

Emotion Regulation in Sexually Abused Preschoolers

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Abstract Emotion regulation is closely related to mental health in children and adults. Low emotion regulation competencies have been found in school-aged sexually abused girls. The aim of the present study was to investigate emotion regulation competencies in sexually abused preschool girls and boys using a multi-informant approach. Emotion regulation was assessed in 62 sexually abused and 65 non-abused preschoolers using the *Emotion Regulation Checklist* and the *MacArthur Story Stem Battery*. Both parents and educators reported lower emotion regulation competencies in sexually abused preschoolers, especially boys, than in non-abused children. The narrative task completed by the children also revealed lower emotion regulation competencies in sexually abused boys. These findings could have an important impact on intervention programs offered to these at-risk children.

Keywords Sexual abuse · Emotion regulation · Emotional development · Preschoolers

Introduction

Child sexual abuse (SA) is a major social problem that raises concerns among both clinicians and researchers [1]. According to a recent meta-analysis including 217

publications from five continents, 18 % of women and 7.6 % of men report having experienced SA before 18 years of age [2]. SA is a substantial risk factor for the development of physical [3], sexual [4], and mental health problems [5] in adulthood. Studies exploring short-term correlates of child SA identified similar deleterious outcomes in childhood including high levels of depressive, posttraumatic stress, and anxiety symptoms as well as internalized and externalized behavior problems [6]. These symptoms appear to be maintained 1 year later [7].

Almost 30 % of SA of minors reported to the United States authorities in 2012 involved children aged 7 and under [8]. Furthermore, according to a study conducted on a nationally representative sample of children, 1.5 % of children ages 2–5 years have been sexually victimized at least once in their life [9]. Yet, few studies have investigated the correlates of SA in preschoolers and most have relied solely on caregivers' evaluations. According to their caregivers, sexually abused preschoolers display symptoms of posttraumatic stress [10] and dissociation [11], sexualized behavior [12], and internalized and externalized behavior problems [12, 13]. Sexually abused preschoolers also report more depressive symptoms than non-abused children [14]. Several of these correlates involve emotion regulation deficits.

The acquisition of effective, autonomous, and adaptive emotion regulation abilities is a major developmental task in early childhood [15]. Emotion regulation has been defined as “the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals.” (p. 27–28) [16]. In the first years of life, parents are the primary source of emotion regulation as infants are very limited in their self-regulation abilities. As they grow older, children internalize the emotion regulation strategies used by their parents and

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become more able to regulate their own emotions. Parents also influence the development of self-regulation through vicarious learning. Although temperament has been described as the foundation on which emotional development builds [17], socialization plays a crucial role in the development of emotion regulation [18]. Thus, maltreating parents may not adequately fulfill their socialization role and even be a source of distress for their children. Children, especially younger ones, are then faced with important demands on their regulatory capacities with few resources to help them cope [18–20].

From the perspective of developmental psychopathology, the nature and timing of maltreatment are central to understand its impact [21]. During the preschool period, emotion regulation is considered a “primary developmental task with wide ranging implications for children’s development” (p. 546) [21]. Impairment in emotion regulation development could compromise subsequent adjustment (e.g., interpersonal relationships, behavioral regulation) [21]. Maltreatment occurring in the preschool period, a period of rapid changes and numerous acquisitions, might therefore have a greater impact on children than maltreatment occurring at a later age. Furthermore, SA is a distinctive form of maltreatment [22, 23]. It can be perpetrated by a parental figure or by an extra-familial perpetrator, and often involves manipulation and secrecy. The sexual nature of the abuse also adds to feelings of shame and intrusion experienced by the victims. Hence, sexually abused children may experience emotions that are quite different from those experienced by children victims of physical abuse or neglect. However, further investigation is needed in order to examine the association among SA and child’s self-regulatory abilities during the preschool period.

Emotion regulation deficits or dysfunctions are theoretically and empirically closely related to psychopathology at all ages. It represents a risk factor for the development of psychopathology and is involved in several mental health problems (e.g., anxiety disorders, mood disorders, substance use, post-traumatic stress, externalizing behavior disorders) [17, 24, 25].

This association has drawn the attention of a number of scholars who identified emotion regulation deficits in school-aged children experiencing various forms of maltreatment (sexual, physical, and emotional abuse and neglect). Among the deficits observed were emotional lability and negativity, low flexibility, poor situational appropriateness in emotion expression, low empathy and emotion awareness [26, 27]. Two studies have examined emotion regulation in maltreated preschoolers. Lower inhibitory control and more overcontrolled and undercontrolled reactions were found in maltreated compared to nonmaltreated preschoolers [28, 29]. Despite the specific nature of

SA, to our knowledge, only one study has investigated the association between SA and aspects of emotion regulation competencies in sexually abused children [30]. Compared to their non-abused peers, they showed less emotional understanding, more anger inhibition, higher levels of emotional lability and negativity. However, the sample only included school-aged girls sexually abused by a parental figure, which limits the generalization of such findings. In spite of these limits, these results underscore the relevance of pursuing the investigation of emotion regulation in children of both genders sexually abused by parental and non-parental figures.

Yet measuring emotion regulation in young children can be challenging. Caregivers’ reports can provide relevant information on child self-regulatory abilities, but relying exclusively on parental reports has serious limitations, perhaps even more so with samples of victimized children whose parents are likely to experience significant distress following disclosure. Parents’ distress may somewhat bias their evaluation of child’s functioning [31]. Given the high prevalence of past sexual victimization, mothers of sexually abused children are particularly at risk of experiencing such distress [32]. Parental reports are nevertheless essential [33].

It is now widely acknowledged that a multi-informant approach is essential for a comprehensive evaluation of child symptomatology [34]. Incorporating other adult informants, such as kindergarten teachers, early childhood educators, or child care workers may provide a more comprehensive picture of children’s difficulties since they have access to children’s behaviors in different contexts [35]. The most widely-used questionnaire for assessing emotion regulation in children, the Emotion Regulation Checklist (ERC) [36] can be completed by both parents and educators [37]. The ERC assesses processes central to emotion regulation, such as emotional valence, lability, intensity, and flexibility. Some items also target the situational appropriateness of emotion expression [38]. Two subscales are usually derived from the ERC: *Lability/Negativity* and *Emotion Regulation*. Items from the *Lability/Negativity* subscale describes behaviors related to under-regulation of emotion and the *Emotion Regulation* subscale includes behaviors and competencies associated with positive emotion regulation and engagement with others. A high score on this subscale indicate that the child is emotionally well-regulated as opposed to over or under-regulated. Previous studies conducted with clinical samples (e.g., maltreated children, children admitted in psychiatric services) of school-aged children and adolescents show that scores on both scales are associated with internalized and externalized behavior problems [26, 27, 38–40]. More specifically, the *Lability/Negativity* subscale of the ERC is more strongly associated with externalized behavior

problems and the *Emotion Regulation* subscale more strongly, but negatively, related to internalized behavior problems.

Finally, because young children's abilities to resolve emotionally charged stories can provide significant insights into their self-regulatory processes, children's narratives can be used to assess their emotion regulation competencies [41, 42]. The narratives of maltreated preschoolers have been found to include more themes centered on aggression, sexualized behavior, and denial of conflicts [43] as well as less prosocial themes than those of non-maltreated preschoolers [44]. Girls were also found to bring more positive resolutions and prosocial themes to their stories than boys whose stories included more aggressive themes [45]. It is worth noting that the level of verbal abilities has been associated with the quality of the narrative resolution and with emotion regulation competencies in children [41]. Language enables to organize, express, and represent affective experiences [41]. It is therefore central to emotion regulation and its development. Language and its interplay with emotion regulation also appear to be related with behavior problems in young children [46, 47].

Early intervention has been found to be effective in preventing enduring emotional and behavioral problems in at-risk infants, toddlers, and preschoolers [48]. Because emotion regulation competencies are an essential component of child psychological adjustment, we aimed to assess emotion regulation competencies in sexually abused preschoolers by comparing them with non-abused preschoolers using a multi-informant approach. We hypothesized that sexually abused children would present lower emotion regulation competencies than non-abused children according to their parents and educators. The narratives provided by children of both groups would also differ with children in the SA group including more negative content themes and less positive themes in their stories than children in the comparison group. Because preschool boys generally show lower regulation competencies than girls in clinical and normative populations [e.g., 49], girls were expected to show better emotion regulation competencies than boys in both groups.

Methods

Participants

A total of 127 French-speaking children, including 103 girls and 24 boys, aged 41–79 months old ($M = 57.1$ months; $SD = 10.1$) participated in this study. The sample comprised 62 sexually abused and 65 non-abused children. The SA group was recruited at two centers where children are assessed following disclosure of SA and the comparison

group from daycare centers and kindergartens in the Montreal area. The parents (93 % mothers), non-abusive parents for abused children, and early childhood educators or kindergarten teachers of these children were also recruited. For sake of simplicity, the term educators used in the text also refers to kindergarten teachers. Eight children (all in the SA group) did not attend daycare service or kindergarten and 31 educators did not complete or return the questionnaire, leaving a subsample of 88 children evaluated by their educator (53 in the comparison group, including 8 boys; 35 in the SA group, including 5 boys). More precisely, 12 educators in the comparison group and five in the SA group refused to complete the questionnaire, and 13 educators in the SA group were not contacted because the parents were worried about their reactions or reported they had a difficult relationship with them. In one case, someone related to the daycare service was identified as the abuser. The parents of three children who participated in the study did not complete the questionnaires. Sex, age, and ethnicity of children in the comparison group and in the SA group were similar but family structure, maternal education level, and annual family income were found to differ (see Table 1). Characteristics of the abuse for the SA group, when available, are also presented in Table 1.

Measures

Emotion regulation

Parents and educators completed a French version [50] of the ERC, a 24-item measure of emotion regulation [36]. Although the ERC was originally designed for clinical and normative samples of school-aged children, it has also been successfully used in studies with at-risk preschool samples [51, 52]. Respondents were asked to indicate on a Likert-type scale the frequency of behaviors observed in the child. Two subscales were derived from their answers: *Lability/Negativity* (15 items) and *Emotion Regulation* (8 items).

The ERC can efficiently discriminate between well-regulated and dysregulated children [52]. Its validity has been supported using criterion measures from the Emotion Regulation Observations and Emotion Regulation Q-Sort [36, 52]. In the present study, internal consistency for the *Lability/Negativity* and the *Emotion Regulation* scales of parents' ($\alpha = .82$ and $.61$) and educators' reports ($\alpha = .86$ and $.76$) was satisfactory, although parents' *Emotion Regulation* scale was at the lower limit.

In order to assess their inner emotion regulation processes, children completed eight stories from the *MacArthur Story Stem Battery* (MSSB) [45] selected for the variety of emotions they could elicit (e.g., sadness, fear, pain, joy, shame). One story was specifically designed for the purpose of this study to elicit disappointment (cancelled

Table 1 Socio-demographic variables of the sample and group differences

Variables	SA group (<i>n</i> = 62)	Comparison group (<i>n</i> = 65)	Statistical test
Mean age (months)	57.7 (11.5)	56.5 (8.7)	$t_{(125)} = -0.68$, ns
Gender			$\chi^2(1, N = 127) = 0.11$, ns
Girls	82.3 %	80.0 %	
Boys	17.7 %	20.0 %	
Ethnicity			$\chi^2(1, N = 124) = 0.96$, ns
Caucasian	81.4 %	87.7 %	
Other	18.6 %	12.3 %	
Family structure			$\chi^2(2, N = 127) = 45.80$, $p < .001$
Intact family	29.0 %	87.7 %	
Single-parent family	48.4 %	10.8 %	
Recomposed or foster family	22.6 %	1.5 %	
Maternal education level			$\chi^2(4, N = 124) = 50.52$, $p < .001$
Elementary school	5.1 %	0.0 %	
High school	42.4 %	3.1 %	
College level	30.5 %	15.4 %	
Undergraduate level	16.9 %	43.1 %	
Graduate level	5.1 %	38.5 %	
Annual family income			$\chi^2(1, N = 117) = 41.73$, $p < .001$
<60 000\$	85.2%	25.4 %	
>60 000\$	14.8 %	74.6 %	
Duration of the abuse (<i>n</i> = 52)			
One episode	36.5 %	NA	
More than one episode	63.5 %	NA	
Relation with the abuser			
Father figure	51.6 %	NA	
Not a father figure	48.4 %	NA	
Severity of the abuse (<i>n</i> = 57)			
No penetration	49.1 %	NA	
Attempted or actual penetration	50.9 %	NA	

NA not applicable

fun activity). The MSSB is a flexible assessment tool that can be adapted to researchers' specific objectives (e.g., moral, emotional, and social development, children's representations of adults) [45]. The stories were presented to each child by an interviewer. Each story consisted in an emotionally charged situation that needs to be resolved (e.g., spilled juice by a child, fear of a monster or a dog, parents leaving for a week-end, conflict with a friend). The interviewer invited the child to resolve the situation using a set of small human figures representing a family. Children's narratives during the tasks were audio recorded.

Children's narratives are believed to depend on their abilities to regulate the emotions elicited [53]. Well-regulated children can tell a coherent story that reaches emotional resolution and includes prosocial themes. Children with lower regulation capacities propose incoherent stories and include more aggression, conflicts, and negative emotions to their narratives [41, 42, 54]. Narrative coding

systems for the MSSB generally include codes relating to the content of the stories (what is happening) and child's performance (how the story is told) [45]. The content and form of children's narratives have been associated with parents' and educators' reports of internalized and externalized behavior problems, and measures of interpersonal relatedness, adjustment, and temperament [45, 54]. For the purpose of this study, a narrative coding system based on the Narrative Emotion Code [41, 54] and on the coding system of the MacArthur Group [42] was elaborated to specifically assess emotion regulation. It included 30 content items and 6 performance items relevant to the concept of emotion regulation. The content items were coded as present or absent (e.g., conflict resolution, affection, interest and concern for emotions of others), and the performance items coded on scales ranging from 0–2 (e.g., impulsivity, emotional lability) to 0–10 (narrative coherence). Inter-rater agreement, calculated on 25 % of the stories, was found to be adequate ($r = .79$).

To identify the underlying constructs of the coding system, a principal component analysis was performed using data from this sample. The factorability of the correlation matrices was assessed on the basis of the Kaiser-Meyer-Olkin measure of sampling adequacy ($KMO = .77$) and obtained a significant result on Bartlett's test of sphericity ($p < .001$). A four-factor solution was identified with the criteria derived from a parallel analysis [55]. Two of the content items (worry and sudden onset of sleep) were then dropped because they did not load on any of the four factors. The four factors are *Optimal Emotion Regulation* (11 items: empathy, affection, conflict resolution, narrative resolution, narrative coherence, etc.), *Under-Regulation/Aggression* (9 items: aggression, conflict escalation, sexualized activity, danger, grandiosity, emotional incoherence to negative—children's narrative switching from a positive to a negative emotion without a clear and understandable transition, etc.), *Lability/Impulsivity* (eight items: emotional incoherence to positive, emotional exacerbation, vocal lability, impulsivity, etc.), and *Conflicts* (six items: conflicts, blaming others, anger, etc.). Internal consistency for each factor is, respectively, .77, .65, .73 and .60.

A summation of the child's scores on each item composing the four factors for the nine stories was computed to obtain four scores of emotion regulation per child. This strategy was used to insure comparability of our results with previous studies using the MSSB.

Expressive vocabulary

Because narrative performance has been shown to be associated with verbal abilities in preschoolers [41] and given the positive association between SA and speech/language disabilities [56], expressive vocabulary was assessed in children as a control variable using the French version of the Expressive One-Word Picture Vocabulary Test (EOW) [57]. Children were presented with a series of pictures they were asked to identify. Standard scores were derived from their performance. The EOW presents adequate psychometric properties with internal consistency (α) varying between .95 and .96, depending on child's age, and a mean test-retest stability of $r = .90$ [57]. Inter-rater agreement on score calculation and acceptability of responses was, respectively, 100 and 99.4 % [57].

Sociodemographic and abuse characteristics

Sociodemographic characteristics of the participants, such as family structure, ethnicity, maternal education level, and family annual income, were obtained through parental reports. Information regarding the characteristics of the SA was compiled from a short questionnaire completed by parents and from the medical records.

Procedure

Informed written consent was obtained from parents and educators. Children's consent was obtained orally. Sexually abused children and their parents were met in the clinical settings and families in the comparison group at home. An extensively trained research assistant presented children with the MSSB and the EOW while their parents completed the questionnaires in a separate room. If parents agreed, educators were sent a consent form and questionnaire by mail and asked to return them. After a month, if necessary, a reminder was sent by mail and, after 2 months, an assistant called. Small financial compensations were given to parents (\$20) and educators (\$5) and small gifts were offered to the children (e.g., stickers, arts and crafts material). The study was approved by Ethic Committees of Centre Hospitalier Universitaire Sainte-Justine and Université du Québec à Montréal.

Results

Preliminary analyses showed that all variables were normally distributed except for the *Under-Regulation/Aggression* and *Conflicts* scores which were transformed using a square-root and a logarithmic transformation. *T* tests and Chi square tests were used to compare the sociodemographic characteristics and expressive language abilities of girls and boys in the SA group and the comparison group. Differences were found in family structure, maternal education level, and family income (see Table 1). The expressive language scores of abused girls and boys were also lower: $t(125) = 6.07, p < .001$. Abused boys and girls were compared and did not differ on any of these variables: age, family structure, family income, maternal education level, expressive language, and abuse characteristics. Sexually abused boys had lower expressive language abilities ($t(22) = 3.26, p < .01$), were more likely to live in a single-parent and a low income family ($\chi^2(2) = 8.37, p < .05$ and $\chi^2(1) = 8.56, p < .01$), and their mothers had lower education levels ($\chi^2(4) = 11.41, p < .05$) compared to non-abused boys.

Correlations between scores of emotion regulation

Correlations between the *Lability/Negativity* and *Emotion Regulation* scores from parents' and educators' reports and the *Optimal Emotion Regulation*, the *Under-Regulation/Aggression*, the *Lability/Impulsivity* and the *Conflicts* scores derived from children's narratives were calculated to evaluate cross-informant agreement (see Table 2). Moderate to high significant correlations were found between parents' and educators' evaluations and a few significant, but small, correlations found between adults' reports and the narrative measures. Because combining

Table 2 Correlations between Measures of Emotion Regulation

Measures	1	2	3	4	5	6	7	8
Parents' evaluation								
1. Lability/Negativity	–							
2. Emotion Regulation	–.46***	–						
Educators' evaluation								
3. Lability/Negativity	.50**	–.33**	–					
4. Emotion Regulation	–.31**	.31**	–.41***	–				
Narrative measures								
5. Optimal Emotion Regulation	.02	.22*	–.21*	.29**	–			
6. Under-regulation/Aggression	.17†	–.18*	.25*	–.05	–.12	–		
7. Lability/Impulsivity	.17†	–.02	.25*	–.06	.08	.54***	–	
8. Conflicts	–.04	.13	–.02	.05	.20*	.52***	.51***	–

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

educators' and parents' reports would result in an important loss of participants, subsequent analyses were performed on each ERC score separately and on narrative scores.

Comparison of emotion regulation competencies in abused and non-abused children

As recommended by Asparouhov and Muthen [58], Full Information Maximum Likelihood procedures (FIML) were implemented in Mplus in order to take into account the missing educators' and parents' evaluations. Standardized scores were used. Family structure, which is highly correlated with maternal education level ($r = -.60$, $p < .01$) and family annual income ($r = -.56$, $p < .01$), was used as a covariate to control for differences in characteristics between the SA and the comparison groups. Standard scores of expressive vocabulary were used as covariates in the analyses of the narrative measures. The mean scores and standard deviations of each emotion regulation variable for each group and the results of the FIML are presented in Table 3.

Parents' reports

A group \times sex interaction was found on the *Lability/Negativity* scale derived from parental reports (see Fig. 1). Post-hoc analyses (using Bonferroni correction to adjust for multiple comparisons) revealed higher *Lability/Negativity* scores in abused boys than in abused and non-abused girls. A main effect of group was found with higher *Lability/Negativity* scores for the SA group. No main effect of sex was found. The covariate Family Structure was significantly associated with the *Lability/Negativity* scores: $\beta = .24$, $p < .05$.

A significant group \times sex interaction was found on the *Emotion Regulation* scale derived from parental reports

(see Fig. 1). Post-hoc analyses revealed no significant difference between boys and girls in the comparison group, but a significant sex difference in the SA group with higher scores for girls. Sexually abused boys also presented lower scores on the *Emotion Regulation* scale than non-abused boys and girls. A significant main effect of group was also found indicating lower scores for the SA group. There was no main effect of sex. The covariate Family Structure was significantly associated with scores on the *Emotion regulation* scale: $\beta = -.22$, $p < .01$.

Educators' reports

Analysis conducted on the scores derived from educators' reports revealed no significant group \times sex interaction and no group effect for the *Lability/Negativity* scale. However, a main effect of sex was found with boys obtaining higher scores than girls (Fig. 2). The covariate Family Structure was not significantly associated with scores on this scale. A significant main effect of group was found in the *Emotion Regulation* scale with children in the SA group presenting lower scores than children in the comparison group (Fig. 2). No main effect of sex and no group \times sex interaction were found on this scale and the covariate Family Structure was not significantly associated with scores.

Children's narratives

Analysis performed on the *Optimal Emotion Regulation* scores yielded no main effects of group, nor sex, and no group \times sex interaction. However, a main effect of Expressive Vocabulary was found: $\beta = .24$, $p < .01$. The covariate Family Structure was not significantly associated with scores of *Optimal Emotion Regulation*.

Analysis revealed a significant group \times sex interaction in *Under-Regulation/Aggression* (see Fig. 3). The results

Table 3 Mean scores and standard deviation of emotion regulation measures as a function of group and sex and results of the FIML (n = 127)

Emotion regulation measures	Girls	Boys M (SD)	Effect of group	Effect of sex β (p)	Group \times sex
Parents' evaluation					
Lability/Negativity			.48* (.01)	.03 (.78)	-.51* (.01)
SA group	14.13 (7.31)	20.27 (6.93)			
Comparison group	12.12 (5.13)	11.92 (3.62)			
Emotion regulation			-.94*** (.00)	-.06 (.53)	.76*** (.00)
SA group	18.85 (2.60)	14.73 (1.74)			
Comparison group	20.88 (2.52)	21.23 (2.35)			
Educators' evaluation					
Lability/Negativity			.36 (.14)	-.28* (.03)	-.26 (.31)
SA group	9.90 (6.94)	18.60 (4.78)			
Comparison group	6.56 (5.50)	12.00 (8.14)			
Emotion regulation			-.45* (.05)	.16 (.19)	.20 (.42)
SA group	15.97 (4.32)	12.60 (2.88)			
Comparison group	19.31 (3.30)	17.25 (2.05)			
Narrative measures					
Optimal Emotion Regulation			-.27 (.17)	.18 (.10)	-.04 (.85)
SA group	98.41 (29.31)	88.00 (29.79)			
Comparison group	116.58 (20.29)	106.92 (25.82)			
Under-Regulation/Aggression			.23 (.27)	-.12 (.29)	-.47* (.04)
SA group	2.25 (1.29)	3.91 (1.61)			
Comparison group	2.36 (1.28)	2.70 (1.67)			
Lability/Impulsivity			-.05 (.82)	-.06 (.63)	-.14 (.52)
SA group	17.96 (11.39)	24.27 (16.37)			
Comparison group	19.10 (11.66)	21.62 (12.41)			
Conflicts					
SA group	1.14 (0.17)	1.12 (0.18)			
Comparison group	1.18 (0.19)	1.19 (0.24)			

SA sexual abuse

* $p < .05$; *** $p < .001$

of post hoc analyses revealed higher scores in sexually abused boys than in abused girls, but no differences between abused and non-abused boys. No main effect of sex or group was found. The covariate Family Structure was not significantly associated with *Under-Regulation/Aggression*, but Expressive Vocabulary was: $\beta = -.21$, $p < .01$.

No main effect of group and sex and no group \times sex interaction were found in the *Lability/Impulsivity* and *Conflicts* scales. Neither Family Structure, nor Expressive Vocabulary were significantly associated with scores on these scales.

Discussion

The aim of this study was to investigate emotion regulation competencies in sexually abused preschoolers by

comparing them with non-abused children using a multi-informant approach. In accordance with our hypothesis, significant differences were found between the two groups. Parents reported more *Lability/Negativity* in sexually abused children and lower scores of *Emotion Regulation*. Lower scores of *Emotion regulation* were also found in educators' reports. Differences were more salient in emotion expressions, positive engagement with others, and empathy than in the level of negativity, emotional lability, and dysregulated behaviors.

However, group \times sex interaction effects indicate that the group differences found in parents' evaluation are entirely attributable to the low *Emotion Regulation* and high *Lability/Negativity* scores of sexually abused boys. Thus, according to parents, sexually abused boys show more important deficits in positive engagement with others, emotion expression, and empathy. Another study of sexually abused preschoolers based on mothers' reports

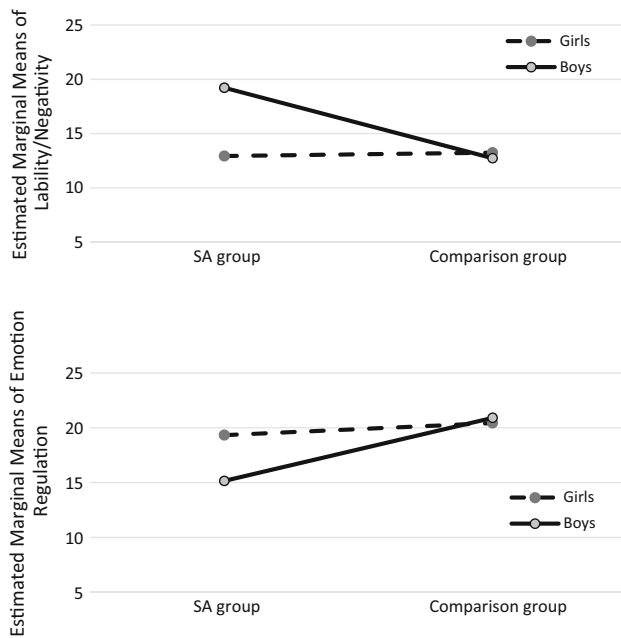


Fig. 1 Parents' reports of emotion regulation competencies in children as a function of group and sex. *Note* Both group \times sex interaction effects were significant for parents' reports

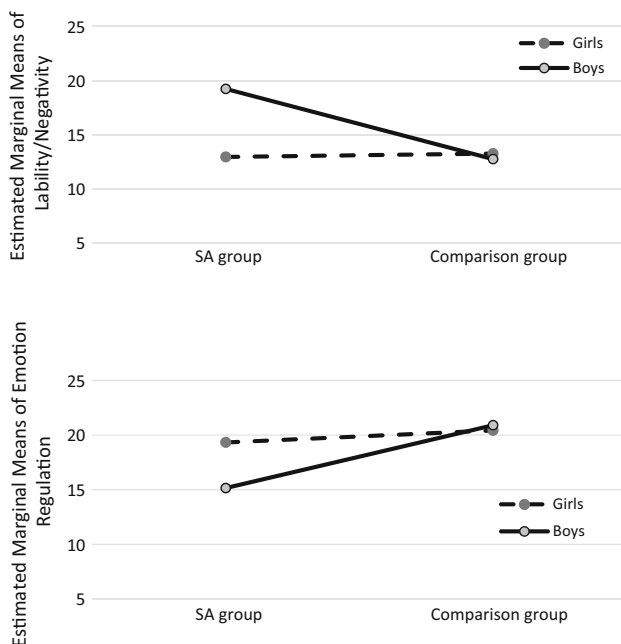


Fig. 2 Educators' reports of emotion regulation competencies in children as a function of group and sex. *Note* No group \times sex interaction effects were significant with educators' reports

found higher levels of dissociative symptoms in abused boys than in abused girls and non-abused boys and girls [11]. A group \times sex interaction was also found in children's narratives. Clyman [44] reported similar results in a

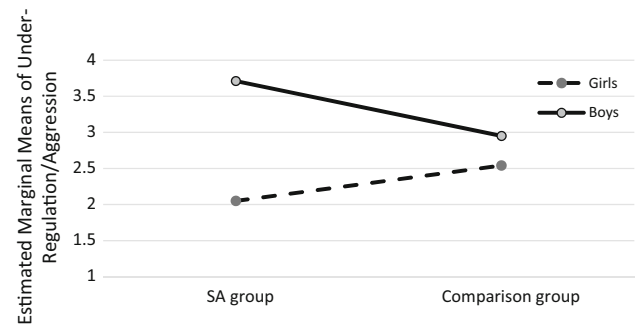


Fig. 3 Narrative measure of emotion regulation competencies in children as a function of group and sex. *Note* The group \times sex interaction effect was significant for the Under-Regulation/Aggression scores

sample of maltreated and non-maltreated preschoolers using the MSSB. Maltreated boys incorporated more aggressive themes in their stories than maltreated girls.

We predicted that girls would present better emotion regulation competencies than boys in both groups. However, only one main effect of sex was found: educators reported lower scores of *Lability/Negativity* in girls than in boys of both groups. Group \times sex interactions were found in most of the other measures of emotion regulation with sexually abused boys showing poor emotion regulation abilities. Previous studies have reported sex differences in emotion regulation competencies of maltreated and non-maltreated children, but no group \times sex interactions [27, 36, 38]. These studies included older children victims of various types of maltreatment and were based on camp counselors' evaluations on the ERC. Camp counselors' evaluations may be closer to those of educators than to those of parents because of the context and the nature of their relationship with the assessed child.

Emotion regulation competencies can be understood in terms of control styles. Eisenberg and Morris [59] described three styles of control in children: overcontrol, undercontrol, and optimal control. Children with externalizing disorders were found to exhibit increased levels of negative emotions and impulsivity, an indication of under regulation of emotions [17, 60]. On the other hand, children presenting internalizing disorders tend to overcontrol or inhibit their emotions, as suggested by their tendency to exhibit positive emotion despite experiencing anger, and by their lower awareness of their own and others' emotional states [17, 60].

Gender role norms prescribe greater self-control and positive emotion display to girls than to boys and disturbing behaviors, such as aggression and anger display, are more likely to be punished in girls [49, 61, 62]. Socialization pressures could explain why girls have better emotion regulation competencies. But socialization could also result

in a tendency to inhibit emotion expressions in abused girls. Overcontrol of emotion in the preschool period could lead to the development of internalized behavior problems in girls, while undercontrol of emotions in boys might lead to externalized behavior problems. Sexually abused boys have been found to present more externalized behavior problems at school age and adolescence, while abused girls present more internalized behavior problems [63].

There is some evidence that boys are more likely to react to stressful life events by externalizing their distress while girls tend to internalize distress. A recent longitudinal study found distinct trajectory of internalized and externalized behavior problems among boys and girls maltreated at an early age [64]. At the most proximal measure (around age 4), maltreated boys showed more behavior problems than non-maltreated boys, but their level of behavior problems decreased over time. In contrast, the effect of maltreatment on behavior problems for girls was the weakest at age 4 and increased over time, but the group difference never became significant. This suggests a possible delay in girls' reactions to trauma. Emotion regulation and behavioral disorders may be more subtle and difficult to assess in young girls than in boys because of their internalized nature. This could be the case with our sample. A detailed inspection of their narratives indicates lower scores of empathy and of emotion expressions in sexually abused girls than in non-abused girls. The specific impact of SA on girls' emotion regulation competencies clearly needs to be further investigated.

An important strength of this study is the use of multi-informant measures with the inclusion of a narrative task. Expressive vocabulary was associated with the narrative measure of *Optimal Emotion Regulation* and *Under-Regulation/Aggression*, a finding similar to previous studies reporting association between emotion regulation and language [46, 47]. Children with better expressive competencies might have additional tools to regulate their emotions than children with lower language competencies [46].

Agreements between parents and educators were moderate to high, which is similar and even higher than what was found in a study comparing parents' and educators' reports of preschoolers' behavior problems [65]. Agreements between adult informants and the narrative measures were smaller and some correlations were not significant. Other studies have found similar [66] to higher [67] associations between adults' reports of children symptomatology and measures derived from the MSSB. Part of the discrepancies between informants could be explained by differences in measurement type. Narratives are used for exploring children's inner world [68], more specifically in the present study, their inner regulatory processes in response to emotionally charged situations. These narratives were produced in a particular context in the presence of a

stranger and in response to hypothetical emotions. On the other hand, parents' and educators' evaluations were based on a prototypical representation of the child, i.e. an aggregation of child's behavior in various situations eliciting various emotions indiscriminately. Another plausible explanation for these discrepancies is that children's behaviors in the narrative context could differ from those observed in familiar situations. The two measures could also assess distinct constructs [35]. Both types of measurement are nevertheless complementary and reveal relevant components of children's emotion regulation competencies. Further investigation of children's narratives and of their associations with other measures of emotion regulation is clearly needed.

The present study represents a significant contribution to the field of SA research by its unique design: a sample of preschoolers including a comparison group and children of both genders, a multi-informant perspective with a narrative measure, and a focus on emotion regulation. The coding system designed for the purpose of this study is quite innovative as it allows to assess children's inner emotion regulatory processes in a playful context. Demonstrating acceptable psychometric properties, such a system represents an interesting option for assessing emotion regulation in children as young as 3 years of age [68]. Hence, this study provides the first reliable data on emotion regulation competencies in sexually abused preschoolers.

Still, certain limitations are worth mentioning. Although the total sample size is comparable to those of other studies of sexually abused preschoolers, the number of missing evaluations from educators in the SA group is relatively high. Furthermore, the small proportion of boys in the sample limits the statistical power and generalization of our findings. Although abused boys did not differ from abused girls and non-abused boys on a number of variables, deficits observed in abused boys may be explained by variables that were not measured. The correlational nature of this study also prevents from drawing conclusions about directionality of the effects. Future studies should further investigate emotion regulation in sexually abused preschoolers using a prospective longitudinal study and extending the sample size, especially the number of boys. Exploring the associations between emotion regulation competencies and psychopathology in sexually abused children could also be an interesting avenue.

In conclusion, the results of this study reveal a significant association between SA and emotion regulation difficulties with a stronger association for boys than for girls. This study provides unique findings regarding SA correlates in preschool children emphasizing the need for an in-depth exploration of emotion regulation in sexually abused children. Although replication studies are essential,

our findings underscore some issues of potential relevance for clinicians. As suggested by our results, emotion regulation abilities might be affected in different ways in abused boys and girls. An in-depth assessment of emotion regulation is therefore essential prior to any treatment implementation.

Our results suggest that fostering the ability to identify and understand one's own emotions and those of others, to positively express them, and to develop empathy might be of particular relevance with young sexually abused children. For boys, an additional focus on favouring a positive engagement with others could be considered. Specific modules [69] targeting aspects of emotion regulation could be incorporated to a trauma-focused cognitive behavioral therapy [70], the most recognized treatment for sexually abused children. Other treatment modalities might be used such as parental coaching to help parents become better models of emotion regulation for their child, and to increase their sensitivity and the appropriateness of their responses to their child's emotional needs [18]. A brief dyadic attachment-based intervention might also be recommended [71]. No matter what treatment modality is used, targeting various aspects of emotion regulation in sexually abused children could have a significant impact on their socioemotional development and reduce the risk of concurrent or later psychopathology [24, 69].

Summary

The development of emotion regulation skills is a major task for preschool-aged children [15]. Previous studies have shown that emotion regulation is closely related to mental health in children and adults [17, 24, 25]. Experiencing trauma, such as SA, during this crucial period could impair the development of adequate emotion regulation skills and seriously compromise later functioning [15, 20]. Correlates of SA such as internalized and externalized symptoms involve emotion regulation deficits [17]. Associations have also been found between experiences of maltreatment and emotion regulation disorders [27]. Despite the specific nature of SA, and the importance of the preschool period in emotion regulation development, to our knowledge, no study has specifically explored emotion regulation in sexually abused preschoolers. The aim of this study was to compare emotion regulation competencies in sexually abused ($n = 62$) and non-abused preschoolers ($n = 65$). A multi-perspective assessment was used: emotion regulation was evaluated by parents and early childhood educators with the *Emotion Regulation Checklist* [36], and observed in a series of tasks from the *MacArthur Story Stem Battery* [45] using a narrative coding system. Results revealed that sexually abused children, especially

boys, presented lower emotion regulation skills than non-abused children. More specifically, parents reported more *Lability/Negativity* in sexually abused children and lower scores of *Emotion Regulation*. Lower scores of *Emotion regulation* were also found in educators' reports. Higher scores of *Under-Regulation/Aggression* were also derived from the narratives of sexually abused boys. This study has significant research and clinical implications.

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References

- Collin-Vézina D, Daigneault I, Hébert M (2013) Lessons learned from child sexual abuse research: prevalence, outcomes, and preventive strategies. *Child Adolesc Psychiatry Ment Health*. doi:10.1186/1753-2000-7-22
- Stoltenborgh M, van Ijzendoorn MH, Euser EM, Bakermans-Kranenburg MJ (2011) A global perspective on child sexual abuse: meta-analysis of prevalence around the world. *Child Maltreat* 16:79–101. doi:10.1177/1077559511403920
- Nelson S, Baldwin N, Taylor J (2012) Mental health problems and medically unexplained physical symptoms in adult survivors of childhood sexual abuse: an integrative literature review. *J Psychiatr Ment Health Nurs* 19:211–220. doi:10.1111/j.1365-2850.2011.01772.x
- Lacelle C, Hébert M, Lavoie F, Vitaro F, Tremblay RE (2012) Sexual health in women reporting a history of child sexual abuse. *Child Abuse Negl* 36:247–259. doi:10.1016/j.chiabu.2011.10.011
- Trickett PK, Noll JG, Putnam FW (2011) The impact of sexual abuse on female development: lessons from a multigenerational, longitudinal research study. *Dev Psychopathol* 23:453–476. doi:10.1017/s0954579411000174
- Yancey CT, Hansen DJ, Naufel KZ (2011) Heterogeneity of individuals with a history of child sexual abuse: an examination of children presenting to treatment. *J Child Sex Abus* 20:111–127. doi:10.1080/10538712.2011.554341
- Daigneault IV, Hébert M (2008) Short-term correlates of child sexual abuse: an exploratory study predicting girls' academic, cognitive, and social functioning 1 year later. *J Child Adolesc Trauma* 1:301–316. doi:10.1080/19361520802505693
- U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau (2013) Child maltreatment 2012. Retrieved from <http://www.acf.hhs.gov/>
- Finkelhor D, Turner H, Ormrod R, Hamby SL (2009) Violence, abuse, and crime exposure in a national sample of children and youth. *Pediatrics* 124:1411–1423. doi:10.1542/peds.2009-0467
- Hulette AC, Freyd JJ, Pears KC, Kim HK, Fisher PA, Becker-Blease KA (2008) Dissociation and posttraumatic symptoms in maltreated preschool children. *Child Adolesc Trauma* 1:93–108. doi:10.1080/19361520802083980
- Bernier MJ, Hébert M, Collin-Vézina D (2013) Dissociative symptoms over a year in a sample of sexually abused children. *J Trauma Dissociation* 14:455–472. doi:10.1080/15299732.2013.769478

12. Mian M, Marton P, LeBaron D (1996) The effects of sexual abuse on 3- to 5-year-old girls. *Child Abuse Negl* 20:731–745. doi:[10.1016/0145-2134\(96\)00061-0](https://doi.org/10.1016/0145-2134(96)00061-0)
13. Berthelot N, Langevin R, Hébert M (2012) L'association entre la victimisation sexuelle dans l'enfance de la mère et les troubles de comportement chez l'enfant victime d'agression sexuelle [The association between mothers' sexual victimization and behavior problems in sexually abused children]. *Journal international de victimologie* 10:8–20
14. Hébert M, Langevin R, Bernier MJ (2013) Self-reported symptoms and parents' evaluation of behavior problems in preschoolers disclosing sexual abuse. *Int J Child Youth Fam Stud* 4:467–483
15. Calkins SD, Hill AL (2007) Caregiver influences on emerging emotion regulation: biological and environmental transactions in early development. In: Gross JJ (ed) *Handbook of emotion regulation*. The Guilford Press, New York, pp 229–248
16. Thompson RA (1994) Emotion regulation: a theme in search of definition. *Monogr Soc Res Child Dev* 59:25–52. doi:[10.1111/j.1540-5834.1994.tb01276.x](https://doi.org/10.1111/j.1540-5834.1994.tb01276.x)
17. Southam-Gerow MA, Kendall PC (2002) Emotion regulation and understanding: implications for child psychopathology and therapy. *Clin Psychol Rev* 22:189–222. doi:[10.1016/s0272-7358\(01\)00087-3](https://doi.org/10.1016/s0272-7358(01)00087-3)
18. Thompson RA (2013) Socialization of emotion and emotion regulation in the family. In: Gross JJ (ed) *Handbook of emotion regulation*, 2nd edn. The Guilford Press, New York, pp 173–186
19. Alink L, Cicchetti D, Kim J, Rogosch F (2009) Mediating and moderating processes in the relation between maltreatment and psychopathology: mother–child relationship quality and emotion regulation. *J Abnorm Child Psychol* 37:831–843. doi:[10.1007/s10802-009-9314-4](https://doi.org/10.1007/s10802-009-9314-4)
20. Thompson RA, Calkins SD (1996) The double-edged sword: emotional regulation for children at risk. *Dev Psychopathol* 8:163–182. doi:[10.1017/S0954579400007021](https://doi.org/10.1017/S0954579400007021)
21. Cicchetti D, Toth SL (1995) A developmental psychopathology perspective on child abuse and neglect. *J Am Acad Child Adolesc Psychiatry* 34:541–565. doi:[10.1097/00004583-199505000-00008](https://doi.org/10.1097/00004583-199505000-00008)
22. Finkelhor D, Browne A (1985) The traumatic impact of child sexual abuse: a conceptualization. *Am J Orthopsychiatry* 55:530–541. doi:[10.1111/j.1939-0025.1985.tb02703.x](https://doi.org/10.1111/j.1939-0025.1985.tb02703.x)
23. Spaccarelli S (1994) Stress, appraisal, and coping in child sexual abuse: a theoretical and empirical review. *Psychol Bull* 116:340–362. doi:[10.1037/0033-2909.116.2.340](https://doi.org/10.1037/0033-2909.116.2.340)
24. Cole P, Deater-Deckard K (2009) Emotion regulation, risk, and psychopathology. *J Child Psychol Psychiatry* 50:1327–1330. doi:[10.1111/j.1469-7610.2009.02180.x](https://doi.org/10.1111/j.1469-7610.2009.02180.x)
25. Gross JJ (2013) *Handbook of emotion regulation*, 2nd edn. The Guilford Press, New York
26. Kim J, Cicchetti D (2010) Longitudinal pathways linking child maltreatment, emotion regulation, peer relations, and psychopathology. *J Child Psychol Psychiatry* 51:706–716. doi:[10.1111/j.1469-7610.2009.02202.x](https://doi.org/10.1111/j.1469-7610.2009.02202.x)
27. Kim J, Cicchetti D, Rogosch FA (2013) A longitudinal study of emotion regulation, emotion lability-negativity, and internalizing symptomatology in maltreated and nonmaltreated children. *Child Dev* 84:512–527. doi:[10.1111/j.1467-8624.2012.01857.x](https://doi.org/10.1111/j.1467-8624.2012.01857.x)
28. Maughan A, Cicchetti D (2002) Impact of child maltreatment and interadult violence on children's emotion regulation abilities and socioemotional adjustment. *Child Dev* 73:1525–1542. doi:[10.1111/1467-8624.00488](https://doi.org/10.1111/1467-8624.00488)
29. Pears KC, Fisher PA, Bruce J, Kim HK, Yoerger K (2010) Early elementary school adjustment of maltreated children in foster care: the roles of inhibitory control and caregiver involvement. *Child Dev* 81:1550–1564. doi:[10.1111/j.1467-8624.2010.01491.x](https://doi.org/10.1111/j.1467-8624.2010.01491.x)
30. Shipman K, Zeman J, Penza S, Champion K (2000) Emotion management skills in sexually maltreated and nonmaltreated girls: a developmental psychopathology perspective. *Dev Psychopathol* 12:47–62. doi:[10.1017/s0954579400001036](https://doi.org/10.1017/s0954579400001036)
31. De Los Reyes A, Kazdin AE (2005) Informant discrepancies in the assessment of childhood psychopathology: a critical review, theoretical framework, and recommendations for further study. *Psychol Bull* 131:483–509. doi:[10.1037/0033-2909.131.4.483](https://doi.org/10.1037/0033-2909.131.4.483)
32. Kim K, Trickett PK, Putnam FW (2010) Childhood experiences of sexual abuse and later parenting practices among non-offending mothers of sexually abused and comparison girls. *Child Abuse Negl* 34:610–622. doi:[10.1016/j.chiabu.2010.01.007](https://doi.org/10.1016/j.chiabu.2010.01.007)
33. Weems CF, Taylor LK, Marks AB, Varela RE (2010) Anxiety sensitivity in childhood and adolescence: parent reports and factors that influence associations with child reports. *Cogn Ther Res* 34:303–315. doi:[10.1007/s10608-008-9222-x](https://doi.org/10.1007/s10608-008-9222-x)
34. DelCarmen-Wiggins R, Carter A (2004) Measurement issues: introduction. In: DelCarmen-Wiggins R, Carter A (eds) *Handbook of infant, toddler, and preschool mental health assessment*. Oxford University Press, New York, pp 183–184
35. De Los Reys A (2011) More than measurement error: discovering meaning behind informant discrepancies in clinical assessment of children and adolescents. *J Clin Child Adolesc Psychol* 40:1–9. doi:[10.1080/15374416.2011.533405](https://doi.org/10.1080/15374416.2011.533405)
36. Shields A, Cicchetti D (1997) Emotion regulation among school-age children: the development and validation of a new criterion Q-sort scale. *Dev Psychol* 33:906–916. doi:[10.1037/0012-1649.33.6.906](https://doi.org/10.1037/0012-1649.33.6.906)
37. Adrian M, Zeman J, Veits G (2011) Methodological implications of the affect revolution; a 35-year review of emotion regulation assessment in children. *J Exp Child Psychol* 110:171–197. doi:[10.1016/j.jecp.2011.03.009](https://doi.org/10.1016/j.jecp.2011.03.009)
38. Shields A, Cicchetti D (1998) Reactive aggression among maltreated children: the contributions of attention and emotion dysregulation. *J Clin Child Psychol* 27:381–395. doi:[10.1207/s15374424jccp2704_2](https://doi.org/10.1207/s15374424jccp2704_2)
39. Adrian M, Zeman J, Erdley C, Lisa L, Homan K, Sim L (2009) Social contextual links to emotion regulation in an adolescent psychiatric inpatient population: Do gender and symptomatology matter? *J Child Psychol Psychiatry* 50:1428–1436. doi:[10.1111/j.1469-7610.2009.02162.x](https://doi.org/10.1111/j.1469-7610.2009.02162.x)
40. Choi J, Oh K (2014) Cumulative childhood trauma and psychological maladjustment of sexually abused children in Korea: mediating effects of emotion regulation. *Child Abuse Negl* 38:296–303. doi:[10.1016/j.chiabu.2013.09.009](https://doi.org/10.1016/j.chiabu.2013.09.009)
41. Jachimowicz T (2010) Can they use their words? An investigation of the relationship between language competence and emotion regulation in preschool-aged children (Doctoral dissertation). Available from ProQuest Dissertations and Theses database (UMI No. 3407639)
42. Robinson JL, Kelsay KJ (2002) Le complément d'histoire de MacArthur: un nouvel outil d'évaluation [The MacArthur Story Stem Battery: a new evaluation tool]. *Devenir* 14:401–414. doi:[10.3917/dev.024.0401](https://doi.org/10.3917/dev.024.0401)
43. Buchsbaum HK, Toth SL, Clyman RB, Cicchetti D, Emde RN (1992) The use of a narrative story stem technique with maltreated children: implications for theory and practice. *Dev Psychopathol* 4:603–625. doi:[10.1017/S0954579400004892](https://doi.org/10.1017/S0954579400004892)
44. Clyman RB (2003) Portrayals in maltreated children's play narratives: representations or emotion regulation? In: Emde RN, Wolf D, Oppenheim D (eds) *Revealing the inner worlds of young children: The MacArthur Story Stem Battery and parent–child narratives*. Oxford Press, New York, pp 201–221
45. Bretherton I, Oppenheim D (2003) The MacArthur Story Stem Battery: development, administration, reliability, validity, and reflections about meaning. In: Emde RN, Wolf D, Oppenheim D

- (eds) Revealing the inner worlds of young children: The MacArthur Story Stem Battery and parent–child narratives. Oxford Press, New York, pp 50–80
46. Cole PM, Armstrong LM, Pemberton CK (2010) The role of language in the development of emotion regulation. In: Calkins SD, Bell MA (eds) Child development at the intersection of emotion and cognition. American Psychological Association, Washington, DC, pp 59–77
 47. Stansbury K, Zimmermann LK (1999) Relations among child language skills, maternal socializations of emotion regulation, and child behavior problems. *Child Psychiatry Hum Dev* 30:121–142. doi:[10.1023/A:1021954402840](https://doi.org/10.1023/A:1021954402840)
 48. Lieberman AF, Ippen CG (2011) Mental health intervention in infancy and early childhood. In: Keating DP (ed) Nature and nurture in early child development. Cambridge University Press, New York, pp 188–216
 49. Else-Quest NM, Hyde JS, Goldsmith HH, Van Hulle CA (2006) Gender differences in temperament: a meta-analysis. *Psychol Bull* 132:33–73. doi:[10.1037/0033-2909.132.1.33](https://doi.org/10.1037/0033-2909.132.1.33)
 50. Langevin R, Hébert M, Cossette L (2010) Adaptation française du Québec à Montréal, Montréal. Unpublished work. Université du Québec à Montréal, Montréal
 51. Miller AL, Gouley KK, Seifer R, Dickstein S, Shields A (2004) Emotions and behaviors in the head start classroom: associations among observed dysregulation, social competence, and preschool adjustment. *Early Educ Dev* 15:147–165. doi:[10.1207/s15566935eed1502_2](https://doi.org/10.1207/s15566935eed1502_2)
 52. Shields A, Dickstein S, Seifer R, Giusti L, Magee KD, Spritz B (2001) Emotional competence and early school adjustment: a study of preschoolers at risk. *Early Educ Dev* 12:73–96. doi:[10.1207/s15566935eed1201_5](https://doi.org/10.1207/s15566935eed1201_5)
 53. MacFie J, Swan SS (2009) Representations of the caregiver–child relationship and of the self, and emotion regulation in the narratives of young children whose mothers have borderline personality disorder. *Dev Psychopathol* 21:993–1011. doi:[10.1017/S0954579409000534](https://doi.org/10.1017/S0954579409000534)
 54. Warren SL (2003) Narrative emotion coding system. In: Emde RN, Wolf DP, Oppenheim D (eds) Revealing the inner worlds of young children: The MacArthur Story Stem Battery and parent–child narratives. Oxford University Press, New-York, pp 55–80
 55. Achim A (2013) Parallel analysis. Retrieved from www.er.uqam.ca/nobel/r11274/PSY7105.html
 56. Sullivan PM, Knutson JF (2000) Maltreatment and disabilities: a population-based epidemiological study. *Child Abuse Negl* 24:1257–1273. doi:[10.1016/s0145-2134\(00\)00190-3](https://doi.org/10.1016/s0145-2134(00)00190-3)
 57. Brownell R (2000) Expressive one-word picture vocabulary test manual. Academic Therapy Publications, Novato
 58. Asparouhov T, Muthen BO (2010, September 29) Multiple imputation with Mplus. Retrieved from: <http://statmodel.com/download/Imputations7.pdf>
 59. Eisenberg N, Hofer C, Sulik MJ, Spinrad TL (2013) Self-regulation, effortful control, and their socioemotional correlates. In: Gross JJ (ed) Handbook of emotion regulation, 2nd edn. The Guilford Press, New York, pp 157–172
 60. Zeman J, Cassano M, Perry-Parrish C, Stegall S (2006) Emotion regulation in children and adolescents. *J Dev Behav Pediatr* 27:155–168
 61. Brody LR, Hall JA (2014) Gender and emotion in context. In: Lewis M, Haviland-Jones JM, Barrett LF (eds) Handbook of emotions, 3rd edn. The Guilford Press, New York, pp 395–408
 62. Chaplin TM, Aldao A (2013) Gender differences in emotion expression in children: a meta-analytic review. *Psychol Bull* 139:735–765. doi:[10.1037/a0030737](https://doi.org/10.1037/a0030737)
 63. Yancey CT, Hansen DJ (2010) Relationship of personal, familial, and abuse-specific factors with outcome following childhood sexual abuse. *Aggress Violent Behav* 15:410–421. doi:[10.1016/j.avb.2010.07.003](https://doi.org/10.1016/j.avb.2010.07.003)
 64. Godinet MT, Li F, Berg T (2014) Early childhood maltreatment and trajectories of behavioral problems: exploring gender and racial differences. *Child Abuse Negl* 38:544–556. doi:[10.1016/j.chiabu.2013.07.018](https://doi.org/10.1016/j.chiabu.2013.07.018)
 65. Rescorla LA, Achenbach TM, Ivanova MY, Bilenberg N, Bjar-nadottir G, Denner S et al (2012) Behavioral/emotional problems of preschoolers: caregiver/teacher reports from 15 societies. *J E-mot Behav Disord* 20:68–81. doi:[10.1177/1063426611434158](https://doi.org/10.1177/1063426611434158)
 66. Beresford C, Robinson JL, Holmberg J, Ross RG (2007) Story stem responses of preschoolers with mood disturbances. *Attach Hum Dev* 9:255–270. doi:[10.1080/14616730701455429](https://doi.org/10.1080/14616730701455429)
 67. Oppenheim D (2003) Children’s emotional resolution of MSSB narratives: relations with child behavior problems and parental psychological distress. In: Emde RN, Wolf DP, Oppenheim D (eds) Revealing the inner worlds of young children: The MacArthur Story Stem Battery and parent–child narratives. Oxford University Press, New York, pp 55–80
 68. Emde RN (2003) Early narrative: a window to the child’s inner world. In: Emde RN, Wolf D, Oppenheim D (eds) Revealing the inner worlds of young children: The MacArthur Story Stem Battery and parent–child narratives. Oxford University Press, New York, pp 3–26
 69. Southam-Gerow MA (2013) Emotion regulation in children and adolescent: a practitioner’s guide. The Guilford Press, New York
 70. Deblinger E, Behl LE, Glickman AR (2012) Trauma-focused cognitive-behavioral therapy for children who have experienced sexual abuse. In: Kendall PC (ed) Child and adolescent therapy: Cognitive-behavioral procedures, 4th edn. The Guilford Press, New York, pp 345–375
 71. Moss E, Dubois-Comtois K, Cyr C, Tarabulsky GM, St-Laurent D, Bernier A (2011) Efficacy of a home-visiting intervention aimed at improving maternal sensitivity, child attachment, and behavioral outcomes for maltreated children: a randomized control trial. *Dev Psychopathol* 23:195–210. doi:[10.1017/s0954579410000738](https://doi.org/10.1017/s0954579410000738)