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The promise of compassion-based therapy as a novel intervention for adolescent PTSD

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Abstract

In this review, we summarize current evidence for compassion-based approaches for PTSD and the potential for their application to the adolescent PTSD population. Exposure to traumatic events is common in adolescence and PTSD remains a public health crisis. Accessibility, willingness, and engagement are significant barriers to established treatments for PTSD, with attrition rates as high as 50 %. Compassion-based therapies provide potential solutions to treatment obstacles by providing a non-threatening, transdiagnostic option unburdened by aspects of current trauma treatment which may be associated with treatment resistance (e.g., exposure, trauma narrative, induction of fear). Compassion-based approaches are intuitive for trauma treatment, as compassion activates the self-soothing system, thereby disarming the fear system and promoting affect regulation. Compassion-based treatments demonstrate reductions across a substantial range of PTSD symptoms in adults, however, in adolescents extant literature is sparse, with cross-sectional studies suggesting self-compassion is inversely associated with trauma-related psychopathology. Understanding the impact of compassion-based approaches on adolescent PTSD is warranted as the adolescent developmental period may be a particularly opportune time for this approach. Evaluation of the impact of compassion-based treatment on adolescent PTSD in clinical populations via randomized-controlled studies and comparison of its relative efficacy to current evidence-based practices is warranted.

Keywords

Compassion; Compassion-based treatments; Post-traumatic stress disorder; Trauma; Adolescents

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CRediT authorship contribution statement

Bridget Brinckman: Investigation, Resources, Writing – original draft, Writing – review & editing. **Elena Alfaro:** Conceptualization, Supervision, Project administration. **William Wooten:** Conceptualization, Resources. **Ryan Herringa:** Conceptualization, Writing – review & editing, Supervision, Project administration.

Declaration of Competing Interest

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Adolescent PTSD is a debilitating condition affecting nearly 7 % of youth by the age of 18 (U.S. Department of Health and Human Services, 2017). Trauma exposure is prevalent, with over 12 million adolescents experiencing trauma in their lifetime (Child and Adolescent Health Measurement Initiative, 2019). Currently established therapeutic approaches for adolescent PTSD, which are considered the first line of intervention, can be effective but are not without limitations (Zhang et al., 2018). Notably, long-term effects (i.e., > 6 months) may be small in adolescents (Gutermann et al., 2017) and prognosis for PTSD is still generally poor (Pradhan et al., 2015), with up to one third of trauma patients continuing to experience trauma symptoms when treated with traditional approaches (Bradley et al., 2005). Furthermore, although psychotropic medication may target comorbid conditions associated with PTSD (e.g., depression, anxiety), medications do not exist to treat PTSD directly (Morina et al., 2016). Overall, there continues to be a great need to establish new and alternative psychotherapeutic treatments for adolescent PTSD to increase the armamentarium of options available to clinicians and patients.

In this paper, we review currently established psychotherapeutic approaches for adolescent PTSD and then focus on self-compassion as a novel intervention that may be used to improve outcomes in youth suffering from this illness. In doing so, we review the current evidence for compassion-based therapies and highlight a research path needed to establish this therapeutic approach as an evidence-based modality for adolescent PTSD.

1. Current evidence-based psychotherapeutic approaches for adolescent PTSD

Current evidence-based psychotherapeutic approaches for adolescent PTSD include but are not limited to Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), Prolonged Exposure (PE), Cognitive Processing Therapy (CPT) and Eye Movement Desensitization and Reprocessing Therapy (EMDR; John-Baptiste Bastien et al., 2020; Mavranezouli et al., 2020; Smith et al., 2019; Dorsey et al., 2017; Morina et al., 2016; Haller et al., 2016; Watts et al., 2013). Although these approaches are distinct, they all involve patient recollection and discussion of traumatic experiences, exposure to specific trauma triggers (e.g., external or internal cues for physiological arousal) psychoeducation on the nature of trauma symptoms, and training in relaxation or emotion regulation strategies (Dorsey et al., 2017; Bistricky et al., 2017).

1.1. Mechanisms of change

The majority of existing approaches for adolescent PTSD are based on the cognitive-behavioral model (Banks et al., 2015). Cognitive approaches, such as TF-CBT or CPT, utilize trauma discussion to facilitate cognitive reappraisal and behavioral engagement (i.e., exposure; de Arellano et al., 2014), consequently reducing avoidance (Bistricky et al., 2017). Cognitive change, specifically reduced maladaptive trauma cognitions, represent a core mechanism of change in these approaches (Kangaslampi and Peltonen, 2019; Zalta, 2015), with critical cognitions about the self as incompetent or weak a particularly important target for improving PTSD symptoms (Kangaslampi and Peltonen 2019). Between-session habituation is an added core mechanism in PE (Cooper et al., 2017a). Other mechanisms

of change for cognitive approaches supported by preliminary evidence, are hope in both TF-CBT and CPT (Gallagher, 2017; Zalta, 2015), emotion regulation and anxiety sensitivity in TF-CBT (Gallagher, 2017), and inhibitory learning and emotional engagement in PE (Cooper et al., 2017).

1.2. Limitations

Although existing approaches for adolescent PTSD, such as TF-CBT and PE, are consistently shown to be effective (Gutermann et al., 2017, Powers et al., 2010; van Minnen et al. 2012), the effects appear to wane with time and generally the overall prognosis for adolescent PTSD remains suboptimal. Additionally, drop-out from trauma-based treatment has been deemed “a serious problem” (Kehle-Forbes et al., 2016) and a recent meta-analysis of TF-CBT estimated 38 % of children prematurely drop out of treatment, with increasing rates as children age (Wamser-Nanney and Walker, 2022).

A further limitation of existing approaches is that in order to utilize current therapeutic approaches for PTSD the fear network needs to be activated through recollection and exposure to trauma memories. Thus, patient recall of trauma, and willingness to do so, are treatment requirements. Patients must first be able to access a detailed trauma memory, or at least have identifiable trauma themes. Providing detailed descriptions of traumatic experiences may be especially challenging for youth, who developmentally have less verbal ability and smaller vocabularies (Horesh and Gordon, 2018). Not only must patients have a detailed trauma memory, but also they must be willing to engage in situations associated with strong negative emotional reactions (e.g., fear, shame, terror). Therefore, tolerance for exposure may be a hindrance (Pradhan et al., 2015), especially because many patients with trauma backgrounds have strong avoidance tendencies (Earley et al., 2014).

2. Rationale for compassion-based therapies as novel treatment for adolescent PTSD

In recent years there has been a growing popularity and increased evidence of effectiveness for third-wave cognitive-behavioral psychotherapeutic approaches such as acceptance & commitment therapy (ACT) and dialectical behavioral therapy (DBT) (Schaeuffele et al., 2021). Although third wave psychotherapeutic approaches are often complementary to existing treatments, the field has yet to explore the possibilities of third-wave components (e.g., mindfulness or self-compassion; see page 13 for a detailed definition of these components) as novel treatments for adolescent PTSD.

Third wave approaches (e.g., ACT) often seek to change one’s relationship with the self, in terms of response to one’s thoughts and feelings, rather than altering thoughts and feelings directly, as in traditional cognitive-behavioral treatment. Given that PTSD is characterized by persistent negative emotional states, often directed inward, such as shame or anger, treatment may be enhanced by alternative approaches suitable for reducing this type of negative affect. Because adolescence is a time of increased self-focus (Pullmer et al., 2019) and self-criticism (Marsh et al., 2018), treatments that address self-critical attitudes and accompanying emotions may be especially beneficial for adolescents with trauma. Because

compassion-basedapproaches promote social connectedness through equanimity, empathy (Dodson-Lavelle et al., 2015), appreciation and gratitude (Dodds et al., 2015) they may be especially beneficial during adolescence.

Compassion-based approaches for adolescent PTSD are novel as they do not require direct exposure to trauma triggers or review of trauma-specific memories. Therefore, compassion-based approaches may present solutions to current barriers in PTSD treatment related to these components of treatment. Where cognitive and exposure-based treatments attempt to heal by sending the message to “change”, compassion heals by implying one needs to “love”. This shift in treatment focus to proposing that one needs to warmly provide care for themselves and allow their experiences to be as they are, may offer benefit for trauma survivors who are already critical of their thoughts and behaviors. With a focus on cultivating positive responsiveness to the self rather than reviewing painful traumatic memories, compassion-based approaches may feel less pathologizing, especially for teens (Reddy et al., 2013), and less emotionally demanding (Horesh and Gordon, 2018).

Compassion offers agency and healing when trauma turns individuals into harsh critics of themselves and the world (Braehler and Neff, 2020). Approaches centered around self-compassion are especially valuable for PTSD because they not only target the most critical cognitions involved in PTSD, such as viewing oneself as weak or incompetent (Kangaslampi and Peltonen, 2019), but they also develop one’s ability to soothe or provide care for themselves (Germer and Siegel, 2012). After trauma exposure, those who develop PTSD experience changes in cognition, which often include negatively-altered self-perceptions, and inaccurate or distorted attributions of self-blame. Self-compassion may be a particularly effective antidote toward self-critical post-traumatic cognitions by reducing one’s sensitivity to shame and anxiety (Kangaslampi and Peltonen, 2019). However, cognitive change, or simply changing one’s internal dialogue, may be insufficient to improve mood-related symptoms for those with PTSD; one may also need to modify their internal conversational “tone” (Germer and Siegel, 2012) to be gentler and kinder.

Compassion-based treatments demonstrate high levels of therapist and patient comfortability (Craig et al., 2020), satisfaction (Dodds et al., 2015), and engagement (Braehler et al., 2013; Serpa et al., 2021), which may increase utilization rates and thereby patient access to evidence-based intervention. Transdiagnostic in nature, compassion-based approaches represent an efficient treatment that is effective for a variety of disorders, with outcomes beyond trauma symptom reduction (Kirby, 2017). As many psychological conditions are comorbid, a treatment that has broad clinical application is practically advantageous..

2.1. Compassion & internal threat emotions

Compassion-based approaches target the broad negative emotional landscape that is characteristic of PTSD symptoms for most patients (Banks et al., 2015; Harman and Lee, 2010). The narrow foci of many current treatments (e.g., solely targeting anxiety and fear), which leaves emotions like shame and self-criticism to fester, is likely to be insufficient for PTSD recovery. A significant advantage of compassion-based approaches is that they target the plethora of emotions that represent internal threat such as anger, guilt, sadness, shame, self-criticism and self-blame (Power and Fyvie, 2013), for which exposure-based

treatments may be less effective (Lee et al., 2001). The ability to target internal threat emotions is a crucial benefit of compassion-based treatments because emotions such as shame are predictive of both the development and severity of PTSD (Badour et al., 2017; LaBash and Papa, 2014).

2.2. Compassion & soothing

Due to the nature of post-traumatic stress disorder, which promotes particularly harsh responses to oneself, the ability to activate, develop, and expand one's self-soothing system is key for healing (Germer and Siegel, 2012; Carona et al., 2017; Welford and Langmead, 2015; MacBeth and Gumley, 2012). Self-criticism is a central problem for those with PTSD, making approaches which alleviate criticism through self-soothing, like compassion, potentially fruitful (Leaviss and Uttley, 2015).

Providing compassion to oneself is a self-soothing behavior. Activation of one's soothing system promotes emotion regulation, and therefore, may decrease PTSD symptoms. The soothing system counters the threat system (e.g., anger, fear, shame; MacBeth and Gumley, 2012), which is triggered in those with PTSD. From an evolutionary perspective, nurturing, promoted by the soothing system, is an avenue to manage threat as a means for survival (Gilbert, 2009; MacBeth and Gumley, 2012). Therefore, the capacity to nurture or soothe is foundational to human existence. Teaching individuals to be compassionate toward not only themselves, but also to safe-others, is a way to facilitate access to the soothing system.

Lastly, because the soothing system is rooted in early life experiences regarding attachment (Gilbert, 2009), difficulties with foundations necessary to develop self-compassion can be overcome by working to establish secure attachment to oneself, in order to provide feelings of safety and care. This allows individuals to become their own safe base capable of providing empathy, nurturing, and reassurance inward (Harman and Lee, 2010); to be a caregiver for the self. Activation of these attachment systems during adolescence may help shape future relationships and regulation skills and provide better assistance for later in life.

2.3. Compassion & positive emotions

Another advantage of compassion-based approaches is that they create positive emotions, such as warmth, peacefulness, contentment, and well-being (Carona et al., 2017; Leaviss and Uttley, 2015;Dodson-Lavelle et al., 2015, Matos et al., 2017) Development of positive emotion is especially relevant to trauma treatment, as a core feature of trauma symptomology is the inability to experience positive feelings (Litz et al., 2002). Positive emotion may reduce fear-based reactivity characteristic of PTSD and therefore decrease hyperarousal by acting as a buffer (Fredrickson et al., 2000; Lang et al., 2020). Lastly, positive emotion may promote trauma recovery by increasing cognitive flexibility necessary for reshaping trauma-altered cognitions (Hiraoka et al., 2015). Building positive emotions during adolescence will allow individuals to manage emotions and reactions in a more preventative manner, which builds resilience.

2.4. Compassion & social connection

Social support systems may be enhanced through compassion-based approaches by increasing one's ability to accept support from others (Cosley et al., 2010). Openness to help offered from others can be especially effective to combat isolation and withdrawal, a common target in PTSD treatment (Rosen et al., 2013). Trauma survivors often withdraw from others due to the perspective that others see them the way they see themselves, flawed (Carona et al., 2017). Thus, enhancing social support for trauma survivors is vital as social isolation is associated with the most detrimental outcome from PTSD, suicide (Panagioti et al., 2011). Having supportive individuals listen and acknowledge one's experience may reduce negatively distorted self-views. The tendency to engage with others, rather than withdraw, may be facilitated by compassion approaches through the development of gratitude, appreciation (Dodds et al., 2015) and empathy (Dodson-Lavelle et al., 2015).

Compassion facilitates a feeling of connectedness to society as a group that collectively suffers from pain as a common experience (Pullmer et al., 2019; Braehler and Neff, 2020) which may reduce unwarranted self-blame. Compassion approaches may also reduce social bias and fear towards others who are in fact safe (Lang et al., 2020; Hiraoka et al., 2015) allowing one to reap the benefits of adaptive social connection. The ability for compassion meditation to promote social connectedness (Lang et al., 2012), may be especially valuable for trauma recovery in teens given the importance of the peer group during this developmental stage and its ability to promote pro-social reasoning (Dodson-Lavelle et al., 2015) and inclusive social networks in teens (Lang et al., 2012).

3. Trauma symptom reduction and compassion in adults

Meta-analyses with adults have found that the majority of compassion-based interventions resulted in reductions in PTSD symptomology (Winders et al., 2020), as well improvements across a variety of outcomes more broadly, such as, self-criticism (Ferrari et al., 2019), negative emotional states like shame or fear of self-compassion (Matos et al., 2017), psychological distress, as well as depression and anxiety, with moderate effect sizes measured via randomized-control trials (Kirby et al., 2017). In both veterans (Lang et al., 2019; Kearney et al., 2013) and a community sample of adults diagnosed with PTSD (Hoffart et al., 2015), compassion-based approaches, such as CBCT, LKM and CBI demonstrated significantly reduced PTSD symptomology, maintained at three-month follow-up (Kearney et al., 2013). Reduced self-judgment and increased self-kindness were noted as particularly related to symptom improvement (Hoffart et al., 2015). Similar reductions in PTSD symptoms have been found in non-randomized studies on compassion-approaches, such as CBCT, with adult veterans (Lang et al., 2020; Evans et al., 2019). Compassion has been found to have a particularly strong effect on emotional numbing symptoms(Evans et al., 2019). The group structure of compassion-based treatment has been identified by adult women with complex trauma as a core contributor to the reduction of their PTSD symptoms, as this format was suggested to facilitate relationships with others who showed compassion for their suffering (Ashfield et al., 2020).

Adult studies on compassion-based approaches have also included non-clinical samples, with exposure to potentially traumatic events, such as, sexual abuse (Au et al., 2017),

breast cancer diagnosis (Dodds et al., 2015), or attempted suicide (Loparo et al., 2018). In these samples, significant improvements on avoidance of intrusive thoughts, perceived stress, and self-blame (Au et al., 2017), as well as overall PTSD symptoms (Au et al., 2017), was found; self-compassion also improved (Au et al., 2017) and was inversely related to depression symptoms (Loparo et al., 2018; Dodds et al., 2015).

Compassion-based approaches with adults have also increased positive outcomes. Increases in positive emotion, self-compassion, compassion for others (Matos et al., 2017), and mindfulness (Ferrari et al., 2019; Dodds et al., 2015) have been found from compassion-based intervention, with some improvements noted after durations as short as two weeks (Matos et al., 2017), and with moderate effect sizes (Ferrari et al., 2019). Reviews have also noted significant reductions in PTSD symptoms resulting from one of the main components of compassion-based approaches: mindfulness (Boyd et al., 2018; Hopwood and Shutte, 2017; Banks et al., 2015). Further studies evaluating the impact of compassion on trauma symptoms that include active control groups with established treatments for PTSD, such as, PE, TF-CBT, or CPT have been called for (Kirby et al., 2017).

Compared to active controls compassion-based approaches have been shown to produce moderate effect sizes ($d = 0.60$) on outcomes of self-compassion, slightly larger than compassion more broadly ($d = 0.55$) and mindfulness ($d = 0.46$) in a meta-analysis of compassion-based interventions in adults (Kirby et al., 2017).

4. Compassion in trauma-exposed youth: limitations & future directions

4.1. Adolescent literature limitations

Meta-analyses on compassion-based interventions for adult samples have called for randomized-control trials on compassion-based interventions with adolescents (Kirby et al., 2017). The majority of studies on compassion and trauma in children and adolescents are cross-sectional and conducted with non-clinical populations who have traumatic event exposure (e.g., natural disaster, abuse), or with youth who are part of a group that historically experiences high levels of trauma and adversity (e.g., the foster care system). Therefore, many youth-focused studies on compassion and trauma simply analyze correlations between self-reported levels of compassion and PTSD symptoms.

Although participants in child and adolescent studies often show elevations on measures of PTSD symptoms they are not necessarily diagnosed with PTSD. There may be important differences between individuals who show elevations of PTSD symptoms and those who meet the constellation of criteria necessary for a PSTD diagnosis, which may impact generalization of findings to clinical populations.

4.2. Adolescent findings on compassion

The few intervention studies on compassion in adolescents (i.e., aged 13–17) with trauma exposure suggest that compassion-based approaches may reduce stress markers (Pace et al., 2013) and be perceived by teens as engaging and helpful (Reddy et al., 2013). Specifically, an RCT conducted in 2013 by Pace and colleagues with a majority African American sample of adolescents in the foster care system who had experienced abuse suggested

compassion training was associated with improved psychological outcomes. Reddy et al. (2013) found that cognitively-based compassion training (CBCT) was self-reported as engaging and helpful by adolescents in the foster care system, however not superior to a wait-list control group (Reddy et al., 2013). Researchers cited insensitive measurement tools and inadequate duration of treatment (i.e., 12 h) as possible reasons for insignificant findings on outcome measures (Reddy et al., 2013).

In cross-sectional studies, self-compassion has been found to predict lower trauma-related psychopathology and to be a protective factor for PTSD development in both teens exposed to a traumatic event (i.e., fire; Zeller et al., 2015) and those who experienced "victimization" (e.g., abuse, community violence, bullying) with concurrent poor school performance (Jativa and Cerezo, 2014). Self-compassion has also been found to have an inverse relationship with shame-traumatic memories in adolescents, suggesting self-compassion may be protective against intrusive trauma symptoms for this population (Castilho et al. (2017).

Extant literature demonstrating links between self-compassion and general psychological distress in teens is more extensive than trauma symptom reduction specifically. For example, Marsh et al. (2018) conducted an international review of 19 majority cross-sectional studies on self-compassion and psychological distress with over 7000 adolescents (i.e., ages 10–19) and concluded that self-compassion was inversely related to adolescent mental health problems (i.e., stress, anxiety, depression), with a large effect size ($r = -0.55$). Marsh et al. (2018) asserted that self-compassion may be an important ingredient in the mental health treatment for youth and that lack of self-compassion may be a causal or maintaining factor in child and adolescent psychological maladjustment.

Self-compassion has also been linked specifically to reduced depressive symptoms in teens following a review of over 18 studies on self-compassion and depression in adolescents and is suggested to be protective against the development of psychological disorder in teens (Pullmer et al., 2019). Increasing self-compassion as an avenue toward trauma reduction, may be especially important for adolescent females, as this group may be particularly at-risk for lower levels of self-compassion (Pullmer et al., 2019).Interestingly, compassion-based approaches have indirectly shown positive effects on the stress response in children when their parents participated in compassion-focused treatments (i.e., CBCT; Poehlmann-Tynan et al., 2020).

5. Components of compassion-based interventions & mechanisms of change

5.1. Components

All compassion-based interventions or therapies generally include psychoeducation on the rationale for compassion development, active experiential components (e.g., compassion-facilitating activities), mindfulness training (e.g., loving-kindness meditation or compassion meditation), homework exercises, and most are conducted in a group setting, with the exception of Compassion-Focused Therapy (CFT; Kirby et al., 2017). Some compassion-based approaches involve direct cognitive restructuring (e.g., Cognitively-Based Compassion

Training, CBCT), a focus on understanding emotions (e.g., Cultivating Emotional Balance, CEB), a focus on fear of compassion (e.g., Compassion-Focused Therapy, CFT), and some include physical movement, like yoga (e.g., CEB, Being with Dying, BWD). Most compassion interventions are manualized with the exception of CFT (Kirby et al., 2017), which is a therapy tailored to the individual. Core foci across compassion-based approaches include mindfulness, compassion, and self-compassion.

5.2. Mindfulness

Mindfulness is most commonly defined in Western cultures as awareness of the present moment (i.e., of one's experience) with openness, curiosity and acceptance, rather than judgment, though it stems from Eastern influences (Kabat-Zinn, 1994; Keng et al., 2011). Mindfulness has been theorized to be a multi-dimensional construct, involving not only present moment awareness without judgment, but also attentional control to such experience, gently bringing the mind back to the present moment when it wanders toward a "thinking" rather than "being" orientation (Keng et al., 2011).

Described as a process of coming to a new understanding, or realization of one's experience, mindfulness also called "reperceiving" (Shapiro et al., 2006), can be conceptualized as a way to decenter from one's negative thoughts (Gecht et al., 2014) by looking *at* one's thoughts rather than *from* them. In this way, mindfulness creates cognitive defusion, rather than fusion, or entanglement with one's thoughts. Mindfulness promotes a healthy relationship with one's internal experience of pain, rather than avoidance or overidentification. By allowing instead of avoiding negative experiences, accurate assessment of what care is needed and the development of new ways of responding to the self can occur (Braehler and Neff, 2020). By facilitating positive self-responsiveness, mindfulness reduces the critical self-judgment which interferes with providing warmth and care to the self by sending the message one is not deserving of such care. Creating space between one's actual lived experience and one's mental conceptualization of it, allows room for healing and new ways of experiencing, rather than opting for strategies like suppression or preoccupation (Keng et al., 2011). These core features of mindfulness help facilitate recognition of the need to engage in compassion or self-compassion by increasing awareness of internal states (e.g., cognitive or affective states), and may prompt the use of adaptive skills.

5.3. Compassion

Compassion is the prominent focus of compassion-based approaches and is essentially defined as sensitivity toward suffering, and desire or motivation to reduce it (Gilbert, 2014). A multi-faceted and foundational construct to the human experience, the function of compassion has been described to bring others together to protect and care for those who are struggling (Goetz et al., 2010) and to regulate negative affect in order to promote social bonding (Gilbert, 2009).

Although the definition of compassion continues to be somewhat ambiguous, generally, compassion is considered to be a multi-component construct, ranging from two elements (e.g., recognition of suffering and motivation to act) to five, mainly consisting of a

constellation of affective, cognitive, and/or motivational components. In terms of affect, compassion involves affection or warmth (Dodson-Lavelle et al., 2015), prompted by feelings of similarity with others and gratitude (Ash et al., 2019), experiencing emotions alongside or from the views of others via sympathy and empathy (Strauss et al., 2016); and is described by some as an emotion (Goetz et al., 2010). Cognitively, compassion involves awareness, recognition, or sensitivity of suffering; the idea that suffering is universal (Strauss et al., 2016; Ash et al., 2019), and the understanding or position that the suffering can be alleviated (Gilbert, 2014). From a motivational standpoint, compassion is described as culminating in a desire to help reduce or prevent suffering (i.e., in oneself or others), and an intent or readiness to do so (Jazaieri et al., 2013; Gilbert, 2014). Compassion inherently includes acknowledgement (Neff and Dahm, 2015) and tolerance for (Strauss et al., 2016) pain, facilitated through mindfulness, which may allow one to recognize pain and simultaneously hold feelings or motivations toward it without becoming overwhelmed (Strauss et al., 2016).

Compassion can be self or other-oriented, and both types of compassion may have reciprocal benefits. That is, compassion toward others may increase one's ability to be compassionate to the self and compassion toward the self may increase one's ability to be compassionate toward others. Compassion, particularly toward safe-others, may facilitate PTSD recovery as one's world beliefs (i.e., kind vs. unkind) are associated with recovery from PTSD (Ferrajao and Elkit, 2020). Therefore, developing compassion for others may increase the odds that individuals are exposed to positive social interactions where they may be offered support and kindness, thereby challenging an individual's negative world beliefs. That is, a compassionate stance toward the world may invite more positive social interactions and these positive experiences may make it less likely for an individual to view the world as unkind. Increasing one's ability to receive compassion from others as a path toward recovery has also been a focus of some compassion-based approaches (Gilbert, 2014).

5.4. Self-Compassion

Self-compassion is the end goal of most compassion-based interventions (Germer and Siegel, 2012) and is defined as the self-directed application of compassion or compassion focused inward (Neff and McGehee, 2010). Self-compassion consists of three interrelated components during times of struggle: 1) self-kindness, 2) common humanity, and 3) mindfulness (Braehler and Neff, 2020; Neff, 2003). The first component, self-kindness is the opposite of self-criticism, and involves opening one's view to themselves as imperfect humans (Braehler and Neff, 2020). Self-compassion is different from self-love as it is inherently relational; it uses the imperfect social comparison group to justify or facilitate grace for one's flaws.

The second component, common humanity, allows one to become empowered by recognizing a sense of unity by being part of humanity rather than feeling like a shameful exception to the human experience. While a seemingly complex and abstract concept, research suggests that children as young as six can understand common humanity when described using child-friendly examples (Ozawa-de Silva and Dodson-Lavelle, 2011).

The third component of self-compassion is mindfulness. When considered as a component of self-compassion, mindfulness refers to awareness of negative thoughts and feelings, rather than more generally one's overall experience (Neff and Dahm, 2015). Because self-compassion involves reducing negative or critical judgment, it inherently involves a mindful/non-judgmental approach (Neff and Dahm, 2015), meaning you cannot engage in both simultaneously (Germer and Siegel, 2012). In this way, mindfulness may be a prerequisite to self-compassion. Self-compassion involves mindful perception of self, rather than self-evaluation which is a component of other self-constructs, like self-esteem (Breines and Chen, 2012) which tends to be dependent on one's perception of their performance (Gilbert, 2009). Additionally, self-compassion can exist, and is perhaps especially important, when self-esteem is low; individuals can be *kind* to themselves even if they don't feel *good* about themselves (Neff, 2011).

5.5. Mindful self-compassion

Mindful self-compassion (MSC) was originally developed by Neff & Germer (2013) as an 8-week, group-based intervention and is modeled on Mindfulness-based Stress Reduction (MBSR; Neff and Dahm, 2015). MSC is one of the most widely known compassion-based interventions (Au et al., 2019), along with compassion-focused therapy (CFT), and has shown large effect sizes maintained at follow-up via a small RCT (Neff and Germer, 2013); however, MSC has yet to be evaluated with clinical populations (Kirby et al., 2017). With a main focus on self-compassion, MSC differentiates from the majority of compassion-based approaches which tend to focus on compassion more broadly (e.g., ability to receive and give compassion). MSC includes loving-kindness meditation, and also has somewhat less of a focus on mindfulness than other approaches with just one session devoted solely to mindfulness (Neff and Dahm, 2015). Although many compassion-oriented approaches exist (i.e., Loving-Kindness meditation, LKM; Cognitively-based Compassion Training, CBCT; Compassionate-mind Training, CMT; Compassion-Cultivation Training, CCT; Compassion Meditation, CM; Cultivating Emotional Balance, CEB; Being with Dying, BWD) the majority are compassion-training programs, rather than therapies, with the exception of Compassion-Focused Therapy (CFT).

5.6. Mechanisms of change in compassion interventions

Mechanisms of change in compassion-based approaches continue to be explored and research can be improved by examining the order in which psychological improvement is noted in relation to intervention components (Kangaslampi and Peltonen, 2019). Various constructs have been proposed as reasons for symptom improvement, such as emotion regulation (Inwood and Ferrari, 2018), self-compassion (Beaumont et al., 2015; Macbeth and Gumley, 2012), positive emotions (Lang et al., 2019), self-kindness (Hoffart et al., 2015), mindfulness (Lang et al., 2019), social connectedness (Lang et al., 2012, 2019), empathy (Lang et al., 2019), commitment to values (Germer and Siegel, 2012) and attentional control (Keng et al., 2011).

6. Caregiver role in compassion-based approaches for PTSD

There are some unique aspects of the caregiver-child relationship that require additional consideration when adapting compassion-based interventions to youth. Parents or caregivers are often the main person to which children turn for support following a trauma and parent response after a child's exposure to trauma is directly linked to the development of child psychopathology (Williamson et al., 2016). The benefit of caregiver involvement in child and adolescent trauma treatment has been emphasized across various treatment modalities (Yasinski et al., 2016), such as TF-CBT. TF-CBT with parental involvement is a "well-established" treatment for youth with trauma in terms of evidence-based treatment standards (Dorsey et al., 2017). Parent-child psychotherapy, which focuses on attachment between children and parents following domestic abuse, has shown to improve child traumatic symptoms up to one year later (Lieberman et al., 2005). Additionally, parenting behavior has been suggested to be a mediator in children's trauma recovery (Gewirtz et al., 2008). Thus, the role of the caregiver-child interaction in compassion-focused therapy for youth has been deemed a primary target (Carona et al., 2017) given the importance of this relationship on children's ability to develop a variety of skills which enhance trauma treatment outcomes. For example, children's attachment systems influence whether they are able to respond to themselves with kindness and compassion. Caregiver response to children's distress shapes children's attachment systems, and therefore, indirectly influences trauma reduction through facilitating or thwarting the child's ability to develop self-compassion (Neff and McGehee, 2010). Because individuals tend to afford the same compassion to themselves that they were given by others (Hermanto and Zuroff, 2016) caregiver compassion may foster child compassion. Therefore, caregiver involvement in compassion-based treatments may improve outcomes for youth with PTSD.

Caregiver involvement in compassion-based therapy may also reduce critical responses to children, which are associated with lower levels of self-compassion. Essentially, interpersonal interaction, most importantly through the child-caregiver dynamic, lays the groundwork for *intra-personal* interaction (i.e., interaction with the self), and whether children respond to their own distress with harshness or compassion. Therefore, caregiver participation may be advantageous to trauma treatment in youth by increasing compassionate interactions between child and caregiver, potentially increasing self-directed compassion, and improving children's relationships with others and themselves. These relationships with others and the self are vital to trauma treatment (Braehler and Neff, 2020), as they inform self-concept and self-evaluation as described earlier. The influence of caregiver behavior on children's mental health is further demonstrated by the impact of parent-child relationships on the development of children's brain circuits involved with emotion regulation and flexible behaviors (Carona et al., 2017); skills beneficial for the cultivation of compassion.

Caregivers of children and teens who have endured trauma exposure may blame or react harshly toward themselves for believing they did not protect their children from harm (Neff, 2004). Because parental psychological difficulty has been associated with increased trauma symptomology in children (Yasinski et al., 2016), interventions which have the potential to reduce parent psychopathology may indirectly have a positive impact on children's trauma

symptoms. When caregivers learn compassionate responding, they apply it to their children and to themselves. By doing so, they model self-kindness and compassion which may result in reduced negative caregiver experiences, openness to support their child, and facilitating a culture of self-compassion in the home and in relationships. Lastly, caregiver involvement may improve treatment attrition, as caregiver hesitancy in trauma treatment has been shown to be associated with child avoidance of treatment (Yasinski et al., 2016). Fortunately, current evidence suggests that caregivers find compassion-based treatments, such as CBCT, to be immensely helpful (Poehlmann-Tynan et al., 2020).

Given the significant exposure that children have to caregiver behavior modeling, as well as the role of the caregiver-child relationship in facilitating self-compassion through attachment-related self-soothing, caregiver participation in compassion-focused treatment is likely of great benefit. However, few studies have analyzed the role of parent involvement in trauma reduction in adolescents (Yasinski et al., 2016; Gewirtz et al., 2008).

6.1. Limitations of compassion-based approaches

Despite the potential benefits of compassion for adolescent PTSD, there are also potential limitations that should be acknowledged. Some individuals may perceive opening oneself to compassion as a sign of weakness, as setting oneself up for disappointment with others (Gilbert, 2009). Further, self-compassion may be confused with self-pity or feeling sorry for oneself (Neff, 2004). Traumatized individuals often feel intense feelings of shame and self-criticism, which is associated with fear of compassion (Gilbert, 2014). When individuals are afraid of compassion it may be especially difficult to gain motivation to cultivate compassion toward themselves (Gilbert, 2009) due to the incorrect assumption that self-compassion thwarts growth or undermines the motivation to change (Breines and Chen, 2012). Self-compassion may also be avoided by patients due to assumptions that self-compassion will lead to laziness or being “too easy” on oneself. Fortunately, however, fear of compassion has been shown to be amenable to change (Jazaieri et al., 2013) as self-compassion is associated with self-improvement motivation, such as, increasing motivation to improve weaknesses, make amends with others, learn from their mistakes and accurately assess their behavior (Breines and Chen, 2012), as well as to feel self-efficacious when posed with difficult tasks (Chow and Hui, 2021). Still, others may associate self-kindness with indulgence or lack of self-control, which could present further difficulties with compassion-based approaches (Leaviss and Uttley, 2015), despite research suggesting self-compassion may facilitate healthy self-regulation (Dundas et al., 2017).

Another potential limitation is that compassion-focused treatments that center on cultivating compassion toward others may inadvertently bring up memories of perpetrators or other individuals associated with unpleasant memories for patients (Leaviss and Uttley, 2015), which could potentially be associated with patient resistance to treatment and trauma re-experiencing. Compassion-based approaches may be difficult for those with PTSD because initiating an unfamiliar experience of warmth toward the self may spark feelings of sadness and grief in those who have endured harsh treatment in their lives (Gilbert, 2009).In both research and clinical practice, it will be important for the field to be aware of these potential

limitations, address misconceptions proactively, and focus compassion approaches on self and safe-others.

In addition to patient variables, clinician variables represent barriers to current trauma treatment. Patients must have therapists willing to provide cognitive and exposure-based treatments for trauma, such as in vivo exposure. Current evidence-based approaches (e.g., prolonged exposure) are under-utilized in clinical practice due to factors, such as, therapist comfortability and willingness to intentionally subject patients to distress (Finch et al., 2020; van Minnen et al., 2012; Becker et al., 2004), which may be ego-dystonic for clinicians who have chosen careers based on alleviating suffering. Fear of symptom exacerbation (Zhang et al., 2018) is another concern that has been noted amongst clinicians, despite outcomes suggesting otherwise. Given the significant utilization barriers for practices rooted in trauma exposure for PTSD treatment, it is worth noting that explicit trauma exposure may not be necessary for recovery (Dorsey et al., 2017). Overall, despite the efficacy of existing evidence-based approaches for trauma treatment, significant barriers and limitations call for innovative treatment options.

Summary

Trauma exposure and PTSD in adolescence continue to be a pervasive problem for which alternative treatments are warranted. A key finding of this review is that despite compassion-based approaches showing preliminary effectiveness for PTSD symptom reduction in adults with PTSD, far less is known about the impact of compassion-based approaches for trauma symptoms during the adolescent period. Compassion based approaches, which focus on developing a supportive relationship with the self during times of difficulty (e.g., a traumatic event), may be particularly beneficial for adolescents, given their tendency for self-criticism and social comparison facilitating shame, which may contribute to PTSD symptomology. This review suggests caregiver involvement may be a particularly beneficial ingredient in treatment given the opportunity for environmental modeling and reinforcement of compassion. However, further study is needed to investigate the potential of compassion-based approaches as a novel treatment for adolescent PTSD.

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