Is female psychopathy linked with child abuse? An empirical investigation using a person-centered approach

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Abstract

Childhood abuse is associated with increased psychopathic features among girls, but most prior research is based on data from correctional samples of female delinquents and less is known about how specific forms of childhood abuse affect specific features of psychopathy. Using a school-based community sample of 696 girls aged 9-17 years from Barbados and Grenada, the current study examined latent profiles of psychopathic personality traits and their associations with physical, emotional, and sexual abuse. Latent profile analysis (LPA) revealed four distinct psychopathy groups among girls, including a 'low psychopathy' group (41.9% of girls), 'high psychopathy' group (4.8%), 'high interpersonal manipulation and egocentricity' group (37.4%), and a 'moderate psychopathy' group (16%). There was considerable evidence of physical abuse, emotional abuse, and sexual abuse among participants. Sexual abuse was associated with a 116% increased likelihood of membership in the high psychopathy group and a 57% increased likelihood of membership in the high interpersonal manipulation and egocentricity group. These results indicate that sexual abuse is a powerful distal factor in the development of psychopathic personality functioning, especially more severe variants.

***Keywords**:* Child abuse; Sexual abuse; Psychopathy profiles; Female psychopathy

Introduction

In an insightful study, Fontaine, Rijsdijk, McCrory, and Viding (2010) examined trajectories of psychopathic features across childhood using data from the Twins Early Development Study, which is a population-based sample of twins selected from the United Kingdom. Among a variety of findings, the etiological factors relating to stable, highly psychopathic features were perhaps most interesting. When considering those with stable and high levels of psychopathic features, Fontaine et al. (2010) found substantial gender differences in the etiology of psychopathy. For males, 78% of the variance was attributable to genetic factors and just 1% of the variance was attributable to shared environmental factors, such as child abuse and neglect occurring within the home environment. For females, 0% of the variance was attributable to genetic factors and 75% of the variance was attributable to shared environmental factors, such as child abuse and neglect occurring within the home environment. Although adverse childhood experiences are broadly associated with increased psychopathology (Kendler et al., 2000; MacMillan et al., 2001), substance use (Dube et al., 2003; McGloin & Widom, 2001), externalizing and conduct problems (Gao, Raine, Chan, Venables, & Mednick, 2010; Krischer & Sevecke, 2008), and serious, violent, and chronic criminality (Craig, Piquero, Farrington, & Ttofi, 2017; Drury et al., 2017; Fox, Perez, Cass, Baglivio, & Epps, 2015), the aforementioned findings suggest that various forms of childhood abuse are particularly meaningful distal factors in the developmental of psychopathic personality features among girls.

The abuse-psychopathy relationship among females

Child maltreatment is associated with a disrupted process of emotional development, which can result in abnormal personality structures (Young & Widom, 2014). There is considerable evidence that environmental pathogens, childhood abuse, victimization, and trauma are implicated in the development of psychopathic features generally and specifically among females. To illustrate, in his theory of secondary psychopathy, Porter (1996) suggested that repeated exposure to trauma and other disillusioning experiences during childhood contribute to affective inhibition. As these experiences accumulate, the person's affective displays are continuously inhibited until the point of dissociation in terms of affective and cognitive experiences. In this developmental sequence, the person exhibits

blunted affect and little connection to others—part of the core of psychopathy—in addition to suffering from comorbid psychiatric problems, such as anxiety disorders, mood disorders, personality disorders, substance use disorders, and other conditions that disproportionately affect girls (Fanti, Demetriou, & Kimonis, 2013; Goulter, Kimonis, Hawes, Stepp, & Hipwell, 2017; Kahn et al., 2013; Newhill, Vaughn, & DeLisi, 2010; Pechorro et al., 2013). In support of the theory, recent empirical research among 557 youth (50% female) indicated that maltreatment in childhood and adolescence (up to age 13) was predictive of lack of guilt at age 14, which can subsequently lead to the development of callous-unemotional traits. Each additional maltreatment event was related with an increased risk of callous-unemotional tendencies, confirming the accumulative impact of childhood trauma (Docherty, Kubik, Herrera, & Boxer, 2018). Maltreated children were also shown to display deficits in empathy as well as expressing, understanding, and recognizing emotions (Beeghly & Cicchetti, 1994; Gaensbauer, 1982; Pollak, Cicchetti, Hornug, & Reed, 2000; Shipman & Zeman, 1999) – all of which are integral features of a psychopathic personality (Boduszek, Debowska, Dhingra, & DeLisi, 2016).

Although Porter (1996) did not specifically develop the theory to explain psychopathy among girls and women, others have drawn these connections in a gendered context. For instance, Odgers, Reppucci, and Moretti (2005, p. 758) described the relationship between abuse and psychopathy among women:

> One explanation for the relationship between victimization and psychopathy may stem from the broader context in which these young women function, or perhaps more accurately, survive. The harsh life and severe forms of victimization that these girls have experienced are likely to lead to interpersonal styles that are hostile and defensive. Child and adolescents within these contexts may suppress their emotional responses as an adaptive coping mechanism.

Indeed, several studies have shown significant but at times conflicting associations between assorted forms of childhood abuse, psychopathy, and conduct across gender or specifically among girls (Bennett & Kerig, 2014; Campbell, Porter, & Santor, 2004; Kerig, Bennett, Thompson, & Becker, 2012; Kimonis, Frick, Fazekas, & Loney, 2006; Lindberg, Oshukova, Miettunen, & Kaltiala-Heino,

2016). In some studies, childhood abuse has more pernicious effects for males, in other studies, the effects are more detrimental for girls. For instance, Krischer and Sevecke (2008) found that sexual abuse, physical abuse, and emotional abuse were more strongly correlated with psychopathy among delinquent boys than girls. Indeed, they reported negative associations between physical abuse and total psychopathy score and lifestyle features, but positive associations between emotional abuse and number of placements in foster homes and antisocial features of psychopathy (also see, Sevecke, Franke, Kosson, & Krischer, 2016). These findings, however, should be tempered by the fact that psychopathy was assessed using a measure which is heavily weighted towards behavioral indicators of the disorder, including antisocial features. Recent research has indicated that antisocial behavior can be a possible outcome of psychopathy rather than its integral part and hence future studies in the area should focus on core psychopathic personality traits (see Boduszek & Debowska, 2016).

Using data from the Pittsburgh Girls Study, Goulter et al. (2017) found that childhood abuse in the form of harsh punishment distinguished girls with primary and secondary psychopathic features from controls. In another study, community-recruited female victims of child sexual abuse (n = 28) were found to score two SDs above the mean on the Psychopathic Deviate subscale of the Minnesota Multiphasic Personality Inventory (Hathaway & McKinley, 1943). Their scores on the subscale were also significantly higher compared with matched non-abused controls (n = 28) (Hunter, 1991). Nonetheless, these findings should be interpreted with caution due to the small sample size used. Recently, Farina, Holzer, DeLisi, and Vaughn (2018) examined diverse forms of abuse and other adverse childhood experiences and psychopathy among adjudicated youth selected from juvenile residential settings in two states in the United States. Correlations between family support, sexual abuse, physical abuse, and emotional abuse and psychopathy were stronger among girls than boys. Moreover, stronger correlations between childhood abuse and psychopathy were found among girls using two measures of psychopathy, the Youth Psychopathic Traits Inventory (Andershed, Kerr, Stattin, & Levander, 2002) and the Psychopathic Personality Inventory – Short Form (Lilienfeld & Andrews, 1996).

Due to the elevated prevalence of psychopathy in correctional compared to community settings (DeLisi, 2016), research on psychopathy among females has heavily relied on clinical

samples of juvenile justice or criminal justice involved clients.[1] Indeed, we only identified one study of a community sample of youth that examined associations between child abuse and victimization and psychopathic features. Drawing on data from 4,855 school adolescents in Finland, Saukkonen et al. (2016) found that victimization or abuse experiences were stronger predictors of psychopathic personality among girls than boys. However, the gendered effects were only seen for lifetime victimization experiences. For more recent abuse experiences, there was a positive association between abuse and psychopathy for girls and boys and the effect sizes were comparable. Irrespective of gender, sexual abuse, physical abuse, and parental corporal punishment were the strongest predictors of psychopathy.

Person-centered approaches in the abuse-psychopathy relationship

Recent years have witnessed an increased use of person-centered statistical techniques, including latent class analysis (LCA) and latent profile analysis (LPA), in the field of developmental psychology (Laudy et al., 2007). LCA and LPA, instead of focusing on correlations between study variables, identify typologies of individuals by examining configurations of traits within those individuals (see Debowska, Willmott, Boduszek, & Jones, 2017; Lanza, Flaherty, & Collins, 2003). De Fruyt and De Clercq (2014) have recommended the use of such analytic approaches in the study of personality pathology development in childhood and adolescence.

To the best of our knowledge, only one study to date has inquired into psychopathy profiles and their associations with childhood victimization. More specifically, Colins, Fanti, Salekin, and Andershed (2017), using a sample of 2500 young community adults (aged 20-24 years; 52.6% females) in Sweden, identified subgroups of individuals based on their scores on three psychopathy dimensions (grandiose-manipulative, callous-unemotional, and impulsive-irresponsible). LPA, conducted separately for men and women, showed five distinct psychopathy groups with similar class probabilities for the two genders, including high psychopathy groups comprising 12.9% of males and

[1] Several comparative studies have examined psychopathy among girls using both samples of girls in clinical, forensic, or correctional settings and control samples of girls in the community (see, Frick, Bodin, & Barry, 2000; Leenarts et al., 2017; Oshukova et al., 2017; Pechorro et al., 2017). These studies have shown that clinical samples of girls are unilaterally more severe in their psychopathology, psychopathy, and offending; however, these works did not focus on the role of childhood abuse in the girls' backgrounds.

12.4% of females. Post-hoc multivariate analyses of variance showed that adults in high psychopathy groups more frequently reported experiences of childhood physical abuse than adults in low psychopathy and high callous-unemotional groups. Neglect was more likely to be reported by adults in high psychopathy groups compared with those in high callous-unemotional groups. Additionally, females with high psychopathy scores were more likely to have a history of child sexual abuse than their male counterparts, suggesting possible gender differences in the development of psychopathic personalities.

Current focus

To fill the above-cited research voids, the current study sought to examine the latent classes of psychopathy and their associations with childhood abuse experiences in a sample of girls. Due to the paucity of similar studies, we did not make any specific predictions as to the number of latent classes. However, based on Colins et al. (2017), we predicted that a low and high psychopathy group would emerge. We also expected that girls with high psychopathy scores would report more child abuse experiences than girls in the remaining latent classes.

Method

Sample

The study involved 696 girls aged 9-17 years (M = 12.95, SD = 2.19, Mdn = 13, Mode = 13) from Barbados and Grenada. Participants came from both rural (73.6%) and urban (26.4%) areas of the two Eastern Caribbean countries. Ethical approval was granted by the Human and Health Sciences Ethical Board at the first author's institution. The Ministry of Education, Science, Technology and Innovation (Barbados) and the Ministry of Education and Human Resource Development (Grenada) granted permission for conducting the project. We recruited participants from 10 primary schools (23.1% of all participants) and nine secondary schools (76.9%). The research team purposively selected participating institutions and directors of all establishments agreed to take part. Local researchers delivered printed self-reported surveys to the institutions and distributed them among adolescents using an opportunistic sampling method. Data collection was anonymous and occurred in classroom settings. Parental consent was obtained prior to participation. Additionally, local

researchers provided participants with verbal and written summary of the informed consent and gave verbal instructions on how to complete the survey. Youths were also informed that participation was voluntary and that they did not have to inform anyone of the specific reason for not participating (one of the options was to return a blank questionnaire). In line with the duty of care, participants were told how to access support services in the event of distress, re-traumatization, or the need to report concerns about risk of harm. A local researcher collected surveys and debriefed study participants. Participation was without any form of reward. Response rate in the current study was 68.9%, which is satisfactory by present survey research standards (Kohut, Keeter, Doherty, Dimock, & Christian, 2012).

Measures

Psychopathic Personality Traits Scale (PPTS; Boduszek et al., 2016) is a personality-based self-reported 20-item measure designed to assess psychopathic traits in forensic and non-forensic populations. The scale was developed to measure four factors labeled affective responsiveness (Factor 1), cognitive responsiveness (Factor 2), interpersonal manipulation (Factor 3), and egocentricity (Factor 4). Each subscale consists of five items measured using "*agree"* (3), "*sometimes*" (2), and "*disagree"* (1) format. Scores for full scale range from 20 to 60, whereas subscale scores range from five to 15. Higher scores indicate increased levels of egocentricity and interpersonal manipulation, and increased deficits in affective and cognitive responsiveness. Sample scale items include: "I don't care if I upset someone to get what I want." (affective responsiveness); "Before criticizing somebody, I try to imagine and understand how it would make them feel." (cognitive responsiveness); "I know how to pay someone compliments to get something out of them." (interpersonal manipulation); "In general, I'm only willing to help other people if doing so will benefit me as well." (egocentricity). Internal reliability of the PPTS factors was assessed using composite reliability. Results suggest that all four psychopathy factors (affective responsiveness = 0.86, cognitive responsiveness = 0.76, interpersonal manipulation = 0.84, and egocentricity = 0.69) demonstrated good internal reliability.

Violence victimization by adults within and outside the family was measured using six items indexed on a 4-point Likert scale (1 = *never*, 2 = *sometimes*, 3 = *often*, 4 = *almost always*). Physical victimization is operationalized as the use of physical force that may affect child's health,

survival, development, or dignity. Emotional victimization refers to the failure to provide a developmentally appropriate and supportive environment. Sexual victimization pertains to the involvement of a child in sexual activity that he or she does not fully understand, or is unable to consent to, or is developmentally unprepared for (definitions taken from Butchart, Phinney Harvey, Kahane, Mian, & Fürniss, 2006, p. 10). Two questions in the present study inquired into experiences of physical violence (How often has an adult in your family [second question: outside your family] done something to hurt your body, such as hitting you, kicking you, or beating you up?); two question assessed emotional violence experiences (How often has an adult in your family [second question: outside your family] hurt your feelings by making fun of you, calling you names, threatening you, or saying things to make you feel bad?); and two question measured experiences of sexual violence (How often has an adult in your family [second question: outside your family], touched your private parts when you didn't want them to, made you touch their private parts, or forced you to do something sexual you didn't want to?). Local researchers familiar with the Caribbean culture assisted with phrasing the above questions.

Plan of analysis

Latent profile analysis (LPA) was used to detect homogeneous groups (latent classes) using four factors of the PPTS. A two-stage process was applied. First, LPA was conducted to calculate the quantity of psychopathy classes and verify whether they varied qualitatively or/and quantitatively. The LPA part of the model used four PPTS factors (affective responsiveness, cognitive responsiveness, interpersonal manipulation, and egocentricity). Second, using a multinomial logistic regression, we assessed the association between latent classes of psychopathy and three types of violence victimization (physical, emotional, and sexual abuse). These associations were evaluated using odds ratios (ORs), along with accompanying confidence intervals (CIs).

In LPA, four alternative models were assessed (a 2-class model through to a 5-class model) using robust maximum likelihood (Yuan & Bentler, 2000). To avoid solutions based on local maxima, 500 random sets of starting values were used initially and 100 final stage optimizations. The relative fit of the models was compared using the Akaike Information Criterion (AIC; Akaike, 1987), the Bayesian Information Criterion (BIC; Schwartz, 1978), and sample size adjusted Bayesian

Information Criterion (SSA-BIC; Sclove, 1987). The model with the lowest value indicates the best latent profile solution. Strong evidence from simulation studies have suggested that the BIC is better information criterion than SSA-BIC and AIC for identifying the correct number of latent classes (Nylund, Asparouhov, & Muthén, 2007). We also calculated entropy value which indicates the ability of the model to correctly classify participants, with higher value indicating better classification (Ramaswamy, DeSarbo, Reibstein, & Robinson, 1993). In addition, the Lo-Mendell-Rubin adjusted likelihood ratio test (LRT; Lo, Mendell, & Rubin, 2001) was used to compare models with increasing numbers of latent classes. A non-significant value ($p > 0.05$) suggests that the model with one less class should be accepted. All analyses were conducted using M*plus* version 7.4.

Results

Descriptive statistics for four factors of psychopathy and three types of violence victimization (physical, emotional, and sexual abuse) are reported in Table 1.

Table 1

Descriptive Statistics for Psychopathy and Child Abuse Variables

Variable	***M* (*SD*)**	**Median**	**Mode**	**Reported Min**	**Reported Max**
Affective responsiveness	8.21 (1.96)	8	9	5	14
Cognitive responsiveness	8.60 (1.97)	8.50	8	5	15
Interpersonal manipulation	9.38 (2.65)	9	9	5	15
Egocentricity	10.05 (1.94)	10	11	5	14
Physical abuse	2.87 (1.17)	2	2	2	8
Emotional abuse	3.51 (1.40)	3	3	2	8
Sexual abuse	2.28 (0.82)	2	2	2	8

A series of independent sample t-tests showed no significant difference between the two country samples on all study variables (Bonferroni correction $p = 0.007$). Given the t-test results, LPA was conducted on the entire sample. The fit statistics for the LPA of psychopathy are presented in Table 2. The lowest BIC value is observed for the 3-class solution, but the Lo-Mendell-Rubin's adjusted likelihood ratio test suggests the 4-class solution. The entropy test confirms the supremacy of the 4-class solution over alternative solutions. On the basis of these statistics, the 4-class solution is considered the best fitting model.

Table 2

Fit Indices for the Latent Profile Analysis of Psychopathy

Model	**AIC**	**BIC**	**SSABIC**	**LRT**	***p***	**Entropy**
2 classes	10549.79	10621.32	10570.52	122.47	<.001	0.48
3 classes	10477.63	10584.93	10508.73	86.49	<.001	0.64
4 classes	**10464.48**	**10607.54**	**10505.94**	**36.96**	**0.038**	**0.74**
5 classes	10459.55	10638.38	10511.38	20.54	0.239	0.70

Note. AIC = Akaike information criterion, BIC = Bayesian information criterion, SSABIC = sample size adjusted BIC, LRT = Lo-Mendell-Rubin's adjusted likelihood ratio test. **Boldface** type indicates the best-fitting model.

Figure 1 shows the profile plot for the 4-class solution (means and standard deviations are presented in Table 3). Class 1 (41.9% of girls) is the largest group. It is characterized by low mean scores on all four psychopathy dimensions and is labeled the 'low psychopathy' group. Class 2 (4.8% of girls) is the smallest group. It is characterized by high mean scores on affective responsiveness, cognitive responsiveness, egocentricity, and moderate scores on interpersonal manipulation. This class is labeled the 'high psychopathy' group. Class 3 (37.4% of girls) is characterized by low mean scores on affective and cognitive responsiveness and high on interpersonal manipulation and egocentricity. This class is labeled the 'high interpersonal manipulation and egocentricity' group.

Class 4 (16% of girls) is characterized by high mean scores on affective responsiveness and egocentricity, moderate scores on cognitive responsiveness, and low on interpersonal manipulation. This class is labeled the ‘moderate psychopathy’ group.

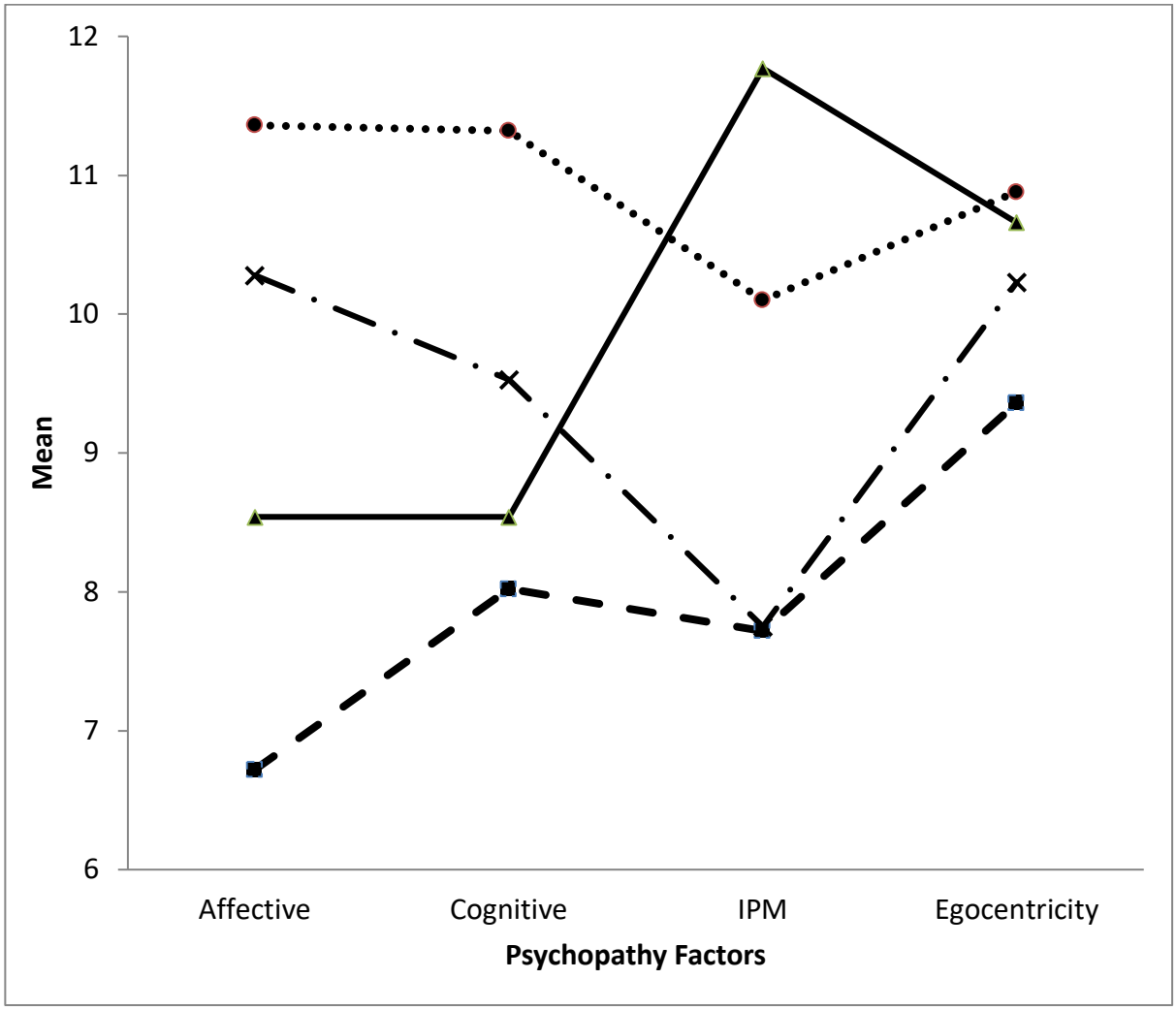

Figure 1. Latent profile analysis plot of psychopathic traits for girls (N = 696). Dashed line - Class 1 = ‘low psychopathy’ group (reference group; 41.9% of cases); Dotted line - Class 2 = ‘high psychopathy’ group (4.8% of cases); Solid line - Class 3 = ‘high interpersonal manipulation and egocentricity’ group (37.4% of cases); Dashed dotted line - Class 4 = ‘moderate psychopathy’ group (16% of cases); IPM = Interpersonal manipulation.

Table 3

Means (Standard Deviations) for the 4-class Solution of the Psychopathic Personality Traits Scale (PPTS)

Means	**AR**	**CR**	**IPM**	**Ego**
Class 1	6.72 (1.32)	8.02 (1.80)	7.72 (1.82)	9.36 (1.83)
Class 2	11.36 (1.32)	11.32 (1.80)	10.10 (1.82)	10.88 (1.83)
Class 3	8.54 (1.32)	8.54 (1.80)	11.77 (1.82)	10.66 (1.83)
Class 4	10.28 (1.32)	9.53 (1.80)	7.75 (1.82)	10.23 (1.83)

Note. AR = Affective responsiveness; CR = Cognitive responsiveness; IPM = Interpersonal manipulation; Ego = Egocentricity.

The associations between psychopathy class membership and three types of violence victimization were estimated using a multinomial logistic regression (see Table 4). The ‘low psychopathy’ group (class 1) was a reference category. Results suggest that girls with high scores on all psychopathy factors (class 2) are over two times more likely to have experienced sexual abuse (OR = 2.16, 95% CI = 1.31/3.55, $p < 0.01$) in comparison to the ‘low psychopathy’ group (class 1). In addition, girls in class 3 (‘high interpersonal manipulation and egocentricity’ group) are significantly more likely to have experienced sexual abuse (OR = 1.57, 95% CI = 1.13/2.16, $p < 0.05$) compared with the ‘low psychopathy’ group (class 1). Associations between latent psychopathy classes and physical as well as emotional abuse were statistically non-significant.

Table 4

Associations between Psychopathy Profiles and Child Abuse

Variable	Class 2 with Class 1 OR (95% CI)	Class 3 with Class 1 OR (95% CI)	Class 4 with Class 1 OR (95% CI)
Physical Abuse	0.91 (0.58/1.42)	1.01 (0.80/1.27)	1.44 (0.96/2.14)
Emotional Abuse	1.48 (0.75/2.92)	1.16 (0.96/1.40)	0.76 (0.55/1.06)
Sexual Abuse	2.16** (1.31/3.55)	1.57* (1.13/2.16)	0.86 (0.62/1.20)

Note. Class 1 = 'low psychopathy' group (reference group; 41.9% of cases); Class 2 = 'high psychopathy' group (4.8% of cases); Class 3 = 'high interpersonal manipulation and egocentricity' group (37.4% of cases); Class 4 = 'moderate psychopathy' group (16% of cases); OR = Odds Ratio, 95% CI = 95% Confidence Interval.
* $p < .01$; ** $p < .001$

Discussion

One in three women and girls will be subjected to sexual or physical violence in their lifetime and gender-based violence is a critical issue of global importance (World Health Organization [WHO], 2013). Beyond the tragic nature of the abuse experiences themselves, childhood abuse carries additional burdens of greatly increased liability for a broad range of psychopathology and conduct problems, including psychopathic personality features (Fontaine et al., 2010; Young & Widom, 2014). Using a large community/school-based sample of girls aged 9-17 years from Barbados and Grenada, the current study examined linkages between physical abuse, emotional abuse, and sexual abuse and assorted psychopathic features. Several findings warrant discussion.

First, LPA yielded a four-class solution as the best fit to the data. As predicted and in line with prior research among community females in Sweden (Colins et al., 2017), we recovered low (class 1) and high (class 2) psychopathy classes characterized by lowered and increased scores on all PPTS dimensions respectively. With 4.8% of girls, the high psychopathy class was characterized by the lowest membership in the current study. Conversely, the low psychopathy class was the largest group in this study (41.9%). Although the current results did not replicate Colins et al.'s five-class

solution, this past research employed a different psychopathy measure consisting of three dimensions, including a behavioral facet (impulsive-irresponsible), and employed an adult sample.

Further, it is essential to recognize and understand that based on the maximum values for physical abuse, emotional abuse, and sexual abuse, some children in the current sample are living a life where assorted violence and exploitation not only exist but are commonplace. In contrast to a normative childhood comprised of nurturing, warmth, and loving support, their childhoods are in many respects devoid of these positive features and instead replaced with adverse childhood experiences—traumatic circumstances that can create a veritable flood of psychopathology and maladjustment. Although physical, emotional, and sexual abuse have been shown to cause a variety of problems, only sexual abuse in the current data was associated with variations in psychopathy, and its effects were strongest for the most severe manifestation—class 2—that had the highest affective, cognitive, and egocentricity features. Girls who had been sexually abused were significantly more likely to have personality dysfunction characterized by unempathic affective and cognitive responsiveness, high interpersonal manipulation, and pronounced egocentricity. This constellation of traits lends itself to self-gratifying conduct that is executed without consideration of its effects on others. It is interesting, and likely not coincidental, that class 2—the most severe group in terms of personality functioning—is 4.8% of the sample which is nearly identical to the severe 5% subgroup that is documented among juveniles (Vaughn et al., 2014) and adults (Vaughn et al., 2011). The severe 5% has been shown to engage in lifelong, severe conduct problems and has considerable convergent validity with psychopathy (McCuish et al., 2015; Vaughn & DeLisi, 2008). It is likely that girls in class 2 are at greatest risk for exhibiting significant conduct problems not only due to their sexual abuse victimization, but also the array of psychopathic personality features that they display.

In their over 20-year follow-up study of formerly abused and neglected children, McGloin and Widom (2001) documented that compared to controls who had not been abused or neglected, adults who had been abused as children experienced more adverse lives characterized by employment problems, transiency, high school dropout, psychiatric disorders, substance abuse, criminal activity, and criminal justice system involvement. They also reported much greater resilience among women than men. In terms of adult employment, residential stability, high school graduation, mental health, sobriety, crime, and arrest activity, formerly abused women fared better than formerly abused men.

Some resilience among girls in the current study can be inferred from the multinomial logistic regression models. Physical abuse and emotional abuse were not significantly associated with the high psychopathy group, the high interpersonal manipulation and egocentricity group, or the moderate psychopathy group. Although potentially devastating in their own rite, physical abuse and emotional abuse pale to the developmental effects of sexual abuse, and girls in these data were seemingly able to withstand these non-sexual forms of abuse in terms of their personality functioning.

The psychopathic profiles herein can be prognostic of interpersonal difficulties that are characteristic of personality disorders overall (Newton-Howes, Clark, & Chanen, 2015). Notwithstanding the low psychopathy reference group, nearly 60% of the girls in these data exhibited some form of problematic personality functioning relating to affective responsiveness, cognitive responsiveness, egocentricity, or interpersonal manipulation. These traits are conducive of adjustment problems and strained, aversive interactions with others, which are likely to create problems within the family, at school, and in work settings (Charles et al., 2012; Pechorro et al., 2013; Pechorro et al., 2014; Vaughn, DeLisi, Beaver, Wexler, Barth, & Fletcher, 2011). Although the level of maladjustment in adolescence has been reported as high yet declining after reaching maturity (Moffitt, 1993), it appears that girls with the most pronounced personality pathology who had also suffered from sexual abuse, may experience the poorest outcomes in adulthood. They may therefore require additional support in this passage through maladjustment in order to prevent the development of full-fledged psychopathy in adulthood. Apart from ensuring that those girls are in safe environments free from abuse, an important goal should be to improve their psychosocial functioning (with a special focus on empathy development) and the quality of their current and future relationships. It appears that such an intervention could draw on the tenets of the mentalization-based treatment (MBT), which was originally develop for patients with borderline personality disorder (BPD). The MBT focuses on increasing individuals' ability to mentalize, i.e., reflect upon and understand others' mental states (Fonagy & Luyten, 2009). Mentalization is believed to be fostered via caregiver's empathic response to a child's distress and hence could be undeveloped or underdeveloped in girls who suffered from child sexual abuse, especially when the abuse perpetrator was a caregiver or if the caregiver failed to protect a child from such abuse. In the current context, mentalization could improve adolescents' affective and cognitive responsiveness, increase their consideration for others, and foster healthy

relationships free from interpersonal manipulation, all of which can develop in response to child sexual abuse experiences.

Some limitations of the present research should be considered when interpreting its findings. First, the study design was cross-sectional and hence causal relationships between psychopathy profiles and child abuse can only be theorized. When possible, future research should aim for longitudinal data collection to better understand the process of personality pathology development in childhood and adolescence. Notwithstanding, longitudinal data collection on child abuse and neglect among youth and possible developmental outcomes is difficult to achieve due to the sensitive nature of the topic, especially in countries where the problem is not yet recognized as a serious issue. Although advances in this respect have been made in the United States (a notable example is the LONGSCAN consortium of research studies), such data on youth from different countries are lacking. Therefore, cross-sectional studies in under-explored populations are crucial to draw practitioners, policy makers, and funding institutions' attention to the detrimental effects of child abuse, subsequently leading to more efforts and resources being devoted to the study in the area. Second, psychopathic traits and child abuse were assessed using self-report surveys. Although future research should aim to obtain data from different sources (such as teacher reports or substantiated maltreatment reports) to corroborate the findings, self-report anonymous surveys are argued to increase participation and disclosure in studies concerning abuse experiences (Rumble, Ramly, Nuryana, & Dunne, 2017). Additionally, we did not measure neglect. Since earlier research found that neglect is likely to be reported by adults with increased psychopathic features (Colins et al., 2017), future research among youth should control for this feature. Another interesting aspect of the current results which could not be explored further due to lack of appropriate data is the statistically non-significant relationship between physical and emotional abuse and increased psychopathic traits. As explained above, one possible explanation of this finding is that girls remained resilient to the effects of such abuse experiences. It is recommended that future research explores factors which are likely to build this resilience.

Notwithstanding, the current study was unique in its person-centered approach to studying variants of psychopathy and its environmental correlates in a sample of girls. LPA revealed four

distinct psychopathy groups, including low psychopathy, high psychopathy, high interpersonal manipulation and egocentricity, and moderate psychopathy. Low psychopathy group was characterized by the highest membership, whereas high psychopathy group was the least numerous. Compared with the low psychopathy group, sexual abuse was associated with an increased likelihood of membership in the high psychopathy group and high interpersonal manipulation and egocentricity group. These findings suggest that child sexual abuse may result in disrupted emotional development and hence girls with such maltreatment experiences should be targeted for interventions to prevent abnormal personality functioning in adulthood.

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