



Research Article

Emotional Intelligence in Female Children with PTSD After Sexual Abuse

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Abstract

Objectives: The aim was to investigate the effects of child sexual abuse on emotional intelligence in children with posttraumatic stress disorder (PTSD). Also, there is no study assessing the effects of incest on emotional intelligence in children with PTSD after sexual abuse. The current study aimed to assess the effects of incest on emotional intelligence.

Methods: This study included 30 female children with sexual abuse, 20 female traffic accident victims with PTSD, and 25 female healthy volunteers as controls. All participants in the study were assessed with the Toronto Alexithymia Scale (TAS-20) and the Difficulties in Emotion Regulation Scale (DERS) and the reading mind from eyes test (RMET) for children.

Results: It was found that the TAS-20 total score was significantly higher in the CSA victims than in controls. Difficulty identifying feelings and difficulty describing feelings subscales scores were higher in the incest group. When the groups were compared regarding total DERS scores, it was found that the DERS total scale was significantly higher in the CSA victims than in controls while no difference was detected between the CSA victims without incest and the incest group. RMET score was significantly lower in the incest group than in the CSA victims without incest.

Conclusion: Sexual abuse disrupts emotional processing in female children. It is important to consider the clinical features of emotion processing that could contribute to PTSD treatment in children with sexual abuse.

Keywords: Alexithymia, child sexual abuse, emotion regulation, emotion recognition

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Child abuse is a repeatable early life trauma that is difficult to identify and is one of the strongest risk factors for later emotional psychopathology. Children and adolescents who have a history of childhood abuse have a low level of health-related quality of life,^[1] and tend to be more prone to delinquency, posttraumatic stress disorder, and dissociation than those who have not.^[2] Also, types of abuse are related to specific psychiatric comorbidity. Sexual abuse is more associated with posttraumatic stress disorder than other kinds of abuse.^[3,4]

Emotional intelligence is the ability to recognize the meanings of emotions and their relationships and to use them as a basis for reasoning, problem-solving, and

enhancing cognitive activities. Emotional intelligence is comprised of four skills: emotion regulation, emotion recognition in self and others (e.g. reading mind and alexithymia), understanding of emotion, and utilization of emotion to facilitate thinking.^[5] Evidence in studies suggests that traumatic experience can rapidly alter brain activation associated with emotional intelligence such as emotion processing.^[6] Children with early-life trauma exposure show altered connectivity in brain systems relevant for detecting and processing emotional information and early-life adversity is associated with reorganization of neural circuits in ways that enhance processing of salient emotional stimuli. Altered processing of emotional

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information may potentiate emotion regulation deficits reported in individuals with early-life trauma.^[7, 8] In this way, child abuse, a trauma that is difficult to treat, changes the neural system governing emotion regulation thereby increasing sensitivity to emotional conflict.^[7, 9] As adults, they continue to have difficulties regulating and processing emotions.^[10, 11] They might have developed a kind of “alexithymic” state in order to protect themselves.^[12]

Posttraumatic stress disorder (PTSD) is defined by symptoms denoting the reexperiencing of trauma, withdrawal, and heightened numbed responsiveness arousal that frequently appears after exposure to trauma. Also, it is known that PTSD has been linked to deficits in the processing and regulation of negative emotions, suggesting potential abnormalities in brain regions involved in emotion processing and regulation.^[13] Compared to non-PTSD samples, chronic PTSD is associated with greater activity in emotion-processing regions, including the amygdala and insular cortex (IC), and less activity in emotion-regulatory regions, including dorsolateral prefrontal (dlPFC), medial prefrontal (mPFC), and anterior cingulate (ACC) cortex.^[14, 15] Thus, PTSD has been closely associated with the concept of alexithymia and studies also suggest a relationship between emotion regulation difficulties and PTSD.^[16, 17] In addition, it was reported that women with PTSD related to childhood abuse show deficits in theory of mind performance, particularly during interpretations of familial interactions and they are slower at recognizing mental states from facial/eye expressions in comparison with healthy women.^[18]

Although it is not known that sexual trauma is a serious emotional abuse there are limited studies assessing the effects on emotional intelligence in children with PTSD. The current study aimed to investigate the effects of child sexual abuse on emotional intelligence in children with PTSD.

Methods

Participants

The study included 30 female CSA victims without mental retardation, in the age range of 12-18, who were assessed in the Child and Adolescent Psychiatry Department, who were not diagnosed with a psychiatric disorder before abuse, who completed 6-months of follow-up and who were not diagnosed with a psychiatric disorder other than post-traumatic stress disorder (PTSD) during the six month follow-up period after abuse. Control groups consisted of 25 female healthy voluntary participants without any known psychiatric, neurological, or metabolic disorders and 20 female traffic accident victims with PTSD who were

not sexually abused.

Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL)^[19] was applied to all CSA victims 6 months of follow-up after abuse and controls for once. All participants in the study were assessed with the Toronto Alexithymia Scale (TAS-20) and the Difficulties in Emotion Regulation Scale (DERS).^[12, 20] During the interview, the patient and the control groups were subjected to the reading mind from eyes test (RMET) for children to evaluate their emotional facial expression recognition.^[21]

This study was approved by the Ethics Committee (2018/018). The objectives and procedures of the study were explained to the participants and their parents. Written informed consent was obtained from both participants and their parents.

Statistical Analysis

Data were analyzed by using SPSS for IBM version 21.0 and SigmaStat 3.5 statistics software. The variables were expressed as number (n), mean, and standard deviation (SD). The Shapiro–Wilk test was used to evaluate whether the data were normally distributed. Comparisons across multiple groups were carried out using Dunn’s test. Statistical significance was set at $p < 0.05$.

Results

The study included 30 female children aged 12-18 years who were exposed to sexual abuse, 20 female traffic accident victims with PTSD, and 25 female healthy volunteers as controls (Table 1).

When TAS-20 scores were considered, it was found that TAS-20 total scores and scores in difficulty identifying feelings, difficulty describing feelings, and externally-oriented thinking subscale scales were significantly higher in the PTSD than in controls (Table 2). As an important result, the externally-oriented thinking subscale was higher in the CSA group than in the PTSD group without CSA. When the groups were compared regarding total DERS scores, it was found that the DERS total scale was significantly higher in the PTSD group than in the controls (Table 3). The impulse control difficulties, lack of emotional awareness, and lack of emotional clarity subscores were higher in the PTSD group with CSA than in the PTSD group without CSA and the controls (Table 3). When total RMET scores were considered, a significant difference was detected between groups (Table 4). As an interesting result, the RMET score was significantly lower in the PTSD group with CSA than in the PTSD group without CSA, and the controls.

Table 1. Sociodemographic characteristics of sexual abuse victims with PTSD, control groups, and their parents

	PTSD patients with sexual abuse n=30	PTSD patients with a traffic accident n=20	Healthy controls n=25
Mean age (years)	15.35±3.45	14.55±3.36	13.42±2.38
Years of education (Min-Max)	5-9	5-9	4-9
Parents			
Living together	25	15	23
Divorced	5	3	2
Parental psychopathology	2	1	1
Father's mean age	45.15±7.35	42.30±6.20	40.45±5.05
Mother's mean age	38.25±6.25	38.33±5.50	36.75±5.25
Father's years of education (Min-Max)	5-15	5-17	5-17
Mother's years of education (Min-Max)	0-15	0-17	5-17
Income level of the family			
Low	8	3	3
Normal	17	13	18
High	5	4	4

Table 2. Comparison of Toronto Alexithymia Scale (TAS-20) in all groups

	PTSD patients with sexual abuse (Mean±SD)	PTSD patients without sexual abuse (Mean±SD)	Healthy controls (Mean±SD)	Comparisons
DIF	19.66±4.36**	16.26±5.07*	12.08±2.73	p=0.003
DDF	14.71±3.38*	12.21±3.75*	8.79±3.74	p=0.007
EOT	26.77±3.51**	20.26±6.28*	16.15±3.65	p=0.009
TAS 20 total scores	59.15±9.32**	48.74±9.37*	37.03±8.28	p=0.002

Toronto Alexithymia Scale (TAS-20), difficulty identifying feelings (DIF), difficulty describing feelings (DDF), and externally oriented thinking (EOT). *Higher than the healthy controls ($p<0.05$). **Higher than all other groups ($p<0.05$).

Table 3. Comparison of DERS Scale in all groups

	PTSD patients with sexual abuse (Mean±SD)	PTSD patients without sexual abuse (Mean±SD)	Healthy controls (Mean±SD)	Comparisons
Nonacceptance of emotional responses	12.20±5.69*	8.25±3.55*	5.35±2.35	p=0.006
Difficulty engaging in goal-directed behavior	14.16±5.2*	9.42±3.28*	4.32±1.78	p=0.003
Impulse control difficulties	15.74±4.08**	7.83±3.71*	3.46±1.72	p=0.005
Lack of awareness of emotions	15.45±5.67**	6.46±4.22*	3.26±1.02	p=0.001
Limited access to strategies for regulation	17.35±6.42*	12.47±4.76*	7.42±3.76	p=0.003
Lack of emotional clarity	11.23±5.59**	7.23±2.32*	5.35±1.35	p=0.002
Total DERS scores	85.92±27.23**	55.53±21.45*	29.63±11.35	p=0.002

Difficulties in Emotion Regulation Scale (DERS); *Higher than healthy controls ($p<0.05$). **Higher than all other groups ($p<0.05$).

Discussion

Alexithymia, characterized by difficulty in identifying and describing feelings and a deficit in the cognitive modulation of emotions, has been linked with health-related problems. Emotion regulation is the critical ability to modu-

late and maintain feelings, behaviors, and physiological responses that constitute an emotion.^[22] Dysregulation of emotion refers to maladaptive ways of responding to emotions including non-accepting responses, difficulty controlling behaviors in the face of emotional distress, and deficits

Table 4. Comparison of RMET Scores in all groups

	PTSD patients with sexual abuse (Mean±SD)	PTSD patients without sexual abuse (Mean±SD)	Healthy controls (Mean±SD)	Comparisons
RMET Correct answers	18.35±6.0**	21.50±4.50*	24.35±2.65	p<0.05

Reading mind from eyes test (RMET); *Lower than the healthy controls (p<0.05). **Lower than all other groups (p<0.05).

in the functional use of emotions as information.^[23] Alexithymia may potentially also relate to emotion regulation difficulties. Researchers have theorized that alexithymia reflects a deficit in the cognitive processing and regulation of emotions and that the disorders with which alexithymia is most strongly associated can be conceptualized as “disorders of emotion regulation.”^[24] Studies showed that the inability to identify one’s own feelings is highly congruent with the construct of PTSD.^[25] It was reported that the type of trauma experienced is an important factor influencing the probability of developing alexithymia.^[26] In a meta-analysis of the prevalence of alexithymia among 1,095 individuals with PTSD, both PTSD and alexithymia appeared to be significantly and positively linked.^[27] This correlation has also been demonstrated in sexually abused children.^[28] Evidence in the literature suggests that trauma exposure, particularly in early life, fundamentally alters the way emotional information is processed and prioritized. Studies in children with histories of abuse show enhanced attention to and difficulty in disengaging from emotional stimuli and they have deficits in cognitive control and emotion regulation.^[7, 28, 29] In adulthood, they continue to have difficulties regulating and processing emotions.^[11, 30, 31] They avoid negative emotional expressions and could develop an alexithymic state in order to protect themselves by endorsing an inhibitory mechanism.^[12, 32] In our study, the TAS-20 and the DERS scores were higher in PTSD patients than in healthy controls as we predicted. Also, we found that the TAS-20 total scores and subscores in difficulty identifying feelings, difficulty describing feelings, and externally-oriented thinking subscale scales were significantly higher in the CSA victims with PTSD than in healthy individuals and PTSD patients who were not sexually abused. At this point, we could say that the complex, severe, and difficult-to-treat trauma which also has an emotional aspect, such as sexual abuse, is increasing the risk of alexithymia.

Children with histories of sexual abuse had lower emotion regulation competencies than children without sexual abuse. These problems were reported shortly after the disclosure of the abuse and persisted one year later.^[33] Also, it is known that trauma-exposed children tend to have difficulty self-soothing and trouble regulating anger.^[34] Trauma may affect the ability of children to express their emotions,

resulting in acting out through externalizing behaviors.^[35] Impulsivity could accept as an externalizing symptom, this results could be interpreted in this way. In this study, we found the impulse control difficulties subscore of DERS was higher in the CSA group with PTSD. Also, the lack of emotional awareness and lack of emotional clarity subscores of DERS were higher in the CSA group than in the controls. When considering the differences between groups, it may be thought that children with CSA may exhibit symptoms of externalization, anger, and impulsivity more often than the symptoms of internalization due to the nature of abuse and higher alexithymia levels. Also, parental care, is an important variable, besides the process of emotion dysregulation.^[36] In this point, another explanation could be that sexually abused children could not learn how to successfully regulate emotions from their caregivers.

Emotion recognition is conceptually more primary than emotion regulation because regulation is only possible after recognition has occurred. Thus recognition must be a precursor to regulation; conversely, if emotion is not recognized, there is nothing to regulate.^[5] The maturation of the structures that support the ability to recognize emotion goes through a sensitive period during adolescence, where experience may have a greater impact on emotional recognition.^[5,6] Different types of traumas may be associated in a specific manner with different impairments in recognizing facial emotions. Experiences of abuse, neglect, and stress could lead to a bias toward expressions of anger and sadness.^[37] Children with PTSD were able to recognize facial expressions of fear much faster than the control children who did not meet the diagnostic criteria for PTSD.^[38] Also, child abuse can change the neural system governing emotion processing thereby increasing sensitivity to emotional conflict.^[7] Exposure to threatening environments early in development might lead to changes in the amygdala response to negative emotional cues due to the heightened salience of negative emotional information as a marker of potential threats.^[39] Heightened amygdala reactivity to emotional conflict observed in trauma-exposed youth may reflect alterations in the neural systems that monitor the environment for biologically salient information.^[40] These findings reveal general deficits in emotion processing in child abuse, but the question remains about whether these

deficits would persist in sexual abuse. In only one study, it was reported that childhood sexual abuse predicted poorer performance on positive picture recognition, compared to controls.^[11] Their results showed that childhood histories of abuse/neglect in general and neglect and sexual abuse, in particular, predicted deficits in positive, but not negative, picture recognition. They suggested that these previously abused and neglected individuals have developed negative worldviews that might have prevented them from recognizing positive emotions. RMET scores were lower in PTSD patients with sexual abuse so we could suggest that they developed more negative and insecure worldviews than other patients with PTSD.

As a result, sexual abuse disrupts emotional processing in female children and they have difficulties in recognizing their own feelings and describing others' feelings. At this point, it is important to consider the clinical features of emotional processing that could contribute to PTSD treatment in children with sexual abuse. Learning to recognize their own feelings and others' feelings and to cope with emotions correctly can be effective in preventing future psychopathologies.

Limitations

The limited sample size is one of the limitations of our study. In this study, we only assessed female victims. In these cases, data regarding psychological status before the abuse was based on information gathered from the patients and their parents.

Disclosures

Ethics Committee Approval: This study was approved by the Ethics Committee (2018/018).

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Conflict of Interest: None declared.

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