted from data provided by VetoViolence (2013).

## **Toxic Stress**

Stress and adversity are integral to one's life as these experiences provide opportunities for an individual to adapt, grow, and learn healthy coping skills (Waite & Ryan, 2020). Particularly during childhood and adolescence, healthy responses to stress are learned through the presence of a protective, compassionate, and supportive adult (Waite & Ryan, 2020). In the presence of a protective adult, a young person will develop self-efficacy, adopt positive affect regulation, and acquire the ability to engage in healthy relationships (Pearlman, 1997; Van Der Kolk, 2014). Conversely, in the absence of a supportive adult, an individual with ACEs is at risk for a dysregulated stress response which may result in emotional and behavioral issues (Waite & Ryan, 2020).

Physiologically, the stress response is dysregulated at the negative feedback mechanism of allostasis, the process utilized to restore homeostasis in the face of a stressor or threat (Asmussen et al., 2020; Shapiro & Applegate, 2018). Allostasis involves the hypothalamic pituitary adrenal (HPA) axis which consists of the hypothalamus, anterior pituitary, and adrenal cortex (Shapiro & Applegate, 2018). The HPA axis is activated at the amygdala when a threat is detected by the sympathetic nervous system, otherwise known as the fight-or-flight response. The neurohormone, corticotropin-releasing hormone is released from the hypothalamus which then triggers the anterior pituitary gland to release adrenocorticotropin hormone (ACTH) into the bloodstream. ACTH causes the release of glucocorticoids, such as cortisol, epinephrine, and norepinephrine from the adrenal cortex. Thereafter, the rising levels of cortisol are modulated by the negative feedback mechanism and the parasympathetic nervous system through the release of acetylcholine (Shapiro & Applegate, 2018). Physiological responses to the activation of the HPA axis include increased heart rate and breath, sharpened senses, and hypervigilance in preparation

for quick action. Also, the immune system elevates inflammation to heal the body quickly if physical injury occurs. Once the threat has dissipated, the parasympathetic nervous system activates by releasing acetylcholine resulting in a lower heart rate, relaxed muscles, and a return to normal breathing (Shapiro & Applegate, 2018).

Not all forms of stress are bad, in fact, some forms of stress are positive. Positive stress is considered an experience that causes a mild-to-moderate physical response, such as a brief increase in heart rate and elevated hormone levels (Asmussen et al., 2020). Examples of positive stress include meeting new people on the first day of school or going on a first date. Positive stress allows for adaptation to meet the demands of daily life. Other forms of stress endured for longer durations than positive stress, such as the death of a family member or a natural disaster are considered tolerable stress. Tolerable stress requires a longer physiological recovery process to achieve allostasis but, in both tolerable and positive stress, normal functioning is restored once the stressor is removed (Asmussen et al. 2020). Lastly, prolonged or chronic types of stress, often in the form of ACEs, are recognized as toxic stress. Effects of toxic stress include continuously elevated levels of cortisol resulting in the release of stored glucose, alterations in immune cells, increased inflammation, decreased cellular sensitivity, atherosclerotic changes, and loneliness (Asmussen et al., 2020; Creswell et al., 2012; Danese & McEwen, 2012; Miller et al., 2011; Rich-Edwards et al., 2012; Su et al., 2015). Over time, toxic stress burdens several body systems, such as the cardiovascular, endocrine, and immune systems (Asmussen et al., 2020). Additionally, toxic stress impairs the amygdala which controls language, learning, and logic and the prefrontal cortex which controls anticipation, judgment, planning, and decision-making (Asmussen et al., 2020; Roberts, 2019). As a result, even in the absence of stress, chronic activation of the amygdala and disruption of the prefrontal cortex may inhibit an individual from



responding reasonably and responsibly to daily life events (Roberts, 2019; Viding et al., 2012). Consequently, toxic stress leads to poor emotion regulation, a lack of self-discipline, and difficulty with mood (Viding et al., 2012).

## **Risk-Taking Behavior**

### *Adolescents*

Biological and physical changes experienced during adolescence, increased emotional reactivity, and stress present many challenges for young people (Ahmed et al., 2015). Early initiation of risk-taking behavior among adolescents, such as alcohol, tobacco, and drug use are thought to be utilized as a means to cope with stress (Duke, 2018). Further, risk-taking behaviors among young people are strongly associated with anxiety, depression, inadequate refusal skills, and peer use and pressure (Schwinn et al., 2016). Since adolescents are predisposed to impulsivity and impaired decision-making, young people with ACEs are particularly vulnerable to adopt maladaptive coping mechanisms given their compounding challenges (Ahmed et al., 2015; Shin et al., 2018; Soleimanpour et al., 2017). In fact, alcohol has been identified as a coping mechanism used for the sedative effect to mediate symptoms related to post-traumatic stress disorder (PTSD) (Lee et al., 2018; Shin et al., 2018).

For those exposed to ACEs, odds of early initiation of alcohol or cannabis use among young people increases by 34% for each additional ACE exposure (Duke, 2018; Sartor et al., 2013). According to Duke (2018), the strongest association of early alcohol use and binge drinking among adolescents with ACEs is related to sexual abuse by a family member and living with someone who uses illegal drugs or abuses prescription drugs. Additionally, results from a study conducted by Cheney et al. (2014) of 1,040 adolescents and a study conducted by Duke

(2018) of 126,868 adolescents also demonstrated a significant link between ACEs and adolescent alcohol, tobacco, and drug use.

### ***Emerging Adults***

Alcohol, tobacco, and drug use to cope with trauma-related symptoms often extends into emerging adulthood (Hale et al., 2014; Keyes et al., 2011). At the brink of adulthood, young people aged 18-25 years gain autonomy, responsibilities, and begin to explore their identities (SAMHSA, 2019a). During the formative years of 18-25, emerging adults have some of the highest rates of alcohol and illicit substance use and higher rates of cooccurring mental health conditions and substance use disorders than other age groups (SAMHSA, 2019b). Also, emerging adults are less likely to perceive substance use, weekly binge drinking, and smoking marijuana monthly or weekly as harmful (USDHHS, 2019). Further, emerging adults are more likely to ride with an impaired driver (Lee et al., 2018). This population also has the highest percentage of drunk drivers, ages 21 to 24 years, and the highest rate of fatal drunk-driving crashes, ages 16 to 25 years (U.S. Department of Transportation, National Highway Traffic Safety Administration, 2018). Specifically in North Dakota, among individuals aged 18 to 25 years, North Dakota is one of the top ten states to have the highest rates of alcohol and binge alcohol use in the past month and the highest rates of alcohol use disorder in the past year (SAMHSA, 2020a).

Researchers contribute poor health behaviors among this population to the ongoing development of the human brain until the mid-20s (Giedd, 2008). As a result, emerging adults are at risk for impaired judgment and substance misuse (Casey & Jones, 2010). Additionally, newfound independence prompts increased influence from friends who are more likely to encourage rather than discourage substance use (Arnett, 2005). Consequently, misuse of

substances may impair areas of the brain such as the basal ganglia which is involved in motivation and formation of habits and routines (SAMHSA, 2019b). Thus, an individual's life-trajectory is greatly impacted based on decisions made during this transitional phase of life.

### ***College Students***

For emerging adults enrolled in college, engagement in risk-taking behaviors may be utilized to cope with stressors experienced in college, such as changes in sleeping and eating habits, increased coursework, and new responsibilities, and changes in social activities (Khrapatina & Berman, 2017). Moreover, for those exposed to ACEs, the compounding challenges associated with college, history of adversity, and toxic stress may increase the use of maladaptive coping mechanisms. Further, evidence indicates students with ACEs are at risk for substandard academic performance and they are more likely than their unexposed peers to drop out of college by the end of their freshman year (Amnie, 2018; Boyraz et al., 2016; Duncan, 2000; Keyes et al., 2011; White & Hingson, 2014; Windle et al., 2018).

When compared to their same-aged peers, college students across the nation report higher rates of illicit drug use and more frequent episodes of binge-drinking (Center for Behavioral Health Statistics and Quality, 2015). Moreover, consequences of alcohol or drug use, such as hangovers, blackouts, or memory loss occur more frequently among North Dakota State University (NDSU) students compared to the national average (Jackson et al., 2005; North Dakota University Systems [NDUS], 2020). Data from a 2020 wellness and perception survey of NDSU undergraduate students support the presence of other risk-taking behaviors and mental health symptoms among NDSU students (NDSU, 2020). In 2020, 1,017 NDSU undergraduate college students participated in a wellness and perception survey aimed to understand the well-being of students, including experiences using alcohol, substances, and mental health symptoms

(NDSU, 2020). The average age of students was 20 years with the highest percentage enrolled in their first year of college. Further, half of students lived on campus and 95.4% of students reported health insurance coverage.

Table 1 provides a summary of alcohol, tobacco, and cannabis use on at least once occasion in the 30 days and 12 months prior to the survey. Also, on average, students were consuming 4 alcoholic beverages per week. Further, in the year prior to the survey, 75.7% of students had been hungover, nauseated, or vomited, 45.3% had experienced a blackout or memory loss, 26.3% had performed poorly on a class related task or missed class, and 36.1% had done something they later regretted because of alcohol or drug use (NDUS, 2020).

**Table 1**

*NDSU Student Alcohol, Tobacco, and Cannabis Use*

| Substance  | Previous 30 days | Previous year |
|------------|------------------|---------------|
| ▪ Alcohol  | ▪ 57%            | ▪ 71.7%       |
| ▪ Tobacco  | ▪ 4.6%           | ▪ 11.6%       |
| ▪ Cannabis | ▪ 12.7%          | ▪ 21.5%       |

NDSU students also experience academic and relational challenges associated with mental health symptoms and feel unable to cope with their stress (NDUS, 2020). In the two weeks prior to the survey, an average of 60% of students had experienced the following depression and anxiety symptoms: feeling down or depressed; little interest or pleasure in things; feeling nervous, anxious, or on edge; and an inability to control or stop worrying. These symptoms negatively impacted academic performance and getting along with others (23.9% and 18.2% respectively). Further, in the month prior to the survey, NDSU students reported high rates of emotional distress, such as feeling hopeless, mentally exhausted, and very lonely (44%, 80.4%, and 60.8% respectively). These data are particularly concerning because about 70% of NDSU students also reported an inability to cope or overcome stressors (NDUS, 2020). Lastly,

despite the substantial presence of mental health and well-being concerns among NDSU students, a relatively small percentage of students sought mental and physical health services in the 12 months prior to the survey (NDUS, 2020).

While not all risk-taking behavior and mental health concerns among NDSU students are linked to ACEs, data from the NDSU survey serves as a proxy measure of maladaptive coping mechanisms often used by students exposed to ACEs. Thus, the need to understand the prevalence of ACEs and the subsequent use of these maladaptive coping mechanisms among college students is important, as they're likely to adversely affect health later in life (Boyratz & Waits, 2018; Witte et al., 2015). Though data regarding the number of NDSU students who have ACEs is not available, data indicate ACEs are likely prevalent among students (Karatekin, 2018; McGavock & Spratt, 2012; Windle et al., 2018; Lust, 2018). A study examining geographically close and demographically similar students from 18 post-secondary Minnesota colleges report nearly 70% of students had at least one ACE (Lust, 2018). Further, given the high rate of ACEs among children in the tri-state area and the three most common states of residency for NDSU students are North Dakota, Minnesota, and South Dakota (41.38%, 44.96%, and 1.49% respectively), we can assume NDSU students have ACEs at a similar level to what has previously been reported (NDSU, 2020c; Novoa & Morissey, 2020).

### **Adverse Childhood Experiences Best Practices for Clinicians**

The role of a clinician is vital to addressing and mitigating AAHCs; however, to effectively provide care, a clinician must first develop an understanding of ACEs. Educational opportunities regarding ACEs are vastly available to clinicians and often accessible via the internet. For instance, a free, two-hour training is available for clinicians to learn about ACEs, ACE screening, toxic stress, risk assessment, and evidence-based care to provide effective

interventions (SCDHCS, 2021). Further, through a collaboration between the Primary Care Development Corporation and ACEs Aware initiative, clinicians have access to a 78-minute webinar which introduces trauma, trauma-informed care (TIC), and ACEs (Primary Care Development Corporation [PCDC], 2021). Notably, the webinar provides an overview of ACEs and the effects on physical and emotional health, common presentation for individuals with ACEs, triggers associated with health care, and elements of TIC.

Sometimes, individuals with ACEs may be sensitive to power and authority dynamics in relationships which may result in being unable to form and maintain trusting relationships (Green et al., 2015). These concerns may hinder the development of a trusting relationship between a patient and clinician. Further, clinicians are at risk of re-traumatizing a patient through inadvertent use of practices or language which may be triggering (Roberts, 2019; SAMHSA, 2014). The use of trauma-informed care (TIC) aids in overcoming these challenges (SAMHSA, 2014). TIC is a framework of thought and interventions based on an understanding of the neurobiological, biological, psychological, and social effects of trauma (Lietzke & Loftus, 2020). The framework helps to establish trust and safety, promote transparency, and emphasize collaborative decision-making (SAMHSA, 2014; SCDHCS, 2020c). A key component of TIC is the development of a therapeutic relationship which may incite a patient who feels shame or has not disclosed their history of trauma to explore their trauma and initiate the healing process (Pearlman, 1997).

### **Adverse Childhood Experiences Screening Tool**

Numerous ACE screening tools have been adapted from the ACE questionnaire utilized in the original ACE study. ACE screening tools are designed to assess the number of ACEs reported by an individual prior to the age of 18 years. The questions on the tool ask if the

individual has experienced any one of the 10 categories of ACEs with answer options of “yes” or “no” (see Appendix C for an assessment tool). A score is calculated based on the patient’s answers. One point is added for every “yes” answer. The total score cannot exceed 10 points. The ACE screening tool is a self-administered instrument designed to be completed once per adult per lifetime. Completion of the ACE assessment tool is dependent on an individual’s reading level and competence. According to the Flesch formula, the calculated grade level of the questionnaire is about a 7th grade reading level which is appropriate for college students (Schnelbach & Wyatt, 2020). At the beginning of a clinical encounter, a private and safe space should be provided for individuals to complete the questionnaire due to the sensitive nature of the questions.

ACE screening requires patients to reflect and revisit potentially upsetting aspects of their lives. This form of processing may activate distressing feelings or thoughts, such as shame, blame, anger, sadness, or embarrassment (Asmussen et al., 2020). Conversely, individuals may feel empowered by learning about ACEs and hopeful to receive help through their healing process. Moreover, individuals may become more invested in preventative care once they understand the risks associated with ACEs. In fact, results from a study of women with an ACE score of 4 or more and a history of two or more chronic health conditions found many of these individuals didn’t mind being screened for ACEs (Purkey et al., 2018). Notably, participants felt understanding ACEs was important and should be discussed in the primary care setting (Purkey et al., 2018). With that said, the act of performing ACE screening isn’t necessarily to elicit specific details about a traumatic event but, rather, a segue to providing compassionate and guided responses to ACEs.

### ***Advantages***

The ACE screening tool provides quick identification of exposed individuals and prompts consideration for treatment interventions, including referral services and follow-up care (Soleimanpour et al., 2017). Additional advantages are that the survey is brief, leads to earlier identification, and offers an opportunity to discuss potential treatment options which may reduce the burden of trauma on healthcare dollars and resources. Identification of exposed individuals may open dialogue regarding life events and current stressors. Also, identifying someone's ACE score is a great segue for assessing resiliency skills and identifying coping and protective factors (Simon et al., 2014; Soleimanpour et al., 2017; Wade et al., 2014).

### ***Barriers***

Despite the advantages to ACE screening, there remains barriers to universal screening in healthcare settings. Examples include a lack of awareness regarding ACEs, the prevalence of ACEs, and AAHCs (Soleimanpour et al., 2017). Additional barriers include limited time for office visits, inability to bill for screening, no standard protocol for how to manage the results, and risk for re-traumatization (Soleimanpour et al., 2017; Starecheski, 2015). Also, the sensitive nature of the questions has been identified as a source of discomfort for some clinicians (Starecheski, 2015).

### ***Symptomology***

Clinicians are trained to utilize clinical judgment to diagnose and treat their patients and screening tools are often used as an adjunct to care. In the absence of a screening tool, clinicians must be trained to recognize the common psychological and behavioral sequelae seen in patients with ACEs. As a result of trauma, an individual may present to the clinic with signs of impaired connection, affect dysregulation, and low self-worth (Pearlman, 1997). Examples of impaired



connection include a lack of stable sources of support, loneliness, an inability to feel safe and trust others, or an inability to develop rapport and trusting healthy relationships with others, such as health care professionals (Pearlman, 1997; Van Der Kolk, 2014).

An individual suffering from affect dysregulation may show signs of alexithymia, denial, dissociation, and emotional suppression or avoidance. Often, children exposed to ACEs register emotions as physical sensations; for example, they might seem terrified but report feeling fine (Pearlman, 1997; Van Der Kolk, 2014). Further, somatic symptoms may occur as a result of unprocessed emotions. Somatic complaints seen among individuals with ACEs include cardiac, muscle, and chronic pain; gastrointestinal symptoms such as bowel irregularities; headaches and blurry vision; unexplained dizziness and tinnitus (Boyras & Waits, 2018; Gupta, 2013; Pearlman, 1997; Van Der Kolk, 2014). A result of unprocessed emotions may be signs of anger, alcohol or drug use, and self-destructive behaviors (Goodman, 2017).

Other suspicions include high rates of revictimization, difficulty feeling pleasure or sensuality, and inadequate self-soothing (Van Der Kolk, 2014). Additional clues for ACE exposure are feelings of shame, low self-esteem, and self-loathing (Pearlman, 1997; Van Der Kolk, 2014). Lastly, clinic visits for hyperactivity, or depression and anxiety symptoms should trigger a consideration of ACEs as a contributing factor (Jonkman, 2013). Evidence has also shown college students with ACEs have more frequent clinic visits than their unexposed peers (Flood et al., 2009). Therefore, a clinician should be suspicious a patient has ACEs if they have frequent office visits or elicit emotional and/or conduct problems, mental health symptoms, somatic complaints, or an inability to self-soothe (Flood et al., 2009; Goodman, 2017; Gupta, 2013; Jonkman et al., 2013; Pearlman, 1997; Van Der Kolk, 2014).

## **Stress Response Regulation**

ACE-related interventions include strategies to regulate the stress response, such as supportive relationships, high-quality sleep, balanced nutrition, mindfulness and meditation, and mental healthcare (SCDHCS, 2020b). Other interventions include assisting in building resilience, promoting protective factors, encouraging positive coping mechanisms, and providing patient education. Several evidence-based interventions used to address ACEs in the primary care setting apply to the student health setting. Despite the many challenges endured by college students, their life journey does not have to be defined by their childhood trauma. Not all types of childhood stress are negative or lead to poor health outcomes. In fact, positive and tolerable forms of stress provide an opportunity to develop resilience, an individual's capacity to rebound and recover from abuse and neglect (Roberts, 2019). Fostering resiliency and promoting protective factors positively alters an individual's life course (American Academy of Pediatrics, 2014).

Resilience develops from nurturing emotional, psychological, and social support (World Health Organization, 2019). Focus areas for building resiliency skills include positivity, confidence, priorities, creativity, connection, structure, and experimentation (Spencer, 2010). Positivity provides hope and gravitates energy toward finding a solution rather than focusing on the problem. Identifying and affirming one's strengths boosts confidence to learn, grow, and develop from challenges. Being creative and engaging in experimentation activate the regions of the brain that are often impaired due to ACEs. Creativity is either performed through activities like art or by embarking on a new, unusual, or unexpected experience (Spencer, 2010). Positive outcomes of resiliency include supportive friends, improved academic performance, better

cognitive functioning, and enhanced social skills (Development Services Group, Inc., & Child Welfare Information Gateway [DSGI], 2015).

Acquiring resilience and protective factors aid in regulating the stress response (World Health Organization, 2019). Protective factors include goal setting, problem solving, self-efficacy, self-regulation, social connectedness, effective communication, and improved coping skills (DSGI, 2015; Duke, 2018; Schwinn et al., 2016; Spencer, 2010). An understanding of a patient's motives for healthy behavior enhances goal setting and assists a clinician in providing effective interventions. Findings from two similar studies suggest undergraduate college students with high ACE scores tend to focus more on preventing negative outcomes rather than promoting health (Karatekin et al., 2018; Ledford, 2012). Further, in a study performed by Karatekin (2018), undergraduate students with ACEs were more apt to seek resources from the university. These data suggest college students with ACEs may benefit from education regarding ACEs, risk for AAHCs, and prevention strategies. Moreover, college students with ACEs may benefit most from receiving resources and help from a campus clinic.

Promoting resiliency, protective factors, and positive coping mechanisms may alleviate or moderate AAHCs (DSGI, 2015; Duke, 2018). Positive coping mechanisms, such as self-soothing practices, yoga, and meditation are also encouraged. A beneficial physiological response to yoga and meditation practices is the release of acetylcholine by way of the parasympathetic nervous system during deep breathing exercises and exhalation (Van Der Kolk, 2014). The release of acetylcholine slows down the heart rate, relaxes the muscles, and returns breathing to normal (Van Der Kolk, 2014).

Evidence has shown yoga improves sleep, positive affect, perceived stress, anxiety, stress, and resilience as well as markedly reducing PTSD symptoms (Jindani et al., 2015; Van

Der Kolk et al., 2014). Additional benefits of yoga are enhanced tolerability of physical and sensory experiences associated with fear and helplessness and increased resilience, emotional awareness, and affect tolerance (Soleimanpour et al., 2017; Pearlman, 1997). Brain scans have also identified the efficacy of meditation. Participants practiced mindfulness meditation for 27 minutes a day for eight weeks. At the end of the study, image findings showed increased activation in the hippocampus and prefrontal cortex and decreased activation of the amygdala (Holzel et al., 2013). Further, based on a small, randomized control study measuring the expression of inflammatory genes, Creswell et al. (2012) found an eight-week mindfulness program reduced symptoms of loneliness.

### **Patient Education**

Education is vital to providing interventions for individuals with ACEs. Examples of topics include an overview of ACEs, toxic stress, risks for AAHCs, and signs of distress. Signs of distress include feelings of fear, anger, sadness, worry, numbness, or frustration; changes in appetite, energy, and activity levels; difficulty concentrating and making decisions; difficulty sleeping or nightmares; physical reactions, such as headaches, body pains, stomach problems, and skin rashes; worsening of chronic health problems; and increased use of alcohol, tobacco, other drugs (SAMHSA, 2020b). Education tools in the form of short videos, pamphlets, models, or pictures might spark interest and promote retention of information (Lipton & Fernandez, 2020).

### **Counseling**

Lastly, mental health care plays a tremendous role in healing the effects of ACEs. Fortunately, most college students have access to an on-campus counseling center. A large body of evidence has shown trauma-specific counseling, such as Trauma-Focused Cognitive-

Behavioral Therapy (TF-CBT) and eye movement desensitization and reprocessing (EMDR) are most effective in the management of PTSD (Mavranouzouli et al., 2020). Aspects of TF-CBT include developing skills for behavior regulation, processing trauma, and improving a sense of safety and trust (Mavranouzouli et al., 2020; Soleimanpour et al., 2017). EMDR therapy is designed to provide rapid resolution of unprocessed traumatic memories, negative emotions, beliefs, and physical sensations (Shapiro, 2014). Patients may prefer EMDR versus TF-CBT because they are not required to discuss emotions or memories. During an EMDR session, a trained professional uses memory-evoking prompts and guides a patient through a series of eye movements (Van Der Kolk, 2014). When a patient demonstrates an emotionally significant response through body language, they are encouraged to notice how they feel. This entire process is repeated during the session while the professional remains silent except for the prompts (Van Der Kolk, 2014). There are eight phases to EMDR therapy and sessions typically last 60-90 minutes (Shapiro, 2014).

In a study comparing the use of fluoxetine with EMDR for patients with PTSD, EMDR was a more effective antidepressant (Van Der Kolk et al., 2007). Results from a six-month follow up after an eight-week study of 88 participants found 57% of the participants who completed EMDR were asymptomatic compared to 0% of the fluoxetine group. These findings indicate the possibility EMDR has a longer lasting effect on reducing symptoms than fluoxetine alone. Further, based on a systemic review and meta-analysis of 11 clinical trials (n=547) by Khan et al. (2018), EMDR has also been shown to produce better outcomes than CBT at relieving symptoms of PTSD and anxiety.

## **Initiatives and Policy**

While strategies to address ACEs remain inconsistent and vary based on practice setting, efforts to address ACEs are evolving and becoming more streamlined. As of July of 2020, more than half of the United States had passed legislation regarding ACEs, and at least 37 states had a plan to implement initiatives pertaining to ACEs, and trauma-informed resiliency policy (Novoa & Morrissey, 2020). At that time, Washington, Vermont, Colorado, and California were addressing ACEs (Novoa & Morrissey, 2020). One example is the first-in-the-nation initiative for addressing ACEs was launched in the beginning of 2020 in the state of California. The initiative named, ACEs Aware, equips clinicians with the knowledge, tools, and resources to address ACEs in the clinical setting (SCDHCS, 2020b). Through the initiative, clinicians in California may bill and receive reimbursement for ACE screening upon completion of a free two-hour training on screening for ACEs, recognizing and responding to symptoms of toxic stress, and providing evidence-based practices. Although the training is designed to educate health care professionals in California, the training is available to all clinicians with a National Provider Identifier, Board Certification ID, and a service/practice address. The training can be accessed at <https://training.acesaware.org/>. Additionally, clinicians have access to resources for incorporating ACE screening into practice. The resources include the following: clinical workflow for incorporating an ACE screening tool; toxic stress risk assessment algorithm; list of odds ratios for AAHCs; and guidance for treatment plans and follow up care (SCDHCS, 2020b) (see Appendix D for the clinical workflow, Appendix E for the algorithm, and Appendix F for the list of health conditions). Other resources provided by ACEs Aware include a provider directory for patients to find providers who are “ACE aware”, educational events, clinical ACE resources, and a provider toolkit for screening and responding to ACEs (SCDHCS, 2020b). As of

October of 2020, nearly 14,000 health care professionals had completed the provider training (ACEs Aware, 2020). Data from the first nine months prodigiously supports the efficacy and success of the ACE Aware initiative. For example, after completing the training, 81% of health care professionals who had previously not been screening for ACEs planned to implement routine ACE screening after completing the training. Further, 91% of health care professionals felt confident and able to make practice changes to address ACE (ACEs Aware, 2020).

In 2019, the Congress of Delegates for the American Academy of Family Physicians (AAFP) released a policy encouraging physicians to receive education on ACEs and the potential impact on a patient's health (American Academy of Family Physicians [AAFP], 2019). AAFP also states they support programs aimed at preventing ACEs, reducing the severity of acute consequences, and treating long-term consequences of ACEs. Lastly, AAFP supports ACE-related research and advocates for public policies and legislation to support initiatives to address ACEs (AAFP, 2019).

Though the ACEs Aware initiative and support from the AAFP are not exhaustive of current ACE-related initiatives and policy, as mentioned, several states and key stakeholders are committed to addressing ACEs. Data from the ACEs Aware initiative reveals the benefits to enhancing awareness of ACEs among health care professionals. Further, results indicate a significant increase in clinician confidence to effectively address ACEs. More encouraging is the increase in health care professionals who plan to change their practice to conduct ACE screenings as identification is key to abating the consequences associated with adverse childhood experiences. Perhaps, the number and variety of health care settings incorporating ACE-related practices will increase as ACE-related research evolves and initiative continue to be efficacious.

## **Clinical Encounters**

Throughout the clinical encounter, a therapeutic relationship is fostered through maintaining rapport throughout the visit, asking open-ended questions, offering reflective statements and summary/clarifying statements, and preparing the patient before the physical exam (Mauksch, 2011). Providing instructions, asking for permission, and setting expectations are other ways to ease tension and promote comfort from the earliest stages of a clinical encounter (Lipton & Fernandez, 2020). Clinicians may also consider asking the patient what can be done to improve comfort and if they would prefer a chaperone during the visit regardless of gender. Suggestions for setting up an exam room to promote relaxation include offering warm blankets and warm socks on the exam table footrests, soft lighting, and calming background noise (Lipton & Fernandez, 2020).

Establishing and continuing to foster a therapeutic relationship eases tension and provides comfort in the earliest stages of a clinical visit. Examples of establishing rapport with a patient include introducing self, offering a warm greeting, and maintaining eye contact (Mauksch, 2011). Other helpful tips for interactions include an expression of kindness, reassurance, and acceptance, strong verbal or non-verbal acts of empathy, and frequent use of words, such as ‘please’ and ‘thank you’ (Lipton & Fernandez, 2020; Mauksch, 2011). Additionally, role-modeling assertive and emotionally expressive behavior can be an effective tool to promote self-regulation among patients with ACEs (Roberts, 2019).

Conversely, patient-clinician interactions have the potential to be harmful. Patients with ACEs may be triggered by humiliating, impersonal, or disrespectful interactions, rushed or abrupt visits, use of demanding or condescending tone, and a lack of collaboration (Lipton & Fernandez, 2020). Clinical encounters may also be triggering for patients with ACEs due to the



lack of control/autonomy, low health literacy, invasion and touching of body, fear of pain, and exam rooms are often uncomfortable and cold. Additionally, common phrases used by clinicians may be triggering for patients with ACEs. For example, avoid referring to the exam table as a bed as some patients may associate traumatic experiences with a bed and replace the word ‘stirrups’ with ‘footrests’ (Lipton & Fernandez, 2020).

Another consideration during clinical encounters is health literacy. Individuals with ACEs may have low health literacy increasing their risk for misunderstanding and interruptions in care (Lipton & Fernandez, 2020). Up to 80% of medical information provide by clinicians is forgotten by patients upon exiting the clinic. Of the remaining information retained, about half of the information is remembered inaccurately. Clinicians should avoid assuming college students understand or will retain information regarding their health even though students are educated and literate. Short videos, pamphlets, models, or pictures are helpful to arouse interest and improve education. Lastly, when applying the teach-back method, clinicians should place an emphasis on themselves rather than the patient; for example, “Will you please repeat what I just said? I want to make sure I did a good job explaining this important information.” “Sometimes I rush or I’m not clear and my explanations may be confusing.” (Lipton & Fernandez, 2020).

## **Theoretical Framework**

### **Trauma and the Self**

The Constructivist Self Development Theory (CSDT) has been utilized in many ways as a framework for understanding the overall impact of trauma on one’s frame of reference, psychological needs, ego resources, the memory system, and self-capacities (Pearlman, 1997). Based on the CSDT framework, Pearlman (1997) developed Trauma and the Self (TST), a theoretical and clinical perspective of the impact of trauma on oneself and a supporting guide for

clinicians on how to help an individual heal from their trauma. Key components of TST include an understanding of the impact childhood abuse and neglect have on an individual's self-capacities which include connection, affect regulation, and self-worth.

An individual's self-capacities, such as a positive sense of self-worth, the ability to maintain connection with others, and the ability to self-regulate emotions develop early in life. The development on an individual's self-capacities is fostered by their relationship with a caregiver. A caregiver who protects and cares for a child will yield functional self-capacities. Conversely, an environment of abuse and neglect will impede the development of one's self-capacities. Thus, impaired self-capacities may cause a lack of connection to stable sources of support during childhood which creates an inability to feel safe and trust others. Therefore, a traumatized individual will feel unable to help or protect themselves and feel as though others won't either. Consequently, this may result in an inability to develop rapport and trusting healthy relationships between these patients and their healthcare providers.

As an adult, an individual without an ability to self-regulate feelings and emotions may somaticize, suppress or avoid emotions, and/or process emotions through action, such as alcohol or drug use and harm to oneself or others (Pearlman, 1997; Van Der Kolk, 2014). In an environment of abuse and neglect, a child lacks support in properly identifying and naming emotions and needs. Hence, a child may learn to not feel, or engage in denial, dissociation, or self-destructive behaviors. Further, they may register emotions as physical sensations; they may look furious but deny anger or they may seem terrified but say they're fine. As a result, individuals may 'shut down' which may contribute to somatic complaints (Pearlman, 1997; Van Der Kolk, 2014). Examples of somatic complaints include cardiac, muscle, and chronic pain, gastrointestinal symptoms such as bowel irregularities, headaches, unexplained dizziness,

tinnitus, and blurry vision (Boyratz & Waits, 2018; Gupta, 2013; Pearlman, 1997; Van Der Kolk, 2014). Other consequences of alexithymia include extreme responses to stress such as numbness or excessive anger contributing to a lack of self-protection, high rates of revictimization, difficulty feeling pleasure, sensuality, and having a sense of meaning (Van Der Kolk, 2014). Overall, a misunderstanding of one’s emotions leads to inadequate self-soothing.

During childhood, self-worth and an opinion of one’s value is based on recognition from others. As an individual develops, they identify as being either a good or bad person based on their perceived self-worth. Negative self-worth developed during an abusive childhood may be caused by a child feeling unable to make their abuser happy or meet their needs and demands. Thus, the affected child may become confused regarding their personal value leading to shame, low self-esteem, and self-loathing.

Psychological and behavioral sequelae of child abuse and neglect lead to poor health outcomes. To illustrate related sequelae, examples of behaviors and perceptions of oneself or others related to each self-capacity as outlined by TST are listed in table 2.

**Table 2**

*Psychological and Behavioral Sequelae*

| Connection   | Affect regulation   | Self-worth  |
|--|---|---|
| <ul style="list-style-type: none"> <li>▪ Non-existent or minimal resources to utilize in times of crisis</li> <li>▪ Loneliness</li> <li>▪ Dysfunctional relationships</li> <li>▪ Difficulty establishing or managing boundaries</li> <li>▪ Feeling as though no one cares</li> <li>▪ Avoiding relationships and connections with others</li> </ul> | <ul style="list-style-type: none"> <li>▪ Loathe, detest, or rage against themselves</li> <li>▪ Destructive behaviors, such as cutting, burning, or punching</li> <li>▪ Engaging in risk-taking behavior</li> <li>▪ Inability to experience or name feelings</li> <li>▪ Expression of one’s misunderstood feelings in the form of anger, violence, and bullying</li> </ul> | <ul style="list-style-type: none"> <li>▪ Feeling “less than” or inadequate</li> <li>▪ Struggle to accept or feel good about themselves</li> <li>▪ Feel as though they’re not entitled to exist</li> <li>▪ Feelings of shame, self-loathing, or despair</li> </ul> |

Recognizing impaired self-capacities and offering intervention strategies is pivotal in helping an individual heal from their trauma. An individual who has been traumatized may suffer from behaviors listed in Table 2 which may lead them to seek care from a clinician. Again,

because of their trauma, an individual may present with complaints of loneliness, dysfunctional relationships, a lack of understanding why they feel how they do and feeling as though they're not a good person. Therefore, a clinician can best serve traumatized individuals by understanding the impact of trauma and effective intervention strategies. Intervention strategies suggested by TST focus on developing a therapeutic relationship, exploring trauma history and meanings, and conducting exploratory work. At the core of TST is exploratory work, such as an assessment of an individual's thoughts, opinions, perspectives, and cognitive/behavioral work. In an effort to avoid re-traumatization, a clinician must establish a therapeutic relationship with an individual exposed to trauma before exploratory work can begin.

According to TST, a therapeutic relationship is based on trust, rapport, collaboration, thought provocation, and an ability for a clinician to positively challenge a patient. Through these efforts, a patient will feel they have a voice, they can break their silence and shame associated with their trauma and name their feelings. The targeted approach of a therapeutic relationship aims to convey and instill hope in a traumatized individual.

Another key intervention as defined by TST is to help the patient explore their trauma history. Therapeutic work in exploring trauma aims to make connections with triggers in the past and present. An example of a tool to guide identification of an individual's trauma is ACE screening. By eliciting specific experiences, an individual may then identify ways in which they cope. Some traumatized individuals have been found to cope with drug abuse and dissociative and self-destructive behaviors. A healthy part of the healing process is to acknowledge painful feelings are normal and an individual has a choice regarding how they respond to their feelings. Self-soothing practices, such as listening to music, painting, reading, gardening, or being in nature are encouraged. Activities which allow an individual to connect with their body, such as

yoga, exercise, and massage can be helpful for an individual to identify ways to respond to their stress. TST defines the goal of exploration of trauma and feelings is for an individual to become acquainted and gain an understanding of their feelings.

Another intervention strategy suggested by TST is cognitive/behavioral work focused on helping an individual value themselves. A key component of the healing process is to help an individual identify talents and strengths and encourage them to seek positivity. For example, the practice of positive self-talk through words of affirmation allows an individual to inculcate a healthy image of oneself.

TST is a helpful theoretical and clinical perspective for clinicians to use when caring for traumatized individuals. Components of TST help to identify the impact of childhood abuse and neglect, recognize psychological and behavioral sequelae in a presenting patient, and suggest interventions to aid in the healing process (Pearlman, 1997). TST is a foundation for which a clinician may build their clinical practice to assist in providing comprehensive care for individuals exposed to trauma.

## **CHAPTER 3: METHODS**

### **Overall Project Design**

Many evidence-based practices have been established to address ACEs globally, however, little evidence supports strategies for student health clinicians to address ACEs among college students. Therefore, a community needs assessment was utilized for this dissertation to identify clinician needs and assess strengths and resources in the student health setting to address ACEs among college students. A community needs assessment fulfilled the purpose of this dissertation through collecting data, developing a summary of the needs assessment results, and presenting the results to the clinicians at the NDSU Student Health Services (SHS) clinic.

The community needs assessment used a two-phase mixed method design to collect and analyze quantitative and qualitative data pertaining to the three known effective approaches to addressing ACEs: clinician awareness, identification of ACEs, and ACE-related interventions. Quantitative data was obtained through an electronic Likert scale survey disseminated through Qualtrics. The qualitative data was gathered from individual interviews utilizing a semi-structured questionnaire consisting of open-ended questions. A two-phase mixed method design provides a connection between quantitative and qualitative data and, often, the qualitative data is gathered after the quantitative data. Therefore, the two-phase mixed method design worked well for the needs assessment as the collection of the quantitative data supported and helped guide the next phases of implementation including the qualitative data.

### **Implementation Plan**

Through the Plan-Do-Study-Act (PDSA) cycle, a systematic approach was utilized to create an implementation plan to successfully meet the objectives and fulfill the purpose of the dissertation. Widely used in healthcare setting, the PDSA cycle serves as a tool to test a change

by developing a plan, carrying out the plan, observing and learning from the plan, and determining opportunities for change based on findings (Institute for Healthcare Improvement, n.d.; Minnesota Department of Health, n.d.). Therefore, the PDSA cycle was an ideal model for this community needs assessment as the stages of implementation are analogous. Specifically, the four steps involved in a community needs assessment are planning and organizing, data collection, coding and summarizing the needs assessment results, and sharing the results with the community and stakeholders. The PDSA cycle is typically executed by the following four stages:

*Plan* – Recruit a team, identify roles and responsibilities, set timelines, and establish a meeting schedule. Draft an aim statement used to answer the following questions: 1) What are we trying to accomplish? 2) How will we know that a change is an improvement? 3) What changes can we make that will result in an improvement? Examine the current process. Describe the problem. Identify causes and alternatives.

*Do* – Carry out the plan while being sure to collect data to aid in evaluation throughout the process.

*Study* – Analyze gathered data from the do stage by utilizing the aim statement drafted in the plan stage.

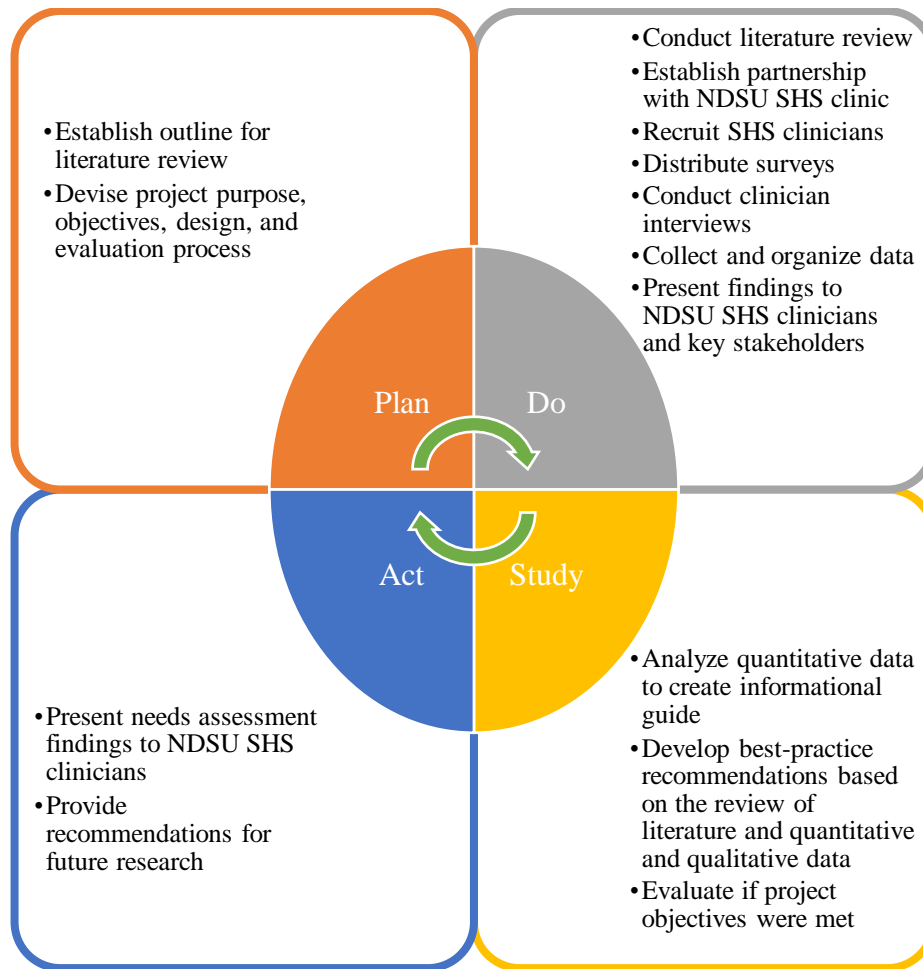
*Act* – Reflect on plan and outcomes. Begin to use the plan if it resulted in success. If the plan was not successful return to the plan stage to develop a new plan.

### **Plan-Do-Study-Act**

The following provides a description of the application of the PDSA cycle to meet the objectives of the community needs assessment. See Figure 2 below for an abbreviated description of the plan, do, study, and act phases.

**Figure 2**

*Plan-Do-Study-Act Model*



***Plan***

First, a dissertation committee was selected to assist the co-investigator. Then, the committee chair and co-investigator created a plan for the purpose, objectives, project design, and evaluation process to successfully complete the community needs assessment. Additionally, a timeline was established. Next, the principle- and co-investigator decided upon an implementation site and requested permission from the site. Lastly, prior to the implementation phase of the community needs assessment, an extensive review of literature was conducted to gain a comprehensive understanding of ACEs.



## ***Do***

A comprehensive literature review was conducted utilizing the following databases, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Academy Search Premier, PubMed, Cochrane Library, ProQuest, and Google Scholar. Keywords for the search were categorized by the following themes: impact of ACEs, evidence-based ACE screening guidelines, and current ACE screening practices in student health (see Table 3). Inclusion criteria for published articles included full text, peer reviewed, written in English language, and a publication date between 2010-2020.

**Table 3**

### *Search Strategies*

| Impact of ACEs                | Evidence-based ACE screening guidelines | Current ACE screening practices in student health |
|-------------------------------|---|---|
| Addiction                     | Clinician                               | College   |
| Adolescent                    | Evidence-based                          | Emerging adult                                    |
| Adolescent health             | Guidelines                              | Screening   |
| Adverse childhood experiences | Interventions                           | Student   |
| Alcohol                       | Primary care                            | University  |
| Anxiety                       | Protective factors                      | Young Adult                                       |
| Binge drinking                | Resilience                              |   |
| Cannabis                      | Screening                               |   |
| Child maltreatment            | Trauma informed                         |   |
| Cigarette                     |   |   |
| Coping mechanisms             |   |   |
| Depression                    |   |   |
| Emotional abuse               |   |   |
| Emotion regulation            |   |   |
| Impulsivity                   |   |   |
| Marijuana                     |   |   |
| Mental health                 |   |   |
| Negative life event           |   |   |
| Nicotine                      |   |   |
| Physical abuse                |   |   |
| PTSD                          |   |   |
| Risk behavior                 |   |   |
| Sexual abuse                  |   |   |
| Stress                        |   |   |
| Substance                     |   |   |
| Tobacco                       |   |   |
| Trauma                        |   |   |

Further, a partnership was established with the NDSU SHS clinic. Participants were recruited by an email which explained the project purpose, objectives, and activities, provided information regarding voluntary consent, and offered instructions on how to complete the next step of the implementation phase (see Appendix G). A key stakeholder was the clinic director who assisted in recruiting participants by forwarding the recruitment email to seven clinicians who met the inclusion criteria for the project. The email was sent by the clinic director on August 20, 2020.

Within the recruitment email included a Qualtrics link to a seven-question Likert scale survey which could be accessed online by a computer, phone, or other electronic device. Completion of the survey provided consent for participation. Subjects were informed they could withdraw from the project at any time without explanation or penalty. Originally, the survey link was supposed to be available for seven days. However, due to a less than 50% response rate, the clinic director sent a reminder email to the clinicians once the deadline was reached. As a result, the survey was open for a total of 14 days and closed on September 4, 2020. While the survey responses were anonymous, upon completion of the survey, respondents were automatically redirected to a site not linked to their responses to obtain their email address for further communication regarding the next phase of the project.

Next, an informational guide was developed based on findings from the survey data and the review of literature to provide the participants an understanding of their colleagues' awareness of ACEs, efforts to identify ACEs, and willingness to address ACEs. Moreover, the informational guide was utilized as a tool to enhance clinician awareness of ACEs and the prevalence and impact of ACEs on college students. Additionally, the informational guide ensured the participants were prepared to provide well-informed answers to the interview

questions. The informational guide was disseminated to the participants via email and reviewed at the initiation of the participant interviews. Then, throughout the month of October, a 30-minute individual interview was conducted through Zoom, an online platform, and guided by the semi-structured questionnaire consisting of 13 open-ended questions. Thereafter, best-practice recommendations were developed based on the findings from the review of literature, survey responses, and interview data and assembled into a 24-slide PowerPoint document. Lastly, the best-practice recommendations were presented to the participants and key stakeholders on January 12, 2021 in a conference room at the SHS clinic building. The co-investigator invited the participants to attend the presentation and the clinic director invited the remaining clinic staff. In-person attendance included four study participants, one clinic nurse, one NDSU doctoral nurse practitioner student, and the associate director of the clinic. One participant and the clinic director attended via Zoom. One participant was unable to attend the presentation. The presentation was scheduled for one hour but, due to technical difficulties, the duration of the presentation was 45-minutes.

### ***Study***

First, literature regarding ACEs was reviewed to inform current evidence-based practices to address ACEs and support the need to incorporate ACE-related practices in the student health setting. Second, the survey data was examined to identify clinician awareness of ACEs, identification of ACEs in the student health setting, and clinician knowledge and willingness to offer ACE-related interventions. Third, the results from the survey and the literature review were compared to determine areas of opportunity to enhance student health clinician awareness regarding ACEs and the impact and prevalence of ACEs among college students. Fourth, the clinician interview data were analyzed to discover response themes which include ACE

awareness, challenges providing care to students exposed to ACEs, benefits and barriers to ACE screening, strategies to overcome barriers, implementing ACE screening, mitigating ACE-associated health conditions, and campus and community referrals. Lastly, the findings from the review of literature, survey responses, and interview data were combined to assess for similarities and differences in current ACE-related practices in the student health setting and established evidence-based approaches to address ACEs.

### ***Act***

Through the actionable steps of the community needs assessment, SHS clinicians enhanced their knowledge regarding the biological and cumulative effects of ACEs. As a result, many of the clinicians expressed a need to broaden their focus of care, especially for students with ACEs, beyond mental health to include physical health. Further, clinicians are interested and willing to incorporate best practices to address ACEs among college students. Information gathered from the interviews revealed varying opinions regarding the best way to administer the ACE screening tool. Although, many clinicians expressed a plan to augment their mental health visits by assessing for the 10 categories of ACEs. Further, the clinicians plan to seek education regarding EMDR from a trained counselor at the campus counseling center. Lastly, the clinicians intend to adapt and use the list of community resources to provide trauma-focused referrals for students with ACEs.

### **Setting**

The NDSU SHS clinic was chosen as the setting for the community needs assessment because the clinic is a health care agency which serves college students. The SHS clinic is an entity of NDSU and located on-campus. Varying services provided by NDSU SHS clinic are available to undergraduate, professional, and graduate students. Overall, there were 8,625 annual

visits and 1,426 mental health visits at the SHS clinic during the 2019-2020 fiscal year. In the fall of 2020, total enrollment for NDSU was 12,846 students (NDSU, 2020c). The majority of NDSU students were White 82.86%, 4.91% non-resident alien, 3.5% two or more races, 2.63% Hispanic or Latino, 2.57% Black or African American, 1.7% Asian, 1.19% not specified, 0.58% American Indian/Alaskan Native, and 0.05% Hawaiian/Pacific Islander. Further, 46.05% of students were Minnesota residents and 41.52% were residents of North Dakota and 50.83% were male and 49.17% were female (NDSU, 2020c). In 2019, most enrolled students were freshman and between the ages of 18-24 years of age, 71.09% and 82.08% respectively (NDSU, 2019). These data were not obtained in 2020.

NDSU student fees provide access to the SHS clinic as well as the fitness and counseling centers. NDSU's SHS clinic offers numerous services, such as physical and mental health care, laboratory, radiology, dietary, and sexual assault prevention, and advocacy. NDSU SHS clinic employs seven nurse practitioners, one physician, five registered nurses, and various support staff (NDSU, 2020a). Acute care, preventative care, primary care, sexual health, and mental health visits are the most common at SHS clinic. When a patient establishes care for a mental health visit, they must complete an initial 60-minute "mental health intake" visit which includes a comprehensive evaluation of current and past mental health concerns. The SHS clinic utilizes an online student health portal to assist in scheduling appointments, communicating with staff, uploading documents, managing payments, and deploying several forms, such as visit-related questionnaires. For example, the questionnaire for an upper respiratory illness visit asks about onset, duration, and characteristics of symptoms. Another example of a form deployed by the student health portal is the General Anxiety Disorder-7 (GAD-7) screening tool to detect the presence of an anxiety disorder. The completed forms are then auto populated to the patient's

chart through the electronic health record, AllScripts, Thereafter, prior to entering the exam room, clinicians review the forms to assist in the diagnosis and treatment plan.

In addition to general practices of care, the SHS clinicians promote health through prevention and advocacy efforts targeting sexual assault, drug use, and sexual health. For optimal care related to these services, SHS clinicians are also familiar with community resources available within Fargo, ND, for which referrals are made available (NDSU, 2020a). NDSU and community resources include assistance with food, housing, childcare, transportation, financial support, disability services, student health, counseling, safety and security, and trauma survivor support (NDSU, 2020b).

### **Sample/Sample Size/Recruitment**

The targeted participants for the community needs assessment were clinicians employed by NDSU SHS clinic. In the fall of 2019, while the co-investigator was completing clinical hours at the NDSU SHS clinic two of the clinicians expressed interest in the topic of ACEs. This interest led the co-investigator to email the clinic director requesting clinician participation in the project. Inclusion criteria for participants included (1) a degree and certification as either an advanced practice registered nurse or medical doctor, (2) employment at NDSU SHS clinic, (3) informed consent provided prior to participation. A key stakeholder in the project was the clinic director who assisted the co-investigator. Convenience sampling was performed by sending a recruitment email to the clinic director who forwarded the email to seven clinicians employed by the SHS clinic. The email consisted of an invitation for participation, an explanation of the project purpose, objectives, and activities, information regarding voluntary consent, and directions for the first step of the implementation phase. Consent was indicated by completing an

electronic survey. Six clinicians completed the survey by the deadline and one clinician did not respond to the recruitment email.

The community needs assessment was conducted in accordance with the regulations and policies of the NDSU Institutional Review Board (IRB). The project approval was granted on August 20, 2020 (see Appendix A). The project was amended on October 5, 2020 to address a title change, removal of three questions from the survey, and removal of one question and addition of one question to the interview questionnaire. The project amendment was granted on October 8, 2020 (see Appendix B). In accordance with federal regulations, the project was declared exempt under category 2b.

### **Evidence-based Project Interventions/Activities**

Due to limited evidence regarding ACE-related practices specific to the student health setting, previously tested instruments were unavailable. Therefore, original instruments were developed. For objective one, a seven-question Likert scale survey was disseminated through Qualtrics, a survey software program (see Appendix H), to assess clinician knowledge and ACE-related practices occurring in the student health setting. For objective two, an informational guide was created and contained an overview of ACEs, a description of the ACE screening tool, and a presentation of survey data was developed into a 13-slide PowerPoint document (see Appendix I). For objective three, a semi-structured interview questionnaire consisting of 13 open-ended questions (see Appendix J) was utilized. The questionnaire aimed to identify the impact of ACEs on a clinician's practice, strategies to support effective interventions, and feasibility of ACE screening in the student health setting. Lastly, for objective four, a 24-slide PowerPoint document was created which included the 13 slides from the informational guide, results from the clinician interviews, and evidence from the literature to support best-practices

recommendations for addressing ACEs in the student health setting (see Appendix K). A list of resources was also provided to the clinicians and consisted of campus and community referral sites including types of payment accepted and recommendations for book and electronic resources, such as smartphone apps, YouTube videos, and Podcasts (see Appendix L).

Resources required for the community needs assessment were increased staff time to complete the electronic survey, participate in the individual interview, and attend the presentation of the project findings. The co-investigator conducted the transcription of audio recordings and compilation of data from the survey and the interview.

### **Evaluation/Outcomes/Data Analysis**

The purpose of the community needs assessment was to identify clinician needs and assess strengths and resources in the student health setting to address ACEs among college students. Further, the overall goal was to generate best-practice recommendations for addressing ACEs among college students. The following provides an evaluation of how the implementation phase of the dissertation met the objectives of the community needs assessment. See table 4 below for an abbreviated description of the project activities and evaluation of the dissertation objectives.



**Table 4***Objectives, Activities, Evaluation*

| Objective  | Project Activities   | Evaluation  |
|--|--|---|
| Assess clinician awareness of ACEs, identification of ACEs in the student health setting, and clinician willingness to offer ACE-related interventions through a survey of student health clinicians | Electronic seven-question Likert scale survey                      | Completion of surveys<br>Collected and organized data to develop an informational guide   |
| Develop and disseminate an informational guide to enhance clinician awareness regarding ACEs and the impact and prevalence of ACEs among college students  | 13-slide PowerPoint document                                       | Disseminated informational guide to participants via email and reviewed during interviews |
| Identify the impact of clinician awareness and identification of ACEs on a student health clinician's practice and identify suggestions for ACE-related interventions                                | Individual interviews guided by a semi-structure 13-question guide | Completion of interviews<br>Collected and analyzed data                                   |
| Develop best-practice recommendations for addressing ACEs in the student health setting and present findings to participants and key stakeholders  | 24-slide PowerPoint document                                       | Presented findings to the NDSU SHS clinicians   |

Objective one was met by the completion of anonymous surveys obtained through Qualtrics. Data was manually exported from the Qualtrics software and entered into an Excel document. Once the survey closed, the survey and survey data were deleted from Qualtrics. Survey data were analyzed by the percentage of responses obtained by Likert scale questions. The results were then formatted into graphs and categorized by clinician awareness of ACEs, practices to identify ACEs, and ACE-related interventions.

Objective two was met by the development of an informational guide. Survey results indicated a need for additional information regarding ACEs, the ACE screening tool, and ACE-related interventions. In response to the survey and to prepare the participants for the interview, the following topics outlined in Chapter Two were synthesized and included in the informational guide: 1) definition and description of ACEs; 2) prevalence of ACEs; 3) toxic stress response as a result of ACEs; 4) symptomology and maladaptive coping; 5) AAHCs; 6) behaviors among emerging adults, particularly, college students; 7) overview of the ACE screening tool. The

informational guide was disseminated to each clinician via email and reviewed at the beginning of the interviews.

Objective three was met through the completion of interviews. Each interview was recorded through Zoom and saved to a single-user unique password protected computer. The audio recordings were kept confidential and were inaccessible to anyone other than the co-investigator. Thereafter, the unidentifiable interview responses were transcribed into a Word document. Analysis of the qualitative data began with transcribing the entirety of each interview absent of identifying information. Data were then deciphered to separate responses by categories established in the interview questionnaire. Data pertaining to each category was saved in separate documents titled by the corresponding category. Data from each category was analyzed for keywords and similarities and differences in responses. Finally, data was organized by ACE-related themes which include awareness, identification, and intervention.

Lastly, objective four was met by the development of best-practice recommendations for clinicians in the student health setting and a presentation of the needs assessment findings to key stakeholders. Data gathered from the literature review, surveys, informational guide, and interviews were used to develop best-practice recommendations for addressing ACEs in the student health setting. Best-practice recommendations include the following:

- enhance clinician understanding of ACEs and trauma-informed care
- provide specific guidance for student health clinicians
- address barriers to utilizing the ACE screening tool
- incorporate the ACE screening tool in the student health setting
- identify students with ACEs based on ACE-associated symptoms
- assess risk for toxic stress

- develop therapeutic relationships
- provide evidence-based interventions to regulate the stress response
- assist in building resilience
- promote protective factors
- encourage positive coping mechanisms
- educate patients on ACEs, toxic stress, risk for ACE-associated health conditions, and signs of distress
- offer referrals as indicated

The best-practice recommendations were assembled into a PowerPoint document and presented to the NDSU SHS clinicians. In-person attendance was four study participants, one clinic nurse, one NDSU doctoral nurse practitioner student, and the associate director of the clinic. One participant and the clinic director attended via Zoom. One participant was unable to attend the presentation. The presentation was scheduled for one hour but, due to technical difficulties, the duration was 45-minutes.

## CHAPTER 4: RESULTS

### Survey

A total of six clinicians participated in the survey. Table 5 demonstrates the quantitative data based on clinician awareness of ACEs, practices to identify ACEs, and ACE-related interventions.

**Table 5**

#### *Survey Results*

| Clinician awareness of ACEs   | Practices to identify ACEs   | ACE-related interventions  |
|---|--|--|
| <ul style="list-style-type: none"><li>• &lt;20% of clinicians know the 10-categories of ACEs</li><li>• &gt;60% of clinicians rate their knowledge level as average or above average on the impact of ACEs on neurodevelopment and risk-taking behaviors along with AAHC</li></ul> | <ul style="list-style-type: none"><li>• Five out of six clinicians are unable to identify individuals exposed to ACEs based on symptoms</li><li>• Four in six clinicians screen for ACEs at some point during their visits</li></ul> | <ul style="list-style-type: none"><li>• 80% of clinicians are likely to offer interventions for students exposed to ACEs</li><li>• About 30% of clinicians are unsure of campus and community referral sources</li></ul> |

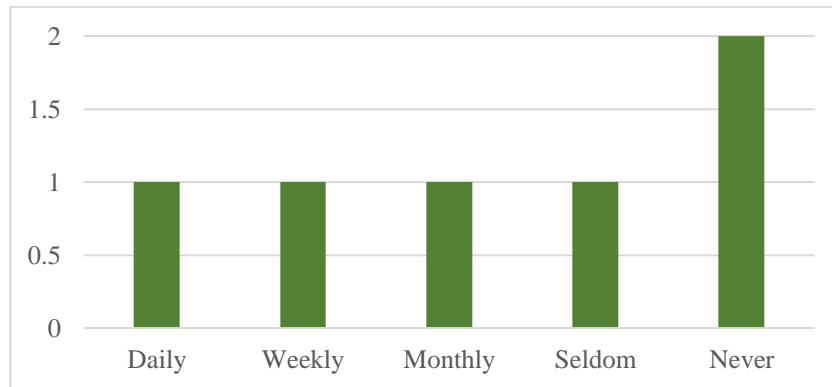
Results of the survey indicate the majority of participants did not know the 10 categories of ACEs (83%) and the majority of them rated their knowledge level as average or above average on the impact of ACEs on neurodevelopment and risk-taking behaviors along with ACE-associated health conditions (33% and 34% respectively). One clinician felt able to identify students with ACEs based on symptoms and two-thirds felt neutral about their ability.

At the time of the survey, more than half of the participants were conducting ACE screening during clinic visits (67%) (see Figure 3). Only one participant reported an unwillingness to offer interventions for students exposed to ACEs (see Figure 4). About 30% of the participants were unsure of campus and community referral sources for students exposed to ACEs. Finally, responses to the last question regarding ways to mitigate ACE-associated health conditions among college student with ACEs include the following: 1) something you encounter

often with a patient, especially those presenting with mental health symptoms; 2) (need) availability of therapy options/support options for students who have history of ACE and increased awareness from healthcare community regarding identification of ACE and risks associated.

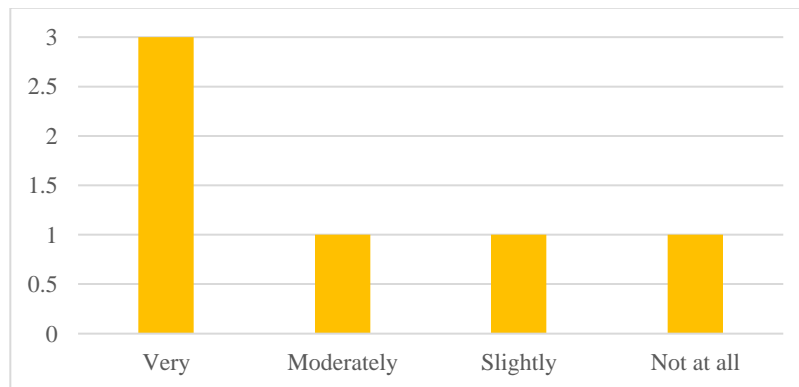
**Figure 3**

*Occurrence of ACE Screening*



**Figure 4**

*Likelihood to Offer ACE-related Interventions*



### **Informational Guide**

Findings from the survey indicated a need for additional information regarding ACEs, the ACE screening tool, and ACE-related interventions. In response to the survey and to prepare the participants for the interview, the following topics outlined in Chapter Two were synthesized and

included in the informational guide: 1) definition and description of ACEs; 2) prevalence of ACEs; 3) toxic stress response as a result of ACEs; 4) symptomology and maladaptive coping; 5) AAHCs; 6) behaviors among emerging adults, particularly, college students; 7) overview of the ACE screening tool (see Appendix I for the informational guide PowerPoint slides).

### **Interview**

Clinician responses to the interview questionnaire are organized by ACE-related themes which include awareness, identification, and interventions. Further, interview responses are categorized by the following topics: ACE awareness, challenges, benefits and barriers to ACE screening, strategies to overcome barriers, implementing ACE screening, mitigating ACE-associated health conditions, and campus and community referrals (see Table 6 provides a brief overview of the interview results).

**Table 6***Clinician Interview Responses*

| Awareness                          |   |
|------------------------------------|---|
| 1. ACE awareness                   | <ul style="list-style-type: none"> <li>- Previously unaware</li> <li>- Need to broaden focus beyond mental health to include care of physical health</li> <li>- Provides more perspective about cumulative effects</li> <li>- Consider ACEs as a differential</li> <li>- Knowing the sequelae can be utilized to promote physical health</li> </ul>   |
| 2. Challenges                      | <ul style="list-style-type: none"> <li>- Insufficient financial means for students to seek general and mental health care</li> <li>- Busy and overwhelmed with school</li> <li>- Denial and/or disinterest in addressing trauma</li> <li>- Patients don't follow up</li> </ul>  |
| Identification                     |   |
| 3. Benefits                        | <ul style="list-style-type: none"> <li>- Helps to understand possible causes of symptoms and severity and risk for health complications</li> <li>- Useful in tailoring questions toward addressing traumatic events</li> <li>- Only needs to be done one time; a clear and easy form to complete</li> <li>- Completing the screening tool may give students permission to discuss their experienced trauma</li> <li>- Gateway to address trauma for students who may have normalized their experiences</li> </ul> |
| 4. Barriers                        | <ul style="list-style-type: none"> <li>- Form fatigue / one more expectation of the students</li> <li>- Lack of clinical utility</li> <li>- Answering the questions may be intimidating or sensitive</li> <li>- Students already feel they're at the clinic too long</li> </ul>   |
| 5. Strategies to overcome barriers | <ul style="list-style-type: none"> <li>- Obtain interest and buy-in from administration, clinicians, and staff</li> <li>- Perform a trial of utilizing the screening tool</li> <li>- Include the specific categories in the mental health intake form rather than adding an additional form</li> <li>- Make the form non-mandatory for the students</li> </ul>  |
| Interventions                      |   |
| 6. Implementation of ACE screening | <ul style="list-style-type: none"> <li>- Trauma-informed care training</li> <li>- Need more counselors at the NDSU counseling center to accept the influx of new patients through identification by screening tool</li> </ul>   |
| 7. Mitigating AAHC                 |   |
| 8. Campus & community referrals    | <ul style="list-style-type: none"> <li>- Need an understanding of what types of ACE-associated risk for chronic conditions and how to address and screen for those conditions</li> <li>- Identify which facilities or specific counselors have an interest in treating trauma (on-campus and in the community)</li> </ul>   |

## **Awareness**

### ***ACE Awareness***

Clinicians were asked to describe the most common types of clinical encounters seen at NDSU SHS clinic. All the clinician's reported the most common visit types are mental health intake and follow-up visits. Other examples of visit types include upper respiratory tract infection, urinary tract infection, contraceptive management, STIs, annual wellness exams, gastrointestinal/abdominal pain, headaches, and injuries. All the clinicians feel their current practice addresses some aspects related to ACEs. A few of the clinicians reported being previously unaware of the physical effects of ACEs. Those clinicians felt they gained perspective by learning about ACEs and the cumulative effects and discussed broadening their practice to focus beyond mental health management to include care of physical health conditions, particularly long-term health problems. A clinician stated, "we need to consider ACEs as a differential." Another described the physical impact of ACEs:

Most don't understand the breadth and depth of the physical aspects, more so, people think about psychological impacts into adulthood. Some of the physical impacts are not as well-known but certainly emotional and mental health and physical issues can significantly impact our patients throughout their adulthood.

Currently, clinicians are screening for past abuse (sexual, mental, physical, and emotional) but specific events, such as ACEs are not assessed. Regarding the impact of learning about ACEs from the informational guide, clinicians made the following comments: 1) glad to learn about the ACE screening tool because it seems easy to use, provides a consistent assessment, and addresses 10 major categories of childhood trauma; 2) enhanced willingness to educate students about ACEs and advocate more strongly for counseling; 3) identifying an



individual's ACE score may provide another reason to promote a healthy lifestyle; 4) the screening tool provides more ammunition for the clinician to encourage changes earlier in life; 5) ACEs are more pervasive than they realized and have a wider-reaching effect on patients.

### ***Challenges***

Clinicians reported various challenges associated with providing care to students who may have been exposed to ACEs. Finances were discussed during several interviews as a barrier to managing a patient's care and often leads to a lack of follow-up. The complexity of differing insurance coverage and copays causes uncertainty regarding which referral sites are most appropriate. Another challenge to providing care for students who may have been exposed to ACEs is availability at referral sites. For example, the counseling center on campus was identified as the main referral site for students experiencing mental health concerns. However, depending on the time of year there may be a wait list at the counseling center for students to establish care. Several clinicians reported difficulty guiding students to follow through with their recommendations, such as seeking care at the counseling center. Additionally, the clinicians had noticed a tendency among students with mental health concerns to not return for follow up visits which makes it challenging to optimize care.

Another challenge in providing care to students exposed to ACEs relates to symptomology. Some clinicians reported difficulty addressing somatic symptoms seen among individuals exposed to ACEs. Clinicians also expressed difficulty addressing severe mental health symptoms, such as loneliness, communication issues, and outburst behaviors (e.g., anger and hostility). One clinician stated, "as a provider, it can be hard to assist these students in finding social support when their behavior makes it difficult to maintain relationships." Another clinician described denial behavior among students who have experienced trauma:

An individual may have buried their feelings and emotions or think they've moved on so it can be difficult to understand the importance of addressing their trauma and hard to get them to admit they need help.

One of the other clinicians added:

Sometimes it's getting a person to realize there is a tie back to childhood trauma. They feel like they've buried it emotionally and they've moved on. It's always underlying there and getting to those past issues is important. The biggest thing is getting them to admit they need to get help for it.

Lastly, as a clinician pointed out, students are busy and overwhelmed with school, jobs, and friends so adding addressing mental health needs and risk prevention may be perceived as too much to manage.

## **Identification**

### ***Benefits to ACE Screening***

ACE screening was described by several clinicians as a gateway to identifying the impact of trauma for those who may have normalized their experiences. Two other clinicians added to this by indicating universal screening for ACEs may offer students permission to discuss their trauma and concerns. Clinicians shared similar experiences when referring a student to the counseling center. When reviewing the notes provided by the counseling center, at times, they have found students share a different story or more details regarding their history of trauma than what was shared with the clinician. By utilizing the screening tool to inquire about specific traumatic events, students may feel more open to explore their trauma with the clinician.

Additionally, clinicians indicated the brief and clear format of the screening tool was beneficial. Also, the clinicians thought a great advantage of the screening tool is that the tool is

completed once versus other types screening tools, such as the GAD-7 or the patient health questionnaire-2 (PHQ-2). Some clinicians said the screening tool would speed up the intake process due to the readily available ACE-related information in the chart. Further, the screening tool could be useful to tailor questions regarding mental health concerns toward the ACEs a student has experienced. The clinicians also felt the tool is a consistent way of identifying an individual's ACEs and can be used as a point of reference to encourage patients to seek appropriate interventions and healthy lifestyles. Further, the screening tool could aid in treatment of physical conditions when used in conjunction with current treatment guidelines. Lastly, a clinician described the utility of the ACE screening tool by stating, "it plants a seed about health complications associated with ACEs which could explain symptoms and what they're at risk for in the future."

### ***Barriers to ACE Screening***

Nearly all the clinicians described 'form fatigue' in reference to the number of forms students are currently expected to complete prior to their visit. Also, a large number of students have provided feedback clinical visits are already too long. Therefore, clinicians indicated incorporating an additional form isn't ideal as it would create more expectations of the students. Further, identifying an ACE score and, subsequently, addressing ACEs may worsen time constraints. A clinician pointed out: "in the practical setting it makes for a messy appt that you open a lot of pandora boxes and not sure where to go with it."

A clinician reported that for non-mental health visits, discussing childhood trauma is not typical, which may cause discomfort. Some students may be in denial about their childhood trauma and/or may be disinterested in addressing their experiences. As a result, if a student is asked to complete the ACE screening tool, some of the questions may trigger discomfort or lead

to an inaccurate score. Among other factors, one clinician reported a hesitancy to implement the ACE screening tool in their practice due to a lack of clinical guidance on how to proceed with care once an ACE score is identified. Specifically, they stated:

There isn't an easy treatment. I usually encourage people who have ACEs or have a deeper mental health history that they do counseling... because some of the diseases linked to ACEs (e.g., hypertension and obesity) are multifactorial. You can't link them directly back to ACEs and even if you could link them there isn't any guidance on what to do about it.

### ***Strategies to Overcome Barriers***

In response to the identified barriers to ACE screening, clinicians were asked to provide strategies to overcome barriers. Several clinicians reported a need to obtain interest and buy-in from administration, clinicians, and clinic staff. Clinicians would like training on how to use the screening tool. Further, they suggested ensuring clinicians understand they do not need to address an individual's ACE score. A clinician felt the screening tool would be most useful with every patient establishing care, so the information is always available for reference in future visits. A clinician suggested acknowledging form fatigue during the clinical encounter and explain ACEs and the intent for use of the ACE screening tool. Also, clinicians suggested making the screening tool non-mandatory for students. Someone also suggested trialing the screening tool to test for efficacy. A clinician felt incorporating the screening tool would be easy as many visits are patient portal directed by templates which provides consistent information among all clinicians. Lastly, a clinician suggested obtaining a patient's ACE score by including the 10 categories into the mental health intake form rather than adding an additional template.

## **Interventions**

### ***Implementing ACE Screening***

Clinicians were asked which visit types would be most appropriate for incorporating the ACE screening tool. Nearly all of the clinicians felt the tool would be most useful for mental health and sexual health visits. As for other visits, a clinician suggested a patient could be screened for ACEs if they expressed difficulty with emotions and mood. A clinician felt an annual visit may be an appropriate time to utilize the screening tool as the information provides the background and childhood experiences which fits into the wellness aspect of the visit. Several clinicians felt universal screening may be too time consuming as there is already a lot of information to cover during clinical encounters. However, one of the clinicians suggested if universal screening was implemented, clinicians may choose if they want to address a patient's ACE score. Conversely, some of the clinicians felt universal screening could be off-putting for students because questions related to trauma may be out of context for a routine or physical related visit. One of the clinicians felt the clinical setting is not an appropriate time to screen for ACEs with the tool. They suggested ACE screening is most useful in the counseling setting because the primary purpose of the clinic is medication management and referrals.

### ***Mitigating ACE-associated Health Conditions***

A clinician described the goal of college is to promote health and equip students to live within the lens of prevention now to avoid chronic illnesses later. A clinician suggested emphasized education by stating:

Something to make them (students) aware of, so you have a high ACE score you're at more risk for hypertension, obesity, poor mental health outcomes... at this point, they're

likely not suffering from many of the poor physical outcomes related to ACEs so it's more about education.

Further, the importance of screening for ACEs during emerging adulthood was described by the following:

College age is a wonderful time to address ACEs because (the students) are out of the home of origin and removed from ongoing trauma so they have their whole adult life to live free from trauma and then recover from it.

### ***Campus and Community Referrals***

On NDSUs campus, all clinicians listed the counseling center as the main referral site utilized. Two of the clinician's suggested a counselor who is trained in EMDR and another who specializes in addiction services. Other resources available to students on-campus as identified by the clinicians were the sexual advocate and a mental health nurse practitioner at the SHS clinic. Several clinicians reported using the same community referral sites including: The Village, Rape and Abuse Crisis Center, and Valley Christian. Other community sites clinicians have referred patients are Sharehouse, First Step Recovery, Drake Counseling, and Family Healthcare. All of the clinicians reported a desire to seek additional community resources and referral sites, but several felt unsure what is available to students. Clinicians also had an interest in identifying which facilities or specific counselors have an interest in treating trauma. Lastly, one of the clinicians mentioned feeling uncomfortable providing community referrals because of the immense variability in insurance coverage among patients.

## **Best-Practice Recommendations**

Findings from the review of literature, survey responses, and interview data were combined to establish best-practice recommendations for student health clinicians to address ACEs among college students. Table 7 below provides the recommendations and additional guidance for incorporating the practices in the student health setting. Additionally, see Appendix K for the PowerPoint slides developed and utilized to present the community needs assessment findings to the participants and key stakeholders.

**Table 7**

*Best-Practice Recommendations*

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| <b>Awareness</b>   |
|--|
| <ol style="list-style-type: none"><li>1. Enhance clinician understanding of ACEs and trauma-informed care<ul style="list-style-type: none"><li>- Educational opportunities<ul style="list-style-type: none"><li>◦ ACEs Aware provider training (<i>see page 73 for additional information</i>)</li><li>◦ Trauma-informed care training</li><li>◦ Webinar: free six-part series on how to screen and address ACEs in a small primary care practice (<i>see page 74 for additional information</i>)</li></ul></li><li>- Need to broaden focus beyond mental health to include physical health care</li><li>- Consider ACEs as a differential</li><li>- Knowing the long-term sequelae can be utilized to promote physical health before onset of disease</li></ul></li></ol>   |
| <ol style="list-style-type: none"><li>2. Provide specific guidance for student health clinicians<ul style="list-style-type: none"><li>- Best-Practice Recommendations for NDSU SHS clinicians (<i>see Appendix K for additional information</i>)<ul style="list-style-type: none"><li>◦ Overview of ACEs</li><li>◦ NDSU data college related stressors, mental health symptoms, and academic impact of wellness factors and risky behaviors</li><li>◦ ACE screening tool</li><li>◦ Trauma-informed care and trauma sensitivity practices during clinical encounters</li><li>◦ Strategies to redirect the effects of trauma</li><li>◦ Examples of ways to promote self-soothing</li><li>◦ Example brochure on ACEs</li><li>◦ Resource list of campus and community services, electronic and book recommendations (<i>see Appendix L for additional information</i>)</li></ul></li></ul></li></ol>   |
| <b>Identification</b>  |
| <ol style="list-style-type: none"><li>3. Address barriers to utilizing the ACE screening tool<ul style="list-style-type: none"><li>- Identify clinician willingness to utilize the ACE screening tool</li><li>- Obtain interest and buy-in from administration, clinicians, and clinic staff<ul style="list-style-type: none"><li>◦ Present best-practice recommendations for addressing ACEs among college students</li><li>◦ Provide examples of health care settings that have found the ACE screening tool beneficial</li><li>◦ Identify and/or adopt policies that support ACE screening</li><li>◦ Perform a trial of utilizing the screening tool to determine efficacy and utility of tool</li></ul></li><li>- Address form fatigue with students<ul style="list-style-type: none"><li>◦ Incorporate questions regarding the 10 categories of ACEs into existing visit templates</li><li>◦ Build a template for the screening tool and add it to the patient portal</li><li>◦ Make the form non-mandatory for the students</li><li>◦ Acknowledge the abundance of forms during clinical encounter</li><li>◦ Education the student on the importance of identifying an ACE score to mitigate AAHCs</li><li>◦ Inform the student the ACE screening tool only needs to be completed once</li><li>◦ Discuss with the student how the information will be used</li></ul></li></ul></li></ol> |

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**Table 7. Best-Practice Recommendations (continued).**

| <b>Identification</b> |  |
|-----------------------|--|
| 4.                    | Incorporate the ACE screening tool in the student health setting <ul style="list-style-type: none"> <li>- Modify and incorporate the following ACEs Aware resources:               <ul style="list-style-type: none"> <li>◦ Clinical workflow (see Appendix D)</li> <li>◦ List of ACE-associated health conditions (see Appendix F)</li> <li>◦ Toxic Stress Risk Assessment Algorithm (<i>see Appendix E</i>)</li> </ul> </li> </ul> |
| 5.                    | Identify students with ACEs based on ACE-associated symptoms <ul style="list-style-type: none"> <li>- Common psychological and behavioral sequelae, somatic complaints, and ACE-associated health conditions</li> </ul>  |
| <b>Interventions</b>  |  |
| 6.                    | Assess risk for toxic stress   |
| 7.                    | Develop therapeutic relationships <ul style="list-style-type: none"> <li>- Educate on therapeutic relationships</li> <li>- Provide strategies to promote a trauma sensitive clinic environment</li> <li>- Provide examples of potential triggers during a clinical encounter</li> </ul>  |
| 8.                    | Provide evidence-based interventions to regulate the stress response <ul style="list-style-type: none"> <li>- supportive relationships</li> <li>- high-quality sleep</li> <li>- balanced nutrition</li> <li>- mindfulness and meditation</li> <li>- mental health care</li> </ul>  |
| 9.                    | Assist in building resilience  |
| 10.                   | Promote protective factors   |
| 11.                   | Encourage positive coping mechanisms <ul style="list-style-type: none"> <li>- Promote self-soothing practices               <ul style="list-style-type: none"> <li>◦ Listening to music, painting, reading, gardening, or being in nature</li> <li>◦ Yoga, exercise, massage</li> </ul> </li> </ul>  |
| 12.                   | Educate patients on ACEs, toxic stress, risk for AAHCs, and signs of distress <ul style="list-style-type: none"> <li>- Provide educational tools (e.g., short videos, pamphlets, models, or pictures)</li> <li>- Be mindful of health literacy</li> </ul>  |
| 13.                   | Offer referrals as indicated <ul style="list-style-type: none"> <li>- Provide a list of available resources for students including community referral sites and the types of insurance accepted               <ul style="list-style-type: none"> <li>◦ Counseling</li> <li>◦ EMDR and TF-CBT</li> </ul> </li> </ul>  |

## **CHAPTER 5: DISCUSSION AND RECOMMENDATIONS**

### **Summary**

Findings from the community needs assessment identified several strengths, resources, and needs for clinicians in the student health setting to address ACEs among college students (see Table 5 for a summary). The main strengths identified by the community needs assessment were that the clinicians are innovative and provide consistent evidence-based services to NDSU students. The clinicians are cohesive and support one another and they work closely with the campus counseling center and utilize similar community referral sites.

Collectively, survey data indicated a gap in clinician knowledge regarding ACEs. Further, inconsistent ACE-related practices were occurring at the SHS clinic. As a result, many of the clinicians expressed a need to broaden their focus of care, especially for students with ACEs, beyond mental health to include physical health. At the time of the survey, one clinician reported an unwillingness to provide ACE-related interventions. However, during the interviews, all clinicians expressed a need to identify ACEs among college students before the onset of disease and provide ACE-related interventions. Identification and providing education about ACEs lend itself well to the goal of prevention which could greatly improve health outcomes for students. Based on survey data, ACEs are encountered often by the clinicians, especially for students presenting with mental health symptoms. Additionally, through screening of past abuse (sexual, mental, physical, and emotional) during mental health visits, all of the clinicians have found several NDSU students have ACEs. Despite the current ACE identification practices occurring at the SHS clinic, ACE screening is conducted inconsistently and not comprehensively. Thereby, ACE scores are not identified and a standardized ACE screening tool is not being utilized.

All the clinicians agree the ACE screening tool would be beneficial for mental health visits. The most common type of visits at the SHS clinic are patients establishing or subsequent return visits related to mental health care. Particularly for non-mental health visits, benefits to using the ACE screening tool were identified as the tool is clear, easy to complete, and only has to be done once. Also, the tool is a consistent way of identifying an individual's history of ACEs, may give students permission to discuss their experiences, and has the potential to serve as a gateway for addressing ACEs. Further, acknowledging a student's ACE score provides an opportunity for education, health promotion, and enhanced treatment. For example, by educating students about ACEs, AAHCs, and toxic stress, students may gain an understanding of how ACEs exacerbate or contribute to physical and mental health symptoms and conditions. Additionally, enlightening a student about ACEs provides another reason for students to adopt or improve a healthy lifestyle. Lastly, incorporating ACE-related interventions into a treatment plan may support and enhance positive outcomes. Despite the many benefits, many of the clinicians remain hesitant to perform universal screening.

Most clinicians reported the main barrier to incorporating the ACE screening tool is 'form fatigue.' Form fatigue is described as the frustration students feel about the number of forms they are required to complete prior to a visit. NDSU students have also expressed a desire to spend less time in the clinic. One of the clinicians discussed a recent survey of students who reported spending too much time in the clinic. Another barrier identified was a lack of clinical utility, namely, a lack of guidance on treatment for ACEs. Also, some of the clinicians felt the screening tool questions may be intimidating and sensitive for both the students and the clinicians. Regarding sensitivity, the main concern was triggering trauma, thereby, causing a student to shut down before entering the exam room. Thus, barriers to utilizing the ACE

screening tool were identified as student frustration and desire to spend less time in the clinic, a lack of clinical utility, and the tool may trigger trauma for students.

Challenges caring for a student with ACEs include student finances, uncertainty of insurance coverage for community referral sites, and management of symptoms. Financial instability among college students may result in patients not seeking care and not returning for follow up visits which makes it challenging for clinicians to optimize care. Further, the complexity of differing insurance coverage and copays causes uncertainty regarding which referral sites are most appropriate. Severe mental health and somatic symptoms are seen among students with ACEs which can be difficult for clinicians to manage. Additionally, symptoms such as loneliness, communication issues, and outburst behaviors are difficult to navigate when students lack social support and have a difficult time maintaining relationships.

SHS clinicians identified strategies to overcome the barriers to utilizing the ACE screening tool and addressing ACEs. They suggested performing a trial of using the tool to assess efficacy, add the ACE categories to the current mental health intake form, build a template of the ACE screening tool for the patient portal, acknowledge form fatigue with students and discuss the intended use of the screening tool, and obtain interest and buy-in from administration, clinicians, and clinic staff. Further, clinicians identified TIC training and a list of available community resources, referral sites, and types of insurance accepted as ways to support effective interventions to address ACEs. Overall, SHS clinicians feel identification of ACEs and promotion of interventions is appropriate during college.

As a result of the community needs assessment, SHS clinicians enhanced their knowledge of ACEs and the biological and cumulative effects of ACEs. The clinicians are interested and willing to incorporate best practices to address ACEs among college students.

Information gathered from the interviews revealed varying opinions regarding the best way to administer the ACE screening tool. However, many clinicians expressed a plan to augment their mental health visits by inquiring about the 10 categories of ACEs. Further, the clinicians plan to seek education regarding EMDR from a trained counselor at the campus counseling center. Lastly, the clinicians intend to adapt and use the list of community resources to provide referrals for students with ACEs.

### **Discussion**

The need to understand the prevalence of ACEs and the subsequent use of maladaptive coping mechanisms among college students is important, as they're likely to adversely affect health later in life (Boyraz & Waits, 2018; Witte et al., 2015). Evidence has shown ACEs are prevalent among college students and, based on the findings from the community needs assessment, NDSU college students are impacted as well (Forster et al., 2018; Karatekin, 2018; Lust, 2018; McGavock & Spratt, 2012; Windle et al., 2018). The presence of ACEs and the high occurrence of risk-taking behavior, wellness associated challenges, stress, and mental health symptoms among NDSU students is concerning. Due to the predisposition for a dysregulated stress response, students with ACEs may be unable to manage the stressors of college which increased the risk of dropping out of college (Duncan, 2000). Therefore, a consistent measurement of ACEs among NDSU students is needed to effectively provide ACE-related interventions to mitigate AAHCs.

SHS clinicians support the utility of the ACE screening tool for mental health visits. SHS clinicians agree with other health care professionals regarding the many benefits to utilizing the ACE screening tool. For example, the tool is clear, easy to complete, and only has to be done once (Soleimanpour et al., 2017). Also, the tool provides a consistent way of identifying an

individual's history of ACEs. The act of completing the tool by students may give them permission to explore their traumatic experiences. Further, understanding a student's ACE score may provide insight into possible causes of symptoms and risk for AAHCs. Individuals may also feel empowered by learning their ACE score and hopeful to receive help through their healing process. As many SHS clinicians and other health providers report, individuals may become invested in preventative care once they understand their ACE score and the associated risks (Soleimanpour et al., 2017). Lastly, the act of performing ACE screening isn't necessarily to elicit specific details about a traumatic event but, rather, a segue to providing compassionate and guided responses to ACEs, assess resiliency skills, and identify coping and protective factors (Simon et al., 2014; Soleimanpour et al., 2017; Wade et al., 2014).

Despite the numerous benefits of the ACE screening tool, many clinicians remain hesitant to utilize the tool. Clinicians report the tool requires patients to reflect and revisit potentially upsetting aspects of their lives (Asmussen et al., 2020). This type of processing may activate distressing feelings or thoughts, such as shame, blame, anger, sadness, or embarrassment (Asmussen et al., 2020). Other barriers identified both by SHS clinicians and the literature are limited time for office visits, no standard protocol for what to do with the results, and risk for re-traumatization due to the sensitive nature of the questions (Soleimanpour et al., 2017; Starecheski, 2015). Further, SHS clinicians describe form fatigue as a major hinderance to conducting ACE screening.

An effort to address form fatigue is to acknowledge the abundance of forms during clinical encounters, explain the importance of identifying a patient's ACE score to mitigate AAHCs, inform the patient the ACE screening tool only needs to be completed once, and discuss how the information will be used. A suggestion for overcoming the barrier to integrating the

ACE screening tool at the SHS clinic is to build a template for the screening tool and add it to the patient portal. The process to integrate the screening tool into the patient portal is reasonable as many visits are patient portal directed by templates.

The primary purpose of the templates is to provide clinicians pertinent information prior to the clinical encounter. Templates are currently being used for visit types, such as abdominal pain, vaginitis, urinary symptoms, and mental health intake visits. Further, screening forms are also available in the patient portal including the GAD-7 and PHQ-2 forms. Thus, the established patient portal would allow for a seamless addition of the electronic version of the ACE screening tool. This would alleviate inconsistencies in transcribing information obtained from the ACE screening tool into the patient chart. Therefore, a template of the ACE screening tool should be created and added to the patient portal at the SHS clinic.

An additional suggestion to overcome the barriers to integrating the ACE screening tool is to perform a trial of using the ACE screening tool to determine the utility. Further, a trial could support optimal care by informing clinicians the ways their peers are addressing ACEs. Based on this information, a decision could be made by clinic staff regarding continued use. Finally, strategies were provided to address clinician concerns and strategies to obtain buy-in and willingness to use the tool from administration, clinicians, and clinic staff. Perhaps, being informed that all of the clinicians support the integration of the ACE screening tool will increase willingness to use the tool. Further, informing the clinicians of the ACEs Aware resources will enhance clinician understanding of how to address ACEs among college students. Lastly, providing best-practice recommendations, examples of health care settings that have found a benefit from using the screening tool, and policies that support ACE screening will obtain buy-in

and support from clinicians, administration, and staff for the integration of the screening tool at the SHS clinic.

Other challenges related to caring for students with ACEs at the SHS clinic include student finances, uncertainty of insurance coverage for community referral sites, and management of severe mental health symptoms and somatic symptoms. These challenges can be overcome with a list of available resources for students including campus and community referral sites and the type of insurance and payment accepted. Lastly, support for clinicians to care for students with severe mental health or somatic symptoms includes trauma-informed care training and providing examples of how to promote trauma sensitivity during clinical encounters.

While strategies to address ACEs remain inconsistent and vary by practice setting, efforts to address ACEs are evolving and becoming more streamlined. For example, the first-in-the-nation initiative for addressing ACEs was launched in the beginning of 2020 in the state of California. The initiative, named ACEs Aware, equips clinicians with the knowledge, tools, and resources to address ACEs in the clinical setting (SCDHCS, 2020b). As of October of 2020, nearly 14,000 health care professionals have completed the provider training (ACEs Aware, 2020). Data from the first nine months prodigiously supports the efficacy and success of the ACE Aware initiative. After completing the training, 81% of health care professionals who had previously not been screening for ACEs planned to implement routine ACE screening. Further, 91% of health care professionals felt confident and able to make practice changes to address ACEs. These data support the benefit of clinicians in the student health setting having a basic understanding of ACEs, toxic stress, AAHCs, incorporating TIC and tools for identifying ACEs in the clinical setting, and offering evidence-based interventions to address ACEs.



## **Recommendations**

The student health setting is an ideal point of access for students with ACEs to seek care. The location is generally on-campus making care easy to access. Evidence suggests students with ACEs are more apt to seek resources from the university and those same individuals are more likely to benefit from messaging focused on disease prevention (Karatekin et al., 2018; Ledford, 2012). These data suggest college students with ACEs may benefit from education regarding ACEs, risk for AAHCs, and intervention strategies. Moreover, college students with ACEs may benefit most from receiving resources and help from a campus clinic. Therefore, clinicians in the student health setting are well-suited to address ACEs among college students through awareness, identification, and intervention targeting disease prevention.

While clinical recommendations exist regarding best-practices for addressing ACEs, there remains a gap in specific guidance for the student health setting. The focus areas of ACE-related practices include educating health care professionals, utilizing tools to identify patients with ACEs, offering supportive care, collaborating with other agencies and organizations to increase the availability of resources, and incorporating opportunities at multiple levels (DSGI, 2015). Therefore, the best-practice recommendations for student health clinicians to address ACEs among college students identified by the community needs assessment include the following:

- enhance clinician understanding of ACEs and trauma-informed care
- provide specific guidance for student health clinicians
- address barriers to utilizing the ACE screening tool
- incorporate the ACE screening tool in the student health setting
- identify students with ACEs based on ACE-associated symptoms

- assess risk for toxic stress
- develop therapeutic relationships
- provide evidence-based interventions to regulate the stress response
- assist in building resilience
- promote protective factors
- encourage positive coping mechanisms
- educate patients on ACEs, toxic stress, risk for ACE-associated health conditions, and signs of distress
- offer referrals as indicated

Additional information and guidance on how to incorporate the best-practice recommendations in the student health setting can be found in Table 7. Moreover, see Appendix K for the informational slides developed and utilized to present the community assessment findings and best-practice recommendations to the participants and key stakeholders.

Educational opportunities regarding ACEs are widely available to clinicians and often accessible via the internet. Through the ACEs Aware initiative, a multitude of resources are available at no cost for clinicians to augment their effort to address ACEs. For example, clinicians have access to a free, two-hour training regarding screening for ACEs, recognizing and responding to symptoms of toxic stress, and providing evidence-based practices (SCDHCS, 2021). Although the training is designed to educate health care professionals in California, the training is available to all clinicians with a National Provider Identifier, Board Certification ID, and a service/practice address. The training can be accessed at <https://training.acesaware.org/>.

Also, through a collaboration between the Primary Care Development Corporation and ACEs Aware initiative, clinicians have access to a free six-part webinar series for screening and

addressing ACEs in a small primary care practice (PCDC, 2021). The target audience for these webinars are small- and medium-sized community medical practices with fewer than six to seven medical providers. Various topics are discussed to guide healthcare professionals on navigating the challenges of incorporating ACE screening into a small practice. One of the webinars provides an overview of ACEs and the effects on physical and emotional health, common presentation for individuals with ACEs, triggers associated with health care, and elements of trauma-informed care (PCDC, 2021). The six-part webinar series may be accessed at <https://www.pcdc.org/what-we-do/training-technical-assistance/screening-for-and-addressing-aces-adverse-childhood-experiences-webinar-series/>

All clinicians who work with individuals potentially exposed to ACEs will benefit from TIC training. TIC provides clinicians a basic understanding of trauma, the ongoing effects of trauma, and an awareness of the impact past experiences have on an individual's future and functioning (SCDHCS, 2020c). Further, learning helpful tips and tricks for the clinical encounter may benefit clinicians in the student health setting as well. For example, asking for permission, role-modeling assertive and emotionally expressive behavior, and avoiding triggering interactions caused by humiliation or rushed visits (Lipton & Fernandez, 2020; Mauksch, 2011; Roberts, 2019).

Identifying an individual with ACEs is done either through the ACE screening tool or by recognizing symptoms and clinical presentations of those with ACEs. Thus, clinicians in the student health setting must be armed with knowledge on how to identify students with ACEs based on symptoms. A clinician should be suspicious a patient has ACEs if they have frequent office visits or elicit emotional and conduct problems, mental health symptoms, somatic

complaints, or an inability to self-soothe (Calhoun et al., 2012; Flood et al., 2009; Goodman, 2017; Gupta, 2013; Jonkman et al., 2013; Pearlman, 1997; Van Der Kolk, 2014).

In addition to assessing patients based on symptoms and behaviors, the ACE screening tool provides a consistent measurement of a patient's exposure to childhood trauma. The act of performing ACE screening isn't necessarily to elicit specific details about a traumatic event but, rather, a segue to providing compassionate and guided responses to ACEs. Ultimately, the goal of screening is to reduce human suffering and promote healing (Lipton & Fernandez, 2020). The ACE screening tool should be offered in a private space at any point during the visit. However, Lipton and Fernandez (2020) suggest if completion is done prior to the visit, a statement should be provided to explain the rationale of the screening and to inform the patient completing the form is non-mandatory. The tool may either be disseminated by paper or through an electronic health record. If the score is calculated on paper and prior to the visit, clinics will need to decide how the score will be transcribed to the chart. Currently, the ACE Aware initiative is working to provide clinics an online screening tool that is compatible with the most common electronic health records.

To overcome the common barrier of misunderstanding use of the ACE screening tool, resources and educational webinars are available to clinicians, such as the aforementioned webinar series. A particularly useful webinar for clinicians in the student health setting is titled, "Screening and Responding to ACEs & Trauma" (PCDC, 2021). This webinar provides information regarding which tools to use, how to integrate screening into clinical workflows, who should do the screening, where it is documented, and what to do if trauma is disclosed. Further, through the ACE Aware initiative, clinicians receive access to a clinical workflow, a toxic risk assessment algorithm, and a list of AAHCs designed to guide clinicians through the

process of incorporating and utilizing the ACE screening tool (SCDHCS, 2020b) (see Appendix D for the workflow, Appendix E for the algorithm, and Appendix F for the health conditions). The algorithm helps determine the treatment plan based on an individual's ACE score and current AAHCs. For example, if a patient has an ACE score of two without AAHCs, the plan would be to provide education about ACEs, toxic stress, and resilience. Additionally, clinicians should assess for protective factors. If the same patient had an ACE score of two but has AAHCs, the treatment plan would be similar except the plan would be linked to support services and treatment, as appropriate. The same treatment plan would be used for all patients with a score of four or more regardless of the presence of a health condition (SCDHCS, 2020b).

Education is vital to providing intervention for individuals with ACEs. Educational topics include an overview of ACEs, toxic stress, risks for AAHCs, and signs of distress. Additionally, health literacy should be considered when providing education in the clinic setting. Individuals with ACEs are at-risk for low health literacy which may result in misunderstanding or interruptions in care (Lipton & Fernandez, 2020). Hence, clinicians in the student health setting should avoid assuming college students understand or will retain information regarding their health even though students are educated and literate. Education tools in the form of short videos, pamphlets, models, or pictures might spark interest and promote retention of information (Lipton & Fernandez, 2020). Lastly, when applying the teach-back method, clinicians should place an emphasis on themselves rather than the patient (Lipton & Fernandez, 2020).

Additional ACE-related interventions include providing strategies to regulate the stress response, such as supportive relationships, high-quality sleep, balanced nutrition, mindfulness and meditation, and mental health care (SCDHCS, 2020b). Interventions also include building resiliency skills, promoting protective factors, encouraging positive coping mechanisms, and

providing referrals as needed. A common referral source for individuals with ACEs is counseling. Trauma-specific counseling may provide the best outcomes for individuals with ACEs. For example, evidence-based therapies include Trauma-Focused Cognitive-Behavioral Therapy and EMDR.

Clinicians collaborate with other professionals to meet the needs of students with ACEs. Optimizing care for students with ACEs includes developing partnerships with other health care disciplines, both on-campus and in the community. Clinicians in the student health setting may be uncertain of appropriate community referral sites. Therefore, it may be helpful for clinicians to have a list available of community resources including types of payment and insurance accepted by organizations. Clinicians may also benefit from recommendations for book and electronic resources, such as smartphone apps, YouTube videos, and Podcasts (see Appendix L for an example).

### **Implications for Healthcare**

The findings from this community needs assessment could be expanded for use in clinical practice, education, and policy. For example, this project could be replicated to identify practices, clinician awareness, and interventions strategies to address ACEs in other student health settings. Additionally, another clinical dissertation could be conducted to assess if the needs assessment findings change the SHS clinician's practice. Further, a quality improvement project could be conducted by implementing the ACE screening tool at the SHS clinic followed by a chart audit and peer review to determine the efficacy and utility of the screening tool at the NDSU SHS clinic. Additionally, continued application of this community needs assessment could be utilized to develop an interdisciplinary approach to meet the needs of college students with ACEs. For example, a systematic referral process between the student health clinic and the

campus counseling center could be developed to optimize care for students with ACEs. In terms of education, the findings of this dissertation support the need for campus-wide education on ACEs and the impact of toxic stress. Perhaps, an educational seminar could be provided to incoming freshman during orientation week. Possibly university health-related programs will adopt an undergraduate and graduate curriculum to provide ACE-related education to future health professionals. Lastly, the community assessment findings support the need for legislation and policy surrounding ACEs in the state of North Dakota. As of July 2020, more than half of the United States had passed legislation regarding ACEs, and at least 37 states had a plan to implement initiatives pertaining to ACEs, and trauma-informed resiliency policy (Novoa & Morrisey, 2020). North Dakota is one of very few states yet to implement ACE-related practices.

### **Dissemination**

Key findings from the implementation of the community needs assessment and recommendations for best practices for addressing ACEs among college students were presented to staff at the NDSU SHS clinic. Written materials including the PowerPoint slides and resources were provided to the participants and key stakeholders. Additionally, overall discoveries from the dissertation were presented at the co-investigators final defense to the dissertation committee. Also, an overview of the community needs assessment was presented in a poster format at a poster exhibition during the virtual North Dakota Nurse Practitioner Association conference in the fall of 2020. The previous poster will be updated to include the results and recommendations to be exhibited at a poster conference at NDSU on May 5, 2021. Lastly, this dissertation may be submitted for publication to reach a larger audience with the intent to inform future practice related to addressing ACEs among college students.

## **Strengths and Limitations**

The dissertation was strengthened by an interest in the topic by clinicians and clinic staff working at the NDSU SHS clinic. Limitations of the community needs assessment included a small sample size, singular setting, and the possibility of researcher bias. Despite the presence of five college campuses within the Fargo-Moorhead community, NDSU SHS clinic is the only campus to offer clinic services. Therefore, a limitation of the study may have been the underrepresentation of clinicians in other student health settings. Another limitation may be the variable ways to interpret the qualitative data obtained through the interviews. While as much information obtained during the interviews was relayed in Chapter Four, the collection and interpretation of data is subjective and, perhaps, biased by the co-investigator.

## **Conclusion**

Clinicians meet the needs of patients with ACEs by utilizing assessment tools to identify patients, offering supportive care, collaborating with other agencies and organizations to increase the availability of resources, and incorporating opportunities at multiple levels (DSGI, 2015). Thus, nurse practitioners (NP) are particularly equipped to address ACEs. Based on the nursing modality, NPs are trained to utilize evidence-based practices, provide thorough patient education, and emphasize health promotion and disease prevention (LinkPAs, 2020). Further, the nursing model incorporates the practice of holistic care (Thornton, 2019). Holistic care seeks to heal an individual as a whole through patient education, community-building among nurses, and collaboration with other healthcare professionals (LinkPAs, 2020; Thornton, 2019). Therefore, with an understanding of ACEs, skills to identify individuals exposed, knowledge of evidence-based interventions, and availability of interdisciplinary partnerships, NPs are a vital contributor to addressing ACEs.



## REFERENCES

- ACEs Aware. (October 2020). *Becoming ACEs aware in California* [Fact Sheet]. Office of the California Surgeon General and Department of Health Care Services.  
<https://www.acesaware.org/wp-content/uploads/2020/10/Data-Report-Fact-Sheet-10-15-20.pdf>
- Ahmed, S. P., Bittencourt-Hewitt, A., & Sebastian, C. L. (2015). Neurocognitive bases of emotion regulation development in adolescence. *Developmental Cognitive Neuroscience, 15*, 11-25. <https://doi.org/10.1016/j.dcn.2015.07.006>
- Amanpour and Company. (2019, October 28). *Nadine Burke Harris on the impact of childhood adversity* [Video]. YouTube. <https://www.youtube.com/watch?v=DqiSCevEt5I>
- American Academy of Family Physicians. (2019). *Adverse Childhood Experiences*.  
<https://www.aafp.org/about/policies/all/adverse-childhood-experiences.html>
- American Academy of Pediatrics. (2014). *Adverse Childhood Experiences and the Lifelong Consequences of Trauma*. [https://www.aap.org/en-us/Documents/ttb\\_aces\\_consequences.pdf](https://www.aap.org/en-us/Documents/ttb_aces_consequences.pdf)
- Amnie, A. G. (2018). An investigation of predictors of self-efficacy to cope with stress and implications for health education practice. *American Journal of Health Education, 49*(3), 155-165. <https://doi.org/10.1080/19325037.2018.1431165>
- Arnett, J. J. (2005). The developmental context of substance use in emerging adulthood. *Journal of Drug Issues, 35*(2), 235–254. doi: 10.1177/002204260503500202
- Asmussen, K., Fischer, F., Drayton, E., & McBride, T. (2020). *Adverse childhood experiences: What we know, what we don't know, and what should happen next*. Early Intervention Foundation.

- Bellis, M. A., Hughes, K., Leckenby, N., Hardcastle, K. A., Perkins, C., & Lowey, H. (2015). Measuring mortality and the burden of adult disease associated with adverse childhood experiences in England: A national survey. *Journal of Public Health, 37*(3), 445-454. <https://doi.org/10.1093/pubmed/fdu065>
- Bodendorfer, V., Koball, A. M., Rasmussen, C., Klevan, J., Ramirez, L., & Olson-Dorff, D. (2019). Implementation of the adverse childhood experiences conversation in primary care. *Family Practice, 37*(3), 355-359. doi: 10.1093/fampra/cmz065
- Boyratz, G., Granda, R., Baker, C. N., Tidwell, L. L., & Waits, J. B. (2016). Posttraumatic stress, effort regulation, and academic outcomes among college students: A longitudinal study. *Journal of Counseling Psychology, 63*, 475-486. doi:10.1037/cou0000102
- Boyratz, G., & Waits, B. J. (2018). Interpersonal trauma and physical health symptoms in college students: Mediating effects of substance use and self-blame. *Journal of Loss and Trauma, 23*(1), 70-87. <https://doi.org/10.1080/15325024.2017.1422849>
- Casey, B. J., & Jones, R. M. (2010). Neurobiology of the adolescent brain and behavior: Implications for substance use disorders. *Journal of the American Academy of Child & Adolescent Psychiatry, 49*(12), 1189–1201. doi: 10.1016/j.jaac.2010.08.017
- Center for Behavioral Health Statistics and Quality. (2015). *2014 National Survey on Drug Use and Health: Detailed tables*. Substance Abuse and Mental Health Services Administration, Rockville, MD. <https://www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs-2015/NSDUH-DetTabs-2015/NSDUH-DetTabs-2015.pdf>
- Centers for Disease Control and Prevention. (2019). *Violence Prevention*. <https://www.cdc.gov/violenceprevention/index.html>

- Cheney, M. K., Vesely, S. K., Aspy, C. B., Oman, R. F., & Tolma, E. L. (2014). Prospective associations between negative life events and youth tobacco use. *American Journal of Health Behavior, 38*(6), 942-950. doi: 10.5993/ajhb.38.6.16
- Creswell, J. D., Irwin, M. R., Burklund, L. J., Lieberman, M. D., Arevalo, J. M. G., Breen, E. C., & Cole, S. W. (2012). Mindfulness-based stress reduction training reduces loneliness and pro-inflammatory gene expression in older adults: A small randomized controlled trial. *Brain, Behavior, and Immunity, 26*(7), 1095-1101.  
<https://doi.org/10.1016/j.bbi.2012.07.006>
- Danese, A., & McEwen, B. S. (2012). Adverse childhood experiences, allostasis, allostatic load, and age-related disease. *Physiology & Behavior, 106*, 29-39.
- Deschenes, S. S., Graham, E., Kivimake, M., & Schmitz, N. (2018). Adverse childhood experiences and the risk of diabetes: Examining the roles of depressive symptoms and cardiometabolic dysregulations in the Whitehall II cohort study. *Diabetes Care, 41*(10), 2120-2126. doi: 10.2337/dc18-0932
- Development Services Group, Inc., & Child Welfare Information Gateway. (2015). *Promoting protective factors for in-risk families and youth: A guide for practitioners* [Fact Sheet]. Washington, DC: U.S. Department of Health and Human Services, Administration on Children, Youth and Families, Children's Bureau.  
<https://www.childwelfare.gov/pubs/factsheets/in-risk/>
- Duke, N. (2018). Adolescent adversity and concurrent tobacco, alcohol, and marijuana use. *American Journal of Health Behavior, 42*(5), 85-99. doi: 10.5993/AJHB.42.5.8
- Duncan, R. D. (2000). Childhood maltreatment and college drop-out rates. *Journal of Interpersonal Violence, 15*(9), 987-995. doi:10.1177/088626000015009005

- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventive Medicine, 14*(4), 245-258. [https://doi.org/10.1016/S0749-3797\(98\)00017-8](https://doi.org/10.1016/S0749-3797(98)00017-8)
- Flood, A. M., McDevitt-Murphy, M. E., Weathers, F. W., Eakin, D. E., & Benson, T. A. (2009). Substance use behaviors as a mediator between posttraumatic stress disorder and physical health in trauma-exposed college students. *Journal of Behavioral Medicine, 32*, 234 – 243. [http:// dx.doi.org/10.1007/s10865-008-9195-y](http://dx.doi.org/10.1007/s10865-008-9195-y)
- Forgash, C. (2015). The ACE (adverse childhood experiences) study and EMDR. *EMDR Europe Conference*. <https://advancededucationalproductions.com/the-ace-adverse-childhood-experiences-study-and-emdr/>
- Forster, M., Grigsby, T. J., Rogers, C. J., & Benjamin, S. M. (2018). The relationship between family-based adverse childhood experiences and substance use behaviors among a diverse sample of college students. *Addictive Behaviors, 76*, 298-304. <https://doi.org/10.1016/j.addbeh.2017.08.037>
- Garner, A. S., Forkey, H., & Szilagyi, M. (2015). Translating developmental science to address childhood adversity. *Academic Pediatrics, 15*(5), 493-502. <https://doi.org/10.1016/j.acap.2015.05.010>
- Giedd, J. N. (2008). The teen brain: Insights from neuroimaging. *Journal of Adolescent Health, 42*(4), 335–343. doi: 10.1016/j.jadohealth.2008.01.007

- Glowa, P. T., Olson, A. L., & Johnson, D. J. (2016). Screening for adverse childhood experiences in a family medicine setting: A feasibility study. *Journal of the American Board of Family Medicine, 29*(3), 303-307.  
<https://doi.org/10.3122/jabfm.2016.03.1500310>
- Goodman, R. (2017). Contemporary trauma theory and trauma-informed care in substance use disorders: A conceptual model for integrating coping and resilience. *Advances in Social Work, 18*(1), 186-201. doi: 10.18060/21312
- Green, B. L., Saunders, P. A., Power, E., Dass-Brailsford, P., Schelbert, K. B., Giller, E., Wissow, L., de Mendoza, A. H., & Mete, M. (2016). Trauma-informed medical care: Patient response to a primary care provider communication training. *Journal of Loss and Trauma, 21*(2), 147-159. doi: 10.1080/15325024.2015.1084854
- Gupta, M. A. (2013). Review of somatic symptoms in post-traumatic stress disorder. *International Review of Psychiatry, 25*(1), 86-99. doi: 10.3109/09540261.2012.736367
- Hale, D. R., Fitzgerald-Yau, N., & Viner, R. M. (2014). A systematic review of effective interventions for reducing multiple health risk behaviors in adolescence. *American Journal of Public Health, 104*(5), e19-e41. <http://dx.doi.org/10.2105/AJPH.2014.301874>
- Holzel, B. K., Hoge, E. A., Greve, D. N., Gard, T., Creswell, J. D., Brown, K. W., Barrett, L. F., Schwartz, C., Vaitl, D., & Lazar, S. W. (2013). Neural mechanisms of symptom improvements in generalized anxiety disorder following mindfulness training. *NeuroImage: Clinical, 2*, 448-458.  
<https://www.sciencedirect.com/science/article/pii/S2213158213000326>
- Huang, H., Yan, P., Shan, Z., Chen, S., Li, M., Luo, C., Gao, H., Hao, L., & Liu, L. (2015). Adverse childhood experiences and risk of type 2 diabetes: A systematic review and

- meta-analysis. *Metabolism*, 64(11), 1408-1418.  
<https://doi.org/10.1016/j.metabol.2015.08.019>
- Institute for Healthcare Improvement. (n.d.) Plan-Do-Study-Act (PDSA) Worksheet.  
<http://www.ihi.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx>
- Jackson, K. M., Sher, K. J., & Park, A. (2005). Drinking among college students: Consumption and consequences. *Recent Developments in Alcoholism*, 17, 85-117. doi: 10.1007/0-306-48626-1\_5
- Jindani, F., Turner, N., & Khalsa, S. B. S. (2015). A yoga intervention for posttraumatic stress: A preliminary randomized control trial. *Evidence-Based Complementary and Alternative Medicine*. <https://doi.org/10.1155/2015/351746>
- Jonkman, C. S., Verlinden, E., Bolle, E. A., Boer, F., & Lindauer, R. J. L. (2013). Traumatic stress symptomatology after child maltreatment and single traumatic events: Different profiles. *Journal of Traumatic Stress*, 26, 225-232. <https://doi.org/10.1002/jts.21792>
- Karatekin, C. (2018). Adverse childhood experiences (ACEs) and help-seeking for health-related interventions in young adults. *The Journal of Psychology*, 153(1), 6-22.  
<https://doi.org/10.1080/00223980.2018.1476316>
- Karatekin, C., Ahluwalia, R., & Desir, M. (2018). Tailoring health-related messages for young adults with adverse childhood experiences (ACEs). *Child Abuse and Neglect*, 80, 194-202. <https://doi.org/10.1016/j.chiabu.2018.03.010>
- Karatekin, C. (2017). Adverse childhood experiences (ACEs), stress, and mental health in college students. *Stress & Health*, 34, 36-45. doi: 10.1002/smi.2761

- Keyes, K., Hatzenbuehler, M., & Hasin, D. (2011). Stressful life experiences, alcohol consumption, and alcohol use disorders: The epidemiologic evidence for four main types of stressors. *Psychopharmacology*, *218*(1), 1-17. doi: 10.1007/s00213-011-2236-1
- Khan, A. M., Dar, S., Ahmed, R., Bachu, R., Adnan, M., & Kotapati, V. P. (2018). Cognitive behavioral therapy versus eye movement desensitization and reprocessing in patients with post-traumatic stress disorder: Systematic review and meta-analysis of randomized clinical trials. *Cureus*, *10*(9), e3250. doi: 10.7759/cureus.3250
- Khrapatina, I., & Berman, P. (2017). The impact of adverse childhood experiences on health in college students. *Journal of Child & Adolescent Trauma*, *10*, 275-287.
- Lambert, D., Gale, J. A., & Hartley, D. (2008). Substance abuse by youth and young adults in rural America. *The Journal of Rural Health*, *24*(3), 221– 228. doi: 10.1111/j.1748-0361.2008.00162
- Lee, R. S., Oswald, L. M., & Wand, G. S. (2018). Early life stress as a predictor of co-occurring alcohol use disorder and post-traumatic stress disorder. *Alcohol Research*, *39*(2), 147-159
- Ledford, C. J. W. (2012). Exploring the interaction of patient activation and message design variables: Message frame and presentation mode influence on the walking behavior of patients with type 2 diabetes. *Journal of Health Psychology*, *17*(7), 989-1000.  
<https://doi.org/10.1177/1359105311429204>
- Lietzke, A., & Loftus, T. D. (n.d.). Neuroplasticity and trauma: 5 powerful ways to support recovery. *Crisis Prevention Institute*.  
<https://www.crisisprevention.com/Blog/Neuroplasticity-and-Trauma>
- LinkPAs. (n.d.). *Nursing Model vs. Medical Model (Similarities & Differences)*. Retrieved February 13, 2021, from <https://linkpas.com/nursing-vs-medical-model/>

- Lipton, Y. A., & Fernandez, A. (2020). *Setting the Stage for ACEs Screening and Trauma-Informed Practices in Small Practices; Webinar 3 - The Clinical Encounter: Exams, Tests, & Procedures* [Webinar]. [https://pcdc.zoom.us/rec/play/5sqosuL-hogs00VaoqXmLx4xzs93bss5j7uYXrHfMTH7uK2FqJVIUFldMQez9B5T1D2Nc9mjGaotMdzy.xGYvBkg9QFnli1C5?continueMode=true&\\_x\\_zm\\_rtaid=Ic1ZS6FgT9asxRZUJr ekvg.1614163478043.9cae55b15f5766f113cd9521598be06d&\\_x\\_zm\\_rhtaid=242](https://pcdc.zoom.us/rec/play/5sqosuL-hogs00VaoqXmLx4xzs93bss5j7uYXrHfMTH7uK2FqJVIUFldMQez9B5T1D2Nc9mjGaotMdzy.xGYvBkg9QFnli1C5?continueMode=true&_x_zm_rtaid=Ic1ZS6FgT9asxRZUJr ekvg.1614163478043.9cae55b15f5766f113cd9521598be06d&_x_zm_rhtaid=242)
- Lust, K. (2018). College student health survey report. Boynton Health: University of Minnesota. <https://boynton.umn.edu/sites/boynton.umn.edu/files/2019-09/CSHS-2018-UMN-Twin-Cities.pdf>
- Marsicek, S. M., Morrison, J. M., Manikonda, N., O'Halleran, M., Spoehr-Labutta, Z., & Brinn, M. (2019). Implementing standardized screening for adverse childhood experiences in a pediatric resident continuity clinic. *Pediatric Quality and Safety*, 4(2), 154. doi: 10.1097/pq9.0000000000000154
- Mauksch, L. (2011). Patient centered observation form. *University of Washington Department of Family Medicine*. [https://depts.washington.edu/fammed/files/ICAP/PCOF\\_20110516.pdf](https://depts.washington.edu/fammed/files/ICAP/PCOF_20110516.pdf)
- Mavranouzouli, I., Megnin-Viggars, O., Daly, C., Dias, S., Stockton, S., Meiser-Stedman, R., Trickey, D., & Pilling, S. (2020). Research review: Psychological and psychosocial treatments for children and young people with post-traumatic stress disorder: A network meta-analysis. *The Journal of Child Psychology and Psychiatry*, 61(1), 18-29. doi: 10.1111/jcpp.13094
- McGavock, L., & Spratt, T. (2012). Prevalence of adverse childhood experiences in a university population: Association with use of social services. *British Journal of Social Work*, 44(3), 657-674.



- Miller, G. E., Chen, E., & Parker, K. J. (2011). Psychological stress in childhood and susceptibility to the chronic diseases of aging: Moving towards a model of behavioral and biological mechanisms. *Psychological Bulletin Journal*, 137(6), 959-997. doi 10.1037/a0024768
- Minnesota Department of Health. (n.d.) *PDSA: Plan-Do-Study-Act*.  
<https://www.health.state.mn.us/communities/practice/resources/phqitoolbox/pdsa.html>
- North Dakota State University. (2019). *Enrollment trends*.  
[https://www.ndsu.edu/data/student\\_related\\_facts/enrollment\\_trends/](https://www.ndsu.edu/data/student_related_facts/enrollment_trends/)
- North Dakota State University. (2020a). *Health promotion values*. Retrieved April 23, 2020, from <https://www.ndsu.edu/studenthealthservice/healthpromotion/>
- North Dakota State University. (2020b). *NDSU and community resources*. Retrieved April 23, 2020, from <https://www.ndsu.edu/deanofstudents/assistance/>
- North Dakota State University. (2020c). *Student Data Statistics Enrollment*. Retrieved February 18, 2021, from <https://www.ndsu.edu/fileadmin/data/enrollment/2130/report-d.pdf>
- North Dakota University Systems. (2020). *2020 NDSU Student Wellness and Perception Survey*.  
[https://www.ndsu.edu/fileadmin/studenthealthservice/Wellness\\_Education/Institutional\\_Report\\_NDSU2020.pdf](https://www.ndsu.edu/fileadmin/studenthealthservice/Wellness_Education/Institutional_Report_NDSU2020.pdf)
- Novoa, C., & Morrissey, T. (2020). Adversity in early childhood: The role of policy in creating and addressing adverse childhood experiences. *Center for American Progress*.  
<https://www.americanprogress.org/issues/early-childhood/reports/2020/08/27/489805/adversity-early-childhood/>
- Pearlman, L. A. (1997). Trauma and the self: A theoretical and clinical perspective. *Journal of Emotional Abuse*, 1, 7-25. doi: 10.1300/J135v01n01\_02

- Purkey, E., Patel, R., Beckett, T., & Mathieu, F. (2018). Primary care experiences of women with a history of childhood trauma and chronic disease: Trauma-informed care approach. *Canadian Family Physician, 64*(3), 204-211.
- Primary Care Development Corporation. (2021). *Screening for and Addressing ACEs (Adverse Childhood Experiences) Webinar Series*. <https://www.pcdc.org/what-we-do/training-technical-assistance/screening-for-and-addressing-aces-adverse-childhood-experiences-webinar-series/>
- Rich-Edwards, J. W., Mason, S., Rexrode, K., Spiegelman, D., Hibert, E., Kawachi, I., Jin Jun, H., & Wright, R. J. (2015). Physical and sexual abuse in childhood as predictors of early-onset cardiovascular events in women. *Circulation, 126*(8), 920-927. doi: 10.1161/CIRCULATIONAHA.111.076877
- Roberts, B. W. (2019). Caring for patients with adverse childhood experiences. *Radiologic Technology, 91*(2), 141-157.
- Sartor, C. E., Waldron, M., Duncan, A. E., Grant, J. D., McCutcheon, V. V., Nelson, E. C., Madden, P. A., Bucholz, K. K., & Heath, A. C. (2013). Childhood sexual abuse and early substance use in adolescent girls: The role of familial influences. *Addiction, 108*(5), 993-1000. doi: 10.1111/add.12115
- Schnelbach, S. D., & Wyatt, C. S. (2020). *Calculating Reading and Writing Levels*. Retrieved April 15, 2020, from <https://www.tameri.com/teaching/levels.html>
- Schwinn, T. M., Schinke, S. P., Hopkins, J., & Thom, B. (2016). Risk and protective factors associated with adolescent girls' substance use: Data from a nationwide Facebook sample. *Journal of Substance Abuse, 37*(4), 564-570. <http://dx.doi.org/10.1080/08897077.2016.1154495>

- Shapiro, F. (2014). The role of eye movement desensitization and reprocessing (EMDR) therapy in medicine: Addressing the psychological and physical symptoms stemming from adverse life experiences. *The Permanente Journal*, 18(1), 71-77. doi: 10.7812/TPP/13-098
- Shapiro, J. R., & Applegate, J. S. (2018). *Neurobiology for Clinical Social Work: Theory and Practice* (2<sup>nd</sup> ed.). Norton Professional Books.
- Shin, S., McDonald, S., & Conley, D. (2018). Profiles of adverse childhood experiences and impulsivity. *Child Abuse & Neglect*, 85, 118-126. doi: 10.1016/j.chiabu.2018.07.028
- Simon, G. R., Baker, C., Brown, O. W., Hardin, A., Lessin, H. R., Meade, K., Moore, S., & Rodgers, C. T. (2014). 2014 recommendations for pediatric preventive health care. *Official Journal of the American Academy of Pediatrics*, 133(3), 568-570. doi:10.1542/peds.2013-40969
- Soleimanpour, S., Geierstanger, S., & Brindis, C. (2017). Adverse childhood experiences and resilience: Addressing the unique needs of adolescents. *Academic Pediatrics*, 17(7), S108-S114. doi: 10.1016/j.acap.2017.01.008
- Spencer, N. (2010). Emotional acceptance: Why feeling bad is good. *Psychology Today*. <https://www.psychologytoday.com/us/blog/insight-therapy/201009/emotional-acceptance-why-feeling-bad-is-good>
- Starecheski, L. (2015). *10 questions some doctors are afraid to ask*. National Public Radio. <https://www.npr.org/sections/health-shots/2015/03/03/377569539/even-some-doctors-fear-these-10-questions>

- State of California Department of Health Care Services. (2020a). *ACE screening clinical workflows, ACEs and toxic stress risk assessment algorithm, and ACE-associated health conditions: For pediatrics and adults*. ACEs Aware. <https://www.acesaware.org/wp-content/uploads/2019/12/ACE-Clinical-Workflows-Algorithms-and-ACE-Associated-Health-Conditions-ADA.pdf>
- State of California Department of Health Care Services. (2020b). *Clinician assessment & treatment planning*. ACEs Aware. <https://www.acesaware.org/treat/clinical-assessment-treatment-planning/>
- State of California Department of Health Care Services. (2020c). *Principals of trauma-informed care*. ACEs Aware. <https://www.acesaware.org/treat/principles-of-trauma-informed-care/>
- State of California Department of Health Care Services. (2020d). *Screening for adverse childhood experiences*. ACEs Aware. <https://www.acesaware.org/screen/screening-for-adverse-childhood-experiences/>
- State of California Department of Health Care Services. (2020e). *Screening tools*. ACEs Aware. <https://www.acesaware.org/screen/screening-tools/>
- State of California Department of Health Care Services. (2021). *Becoming ACEs aware in California*. ACEs Aware. <https://training.acesaware.org/>
- Su, S., Jimenez, M. P., Roberts, C. T. F., & Loucks, E. B. (2015). The role of adverse childhood experiences in cardiovascular disease risk: A review with emphasis on plausible mechanisms. *Current Cardiology Reports*, 17(10), 88. doi: 10.1007/s11886-015-0645-1
- Substance Abuse and Mental Health Services Administration. (2014). *SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach*. HHS Publication No. (SMA) 14-4884. Rockville, MD: Substance Abuse and Mental Health Services Administration.

Substance Abuse and Mental Health Services Administration. (2019a). *Key substance use and mental health indicators in the United States: Results from the 2018 National Survey on Drug Use and Health*. <https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHNationalFindingsReport2018/NSDUHNationalFindingsReport2018.pdf>

Substance Abuse and Mental Health Services Administration. (2019b). *Substance misuse prevention for young adults*. <https://store.samhsa.gov/product/Substance-Misuse-Prevention-for-Young-Adults/PEP19-PL-Guide-1>

Substance Abuse and Mental Health Services Administration. (2020a, December 15). *2018-2019 National survey on drug use and health: National maps of prevalence estimates, by state*. <https://www.samhsa.gov/data/report/2018-2019-nsduh-national-maps-prevalence-estimates-state>

Substance Abuse and Mental Health Services Administration. (2020b). *Warning signs and risk factors for emotional distress*. <https://www.samhsa.gov/find-help/disaster-distress-helpline/warning-signs-risk-factors>

Tani, Y., Fujiwara, T., & Kondo, K. (2020). Association between adverse childhood experiences and dementia in older Japanese adults. *JAMA Network Open*, 3(2). doi: 10.1001/jamanetworkopen.2019.20740

Thornton, L. (2019). A brief history and overview of holistic nursing. *Integrative Medicine: A Clinician's Journal*, 18(4), 32-33. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7219452/>

U.S. Department of Transportation, National Highway Traffic Safety Administration. (2018). *Alcohol-impaired driving*. <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812630>

- Van Der Kolk, B. A., Spinazzola, J., Blaustein, M. E., Hopper, J. W., Hopper, E. K., Korn, D. L., & Simpson, W. B. (2007). A randomized clinical trial of eye movement desensitization and reprocessing (EMDR), fluoxetine, and pill placebo in the treatment of posttraumatic stress disorder: Treatment effects and long-term maintenance. *Journal of Clinical Psychiatry, 68*(1), 37-46. doi: 10.4088/jcp.v68n0105
- Van Der Kolk, B. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma*. Penguin Books.
- Van Der Kolk, B. A., Stone, L., West, J., Rhodes, A., Emerson, D, Suvak, M., & Spinazzola, J. (2014). Yoga as an adjunctive treatment for posttraumatic stress disorder: A randomized controlled trial. *Journal of Psychiatry, 75*(6), 559-565. doi: 10.4088/JCP.13m08561
- VetoViolence. (2013). *Adverse childhood experiences: Looking at how ACEs affect our lives & society*. Retrieved from [https://vetoviolence.cdc.gov/apps/phl/resource\\_center\\_infographic.html](https://vetoviolence.cdc.gov/apps/phl/resource_center_infographic.html)
- Viding, E., Sebastian, C. L., Dadds, M. R., Lockwood, P. L., Cecil, C. A. M, De Brito, S. A., & McCrory, E. J. (2012). Amygdala response to pre-attentive masked fear in children with conduct problems: The role of callous-unemotional traits. *American Journal of Psychiatry, 169*, 1109-1116. <https://doi.org/10.1176/appi.ajp.2012.12020191>
- Wade, R., Shea, J. A., Rubin, D., & Wood, J. (2014). Adverse childhood experiences of low-income urban youth. *Official Journal of the American Academy of Pediatrics, 134*(1), e13-e20. <https://doi.org/10.1542/peds.2013-2475>
- Waite, R., & Ryan, R. A. (2020). *Adverse childhood experiences: What students and health professionals need to know*. Routledge.

- White, A., & Hingson, R. (2014). The burden of alcohol use: Excessive alcohol consumption and related consequences among college students. *Alcohol Research*, 35(2), 201-218.
- Windle, M., Haardorfer, R., Getachew, B., Shah, J., Payne, J., Pillai, D., & Berg, C. J. (2018). A multivariate analysis of adverse childhood experiences and health behaviors and outcomes among college students. *Journal of American College Health*, 66(4), 246-251.  
doi: 10.1080/07448481.2018.1431892
- Witte, T. H., Hackman, C. L., Boleigh, A., & Mugoya, G. (2015). The link between psychological abuse victimization and physical health in college students. *Journal of Aggression, Maltreatment, & Trauma*, 24, 693-706.  
doi:10.1080/10926771.2015.1049769
- World Health Organization. (2019). *Coming of age: Adolescent health*.  
<http://www.who.int/health-topics/adolescents/coming-of-age-adolescent-health>

## APPENDIX A: IRB APPROVAL



August 20, 2020

Dr. Mykell Barnacle  
School of Nursing

Re: IRB Determination of Exempt Human Subjects Research:  
Protocol #PH21019, "Adverse Childhood Experiences Screening in the Student Health Setting: Mitigating Poor Health Outcomes"

NDSU Co-investigator(s) and research team: Rachel Ostlund  
Date of Exempt Determination: 8/20/2020 Expiration Date: 8/19/2023  
Study site(s): NDSU Student Health Services/online Funding Agency: n/a  
The above referenced human subjects research project has been determined exempt (category 2(ii)) in accordance with federal regulations (Code of Federal Regulations, Title 45, Part 46, Protection of Human Subjects). This determination is based on the revised protocol materials received 8/18/2020.

Please also note the following:

- If you wish to continue the research after the expiration, submit a request for recertification several weeks prior to the expiration.
- The study must be conducted as described in the approved protocol. Changes to this protocol must be approved prior to initiating, unless the changes are necessary to eliminate an immediate hazard to subjects.
- Notify the IRB promptly of any adverse events, complaints, or unanticipated problems involving risks to subjects or others related to this project.
- Report any significant new findings that may affect the risks and benefits to the participants and the IRB.

Research records may be subject to a random or directed audit at any time to verify compliance with IRB standard operating procedures.

Thank you for your cooperation with NDSU IRB procedures. Best wishes for a successful study.  
Sincerely,

A handwritten signature in purple ink that reads "Kristy Shirley".

Kristy Shirley, CIP, Research Compliance Administrator

For more information regarding IRB Office submissions and guidelines, please consult [https://www.ndsu.edu/research/for\\_researchers/research\\_integrity\\_and\\_compliance/institutional\\_review\\_board\\_irb/](https://www.ndsu.edu/research/for_researchers/research_integrity_and_compliance/institutional_review_board_irb/). This Institution has an approved FederalWide Assurance with the Department of Health and Human Services: FWA00002439.

#### INSTITUTIONAL REVIEW BOARD

NDSU Dept 4000 | PO Box 6050 | Fargo ND 58108-6050 | 701.231.8995 | Fax 701.231.8098 | [ndsu.edu/irb](https://www.ndsu.edu/irb)

Shipping address: Research 1, 1735 NDSU Research Park Drive, Fargo ND 58102

NDSU is an EO/AA university.



## APPENDIX B: IRB PROTOCOL AMENDMENT

Date Received



INSTITUTIONAL REVIEW BOARD

office: Research 1, 1735 NDSU Research Park Drive, Fargo, ND 58102

mail: NDSU Dept. #4000, PO Box 6050, Fargo, ND 58108-6050

p: 701.231.8995 f: 701.231.8098 e: [ndsuirb@ndsu.edu](mailto:ndsuirb@ndsu.edu) w: [www.ndsu.edu/irb](http://www.ndsu.edu/irb)

IRB Protocol #:

### Protocol Amendment Request Form

Changes to approved research may not be initiated without prior IRB review and approval, except where necessary to eliminate apparent immediate hazards to participants. Reference: [SOP 7.5 Protocol Amendments](#).

Examples of changes requiring IRB review include, but are not limited to changes in: investigators or research team members, purpose/scope of research, recruitment procedures, compensation strategy, participant population, research setting, interventions involving participants, data collection procedures, or surveys, measures or other data forms.

#### Protocol Information:

Protocol #: **PH21019** Title: **Adverse Childhood Experiences Screening in the Student Health Setting: Mitigating Poor Health Outcomes**

Review category:  Exempt  Expedited  Full board

Principal investigator: **Mykell Barnacle** Email address: [mykell.barnacle@ndsu.edu](mailto:mykell.barnacle@ndsu.edu)  
Dept: **Nursing**

Co-investigator: **Rachel Ostlund** Email address: [rachel.m.ostlund@ndsu.edu](mailto:rachel.m.ostlund@ndsu.edu)  
Dept: **Nursing**


Principal investigator signature, Date: Mykell Barnacle via email 10/5/2020



In lieu of a written signature, submission via the Principal Investigator's NDSU email constitutes an acceptable electronic signature.

#### Description of proposed changes:


1. Date of proposed implementation of change(s)\*: **10/1/2020**  
\* Cannot be implemented prior to IRB approval unless the IRB Chair has determined that the change is necessary to eliminate apparent immediate hazards to participants.
2. Describe proposed change(s), including justification:
  1. Title Change: Adverse Childhood Experiences Among College Students: Best-Practice Recommendations for Student Health Clinicians
  2. Removal of 3 questions from survey - see attachment
  3. Removal of 1 question and addition of 1 question to interview questionnaire - see attachment

3. Will the change(s) increase any risks, or present new risks (*physical, economic, psychological, or sociological*) to participants?  
 No  
 Yes: *In the appropriate section of the protocol form, describe new or altered risks and how they will be minimized.*
4. Does the proposed change involve the addition of a vulnerable group of participants?  
 Children:  no  yes – include the *Children in Research* attachment form  
 Prisoners:  no  yes – include the *Prisoners in Research* attachment form  
 Cognitively impaired individuals:  no  yes\*  
 Economically or educationally disadvantaged individuals:  no  yes\*
- \*Provide additional information where applicable in the revised protocol form.*
5. Does the proposed change involve a request to waive some or all the elements of informed consent or documentation of consent?  
 no  
 yes -  Attach the *Informed Consent Waiver or Alteration Request*.
6. Does the proposed change involve a new research site?  
 no  
 yes



**If information in your previously approved protocol has changed, or additional information is being added, incorporate the changes into relevant section(s) of the protocol. Draw attention to changes by using all caps, asterisks, etc. to the revised section(s) and attach a copy of the revised protocol with your submission. (If the changes are limited to addition/change in research team members, research sites, etc. a revised protocol form is not needed.)**

**Impact for Participants (future, current, or prior):**

1. Will the change(s) alter information on previously approved versions of the recruitment materials, informed consent, or other documents, or require new documents?  
 No  
 Yes -  attach revised/new document(s)
2. Could the change(s) affect the willingness of *currently* enrolled participants to continue in the research?  
 No  
 Yes - describe procedures that will be used to inform current participants, and re-consent, if necessary:

3. Will the change(s) have any impact to *previously* enrolled participants?

No

Yes - describe impact, and any procedures that will be taken to protect the rights and welfare of participants:

-----FOR IRB OFFICE USE ONLY-----

|  |                 |
|--|-----------------|
| Request is: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Not Approved   |                 |
| Review: <input checked="" type="checkbox"/> Exempt, category #: <u>2(ii)</u> <input type="checkbox"/> Expedited method, category # ____ <input type="checkbox"/> Convened meeting, date: ____<br><input type="checkbox"/> Expedited review of minor change |                 |
| IRB Signature: <i>Kirsty Shirley</i>   | Date: 10/8/2020 |
| Comments:  |                 |

## APPENDIX C: ADVERSE CHILDHOOD EXPERIENCES REVISED QUESTIONNAIRE

### Adverse Childhood Experiences Revised Questionnaire

California Surgeon General's Clinical Advisory Committee



Our relationships and experiences—even those in childhood—can affect our health and well-being. Difficult childhood experiences are very common. Please tell us whether you have had any of the experiences listed below, as they may be affecting your health today or may affect your health in the future. This information will help you and your provider better understand how to work together to support your health and well-being.

|  |                          |
|--|--------------------------|
| <p><b>Instructions:</b> Below is a list of 10 categories of Adverse Childhood Experiences (ACEs). From the list below, please place a checkmark next to each ACE category that you experienced prior to your 18<sup>th</sup> birthday. Then, please add up the number of categories of ACEs you experienced and put the <i>total number</i> at the bottom.</p> |                          |
| Did you feel that you didn't have enough to eat, had to wear dirty clothes, or had no one to protect or take care of you?  | <input type="checkbox"/> |
| Did you lose a parent through divorce, abandonment, death, or other reason?  | <input type="checkbox"/> |
| Did you live with anyone who was depressed, mentally ill, or attempted suicide?  | <input type="checkbox"/> |
| Did you live with anyone who had a problem with drinking or using drugs, including prescription drugs?   | <input type="checkbox"/> |
| Did your parents or adults in your home ever hit, punch, beat, or threaten to harm each other?   | <input type="checkbox"/> |
| Did you live with anyone who went to jail or prison?   | <input type="checkbox"/> |
| Did a parent or adult in your home ever swear at you, insult you, or put you down?   | <input type="checkbox"/> |
| Did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way?  | <input type="checkbox"/> |
| Did you feel that no one in your family loved you or thought you were special?   | <input type="checkbox"/> |
| Did you experience unwanted sexual contact (such as fondling or oral/anal/vaginal intercourse/penetration)?  | <input type="checkbox"/> |
| <b>Your ACE score is the total number of checked responses</b>   |                          |

Do you believe that these experiences have affected your health?  Not Much  Some  A Lot

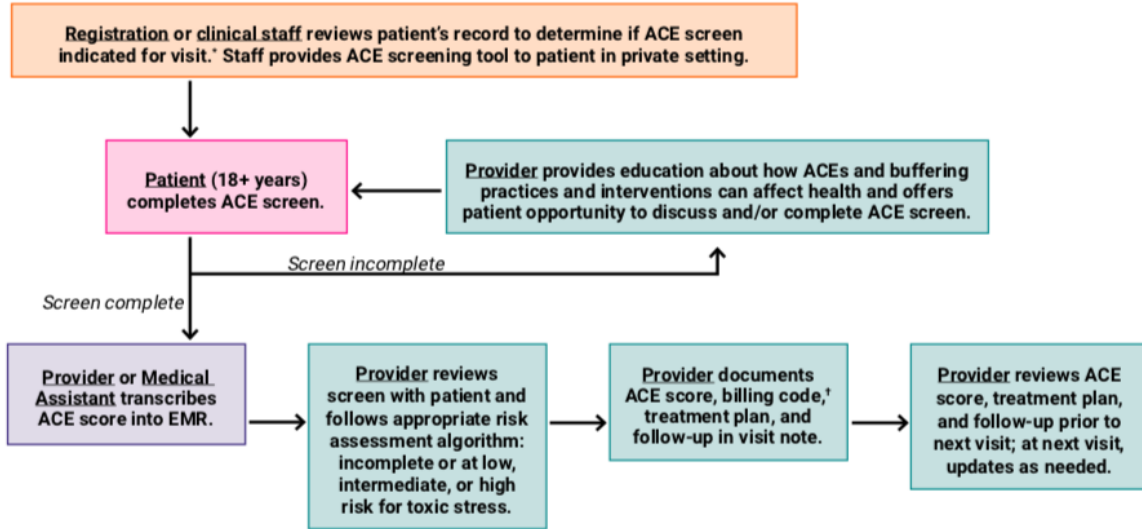
Experiences in childhood are just one part of a person's life story.  
There are many ways to heal throughout one's life.

(SCDHCS, 2020e)

## APPENDIX D: ADULT ACE SCREENING CLINICAL WORK



### Adult ACE Screening Clinical Workflow



\*ACE tool is recommended to be completed once per adult, per lifetime.

†Healthcare Common Procedure System (HCPCS) billing codes for ACE scores:

G9919: ACE score  $\geq 4$ , at high risk for toxic stress.

G9920: ACE score of 0 – 3, at lower risk for toxic stress (on algorithm, at either low or intermediate risk).

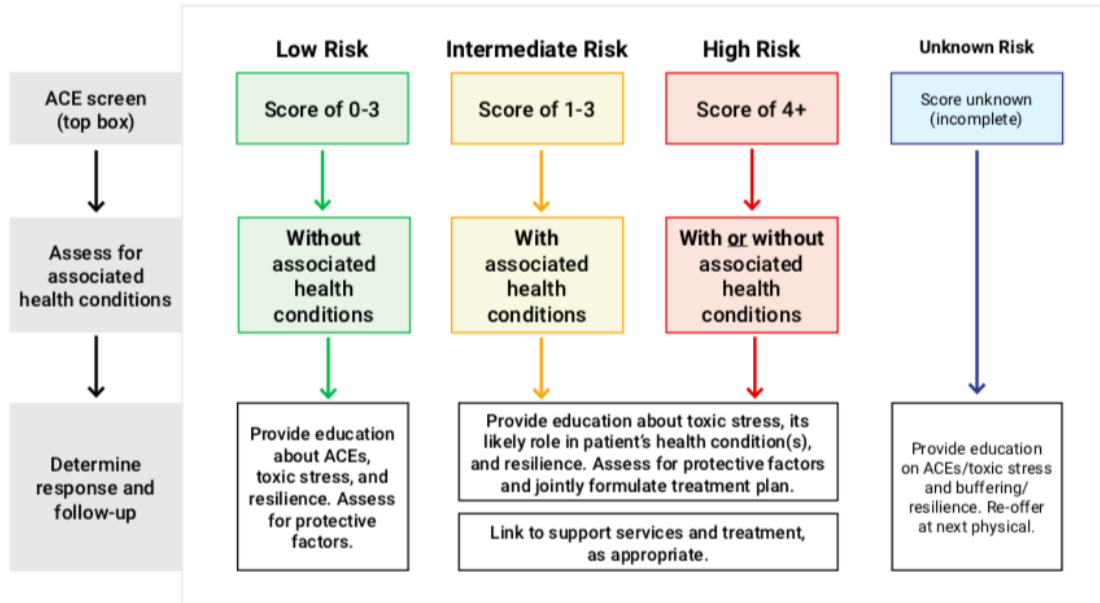
(SCDHCS, 2020a)

# APPENDIX E: ACES AND TOXIC STRESS RISK ASSESSMENT ALGORITHM



## Adverse Childhood Experiences (ACEs) and Toxic Stress Risk Assessment Algorithm

Adults



Partial completion may indicate discomfort or lack of understanding. If partial response indicates patient is at intermediate or high risk, follow the guidelines for that category.

If the ACE score is 0-3 without ACE-Associated Health Conditions, the patient is at "low risk" for toxic stress physiology. The provider should offer education on the impact of ACEs and other adversities on health (including reviewing patient's self-assessment of ACEs' impact on health), buffering/protective factors, and interventions that can mitigate health risks. If the ACE score is 1-3 with ACE-Associated Health Conditions, the patient is at "intermediate risk." If the ACE score is 4 or higher, even without ACE-Associated Health Conditions, the patient is at "high risk" for toxic stress physiology. In both cases, the provider should offer education on how ACEs may lead to a toxic stress response and associated health conditions, as well as practices and interventions demonstrated to buffer the toxic stress response, such as sleep, exercise, nutrition, mindfulness, mental health, and healthy relationships. The provider should also assess for protective factors, jointly formulate a treatment plan and link to supportive services and interventions, as appropriate.

(SCDHCS, 2020a)

## APPENDIX F: ACE-ASSOCIATED HEALTH CONDITIONS

### ACE-Associated Health Conditions: Adults



| Symptom or Health Condition  | Odds Ratio (excluding outliers) |
|--|---------------------------------|
| Cardiovascular disease <sup>21</sup> (CAD, MI, ischemic heart disease)           | 2.1                             |
| Tachycardia <sup>37</sup>  | ≥ 1 ACE: 1.4                    |
| Stroke <sup>20</sup>   | 2.0                             |
| Chronic obstructive pulmonary disease (emphysema, bronchitis) <sup>21</sup>      | 3.1                             |
| Asthma <sup>43</sup>   | 2.2                             |
| Diabetes <sup>21</sup>   | 1.4                             |
| Obesity <sup>20</sup>  | 2.1                             |
| Hepatitis or jaundice <sup>1</sup>   | 2.4                             |
| Cancer, any <sup>21</sup>  | 2.3                             |
| Arthritis <sup>32,7</sup> (self-reported)  | 3 ACEs, HR: 1.5<br>≥ 1 ACE: 1.3 |
| Memory impairment <sup>20</sup> (all causes, including dementias)                | 4.9                             |
| Kidney disease <sup>43</sup>   | 1.7                             |
| Headaches <sup>11</sup>  | ≥ 5 ACEs: 2.1                   |
| Chronic pain, any <sup>38</sup> (using trauma z-score)                           | 1.2                             |
| Chronic back pain <sup>38</sup> (using trauma z-score)                           | 1.3                             |
| Fibromyalgia <sup>27</sup>   | ≥ 1 ACE: 1.8                    |
| Unexplained somatic symptoms, including somatic pain, headaches <sup>20,2</sup>  | 2.0 - 2.7                       |
| Skeletal fracture <sup>1</sup>   | 1.6 - 2.6 <sup>20</sup>         |
| Physical disability requiring assistive equipment <sup>23</sup>                  | 1.8                             |
| Depression <sup>21</sup>   | 4.7                             |
| Suicide attempts <sup>21</sup>   | 37.5                            |
| Suicidal ideation <sup>20</sup>  | 10.5                            |
| Sleep disturbance <sup>20</sup>  | 1.6                             |
| Anxiety <sup>21</sup>  | 3.7                             |
| Panic and anxiety <sup>20</sup>  |                                 |
| Post-traumatic stress disorder <sup>37</sup>                                     | 4.5                             |
| Illicit drug use <sup>21</sup> (any)   | 5.2                             |
| Injected drug, crack cocaine, or heroin use <sup>21</sup>                        | 10.2                            |
| Alcohol use <sup>21</sup>  | 6.9                             |
| Cigarettes or e-cigarettes use <sup>35</sup>                                     | 6.1                             |
| Cannabis use <sup>35</sup>   | 11.0                            |
| Teen pregnancy <sup>21</sup>   | 4.2                             |
| Sexually transmitted infections, lifetime <sup>21</sup>                          | 5.9                             |
| Violence victimization <sup>21</sup> (intimate partner violence, sexual assault) | 7.5                             |
| Violence perpetration <sup>21</sup>  | 8.1                             |

Odds ratios compare outcomes in individuals with > 4 ACEs to those with 0 ACEs, except where specified

(SCDHCS, 2020a)

## APPENDIX G: RECRUITMENT EMAIL

NDSU North Dakota State University  
School of Nursing-Dept. 2670  
PO Box 6050  
Fargo, ND 58108-6050  
701.231.5692

Title of Project: Adverse Childhood Experiences Screening in a Student Health Setting: Mitigating Poor Health Outcomes

Dear Colleague,

My name is Rachel Ostlund and I am currently a Doctor of Nursing Practice student at NDSU. I am requesting your help with a practice improvement project focusing on adverse childhood experiences (ACEs), otherwise known as childhood trauma. The purpose of this project is to assess clinician knowledge, experience, and attitudes surrounding ACEs, current ACE-related practices, and feasibility of ACE screening in the student health setting. Properly identifying ACE exposure can impact a clinician's practice if they are aware of ACEs, know how to identify and screen for ACEs, and understand how to treat and/or refer care for patients who have been exposed to ACEs. Based on the findings of this project, best-practice recommendations will be developed for ACE-related practices specific to the student health setting and will be disseminated to NDSU SHS clinicians.

You are invited to participate in this project because you are a clinician at the SHS clinic. *If you're willing to participate, you will be asked to complete an anonymous electronic survey and engage in an individual interview regarding ACEs.* The one-time confidential interview will be conducted in October and will take place through an online setting (e.g. Zoom), audio and video recorded, and should take about 20-30 minutes. **Below you will find a Qualtrics survey link. Please complete the survey by August 31, 2020.** While your survey responses will be anonymous, a separate link will request your name and email address for further communication regarding the next phase of this project.

Survey responses and the interview file will be stored in a file on a password protected computer only accessible by the co-investigator. Once the data has been analyzed, survey responses will be deleted seven days after survey closure and the interview file will be deleted prior to the completion of this project. Your participation is voluntary; completion of the survey will signify your consent. If you do not wish to participate, you may decline or withdraw from participation at any time without penalty. All procedures for the study have been approved by the Institutional Review Board at NDSU.

If you have any questions or comments, please contact me by email at [rachel.m.ostlund@ndsu.edu](mailto:rachel.m.ostlund@ndsu.edu). You may also contact my advisor, Dr. Mykell Barnacle by email at [mykell.barnacle@ndsu.edu](mailto:mykell.barnacle@ndsu.edu) or by phone at 701.231.7730. You have rights as a research participant. If you have questions about the rights of human participants in research, or to report a problem, contact the North Dakota State University IRB Office by telephone at 701.231.8995 or 800-855-6717, or by e-mail at [NDSU.IRB@ndsu.edu](mailto:NDSU.IRB@ndsu.edu).

Thank you for your attention and consideration,  
Rachel Ostlund, DNP-S, BSN-RN  
Mykell Barnacle, DNP, RN, FNP-BC

Survey link: [https://ndstate.co1.qualtrics.com/jfe/form/SV\\_ewyliANmr6VSHml](https://ndstate.co1.qualtrics.com/jfe/form/SV_ewyliANmr6VSHml)



## APPENDIX H: SURVEY QUESTIONNAIRE

1. I know the 10 categories of adverse childhood experiences (ACEs).
  - a. *Yes/not sure/no*
2. Please rate your knowledge level of the impact of ACEs on neurodevelopment and risk-taking behavior along with health outcomes associated with ACE exposure.
  - a. *Excellent, above average, average, below average, poor*
3. I am able to identify individuals who may have been exposed to ACEs based on their presenting symptoms.
  - a. *Strongly agree, agree, neutral, disagree, strongly disagree*
4. How often do you screen students for ACE?
  - a. *Daily, weekly, monthly, seldom, never*
5. How likely are you to offer interventions for students exposed to ACEs, for example, promoting resiliency and protective factors?
  - a. *Extremely, very, moderately, slightly, not at all*
6. I am able to identify university campus and community referrals for students who've been exposed to ACEs.
  - a. *Yes/not sure/no*
7. Do you have additional comments or feedback regarding ways to mitigate poor health outcomes among college students who've experienced ACEs?
  - a. *Open text*

## APPENDIX I: INFORMATIONAL GUIDE

### What are adverse childhood experiences (ACEs)?

- ACEs are categorized by the following 10 categories<sup>27</sup>:
- Potentially traumatic events experienced prior to the age of 18 years, often in the form of extended or prolonged stress exposure.<sup>5</sup>



### Prevalence/Statistics

- One in six adults have been exposed to four or more ACEs<sup>5</sup>
- Original ACE study – conducted in 1998
  - over 17,000 participants; 95% college educated
  - >50% reported at least one ACE
  - 25% reported two or more ACEs
  - 6.2% reported an ACE score of four or more<sup>10</sup>
- A survey of MN and CA college students reported >50% had one or more ACE exposure<sup>11, 18</sup>
- Among 2,412 MN college students from 18 post-secondary schools, 68.4% reported one or more ACE<sup>18</sup>

## Stress & Neurobiology

- Emerging evidence points to neurobiological, genetic, and epigenetic dysregulation as a result of ACEs
- Chronic and repeated stress affects the neurobiological, endocrine, and immune systems
  - Neurobiological
    - *Hypopituitary adrenal (HPA) axis* – key component of the stress response in the body<sup>1, 8, 22, 31</sup>
      - Activated by impulses sent from amygdala and prefrontal cortex in response to stress
    - *Amygdala* – fear center of the brain; *fight-or-flight*; stimulates sympathetic nervous system (SNS) response
      - Triggers the inflammatory process to prevent infection
      - Chronic activation disrupts the brain center of language, learning, and logic<sup>8</sup>
    - *Prefrontal Cortex*
      - Controls memory, attention, emotion regulation, decision-making, and reasoning<sup>8</sup>
      - Impairs high levels of executive functioning<sup>8</sup> predisposing an individual to impulsivity, lack of judgment, and inappropriate decision-making<sup>31</sup>
  - Endocrine
    - SNS activation leads to the release of cortisol and elevates inflammatory levels which decrease cellular sensitivity to insulin, thereby, increasing risk for diabetes and metabolic syndrome<sup>8</sup>
    - Overall greater cortisol levels throughout the day disrupt the circadian cycle, impairs memory, and reduces motivation for rewarding stimuli<sup>8, 22</sup>
  - Immune
    - Increased inflammatory levels caused by activation of SNS may contribute to atherosclerotic changes. Thus, increasing risk for CVD and autoimmune disorders<sup>8</sup>

## Symptomology

- Impaired decision-making, learning, and attention and behavioral issues<sup>6, 25</sup>
- Inability to identify and/or understand emotions in self and others and an inability to regulate moods and emotions<sup>12</sup>
- Anger, physical aggression, dissociation, emotional and conduct problems, hyperactivity, peer relation difficulty, and symptoms of depression and anxiety<sup>16</sup>
- Self-blame, ruminating thoughts, being withdrawn<sup>15, 31</sup>
- Somatic complaints, for example, unexplained dizziness, tinnitus, and blurry vision<sup>13</sup>
- C/o cardiac, muscle, and chronic pain, gastrointestinal symptoms, and headaches<sup>5</sup>

Psychological and Behavioral Sequelae

| Connection  | Affect regulation  | Self-worth  |
|---|--|---|
| <ul style="list-style-type: none"> <li>• Non-existent or minimal resources to utilize in times of crisis</li> <li>• Difficulty establishing or managing boundaries</li> <li>• Feeling as though no one cares</li> <li>• Avoiding relationships and connections with others</li> </ul> | <ul style="list-style-type: none"> <li>• Detest or rage against themselves</li> <li>• Expression of feelings in the form of anger, violence, and bullying</li> <li>• Destructive behaviors, such as cutting, burning, or punching</li> <li>• Engaging in risk-taking behavior</li> <li>• Inability to experience or name feelings</li> </ul> | <ul style="list-style-type: none"> <li>• Feeling "less than" or inadequate</li> <li>• Struggle to accept or feel good about themselves</li> <li>• Feel as though they're not entitled to exist</li> <li>• Feelings of shame, self-loathing, or despair</li> </ul> |

(Pearlman, 1997)

# Coping Mechanisms

- A lack of behavior and emotion regulation due to a dysfunctional stress response increases a person's vulnerability to develop maladaptive coping mechanisms, such as risky-taking behavior<sup>6, 25, 31</sup>
- Risk-taking behavior includes the use of alcohol, tobacco, and drugs leading to depression, anxiety, self-harm, and substance abuse<sup>35</sup>
  - Odds of early initiation of alcohol or cannabis use increase by 34% for each additional ACE exposure<sup>9, 23</sup>
- Risky sexual behavior<sup>19</sup>
  - Motives for risky sexual behavior are highly linked to depressive symptoms and used to cope with negative emotions, appease partners and friends, and boost self-confidence
  - Increased risk for HIV/STIs, and unplanned pregnancy
- Avoidant Coping
  - Distancing and distraction behavior, such as social withdrawal, isolation, and the use of alcohol and drugs

# Associated Health Outcomes

- Score of 4 or more
  - 12-fold increased risk of alcoholism, drug abuse, depression, and suicide attempts
  - 2- to 4-fold increased risk for smoking and poor self-rated health
  - 1.4- to 1.6-fold increase in physical inactivity and severe obesity
  - 58% increased risk for myocardial infarction
  - 32% increased risk for type 2 diabetes
  - 20-50% increased risk for obesity
- Score of greater than or equal to 6
  - Increased risk for a shortened lifespan by nearly 20 years
- Score of greater than or equal to 7
  - 360% increased risk for cardiovascular disease 7, 8, 9, 10, 11, 12, 13, 14

(Felitti et al., 1998)

| ACE-Associated Health Conditions: Adults   |                                 | oces oware<br>OWN. TREAT. HEL. |
|--|---------------------------------|--------------------------------|
| Symptom or Health Condition  | Odds Ratio (excluding outliers) |                                |
| Cardiovascular disease <sup>1</sup> (CAD, MI, ischemic heart disease)            | 2.1                             |                                |
| Tachycardia <sup>2</sup>   | +1 ACE: 1.4                     |                                |
| Stroke <sup>3</sup>  | 2.8                             |                                |
| Chronic obstructive pulmonary disease (emphysema, bronchitis) <sup>4</sup>       | 3.1                             |                                |
| Asthma <sup>5</sup>  | 2.2                             |                                |
| Diabetes <sup>6</sup>  | 1.4                             |                                |
| Obesity <sup>7</sup>   | 2.1                             |                                |
| Hepatitis or jaundice <sup>8</sup>   | 2.4                             |                                |
| Cancer any <sup>9</sup>  | 2.5                             |                                |
| Arthritis <sup>10</sup> (self-reported)  | 3 ACEs, HR: 1.5<br>+1 ACE: 1.3  |                                |
| Memory impairment <sup>11</sup> (all causes, including dementia)                 | 4.9                             |                                |
| Kidney disease <sup>12</sup>   | 1.7                             |                                |
| Headaches <sup>13</sup>  | +3 ACEs: 2.1                    |                                |
| Chronic pain, any <sup>14</sup> (using trauma z score)                           | 1.2                             |                                |
| Chronic back pain <sup>15</sup> (using trauma z score)                           | 1.3                             |                                |
| Fibromyalgia <sup>16</sup>   | +1 ACE: 1.8                     |                                |
| Unexplained somatic symptoms, including somatic pain, headache <sup>17</sup>     | 2.0-2.7                         |                                |
| Skeletal fracture <sup>18</sup>  | 1.5-2.6 <sup>18</sup>           |                                |
| Physical disability requiring assistive equipment <sup>19</sup>                  | 1.8                             |                                |
| Depression <sup>20</sup>   | 4.7                             |                                |
| Suicide attempts <sup>21</sup>   | 37.5                            |                                |
| Suicidal ideation <sup>22</sup>  | 10.5                            |                                |
| Sleep disturbance <sup>23</sup>  | 1.8                             |                                |
| Anxiety <sup>24</sup>  | 3.7                             |                                |
| Panic and anxiety <sup>25</sup>  |                                 |                                |
| Post-traumatic stress disorder <sup>26</sup>                                     | 4.5                             |                                |
| Illicit drug use <sup>27</sup> (any)   | 5.2                             |                                |
| Injected drug, crack cocaine, or heroin use <sup>28</sup>                        | 10.2                            |                                |
| Alcohol use <sup>29</sup>  | 6.9                             |                                |
| Cigarette or e-cigarette use <sup>30</sup>                                       | 6.7                             |                                |
| Cannabis use <sup>31</sup>   | 11.8                            |                                |
| Teen pregnancy <sup>32</sup>   | 4.2                             |                                |
| Sexually transmitted infections, lifetime <sup>33</sup>                          | 5.9                             |                                |
| Violence victimization <sup>34</sup> (intimate partner violence, sexual assault) | 7.5                             |                                |
| Violence perpetration <sup>35</sup>  | 8.1                             |                                |

Odds ratios compare outcomes in individuals with +4 ACEs to those with 0 ACEs, except where specified.

(SCDHHS, 2020a)

## College Students

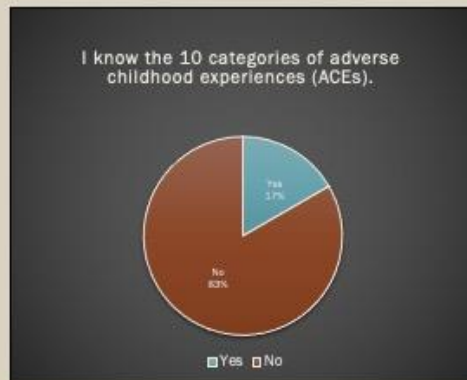
- In addition to expected challenges associated with college, students exposed to ACEs face obstacles related to their trauma history, dysregulation of emotional and social behavior, poor academic performance, and an increased risk of dropping out of college<sup>2, 17, 32, 33</sup>
- In 2016, 2,631 NDSU students completed a survey aimed at identifying high-risk drinking predictors:
  - 74.2% had used alcohol within the past 30 days with nearly half reporting weekly alcohol use over the past year
  - Within two weeks prior to the survey:
    - 43.7% had consumed equal to or greater than 5 drinks per occasion (binge drinking)
    - 15.9% had used tobacco and 14.1% had used cannabis<sup>20</sup>
- In Minnesota, 2,412 college students surveyed
  - Two out of three (68.4%) reported at least one ACE
  - Three or more stressors increased rates of risky health behaviors, such as high-risk drinking, tobacco and cannabis use, and higher credit card debt
  - Stress was the most reported issue (75.4%)
  - Stress had the greatest impact on academic performance (51.1%)
  - Two out of five (41.5%) reported an inability to manage stressors<sup>18</sup>
- National Data Survey
  - In comparison to other emerging adults between 18 and 25 years, college students report more frequent episodes of binge and heavy alcohol use and higher rates of drug use<sup>29</sup>

## ACE Screening

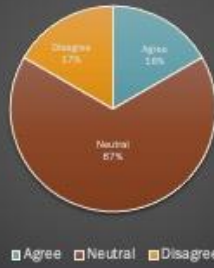
- Assessment tool to calculate number of ACEs experienced prior to age 18 years
- 10-question survey with "yes" or "no" answers
- One point is added for every "yes" answer
- ACE score cannot exceed 10 points
- Self-administered instrument completed once per adult per lifetime (see next slide)
- Provided in a private and safe space
- Advantages
  - Tool is brief, leads to earlier identification of those exposed, and offers an opportunity to discuss potential treatment options
  - Leads to conversations related to trauma exposure opening dialogue regarding life events and stressors
- Barriers
  - Lack of knowledge regarding ACEs, lack of awareness regarding prevalence and incidence of ACEs, a misunderstanding of how to proceed with information garnered by ACE screening, limited time for office visits, and a lack of reimbursement incentive to conduct screenings during brief clinical visits
  - Clinician's feel the questions are invasive and produce discomfort for them and the patients
    - Discussing ACEs is like discussing domestic violence, alcohol use, and other sensitive topics
    - Clinicians are trained to address all aspects of an individual's past and present to maximize optimal care<sup>25, 33</sup>

## NDSU SHS Clinician Survey Results

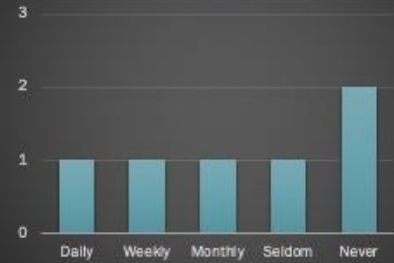
- <20% of clinicians know the 10-categories of ACEs
- >60% of clinicians rate their knowledge level as average or above average on the impact of ACEs on neurodevelopment and risk-taking behaviors along with associated health outcomes
- Five out of six clinicians are unable to identify individuals exposed to ACEs based on symptoms
- Four in six clinicians screen for ACEs at some point during their visits
- >80% of clinicians are likely to offer interventions for students exposed to ACEs
- About 30% of clinicians are unsure of campus and community referral sources
- Clinician responses:
  - ACEs are encountered often with patients, especially those presenting with mental health symptoms.
  - Need availability of therapy and support options for students who have a history of ACEs. The clinician suggested increased awareness from healthcare community regarding identification of ACEs and risks associated.



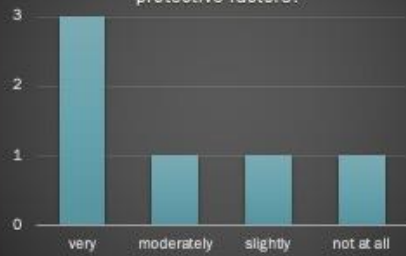
I am able to identify individuals who may have been exposed to ACEs based on their presenting symptoms.



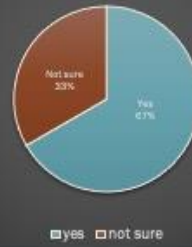
How often do you screen students for ACEs?



How likely are you to offer interventions for students exposed to ACEs, for example, promoting resiliency and protective factors?



I am able to identify university campus and community referrals for students who've been exposed to ACEs.



## APPENDIX J: INTERVIEW QUESTIONNAIRE

1. Describe the most common clinic visit types seen in the student health setting.
2. How do you feel knowledge regarding ACEs and ACE-associated health conditions impacts your practice?
3. If you identify a student who may have been exposed to one of the ACE categories, how would that impact your care? Would it change, if so, how?
4. What challenges do you experience providing care for students who may have been exposed to one or more of the ACE categories?
5. Do you feel screening students for ACEs is important? Why or why not?
6. Would screening students for ACEs change your current practice? If so, how?
7. What are potential benefits of screening students for exposure to ACEs using a one-time screening tool?
8. What are potential barriers to screening students for exposure to ACEs using a one-time screening tool?
9. Do you have specific strategies for ways to overcome barriers to ACE screening in the student health setting?
10. What additional resources would NDSU SHS clinic need to implement ACE screening?

### *Interventions*

11. What university campus and community resources and referrals are available to students who have experienced one or more of the ACE categories?
12. What additional support is needed for NDSU SHS clinic to effectively provide interventions for students who may have been exposed to one or more of the ACE categories?
13. Do you have additional comments or feedback regarding ways to mitigate poor health outcomes among college students who've experienced ACEs?



## APPENDIX K: COMMUNITY NEEDS ASSESSMENT FINDINGS PRESENTATION



### ADVERSE CHILDHOOD EXPERIENCES

- Potentially traumatic events or circumstances occurring before the age of 18 often in the form of extended or prolonged stress exposure
- Instability, a lack of safety, and impaired bonding
- Increased risk for mental health problems and chronic health conditions
- Trauma is subjective

## PREVALENCE

- One in six adults have been exposed to  $\geq 4$  ACEs
- Original ACE study
  - Over 17,000 participants
  - All privately insured • 95% college educated • 75% Caucasian • 66% over the age of 50
    - 1 ACE • 2 out of 3
    - 2 or 3 ACEs • 1 in 5
    - $\geq 4$  ACEs • 1 in 8
- ND | SD | MN
  - Children •  $\geq 1$  ACE  $\rightarrow$   $>40\%$
- College students
  - 1/3 of undergraduate college students report  $\geq 2$  ACEs
  - Georgia • 1 ACE  $\rightarrow$  21% •  $\geq 4$  ACEs  $\rightarrow$  12.4%
  - California • 1 ACE  $\rightarrow$  50% • Multiple ACEs  $\rightarrow$  23%
  - Minnesota • 1 ACE  $\rightarrow$  68.4%

# STRESS RESPONSE

## Types of stress

- Positive
- Tolerable
- Toxic

## Stress Response

- Sympathetic Nervous System "fight-or-flight"
  - Amygdala - fear center of the brain
- Hypothalamic-Pituitary-Adrenal Axis
  - Hypothalamus
    - corticotropin-releasing hormone
  - Anterior pituitary gland
    - adrenocorticotropic hormone (ACTH)
  - Adrenal cortex
    - ACTH triggers release of glucocorticoids (cortisol and epinephrine/norepinephrine)
- Parasympathetic Nervous System

- Acetylcholine

## Nervous

- Synapses and pruning
- Functional and structure changes
- Epigenome - gene expression
- Behavioral issues

## Endocrine

- Elevated levels of cortisol
- Elevates BP
- Release of stored glucose
- Decreased cellular sensitivity to insulin
- Disrupted circadian cycle

## Immune

- Autoimmune disorders
- Elevated inflammatory levels
- Inflammation leads to atherosclerotic changes
- Type 2 diabetes & cardiovascular disease



|                   |   |
|-------------------|---|
| Connection        | <ul style="list-style-type: none"> <li>• Non-existent or minimal resources to utilize in times of crisis</li> <li>• Loneliness</li> <li>• Dysfunctional relationships</li> <li>• Difficulty establishing or managing boundaries</li> <li>• Avoiding relationships and connections with others</li> <li>• Inability to feel safe and trust others</li> </ul>       |
| Affect Regulation | <ul style="list-style-type: none"> <li>• Loathe, detest, or rage against themselves</li> <li>• Expression of feelings in the form of anger, violence, and bullying</li> <li>• Destructive behaviors, such as cutting, burning, or punching</li> <li>• Engaging in risk-taking behavior</li> <li>• Inability to experience or name emotions</li> </ul>             |
| Self-worth        | <ul style="list-style-type: none"> <li>• Feeling "less than" or inadequate</li> <li>• Feeling as though no one cares</li> <li>• Struggle to accept or feel good about themselves</li> <li>• Self-blame, ruminating thoughts, withdrawn</li> <li>• Feel as though they're not entitled to exist</li> <li>• Feelings of shame, self-loathing, or despair</li> </ul> |

## PSYCHOLOGICAL & BEHAVIORAL SEQUELAE

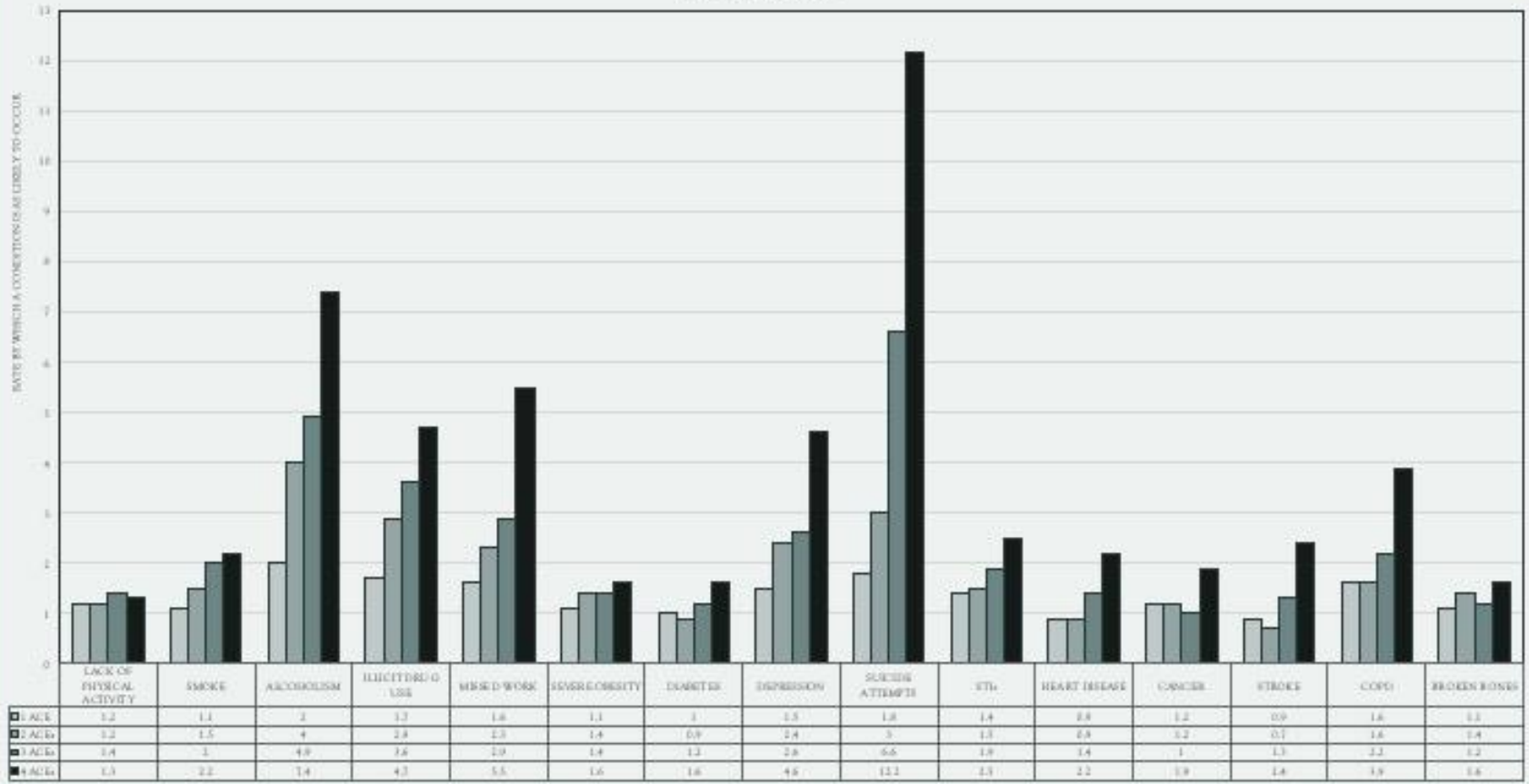
- More frequent office visits among trauma exposed college students
- C/o loneliness, dysfunctional relationships, alexithymia, and feeling as though they're not a good person
  - Alexithymia - inability to identify or name emotions
- Impaired self-capacities
  - Connection
    - Inability to feel safe and trust others, negative self-worth, self-destruction
  - Affect Regulation
    - Somaticize • Suppress or avoid emotions • Process emotions through actions
    - Unable to self-soothe
  - Self-worth
    - Shame, self-loathing

# HEALTH OUTCOMES

- $\geq 4$  ACEs  $\rightarrow$  dramatically increased risk for 8 out of 10 leading causes of death in U.S.
  - Health Conditions:
    - Doubles the risk for cardiovascular disease, stroke, and cancer
    - 32% increased risk for type 2 diabetes
  - Behaviors:
    - Smoking and poor self-rated health: 2- to 3-fold
    - Physical inactivity and severe obesity: 1.4- to 1.6-fold
    - 3- to 6-fold increase in odds of sexual risk-taking, poor mental health, and problematic alcohol use
    - $\geq 7$ -fold increase in odds of problematic drug use and interpersonal and self-directed violence
- 6 ACEs  $\rightarrow$  shortened lifespan by 20 years
- $\geq 7$  ACEs  $\rightarrow$  360% increased risk for cardiovascular disease

| Symptom or Health Condition   | Odds Ratio (excluding outliers)      |
|---|--------------------------------------|
| Cardiovascular disease <sup>1</sup> (CAD, MI, ischemic heart disease)           | 2.1                                  |
| Tachycardia <sup>1</sup>  | $\geq 1$ ACE: 1.4                    |
| Stroke <sup>1</sup>   | 2.0                                  |
| Chronic obstructive pulmonary disease (emphysema, bronchitis) <sup>1</sup>      | 3.1                                  |
| Asthma <sup>1</sup>   | 2.2                                  |
| Diabetes <sup>1</sup>   | 1.4                                  |
| Obesity <sup>1</sup>  | 2.5                                  |
| Hepatitis or jaundice <sup>1</sup>  | 2.4                                  |
| Cancer, any <sup>1</sup>  | 2.2                                  |
| Arthritis <sup>1</sup> (self-reported)  | 3 ACEs, HR: 1.5<br>$\geq 1$ ACE: 1.3 |
| Memory impairment <sup>1</sup> (all causes, including dementia)                 | 4.9                                  |
| Kidney disease <sup>1</sup>   | 1.7                                  |
| Headaches <sup>1</sup>  | $\geq 5$ ACEs: 2.1                   |
| Chronic pain, any <sup>1</sup> (using trauma z-score)                           | 1.2                                  |
| Chronic back pain <sup>1</sup> (using trauma z-score)                           | 1.3                                  |
| Fibromyalgia <sup>1</sup>   | $\geq 1$ ACE: 1.8                    |
| Unexplained somatic symptoms, including somatic pain, headache <sup>1,2</sup>   | 2.0-2.7                              |
| Skeletal fracture <sup>1</sup>  | 1.6-2.8 <sup>1</sup>                 |
| Physical disability requiring assistive equipment <sup>1</sup>                  | 1.8                                  |
| Depression <sup>1</sup>   | 4.7                                  |
| Suicide attempt <sup>1</sup>  | 37.5                                 |
| Suicidal ideation <sup>1</sup>  | 10.5                                 |
| Sleep disturbance <sup>1</sup>  | 1.6                                  |
| Anxiety <sup>1</sup>  | 3.7                                  |
| Panic and anxiety <sup>1</sup>  |                                      |
| Post-traumatic stress disorder <sup>1</sup>                                     | 4.5                                  |
| Illicit drug use <sup>1</sup> (any)   | 5.2                                  |
| Injected drug, crack cocaine, or heroin use <sup>1</sup>                        | 10.2                                 |
| Alcohol use <sup>1</sup>  | 6.9                                  |
| Cigarette or e-cigarette use <sup>1</sup>                                       | 6.7                                  |
| Cannabis use <sup>1</sup>   | 11.0                                 |
| Teen pregnancy <sup>1</sup>   | 4.2                                  |
| Sexually transmitted infections, lifetime <sup>1</sup>                          | 5.9                                  |
| Violence victimization <sup>1</sup> (intimate partner violence, sexual assault) | 7.5                                  |
| Violence perpetration <sup>1</sup>  | 8.1                                  |

ACES VS. NO ACES



# MALADAPTIVE COPING

## Risk-taking

### Alcohol, tobacco, and drugs

- leads to depression, anxiety, self-harm, and substance abuse
- odds of early initiation of alcohol or cannabis use increase by 34% for each additional ACE exposure

## Sexual behavior

### • Motives:

- appeasing partners or friends, coping with negative emotions, and boosting self-confidence

### • Highly linked with depressive symptoms

### • Increased risk due to:

- inadequate refusal skills
- peer pressure
- poor communication
- negative self-esteem

### • Increased risk for HIV/STIs and unplanned pregnancy

## Coping

### • Internal

- self-blame, ruminating thoughts, being withdrawn, somatic complaints, anxiety, and depression

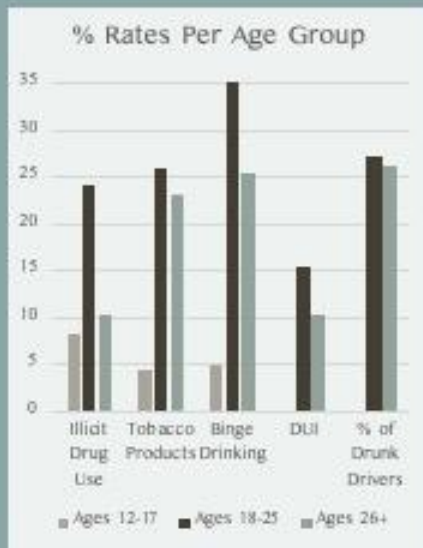
### • External

- impulsivity, inattention, physical aggression, alcohol use, smoking, drug use, risky sexual behavior, and truancy

### • Approach vs. Avoidant

- distancing and distraction behavior, such as social withdrawal, isolation, and the use of alcohol and drugs

## EMERGING ADULTS



JUSTICE, 2018

Dysregulation of emotional and social behavior

Poor academic performance

Increased coursework

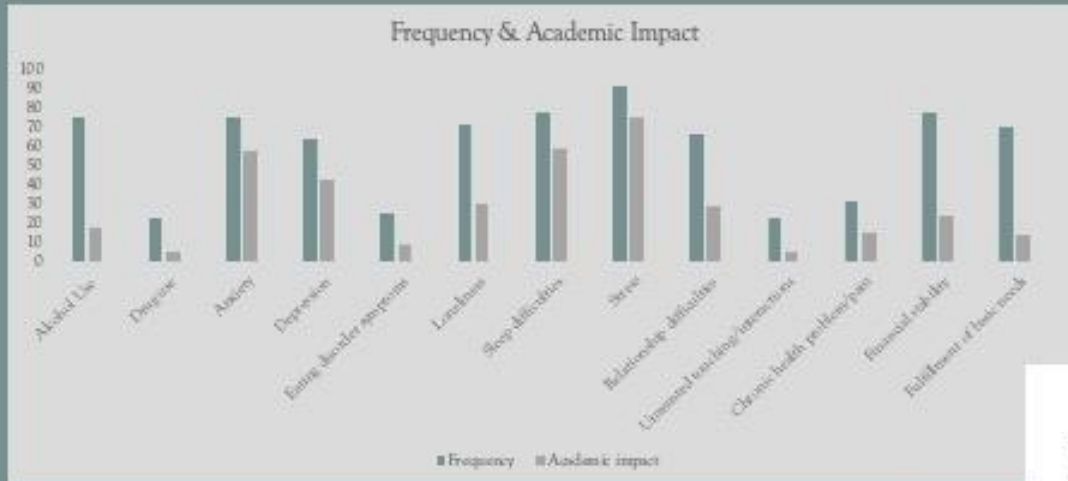
Independence and Autonomy

Increased risk of dropping out of college

Change in eating/sleeping habits

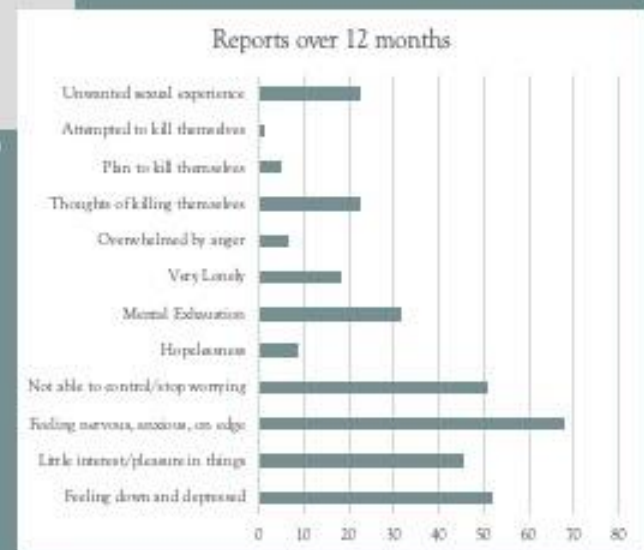
- Emerging Adulthood | Risky Behaviors
  - Less likely to perceive substance use, weekly binge drinking, and smoking marijuana monthly or weekly is harmful
  - More likely to ride with an impaired driver
  - Highest % of drunk drivers (21-24 yo)
  - Highest rate of fatal drunk-driving crashes (16-25 yo)
  - Higher rates of cooccurring mental health conditions and substance use disorders
- College Students
  - Higher rates of illicit drug use, alcohol use, and episodes of binge-drinking
  - Stress & academic performance
- Unwanted Sexual Experiences
  - Since college enrollment, >40% have experienced at least one event of sexual harassment
  - Over the last year, 23% of NDSU students have experienced unwanted touching or interactions
  - Increased alcohol and self-blame as coping mechanisms
  - Sexual perpetration | ACEs

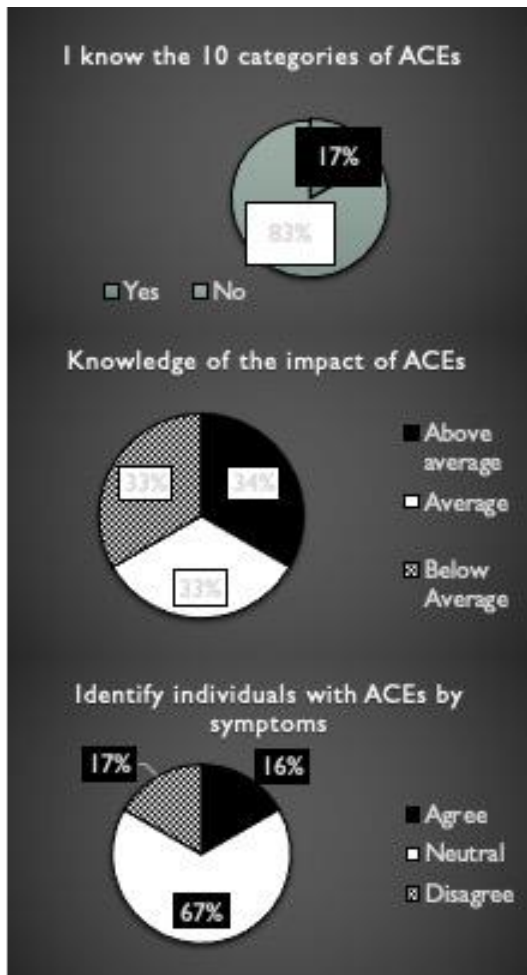




(NDSU, 2018)

## NDSU DATA 2018






- <20% of clinicians know the 10-categories of ACEs
- >60% of clinicians rate their knowledge level as average or above average on the impact of ACEs on neurodevelopment and risk-taking behaviors along with associated health outcomes
- Five out of six clinicians are unable to identify individuals exposed to ACEs based on symptoms
- Four in six clinicians screen for ACEs at some point during their visits
- >80% of clinicians are likely to offer interventions for students exposed to ACEs
- About 30% of clinicians are unsure of campus and community referral sources



| Impact of ACEs on a clinician's practice |   |  |
|--|---|--|
|  | <ul style="list-style-type: none"> <li>• Knowledge regarding ACEs</li> </ul>                | <ul style="list-style-type: none"> <li>• Need to broaden focus beyond mental health to include care of physical health</li> <li>• Provides more perspective about cumulative effects</li> <li>• Consider ACEs as a differential</li> <li>• Knowing the sequelae can be utilized to promote physical health</li> </ul>  |
|  | <ul style="list-style-type: none"> <li>• Challenges</li> </ul>                              | <ul style="list-style-type: none"> <li>• Insufficient financial means for students to seek general and mental healthcare</li> <li>• Busy and overwhelmed with school</li> <li>• Denial and/or disinterest in addressing trauma</li> <li>• Patient's don't follow up</li> </ul>   |
| ACE screening                            |   |  |
|  | <ul style="list-style-type: none"> <li>• Benefits</li> </ul>                                | <ul style="list-style-type: none"> <li>• Helps to understand possible cause of symptoms and severity and risk for health complications</li> <li>• Useful in tailoring questions toward addressing traumatic events</li> <li>• Only needs to be done one time; a clear and easy form</li> <li>• Completing the screening tool may give students permission to discuss their experienced trauma</li> <li>• Gateway to address trauma for students who may have normalized their experiences</li> </ul>               |
|  | <ul style="list-style-type: none"> <li>• Barriers</li> </ul>                                | <ul style="list-style-type: none"> <li>• Form fatigue / one more expectation of the students</li> <li>• Lack of clinical utility</li> <li>• Answering the questions may be intimidating or sensitive</li> <li>• Students already feel they're at the clinic too long</li> </ul>  |
|  | <ul style="list-style-type: none"> <li>• Strategies to overcome barriers</li> </ul>         | <ul style="list-style-type: none"> <li>• Obtain interest and buy-in from administration, clinicians, and staff</li> <li>• Perform a trial of utilizing the screening tool</li> <li>• Include the specific categories in the mental health intake form rather than adding an additional form</li> <li>• Make the form co-mandatory for the students</li> </ul>  |
| Interventions                            |   |  |
|  | <ul style="list-style-type: none"> <li>• Support needed to provide interventions</li> </ul> | <ul style="list-style-type: none"> <li>• Trauma-informed care training</li> <li>• Need more counselors at the counseling center to accept the possible influx of new patients through identification by screening tool</li> <li>• Need an understanding of what types of ACE-associated risk for chronic conditions and how to address and screen for those conditions</li> <li>• Identify which facilities or specific counselors have an interest in treating trauma - on campus and in the community</li> </ul> |

- Assessment tool to calculate number of ACEs experienced prior to age 18 years
- 10-question survey with “yes” or “no” answers
  - One point is added for every “yes” answer
  - ACE score cannot exceed 10 points
- Self-administered instrument completed once per adult per lifetime
- An ACE score can never change
- Provided in a private and safe space
  - Advantages
    - Brief and leads to earlier identification and intervention
    - Opens dialogue regarding specific events and treatment options
    - Targeted efforts to assess resilience and protective factors
    - Consider ACEs a differential when treating somatic complaints
    - No cost
  - Barriers
    - Lack of knowledge
    - Unsure what to do with the information
    - Limited time for office visits
    - Lack of reimbursement
    - Questions are invasive and produce discomfort
    - Lack of referral sources/sites
- Normalize conversations regarding ACEs

**Adverse Childhood Experiences Revised Questionnaire**   
 California Surgeon General's Clinical Advisory Committee

Our relationships and experiences—even those in childhood—can affect our health and well-being. Difficult childhood experiences are very common. Please tell us whether you have had any of the experiences listed below, as they may be affecting your health today or may affect your health in the future. This information will help you and your provider better understand how to work together to support your health and well-being.

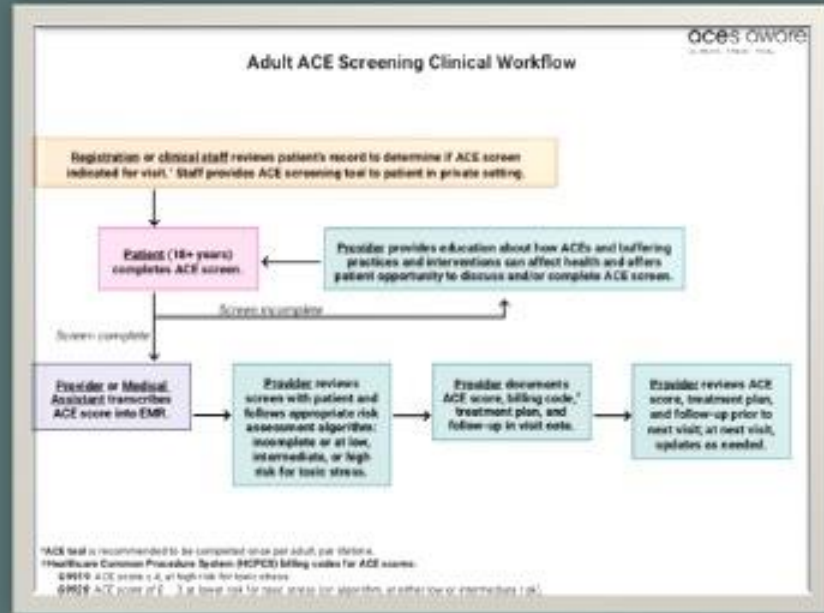
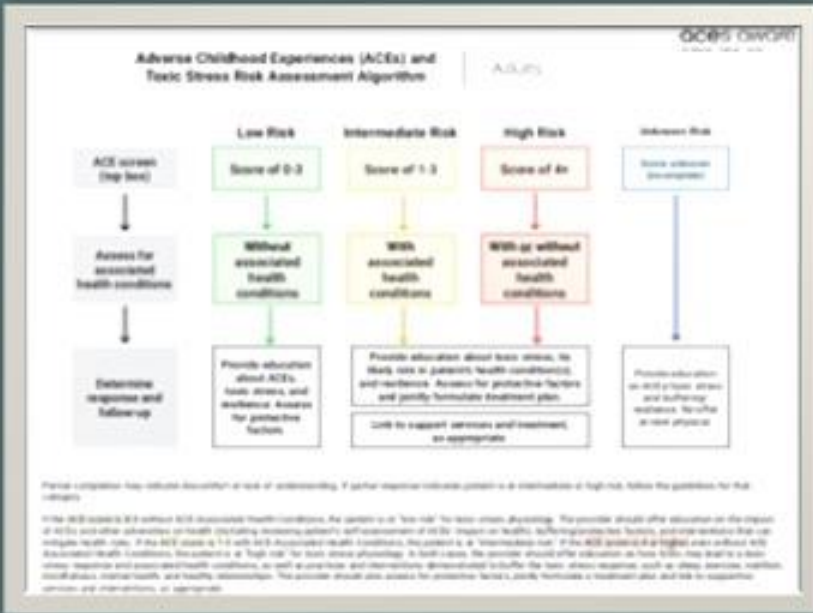
**Instructions:** Below is a list of 10 categories of Adverse Childhood Experiences (ACEs). From the list below, please place a checkmark next to each ACE category that you experienced prior to your 18<sup>th</sup> birthday. Then, please add up the number of categories of ACEs you experienced and put the total number at the bottom.

|   |  |
|---|--|
| Did you feel that you didn't have enough to eat, had to wear dirty clothes, or had no one to protect or take care of you? | <input type="checkbox"/>   |
| Did you lose a parent through divorce, abandonment, death, or other reason?   | <input type="checkbox"/>   |
| Did you live with anyone who was depressed, mentally ill, or attempted suicide?   | <input type="checkbox"/>   |
| Did you live with anyone who had a problem with drinking or using drugs, including prescription drugs?                    | <input type="checkbox"/>   |
| Did your parents or adults in your home ever hit, punch, beat, or threaten to harm each other?                            | <input type="checkbox"/>   |
| Did you live with anyone who went to jail or prison?  | <input type="checkbox"/>   |
| Did a parent or adult in your home ever swear at you, insult you, or put you down?  | <input type="checkbox"/>   |
| Did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way?                               | <input type="checkbox"/>   |
| Did you feel that no one in your family loved you or thought you were special?  | <input type="checkbox"/>   |
| Did you experience unwanted sexual contact (such as fondling or oral/anal/vaginal intercourse/penetration)?               | <input type="checkbox"/>   |
| <b>Your ACE score is the total number of checked responses</b>  |  |
| Do you believe that these experiences have affected your health?  | <input type="checkbox"/> Not much <input type="checkbox"/> Some <input type="checkbox"/> A lot |

Experiences in childhood are just one part of a person's life story. There are many ways to heal throughout one's life.

## MY SCORE IS 4 ... NOW WHAT?

- Campus Clinic Services & Campus Counseling Services
  - "I'll recognize when I see it"
- ACE screening is simply the first step
- "A window of latency between exposure and onset" - Dr. Nadine Burke Harris
- ACEs Aware Initiative
  - Clinical Workflow
  - Toxic Stress Risk Assessment Algorithm
- Buffers | Protective Factors
  - Sleep
  - Exercise
  - Nutrition
  - Mindfulness
  - Mental health
  - Healthy relationships



#### Key Principles

- See through a trauma-informed lens
- Adopt a broad definition of trauma
- Make trauma inquiries sensitive and know how to respond
- Refer to evidence-based, trauma-specific support
- Address re-traumatization
- Prioritize trustworthiness and transparency
- Move toward collaborative relationships
- Adopt a strength-based approach
- Prioritize emotional and physical safety
- Work in partnership

## TRAUMA-INFORMED CARE

- Difficult relationships
  - Impaired relationships with others and providers
  - Concerns with power and authority
- Provoke thought and positively challenge a patient
- Break the silence
- Avoid re-traumatization
- Role modeling
  - Respect, empowerment, collaboration, and connection
  - assertive and emotionally expressive behavior
- “Is there anything we can do to assist you in feeling safe here?”
- “I noticed you are having a hard time sitting still. I wonder if you’re feeling nervous? It’s okay to feel nervous. I want you to know you’re safe and you can tell me what you need to help hold still.”

“What’s wrong with you?” → “What happened to you?”

# CLINICAL ENCOUNTERS

## Exams, Tests, & Procedures

- . Provide instructions, Ask for permission, Set expectations
- . Exam Room
- . Behaviors | Why are clinical encounters triggering?
- . Build trusting relationships
- . Attitudes & Beliefs
- . Health Literacy
- . Communication
  - . OARS
  - . Body language
  - . Example Narrative/Alter verbiage



# REDIRECT THE EFFECTS OF TRAUMA

## Recognise maladaptive response and triggers

- Identify triggers
- Identify common signs of distress
- Avoid alcohol, tobacco, & drugs

## Emotional acceptance vs. avoidance

## Build resilience

## Protective factors

Goal setting – Problem solving – Fear refusal – Effective communication – Self-efficacy

## Establish motivation

- Intrinsic vs. Extrinsic
- "What inspires you to take action?"

## Stress regulation

Sleep – Support – Nutrition – Mental health care – Take breaks

## Self-soothing practices

Music – Paint – Read – Garden – Be in Nature – Journal

## Connect with the body

Yoga – Exercise – Massage

## Encourage positivity

Positive self-talk – Words of Affirmation – Talents & Strengths

## SOOTHE YOURSELF

- 
- Listen to music
  - Read a book
  - Watch TV
  - Play a game
  - Call a friend
  - Call your therapist
  - Talk with a peer
  - Journal
  - Receive a hug
  - Have your hand held
  - Punch a pillow
  - Pound some clay
  - Physical exercise
  - Take a walk
  - Breathing exercises
  - Sit in a quiet room
  - Wrap up in a blanket
  - Use a weighted blanket
  - Lie down with a cold facecloth

# COUNSELING

- Cognitive-Processing Therapy & Emotion-Focused Therapy
- Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT)
- Assessment-Based Treatment for Traumatized Children: Trauma Assessment Pathway (TAP)
- Eye Movement Desensitization Reprocessing (EMDR)

## CLINIC RECOMMENDATIONS

- Incorporate ACE Screening
- Resource List
  - Counseling Resources
    - NDSU & Community
  - Brochure
  - Electronic Resources
    - Smartphone Apps, YouTube, Podcasts
- Trainings:
  - ACEs Training Series
  - Trauma Informed Care Training
  - Substance Misuse Prevention for Young Adults
  - The Positive Neuroplasticity Training

# BROCHURE

- What are ACEs?
- How do they impact you?
  - Neurodevelopment
  - Mental/physical/emotional/sexual health
  - Academic performance
  - Chronic health conditions
- What can be done about it?
  - Adequate sleep, regular exercise, healthy nutrition, mindfulness/meditation, counseling/psychiatry, and develop healthy relationships
  - Suggest ways to promote resilience/protective factors
- Referrals
  - On-campus
  - Off-campus
  - On the Web
    - Smartphone apps
    - Podcasts
    - YouTube
    - Social Media
  - Books
  - Veteran services
- Links to Videos - Quick Facts, Support, QR codes, etc.

# ON- CAMPUS

## Student Health Services Clinic

- 5 FNPs; 1 Physician
- Mental Health Nurse Practitioner
- Health Promotion Coordinators

## Counseling Center

- Individual counseling
- Groups/Classes/Workshops
  - Mindfulness & Meditation
  - Equine assisted counseling
  - Health Concerns Group
- Website
  - Recovering from grief and trauma
  - Meditation & Mindfulness
  - College Life and New Friends (see attachment)

## Wallman Wellness Center

- Fitness
  - Personal training
  - GroupFIT & Yoga
- Recreation
  - Intramural sports/Climbing Wall
- Aquatics

## ON THE WEB

- MindBodyGreen
- Dr. Rick Hanson, Ph.D. - <https://www.rickhanson.net/getstarted/>
  - Podcast: "Being Well with Dr. Rick Hanson" - subscribe on iTunes
  - "Just One Thing" - free weekly newsletter (sign up here: <https://www.rickhanson.net/writings/just-one-thing/just-one-thing-simple-practices/>)
- ElephantJournal
- The Happiness Project
  - Podcast: Happier with Gretchen Rubin
- Tiny Buddha
- Findtreatment.gov
- HelpPro
- Building Healthy Relationships in College
  - [https://www.luc.edu/media/lucedu/cert/publications/healthy\\_relationship.pdf](https://www.luc.edu/media/lucedu/cert/publications/healthy_relationship.pdf)
- TED Talk - "I was thinking too small" - Dr. Nadine Burke Harris
  - [https://www.ted.com/talks/nadine\\_burke\\_harris\\_how\\_childhood\\_trauma\\_affects\\_health\\_across\\_a\\_lifetime?language=en](https://www.ted.com/talks/nadine_burke_harris_how_childhood_trauma_affects_health_across_a_lifetime?language=en)
- The Jed Foundation
  - <https://www.jedfoundation.org/mental-health-resource-center/>

## BOOKS

- The deepest well: Healing the long-term effects of childhood adversity - Nadine Burke Harris, M.D.
- Trauma, PTSD, Grief & Loss: The 10 core competences for evidence-based treatment - Michael Dubi, Patrick Powell, & Eric Gentry
- The dance of connection - Harriet Lerner, Ph.D.
- Boundaries - Anne Katherine, M.A.
- The body keeps the score - Bessel Van Der Kolk, M.D.
- Hardwiring happiness - Rick Hanson, Ph.D.
- A hidden wholeness - Parker J. Palmer
- Let go now: Embracing detachment - Karen Casey
- The good stuff from growing up in a dysfunctional family - Karen Casey
- It didn't start with you: How inherited family trauma shapes who we are and how to end the cycle - Mark Wolynn
- Emotional chaos to clarity - Phillip Moffitt
- Calming Your Anxious Mind by Jeffrey Brantley, M.D.
- Mind Over Mood by Dennis Greenberger and Christine Padesky
- The Relaxation & Stress Reduction Workbook, 4th Edition by Martha Davis, Ph.D., Elizabeth Robbins Eshelman, M.S.W., and Matthew McKay, Ph.D.
- Meditation and Mindfulness by Bhante Henepola Gunaratana
- Wherever You Go, There You Are by Jon Kabat-Zinn, Ph.D.
- Full Catastrophe Living by Jon Kabat-Zinn, Ph.D.
- The Mindful Twenty-Something by Holly B. Rogers, M.D.



## APPENDIX L: NDSU SHS CLINIC RESOURCE LIST

### COUNSELING RESOURCES

#### NDSU COUNSELING CENTER

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##### **Individual Counseling**

##### **Groups/Classes/Workshops**

- Mindfulness & Meditation
  - 3-week mindfulness workshop consisting of 90-minute sessions typically on Thursdays from 1430-1600. Contact [ronni.arenberg@ndsu.edu](mailto:ronni.arenberg@ndsu.edu) with questions.
- Equine Assisted Counseling
  - Equine assisted counseling: women between ages 18-24 years old; goals are to manage anxiety and increase self-compassion. 6-7 females per group. Typically scheduled for Thursdays. Free for students and no prior horse experience is required. Contact: [amber.bach@ndsu.edu](mailto:amber.bach@ndsu.edu)
- Health Concerns Group
  - Health concerns group: a support group for students with an ongoing illness or medical condition (i.e., chronic pain, digestive issues, migraines). Contact: [jaryn.allen@ndsu.edu](mailto:jaryn.allen@ndsu.edu)

##### **Website**

- Recovering from Grief and Trauma
  - Information on this page includes information regarding strategies for building resilience, 10 ways to build resilience, and places to look for help.
  - [https://www.ndsu.edu/counseling/self\\_help\\_library/grief\\_and\\_trauma/](https://www.ndsu.edu/counseling/self_help_library/grief_and_trauma/)
- Meditation & Mindfulness
  - The meditation and mindfulness page provides general information regarding these practices but also lists recommendations for free online audio meditations, smartphone apps, and readings.
  - [https://www.ndsu.edu/counseling/self\\_help\\_library/meditation\\_and\\_mindfulness/](https://www.ndsu.edu/counseling/self_help_library/meditation_and_mindfulness/)
- College Life and New Friends
  - This page suggests ways to make friends including a series of five steps to support friendship making.
  - [https://www.ndsu.edu/counseling/self\\_help\\_library/making\\_new\\_friends/](https://www.ndsu.edu/counseling/self_help_library/making_new_friends/)

##### **External Resources**

- General, academic, and career resources

#### FARGO/MOORHEAD COMMUNITY

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##### **A2Z Trauma & Counseling Services**

4733 Valley Pkwy, Ste W Fargo, ND 58104 • (701) 401-6117

- <https://www.a2ztrauma.com/>
- Individual counseling
- EMDR
- PTSD/Trauma/Abuse Counseling
- Connection and Relationship Counseling

##### **Allana Danduran Psychotherapy Services**

4650 38<sup>th</sup> Ave S, Ste 130, Fargo, ND 58104 • (701) 799-5176

- <http://allanadandurantherapy.com>
- Psychotherapy for children, adolescents, young adults (7-24 years old)
- Accepts private insurance: BCBS & Sanford Health Plan

##### **Altendorf Counseling Center**

1351 Page Dr., Ste 100, Fargo, ND 58103 • (701) 412-7345

- <http://altendorfcounseling.com>
- Issues addressed during sessions include childhood trauma, PTSD, codependency, etc.

##### **Birch Tree Counseling**

4357 13<sup>th</sup> Ave S, Ste 206C, Fargo, ND 58103 • (701) 478-2999

- <http://birchtreecounselingfm.com>
- EMDR
- Accepts BCBS & Sanford Health Plan (includes Sanford Medicaid Expansion)
- Accepts private insurance: BCBS & Sanford Health Plan

**Altendorf Counseling Center**

1351 Page Dr., Ste 100, Fargo, ND 58103 • (701) 412-7345

- <http://altendorfcounseling.com>
- Issues addressed during sessions include childhood trauma, PTSD, codependency, etc.

**Birch Tree Counseling**

4357 13<sup>th</sup> Ave S, Ste 206C, Fargo, ND 58103 • (701) 478-2999

- <http://birchtreecounselingfm.com>
- EMDR
- Accepts BCBS & Sanford Health Plan (includes Sanford Medicaid Expansion)

**Catholic Charities North Dakota**

5201 Bishops Blvd, Ste B, Fargo, ND 58104 • (701) 235-4457

- <http://catholiccharitiesnd.org>
- Sliding fee scale, no one is turned away for inability to pay
- Accepts Medicaid, BCBS, Medica, Sanford Health Plan, TRICARE
- Kimberly Fritel, Director of Counseling
  - Trained in TIC, EMDR, Crisis Intervention Team
  - Serves people of all faith denominations

**Creative Spirit Counseling**

1128 Westrac Dr., Suite A, Fargo, ND 58103 • (701) 715-8567

- <http://creativespiritcounseling.com>
- TF-CBT
- Accepts BCBS, Medica, Sanford Health Plan, TRICARE

**Dr. Kayla Moorer Psychology Services**

1330 Page Dr, Ste 102A, Fargo, ND 58103 • (701) 478-6604

- [Drkaylamoorer.com](http://Drkaylamoorer.com)
- Fond of working with women, LGBTQ+ persons, and college students
- CBT and DBT and evidence-based interventions

**Drake Counseling Services, Inc.**

1202 23<sup>rd</sup> St S, Fargo, ND 58103 • (701) 293-5429

- <http://drakecounselingservices.com>
- Individual counseling
- Chemical dependency assessments and treatment programs
- Accepts BCBS, Medica, Sanford Health Plan, SUD vouchers, and Medicaid
- Offers payment plans and assistance programs

**Family Healthcare**

301 NP Ave, Fargo, ND 58108 • (701) 271-3344

- <https://www.famhealthcare.org/>
- Psychotherapy/counseling
- Offers the “access plan”
  - a plan based on household size and income which covers most services provided by FHC.
- Whitney Fear, MSN, PMHNP-BC
  - special interest in trauma/stressor related disorders, schizophrenia/psychotic disorders, personality disorders, and substance abuse disorders

**Fraser, Ltd – Valley Hope Counseling Services**

2902 University Dr S, Fargo, ND 58103 • (701) 232-3301

- <http://fraserltd.org>
- Sliding fee scale is available
- Common topics include trauma, grief/loss, adult children of alcoholics, families affected by chemical dependency, stress management
- Amanda Lindstrom, MSW, LICSW
  - certified in TF-CBT and EMDR
- Kate Renner, LPCC
  - trained in EMDR, TF-CBT
- Tracy Hansen, LPCC, M. Ed., NCC
- Andi Wheeler, MS, NCC, LPCC
  - interest in mindfulness, meditation, and yoga (NDSU grad)

**Inner Light Counseling**

1323 23<sup>rd</sup> St S, Ste H, Fargo, ND 58103 • (701) 478-0906

- innerlightservices.com
- EMDR, individual counseling
- Payment accepted: BCBS, Medica, Cigna, Preferred One, Aetna, United Healthcare, Health Exchange, UMR, Health Partners

**Inner Wisdom & Wellness Psychological Services**

4733 Amber Valley Parkway, Suite W, located in Apex building • (701) 368-7400

- <http://innerwisdompsychservices.com>
- Dr. Jaryn Allen, LP
  - Offers Ericksonian hypnosis used to manage anxiety, depression, chronic pain and illness or autoimmune diseases
  - Currently a psychologist and Assistant Director (Director of Training) at NDSU

**Lakeland Mental Health Center**

1010 32<sup>nd</sup> Avenue South, Moorhead, MN 56560 • 218-233-7524

**Prairie St. John's**

510 4<sup>th</sup> St S., Fargo, ND 58103 • (701) 476-7216

- <http://prairie-stjohns.com>
- Accepts BCBS, Medica, Sanford Health Plan, SUD vouchers, and Medicaid
- TF-CBT, DBT, individual therapy

**Rape and Abuse Crisis Center**

317 8<sup>th</sup> St N., Fargo, ND 58102 • (701) 293-7273

- <http://raccfm.com>
- No fee, don't bill insurance
- TF-CBT & EMDR
- Group counseling: trauma recovery and empowerment, art-based counseling

**The Village Family Service Center**

2701 12<sup>th</sup> Ave S, Fargo, ND 58103 • (701) 451-4900

815 37<sup>th</sup> Ave S., Ste 100, Moorhead, MN 56560 • (701) 451-4811

- <http://thevillagefamily.org/content/mental-health-counseling-services>
- Services: Alcohol and drug addiction, Counseling services, Debt & Money management
- Based on a sliding fee scale, with no one turned away for inability to pay

**COMMUNITY RESOURCES****SUBSTANCE USE • MENTAL HEALTH • HEALTH CARE CENTERS****FirstLink 2-1-1 Directory of Community Resources**

- <https://prd.icarol.com/landing.html?token=22978899-2ed3-4b35-8687-8773159d829b&cssMode=Publish&orgNum=2318&db=2318>
- Resources for mental health/substance use disorder services, food, support groups, health care, employment, etc.

**ADAPT Inc.**

1330 Page Drive, Suite 202-B, Fargo, ND 58103 • 701-232-1080

**Anchorage**

725 Center Ave S, Suite 5, Moorhead, MN 56560 • 218-287-1500

**Becoming Balanced PC**

3125 41<sup>st</sup> Street South, Fargo, ND 58104 • 3125 41<sup>st</sup> Street South, Fargo, ND 58104

**Beth's Place**

1606 30<sup>th</sup> Avenue South, Moorhead, MN 56560 • 218-287-4338

**Centre, Inc.**

123 15<sup>th</sup> St N, Fargo, ND 58102 • 701-373-8302

**Community Medical Services**

901 28<sup>th</sup> St S, Suite C, Fargo, ND 58103 • 701-404-1100

- Substance use treatment
- Individual and group counseling (trauma-related)
- Accepts federal or any government funding for substance use programs, Medicare, cash or self-pay, state-financed health insurance plan other than Medicaid

**Fargo VA Healthcare System; Substance Abuse Treatment Program**

2101 North Elm Street, Unit 116-A, Fargo, ND 58102 • 701-239-3700 x93150

**First Step Recovery**

2701 12<sup>th</sup> Ave S, Fargo, ND 58103 • 701-451-4900

**Good Clover, LLC**

405 Main Ave, Unit 4-J, West Fargo, ND 58078 • 701-248-0818

**Leane Marie LaFrance**

2323 16<sup>th</sup> Ave S., Suite 308, Moorhead, MN 56560 • 218-284-1600

**Lotus Center, Inc.**

200 5<sup>th</sup> St S, Suite 105, Moorhead, MN 56560 • 218-284-1800

**Lutheran S Services of ND, Luther Hall**

1505 5<sup>th</sup> Ave S, Fargo, ND 58103 • 701-232-8905

**Off Main**

1122 1<sup>st</sup> Ave N, Fargo, ND 58102 • 701-298-4650

**Red River Recovery Center**

701 Center Avenue East, Dilworth, MN 56529 • 218-284-7772

**Solutions Behavioral Healthcare**

1126 Westrac Drive, Fargo, ND 58103 • 701-412-2973

**Southeast Human Service Center – Behavioral Health Services**

2624 9<sup>th</sup> Ave SW, Fargo, ND 58103 • (701) 298-4500

- <http://nd.gov/dhs/locations/regionalhsc/southeast/>
- Substance Use Eval & Treatment

**Resolve Behavioral Health LLC**

17 7<sup>th</sup> Street South, Suite 202, Fargo, ND 58103 • 701-478-1221

**Sharehouse Inc.**

4227 9<sup>th</sup> Avenue South, Fargo, ND 58103 • 701-282-6561

**Thrive Behavioral Network, Gull Harbour**

1704 Belsly Boulevard, Moorhead, MN 56560 • 218-233-8068

**YWCA Cass Clay Emergency Shelter**

3000 S University Dr, Fargo, ND 58103 • 701-232-3449

- Women and children escaping domestic violence, homelessness, and other crisis situations

**Support Group**

Mental Health America of North Dakota – Myrt Armstrong Recovery Center

1419 1<sup>st</sup> Ave S, Fargo, ND 58103 • (701) 478-5200

- <https://www.mhand.org/support-groups/depression-stress-and-anxiety/>
- Depression, Stress, and Anxiety Management
- Free, registration not provided, no cost to attend
- Open every Wednesday from 2-3pm

**ELECTRONIC RESOURCES**

**SMARTPHONE APPS**

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**Self Help/Therapy**

WellTrack

- Free resource for all members of the NDSU community
- Track moods, feelings, and thoughts and provides resources and strategies to support balancing stress

Aetheria

- Teaches about anxiety/panic attacks, signs/symptoms, coping methods, and treatment options. If you're having a panic attack, there is a function to notify a trusted person to help you.

Aloe Bud

- Reminds you to drink water, eat, reach out to friends. Instead of guiltting you if you aren't doing well it encourages you to celebrate the small victories

The To Don't List

- Helps you avoid the stuff you really shouldn't be doing like checking social media or letting laundry pile up

Lumosity

- A gaming app that includes puzzles, memory games, logic problems, meditation techniques, and more. Helps you learn your strengths, weaknesses, and cognitive patterns.

DayOne

- Journal/diary

Loosid

- A digital sober community providing support and celebrating sobriety. The app also links users with friend groups, dating options with other sober singles in the area, and suggests sober events.

SmokeFree

- Offers motivational phrases, tips, time elapsed without cigarettes, and a chart of money saved

**Mindfulness/Meditation** *\*All apps are free and available on iOS and Android*

Insight Timer

- Number 1 free meditation app – also includes topics such as self-love and compassion, getting through recovery and addictions, dealing with anxiety and reducing stress, etc.

Smiling Mind

Stop, Breathe, & Think

UCLA Mindful

10% Happier

“meditation for fidgety skeptics” – a relatable, no-nonsense way to learn mindfulness

Oak Meditation and Breathing

Mindfulness Coach

- For veterans with PTSD

**Medication Reminders**

Medisafe Medication Management

- Can also keep track of blood glucose, BP, and weight

Pill Reminder – All in One

MyTherapy: Medication Reminder

Mango Health

- Includes a gamified points system; take your meds and earn points to win prizes

Dosecast: My Pill Reminder App

- Tracks remaining quantities of medicines, sends refill reminders, and logs med adherence

**Sleep** *\*All apps are free and available on iOS and Android*

Relax Melodies

Sleep Cycle

Recolor

Sleep Time

Relax & Sleep Well

Digipill

Pzizz

Shleep

**Weight Management** *\*All apps are free and available on iOS and Android*

Fooducate

MyFitnessPal

Lose It!

SparkPeople

**Exercise**

Tone It Up

Bodybuilding

Home Workout

Workouts by Muscle Booster

Daily Workouts Fitness Trainer

FitOn Workouts & Fitness Plans

## ELECTRONIC RESOURCES

### YOUTUBE

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#### Exercise

##### Mad Fit

- Toning workouts to the rhythm of songs
- Apartment and neighbor friendly workouts that are effective but avoid jumping movements

##### Natacha Oceane

- HIIT – no-equipment, no-noise workouts

##### Body Project

- Low-impact workouts for all different types of fitness levels

##### Holly Dolke

- 10-15 minutes long
- Toning, HIIT, and indoor walking workouts which are helpful during winter months

##### Chole Ting

- Sculpting and short workouts

##### Zuzka Light

- 5-10-minute exercise routines

##### Livestrong Women

- Also offers healthy recipes

##### MrandMrsMuscle

- HIIT & Circuit
- 30-day workout challenge which incorporates a daily affirmation (i.e., “I am in control”)

##### Yoga with Adriene

##### Yoga with Kassandra

#### Overview of Trauma

##### Nadine Burke Harris on the Impact of Childhood Adversity | Amanpour and Company

- First surgeon general of California, pediatrician
- 18 minutes
- <https://www.youtube.com/watch?v=DqiSCevEt5I>

##### How childhood trauma affects health across a lifetime | Dr. Nadine Burke Harris

- <https://www.youtube.com/watch?v=95ovIJ3dsNk>
- 16 min long

##### Dr. Nadine Burke Harris: Healing the long-term effects of childhood adversity

- <https://www.youtube.com/watch?v=MDTW89Ycxw0>
- ~1 hour

##### Understanding PTSD’s Effects on Brain, Body, and Emotions | Janet Seahorn

- <https://www.youtube.com/watch?v=BEHDQeIRTgs>
- 16 min

### SPOTIFY PODCASTS

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#### Channels

##### The Trauma Therapist

- Guy Macpherson, Ph.D.
- Interviews with thought-leaders in the fields of trauma, mindfulness, addiction, and yoga

##### Transforming Trauma

- The NeuroAffective Relational Model (NARM) Training Institute
- An approach to healing complex trauma (C-PTSD) and restoring connection to self and others

##### Trauma Queen

- Mini-series focused on normalizing the conversation around sexual assault and other traumas
- Provides resources for survivors and allies

##### Life After PTSD: Healing Trauma

- Uses evidence-based memory re-consolidation techniques

#### Episodes

##### Bessel van der Kolk – How Trauma Lodges in the Body

- Channel: Being with Krista Tippett
- Episode: December 2019 (52 min)

Trauma and Resilience Land in Our Bodies | Bessel van der Kolk

- Channel: Becoming Wise
- Episode: July 2016 (9 min)

Bessel van der Kolk (The Body Keeps the Score: A Revolutionary Treatment for Trauma)

- Channel: The Psychiatric Therapy Podcast
- Episode: August 28 (85 min)

## **CRISIS HOTLINES**

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- Crisis Line and Referral Service: 218-828-HELP (4357)
- FirstLink 2-1-1 Helpline
- Rape and Abuse Crisis Center: 800-344-7273
- SAMHSA's National Helpline: 1-800-662-HELP (4357) or TTY 1-800-487-4889
- National Suicide Prevention Hotline: 1-800-273-TALK (8255) or text "START" to 741-741 OR "LOVEIS" to 22522
- Disaster Distress Helpline: call or text 1-800-5990 (Spanish is available)
- National Sexual Assault Hotline: 1-800-656-HOPE (4673)
- Veteran's Crisis Line: 1-800-273-TALK (8255) or text 8388255

## **BOOKS**

- The deepest well: Healing the long-term effects of childhood adversity by Nadine Burke Harris, M.D.
  - Dr. Burke Harris is the Surgeon General of California and the founder of the Center for Youth Wellness in San Francisco's Bayview Hunters Point
  - Provides a frame to understand and respond more effectively to the long-term effects of childhood adversity.
- Trauma, PTSD, Grief & Loss: The 10 core competences for evidence-based treatment by Michael Dubi, Patrick Powell, & Eric Gentry
  - Provides best-practice, evidence-based clinical interventions and techniques
  - Interventions: feedback informed therapy; self-regulation; EMDR; triphasic Model, exposure-based therapies, CBT, narrative exposure therapy
- The dance of connection by Harriet Lerner, Ph.D.
  - How to talk to someone when you're mad, hurt, scared, frustrated, insulted, betrayed, or desperate. This book teaches us how to navigate our most important relationships with clarity, courage, and joyous conviction.
- Boundaries by Anne Katherine, M.A.
  - How to recognize and set health boundaries which help you heal and bring order to your life, strengthen your relationships with yourself and others. "Good fences make good neighbors"
- The body keeps the score by Bessel Van Der Kolk, M.D.
  - Use of recent scientific advances to demonstrate how trauma reshapes the body and brain and compromises a sufferer's capacities. Innovative treatments are suggested to promote recovery by activating the brain's natural neuroplasticity
- Hardwiring happiness by Rick Hanson, Ph.D.
  - A neuropsychologist explores ways to override the brain's default survival mechanism of being Velcro for negative experiences and Teflon for the positive.
- A hidden wholeness by Parker J. Palmer
  - Four themes: (1) the shape of an integral life, (2) the meaning of community, (3) teaching and learning for transformation, (4) nonviolent social change
  - Incorporate a religious perspective
- Let go now: Embracing detachment by Karen Casey
  - Set boundaries and make your life your own. Provides solutions on how to overcome codependency
  - Incorporates a religious perspective
- The good stuff from growing up in a dysfunctional family by Karen Casey
  - "How to survive and then thrive" – "Forgive the past and grow into the future"
  - Stories shared by others who survived a family of dysfunction
  - Aids in developing the following skills:
    - Resilience
    - Perseverance
    - A sense of humor
    - Forgiveness

- Connection
- Kindness
- Ability to detach
- Real meaning of responsibility
- It didn't start with you: How inherited family trauma shapes who we are and how to end the cycle by Mark Wolynn
  - Offers a pragmatic and prescriptive guide on the Core Language Approach developed by author Mark Wolynn
- Emotional chaos to clarity by Phillip Moffitt
  - Move from the chaos of the reactive mind to the clarity of the responsive mind
- Calming your anxious mind by Jeffrey Brantley, M.D.
- Mind over mood by Dennis Greenberger & Christine Padesky
- The relaxation & stress reduction workbook, 4th Edition by Martha Davis, Ph.D., Elizabeth Robbins Eshelman, M.S.W., & Matthew McKay, Ph.D.
- Meditation and mindfulness by Bhante Henepola Gunaratana
- Wherever you go, there you are by Jon Kabat-Zinn, Ph.D.
- Full catastrophe living by Jon Kabat-Zinn, Ph.D.
- The mindful twenty-something by Holly B. Rogers, M.D.