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Alexithymia as a Mediator of the Relationship between Child Sexual Abuse and Psychological Distress in Adolescence: A Short-term Longitudinal Study

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Abstract

Background—Understanding factors influencing mental health of sexually abused teenagers is essential to orient treatment with this vulnerable population. The purpose of this study was to explore alexithymia as a mediator of the relationship between child sexual abuse and psychological distress using a representative sample of teenagers, while considering gender as a potential moderator.

Methods—Teenagers participating in the Quebec Youths' Romantic Relationships Survey completed measures evaluating a history of child sexual abuse and alexithymia at baseline while psychological distress was evaluated 6 months later.

Results—A moderated mediated model revealed a partial mediation effect of alexithymia in the relationship between child sexual abuse and psychological distress. Gender acted as a moderator as the conditional indirect effects of child sexual abuse on mental health via alexithymia were stronger for boys.

Conclusion—Findings underscore the relevance of assessing and targeting sexually abused victims' capacity to identify and communicate emotions to promote well-being.

Keywords

Sexual abuse; Alexithymia; Psychological distress

1. Introduction

Child sexual abuse (CSA) is a major public health issue affecting one out of five women and one out of ten men (Stoltenborgh et al., 2011). Pervasive psychological difficulties have been identified among adolescent victims of CSA with close to two-thirds of CSA victims reporting suicidal ideations (Brabant et al., 2013). Following a systematic review of 52 studies, Miller et al. (2013) found that CSA was associated with adolescent suicidal ideation and suicide attempts in community as well as clinical samples, relying on both cross-

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sectional and longitudinal designs, even when controlling for demographics and possible confounder variables (youth mental health, family adversities). Devries et al. (2014) in a meta-analysis of longitudinal and twin studies concluded that CSA was associated with increased risk of suicide attempts after controlling for genetic risk factors and family adversity. Given the well-known deleterious impact of CSA, it is essential to identify factors underlying the emergence of symptoms and accounting for the diversity of outcomes in survivors. Among the potential factors linked to differential trajectories stand emotion regulation difficulties, which include the concept of alexithymia.

1.1. Alexithymia

Alexithymia is characterized primarily by the difficulty in identifying and expressing feelings (Sifneos, 1973). Overall prevalence of alexithymia among adolescents range from 7.3% to 29.9% (Joukamaa et al., 2007; Säkkinen et al., 2007; Zimmermann et al., 2007; Honkalampi et al., 2009). Generally, higher levels of alexithymia are found among younger teenagers which is consistent with the fact that emotional capacities are still evolving at this developmental stage (Parker et al., 2010). Studies focusing on the general population as well as clinical samples provide mixed results regarding possible gender differences in alexithymia; certain studies identifying higher degree of alexithymia in girls (Ling et al., 2016), while other studies report higher alexithymia in boys (Levant et al., 2009) and some document no difference between genders (Brown et al., 2016).

In general population samples, alexithymia is found to be associated with a host of internalized and externalized behavior problems (Honkalampi et al., 2009; Li et al., 2015). Past studies lend support to the claim that higher levels of alexithymia are characteristics of clinical populations with mental health issues such as somatoform disorders (Koch et al., 2015), self-harming behaviors (Lee, 2016) and conduct disorders (Deborde et al., 2014). A meta-analysis conducted by Frewen et al. (2008) reported a large effect size between alexithymia and posttraumatic stress disorder. Relatedly, several studies identified an acute level of alexithymia among populations who experienced trauma such as combat veterans and survivors of childhood abuse (Taylor and Bagby, 2013).

1.2 Alexithymia and CSA

There is growing support that alexithymia could account for the association between CSA and psychological distress. Indeed, childhood trauma appears to be a major risk factor for alexithymia (Taylor and Bagby, 2013). According to Krystal (1988), alexithymia is a defensive mechanism used by victims to face trauma and avoid being overwhelmed by a multitude of negative emotions by distancing themselves from them. This strategy could lead to emotional regression in adults and interference of emotional development in children. Despite heterogeneous findings, other authors also suggest that alexithymia may result from specific neural correlates such as sensory processing patterns (Van der Velde et al., 2013; Engel-Yeger, 2016). In fact, alexithymia appears to be a tactic used by individuals to deal with negative affect. However, to this date, few studies have investigated the possible role of alexithymia in victims of CSA and the majority of these studies have relied on adult samples.

While some studies found that adult survivors of CSA are likely to display higher levels of alexithymia (Scher and Twaite, 1999; Thomas et al., 2011), more recent studies failed to find a link between CSA and alexithymia (Şenkal and Işikli, 2015; Brown et al., 2016). These discrepant results may be linked to methodological issues and limitations such as a small number of participants disclosing CSA in the samples considered as well as reliance on cross-sectional designs (Taylor and Bagby, 2013). To our knowledge, none of these studies have relied on a prospective design with a sample of youth. Yet, considering the evolution of emotional capacities in adolescence, studies on this age group seems particularly relevant. Moreover, findings related to gender specificities found with adult samples may not generalize to adolescents (Honkalampi et al., 2009; Sendzik et al., 2017).

1.3 Aim and hypotheses

We hypothesized that: (1) CSA will be positively associated with alexithymia; (2) the association between CSA and psychological distress will be mediated by alexithymia. Given conflicting results in past studies, gender is tested as a possible moderator between sexual abuse and alexithymia. The analyses were performed while controlling for age. Fig. 1 illustrates the model tested.

2. Methods

2.1. Participants and procedures

The first wave of the Quebec Youths' Romantic Relationships Survey was completed through a one-stage stratified cluster sampling of high schools. As schools in the whole population are stratified according to metropolitan geographical area, type of schools (public or private schools), teaching language (French or English), and social economic deprivation index, surveyed schools were classified into eight strata giving the aforementioned characteristics in order to obtain a representative sample of students in grades 10–12. Schools were randomly selected from an eligible pool from the Quebec Ministry of Education. Overall, 26% of the solicited schools participated in the survey (34 out of 131). Class response rates and the overall student response rate were determined as the ratio between the number of students that accepted to participate and the number of solicited students. Response rate was 100% for the majority (320/329) of classes; while for the remaining, the response rate ranged from 90% to 98%. In all, 34 high schools participated at Time 1 and questionnaires were completed by 8 194 students. Six months later, students in the same schools were invited to participate in Time 2 and a total of 6 780 teenagers completed the questionnaire. Participants at Time 1 were given a sample weight to correct biases in the nonproportionality of the schools sample compared to the target population. The weight was defined as the inverse of the probability of selecting the given grade in the respondent's stratum in the sample multiplied by the probability of selecting the same grade in the same stratum in the population. A weighted sample of 6 531 teenagers (3 776 girls and 2 755 boys) resulted and is used in further analyses.

Students agreed to participate on a voluntary basis and signed a written consent form. The institutional review board of the Université du Québec à Montréal approved this study.

2.2. Measures

2.2.1 Child sexual abuse (Time 1)—Two items were adapted from previous studies to assess sexual abuse (Finkelhor, et al., 1990; Hébert et al., 2009). One item referred to unwanted touching (Have you ever been touched sexually when you did not want to, or have you ever been manipulated, blackmailed, or physically forced to touch sexually) and one item referred to unwanted sexual activities involving penetration (Has anyone ever used manipulation, blackmail, or physical force, to force or obligate you to have sex [including all sexual activities involving oral, vaginal, or anal penetration]?) A dichotomized score was created based on the absence (0) or presence (1) of CSA.

2.2.2 Alexithymia (Time 1)—Participants completed four items derived from the *Toronto Alexithymia Scale* (TAS-20), a widely used measure for alexithymia (Bagby et al., 1994). A Likert type scale ranging from 1 (false) to 5 (true) is used to obtain a total score ranging from 4 to 20 which provides information about adolescents' alexithymia level ($\alpha = 0.84$). Both English and French versions of the TAS-20 were used. These versions have been translated and validated in clinical and non-clinical samples (Loas et al., 1994, 1996, 2017; Taylor et al., 2003).

2.2.3 Psychological distress (Time 2)—Psychological distress was assessed using the *Kessler Psychological Distress Scale* (Kessler et al., 2002; Statistics Canada, 2006). This 10-item questionnaire is completed using a 5-point frequency scale ranging from 0 (none of the time) to 4 (all the time). This measure provides a total score ranging from 0 to 40 with higher scores reflecting greater psychological distress ($\alpha = 0.88$).

3. Results

3.1 Data analytic plan

First, preliminary analyses were performed (missing data analyses, ANOVAs and bivariate correlations) using SPSS 24 software. Secondly, moderation and mediation analyses were conducted using Mplus 7.31(Muthén and Muthén, 2015). Maximum likelihood (ML) estimators with bootstrap routines were used to estimate the moderated mediation model and account for non-normality. This model allows us first to estimate the direct effect of CSA on psychological distress and the indirect effect through alexithymia. We also tested whether the relationship between CSA and alexithymia was moderated by gender and assessed the conditional indirect effect of CSA on psychological distress for each gender. Missing data were handled with full information maximum likelihood (FIML) estimation. This method provides unbiased estimates under missing at random (MAR) or missing completely at random (MCAR) assumptions (Little and Rubin, 2002).

3.2 Descriptive and bivariate analyses

Demographic characteristics of the participants at Time 1 were as follows: 57.8% of participants were girls and their mean age was 15.35 years ($SD = 0.11$). A total of 63.2% of participants reported living with both parents, 34.6% lived either in single-parent families or in shared custody while 2.2% described another living arrangement (living with a member of

the extended family or living in foster care). A total of 75.4% reported speaking only French at home, 3.6% only English, 5.1% both French and English, and 15.9%, other languages.

Prevalence of CSA was found to be significantly higher for girls (14.89%) than for boys (3.94%), ($F(1, 26) = 108.32$, $p < 0.001$). Means and standard errors for alexithymia and psychological distress are presented in Table 1. Results of the 2 (Group: victims of CSA or not) x 2 (Gender: girl or boy) analysis of variance (ANOVA) conducted on alexithymia scores revealed a main effect of CSA history, $F(1, 26)= 50.14$, $p < 0.001$, and a main effect of gender, $F(1, 26)= 25.56$, $p < 0.001$. Furthermore, a significant Group x Gender interaction effect was evident $F(1, 26)= 10.02$, $p < 0.01$. Post-hoc analyses revealed that among non-victimized youth, girls (10.81 ± 0.08) appeared significantly more alexithymic than boys (8.46 ± 0.13), $p < 0.001$, yet no difference was found between sexually abused girls (12.19 ± 0.25) and boys (11.51 ± 0.53).

The 2 × 2 ANOVA conducted on scores of psychological distress revealed a main effect for CSA history, $F(1, 25)= 41.35$, $p < 0.001$, and gender, $F(1, 25)= 63.23$, $p < 0.001$. Youths with a history of CSA (13.31 ± 0.39) reported higher levels of psychological distress than non-victims (8.32 ± 0.25). Girls (10.52 ± 0.16) showed higher levels of psychological distress than boys (6.14 ± 0.19). The Group x Gender interaction was not significant.

3.3 Moderated mediated analyses

Table 2 presents the results of the moderated mediation model (Fig. 2). As expected, alexithymia was significantly associated with CSA and younger age of participants. Psychological distress was significantly associated with alexithymia as well as CSA and being a girl. The direct effect of CSA on psychological distress was significant. The model also revealed an indirect effect through alexithymia, suggesting a partial mediation effect of this variable in the relationship between CSA and psychological distress. This indirect effect is dependent on gender since the moderation effect of this variable on alexithymia is significant ($b = −1.65$, $p < 0.01$). The bootstrap confidence intervals showed that the conditional indirect effect is positive and significant for boys ($b = 1.79$, 95% CI [1.21, 2.38]) as well as girls ($b = 0.81$, 95% CI [0.49, 1.12]). The index of moderated mediation revealed that this conditional indirect effect was higher for boys than for girls ($b = −0.99$, 95% CI [−1.60, −0.37]). The model explained 21.6% of the variance of psychological distress.

4. Discussion

This short-term longitudinal study is the first, to our knowledge, to investigate alexithymia as a mediator between CSA and later psychological distress among adolescents. Our findings show that trauma does in fact impede on the capacity to identify and express feelings, which in turn increases the level of psychological distress of teenagers. Our results support previous findings among adults showing that CSA victims are characterized by higher levels of alexithymia (Thomas et al., 2011). As posited by Lecours et al. (2016), negative affects generated by the trauma could explain this association. Indeed, alexithymia may act as a strategy for survivors to deal with this emotional overflow in the short term. The use of this strategy may explain why the current results show an absence of gender difference only among victimized youths while non-victimized girls show higher levels of

alexithymia than non-victimized boys. Absence of gender differences has also been found among veterans who experienced military sexual trauma (O'Brien et al., 2008). However, in a long-term perspective, this strategy can lead to heightened psychological distress, as underlined by the present results. The mediation effect of alexithymia is significant, which is in agreement with recent results reported by Orejuela-Dàvila et al. (2017) who showed that alexithymia predicted distress of college students after highly adverse life events.

A closer look of our data underscores an interesting finding in that the indirect effect of alexithymia in the link between CSA and psychological distress is significant for both genders, but stronger for boys. These results with youths support studies on adult populations that showed that alexithymia is a relevant concept in understanding the onset of difficulties (Taylor and Bagby, 2013; Li et al., 2015). However, research with this population generally found stronger effects for girls between child maltreatment, alexithymia and maladaptive outcomes (Swannell et al., 2012; Brown et al., 2017). This discrepancy of findings might be due, in part, to age-related specificities whereas capacity to identify and express feelings have an acute importance for boys in adolescence. Methodological issues must also be considered. While the TAS-20 is the most widely used measure to assess alexithymia, different results could be found depending on the reliance on total score or use of specific subscale scores. For example, girls showed greater difficulties than boys to identify feelings while it was the opposite for the externally oriented-thinking subscale (Meganck et al., 2012). Some dimensions of alexithymia may also be more related than others to negative outcomes among victims of sexual abuse (O'Brien et al., 2008).

Another issue to consider is that the present study focused on a specific trauma (i.e. child sexual abuse) instead of general maltreatment. Several authors suggest that CSA is a particularly stigmatized form of maltreatment with different accompanying barriers of disclosure, especially for boys (Ungar et al., 2009). Past studies have found that men are less likely to disclose sexual abuse (Hébert et al., 2009; McElvaney, 2015). The vast majority of sexual abuse cases involve male perpetrators. Societal stigmas regarding homosexuality and lack of services available for boys may constitute additional barriers to talk about the abuse experienced. This issue of non-disclosure could explain why alexithymia appeared to be a stronger mechanism between CSA and psychological distress for boys. Similar results have been found by studies among sexually abused children (Langevin et al., 2015; Séguin-Lemire et al, 2017) which showed that the mediation effect of emotion regulation competencies between CSA and behavior problems in preschoolers is stronger for boys than for girls.

4.1 Limitations and future directions

Despite the strengths of the current study, such as reliance on a longitudinal design and a representative sample, some limitations must be considered. The use of self-report measures could possibly have implied informant biases, especially for alexithymia. Indeed questions have been raised about the capacity of alexithymic individuals to accurately report their own deficit of affect awareness (Taylor and Bagby, 2013). Single respondent for all measures is also a limitation of the current study. Future research should rely on a cross-informant perspective to gather a more comprehensive evaluation of alexithymia. In addition, our

measure of sexual abuse did not include non-physical contact sexual abuse (for e.g. exhibitionism, sexual harassment).

Considering the partial mediational effect found in the current study, future studies should investigate different pathways or mechanisms potentially implicated in the association between CSA, alexithymia and psychological distress. For example, taking into account the well-known relationship between attachment security and alexithymia, the influence of the quality of the relationship to the non-offending parent could be considered (Taylor and Bagby, 2013). Supportive non-offending parents may indeed foster their child's emotion recognition and coping skills which, in turn, may promote recovery following disclosure of CSA. In addition, future studies on alexithymia should explore characteristics related to the sexual abuse (for e.g. severity, frequency, relationship with the perpetrator) and the presence other forms of child maltreatment experienced by CSA victims (Scher and Twaite, 1999; Güleç et al., 2013) as possible factors associated with alexithymia.

4.2 Implications for clinical practice

Despite these limitations, this study contributes to the identification of factors that may influence outcomes in teen victims of CSA. First, the main findings of the current study point to a clear association between CSA and alexithymia. Thus, alexithymia may constitute an important element to assess for teenagers seeking services following CSA disclosure, especially considering that this variable may influence therapeutic alliance (Quilty et al., 2017) and even the effectiveness of the therapy (Ogrodniczuk et al., 2011). Second, the current study highlights the mediational role of alexithymia explaining the link between CSA and later psychological distress, especially for teenage boy victims of CSA. Thus, evaluating alexithymia among CSA victims could allow clinicians to identify teenagers who are at greater risk to develop persistent mental health problems. Our results underscore that intervention modules targeting emotional recognition and communication, whether in individual, familial or group therapeutic settings, could be beneficial for CSA victims.

Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT) (Cohen et al., 2012, 2017) is recognized as an evidence-based practice for the treatment of youth victims of CSA and is the most widely implemented approach. TF-CBT comprises a number of treatment components including, in the first phase of therapy, a component targeting affective expression and modulation skills. Therefore, strategies to help youth enhance their skills and competencies in identifying feelings and emotions are proposed. As therapy evolves, youth are gradually invited to describe feelings and emotions that they experience when they are reminded of the trauma. Such trauma-related emotions can then be validated and normalized by the therapist. The expression of such emotions can also provide favorable occasions for the therapist to help youth develop efficient strategies to cope with these emotions (Cohen et al., 2017).

In sum, alexithymia may be one of the mechanisms explaining the association between CSA and mental health outcomes in teenagers. Findings suggest that improvement of alexithymia could be one means to promote recovery and foster resilience in victimized teenagers.

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Highlights

- Child sexual abuse is associated with alexithymia in teenagers.
- Alexithymia mediates the relationship between CSA and psychological distress.
- The indirect effect of alexithymia between CSA and distress is stronger for boys.

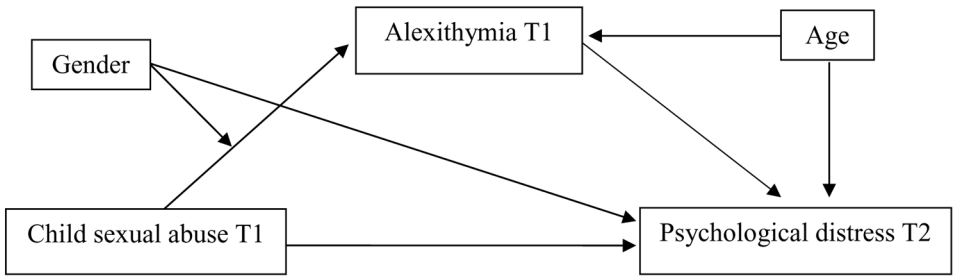

Figure 1.
Relationship between child sexual abuse and psychological distress mediated by alexithymia

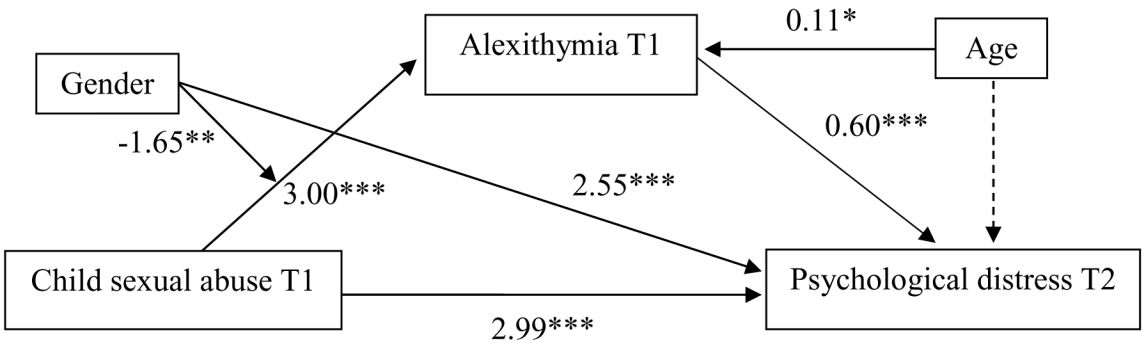

Figure 2.
Moderated mediation model.

Table 1

Means of Alexithymia and Psychological Distress by Sexual Abuse and Gender

	Victims of child sexual abuse	Non victims	Total
Variables	***Mean (SE)***	***Mean (SE)***	***Mean (SE)***
Alexithymia			
Girls	12.19 (0.25)	10.81 (0.08)	11.09 (0.10)
Boys	11.51 (0.53)	8.46 (0.13)	8.58 (0.13)
Total	12.08 (0.23)	9.77 (0.11)	10.02 (0.11)
Psychological distress			
Girls	13.85 (0.39)	10.00 (0.14)	10.52 (0.16)
Boys	10.12 (1.06)	5.97 (0.20)	6.14 (0.19)
Total	13.31 (0.39)	8.32 (0.25)	8.80 (0.26)

Table 2

Results of the Moderated Mediation Model

Variables	*b*	S.E.	*T*	*p*	95% Boot CI
Alexithymia					
Sexual abuse	3.00	0.53	5.63	< .001	[1.96, 4.05]
Gender (Girls)	2.34	0.14	16.29	< .001	[2.06, 2.62]
Sexual abuse * Gender	−1.65	0.56	−2.96	< .01	[−2.74, −0.56]
Age	0.11	0.06	1.98	.04	[0.01, 0.22]
Psychological distress					
Alexithymia	0.60	0.02	30.42	< .001	[0.56, 0.64]
Sexual abuse	2.99	0.30	9.88	< .001	[2.39, 3.58]
Gender (Girls)	2.55	0.20	12.79	< .001	[2.16, 2.94]
Age	−0.01	0.11	−0.07	0.94	[−0.23, 0.21]
Conditional indirect effects					
Conditional indirect effect for boys	1.79	0.30	6.01	< .001	[1.21, 2.38]
Conditional indirect effect for girls	0.81	0.16	5.03	< .001	[0.49, 1.12]
Index of moderated mediation	−0.99	0.32	−3.13	< .01	[−1.60, −0.37]