

**Trauma Reactions in Social Work Students: Increasing Awareness of PTSD and Self-Care
Through the PTSD Coach Application**

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University of Pittsburgh, 2021

Research supports that social work (SW) students may experience Post Traumatic Stress Disorder (PTSD) symptoms in response to course material, pedagogical practices, field practicum experiences, racial trauma, lack of PTSD knowledge and decreased self-care awareness. As a result, a neurological impact on their limbic system causes the frontal lobe to shut down, activating the autonomic nervous system's acute stress reaction to SW content resembling traumatic events (triggers) in a fight, flight, or freeze response. Research indicates that trauma reactions are a barrier to encoding new memories and an impediment to learning pertinent SW information.

A substantial body of research indicates that PTSD education and self-care awareness reduce PTSD symptoms; however, self-care practice is often underutilized. This study aimed to a) increase student psychoeducation of PTSD, and b) increase student self-care awareness through the Learn and Manage Symptoms sections of the PTSD Coach application. The evidence-based, widely used app was created by the Department of Veterans Affairs and is proven to reduce PTSD symptoms while increasing self-care and PTSD knowledge.

During the eight-week study, a ten-item pre-test, and post-test comparison assessed SW students' PTSD knowledge (fourteen participants) and self-care awareness (twelve participants). During the second phase of the study, a weekly two-item Likert scale asked students if they used the app and if so, how helpful was it in reducing their distress. The study was inconclusive in drawing statistically significant conclusions due to the small sample size. Insignificant

improvements in post-test scores and declining participation indicate that students failed to use the PTSD Coach app. However, results slightly show a correlation between using the PTSD app and reducing SW students' distress.

Future efforts should focus on increasing students' motivation to practice self-care by incorporating assignments and lessons into the SW course curriculum. Such content would act as a reminder to SW students that self-care a) mitigates the emotional and cognitive effects of trauma and b) strengthens their mental and physical well-being.

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Preface

Earning a doctorate is a huge accomplishment. Earning a doctorate as an African American woman who grew up enduring financial, educational, and racial struggles is nothing short of divine intervention. I was not “supposed” to earn a doctorate. I grew up with a lot of institutionalized racism. I was often advised to take less academically challenging routes and told that I would not be accepted into a four-year university or a graduate program. However, I was also surrounded by educators and family members who encouraged me to fight through adversity and pursue my dreams. I was convinced that I could be whoever I wanted to be and obtain whatever goal I set my mind to. I was encouraged that I would be successful at whatever I did, as long as I did not quit, and I worked to my fullest potential. Thank you to the late Dr. Renee Clark who was a constant reminder that as a black woman, I could earn a doctorate, too. Thank you to my teachers from grade school to graduate school who nourished my writing skills and planted the seeds of confidence in my writing abilities. Thank you to every client who trusted me to serve you and guide you through your trauma. You gave me the passion to continue to teach other social workers and to help those who are trauma survivors. I am a better therapist, advocate, professor, and human because of you.

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Thank you to all my friends that I've gained from childhood throughout my career path (grade school friends, college friends, fellow therapists, advocates, social workers, professors, and academic colleagues). I cannot count the amount of encouraging telephone calls, texts, funny memes, Bible scriptures, songs, and many words of encouragement that you've given me throughout these years. They have carried me through this journey.

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Last but not least, thank you, God, for helping me to write when I just didn't have the motivation, words, or energy. When I felt too tired to press on, You always reminded me of the strength I have in You. My steps are guided by You, and I am ready for the next chapter in my life. Thank you, friends and family, for your prayers; I could feel the strength of everyone. Friends and family, let's have fun again! Cornell, let's get some traveling in. Naomi and CJ, Mommy is done working...for now.

Dr. Toya Jones

1.0 Introduction

1.1 Broader Problem Area

As a clinician who works with survivors of crime for many years, I have learned behaviors and techniques associated with trauma. As a trauma specialist, I learned to identify trauma symptoms or PTSD symptoms in my therapy clients. However, I was surprised to learn through research literature that (SW) students experience similar trauma symptoms such as crying, fleeing from the classroom, absenting, inability to concentrate, anxiety, depression, avoidance of curriculum that reminds them of the traumatic event, physical illnesses (somatic symptoms), hypervigilance, isolation, high startle reflex, and panic attacks. As a result, their reactions are a deterrent to student learning, resist the integration of new memories, and cause barriers to encoding new memory (van der Kolk, 2002).

To better understand the problem of practice (POP) in the SW career, this dissertation first offers an introduction to trauma, an explanation of DSM-5 criteria, and scholars' definitions of PTSD and trauma symptoms. Also, clinical terms used in the SW profession, such as Vicarious Trauma (VT), need to be defined. An introduction to these definitions and disorder appears in the following sections.

1.2 Trauma Defined

PTSD is categorized in the DSM-5 (Diagnostic Statistical Manual fifth edition) as a disorder that arises after one has been exposed to a traumatic event. The reaction creates a psychological trauma in response to actual or threatened death, serious injury, or sexual violation. The traumatic event must be experienced directly, witnessed in person, learned of actual or threatened death of a close family member or friend, or exposed repeatedly to the extreme details of the event. Posttraumatic Stress Disorder, DSM-5 309.81 (F43.10) includes four clusters of symptoms for those 6 years of age or older:

Re-experiencing the event — Recurrent memories of the event, traumatic nightmares, dissociative reactions, prolonged psychological distress

Alterations in arousal — Aggressive, reckless, or self-destructive behavior, sleep disturbances, hypervigilance

Avoidance — Distressing memories, thoughts, or reminders of the event

Negative alterations in cognition and mood — Persistent negative beliefs, distorted blame, or trauma-related emotions; feelings of alienation and diminished interest in life (American Psychiatric Association, 2013).

As a Licensed Clinical Social Worker (LCSW), I have observed many clients experiencing PTSD symptoms such as reexperiencing, avoidance, and increased arousal (Tatar & Yüksel, 2019); however, the collection of symptoms does not rise to meet all of the criteria of the diagnosis. In other words, one can have PTSD symptoms, yet lack the total symptoms needed for a diagnosis of the disorder. Practitioners refer to such clients as “having trauma.”

Trauma is summarized by Bessel van der Kolk (2003), a highly regarded professional in the study of psychological trauma, as the psychological damage resulting from uncontrollable,

terrifying, life events manifesting cognitively, physically, emotionally, and behaviorally in the person. Renaud (2011) argues that an event alone does not lead to psychological trauma. Rather, the post-event symptoms that render one helpless or overwhelmed by the event constitute a trauma reaction (Renaud, 2011).

Research indicated that SW students reacted to the exposure of stimuli resembling a traumatic event (i.e., triggers), in which they were affected either physically, psychologically, socially, or cognitively, affecting the person's brain functioning (van der Kolk, 2002; Brewin et al., 1996). For example, students often cried and left the classroom during video clips depicting injustice and violence towards vulnerable people. Students bearing witness to another's pain and victimization, rather in person or through video, resulted in Vicarious Trauma (VT) (Nugent, 2013; Pearlman & Mac Ian, 1995). To further explore trauma, it is important to define VT for this dissertation.

1.3 Vicarious Trauma Defined

VT is a term often used in helping professions. It is defined as the longer-term, emotional, changes that occur for clinicians and social workers through repeated, personal contact, and hearing narratives of deeply traumatized survivors (Nugent, 2013; Pearlman & Mac Ian, 1995). Pearlman and Saakvitne (1995a), instrumental in identifying VT, describe it as "a cumulative transformation in the inner experience of the therapist that comes about as a result of empathic work with clients" (p. 31). Symptoms of VT include altered memory, changes in cognition, increased feelings of vulnerability, reduced self-awareness, and increased defensiveness resulting in changes in their world views (Birck, 2001; Cunningham, 2003; Sansbury et al., 2015; van

Deusen & Way, 2006). Perspectives of social workers' professional and personal relationships are viewed with skepticism, questioning the motives and trustworthiness of others (Birck, 2001; Cunningham, 2003; Sansbury et al., 2015; van Deusen & Way, 2006). Other symptoms include physical characteristics such as sleep problems (re-experiencing trauma), emotional aspects (avoidance and numbing), and behavioral aspects, or burnout (Figley, 1993; Sabin-Farrell & Turpin, 2003).

It is important to mention that other terms for VT are used in the SW profession. Terms such as secondary traumatic stress (STS) and compassion fatigue are often used interchangeably to describe how clinicians are impacted by their work with trauma survivors, a term often used to honor a victim who has endured trauma. STS refers to shorter-term symptoms resembling those of PTSD; however, the symptoms are a result of the work with the client, not the clinician's trauma history (Figley, 1993; Sabin-Farrell & Turpin, 2003). The term vicarious trauma (VT) is used throughout this dissertation.

In the next sections, an introduction to the study's theories of the causes of trauma reactions in SW students are addressed: trauma survivors, course content, racial trauma, and lack of self-care knowledge and utilization. Supporting literature and interviews conducted with SW professionals are also discussed.

1.4 Trauma Survivors

There are many causes of SW student trauma reactions. The SW practice is a profession that draws individuals because of one's trauma background. Therefore, students with a trauma history often react to the curriculum content, class activities, and client interactions in field

practicum sites (Black et al., 1993; Butler et al., 2017; Cunningham, 2003; Dane, 2002; Gilin & Kauffman, 2015; Pearlman & Saavkvitine, 1995a, 1995b; van Deusen & Way, 2006; Zosky, 2013). These specific reactions are often attributed to stimuli in the curriculum that act as reminders of past traumatic events.

1.5 Course Content

The course curriculum reflects the intensity of the SW profession through readings, classroom discussions, videos, activities, assignments, and role-plays (Zosky, 2013). SW professionals indicated that survivors retell stories of their victimizations in class discussions resulting in emotional distress after hearing narratives of physical assaults, sexual assaults, and racial injuries. In addition, students are often left to recover emotionally from the course content and what they observe in their field practicum site and in the community in which they serve (Bussey, 2008; Cunningham, 2004; Zosky, 2013).

1.6 Racial Trauma

Research supports that students of Color are more vulnerable to experiencing trauma symptoms due to racial injustices. Carter (2007) reveals that students of Color discuss racial discrimination and the traumatic effects it has on them as college students. Carter (2007) states, "Mental health scholars and practitioners have neglected the experience of race-based traumatic stress in the lives of people of Color," furthermore arguing for the codification in the DSM-5 that,

"Racism should be factored in with the PTSD symptoms" (p. 96). Listing racial injuries as a DSM-5 diagnosis not only illuminates oppression, but it validates trauma symptoms before they accumulate. To decrease the buildup of racially traumatic experiences of students of Color, acknowledgment of privilege and oppression in the SW curriculum is necessary.

The accumulation of racial injuries triggers trauma symptoms. Cose (1993) states, "Many people of Color may report that their stress is not because of one event, but they might say that a series of emotional wounds and blows were experienced. Others may report that slight cuts and scratches in time grew into gaping wounds and that these larger wounds might be the basis of her or his race-based traumatic stress injury . . . encounters may be clustered or cumulative, and perhaps the last straw event may serve as the trigger for the trauma" (p. 91). In other words, the level of distress a SW student of Color is exposed to may not result in a trauma reaction until one has reached one's threshold. SW course material, racial injustices, VT, joined with various stressful factors in a SW program, necessitates the practice of self-care.

1.7 Self-Care Knowledge

Self-care is the motivation and desire to intentionally do a regularly practiced personal plan (Diebold et al., 2018; Moore et al., 2011; Richards et al., 2010). The goal is to strengthen one's health and well-being to manage emotional, psychological, and traumatic distress (Diebold et al., 2018; Moore et al., 2011; Richards et al., 2010). The lack of self-care often increases vulnerability to experience PTSD and VT symptoms. Several studies support this claim and indicate that the practice of self-care can give SW students the skills to effectively manage the physical and emotional distress of course work, field practicum work, racial trauma while enhancing their

effectiveness as SW practitioners (Shapiro et al., 2007). However, if self-care lessons are not built into course curriculums, students are often unaware of self-care tools, forgoing their benefits of utilization.

1.8 Statement of the Problem of Practice

Researchers agree that trauma reactions are a barrier to encoding new memories and that stress, burnout, and VT can be a severe impediment to learning pertinent SW information (Napoli & Bonifas, 2011; Nugent, 2013). It is well documented that the effects of trauma have a neurological impact on various functions of the brain, disrupting the functions in the limbic system: frontal lobe, amygdala, and hippocampus (Burgess et al., 1995; McAllister & Stein, 2010).

The limbic system or alarm system in the brain has several functions that alert the body when in danger. First, the five senses collect information from the traumatic event, and it is stored as memory in the hippocampus, a structure involved in human and animal memory. Second, this fragmented, trauma memory interprets environmental contexts (Metcalf & Jacobs, 1998). Next, the partial information causes reminders or stimuli in the environment to become triggers to the person's traumatic memory, often overacting to the reminder as if it were the actual traumatic event. According to McAllister and Stein (2010), the neurological impact of trauma is the over-activation of the amygdala by stimuli perceived to be threatening. This reaction then alters the response and causes one to experience chronic or acute stress reactions.

Signals of danger are sent to the amygdala, the emotional center of the limbic system. The amygdala then sends messages to regulate automatic responses to stimuli, fight, flight, or freeze responses. As the autonomic nervous system is activated, the frontal lobe, the part of the brain that

is responsible for executive functioning, shuts down and the prefrontal cortex functions are disrupted (McAllister & Stein, 2010). As a result, decision-making, problem-solving, judgment, impulse control, social behavior, emotional expression, and the individual's ability to learn new information are altered (Burgess et al., 1995; McAllister & Stein, 2010).

Exposure to stimuli resembling violence can cause a person's brain to become hyperactive and unable to focus. Burgess and Hartman (1995) state, "Exposure to stimuli can induce a state of hyperarousal and numbing, which may cause the victim to experience highly emotional states with lower levels of thinking" (p. 6). McAllister and Stein (2010) explain that normal activation of the amygdala is impaired, producing outputs to the hippocampus, an area in the brain that "mediates memory consolidation of emotional events and spatial learning" (p. 49). Also, trauma affects the normal growth of the brain and the ability to hold memory (Teicher et al., 2002). Squire (1987) notes, "areas of the hippocampus can be affected, and the person cannot remember from one minute to the next" (p. 19). In other words, the trauma reactions from the triggering elements in a SW program can shut off the frontal lobe of the brain. Consequently, this prohibits the encoding of new information in the hippocampus, creating a barrier to students learning new information.

High arousal within a trauma survivor may cause one to experience high levels of cortisol, human stress hormones, impairing the functioning of the hippocampus and the frontal lobe, which are critically involved in memory encoding, resulting in adverse effects on recall (Metcalf & Jacobs, 1998). Traumatic memory is encoded differently than "normal" memory and due to extreme emotional reactions at the time of victimization, the event alters the functions of the hippocampus, interrupting the memory functions (van der Kolk, 2002).

A summary by van der Kolk (2002) of several studies that indicate the effects of trauma on the hippocampus is provided below.

Saltzman, et al. (2001) studied trauma and grief amongst high school students and found that those exposed to violence are at an increased risk for reduced academic achievement. Other studies show that people with PTSD have decreased hippocampal volumes, compared with matched controls. Bremner et al. (1996) found that Vietnam combat veterans with PTSD had an 8% reduction in the volume of their right hippocampus compared with veterans who suffered no such symptoms. Stein et al. (1997) found a 7% reduction in hippocampus volume in women with PTSD who had suffered repeated childhood sexual abuse. Gurvits et al. (1993) found that Vietnam veterans with the most intense combat exposure and with the most severe PTSD had an average shrinkage of 26% in the left hippocampus and 22% in the right hippocampus, compared with veterans who saw combat but had no symptoms. The severity of their PTSD was directly proportional to the degree of hippocampal shrinkage (van der Kolk, 2002). As the research applies to this study, the effects of trauma on the hippocampus result in the inability to encode new memory, limiting academic achievement for SW students. This study believes that the effects of trauma can be minimized amongst SW students through the increased awareness of PTSD symptoms and managing trauma symptoms through the use of self-care tools.

1.9 Challenges to the Problem of Practice

Knowledge of PTSD and the benefits of self-care can help in the reduction of trauma symptoms experienced by SW students. However, this study recognized the challenges to reducing trauma symptoms through increased use of self-care. A challenge was that SW students who were aware of self-care nevertheless reported that they struggled to find the practice of self-care a necessity and had difficulty finding the time amongst their work and responsibilities (Jackson,

2014; Shannon et al., 2014). In a study conducted by Jackson (2014), students viewed self-care as "an activity that they don't have time for" (p. 2). In the same study, students reported the most common reason they do not practice self-care is the lack of time; they prefer to use self-care when they need it (Jackson, 2014).

1.10 Intervention: Increasing Self-Care and PTSD Awareness

The PTSD Coach app was used to increase awareness of PTSD symptoms and self-care tools. This study believes that if students engage in routine self-care, through convenient methods, their use of self-care tools will increase. Therefore, SW students' PTSD, VT, and overall symptoms of distress will decrease.

A growing body of research indicates that the consistent use of self-care can reduce the risk for increased negative mental health, and enhance a student's psychological, mental, and physical welfare (Baer, 2003; Grossman et al., 2004).

Addressing the POP has the potential for improvement in:

- Decreasing student trauma reactions, VT, and overall distress
- Increasing the ability to learn pertinent SW material
- Improving overall mental and physical health in students
- Improving self-care practice and quality SW services to clients
- Improving knowledge of PTSD and self-care tools

2.0 Literature Review

2.1 Causes for Trauma Reactions in Social Work Students

2.1.1 Student trauma history

Students with trauma history tend to gravitate towards a helping profession such as SW, and the triggering of past victimization may be a cause for trauma reactions (Black et al., 1993; Butler et al., 2017; Cunningham, 2003; Dane, 2002; Gilin & Kauffman, 2015; Pearlman & Saavkvitine, 1995a, 1995b; van Deusen & Way, 2006; Zosky, 2013). Students who have endured and witnessed family and personal violence are more inclined to work in a profession where they can help others in need. Zosky (2013) states, "Trauma histories for adults who pursue Social Work as their professional commitment seem to be at higher rates than the general population . . . it can be hypothesized that a personal history of trauma may be a factor that draws people to the helping professions such as social work" (p. 241). Frazier et al. (2009) reveal the prevalence of exposure to traumatic events among undergraduate students (N = 1,528) using online surveys. Their sample, 85%, reports experiencing a traumatic event in their lifetime, with many students reporting more than one event. Also, SW students reported high rates of exposure to childhood trauma, one or more traumatic childhood experiences, averaging 77.6% (Gilin & Kauffman, 2015). Black et al. (1993) compared the prevalence of a trauma background in SW students (n = 116) to business students (MBA) (n = 46). Findings indicated that MSW students experienced more psychosocial trauma in their families than MBA students. The results supported their hypothesis that exposure to traumatic events, substance, physical, and sexual abuse, mental and physical illness, and death

of a significant other, in the early life history of SW students are associated with their selection of SW as a career (Black et al., 1993).

According to the research, the percentage of social workers who have a trauma history and interact with trauma survivors ranges from 60%-76% (Pearlman & Saavkvitine, 1995a, 1995b; van Deusen & Way, 2006). This is a concern in the SW field because clinicians with personal trauma histories are at a higher risk for VT than those without trauma histories (Figley, 1993; Pearlman & Saavkvitne, 1995a, 1995b; Ryan, 1999). Researchers claim that social workers' personal history of trauma places them at a higher risk for PTSD symptoms and VT (Dane, 2002; Pearlman & Mac Ian, 1995; Shannon et al., 2014).

2.1.2 Course material

SW students are often triggered by course readings, client trauma narratives, and classroom pedagogical practices that resemble their traumatic event. Trauma reactions can occur in response to stimuli such as video clips, pictures, role plays, and vignettes describing traumatic events. These common SW teaching practices reflect the intensity of the profession, acting as involuntary triggers. Brewin (2011) explains, "Conscious memories may be deliberately brought into awareness or may be brought into awareness involuntarily 'triggered' by external reminders of the trauma or by words, thoughts, and images related to the trauma" (p. 160).

Brewin et al. (1996) explain two types of traumatic memory, Verbally Accessible Memory (VAM), and Situationally Accessible Memory (SAM). VAM is a readily recalled memory stored in conscious memory. SAM is triggered involuntarily through environmental, internal, and external cues resembling the traumatic event. SAM is not conscious, so the present thoughts go unaware. This leaves the survivor incapable of distinguishing between past and present threats,

resulting in less control over the triggered memories. Such trauma reactions can leave the person feeling overwhelmed and ill-equipped to regulate these reactions (Zosky, 2013). Brewin (2001) claims that "Reliving episodes are hard to control and are relatively unresponsive to the reexperiencing demands of the social situation" (p. 160).

Trauma reactions can cause the student to feel or act as if the trauma is reoccurring, "through vivid sensory detail such as visual images and sounds; convincing the mind and body that it is reliving the actual event" (Brewin, 2011, p. 160). Although the person is remembering the traumatic event and not re-experiencing it, van der Kolk (2002) believes survivors in distress "do not respond to stress in the way others do. They may feel or act as if they were traumatized all over again" (p. 11).

SW course content can cause trauma reactions in students whether they have a trauma history or not (Bussey, 2008; Cunningham, 2004; Zosky, 2013). However, students with a history of trauma may be more susceptible to experiencing trauma symptoms. (Cunningham, 2003; Dane, 2002; Zosky, 2013). In a small sample study, Zosky (2013) found that participants with a trauma history were more reactive to the curricula. Zosky (2013) stated, "They may experience a range of reactions to the course content, including triggering of flashbacks or memories, enhanced anxiety, increased physiological responses, and avoidance of some material" (Zosky, 2013, p. 247). In the same study, students disclosed that the course content was "emotionally challenging for them, and one student requested an accommodation to an assignment due to her feeling that completion of the assignment would cause significant distress given her experience of witnessing family violence" (p. 242). Zosky (2013) also reported that a team conducted child sexual assault forensic interviews and students stated that "The topics of the course caused them to do more thinking and remembering of their personal traumatic experiences" (Zosky, 2013, p. 244). Some students asked

professors to excuse them from a field trip to a sexual abuse forensic interview while other students expressed elevated distress during a victim impact panel (Zosky, 2013). As a result, students who work with traumatized clients and learn of their injustices through class material, are reminded of their trauma history through witnessing others' distress.

It should be noted, as Zosky (2013) indicated in his research, I found very little literature studying students with past exposure to trauma who were reactive to course material.

2.1.3 Pedagogical practices

SW students' trauma reactions may be caused by the presentation of SW course material. SW students are typically exposed to traumatic material during class instruction (Bussey, 2008; Cunningham, 2004; Zosky, 2013). Students give unexpected, emotional stories of very personal physical or sexual assaults to the class, triggering others' emotional reactions. When students share their traumatization, without warning, other students may be affected and experience trauma symptoms in the classroom.

Students often use clinical case scenarios for small group work, watch videos, listen to guest speakers, and practice SW skills through role-plays, often acting in the client's role (Bussey, 2008; Cunningham, 2004; Zosky, 2013). While this is a favorable practice for teaching practitioners' techniques, Zosky (2013) argues that it leaves students vulnerable to the exposure of human sufferings. Furthermore, if instructors fail to prepare students for possible distress and do not announce the potentially triggering content before showing films, readings, or roleplays, students may experience trauma symptoms throughout the week. In addition, instructors may fail to follow up with distressed students before the next class to discuss the reactions, thus compounding the trauma symptoms.

When introducing traumatic course content, several studies provide suggestions for the best pedagogical practices to reduce the occurrence of SW student trauma symptoms (Newell & Nelson-Gardell, 2014; Zosky, 2013). Newell and Nelson-Gardell (2014) proposed that instructors formally provide students with the content of the possible effects of trauma material, professional burnout, compassion fatigue, and self-care. They recommended that information be infused into SW courses and classroom exercises to help prevent trauma reactions (Newell & Nelson-Gardell, 2014). Students suggested that instructors make a formal announcement before presenting the content such as, "The content of the class might be challenging for students with personal histories of trauma-related violence" (Zosky, 2013, p. 246). Students also proposed that a notice be placed in the syllabus, along with a discussion during the first class (Zosky, 2013). Classroom instruction about the impact of trauma can equip SW students with professional skills for coping with SW course material. It can also prepare the practitioner for difficult client stories, decreasing the risk for VT. For this dissertation, how instructors address classroom trauma and their collective trauma responses have been omitted due to the limited research on the topic.

2.1.4 Vicarious trauma

The first published study on factors predicting VT by Pearlman and Mac Ian (1995) includes the stress of SW school, personal lives, and preexisting mental health conditions. Shapiro et al. (2007) believe that beginning SW students are at a greater risk of psychological distress as they serve clients in the field and learn about various social injustices through case studies in the classroom. As a result of hearing the stories of others' victimizations, practitioners are at a higher risk of viewing the world as an unsafe, unpredictable place (Knight, 2013).

The combination of SW program stress and personal stress can make students more susceptible to VT. While it is a natural consequence for social workers to experience VT when working with clients who have experienced trauma, Dane (2002) explained that repeated exposure to traumatic material can increase the likelihood of triggers to students' traumatic memories. Several studies report that mental health professionals often have a personal trauma history, and the memories of traumatic events aid as triggering stimuli, thus leading to a cyclical phenomenon: increased trauma reactions lead to the increased risk of VT as increased VT conditions lead to more trauma reactions (Butler et al., 2017). It is my professional experience that the practice of self-care can decrease VT and trauma symptoms; however, many SW students fail to routinely use self-care tools.

2.1.5 Lack of self-care

“Sometimes the last person social workers nurture is themselves. This neglect undermines healthy social work practice but can be corrected if clinicians not only pay attention to client care but also to self-care” (Jackson, 2014, p. 2).

In the practice and teaching of SW, it is common to hear the term “self-care.” However, self-care is often left undefined and underutilized. Defined by several practitioners in the counseling field, self-care is the motivation and desire to intentionally do a regular personal plan of practice to take care of oneself. It is with the clear goal of strengthening health and well-being, to manage emotional and psychological distress, trauma symptoms, and address personal needs related to mental, emotional, physical, spiritual, and social states (Diebold et al., 2018; Moore et al., 2011; O’Neill et al., 2019; Richards et al., 2010). Associate Professor Kathy Cox, Ph.D. and

Professor Sue Steiner, Ph.D. at the School of SW, California State University, interviewed SW students and found that they lacked knowledge of self-care (Jackson, 2014).

SW students who were aware of self-care struggled to find the practice of self-care a necessity and had difficulty finding the time amongst their work and responsibilities, due to the high demands of college, employment, and field study (Jackson, 2014; Shannon et al., 2014). Other obstacles preventing students from using self-care tools included their lack of energy and fear of being labeled "weak or vulnerable" in the SW profession (Jackson, 2014, p. 2). Jackson (2014) stated that "students fail to practice self-care because they become wrapped up in a state of mind that suggests that they need to work nonstop" (p. 2).

Social workers need to practice self-care due to the high level of stress in the SW occupation. Studies indicate that the practice of self-care can give SW students the skills to effectively manage the physical and emotional stresses of course work, fieldwork, and enhance their effectiveness as practitioners after graduation (Shapiro et al., 2007). Failure to practice self-care can result in increased stress levels, health, and mental health risks (Jackson, 2014). Self-care techniques and strategies are essential skills that should be woven into daily practice to mitigate the risks of developing VT (Humphrey, 2013; Lewis & King, 2019).

The practice of self-care aids in the ability to be present for clients, and it acts as a preventative for experiencing traumatic symptoms, improving the emotional and cognitive effects of VT (Dane, 2002; Lewis & King, 2019). Grossman et al. (2004) explain, "A growing body of research indicates that a stress reduction program that emphasizes the cultivation of mindfulness may enhance psychological well-being, mental health, and physical health" (p. 27). Nolen-Hoeksema et al. (1993) conducted a training using five mindfulness practices: sitting meditation with deep breathing, full-body scan with progressive muscle relaxation, guided loving-kindness

meditation, and Daily Mindfulness Practice diaries. Results showed significant decreases in stress levels amongst counseling college students, reduced negative affect, anxiety, and rumination, as well as significant increases in positive affect, self-compassion, and overall students' mental health (Nolen-Hoeksema et al., 1993).

A study with 191 undergraduate students in Athens and Crete found that students who practiced daily self-care had lower academic stress ($M = 2.04$, $SD = .55$) than those who did not ($M = 2.70$, $SD = .72$), $t(47) = 4.25$, $p < .001$ (Diebold et al., 2018; O'Neill et al., 2019). Several studies support this research and found that self-care reduced work-related stress (Newell & Nelson-Gardell, 2014; Oser et al., 2013; Shannon et al., 2014). Also, students' involvement with post-traumatic stress intervention in the classroom and outside of the classroom can have a significant PTSD symptom reduction and a significant increase in their grade point average (Shannon et al., 2014). Therefore, routinely practicing self-care can reduce the probability of trauma reactions experienced by SW students.

3.0 Theory of Improvement and Implementation Plan

3.1 Theory of Improvement Change

Through improvement science, the present study focused on decreasing students' experiences of trauma symptoms in an undergraduate SW (BASW) course. Improvement science, defined by Mitchell et al. (2018) "is the study of improvement efforts with the aim of determining which strategies work best for which schools and students, and for accelerating and spreading improvement efforts" (p. 25). Mitchell et al. (2018) also instructed the researcher to discover the root cause of the problem and have a full understanding of the source of that challenge. This study focused on drivers for the cause of trauma symptoms: student's lack of knowledge of PTSD, self-care, and the use of self-care tools (See Appendix B).

This study aimed to increase the psychoeducation of PTSD, and the use of self-care tools to manage trauma symptoms and other distress that BASW students experienced. Krupnick and Green (2008) defined psychoeducation as "explaining to individuals or groups what common reactions have been found among those who have been exposed to traumatic stress. This includes a delineation of the symptoms of PTSD" (p. 329). Psychoeducation includes common reactions one may experience in addition to PTSD symptoms such as anger, shame, guilt, anxious and depressed moods (Krupnick & Green, 2008).

As a trauma therapist, I have found that educating clients about PTSD and self-care tools significantly reduced their PTSD symptoms. My observations are supported by Mughairbi et al. (2019) who studied the effects of psychoeducation and stress management techniques on PTSD. The study concluded that PTSD education can reduce the PTSD symptoms of those exposed to

and affected by traumatic events. Also, Wessely et al. (2008) explained that psychoeducation can provide constructive information “that proactively encourages an expectation of resilience and, if necessary, help-seeking” (p. 296). However, it is a common belief that educating one about PTSD symptoms can cause one to display PTSD symptoms. Krupnick and Green (2008) found no evidence to support the claim that psychoeducation increased the occurrence of PTSD symptoms. This study sought to produce supporting evidence that the use of self-care through a convenient mobile app could reduce the occurrence of trauma symptoms in BASW students.

The widely used, evidence-based PTSD Coach app was selected for this study due to its effectiveness in reducing PTSD symptoms. The PTSD Coach app was created by the VA's National Center for PTSD and the Department of Defense's DHA Connected Health. The designers intend the app to provide information, assessments for tracking symptoms, self-care tools, and direct links to support networks (US Department of Veterans Affairs, n.d.).

Several qualitative studies conducted randomized controlled trials to assess the PTSD Coach app's effectiveness for self-management of PTSD symptoms (Kuhn et al., 2017; Miner et al., 2016). They collected trauma symptom data before and after the use of the app. Participants' use of the PTSD Coach app resulted in improvements in PTSD symptoms when compared to the control group.

Kuhn et al. (2014) aimed to assess the user's helpfulness of the app. Participants were given a list of tasks to complete in the app over several days, exposing them to sections of the app such as the self-assessment and the PTSD psychoeducational literature. This study found that the convenience of the PTSD Coach app and the self-management tools for PTSD symptoms were helpful to reduce symptoms of distress in participants (Kuhn et al., 2014).

3.2 Guiding Questions for Inquiry of Change

To cause a change in the POP, several questions arose to guide this study. The Inquiry questions are listed below:

- Does the PTSD Coach app increase knowledge of PTSD?
- Does the PTSD Coach app increase knowledge of self-care tools?
- Will student self-care increase from the start of the study?
- Will distressing symptoms decrease with the use of self-care tools?
- Will students make time to use the PTSD Coach app weekly?

This study predicted that students in the BASW course sample would show increased knowledge of PTSD and self-care tools. Student self-care knowledge and use of self-care tools would increase moderately with the use of the Manage Symptoms section of the PTSD Coach app. Students would improve self-care utilization, indicated by increased post-test scores in both the Learn PTSD and Manage Symptoms sections of the PTSD Coach app. Distressing symptoms would decrease moderately through the weekly use of the Manage Symptoms Tools section of the app and with detailed instructions, administered at the start of the study, to use each self-care tool within that section. A minimal decline in use would occur due to the two-item weekly survey prompting students to use the Manage Symptoms section of the app.

3.3 Methods and Measures

The purpose of this study was to evaluate the use and effectiveness of two sections of the PTSD Coach app. Participation in this study was voluntary and anonymous. An introduction to the

study was in the form of a letter and a PTSD Coach app flyer posted in Canvas (university learning system), explaining the study and how to join (See Appendix C and Appendix D). Participants were instructed to study two sections of the app, "Learn PTSD" and "Manage Symptoms" Tools (self-care tools). A detailed description of all the research activities in this study are listed below:

1. Participants received "Learn PTSD" Qualtrics pre-test (See Appendix E).
2. Participants received instructions to Part 1 of the PTSD Coach app study (See Appendix F).
3. Participants used the PTSD Coach app and studied the "Learn PTSD" section.
4. Participants completed the "Learn PTSD" Qualtrics post-test (See Appendix E).
5. Participants completed the "Manage Symptoms" Tools Qualtrics pre-test (See Appendix G).
6. Participants received instructions to Part 2 of the PTSD Coach app study (See Appendix H).
7. Participants used the PTSD Coach app, studied, and used "Manage Symptoms" Tools.
8. Participants completed the "Manage Symptoms" Tools Qualtrics post-test (See Appendix G).
9. During Part 2, participants completed a weekly, 2-item, Likert scale, Qualtrics survey (See Appendix I).

The first phase of data collection was a ten-item, Qualtrics pre-test to assess the students' knowledge of PTSD. The students had thirty days to follow the instructions on the handout and to review the "Learn" section of the PTSD Coach app. After the thirty-day cycle, a ten-item PTSD knowledge Qualtrics post-test was administered, identical to the pre-test. The data from the pre-test and post-test was graphed and compared.

The second phase of data collection began with self-care tools, a ten-item Qualtrics pre-test to assess students' knowledge about self-care tools in the "Manage Symptoms" section of the PTSD Coach app. Again, the participants received a handout via Canvas, instructing them on the use of the app and the self-care tools. During the second phase of the study for four weeks, the participants received a weekly, two-item Likert scale survey via Qualtrics. The two-item survey included prompts for students to use the app and to assess the self-care tools' effectiveness.

3.4 Analysis of Data

This study is a descriptive educational evaluation of PTSD and self-care knowledge. Survey data were analyzed through descriptive statistics such as frequency, mode, pre-test and post-test comparison, and standard deviation. Surveys where pseudonyms matched, the data was graphed by individuals to detect changes before and after the use of the PTSD app. A comparison of pre-test and post-test performance was performed. The total correct responses on the pre-test were compared to the total responses on the post-test for both the Learn PTSD and Manage tools phases of the study.

Pre-test surveys where pseudonyms did not match with post-test surveys, the ability to track a participant was lost. Survey responses were corrected, recorded, and graphed. The total correct responses on the pre-test were compared to the total correct responses on the post-test for both the Learn PTSD and Manage tools phases of the study. Thus, total items correct on the pre-test compared to total items correct on the post-test were recorded and graphed.

4.0 Results

This chapter is organized by the research questions and findings. The following research questions guided the research study:

- Why do SW students experience trauma reactions?
 - Student trauma history
 - Course material
 - Pedagogical practices
 - VT
 - Do students lack knowledge of PTSD and self-care tools?
- Do trauma symptoms cause a barrier to students' ability to learn?
- What are the repercussions if trauma symptoms in SW students go unaddressed?

Under each research question, all sources of data will be reviewed, and the data will be described in detail. We begin this chapter with a review of each measure used throughout the study and the response rates for each one. The study was in two parts while a simultaneous 2-item survey was administered during phase two of the study.

4.1 Response Measures and Rates for the Learn PTSD Pre-Test and Post-Test

This section describes the measures used to identify the extent to which students increased their knowledge about PTSD. The student participants' knowledge of PTSD was measured by

comparing the total number correct with the survey questions from the Qualtrics pre-test and post-test. The data from the survey questions were extracted from Qualtrics and analyzed as follows:

Twelve participants completed the Learn PTSD pre-test. The number of correct questions was forty-one (see Table 1). Seven participants completed the Learn PTSD post-test with thirty-one correct answers (see Table 2). There was a decrease in the number of test items correct by 10 incorrect answers. There was an eleven-item increase in number correct from the twenty items correct on the pre-test to thirty-one items correct on the post-test (see Table 3).

Table 1. PTSD Coach – Learn PTSD Pre-Test

| Participant Number | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Total Correct |
|--------------------|----|----|----|----|----|----|----|----|----|-----|---------------|
| One | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Two | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Three | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 |
| Four | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 |
| Five | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 5 |
| Six | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 5 |
| Seven | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 |
| Eight | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 5 |
| Nine | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 |
| Ten | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 |
| Eleven | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| Twelve | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 4 |
| Total Correct | 7 | 10 | 4 | 3 | 0 | 2 | 0 | 2 | 8 | 5 | 41 |

Note. Pre-test $n = 12$; 0 = Participant answered the question incorrectly; 1 = Participant answered the question correctly

Table 2. PTSD Coach – Learn PTSD Post-Test

| Participant Number | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Total Correct |
|--------------------|--------------|----|----|----|----|----|----|----|----|-----|---------------|
| One | No post-test | | | | | | | | | | |
| Two | No post-test | | | | | | | | | | |
| Three | No post-test | | | | | | | | | | |
| Four | No post test | | | | | | | | | | |
| Five | No post-test | | | | | | | | | | |
| Six | No post-test | | | | | | | | | | |
| Seven | No post-test | | | | | | | | | | |
| Eight | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 6 |
| Nine | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 |
| Ten | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 6 |
| Eleven | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 5 |
| Twelve | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 |
| Thirteen | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 |
| Fourteen | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 4 |
| Total Correct | 6 | 5 | 2 | 2 | 0 | 3 | 3 | 2 | 5 | 3 | 31 |

Note. Post-test $n = 7$; 0 = Participant answered the question incorrectly; 1 = Participant answered the question correctly

Table 3. PTSD Coach – Learn PTSD

| Participant Number | Pre-Test Total Correct | Post-Test Total Correct |
|--------------------|------------------------|-------------------------|
| One | 1 | NA |
| Two | 1 | NA |
| Three | 3 | NA |
| Four | 3 | NA |
| Five | 5 | NA |
| Six | 5 | NA |
| Seven | 3 | NA |
| Eight | 5 | 6 |
| Nine | 3 | 3 |
| Ten | 3 | 6 |
| Eleven | 5 | 5 |
| Twelve | 4 | 3 |
| Thirteen | NA | 4 |
| Fourteen | NA | 4 |
| Total Correct | 41 | 31 |

Note. NA = no pre-test or no post-test; pre-test $n = 12$; post-test $n = 7$

The first item on the pre-test and post-survey was indicated as number 0. It asked the participant to “Write your pseudonym (research nickname to keep you anonymous) here. Then enter it into your phone so you can use it on the post-test, too!” Each pseudonym was then assigned a participant number. Pre-test pseudonyms were compared with post-test pseudonyms. Seven pre-test participants’ pseudonyms, participants One, Two, Three, Four, Five, Six, and Seven, did not take the post-test, and two new pseudonyms appeared, participants Thirteen and Fourteen, who

took the post-test only. Due to the inconsistent use of pseudonyms, it was concluded that participants forgot their research nickname, or they completed the pre-test but failed to complete the post-test. Participants Eight, Nine, Ten, Eleven, and Twelve completed both the pre-test and the post-test.

The first question on the pre- and post-surveys asked the participant to choose the correct multiple-choice answer to the question, what four types of symptoms does PTSD include? There were twelve participants for the Learn PTSD pre-test and seven participants for the post-test. The percentage of respondents who gave correct responses for the pre-test was 58% or 7 of 12 students. The percentage of respondents who gave correct responses for the post-test was 85% or 6 of 7 students.

The second question on the pre- and post-surveys asked the participant to choose the correct multiple-choice answer to the statement, “PTSD can also include dissociation which means the person can feel like.” The percentage of respondents who gave correct responses for the pre-test were 83% or 10 of 12 students. The percentage of respondents who gave correct responses for the post-test was 71% or 5 of 7 students.

The third question on the pre- and post-surveys asked the participant to choose the correct multiple-choice answer to the question, “What percentage of the population will have PTSD in their lifetime?” The percentage of respondents who gave correct responses for the pre-test was 33% or 4 of 12 students. The percentage of respondents who gave correct responses for the post-test was 28% or 2 of 7 students.

The fourth question on the pre- and post-surveys asked the participant to choose all the correct multiple-choice answers that apply to the question, “What factors can make it more likely that a person will develop PTSD?” The percentage of respondents who gave correct responses for

the pre-test was 25% or 3 of 12 students. The percentage of respondents who gave correct responses for the post-test was 28% or 2 of 7 students.

The fifth question on the pre- and post-surveys asked the participant to choose all the correct multiple-choice answers that apply to the question, “Some problems that are more common for people diagnosed with PTSD are.” The percentage of respondents who gave correct responses for the pre-test was 0% or 0 of 12 students. The percentage of respondents who gave correct responses for the post-test was 0% or 0 of 7 students.

The sixth question on the pre- and post-surveys asked the participant to choose if the following statement was true or false, “More than half of women with PTSD have alcohol problems.” The percentage of respondents who gave correct responses for the pre-test was 25% or 3 of 12 students. The percentage of respondents who gave correct responses for the post-test was 14% or 1 of 7 students.

The seventh question on the pre- and post-surveys asked the participant to choose all the correct multiple-choice answers that apply to the statement, “Tips for interrupted sleep are.” The percentage of respondents who gave correct responses for the pre-test was 0% or 0 of 12 students. The percentage of respondents who gave correct responses for the post-test was 42% or 3 of 7 students.

The eighth question on the pre- and post-surveys asked the participant to choose all the correct multiple-choice answers that apply to the question, “Which therapies can help improve PTSD?” The percentage of respondents who gave correct responses for the pre-test was 16% or 2 of 12 students. The percentage of respondents who gave correct responses for the post-test was 28% or 2 of 7 students.

The ninth question on the pre- and post-surveys asked the participant to choose if the following statement was true or false, “Post Traumatic Stress Disorder is an abnormal response to abnormal circumstances.” The percentage of respondents who gave correct responses for the pre-test was 60% or 8 of 12 students. The percentage of respondents who gave correct responses for the post-test was 71% or 5 of 7 students.

The tenth question on the pre- and post-surveys asked the participant to choose the correct multiple-choice answer to the statement, “The three steps for the RID tool is used for when someone with PTSD gets triggered.” The percentage of respondents who gave correct responses for the pre-test was 41% or 5 of 12 students. The percentage of respondents who gave correct responses for the post-test was 42% or 3 of 7 students. Participants seemed to struggle more on the multiple-choice questions that asked them to select “all that apply.”

4.2 Response Measures and Rates for the Manage Symptoms Pre-Test and Post-Test

The student participants’ Response Measures and Rates for the Manage Symptoms Pre-Test and Post-Test were measured by comparing the total number correct with the survey questions from the Qualtrics pre-test and post-test. The data from the survey questions were extracted from Qualtrics and analyzed as follows:

Ten participants completed the Manage Symptoms pre-test. The number of correct questions was twenty-three (see Table 4). Seven participants completed the Manage Symptoms post-test with twelve correct answers. There was a decrease in the number of correct test items between the pre-test and the post-test. Students answered eleven less items correct on the post-test than they did on the pre-test (see Table 5). While comparing the data it was discovered that three

pre-test pseudonyms, participants Fourteen, Fifteen, and Eleven, did not take the post-test, and participant Thirteen and one new pseudonym, participant Sixteen, only took the post-test. Participants Seventeen, Ten, Twelve, Nine, and Eighteen completed both the pre-test and the post-test. The total number of correct items on the pre-test and post-test scores were compared. They answered five less questions correct from the fourteen correct items on the pre-test to the nine correct items on the post-test (see Table 6).

There were several unexpected errors that occurred through the administration of the Manage Symptoms pre-test and post-test Qualtrics surveys. Those errors resulted in several questions not appearing for students. The results for those participants are as follows: participant Fifteen answered question one correctly, question two was answered incorrectly, and the rest of the questions did not display for the respondent. A similar error occurred for participant Nineteen; they only answered question number one and the remaining questions had an error. One participant was not given the question to provide their name. “No name” answered question one incorrectly, question two did not display, question three was answered correctly, question four was answered incorrectly, question five reported an error, question six was answered incorrectly, and questions seven through ten did not display for the participant.

Table 4. PTSD Coach – Manage Symptoms Pre-Test

| Participant Number | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Total Correct |
|--------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|
| Seventeen | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 |
| Fourteen | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 4 |
| Ten | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| Twelve | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| Nine | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| Eighteen | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 3 |
| Eleven | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Fifteen | 1 | 0 | Error | Error | Error | Error | Error | Error | Error | Error | 1 |
| Nineteen | 0 | Error | Error | Error | Error | Error | Error | Error | Error | Error | 0 |
| *No Name | 0 | Error | 1 | 0 | Error | 0 | Error | Error | Error | Error | 1 |
| Total Correct | 6 | 0 | 7 | 1 | 1 | 1 | 0 | 3 | 3 | 1 | 23 |

Note. *One survey result had no name; Error = Question did not display to respondent; Pre-test $n = 10$; 0 = Participant answered the question incorrectly; 1 = Participant answered the question correctly

Table 5. PTSD Coach – Manage Symptoms Post-Test

| Participant Number | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Total Correct |
|--------------------|--------------|----|----|-------|-------|-------|-------|-------|-------|-------|---------------|
| Seventeen | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Fourteen | No post-test | | | | | | | | | | |
| Fifteen | No post-test | | | | | | | | | | |
| Ten | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| Twelve | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| Nine | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Eighteen | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 3 |
| Eleven | No post-test | | | | | | | | | | |
| Thirteen | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| Sixteen | 1 | 0 | 0 | Error | Error | Error | Error | Error | Error | Error | 1 |
| Total Correct | 3 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | 12 |

Note. Post-test $n = 7$; 0 = Participant answered the question incorrectly; 1 = Participant answered the question correctly; Error = Question did not display to respondent

Table 6. PTSD Coach – Manage Symptoms

| Participant Number | Pre-Test Total Correct | Post-Test Total Correct |
|--------------------|------------------------|-------------------------|
| Seventeen | 3 | 1 |
| Fourteen | 4 | NA |
| Fifteen | 1 | NA |
| Ten | 3 | 2 |
| Twelve | 2 | 2 |
| Nine | 3 | 1 |
| Eighteen | 3 | 3 |
| Eleven | 3 | NA |
| Thirteen | NA | 2 |
| Sixteen | NA | 1 |
| Nineteen | 0 | NA |
| *No name | 1 | NA |
| Total Correct | 23 | 12 |

Note. NA = no pre-test or no post-test; Pre-test $n = 10$; Post-test $n = 7$

The item on the pre- and post-surveys was indicated as number 0. It asked the participant to “Write your pseudonym (research nickname to keep you anonymous) here. Then enter it into your phone so you can use it on the post-test, too!” Pre-test pseudonyms were compared with post-test pseudonyms. While comparing the data it was discovered that three pre-test participants’ pseudonyms, participants Fourteen, Fifteen, and Eleven, did not take the post-test, and participant Thirteen and one new pseudonym, participant Sixteen, took the post-test only. Participants Seventeen, Ten, Twelve, Nine, and Eighteen completed both the pre-test and the post-test. Due to

the inconsistent use of pseudonyms, it was concluded that either the participant forgot their research nicknames, or they completed the pre-test but failed to complete the post-test.

The first question on the pre- and post-surveys asked the participant to choose if the following statement was true or false, “During a body scan, allow yourself to fall asleep.” The percentage of respondents who gave correct responses for the pre-test was 60% or 6 of 10 students. The percentage of respondents who gave correct responses for the post-test was 43% or 3 of 7 students.

The second question on the pre- and post-surveys asked the participant to read the scenario and after reading the vignette, to arrange the steps of Julia's body scan in the correct order. The percentage of respondents who gave correct responses for the pre-test was 0% or 0 of 10 students. The percentage of respondents who gave correct responses for the post-test was 0% or 0 of 7 students.

The third question on the pre- and post-surveys asked the participant to choose if the following statement was true or false, “During the Body Scan, you are instructed to fix pain and discomfort from your body when you notice them.” The percentage of respondents who gave correct responses for the pre-test was 70% or 7 of 10 students. The percentage of respondents who gave correct responses for the post-test was 43% or 3 of 7 students. A decrease from the pre-test indicated that participants neglected to use the tools in the app.

The fourth question on the pre- and post-surveys asked the participant to choose all the correct multiple-choice answers that apply to the question, “Deep breathing should include the following.” The percentage of respondents who gave correct responses for the pre-test was 10% or 1 of 10 students. The percentage of respondents who gave correct responses for the post-test was 0% or 0 of 7 students.

The fifth question on the pre- and post-surveys asked the participant to choose all the correct multiple-choice answers that apply to the question, “You are a social worker at a domestic violence shelter and receive a call from a victim. She is safe and staying at her sister's house. She describes to you how her partner was extremely violent towards her. You can hear her crying and struggling to catch her breath. How would you guide her through the deep breathing tool?” The percentage of respondents who gave correct responses for the pre-test was 10% or 1 of 10 students. The percentage of respondents who gave correct responses for the post-test was 0% or 0 of 7 students.

The sixth question on the pre- and post-surveys asked the participant to choose the correct multiple-choice answer to the question, “Listening to others' problems when in distress.” The percentage of respondents who gave correct responses for the pre-test was 10% or 1 of 10 students. The percentage of respondents who gave correct responses for the post-test was 0% or 0 of 7 students.

The seventh question on the pre- and post-surveys asked the participant to read the scenario and after reading the vignette, to arrange the steps of the muscle relation tool in the correct order. The percentage of respondents who gave correct responses for the pre-test was 0% or 0 of 10 students. The percentage of respondents who gave correct responses for the post-test was 0% or 1 of 7 students.

The eighth question on the pre- and post-surveys asked the participant to choose if the following statement was true or false, “Focusing on your worries controls rumination.” The percentage of respondents who gave correct responses for the pre-test was 30% or 3 of 10 students. The percentage of respondents who gave correct responses for the post-test was 14% or 1 of 7 students.

The ninth question on the pre- and post-surveys asked the participant to choose the correct multiple-choice answer to the question, “You should avoid muscle relaxation tools if you.” The percentage of respondents who gave correct responses for the pre-test were 30% or 3 of 10 students. The percentage of respondents who gave correct responses for the post-test was 43% or 3 of 7 students.

The tenth question on the pre- and post-surveys asked the participant to read the scenario and after reading the vignette to select all answers that apply. The percentage of respondents who gave correct responses for the pre-test was 10% or 1 of 10 students. The percentage of respondents who gave correct responses for the post-test was 14% or 1 of 7 students.

The decrease in correct responses from the pre-test to the post-test indicated that students did not appear to make time to use the app, thus did not make time for self-care.

4.3 Response Measures and Rates for the Two-Item Weekly Survey

While the manage symptoms Qualtrics survey was open, this study had a two-item survey administered for four weeks, asking about the effectiveness of the manage symptoms tools. The two questions were as follows:

1. Did you use the Manage Symptoms section of the PTSD Coach app?
2. If yes, how helpful were the tools?

The data from the survey questions were extracted from Qualtrics and analyzed as follows (see Table 7):

During week one, two participants completed the two-item survey, participants Ten and Twelve. Participant Ten answered “No” to the first question and “not at all helpful” to the second

question. Participant Twelve answered “Yes” to the first question and “extremely helpful” to the second question.

During week two, the same two participants completed the survey. Participant Ten answered “No” to the first question and “not at all helpful” to the second question. Participant Twelve answered “Yes” to the first question and “extremely helpful” to the second question.

During week three, two participants completed the two-item survey, participants Ten and Fourteen. Participant Fourteen answered “Yes” to question one and “Extremely helpful” to question two. Participant Ten answered “No” for question one and “Not at all helpful” for question two.

During week four, there was one participant that completed the two-item survey, Participant Ten. Participant Ten answered “No” for question one and “Not at all helpful” for question two.

Table 7. Two-Item Survey

| Participant Number | Week | Q1: Did you use the Manage Symptoms section of the PTSD Coach app? | Q2: If yes, how helpful were the tools? |
|--------------------|------|--|---|
| Ten | 1 | No | Not at all helpful |
| | 2 | No | Not at all helpful |
| | 3 | No | Not at all helpful |
| | 4 | No | Not at all helpful |
| Twelve | 1 | Yes | Extremely helpful |
| | 2 | Yes | Extremely helpful |
| Twenty | 2 | Yes | Extremely helpful |
| Fourteen | 3 | Yes | Extremely helpful |

Note. Week 1 $n = 2$; Week 2 $n = 3$; Week 3 $n = 2$; Week 4 $n = 1$

4.4 Student Rating of the Use and Helpfulness of the PTSD Coach App

During the second phase of this study, the students were surveyed about their use of the Manage Symptoms tools section of the PTSD Coach app. Again, students were asked to write their pseudonym for item number “0.” Question one, participants were asked to answer “Yes” or “No” to the question, “Did you use the ‘Manage Symptoms’ section of the PTSD Coach App this week?” The percentage of respondents who answered “Yes” to week one, 50% or 1 of 2 students. The percentage of respondents who answered “Yes” week 2, 66% or 2 of 3 students. The percentage of respondents who answered “Yes” week 3 was 50% or 1 of 2 students. The percentage of respondents who answered “Yes” week 4 was 0% or 0 of 1 student.

Participants were also surveyed using a Likert scale, which they used to rate the helpfulness of the Manage Tools section of the PTSD Coach app. The Likert scale used a three-point scale where 1 was “Extremely helpful” 2 was “Somewhat helpful” and 3 was “Not at all helpful.” In week one, the percentage of respondents who answered “Extremely helpful” was 50% or 1 of 2 students. In week two, the percentage of respondents who answered “Extremely helpful” was 66%, or 2 of 3 students. In week 3 the percentage of respondents who answered “Extremely helpful” was 50% or 1 of 2 students. The percentage of respondents who answered “Extremely helpful” in week 4 was 0% or 0 of 1 student.

In week one, the percentage of respondents who answered “Not at all helpful” was 50% or 1 of 2 students. In week two, the percentage of respondents who answered “Not at all helpful” was 33 % or 1 of 3 students. In week three, the percentage of respondents who answered “Not at all helpful” was 50% or 1 of 2 students. The percentage of respondents who answered “Not at all helpful” in week four was 100% or 1 of 1 student.

There is a direct correlation between participants who answered “Yes” to using the app and the use of the app was “Extremely helpful.” There is also a direct correlation between participants who reported “No” to the use of the app and that the app was “Not at all helpful.” No participants reported that the use of the app was “Somewhat helpful.”

5.0 Discussion

5.1 Introduction

Several theories were explored through the literature review to answer the question “Why do SW students experience trauma reactions?” Literature supported that students with a trauma history are more likely to pursue careers in the helping profession and those who choose a SW career have a higher rate of past trauma exposure than the general public (Black et al., 1993; Butler et al., 2017; Cunningham, 2003; Dane, 2002; Gilin & Kauffman, 2015; Pearlman & Saavkvitine, 1995a, 1995b; van Deusen & Way, 2006; Zosky, 2013). Therefore, a personal history of trauma is often a significant factor that draws students to the SW profession thus, leaving them more vulnerable to experiencing trauma reactions.

SW course material was explored in the literature as a cause for SW student trauma reactions. SW curriculum often reflects the intensity of the SW profession, unintentionally acting as an involuntary trigger to the unconscious memory through environmental stimuli resembling a traumatizing event (Brewin et al., 1996; Brewin, 2011). Trauma reactions triggered by SW curriculum often leave the SW student overwhelmed and ill-equipped to manage their distress (Zosky, 2013).

Pedagogical practices such as using case material as class scenarios, videos, guest speakers, and role-plays often expose students to human sufferings, leaving them ill-equipped to manage the distress that can last throughout the week (Bussey, 2008; Cunningham, 2004; Zosky, 2013). In addition, research and interviews supported the theory that consistent stress of the SW curriculum,

classroom practices, field practicums, and personal stress can cause students to be at a higher risk for VT (Knight, 2013; Shapiro et al., 2007).

Although the literature supported the theory that the effects of trauma have a neurological impact on the functions of the hippocampus and cause a barrier to the student's ability to learn pertinent SW information, this study did not explore the findings further (Napoli & Bonifas, 2011; Nugent, 2013; van der Kolk, 2002). The same literature supports the repercussions on the student's mental and physical wellbeing if trauma symptoms go unaddressed. Their findings have implications for further research studies.

The present study focused on SW students' lack of PTSD knowledge and self-care awareness as a cause of increased trauma symptoms and overall distress. This study attempted to decrease trauma symptoms in SW students through the increased knowledge of PTSD symptoms and managing their distress with the use of self-care tools. Research indicated that SW students who were aware of self-care struggled to find the practice of self-care a necessity and had difficulty finding the time amongst their work and responsibilities (Jackson, 2014; Shannon et al., 2014). Students viewed self-care as "an activity that they don't have time for" and they preferred to use self-care when they needed it (Jackson, 2014, p. 2). Therefore, this study intended to provide a convenient app for SW students to increase the frequency of self-care practice and to enhance their knowledge of PTSD symptoms.

Several guiding questions were utilized for this study. The next several sections will explore and discuss each inquiry question, this study's strengths, and limitations.

5.2 Research Questions

5.2.1 Does the PTSD Coach app increase knowledge of PTSD?

This study predicted that students in the BASW course sample would show increased knowledge of PTSD. Findings were inconclusive and data did not show an increase in PTSD knowledge for pseudonyms that did not match. As indicated in the results section, it appears that the overall PTSD knowledge did not increase with the usage of the PTSD app. Adversely, PTSD knowledge decreased with a total of forty-one correct answers on the Learn PTSD pre-test and thirty-one correct answers on the post-test.

Why did the number of correctly answered questions decline on the Learn PTSD post-test? This study's theory is that the students did not use the PTSD Coach app. It is not possible to learn the correct answers to the questions in the survey if participants do not read the information in the app. In addition, students have a favorable relationship with this study's primary investigator (PI) and if they did not use the app as directed, they may have felt a commitment to complete the post-test as a way to please the PI. This phenomenon is common in therapy practice. As a clinician, I have observed clients answering questions with answers they thought the clinician wanted to hear, in hopes of pleasing them. Similarly, in the effort to please the PI, the post-test questions were not answered after participants studied the app, causing a limitation in this study's attempt to increase PTSD knowledge.

Another limitation of this study was the inability to compare the Learn PTSD pre-test to the post-test data, caused by students using inconsistent pseudonyms for the pre-test and post-test or not taking the post-test. This study could not compare the number of correct answers on the pre-test with the number of correct answers on the post-test when the pseudonyms did not match. Also,

the number of participants decreased from twelve students for the pre-test and seven students for the post-test, leaving the post-test data incomparable to the pre-test.

A strength of this study was the number of correct answers for five participants with the same pseudonyms for the Learn PTSD pre-test and the post-test. Results for both measures were compared and showed a slight improvement in three correct items, twenty correct answers on the pre-test, and twenty-three correct answers on the post-test. It is believed that these participants used the app and had a slight increase in PTSD knowledge, compared to the other participants who did not use the app.

5.2.2 Does the PTSD Coach app increase knowledge of self-care tools?

This study predicted that students in the BASW course sample would show a moderate increase in knowledge of self-care tools with the use of the Manage Symptoms section of the PTSD Coach app. As indicated in the results section, overall self-care knowledge did not increase with the use of the app. Self-care knowledge decreased with a total of twenty-three correct answers on the pre-test and twelve correct answers on the post-test.

Why did the number of correctly answered questions decline on the Manage Symptoms post-test? Again, this study's theory is that the students did not use the PTSD Coach app. Specifically for this part of the study, they did not use the self-care tools because they did not experience trauma symptoms and they did not "need" to use self-care tools. They planned to use the tools when they were in distress and when they had the time to practice self-care. The number of participants also decreased from ten students for the pre-test to seven students for the post-test. This decreased the likelihood that enough data was collected to determine a significant change with correctly answered questions amongst those participants who used the same pseudonym.

Once more, students have a favorable relationship with the PI and although it does not appear that they used the app as directed, they may have felt a commitment to complete the post-test as a way to please the PI. In the effort to satisfy the PI, the post-test questions were answered although participants had not studied the app.

Similar to the Learn PTSD phase of the study, students used inconsistent pseudonyms for the pre-test and post-test. This inconsistency limited this study's ability to compare Manage Symptoms tools pre-test and post-test data. This study could not compare the number of correct answers on the pre-test with the number of correct answers on the post-test if the pseudonyms did not match.

Unlike the Learn PTSD data, the number of items correct for participants with the same pseudonyms who completed both the Manage Tools pre-test and post-test did not show a self-care tool knowledge increase. The participants answered fourteen correct on the pre-test compared to eight correct on the post-test. It is theorized that participants did not use the self-care tools section of the app, therefore decreasing the likelihood that their self-care tools knowledge would increase with the use of the app.

5.2.3 Will student self-care increase from the start of the study?

This study focused on increasing the psychoeducation of PTSD and knowledge of self-care tools to improve student self-care. This study predicted that students would improve self-care practice by learning about the common trauma reactions they may experience as a social worker and the useful tools to reduce those reactions (Krupnick & Green, 2008; Mughairbi et al., 2019). It was predicted that both the PTSD and Manage Symptoms post-test would show an increase in student self-care practice. However, this study did not include a measure to determine the

occurrence and frequency of student self-care practice. The pre-test and post-test only measured the increase or decrease in knowledge of PTSD and self-care tools. Although the study included a survey to prompt students to use the app, it is undetermined if the participants used the app as directed and if so if it improved their self-care practice.

The two-item survey during the Manage PTSD phase of the study was designed to prompt students to use the self-care tools and inquire if the app helped to decrease their distress. The participants were at liberty to complete this survey at their leisure within the week. However, due to the study's voluntary and anonymous nature, prompts could not be directed at specific participants who failed to answer the week's two-item survey. Therefore, there was low participation, making it difficult to determine if they used the app but neglected to report the use in the weekly two-item survey. In addition, the validity of the two-item survey was low, and it did not measure the frequency of the self-care tools, nor did it begin at the start of the study. Perhaps, the presence of both components would have increased the likelihood of students' regular use of the app from the beginning of the study.

5.2.4 Will distress decrease with the use of self-care tools?

This study predicted that students in the BASW course sample would show a moderate decrease in distressing symptoms through the weekly use of the Manage Symptoms Tools section of the PTSD Coach app. During the second phase of this study, the two-item survey measured the participant's use of the app and assessed its helpfulness. Participants who used the app indicated that the tools were extremely helpful. Participants Twelve, Twenty, and Fourteen showed a positive correlation with the use of the Manage PTSD tools section, reporting that when they used

the app, it was extremely helpful. Adversely, Participant Ten reported that “she” did not use the app each week and the app was not at all helpful.

Participant Twelve’s, Participant Twenty’s, and Participant Fourteen’s findings indicate a promising correlation between using the app and reducing distress symptoms. These findings support this study’s predictions that distress will decrease with the use of the PTSD Coach app. This study further predicts that if more participants would have used the self-care tools in the app, more participants would have reported that the app was extremely helpful in reducing their distress. However, the number of participants for the two-item survey was low and inconsistent; week one $n = 2$, week 2 $n = 3$, week three $n = 2$, week 4 $n = 1$. Therefore, the lack of app use limited more participants from benefiting from the use of the self-care tools. It is predicted that the students that did not use the app, did not show a decrease in distress symptoms. If more participants used the app and reported their use in the weekly survey, this study believes the data would have continued to show a strong correlation between the use of the app and a decrease in distress.

However, this study did not have a baseline measure of the level of distress before the pre-test and after the post-test. The measures of distress were in the PTSD app and were not revealed to the researcher at any time in the study. Without pre-and post- distress level ratings revealed to the researcher, it could not be determined if the students were benefiting from the use of the self-care tool unless they reported that in the survey.

5.2.5 Will students make time to use the PTSD Coach app weekly?

This study predicted that participants would consistently use the PTSD Coach app and the two-item weekly survey would aid as a prompt. This weekly reminder would increase the probability that students would prioritize the use of the self-care portion of the app. However, this

study also projected several challenges to the Pop which were supported by the literature. One challenge was that SW students who were aware of self-care reported that they struggled to find the practice of self-care a necessity and they had difficulty finding the time amongst their work and responsibilities (Jackson, 2014; Shannon et al., 2014). In addition, students did not practice self-care because they believed they should work nonstop, and they would use self-care only when they needed it (Jackson, 2014).

The results of this study appear to support the previous research findings. Students either did not make time to use the app or simply did not prioritize their self-care practice over their personal and academic responsibilities. The present study was held during two months of the academic semester. During this period, students were responsible for submitting multiple assignments and presentations, not just in the course where this study was administered but in their other BASW courses. The BASW program is a rigorous, upper-division program where typically, students are enrolled in at least fifteen credits per semester. They are assigned to field practicum sites where they are required to complete at least three hundred client contact or research hours per semester. This study hypothesizes that the low response rates and inconsistent survey results are attributed to the busy academic and personal lifestyles of SW students. In other words, students did not prioritize self-care and instead focused more on their academic requirements and life demands.

5.3 Limitations

There were unexpected limitations and challenges for this study. One limitation was that students seemed to prioritize completing graded assignments over the use of the PTSD Coach app.

Students were diligent in submitting course assignments and doing presentations. However, the results revealed an inconsistency in the app's use. This resulted in a decline in the number of correct items on both post-test surveys in comparison to the number correct on both pre-test surveys. Both post-test results revealed that participants knew little about PTSD symptoms and how to manage them with self-care tools.

Another limitation to this study was the inability to track the students' weekly use of the app. Participation in the study was voluntary and anonymous. Therefore, there was no way to monitor the weekly participation in the study. For example, a student could use the app one week, and the next week decide to not use the app. This study had no mechanism for detecting the inconsistency. This posed a limitation to this study because the use of the app may have increased the familiarity of the PTSD and self-care tools information. In other words, the frequency of use could have improved student's post-test scores, increasing their knowledge of self-care and PTSD.

Another limitation to this study was the several unexpectant changes of the pseudonyms. This limited the ability to compare the correct items from the pre-test to the post-test with several participants. However, several participants kept their pseudonyms throughout the study and results indicated a small increase in PTSD knowledge but showed a decline in knowledge of self-care tools. It is this study's theory that participants forgot or misplaced their fictitious names.

There were unpredicted errors that occurred during the Qualtrics Manage Symptoms pre-test and post-test. Several questions were not displayed for the participants, therefore forsaking them the opportunity to answer several questions. In addition, one participant was unable to provide their pseudonym because the question was not presented to them. These limitations resulted in questions going unanswered, restricting this study from recording and comparing important data.

An additional limitation is that this study had a low test-retest reliability and could not measure the consistency of results when repeated. In the Learn PTSD phase of this study, where pre-test and post-test pseudonyms matched, there was a slight increase with correctly answered questions. This improvement may be due to participants taking the same test twice. As a result of repeating the survey, their familiarity with the test content may have helped to increase the number of items correct on the Learn PTSD coach post-test.

The Qualtrics surveys were piloted with five volunteers unrelated to this study. No issues with the questions were detected. However, this study's results revealed a weakness in the format of some questions. In the Learn PTSD phase of the study, participants seemed to struggle more with the questions that asked them to "Check all that apply," numbers 4, 5, 7, and 8 in particular. Additional low-scoring post-test questions were numbers 3, 6, and 10. However, the answers for these questions were overtly indicated in the Learn PTSD section of the app. Had the participants used the app, the answer would have been easy to locate.

A similar limitation occurred in the Manage Symptoms phase of the study. Questions that were most challenging to participants were the "Select all that apply" and "Click and arrange the steps in the correct order." These results indicated that the questions were either confusing to the student or that students found it too difficult to select all the correct answers to get the entire question correct.

However, it should be noted that participants were not prohibited to use the app while taking the post-test. Also, this study created each question using language directly from the PTSD Coach app. It is predicted that if the student used the app, they would have found the answers to each question without difficulty. In addition, participants showed no improvement with questions that instructed them to "Select 1 answer." This study believes that there was infrequent use of the

app or no use at all. This theory is supported by the results of the two-item survey where there was a correlation between the use of the app and the helpfulness of the app. In contrast, if the participant did not use the app, the student indicated that it was not helpful at all.

Lastly, this study was conducted during a global pandemic. The measurement choices and implementation planning did not factor in an international health crisis. Originally, this study planned a weekly classroom presentation. Due to Covid-19 restrictions, all campus classrooms were off-limits to students and faculty members. As a result, all classes were conducted virtually through Zoom, a cloud platform for video and audio conferencing. This sudden change in events limited weekly, in-person contact in the classroom.

Face-to-face presentations would have allowed the PI to become more familiar with the student participants, making them feel more comfortable with joining the study. In addition, this study initially planned to administer all surveys in class through one-page, paper questionnaires. Anonymous, paper surveys could have increased the probability that students would participate in the study and complete both pre-test and post-test. This study also initially planned to allot classroom time at the beginning of each meeting for students to use the PTSD Coach app. Again, this could have increased the probability that students would use the app if it did not interfere with their time for personal and academic obligations.

5.4 Next Steps and Implications

Broadly, this study intended to collect and analyze information about what is effective in reducing PTSD symptoms and distress amongst SW students. This study approached the first PDSA cycle with a growth mindset that every SW student could learn about PTSD symptoms and

self-care tools, grow in the practice of self-care, and include these concepts in their daily routine. However, the limitations of this study informed further decisions about what is next in the PDSA cycle; what needs to be adjusted, expanded, or abandoned to gain the intended increase in self-care practice and decrease in SW student trauma symptoms (Langley et al., 2009).

Future studies should abandon the survey questions that ask participants to “Select all that apply” or “Arrange in the correct order.” These questions should be replaced with questions that have only one possible answer. This adjustment would eliminate the possibility of the participant getting the entire question incorrect because they did not have every answer to the question correct. Questions should be diverse. Another possibility is to expand the question format types (i.e., asking the student to select the only correct answer, true or false, choose the best response to the vignette, and select the correct answer that is arranged in the correct order).

This study would benefit from an adjustment to the directions for each section of the Learn PTSD and Manage Symptoms of the app. Participants may have been overwhelmed by the magnitude of the two sections of the PTSD Coach app. A future study should adjust the directions to instruct students to focus on smaller sections of the app at a given time, instead of leaving students to study the entire section of the app on their own. Also, future studies would benefit from administering the two-item survey for both phases of the study. This change could encourage participants to read and learn both the PTSD and the Manage Symptoms sections of the app. This future study would include a two-item survey for the Learn PTSD phase:

1. Have you used the PTSD Coach app Learn PTSD section? Yes or No
 - a. If no, why not?
2. If yes, how many times in seven days did you use the app?

In addition, this new study would alter the two-item Manage Symptoms survey to ask the following questions:

1. Have you used the PTSD Coach app Manage Symptoms section? Yes or No
 - a. If no, why not?
 - b. If yes, how many times in seven days did you use the self-care tools?
 - c. Were the tools helpful?" Not at all helpful, somewhat helpful, extremely helpful

The purpose of these questions is to a) remind participants to use the app, b) collect data about the barriers to not using the app, and c) assess the frequency students used the self-care tools.

The need for participants to remain anonymous should be reconsidered for future implementation efforts. Moreover, the use of incentives should be considered in classroom use. Though not permitted under research guidelines governing the present study, instructors seeking to use the app could award credit for the student's submission of their assignments. Therefore, the use of the student's real name would be necessary. This change would not only improve the tracking of each student taking the pre-test and post-test, but it would incentivize the use of the PTSD app, increasing the motivation of the student to practice self-care. In turn, the data comparison with the pre-test and post-test would accurately reflect the progress with learning PTSD symptoms and self-care tools. However, if future studies must keep the participants anonymous, changes to how students create their pseudonyms are warranted.

In the present study, participants forgot or misplaced their fictitious names. A solution for future studies is to adjust the system of creating a pseudonym, such as implementing a code to remind the participants of their fictitious names. For example, students could be instructed to use the first initial of their mother's name, the first two letters of their elementary school, and the last

three letters of the hospital they were born in. This system would benefit both the researcher and the participants in reporting and collecting accurate data for all measurements.

5.5 Conclusion

The results of this study seemed to indicate that students were not motivated to practice self-care and to learn about PTSD through the PTSD Coach app. The data shows that although PTSD Coach is a convenient app, it cannot be given to students with the expectation that they will use it without mandating or incentivizing the use of the app. However, results are inconclusive in determining if students lacked the motivation to a) practice self-care; b) lacked the motivation to participate in a voluntary research study, due to the absence of incentives; or c) did not use the app because they did not need it (i.e., they did not experience distress). Future studies could focus on incentivizing the voluntary use of self-care tools through extra credit point; however, this researcher does not believe this will increase the probability that students will participate in a self-care study that is not a course requirement. Future studies could explore what would lead to sustainable self-care practice beyond an incentivized activity resulting in temporary compliance.

Although this study had inconclusive data, the results revealed pertinent information that could lead to a more sustainable self-care practice for students. The two-item survey results indicated a promising correlation between using the app and reducing students' distress symptoms. These findings support this study's predictions that distress will decrease with the use of the PTSD Coach app. Results determine the need for SW programs to include self-care, not just a curriculum requirement or a voluntary practice but as a continuous reminder to SW students about the importance of practicing self-care for the SW profession. Students need a steady message that the

practice of self-care a) aids in the ability to be present for clients and b) mitigates the emotional and cognitive effects of VT (Dane, 2002; Lewis & King, 2019). Although SW students believe that they have to work non-stop, research supports that self-care techniques and strategies are essential skills that should be woven into daily practice to mitigate the risks of developing VT (Humphrey, 2013; Lewis & King, 2019). In addition, research supports that integrating the practice of self-care in daily routines could provide SW students with the skills to effectively manage their physical and emotional distress of course work, field practicum work, and racial trauma while enhancing their effectiveness as SW practitioners (Shapiro et al., 2007).

Learning about the benefits of self-care from SW professionals in the university could not only help students make micro-level changes to their self-care but it could encourage them to make structural and systematic changes. Perhaps, if SW students are encouraged to expand their self-care practice to involve their family and community, this could result in a more sustainable self-care practice. For example, instead of a student taking a walk every morning alone, one could invite a significant other on their walk. The inclusion of someone from their mezzo level system could increase the probability that their walk remains consistent.

Changes to this study may help to improve future PDSA cycles and expand the use of self-care tools amongst SW students. Research supports that self-care should be designed in every SW course (Butler et al., 2017). In addition, this researcher believes that addressing the effects of VT should begin in the classroom and during the field practicum experience (Courtois & Gold, 2009; Cunningham, 2004; Dane, 2002). Therefore, the PI aspires to create self-care assignments that build upon one another from the beginning to the end of the social worker's academic career.

Finally, this study has already influenced policy and practice. With the collaboration of SW colleagues, the PI wrote a self-care and content warning and proposed it to the leadership team.

Self-Care and Content Warning:

“Sometimes the last person social workers nurture is themselves. This neglect undermines healthy social work practice but can be corrected if clinicians not only pay attention to client care but also to self-care.” Jackson, K. (2014)

Materials presented in this course may be distressing and reflective of situations that you might encounter in your social work career. Social work course content reflects the intensity of the social work profession through readings, classroom discussions, films, interactive activities, assignments, and role-plays. Bearing witness to another’s pain and victimization, whether in person or through class materials, is considered a form of exposure and can have an unintended short- and long-term impact. In addition, course content may be triggering to social work students who may have experienced personal and/or community trauma, disenfranchisement, oppression (either personally and/or professionally), or come from minoritized communities and backgrounds.

Self-care is identified as an ethical principle in the National Association of Social Workers’ (NASW) Code of Ethics (Code), which encourages all social workers to engage in self-care, ongoing education, and other activities to ensure their commitment to the core principles of the social work profession.

Developing and maintaining routine self-care practice empowers social work students to mitigate and manage feelings of vulnerability and distress. The goal of self-care is to strengthen your health and well-being and to manage emotional, and psychological reactions. Self-care practices promote resilience and the development of skills for social work students to effectively manage the physical and emotional stress reactions to course work, fieldwork, racial trauma, and other forms of adverse life experiences. Your success as a social worker is grounded in your ability to initiate, engage, and adhere to self-care practices. The activities in the domains below are areas worth exploring for maintaining your well-being:

- Physical: Nutrition, sleep, exercise or activity, contact with nature.
- Psychological and emotional: Effective relaxation, time management, work play balance.
- Spiritual: Self-reflection, meditation, participation in religious community.
- Interpersonal: Social support, peer support, consultation.

The statement above was approved by all faculty members and is now required to appear in every SW syllabus in the program.

Appendix A Fishbone

SW students will increase their knowledge of PTSD and self-care tools through the use of the PTSD Coach application by 30% within a 15-week SW course.

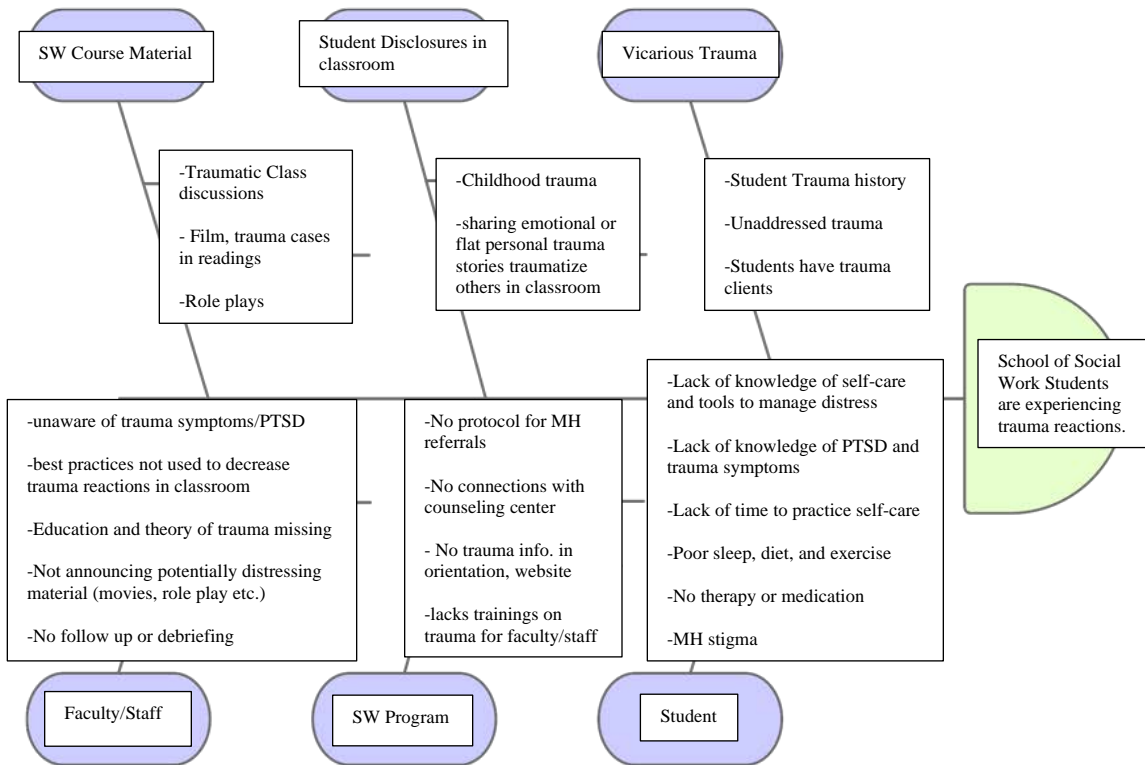


Figure 1. Fishbone

Appendix B Driver Diagram

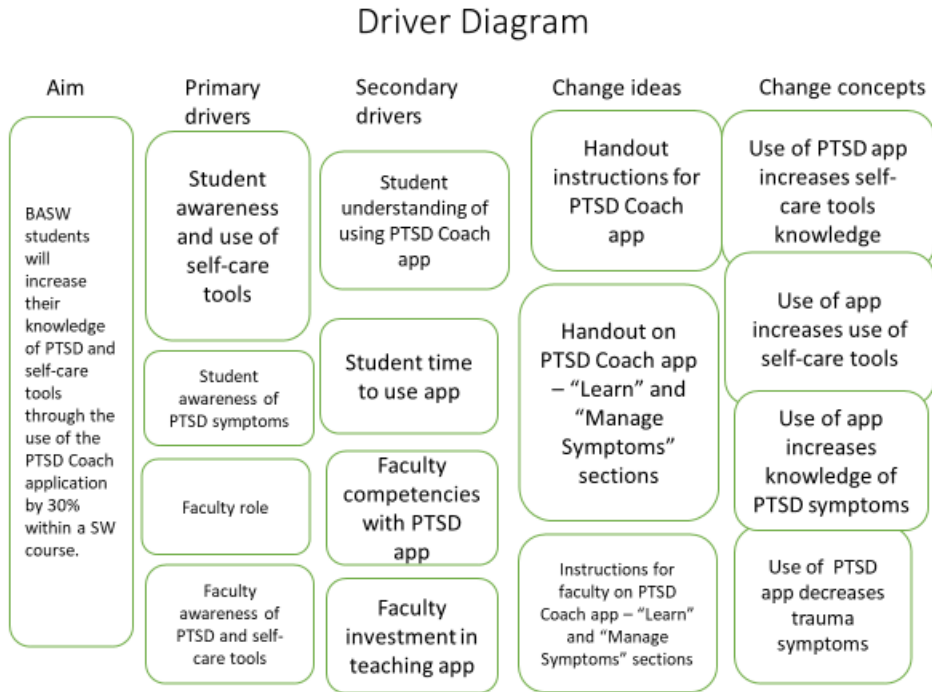


Figure 2. Driver Diagram

Appendix C PTSD Coach Study Script

Dear BASW Students,

Research has shown us that social work is a stressful occupation. We help individuals, families, and communities who have experienced traumatic stress and other unjust life experiences. Research proves that being exposed to another's pain can cause distress in us. As social workers, it is important to take care of ourselves as we take care of others.

The PTSD Coach app has been widely used to manage distressing symptoms and increase self-care. Therefore, the purpose of this research study, entitled "PTSD Coach app" is to increase awareness of PTSD, trauma symptoms, and self-care tools to reduce distress. Also, your feedback on the effectiveness of the app to manage symptoms is of great interest to this study.

The research study has two phases that focus on two sections of the app. Before you explore each section, you will receive a 10-item pre-test to assess your awareness of PTSD and self-care tools. After you complete each section, you will receive a 10-item post-test. During the second phase, you will receive a weekly 2-item survey to assess your use of the self-care tools. The pre and post-test will take about 10 minutes each and the 2-item survey will take less than 2 minutes.

Your participation in the survey is voluntary. All responses and information will be anonymous. Data may be shared in the future in an anonymized manner. As a participant, should you choose to withdraw, all data will continue to be maintained unless you as the participant request that it be destroyed, for which you will be asked for your pseudonym and the data will be deleted. Completing or not completing the surveys will not affect your course grade.

There is no foreseeable risk associated with this project; however, there may be benefits to using the self-care tools. There will be no payments for your participation in this study.

Thank you in advance.

Toya Jones

Appendix D PTSD Coach Flyer



PTSD Coach is a **free, easy-to-use mobile application**. It was developed by the Department of Veterans Affairs (VA) in 2011. It is a convenient way to learn about the symptoms of posttraumatic stress disorder (PTSD). You can also learn about coping skills and PTSD treatments. Research studies have shown that **PTSD Coach can reduce PTSD symptoms**, especially when used as part of therapy. The app may also help with symptoms of depression. PTSD Coach is not meant to replace professional care.

MANAGE YOUR SYMPTOMS

PTSD Coach can support you with tools to help manage symptoms of PTSD.

- Practice relaxation, mindfulness, and other stress-management exercises
- Manage unwanted feelings and thoughts in-the-moment
- Personalize or create new coping tools using your own audio, pictures, or text

TRACK YOUR SYMPTOMS

Answer questions about your thoughts, feelings and behavior over the past month. Feedback based on your responses will include tools that might help you feel better. Set a reminder on your device to re-take the assessment in the future and track your symptoms over time.



LEARN ABOUT PTSD

Find answers to many of the common questions people have about PTSD, like:

- How does PTSD develop and how common is it?
- What are the symptoms of PTSD?
- What treatments work for PTSD?

GET SUPPORT

Use PTSD Coach to learn more about professional treatment options. Locate a mental health care provider near you. Learn how to grow your own personal support system by connecting with people you trust. Add contact information for friends and loved ones who can help when you're feeling stressed. If you're in crisis, you can choose from resources that will connect you with people who are ready to help.

PERSONALIZE THE APP

Select the menu in the top left corner of the app and select Personalize

- Features like the daily quote on the home screen can be turned on or off
- The app language can be switched from English to Spanish



For more information, visit:
www.ptsd.va.gov/appvid/mobile

Date Created: January 24, 2020



U.S. Department
of Veterans Affairs

Appendix E Learn PTSD Qualtrics Pre-/Post-Test Key

PTSD Coach App - Learn PTSD Pre/Post-Test Key

Q0

Write your pseudonym (research nickname to keep you anonymous) here. Then enter it into your phone so you can use it on the post-test, too!

Q1 What 4 types of symptoms does PTSD include?

Re-approaching, persistent engagement, negative thoughts and moods, feeling reactive

Re-experiencing, persistent avoidance, negative thoughts and moods, feeling reactive

Re-experiencing, persistent engagement, negative thoughts and feelings, feeling interactive

Re-approaching, consistent engagement, negative behaviors, feeling interactive

Q2 PTSD can also include dissociation which means the person can feel like

They are overly attached to family and friends

They are less likely to associate with others

They are detached from friends and their workplace

They are detached from themselves and their immediate surroundings

Q3 What percentage of the population will have PTSD in their lifetime?

15%

12%

7%

5%

Q4 What factors can make it more likely that a person will develop PTSD? (Check all that apply)

Previous exposure to trauma

Childhood assault

Male gender

Family mental illness

All the above

There are no factors indicated

Q5 Some problems that are more common for people diagnosed with PTSD are (Check all that apply)

- Bi-polar disorder
- Physical pain**
- Personality disorders
- Drug and alcohol problems**
- All the above
- There are no common problems
-

Q6 More than half of women with PTSD have alcohol problems.

- True
- False**

Q7 Tips for interrupted sleep are (select all that apply)

- Continue to think of the nightmare for at least 5 minutes to flood the fear
- Stay in bed and try falling asleep again as soon as possible
- Get out of bed and stay awake for 5 to 10 minutes**
- Read a book or listen to pleasant music**
- Focus on the differences between the nightmare and present moment**
- All the above

Q8 Which therapies can help improve PTSD? (select all that apply)

- Prolonged exposure therapy**
- Brief electric therapy
- EMDR**
- Talk Therapy**
- All the above
- No therapies can help improve PTSD

Q9 Post Traumatic Stress Disorder is an abnormal response to abnormal circumstances.

- True
- False**

10 The three steps for the RID tool is used for when someone with PTSD gets triggered?

- Relax, Identify, Decide**
- Relax, Interrupt, Deploy

- Respond, Interrupt, Defuse
- Rehearse, Influence, Distribute
-

Q00 Thank you so much for taking the time out to participate in this research study. Your feedback is valuable for increasing our knowledge about social work students' awareness of PTSD.

Appendix F PTSD Coach App Instructions

Welcome to part 1 of the PTSD Coach Application (App) study! Attached is a flyer from the Nation Center of PTSD describing the PTSD Coach App created by the VA US Department of Veterans Affairs.



Part 1, you will learn about PTSD.

- Select the PTSD App icon on your cell phone or computer
 - Go to the “Home page”
 - From the “Home page”, select the “Learn” icon.
 - That will take you to the “Learn” page where you select “About PTSD” .
 - You are now in the “About PTSD” section.
 - Choose the following icons over the next 30 days to learn about PTSD.
 - Please read each section in the App (shown below) in the order it is listed.
 - Study carefully for the post-test.
-
- What is PTSD?
 - PTSD Facts
 - How Does PTSD Develop?
 - How Common is PTSD?
 - Who Develops PTSD?
 - How Long Does PTSD Last?
 - Problems Related to PTSD
 - Understanding PTSD Treatment
 - Do I have PTSD?
 - I Have PTSD
 - I’m Embarrassed to Have PTSD
 - Social Isolation
 - Sleep Problems: Insomnia
 - What Do I Do if I Get Triggered?
 - What is Dissociation?
 - I am Avoiding Things
 - I Don’t Trust People
 - I Can’t Control my Temper
 - I’m Always on Edge
 - I Feel Sad All the Time

Appendix G PTSD Coach Manage Symptoms Pre-/Post-Test Key

PTSD Coach App - Manage Symptoms Tools Pre/Post-Test Key

Q0

Write your pseudonym (research nickname to keep you anonymous) here. Then enter it into your phone so you can use it on the post-test, too!

Q1 During a body scan, allow yourself to fall asleep.

True

False

Q2 You are a social worker and a client walks in your office with an angry look on her face. You say, "Good morning" and she yells "What's so good about it!" She continues, "I haven't gotten my unemployment check yet and I've been laid off from work since the COVID-19 lock down in March! I have 3 kids, how am I supposed to survive?" You notice her voice, hands, and body are shaking as she speaks to you. How would you walk her through the Julia body scan so that she feels relaxed in her whole body? (Click and arrange the steps in the correct order)

1 Ask the client to sit comfortably in a chair

2 Ask her to close her eyes

3 Notice how her fingers feel as she rubs them together

4 Bring awareness to her chest and belly

5 Look around the room and notice how the furniture is arranged

Q3 During the Body Scan, you are instructed to fix pain and discomfort from your body when you notice them.

True

False

Q4 Deep breathing should include the following (check all that apply)

Belly goes out

Chest goes up

Shoulders are relaxed

Completely cleared mind

All the above

Q5 You are a social worker at a domestic violence shelter and receive a call from a victim. She is safe and staying at her sister's house. She describes to you how her partner was extremely violent towards her. You can hear her crying and struggling to catch her breath. How would you guide her through the deep breathing tool? (Select all that apply)

- Count each breath as she inhales slowly**
- Move around the room while slowly breathing
- Exhale and think of the word "relax"**
- Stand or sit comfortably**
- Hold each breath and count to 5
- All of the above

Q6 Listening to others' problems when in distress (select 1 answer)

- Causes your anxiety to increase
- Improves your mood**
- Solve your problems
- All the above

Q7 You are a social worker supervisor at a boys group home and your resident walks in your office yelling. He is angry because he claims another resident has stolen his shirt. You notice his jaw, hands, and shoulders are very tense. How will you help him to relax by using the muscle relaxation tool? (Click and arrange the steps in the correct order)

- 1 Ask the client to have a seat**
- 2 Close his eyes and take a deep breath**
- 3 Clinch both fist and bend his elbows, noticing the tension**
- 4 Tighten his buttocks then exhale and relax his buttocks**
- 5 Tighten his calves and feet, then relax and let tension drain away**
- 6 You will count down from 5-1**

Q8 Focusing on your worries controls rumination.

- True**
- False

Q9 You should avoid muscle relaxation tools if you (select 1 answer)

- Have an injury**
- Have asthma
- Have tense muscles
- Are a sex assault survivor
- All the above
- x None of the above

Q10 You have a big paper due in two days and you only have two lines written! Your mind can't focus because you are thinking about you and your partner's big argument, your unfinished paper, and your piled up dirty laundry! On top of that, you haven't had more than 3 hours of sleep in days! You choose to use the "Clouds in the Sky" tool in the Observe Thoughts section of the PTSD Coach App. What will you do that could help you to relax so you can get your paper written and turned in on time? (select all that apply)



Stop the worries when they come to mind

Notice the worries when they come to mind

Change your thoughts to more pleasant thoughts

Be sure you are doing the tool correctly and adjust throughout

Notice changes in your body



All the above



Q00 Thank you so much for taking the time out to participate in this research study. Your feedback is valuable for increasing our knowledge about social work students' awareness and use of self-care tools.

Appendix H PTSD Coach Instructions Part 2

Welcome to part 2 of the PTSD Coach Application (App) study! Attached is a flyer from the Nation Center of PTSD describing the PTSD Coach App created by the VA US Department of Veterans Affairs.



Part 2, you will learn about effective tools used for managing PTSD symptoms and other distress symptoms.

- Select the PTSD app icon on your cell phone or computer.
 - Go to the “Home page”
 - From the “Home page,” select “Manage Symptoms.”
 - You are now in the “Tools” section.
 - Choose the following icons over the next 60 days to learn about tools to manage PTSD.
 - Please read each section in the App (shown below) in the order it is listed.
 - Study carefully for the post-test.
-
- Ambient Sounds
 - Body Scan
 - Change Your Perspective
 - Connect With Others
 - Deep Breathing
 - Grounding
 - Inspiring Quotes
 - Leisure Activities
 - Mindfulness
 - Muscle Relaxation
 - My Feelings
 - Observe Thoughts
 - Positive Imagery
 - Relationship Tools
 - RID: Coping With Triggers
 - Schedule Worry Time
 - Seeing my Strengths
 - Sleep Tools
 - Soothe the Senses
 - Soothing Audio
 - Soothing Images
 - Thought Shifting
 - Time Out

Appendix I Two-Item PTSD Coach App Survey

2-item PTSD Coach App Survey

Q0 Write your pseudonym (research nickname to keep you anonymous) here.

Q1

1. Did you use the “Manage Symptoms” section of the PTSD Coach App this week?

- Yes
- No

Q2 If you answered Yes to number 1, how helpful were the tools in decreasing your level of distress?

- Extremely helpful
- Somewhat helpful
- Not at all helpful

Q00

Thank you! Your participation is appreciated!

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