

The Interaction between Post-Traumatic Stress Disorders and Eating Disorders: A Review of Relevant Literature

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Abstract

This paper explores the relationship between post-traumatic stress disorders and eating disorders. The frequency with which the two types of disorders co-occur is explored. Additional exploration of comorbidity in specific populations is addressed. These populations include populations not widely explored in the literature, such as males, female veterans, and juvenile delinquents, as well as, populations that have been explored in the literature, such as clients who have experienced child sexual and physical abuse and neglect. Further, this paper explores specific core areas of dysfunction that overlap in eating disorders and post-traumatic stress disorder. Based on these core areas of dysfunction, focuses of additional symptomatology and treatment are discussed.

Keywords: Trauma; Eating disorders; PTSD; Bulimia nervosa; Anorexia nervosa; Binge eating disorder; Dissociation; Child sexual abuse

The association between post-traumatic stress disorders and eating disorders is often experienced by clinicians yet research exploring the link between these disorders frequently focuses on the traumatic experiences rather than diagnostic clarity. Given the subjective nature of traumatic experiencing, this focus makes sense, particularly when traumas are experienced in childhood. Eating disorders and post-traumatic stress disorders share certain core features that explain some of their co-morbidity. Both types of disorders share alexithymia and high rates of dissociation as part of their symptom profiles [1]. The development of both disorders is based on emotion dysregulation. In each type of disorder, genetics and biology play a role in the serotonin, dopamine, and glucocorticoid systems, which may predispose certain individuals to both disorders [1]. Since an overlap occurs, an investigation into the interaction and co-occurrence of these two disorders is warranted. This investigation involved a review of relevant literature. The review set forth based on the criteria to review both quantitative and qualitative research articles on post-traumatic stress disorders, dissociation, and eating disorders published within the past ten years; however, due to the need to include both seminal research and based on some paucity of relevant research within the past ten years, older research was included as well. Additional criteria for the literature review included that research involved adolescent and adult subjects as these are the predominant ages for eating disorders, so mentions of children are related to histories of trauma within childhood, for example in the case of child sexual abuse. A few articles were also included in the review due to their seminal theoretical or meta-analytical value [2].

Eating Disorders and PTSD Symptoms

Although PTSD is widely known as the post-traumatic stress disorder, it is important to remember that trauma-related disorders occur on a spectrum. This spectrum includes a variety of disorders in the eating, mood, anxiety, substance use, dissociative, somatoform, impulse control, disruptive behavior, and personality ranges [3]. Similarly, when a child has experienced chronic interpersonal trauma, he/she will experience dysfunction in multiple areas of functioning. These areas include somatic, affective, behavioral, dissociative, cognitive, interpersonal, and self-concept [4]. These areas are equally adversely impacted developmentally when a person has an eating disorder and often become areas of therapeutic focus. These areas of functioning

have been noted to be problematic in the eating disorder population, especially when there is overlap with child sexual abuse. Particularly, difficulties with anxiety, depression, somatization, alexithymia, suicidal ideation and attempts, obsessive and/or compulsive symptoms, interpersonal difficulties, substance use, impulsivity, self-injurious behavior, dissociation, and other post-traumatic stress symptoms are frequently present and demonstrate difficulties in the core areas of functioning noted [5].

Since these areas of functioning often overlap between complex trauma in childhood or developmental trauma and disordered eating, it is not uncommon for the eating disorder symptom picture to present with PTSD and the eating disorder to have meaning associated with the PTSD. The eating disorder client will likely report the eating disorder symptoms within the context of the trauma relating the cognitive distortions, affect dysregulation, self-injurious behavior, general sense of dysphoria, and dissociative episodes to the traumatic experience(s) associated with the PTSD [5]. The eating disorder is used to regulate the trauma symptoms in a manner that affords pleasing others in ways associated with food. The eating disorder also helps the individual with overall tension reduction through affect regulation and even dissociation at times. Due to the symptomatology in eating disorders being related to an underlying attachment injury or further overt trauma, exploring what functions the eating behaviors have in relation to attachment injury and trauma are important. This exploration is additionally facilitated when clinicians bear in mind the seven aforementioned areas of core dysfunction associated with trauma [4].

Although dissociation has been explored as a function of both eating disorders and PTSD, dissociation in its own right has also been explored with regard to the co-occurrence of these disorders.

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Individuals often dissociate while bingeing or purging. Dissociation is also a symptom of PTSD. Eating disorder clients who report abuse report significantly higher experiences of loss of control than those who do not report abuse experiences [6]. Eating disorder clients report higher levels of dissociation than clients without eating disorders. This level of dissociation is based on traumatic experience [7]. Eating disorder clients who report abuse also report higher numbers of dissociation than individuals without eating disorders but within those dissociative experiences report feeling a loss of control over their thoughts, behaviors, and emotions. These dissociative experiences are similar to those experienced in dissociative disorders and PTSD [6]. Such similarities are likely to be related to the likelihood that the disordered eating behavior that then turns to a diagnosable eating disorder begins as a way to survive. The survival mechanism of pathological eating is a way to escape from the overwhelming psychological and often physical damage of trauma [7].

Clients with eating disorders often experience hyperactivation of their emotions as intolerable. When these clients have a history of avoidant attachment, their desire is to cut off or numb their emotional experience, so restrictive behaviors will become more apparent. When these clients have a history of anxious attachment and emotional reactivity, bingeing, purging, or both is likely a way that heightened emotions will be handled [8]. Another way that eating disorders are used for affect regulation is in a manner similar to other forms of self-harm. Eating disorder symptoms, especially bingeing and purging are used to stop or interrupt a dysphoric affect state that an individual finds intolerable [9]. Essentially a cycle in which an individual would experience trauma symptoms, dysphoria, or another unpleasant affective state would occur, the client would then engage in a binge episode to interrupt or stop the mood state. At times that can produce a dissociative state, at other times, another episode of problematic cognitions enters; so purging behavior is needed to provide regulation [9,10].

Similarly, clients with eating disorders and trauma struggle with interpersonal interactions. These clients struggle with asserting their needs without engaging in passivity, aggression, or passive-aggressiveness [8]. They also struggle with self-concept, including externalizing blame or internalizing blame. Any of these issues can precede eating disorder symptomatology. Similarly, the eating disorder symptoms can become the transitional object for the client, so that when the client who has been traumatized needs comfort, the eating disorder behaviors soothe him/her like the primary caregiver would have, but when this soothing fails due to its very nature, then self-hate and blame arise, creating an addictive cycle [9]. This experience is often re-enactment as it reflects the early experience of needing the primary caregiver as an attachment figure to soothe, and thereby needing to dissociate the experiences of abuse or neglect or attachment injury, which led the child to internalizing the blame for the traumatic experience in order to receive some safety and care and attempt to make sense of his/her internal and external experiences [9,10].

Coherence of mind is another struggle. Clients with avoidant attachment struggle with devaluation or idealization of the primary caregiver. Consequently, the clinician must work to help the client work through polarizations while being mindful of transference and counter transference. The client with anxious attachment is likely to present as preoccupied and/or angry, which often interferes in present-day relationships, including the therapeutic one. Again, clinicians must be mindful of transference and counter transference and help the client work through re-enactment cycles to separate the past from the present

[8]. Re-enactment with clients who have PTSD and eating disorders is a two-person process. The clinician needs to be mindful of the process in which the client engages. The client is trapped engaging in the pattern from childhood in which various roles have become internalized. The client at times is the helpless victim and at other times the perpetrator of the abuse or neglect. At other times, the client is a powerful rescuer, and at other times, the child who is demanding to be rescued. Another internalized role that clients possess is the non-protective bystander. Clients who have been sexually abused often have internalized seducer and the role of the seduced [10]. At any time throughout the process, the clinician may become a recipient of one of the client's roles through projection. It is imperative that clinicians are constantly monitoring transference, counter transference, and re-enactment cycles. Successful clinicians will also work with helping the clients identify and integrate all of these roles into a coherent representation of self, acknowledging and accepting all disowned, distrusted, and disavowed roles, feelings, and thoughts [10]. Clients with trauma and eating disorders also struggle with reflective functioning which not only affects their relationships with others but presents an internal struggle. First, clients have difficulty identifying and understanding their own thoughts, emotions, and internal experiences. Then, they have difficulty understanding those internal experiences of others, let alone the connection between these two processes. An essential part of the therapeutic work for clients with eating disorders and trauma is to help them not only identify their internal processes, but also how their thoughts and behaviors impact others and vice versa [8].

Clinicians also work with clients on facing trauma symptoms directly through other types of re-enactment. Often clients with eating disorders and PTSD experience alexithymia. The alexithymia is further demonstrated by difficulties in self-regulatory functioning, such as extreme numbness versus extreme polarized emotions and hyperarousal. When these clients experience trouble self-regulating or emotional extremes, they tend to not be able to identify, express, or regulate emotions; rather, they experience their emotions as somatic or physical events, which in turn become PTSD re-enactments [10]. Consequently, these clients do not express their PTSD re-enactments verbally but will frequently experience somatic re-enactments or "body memories." Through these types of re-enactment, the client is attempting to gain a type of mastery over the trauma because he/she is in control and an active participant [9,10]. With the eating disorder, at times, this type of re-enactment can be overtly or covertly symbolic. Overtly, individuals with PTSD and eating disorders will experience somatic re-enactment, flashback, intrusive images when they have specific associations of traumatic experiences and food. Food may have been use as reward or punishment for performing certain aspects of abuse in specific ways, or food may have been used in the experiences of abuse itself. Consequently, for individuals with PTSD and eating disorders, food often has specific, overt, traumatic associations [9]. Covertly, individuals with PTSD and eating disorders will experience these same symptoms in a metaphorical, depersonalized, and dissociative manner, particularly in the case of sexual abuse. For example, gorging on food feeling full the way she felt full in her body during an experience of sexual abuse, and then purging to experience ridding her body of the unwanted things that were put into it, both in the past and present [9,10].

Frequency of Co-Occurrence

Mantero and Crippa [11] explored various aspects of post-traumatic stress disorder (PTSD) and all of the diagnostic classifications of eating disorders including anorexia nervosa (AN), bulimia nervosa (BN),

binge eating disorder (BED), and eating disorder not otherwise specified (EDNOS). Individuals with PTSD were slightly more than three and a third times more likely to develop BN while direct victimization without PTSD increased the risk by slightly under 2 times. Even in relation to motor vehicle accidents, PTSD is related to a higher level of current and lifetime eating disorders than partial or no PTSD with rates being 8.1% compared to 4.4% and 3.9% respectively [12]. Often for individuals, traumatic events occur prior to the onset of their eating disorder. These traumatic events may be a major life stressor or an event in which attachment is disrupted. In either case, PTSD symptoms can be likely to present prior to or during the course of the eating disorder [11]. Due to such difficulties, lifetime occurrences of PTSD in clients with eating disorders tends to be high with reports up to 37% in some studies compared to 12% of clients without eating disorders, which is a significant difference [3]. The reported rate of PTSD in clients becomes higher when looking at individuals hospitalized for eating disorders. In a hospitalized eating disorder sample 74% of the clients reported at least one traumatic event and 52% met diagnostic criteria for PTSD [13]. Outpatient eating disordered clients present with a high rate of PTSD but a bit different than inpatient clients. First, it is clear that traumatic events are experienced with great frequency as 63.3% of anorexic clients and 57.7% of bulimic clients report a history of traumatic events, with interpersonal assaults being the most frequently reported traumatic event [14]. Those clients who experienced man-made trauma experienced significantly higher levels of PTSD symptoms than clients who experienced non-man-made trauma and the greatest levels were found between sexual and non-sexual trauma [14].

PTSD, Eating Disorders, and Specific Experiences of Trauma

While much literature has focused on the link between PTSD and eating disorders in females, there is literature that acknowledges the risk factors for PTSD and eating disorders in males. Significant risk factors have been found to include a history of sexual abuse, as well as, date rape and high school violence [3]. Males without PTSD were found to be less likely to have a co-occurring eating disorder diagnosis than hospitalized adolescent males with PTSD [1]. These authors also found that subthreshold PTSD and partial PTSD are common and significant in both genders for individuals with PTSD when the criterion threshold for Criterion C in the PTSD diagnosis is lowered or eliminated (according to DSM-IV-TR standards). New studies with DSM-5 standards would be helpful to determine further co-occurrence of these disorders as [1] Mitchell et al., also found that their subjects of both genders had experienced high numbers of interpersonal violence, which then led to more reports of BN and BED. Another specific group with little known risk factors is juvenile delinquents. These individuals are vulnerable to abuse and neglect which often leads them to interaction with the criminal justice system. Analysis reveals that there are significant relationships between PTSD and abnormal eating behaviors in females who have juvenile delinquency, especially binge eating and purging behaviors [15].

Another special population known for both PTSD and eating disorders but not necessarily the two together is female veterans. It is estimated that 8% of active duty females have a current eating disorder and 5% have a lifetime history of an eating disorder. Further, somewhere between 1/5 to 1/3 of women in the armed forces engage in behaviors that put them at risk for developing an eating disorder [16]. While it is often hypothesized that weight standards may be responsible for these statistics, trauma also occurs in the life of men and women in the armed forces. Women in the armed forces experience interpersonal trauma

both prior to joining the military and after joining the military, as well as, any combat trauma, making them likely to experience a diagnosis of PTSD. Forman-Hoffman et al. [16] found that 28.7% of female veterans had experienced some type of sexual trauma during their lifetime. 23.4% of female veterans experienced sexual trauma during military services, and 27.2% experienced sexual trauma during childhood. 18.6% received a lifetime diagnosis of PTSD. Significant relationships were found between sexual trauma, PTSD, and eating disorders [16]. Further research needs to be conducted in this area, both related to experiences of female veterans to further explore additional traumas, but also to look at the experiences of male veterans, PTSD, and eating disorders.

While the Forman-Hoffman et al. [16] explored female veterans, other researchers have explored the adverse experiences of individuals exposed to violence in countries experiencing other war-like and violent conditions [17]. These traumatic experiences include sexual abuse, one-time or repeated, and other violent experiences, threats of forced displacement of family, physical abuse, extortion, threat of kidnapping, kidnapping, armed assault with deprivation of freedom, suicide of a family member, and homicide of a family member, or both types of trauma. Rodriguez et al. [17] found significant relationships between repeated sexual abuse, other violent experiences, and women who had experienced both types of trauma and eating disorders. Additional implications relevant to the treatment of both PTSD and eating disorders are that these individuals were significantly more likely to drop out of treatment and to relapse [17].

The area on which the most has been written is child sexual abuse and eating disorders. Rates of child sexual and physical abuse appear to be reported with greater frequency in the female eating disorder population than in the female population without eating disorders. It then stands to reason that PTSD would occur with greater frequency in the eating disorder population [2,18,19]. In this study PTSD was found in 10% of the patients. The lifetime history of PTSD was associated with three factors, including child sexual abuse. The other two factors associated with a lifetime history of PTSD and eating disorders were discord in the home and experiencing a highly controlled family life [19]. Restrictive eating has been found to be associated with a greater frequency of traumas, higher total trauma severity & more severe, violent trauma; whereas, bingeing and purging behaviors are more often reported in individuals with again a greater frequency of traumas and a greater trauma severity, but additionally experiences of death of a loved one, divorce or separation of parents, and violent trauma [18]. Each of these factors associated the feelings of helplessness to be a risk factor for the development of an eating disorder, which would appear to equally be a risk factor for the development of PTSD as it fits well into the criteria for the disorder. Additional co-occurring disorders were present in 94% of the participants who had both PTSD and an eating disorder, with the most frequent combination being an anxiety or depressive disorder [19]. Chen et al. [2] also found an association between a history of sexual abuse and a lifetime diagnosis of several co-occurring disorders, notably including PTSD, eating disorders, anxiety disorders, depressive disorders, suicidality, and sleep problems. Further a history of rape strengthened these associations among the history of sexual abuse, PTSD, eating disorders, and depressive disorders [2]. These co-occurring disorders also are associated with feelings of helplessness and dysphoria.

Turnball et al. [19] reported that a highly controlled family life and family discord were associated with PTSD in clients with eating disorders. Additional family dysfunction has been noted including

that families who have children who develop eating disorders display more conflict and disorganization, low maternal and paternal care, high paternal over-protectiveness, less cohesion, less expressiveness, less orientation towards recreational activities, more conflict, and less emotional support than families who do not have children who develop eating disorders [20]. Similarly, in families who have children who experience attachment trauma or childhood abuse or neglect many of these characteristics are present, consequently the two disorders co-occurring in families with these dynamics is clear, particularly when additional characteristics such as increased isolation, less involvement and less supportiveness, increased contradictory communications, increased belittling, ignoring, trust, nurturing, and helpfulness, less cohesiveness, and expressiveness, increased conflict, increased chaotic patterns, and hostile enmeshment are added to the description [20]. Given this constellation of qualities, the child's negative response to abuse or an attachment injury at the time it occurs and a negative evaluation in retrospect of the experience is associated with eating disorder symptoms. An additional factor that bears mention is familial traumatic experience [20].

When parents and children have both experienced trauma, from the same event, or from generational occurrences, generational PTSD and eating disorders can occur. At times these symptoms may be identical and at other times, the symptoms may shift based on cultural contextual factors or survival mechanisms needed to survive the original trauma [20,21]. Mothers who experienced physical or sexual abuse or neglect have been found to experience depression while their daughters have been more likely to experience depression and eating disorders [20]. The question that bears investigation is how the mothers' own trauma symptoms influence the daughters' experiences. How much disparity is related to changing culture and how much is related to attachment and the interaction between parent-child or to the parent's response to the child's own disclosure or lack thereof about her own trauma? Additional generational patterns in PTSD and eating disorders have been found in the children of Holocaust survivors [21]. Specific eating disorder patterns were noted based on parental experiences. Restrictive eaters' parents left Europe prior to 1941. These parents tended to over-feed their children expressing beliefs that health was related to children being chubby yet engaging in restrictive eating themselves. Consequently, as these children grew to adulthood, they later formed beliefs surrounding their parents' own restrictive eating and control of food [21]. The overeaters' parents tended to have experienced survival through food. Their parents taught the children that food meant survival and urged them to eat everything. Although often the parents later maintained normal weight, the children internalized the parents' experiences and would engage in binge eating, subscribing to the beliefs of the parents [21]. Such experiences demonstrate the ability of children to internalize the beliefs of parents' traumatic experience and to use disordered eating to attempt to assuage traumatic symptoms.

Conclusions and Implications

Post-traumatic stress disorders and eating disorders are often co-occurring phenomena due to the overlap in their clinical presentation. This presentation is largely related to the core areas of dysfunction that the two spectrums of disorders share. These core areas of dysfunction encompass a wide arena including cognitive, behavioral, affective, dissociative, somatic, interpersonal, and self-conceptual functioning [4,22]. Given that these two disorders share several core areas of dysfunction, the co-occurrence and comorbidity has been widely investigated. Several researchers have found high levels of PTSD in clients with eating disorders and high levels of eating disorders in clients with PTSD [4,22].

With a distinct co-occurrence between the two disorders, special populations and types of trauma are important to explore. Specifically, familial factors have been identified as a primary risk factor for eating disorders and PTSD with high levels of chaos and conflict, hostile enmeshment, limited emotional expression, family discord, divorce, history of parental trauma, and patterns of abuse/neglect, and child sexual abuse all being identified as further areas of vulnerability for the development of these disorders [1-3,18-21]. Other vulnerable populations for the co-morbidity of eating disorders and PTSD have been identified to be female juvenile delinquents, female veterans, and survivors of trauma related to adverse events such as motor vehicle accidents, war, suicide, homicide, kidnapping, and threats of extortion [15-17]. Despite the literature available in these areas future research needs to be conducted to explore the growing population of males who have co-occurring eating disorders and PTSD. Males need to be explored for both the family background areas listed above and for their eating disorders and trauma histories; although, some traumas that have addressed males and eating disorders have noted the history of parental trauma, and a history of interpersonal violence or dating violence [1,3]. Similarly, the special populations noted above have addressed female experiences but the same issues can be experienced by males. Delinquency, experiences with the military, motor vehicle accidents, and experiences related to being in a war torn country, suicide, homicide, kidnapping, and so forth may all be experienced in a manner similar to those ways in which females internalize the experiences that lead to eating disorders and PTSD or in diverse ways. Future research is needed to bring to light the experiences and processes by which males experience comorbid eating disorders and PTSD. Along the same vein, age differences need to be addressed as growing numbers of younger children and older adults are entering both the eating disorder population and the PTSD population.

Given that both PTSD and eating disorders are co-occurring in a specific sub-group of the population, the importance of understanding functions of these disorders and symptoms is paramount to the treatment process. The use of eating disorders in individuals with PTSD is often an attempt to protect the individuals from an attachment injury or as a way to survive during trauma and then continue to survive through trauma re-enactment. Clients with eating disorders and PTSD use eating disorder behaviors to engage both in dissociation and to protect from dissociation [5-7]. The eating disorder behaviors also serve to help regulate affect for individuals with PTSD, especially when individuals struggle with alexithymia [8,9]. Finally, the eating disorder behaviors create a way to help with interpersonal dynamics, reflexive functioning, and internal cohesion by creating a cycle of re-enactment through creating an internalized triadic self of perpetrator, victim, and non-protecting bystander/rescuer [8,9]. Clinically, implications in this area are vast and were discussed previously in this paper; however, skilled clinicians need to be mindful of conducting thorough assessments on clients who present with PTSD to assess for the presence of eating disorders and on clients who present with eating disorders for PTSD and other trauma spectrum disorders. Further, the clinician needs to continually be mindful of the internalized triadic self and the transference and countertransference dynamics involved in working with the client who possesses both an eating disorder and PTSD to avoid becoming one of the projected members of this re-enactment cycle [8,9]. Again, as most research has been conducted on females in this area, additional research on males and varying age groups would be helpful.

Eating disorders and PTSD spectrum disorders are frequently co-occurring in this population of individuals. Accurate assessment and

treatment is needed by skilled clinicians in order for clients to be able to engage in healthy functioning following the course of these disorders. If a clinician merely focuses on one disorder or the other, the client is likely to not function at optimal level, and indeed, particularly in the case of the eating disorder, if the core, underlying issues are not addressed, the client will not be able to succeed, but will engage in relapse or symptom substitution [17]. Consequently, given the degree of co-occurrence of these disorders, it is imperative for clinicians to be well-informed on the frequency with which the co-occur, the reasons for the comorbidity, the special populations that are likely to be affected, and the functions of the behaviors and symptoms involved for optimum treatment effectiveness.

References

- Mitchell KS, Mazzeo SE, Schlesinger MR, Brewerton TD, Smith BN (2012) Comorbidity of partial and subthreshold PTSD among men and women with eating disorders in the National Comorbidity Survey-Replication Study. *Int J Eat Disord* 45: 307-315.
- Chen LP, Murad MH, Paras ML, Colbenson KM, Sattler AL, et al. (2010) Sexual abuse and lifetime diagnosis of psychiatric disorders: systematic review and meta-analysis. *Mayo Clin Proc* 85: 618-629.
- Brewerton TD (2007) Eating disorders, trauma, and comorbidity: focus on PTSD. *Eat Disord* 15: 285-304.
- Streeck-Fischer A, van der Kolk BA (2000) Down will come baby, cradle and all: diagnostic and therapeutic implications of chronic trauma on child development. *Aust N Z J Psychiatry* 34: 903-918.
- Briere J, Scott C (2007) Assessment of trauma symptoms in eating-disordered populations. *Eat Disord* 15: 347-358.
- Favaro, A, Santonastaso, P (1997) Dissociative experiences and eating disorders in a female college sample. *Psychopathology* 30: 170-176.
- Vanderlinden J, Vandereycken W, van Dyck R, Vertommen H (1993) Dissociative experiences and trauma in eating disorders. *Int J Eat Disord* 13: 187-193.
- Tasca GA, Ritchie K, Balfour L (2011) Implications of attachment theory and research for the assessment and treatment of eating disorders. *Psychotherapy (Chic)* 48: 249-259.
- Farber SK (1997) Self-medication, traumatic reenactment, and somatic expression in bulimic and self-mutilating behaviors. *Clin Soc Work J* 25: 87-106.
- Farber SK (2008) Dissociation, traumatic attachments, and self-harm: Eating disorders and self-mutilation. *Clin Soc Work J* 36: 63-72.
- Mantero M, Crippa L (2002) Eating disorders and chronic post traumatic stress disorder: Issues of psychopathology and comorbidity. *Eur Eat Disord Rev* 10: 1-16.
- Blanchard EB, Hickling EJ, Taylor AE, Loos W (1995) Psychiatric morbidity associated with motor vehicle accidents. *J Nerv Ment Dis* 183: 495-504.
- Gleaves DH, Eberenz KP, May MC (1998) Scope and significance of posttraumatic symptomatology among women hospitalized for an eating disorder. *Int J Eat Disord* 24: 147-156.
- Tagay S, Schlegel S, Senf W (2010) Traumatic events, posttraumatic stress symptomatology and somatoform symptoms in eating disorder patients. *Eur Eat Disord Rev* 18: 124-132.
- Ariga M, Uehara T, Takeuchi K, Ishige Y, Nakano R, et al. (2008) Trauma exposure and posttraumatic stress disorder in delinquent female adolescents. *J Child Psychol Psychiatry* 49: 79-87.
- Forman-Hoffman VL, Mengeling M, Booth BM, Torner J, Sadler AG (2012) Eating disorders, post-traumatic stress, and sexual trauma in women veterans. *Mil Med* 177: 1161-1168.
- Rodríguez M, Pérez V, García Y (2005) Impact of traumatic experiences and violent acts upon response to treatment of a sample of Colombian women with eating disorders. *Int J Eat Disord* 37: 299-306.
- Smyth JM, Heron KE, Wonderlich SA, Crosby RD, Thompson KM (2008) The influence of reported trauma and adverse events on eating disturbance in young adults. *Int J Eat Disord* 41: 195-202.
- Turnball SJ, Troop NA, Treasure JL (1997) The prevalence of post-traumatic stress disorder and its relation to childhood adversity in subjects with eating disorders. *Eur Eat Disord Rev* 5: 270-277.
- Schmidt U, Humfress H, Treasure J (1998) The role of general family environment and sexual and physical abuse in the origins of eating disorders. *Eur Eat Disord Rev* 5: 184-207.
- Chesler BE (2005) Implications of the Holocaust for eating and weight problems among survivors' offspring: An exploratory study. *Eur Eat Disord Rev* 13: 38-47.
- Van der Kolk, B (2005) Developmental trauma disorder: Toward a rational diagnosis for children with complex trauma histories. *Psychiatric Annals* 35: 401-408.