

Profiles of abuse and neglect and the association with mental health indicators among a large  
sample of boys and girls from India

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## **Highlights**

- Profiles and psychological correlates of child abuse and neglect in Mumbai, India
- Complex subgroups of intra- and extra- familial abuse and poly-victimisation
- Higher symptoms of anxiety and depression among abused children and young people
- Increased odds of non-suicidal self-injury and suicidal phenomena for abuse classes

## Abstract

**Background:** Child abuse and neglect (CAN) is a major public health concern, but limited data are available on the occurrence, co-occurrence, and correlates of these phenomena outside Western societies.

**Objectives:** The first aim of this study was to establish the prevalence of CAN across two settings (inside and outside the home) among children and adolescents in Mumbai, India. Another aim was to use latent class analysis (LCA) to identify meaningful profiles of maltreatment, and to examine how class membership is associated with mental wellbeing.

**Participants and setting:** Self-report data was collected from males ( $n = 4,454$ ;  $M_{age} = 12.77$  years) and females ( $n = 3,850$ ;  $M_{age} = 12.87$ ) at secondary schools.

**Results:** Four latent classes of maltreatment were identified among males, including ‘low victimisation’ (50.4% of participants), ‘intra-familial non-sexual abuse’ (34.6%), ‘intra- and extra- familial non-sexual abuse’ (10.2%), and ‘poly-victimisation’ (4.8%). Among females, three latent classes were identified including, ‘low victimisation’ (68.1%), ‘intra-familial non-sexual abuse’ (28.8%), and ‘poly-victimisation’ (3.0%). Compared to the ‘low victimisation’ class, children in the abuse classes demonstrated higher levels of anxiety and depression and increased odds of self-injurious thoughts and behaviours. These associations were augmented for girls relative to boys.

**Conclusion:** There were very few maltreated children who were subjected to just one form of CAN and experiencing co-occurring patterns of abuse and neglect was associated with indicators of poor mental health, especially among girls. These findings highlight the complexity of the situation and will inform policy makers, health professionals and school counsellors.

**Key words:** child abuse and neglect (CAN); latent class analysis (LCA); anxiety; depression; non-suicidal self-injury (NSSI); suicide

## **Introduction**

### **Prevalence of Child Abuse and Neglect (CAN) in India**

A synthesis of past-year prevalence data on violence against children, indicated that half of the global population of children aged 2-17 were subjected to violence (Hillis et al., 2016). However, disaggregation of the data by continent revealed substantial variation in the prevalence of violence victimisation across regions, suggesting that the antecedent factors might be population specific. Indeed, ecological/transactional models propose that childhood maltreatment is at least partly attributable to the confluence of social structures and cultural values and beliefs (Cicchetti & Lynch, 1993). With over 40% of its population under the age of 18, India is home to the largest number of children in the world (Seth, 2015). In Indian society, child abuse and neglect (CAN) is attributable to an accumulation of factors including high population density, poverty, a lack of economic opportunities, political oppression, the caste system, patriarchal structures, gender bias, and societal attitudes that condone certain forms of violence against children (UNICEF, 2018). Corporal punishment, for instance, is routinely regarded as an acceptable approach to disciplining children in India, with 29% of parents reporting the use of harsh physical disciplining methods (Runyan et al., 2010). This practice is also common outside the home, with just over two thirds of children reporting that they had been beaten by a teacher at school (Kacker et al., 2007).

The Convention on the Rights of the Child (United Nations, 1989), which includes the right to freedom from violence, was ratified by India almost two decades ago. Furthermore, the legal obligation to protect children from violence was recently renewed by the inclusion of a specific target to “end abuse, exploitation, trafficking and all forms of violence against and torture of children” in the 2030 Agenda for Sustainable Development (United Nations, 2015). However, the normalisation of violence against children in India evidenced by the scarcity and poor implementation of legal frameworks designed to protect children from CAN (Belur

& Singh, 2015; Kacker et al., 2007). For instance, the introduction of the Protection of Children from Sexual Offences Act 2012 criminalised sexual abuse, but it remains the case that there are no laws to prohibit non-sexual abuse by family members. Therefore, although the National Crime Records Bureau (NCRB; 2020) recorded a total of 148,185 crimes against children in the calendar year ending December 2019, this figure does not capture all forms of child maltreatment recognised in international definitions (WHO, 2020). Sexual abuse accounted for just over one third (35.3%) of all crimes recorded against children in India (NCRB, 2020), but this is likely to be an underestimation of the reality of the problem given that over 70% of child sexual assault victims do not tell anyone about the incident (Kacker et al., 2007). There are a variety of reasons for non-disclosure including cultural, social, and economic barriers, victim-blaming, bystander apathy, and fear of retaliation from the perpetrator (Jones et al., 2014; Palermo et al., 2014). Considering this, there is a general consensus that official rates of CAN do not provide the depth of knowledge needed to effectively guide policy and practice to eradicate it (Bott et al. 2005).

In contrast, self-report surveys that enable children to describe their experiences confidentially and without fear of repercussion can provide a more accurate estimation of the true prevalence of CAN (Gilbert et al., 2009). A global meta-analysis revealed that emotional abuse was the most commonly experienced form of maltreatment (36.3% of children), followed by physical abuse (22.6%), emotional neglect (18.4%), physical neglect (16.3%), and lastly sexual abuse (12.7%; Stoltenborgh et al., 2015). According to this analysis, girls (18.0%) are more likely to experience sexual abuse than boys (7.6%), but the prevalence of other CAN subtypes did not differ significantly between the sexes. However, CAN research is dominated by studies from North America and Europe, and failure to disaggregate the data by continent has the potential to obscure region-specific sex differences in maltreatment (Moody et al., 2018). Contrastingly, when data was analysed by continent, boys in Asia

appear to be at greater risk of emotional abuse, but with little difference between the sexes in other forms of CAN (Moody et al., 2018).

According to the largest ( $n = 12,447$ ) national survey of children and adolescents from 13 Indian states, boys were more likely than girls to report both physical (72.6% compared to 65.0%) and sexual (52.9% compared to 47.1%) abuse, but there was little disparity between the sexes when it came to emotional abuse (50.0% for both boys and girls; Kacker et al., 2007). Although Kacker and colleagues narrowly measured neglect among girls only, this emerged as the most frequently experienced type of maltreatment for girls (70.6%). Given that neglect is associated with increased odds of suicide ideation, suicide attempt, and co-occurring non-suicidal self-injury/suicide ideation/suicide attempt (Boduszek et al., 2021), future studies should endeavour to include indicators of neglect for both sexes. Local surveys of high school students in the districts of Jammu, Tripura and Kerala, have also revealed higher rates of physical abuse among boys, but findings pertaining to sex differences in other types of maltreatment are equivocal (Deb & Modak, 2010; Charak & Koot, 2014, Kumar et al., 2017). Information on the setting of abuse (i.e. inside or outside the home) has been recognised as an important component in the implementation of targeted prevention strategies (Debowska et al., 2018), but this data is largely lacking for India.

### **Implications of CAN for mental health**

CAN presents a serious risk for poor mental health outcomes, with a recent meta-analysis indicating that individuals subjected to any type of maltreatment (physical, sexual and emotional abuse, neglect and exposure to intimate partner violence) were 2.48 more likely to experience a depressive disorder and 1.68 times more likely to develop an anxiety disorder (Gardner et al., 2019). CAN is also associated with significantly increased odds of post-traumatic stress, substance dependence, suicide ideation and suicide attempt (Baiden et al., 2017; Negriff et al., 2020; Oshri, et al., 2011). However, considering individual CAN

subtypes in isolation negates the fact that they often co-occur and have a cumulative impact on mental health (Finkelhor et al., 2007; Finkelhor et al., 2007; Petruccelli et al., 2019).

Moore et al. (2015), for instance, found that exposure to three types of CAN almost doubled the risk of depressive and anxiety disorders compared to exposure to one subtype. Although there is mounting evidence of the deleterious consequences of CAN in Western countries, an international review concluded that there remains a paucity of research evidence on the consequences of maltreatment for children in low to middle income countries such as India (WHO, 2020).

### **The application of person-centered analyses to the study of CAN**

For decades, researchers have relied on variable-centered approaches to understanding the association between individual CAN subtypes and mental health outcomes. In contrast, person-centered approaches such as latent class analysis (LCA), facilitate the identification of naturally occurring constellations of maltreatment subtypes (Debowska et al., 2017). LCA also bypasses problems associated regression analyses, including the presence of intercorrelations between CAN subtypes and the interpretation of complex interaction terms, rendering it a more parsimonious approach to investigating the combined impact of maltreatment subtypes on psychological functioning (McAnee et al., 2019).

A relatively recent increase in the application of person-centered approaches to the investigation of CAN prompted a systematic review of 16 studies published between 2008-2017 (Debowska et al., 2017). The number of classes required to represent real-life patterns of CAN ranged from two to four, with some prominent similarities in the qualitative properties of the classes. Twelve studies identified a class characterised by low endorsement of all maltreatment subtypes, and this was often the most numerous class, accounting for approximately 80% of participants in samples of the general population. Thirteen studies extracted a poly-victimisation class characterised by high endorsement of most CAN



subtypes. This group usually accounted for the smallest proportion of participants in studies of the general population (approximately 2-10%), with higher membership only found among samples of children referred to child protection services, or among at risk populations such as prisoners. Meanwhile, four studies identified a class characterised by high endorsement of sexual abuse but low endorsement of all other CAN subtypes. Remaining classes were more heterogeneous in nature and depended on the particular assortment of maltreatment subtypes included in the studies. The likelihood of experiencing adverse mental health outcomes, including anxiety, depression, emotional dysregulation, post-traumatic stress disorder and personality disorder, is significantly augmented for the poly-victimisation class (Charak et al., 2020; Debowska et al., 2017; Warmingham et al., 2019).

LCA studies are also beginning to reveal key sex differences in patterns of adversity and abuse. In the Caribbean and United States, four latent classes were required to represent the data from females, whereas three sufficed for males, suggesting increased diversity in patterns of maltreatment among females (Debowska et al., 2018; McAnee et al. 2019). Moreover, where studies have revealed a class characterised by high endorsement of items pertaining to sexual abuse and low endorsement of all other items, being female substantially increases the odds of being a member of this class (Charak et al., 2020; Debowska et al., 2017; McAnee et al., 2019). Sex differences are also emerging in the relationship between classes and psychological correlates, including a more pronounced association between the sexual abuse class and depression, anxiety, and post-traumatic stress disorder among males than females (McAnee et al., 2019). Given the clinical implications of this observation, it highlights the importance of analysing the data for the two sexes separately.

Charak and Koot (2015) are the only researchers to apply a person-centered approach to the investigation of CAN in India. Based on data from 702 secondary school pupils in the northern district of Jammu, four classes emerged. These were characterised by minimal levels

of abuse and neglect (28.9% of participants), moderate-severe levels of emotional and physical neglect (25.1%), moderate-severe levels of physical and sexual abuse (30.1%), and moderate-severe levels of physical, sexual, and emotional abuse and physical neglect (15.9%). The abuse classes demonstrated higher scores on several indicators of personality pathology, including cognitive dysregulation, identity problems, affect lability and self-harm. However, the small sample precluded the disaggregation of data by sex.

### **The current study**

The present study reports on the findings of a self-report survey of children and adolescents in the district of Mumbai, India. Considering the specific gaps in the existing evidence base, the objectives were to (1) examine the rates of maltreatment both inside and outside the home; (2) use LCA to identify patterns of co-occurrence in maltreatment experiences; and (3) to examine the association between maltreatment profiles and symptoms of anxiety and depression, non-suicidal self-injury, suicide ideation and suicide attempt. Cognisant of sex differences the occurrence, co-occurrence and correlates of CAN, all analyses were performed separately for males and females. We anticipated that a large proportion of participants would belong to a class characterised by minimal maltreatment experiences, and a small proportion to a poly-victimisation class, but no further predictions were made about the number, nature, or associations of the classes.

## **Method**

### **Participants and procedure**

This paper draws on data collected as part of the *[removed for blind review]* project in 2019. *[removed for blind review]* is an international team of researchers committed to the investigation and prevention of CAN and gender-based violence. Participants (n = 8,304) aged 9-17 were systematically selected from 20 secondary schools in the city and suburbs of Mumbai. Ethical approval for the study was granted by the leading university in the UK and

further permissions were obtained from the federal School Education and Sports Department, State of Maharashtra, and the Public-Private Partnership Cell of the Education Department of the Brihanmumbai Municipal Corporation. Participation was voluntary, without financial remuneration or reward, and consent to take part was obtained from both parents and pupils. Participants were informed of appropriate counselling services where they could seek support should they self-identify as an abuse victim or experience any emotional distress as a result of their participation. Questionnaires were available in English, Hindi, Marathi and Urdu and, these were completed in a pencil and paper format in classroom settings. A researcher was present during questionnaire completion to answer any questions that the students might have. The sample consisted of 4,454 boys ( $M_{age} = 12.77$  years;  $SD = 1.77$ ) and 3,850 girls ( $M_{age} = 12.87$  years;  $SD = 1.73$ ). Most participants were from an urban or city district (94.0% boys; 95.7% girls) and most lived with both parents (82.8% boys; 85.1% girls).

## **Measures**

*The Child Victimization Experiences Questionnaire* (Choo et al., 2011) was utilised to capture experiences of maltreatment perpetrated by parents, guardians or other adults living in the home *and* adults outside the family. Questions inquired into lifetime experience of physical abuse in the home (7 items), sexual abuse in the home (8 items), emotional abuse in the home (6 items) and neglect in the home (8 items), physical abuse outside the home (7 items), sexual abuse outside the home (8 items), and emotional abuse outside the home (5 items). Scoring was dichotomous, with a type of maltreatment being regarded as present if the child endorsed a minimum of one item within the category.

*The PROMIS Anxiety Short Form* (PROMIS Health Organization and PROMIS Cooperative Group, 2012a) records symptoms of anxiety experienced over the past seven days. The measure comprises of 13 items inquiring into thoughts and feelings, which are answered on a scale ranging from 1 (never) to 5 (almost always). Total scores range from 13

to 65, with higher scores representing more severe symptoms of anxiety (Cronbach's alpha was 0.89 for girls and 0.88 for boys).

*The PROMIS Depression Short Form* (PROMIS Health Organization and PROMIS Cooperative Group, 2012b) records symptoms of depression experienced over the past seven days. The measure comprises 14 items inquiring into thoughts and feelings, which are answered on a scale ranging from 1 (never) to 5 (almost always). Total scores range from 14 to 70 with higher scores representing more severe symptoms of anxiety (Cronbach's alpha was 0.92 for girls and 0.90 for boys).

*Suicide and self-harm behaviours* were measured using three items. Lifetime history of non-suicidal self-injury (NSSI) was measured by asking “Have you ever harmed yourself on purpose in a way that was not to take your life?”; suicide ideation by asking “Have you ever felt so unhappy that you have thought about killing yourself?”; and suicide attempt by asking “Have you ever tried to commit suicide or tried to do something that meant you could die?”. The response format was “yes” or “no”.

### **Statistical Analysis**

Descriptive statistics, including frequencies, percentages, means (*M*), standard deviations (*SD*), medians (*Mdn*) and observed minimum and maximum scores, were calculated using SPSS version 26. Differences between boys and girls were examined using the chi-square test for independence (categorical variables) and independent sample t-tests (continuous variables).

Latent class analysis (LCA) was performed separately for boys and girls using MPlus Version 7 (Muthen & Muthen, 2012). LCA is a type of mixture modelling that uses categorical data (in this case experiences of maltreatment inside and outside the home) to identify naturally occurring constellations of phenomena within the population. Based on posterior probabilities, participants are assigned to mutually exclusive groups (or latent

classes) on the basis that their experiences follow as similar pattern to others belonging to that class. This has the effect of increasing the homogeneity within a class, whilst also increasing heterogeneity between classes.

Models with an increasing number of latent classes are specified in an iterative process, and extraction of cases ceases when there is little empirical or conceptual support for the inclusion of an additional latent class. The models were estimated using robust maximum likelihood estimation (Yuan & Bentler, 2000). To avoid solutions based on local maxima, 500 random sets of starting values were used initially, with 100 final stage optimisations. The success of the models was assessed on the basis of a range of statistical indicators pertaining to goodness of fit and parsimony, including the Akaike Information Criterion (AIC; Akaike, 1987); Bayesian Information criterion (BIC; Schwarz, 1978); sample size adjusted BIC ( $ssABIC$ ; Schwartz, 1978); Lo–Mendell–Rubin likelihood ratio test (LMR-LRT; Lo et al., 2001); and entropy (Ramaswamy et al., 1993). AIC, BIC and  $ssABIC$  are goodness of fit indices used for comparing competing models, with lower values indicating better-fitting models. Another useful statistic for elucidating the most appropriate number of classes is the LMR-LRT, which assesses the improvement in fit between competing models. A non-significant value ( $p > 0.05$ ) suggests that the model with one fewer class provides a more parsimonious fit to the data. Entropy evaluates the quality of the classification of participants by the model, with values closer to 1 considered preferable (Nylund et al., 2007).

Then, with regression analyses, we examined the association between class membership and indicators of mental wellbeing. For the categorical dependent variables (NSSI, suicide ideation and suicide attempt), three binary logistic regression models were specified. Class membership was dummy coded and used as the independent variable. For the continuous dependent variables (depression and anxiety), two linear regression models were specified, with class membership entered as a categorical independent variable. Age, number

of siblings, district (urban/rural), living situation (living with both parents/living with one parent), parental alcohol/drug misuse, exposure to physical domestic violence, exposure to verbal domestic violence, and sibling bullying were included as covariates in all analyses.

## **Results**

### **Descriptive statistics and frequencies**

The proportion of boys and girls reporting each type of maltreatment is displayed in Table 1. The most common type of maltreatment experienced by all participants was physical abuse inside the home (boys – 60.36%; girls – 44.36%), followed by neglect (boys – 35.81%; girls – 32.87%), emotional abuse inside the home (boys – 33.08%; girls – 23.71%), physical abuse outside the home (boys – 21.07%; girls – 8.89%), emotional abuse outside the home (boys – 17.52%; girls – 10.69%), and lastly sexual abuse inside (boys – 8.95%; girls – 4.30%) and outside (boys – 8.99%; girls – 3.81%) the home. Chi square tests of independence showed that boys were significantly more likely to report all forms of maltreatment than girls, however the effect sizes (Phi), were at most, small.

The proportion of boys and girls reporting NSSI, suicide ideation and suicide attempt is also displayed in Table 1. Chi square tests of independence showed that boys (9.24%) were significantly more likely to report NSSI than girls (7.69%), but Phi did not reach the criteria for being deemed a small effect. There was no statistically significant difference for suicide ideation (boys – 13.44%; girls – 14.54%) or suicide attempt (boys – 6.25%; girls – 6.86%).

[INSERT TABLE 1 ABOUT HERE]

Descriptive statistics for symptoms of anxiety and depression are displayed in Table 2. Girls were significantly more likely to report symptoms of depression than boys, but the effect size calculation did not reach the threshold for a small effect. There was no statistically significant difference in symptoms of anxiety.

[INSERT TABLE 2 ABOUT HERE]

### **Latent class model selection**

Given significant sex differences in all forms of maltreatment, NSSI and depression, all subsequent analyses were performed separately for boys and girls. Beginning with a two-class solution, a series of models with an increasing number of classes were specified and tested. Based on the traditional threshold of  $p < 0.05$ , the LMR-LRT for the five-class solution was non-significant for both sexes (Table 3), suggesting that this did not provide a better fit for the data than the four-class solution. As such, no further models were included.

[INSERT TABLE 3 ABOUT HERE]

Based on examination of the model fit indices and the conceptually meaningful nature of the classes, the four-class solution was identified as the best fitting model for boys. The AIC, BIC and  $_{SSA}BIC$  were all lower in the four-class solution compared to the two- and three- class solutions. Further, the entropy statistic (0.72) suggests that the data was adequately captured by the four-class solution.

In contrast, the three-class solution was identified as the best fitting model for girls. Although the AIC and  $_{SSA}BIC$  were lower in the four-class solution, differences between two of the classes were quantitative (i.e. based on the probability of endorsement of items) rather than qualitative (i.e. reflecting differences in the types of abuse experienced) in nature. Given that it is qualitative differences between subgroups that lend themselves more readily to the formulation of preventative strategies and treatment approaches (Lanza & Rhoades, 2013, p. 158), the three-class solution was considered to have greater utility in this regard. The BIC was also lower for the three- than the four- class solution, and this particular model fit statistic has been recognised as one of the most reliable indicators of the correct number of latent classes (Nylund et al., 2007). Finally, the entropy statistic (0.80) suggests that the data was well captured by the three-class solution.

### **Description of latent profiles**

Inspection of the latent profile plot for boys (Figure 1) confirmed that the latent classes were characterised by meaningful qualitative differences maltreatment experiences. Item-response probabilities indicate the likelihood of endorsing a particular item conditional on latent class membership. Latent class 1 (50.4% of boys) was characterised by a low-moderate item-response probability for physical abuse inside the home (0.37), a low item-response probability for neglect (0.13), and very low item-response probabilities for all other items, including physical abuse outside the home (0.03), sexual abuse both inside (0.01) and outside (0.01) the home, and emotional abuse both inside (0.03) and outside (0.01) the home. Consequently, this class was labelled the ‘low victimisation’ class.

Latent class 2 (34.6% of boys) comprised of individuals with a high probability of endorsing physical abuse inside the home (0.84); moderate probabilities of endorsing emotional abuse (0.55) and neglect (0.53) inside the home; and low or very low probabilities of endorsing physical (0.26) and emotional (0.13) abuse outside the home, and sexual abuse both inside (0.10) and outside (0.04) the home. In considering the characteristics of this class, it was labelled the ‘intra-familial non-sexual abuse’ class.

Latent class 3 (10.2% of boys) was class characterised by high item-response probabilities for physical abuse both inside (0.86) and outside (0.71) the home, and emotional abuse both inside (0.87) and outside (0.86) the home; a moderate-high item-response probability for neglect (0.69); a low-moderate item-response probability for sexual abuse outside the home (0.31); and zero probability of sexual abuse inside the home (0.00). As such, this class was labelled the ‘intra- and extra- familial non-sexual abuse’ class.

Latent class 4 (4.8% of boys) comprised of participants with high probabilities of endorsing all items, including physical abuse both inside (0.86) and outside (0.74) the home; emotional abuse both inside (0.83) and outside (0.73) the home; sexual abuse both inside



(1.00) and outside (0.89) the home; and neglect (0.87). Hence, this final class was labelled the ‘poly-victimisation’ class.

[INSERT FIGURE 1 ABOUT HERE]

The latent profile plot for girls (Figure 2) also evidenced conceptually distinct typologies of maltreatment. Latent class 1 (68.1% of girls) comprised individuals with low-moderate probabilities of endorsing sexual (0.30) and physical (0.27) abuse inside the home; a low probability of endorsing neglect (0.17); and little to no probability of endorsing physical (0.01), sexual (0.00) or emotional (0.00) abuse outside the home.

Latent class 2 (28.8% of girls) was characterised by a high item-response probability for physical abuse inside the home (0.79); moderate item response probabilities for emotional abuse inside the home (0.67) and neglect (0.63); and low or very low item response probabilities for emotional (0.27) and physical (0.20) abuse outside the home, and sexual abuse both inside (0.07) and outside (0.05) the home. In considering the characteristics of this class, it was labelled the ‘intra-familial non-sexual abuse’ class.

Latent class 3 (3.0% of girls) comprised of participants with high a high probability of endorsing items pertaining to neglect (0.95), emotional abuse both inside (0.90) and outside (0.87) the home, physical abuse both inside (0.83) and outside (0.75) the home, and sexual abuse outside the home (0.74); and a moderate probability of endorsing sexual abuse inside the home (0.62). Hence, this final class was labelled the ‘poly-victimisation’ class.

[INSERT FIGURE 2 ABOUT HERE]

### **Association between latent class membership and covariates**

Associations between the emergent latent classes and symptoms of anxiety and depression, NSSI, suicide ideation and suicide attempt were examined separately for boys and girls. All comparisons were made to class 1 – the ‘low victimisation’ class.

Compared to boys in class 1, boys in class 2 ('intra-familial non-sexual abuse') reported higher symptoms of anxiety ( $B = 3.53$ , 95% CI = 2.99/4.07,  $\beta = .22$ ,  $SE = .27$ ,  $p < .001$ ) and depression ( $B = 3.79$ , 95% CI = 3.18/4.39,  $\beta = .21$ ,  $SE = .31$ ,  $p < .001$ ), and an increased likelihood of NSSI (OR = 1.62, 95% CI = 1.20/2.18,  $p = .002$ ) and suicide ideation (OR = 1.59, 95% CI = 1.24/2.03,  $p < .001$ ). There was no statistically significant difference in suicide attempt for boys in classes 1 and 2 (OR = 1.23, 95% CI = .84/1.79,  $p = .289$ ). Boys in class 3 ('intra- and extra- familial non-sexual abuse') also reported higher symptoms of anxiety ( $B = 9.06$ , 95% CI = 8.20/9.87,  $\beta = .36$ ,  $SE = .43$ ,  $p < .001$ ) and depression ( $B = 9.24$ , 95% CI = 8.28/10.20,  $\beta = .32$ ,  $SE = .49$ ,  $p < .001$ ), and an increased likelihood of NSSI (OR = 2.16, 95% CI = 1.46/3.19,  $p < .001$ ), suicide ideation (OR = 2.85, 95% CI = 2.08/3.91,  $p < .001$ ) and suicide attempt (OR = 1.85, 95% CI = 1.45/2.98,  $p = .012$ ). Lastly, boys in class 4 ('poly-victimisation') reported higher symptoms of anxiety ( $B = 9.67$ , 95% CI = 8.32/11.01,  $\beta = .23$ ,  $SE = .69$ ,  $p < .001$ ) and depression ( $B = 9.80$ , 95% CI = 8.27/11.33,  $\beta = .21$ ,  $SE = .78$ ,  $p < .001$ ), and an increased likelihood of NSSI (OR = 3.05, 95% CI = 1.86/5.00,  $p < .001$ ), suicide ideation (OR = 2.79, 95% CI = 1.78/4.38,  $p < .001$ ) and suicide attempt (OR = 3.76, 95% CI = 2.16/6.54,  $p < .001$ ).

Compared to girls in class 1, girls in class 2 ('intra-familial non-sexual abuse') reported higher symptoms of anxiety ( $B = 5.85$ , 95% CI = 5.17/6.24,  $\beta = .31$ ,  $SE = .34$ ,  $p < .001$ ) and depression ( $B = 7.40$ , 95% CI = 6.64/8.16,  $\beta = .33$ ,  $SE = .39$ ,  $p < .001$ ), and an increased likelihood of NSSI (OR = 2.60, 95% CI = 1.93/3.51,  $p < .001$ ), suicide ideation (OR = 3.47, 95% CI = 2.78/4.35,  $p < .001$ ) and suicide attempt (OR = 2.34, 95% CI = 1.68/3.26,  $p < .001$ ). Girls in class 3 ('poly-victimisation') also reported higher symptoms of anxiety ( $B = 11.79$ , 95% CI = 9.79/13.78,  $\beta = .20$ ,  $SE = 1.02$ ,  $p < .001$ ) and depression ( $B = 15.56$ , 95% CI = 13.35/17.64,  $\beta = .23$ ,  $SE = 1.13$ ,  $p < .001$ ), and an increased likelihood of

NSSI (OR = 7.75, 95% CI = 4.56/13.19,  $p < .001$ ), suicide ideation (OR = 4.29, 95% CI = 2.59/7.11,  $p < .001$ ) and suicide attempt (OR = 7.48, 95% CI = 4.29/13.02,  $p < .001$ ).

### **Discussion**

Considering that certain acts of violence against children are not prohibited in Indian law, and incidents of abuse are vastly under-reported (Kacker et al., 2007), official crime figures do not provide the depth of knowledge needed to effectively guide policy and practice to eradicate CAN (Bott et al. 2005). Self-report surveys can provide a more reliable estimation of the scale of the problem (Gilbert et al., 2009), and are particularly useful in the development of targeted prevention strategies when they produce information on the setting in which abuse took place (Debowska et al., 2018). Given that existing self-report surveys have not provided information on the context of abuse in India (Deb & Modak, 2010; Charak & Koot, 2014; Kacker et al., 2007; Kumar et al., 2017), the first objective of the present study was to provide population specific data on the prevalence of maltreatment both inside and outside the home among children and adolescents in Mumbai, India. Considering the co-occurring nature of CAN subtypes and the cumulative impact on mental health (Finkelhor et al., 2007; Finkelhor et al., 2009), another objective was to use LCA to identify naturally occurring profiles of maltreatment and the association with mental health indicators.

#### **The Prevalence of CAN in India**

The rate of maltreatment outside the home was far from insignificant, but all CAN subtypes were more prevalent inside the home. In contrast to global estimates that indicate emotional abuse is the most common form of CAN (Stoltenborgh et al., 2015), the present study revealed that the most common type of maltreatment in the home was physical abuse (boys – 60.36%; girls – 44.36%), followed by neglect (boys – 35.81%; girls – 32.87%) and emotional abuse (boys – 33.08%; girls – 23.71%), and lastly sexual abuse (boys – 8.95%; girls – 4.30%). Moreover, the rates of physical abuse and neglect reported by the current

sample far exceed global estimates (physical abuse - 16.3%; neglect – 22.6%; Stoltenborgh et al., 2015). Whilst poverty and structural disadvantage are significant factors in the neglect experienced by some children in urban India (UNICEF, 2020), the higher rate of physical abuse suggests that this might be regarded as an unproblematic course of action by parents, families, and society in general. In support of this conjecture, non-sexual abuse by a family member has not been outlawed in India, and research evidence indicates that corporal punishment is widely considered an acceptable approach to disciplining children both inside and outside the home (Kacker et al., 2007; Runyan et al., 2010). There is an urgent need to penetrate cultural attitudes that normalise violence against children, which might be partly achieved via social education strategies highlighting the unacceptability of corporal punishment and the negative impact of this on children and adolescents (UNICEF, 2018).

Further, in contrast to global estimates that indicate sex differences are restricted to higher rates of sexual abuse among girls (Stoltenborgh et al., 2015), the present study revealed that boys were more likely to be subjected to all types of maltreatment both inside and outside the home. Moody et al. (2018) also revealed that boys in Asia were more likely to be subjected to emotional/psychological abuse, and these findings further substantiate the need to disaggregate data by country to ensure that region-specific sex differences in maltreatment are not overlooked. It is noteworthy that the rate of sexual abuse among boys (inside – 8.99%; outside – 8.95%) approximated global estimates (7.6%; Stoltenborgh et al., 2015), whereas the rate of sexual abuse among girls (inside – 4.30%; outside – 3.81%) was noticeably lower than global estimates (18.0%; Stoltenborgh et al., 2015). Despite the adoption of an anonymous self-report survey, there are many reasons that sexual abuse is under-reported including stigma/embarrassment, fear of not being believed, and grooming by perpetrators that leaves victims feelings powerless and helpless (Jones et al., 2014; Palermo et al., 2014; Leclerc et al., 2009). Further, evidence indicates that girls in particular are less

likely to disclose sexual abuse within the family, especially when the perpetrator is their father (Priebe & Swedin, 2008). Kacker et al. (2007) also note a general silence around the issue of sexual abuse in India, with a pervasive perception that it is a problem that only affects the West. Considering that sex and relationship education is scarce in India (UNICEF, 2020), this might suggest that children and adolescents are less suitably equipped to recognise sexual and report sexual abuse (though it is unclear why this might affect girls to a greater extent than boys). Age-appropriate programmes should be implemented, with a focus on educating children about their rights and the support services and agencies that are available to help them.

With direct reference to India, Charak and Koot (2010) and Kumar et al. (2017) also observed higher rates of all maltreatment subtypes among boys than girls, but findings from Deb and Modak (2010) and Kacker et al. (2007) were more contradictory in comparison. These heterogeneous findings might be attributable to differences in samples, definitions of CAN and survey items, which are known to yield variations in estimates (Stoltenborgh et al., 2015).

### **Latent classes of CAN**

In contrast to previous person-centred analyses indicating that a greater number of classes are required to represent maltreatment profiles among girls than boys (Debowska et al., 2018; McAnee et al. 2019), the current study revealed three meaningful classes for girls and four for boys. This discrepancy might be attributable to population specific variations in childhood adversity and abuse, or the inclusion of a different assortment of maltreatment subtypes, but these findings do substantiate the importance of analysing data from boys and girls separately to avoid overlooking important sex differences maltreatment profiles. A low victimisation class was retrieved for both boys (50.4%) and girls (68.1%), and although this still accounted for the largest proportion of participants, this class was smaller than in most

Western studies of the general population (approximately 80% of participants; Debowska et al., 2017), further signalling the urgent need to address CAN in India. A poly-victimisation class was also retrieved for both boys (4.8%) and girls (3.0%), and the low proportion of participants falling into this class is generally commensurate with past research (Charak et al., 2020; Debowska et al., 2017; Warmingham et al., 2019).

Further, we retrieved an intra-familial non-sexual abuse class (boys – 34.6%; girls – 28.8%) characterised by a high likelihood of experiencing physical abuse and a moderate likelihood of experiencing emotional abuse and neglect. Given that multiple CAN subtypes are evident in this class, this finding suggests that ineffective parenting strategies might be manifest in the perpetration of a range of different types of maltreatment. Thus, delivering workshops to parents who are at increased risk of mistreating their children could have multifaceted benefits in terms of protecting children multiple forms of CAN within the home. The final class to mention is the intra- and extra- familial non-sexual abuse class, which was recovered for boys only (10.2%). A possible suggestion for the absence of this class amongst girls is the tendency for girls to spend more time in the home environment in India (Charak & Koot, 2014). Although comparisons with other studies are difficult due to differences in the types of maltreatment modelled, the membership rates for the intra- and extra- familial abuse classes are not dissimilar to the abuse classes retrieved among secondary school children from the district of Jammu (15.9 – 30.1%; Charak & Koot, 2015). In contrast to some previous studies, we did not identify a class characterised by sexual abuse only (Charak et al., 2020; Debowska et al., 2017; McAnee et al., 2019). However, as noted above, the rate of sexual abuse in the current study was lower than reported elsewhere. Latent variable modelling techniques often fail to recover classes where levels of endorsement are low, meaning that this might be an artefact of the current methods of data collection.

### **Associations between latent classes of CAN and mental health**

In addition, the current study found that although exposure to multiple types of maltreatment does not necessarily imply the presence of mental health problems, the likelihood is certainly increased relative to children with little to no maltreatment experiences. Compared to the low victimisation class, boys in the intra-familial non-sexual abuse class, and especially those in the intra- and extra- familial abuse class and poly-victimisation class, reported higher levels of anxiety and depression. Moreover, boys in the intra-familial non-sexual abuse class were approximately 1.6 times more likely to report at least one occurrence of non-suicidal self-injury or suicide ideation than their counterparts in the low victimisation class. The odds of experiencing these phenomena were higher still for the intra- and extra- familial abuse class (non-suicidal self-injury – 2.16; suicide ideation – 2.85; suicide attempt – 1.85), and especially the poly-victimisation class (non-suicidal self-injury – 3.05; suicide ideation – 2.79; suicide attempt – 3.76). This suggests that experiencing a wider range of CAN subtypes across a greater number of settings confers a greater ‘risk’ of deleterious mental health outcomes and self-injurious thoughts and behaviours.

For girls, it is noteworthy that the increment in scores for anxiety and depression from the low victimisation class to the intra-familial non-sexual abuse class, and especially the poly-victimisation class, was more pronounced than among boys. Considering self-injurious thoughts and behaviour, girls in the intra-familial non-sexual abuse class (non-suicidal self-injury – 2.6; suicide ideation – 3.47; suicide attempt – 2.34), and particularly those in the poly-victimisation class (non-suicidal self-injury – 7.75; suicide ideation – 4.29; suicide attempt – 7.48), demonstrated higher odds of experiencing these phenomena on at least one occasion, compared to their peers in the low victimisation class. Contrasting these findings with those reported for boys, it is evident that even among boys and girls with qualitatively similar victimisation experiences, the likelihood of experiencing symptoms of anxiety and depression and self-injurious thoughts and behaviour is substantially augmented for girls.

Although this is not the first study to observe sex differences in the relationship between latent classes of CAN and indicators of mental health (McAnee et al., 2019), there is an urgent need for context-specific research to understand the factors that moderate the relationship between abuse profiles and adverse outcomes among boys and girls in India.

### **Limitations**

The present study should be interpreted in light of several limitations. Firstly, we relied entirely on self-reported experiences of lifetime maltreatment, raising the possibility of a recall bias (though research shows that such reports are surprisingly accurate (Read et al., 2005)). Future research should endeavour to use multi-rater assessments including a combination of self-report and parent/teacher ratings, especially as the later can be particularly useful in gauging the severity or chronicity of abuse (something that was lacking in the current study). Secondly, we did not include certain sections of the population, such as children under the age of nine and those who did not attend school. Thirdly, we adopted a cross-sectional design, which did not enable us to establish causal relationships between maltreatment experiences and indicators of psychological wellbeing. Nor did we establish the age of onset of maltreatment, which is an important factor in determining psychological sequelae (Cowell et al., 2015). Future studies should also endeavour to include sociodemographic factors that might predict membership of maltreatment classes, thus facilitating the implementation of more targeted prevention strategies. Longitudinal research is required to establish cause-effect relationships and developmental trajectories, and person-centered analytic techniques are also available for this purpose (see Rivera et al., 2018).

### **Conclusions and implications**

In conclusion, the findings of the present study indicate that child maltreatment is widespread in India, with rates of physical abuse and neglect in particular exceeding global estimates. Furthermore, the present findings indicate that there were very few maltreated



children who experienced just one form of CAN, confirming previous studies indicating that different forms of maltreatment and adversity coalesce (e.g. Finkelhor et al., 2007; Finkelhor et al., 2009). This observation calls into question the validity and usefulness of studying CAN subtypes in isolation, and it is recommended that future research should concentrate on the identification of real-life maltreatment patterns using person-centered approaches.

Furthermore, police, child protection services and counsellors should be cognisant of the fact that when investigating maltreatment or screening for trauma, single reports of abuse are likely to be indicative of multifaceted maltreatment histories.

As for associations with indicators of mental health, experiencing a wider range of CAN subtypes across a greater number of settings appears to confer a greater ‘risk’ for anxiety, depression, non-suicidal self-injury, suicide ideation and suicide attempt. Although this finding was observed for both boys and girls, the likelihood of experiencing deleterious mental health outcomes and self-injurious thoughts and behaviours was substantially augmented for female victims compared to their male counterparts. These findings carry important implications for counsellors since they suggest that the level and type of service intervention might not only differ according to the particular constellation of abuse experiences, but also according to the sex of the client.

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**Table 1**

Endorsement rates for categorical variables among boys (n = 4,454) and girls (n = 3,850), and chi square test for independence.

	Boys Frequency (%)	Girls Frequency (%)	X <sup>2</sup> (Phi)
Physical abuse (inside home)	2640 (60.36%)	1682 (44.36%)	208.71*** (.16)
Sexual abuse (inside home)	386 (8.95%)	162 (4.30%)	68.89*** (.09)
Emotional abuse (inside home)	1440 (33.08%)	896 (23.71%)	86.76*** (.10)
Neglect (inside home)	1560 (35.81%)	1235 (32.87%)	7.73** (.03)
Physical abuse (outside home)	919 (21.07%)	337 (8.89%)	230.84*** (.17)
Sexual abuse (outside home)	389 (8.99%)	144 (3.81%)	88.08*** (.10)
Emotional abuse (outside home)	755 (17.52%)	401 (10.69%)	76.25*** (.10)
NSSI	377 (9.24%)	278 (7.69%)	5.88* (.03)
Suicide ideation	547 (13.44%)	526 (14.54%)	1.93 (.02)
Suicide attempt	253 (6.25%)	247 (6.86%)	1.13 (.01)

*Note.* \*p<.05; \*\*p<.01; \*\*\*p<.001; Phi = effect size statistic.

**Table 2**

Descriptive statistics for continuous variables among boys (n = 4,454) and girls (n = 3,850), and t-tests.

	Boys			Girls			<i>t</i> value ( <i>n</i> <sup>2</sup> )
	M (SD)	Mdn	Observed Min-Max	M (SD)	Mdn	Observed Min-Max	
Age	12.77 (1.77)	13.00	9 - 17	12.87 (1.73)	13.00	9 - 17	2.62** (0.01)
Anxiety	19.45 (7.74)	17.00	13 - 65	19.75 (8.21)	17.00	13 - 65	1.58 (0.001)
Depression	20.48 (8.49)	17.00	14 - 70	21.28 (9.61)	17.00	14 - 70	3.79*** (0.02)

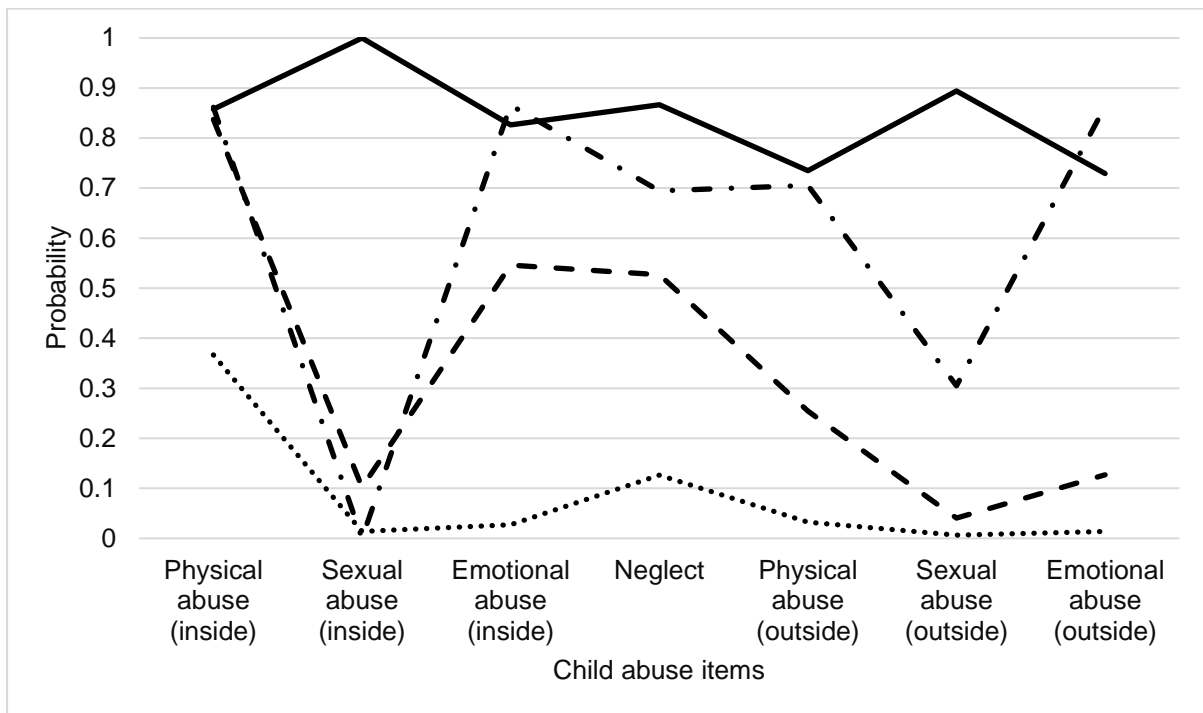
*Note.* \**p* < .05; \*\**p* < .01; \*\*\**p* < .001; *n*<sup>2</sup> = effect size statistic.

**Table 3**

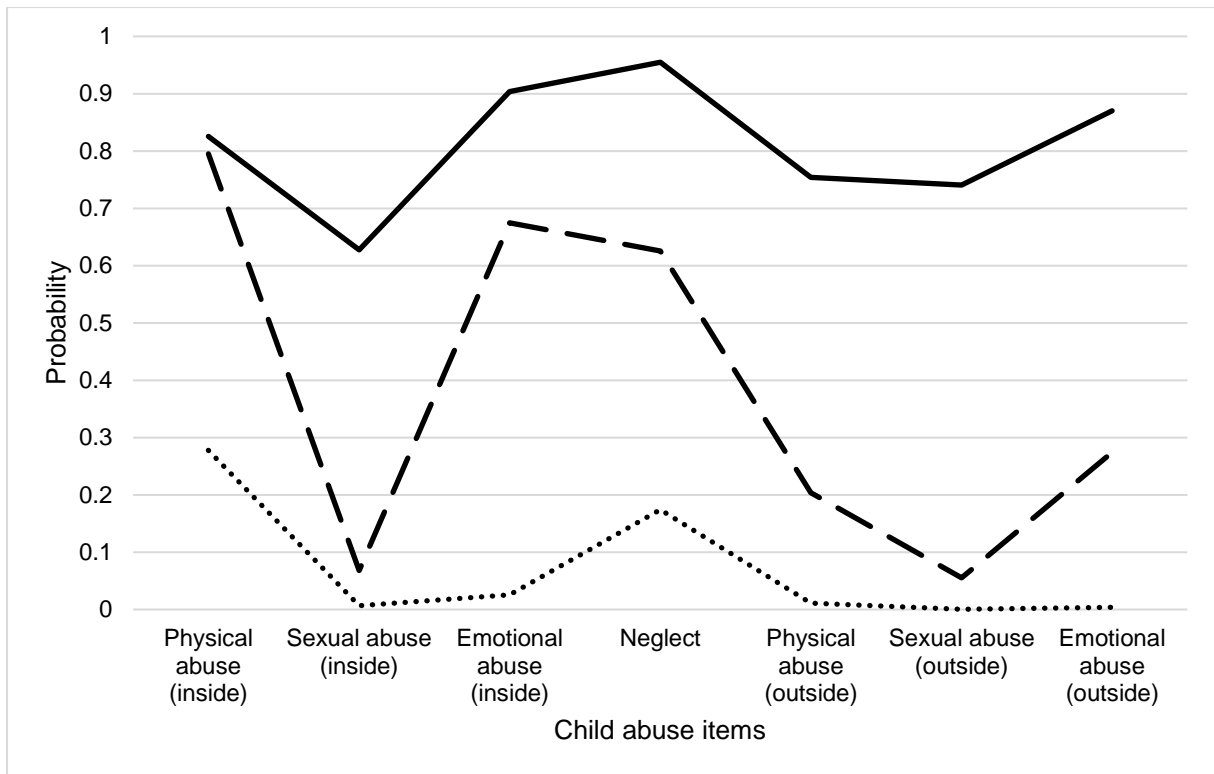
Fit indices for the latent class analysis among boys and girls.

Model	AIC	BIC	$ss_{A}BIC$	LRT	$p$	Entropy
<b>Boys</b>						
2 classes	27095.87	27191.87	27144.21	3668.90	< .001	0.76
3 classes	26663.52	26810.72	26737.64	441.78	< .001	0.78
<b>4 classes</b>	<b>26558.90</b>	<b>26757.30</b>	<b>26658.80</b>	<b>118.85</b>	<b>.0001</b>	<b>0.72</b>
5 classes	26515.57	26765.18	26641.25	58.46	0.164	0.73
<b>Girls</b>						
2 classes	18873.96	18967.78	18920.11	2607.81	< .001	0.78
<b>3 classes</b>	<b>18621.43</b>	<b>18765.29</b>	<b>18692.21</b>	<b>264.52</b>	<b>&lt; .001</b>	<b>0.80</b>
4 classes	18581.16	18775.06	18676.55	55.43	.001	0.77
5 classes	18570.22	18814.15	18690.23	26.54	0.42	0.79

*Note.* AIC = Akaike information criterion, BIC = Bayesian information criterion,  $ss_{A}BIC$  = sample size adjusted BIC, LRT = Lo-Mendell-Rubin's adjusted likelihood ratio test.



**Figure 1.** Latent profile plot of maltreatment among boys. Class 1 (dotted line) = 50.4% participants; Class 2 (dashed line) = 34.6% participants; Class 3 (dash-dot line) = 10.2% participants; Class 4 (solid line) = 4.8% participants.



**Figure 2.** Latent profile plot of maltreatment among girls. Class 1 (dotted line) = 68.1% participants; Class 2 (dashed line) = 28.8% participants; Class 3 (solid line) = 3.0% participants.