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Intergenerational maltreatment in parent-child dyads from Burundi, Africa: associations with parental depression and connectedness, and posttraumatic stress symptoms, and aggression in children

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Abstract

Studies investigating the associations between histories of childhood maltreatment between parents to their child primarily involve samples from high-income countries, when child maltreatment (CM) rates are higher in low-and middle-income countries. The present study aimed to examine this association between maltreatment in parents and maltreatment of their children through risk (parent depression) and protective (parent-child connectedness) factors; associations of maltreatment in children with aggression through posttraumatic stress symptoms and peer/sibling victimization in 227 parent-child dyads from a low-income country, Burundi, Africa. Parents were above the age of 18 years and children were from 12-18 years ($M/SD = 14.76/1.88$; 57.7% female). The range of histories of CM: physical and emotional abuse and neglect reported by parents were 20.7%-69.5%, and for sexual abuse, and physical and emotional abuse and neglect children was 14.5%-89.4%. Findings indicated that a history of CM in parents was associated with CM in children ($B = 0.19, p < 0.01$); CM in parents was indirectly associated with CM in children through parent-child connectedness ($\beta = 0.04, CI: 0.01$ to 0.10) and parents' depression scores ($\beta = 0.08, CI: 0.03$ to 0.15). In children, maltreatment was positively associated with a peer or sibling victimization. CM in children was associated with aggression ($\beta = 0.07, CI: 0.04$ to 0.11) through posttraumatic stress symptoms and not through peer/sibling victimization. Continued efforts need to be made to improve CM-related preventive strategies and the accessibility of prevention services to reduce child maltreatment in low-income countries such as Burundi.

Intergenerational maltreatment in parent-child dyads from Burundi: associations with parental depression and connectedness, and PTSS and aggression in children

Several studies suggest an association between parental histories of childhood maltreatment and exposure to maltreatment experiences in their children. Most of the research studies examining intergenerational continuity of child maltreatment are based on samples from high-income countries (Anderson et al., 2018; Barlett et al., 2016; Thornberry et al., 2013; Widom et al., 2015) and only a handful of studies are from low-and middle-income countries (LMICs) where risk factors are disproportionately higher (Berckmoes, in press; Crombach & Bambonye, 2015; Lakhdir et al., 2019). Studies focusing on child maltreatment in LMICs indicate higher rates of child abuse and neglect compared to high-income nations primarily due to lack of resources for basic sustenance, on-going community conflict and violence, deficits in social and mental health services and child protection legislations (Berckmoes et al., 2017; Charak & Koot, 2014; Charak et al., 2017; De Jong et al., 2015). The overall aim of the present study was to examine the associations between histories of childhood maltreatment in parents and their offspring, identify risk and protective factors, and investigate the accumulating detrimental effect of maltreatment and peer/sibling victimization on mental health of the offspring in parent-child dyads from Burundi.

A small but overpopulated country in Eastern Central Africa, Burundi was immersed in a civil war that lasted from 1993 till 2002 with an estimated 200,000-500,000 deaths and at least 1.2 million displaced persons (Hatungimana, 2011; Lemarchand, 2009). Families residing in conflict zones, such as those living in Burundi, are affected by several challenges, including loss and grief, disruption of family relations and social support, parental stress affecting child-rearing practice, chaos and uncertainty associated with everyday living (De Jong, 2020), which are risk

factors of child maltreatment. For instance, a study on children from Burundi found that 92% had been displaced, 69% had their house burnt, 60% had experienced death of a sibling, 14% and 26% had lost their mother and father, respectively, including to war violence (Ventevogel et al., 2014). These traumatic experiences were in turn associated with mental health disorders (e.g., depression, panic disorder, posttraumatic stress disorder, separation anxiety disorder) in 43% of the children (Ventevogel et al., 2014). Thus, instances of child maltreatment are influenced by factors at the family level and by the broader contextual factors of a country (Crombach & Bambonye, 2015).

Maltreatment model

A theoretical framework that renders support to the association between histories of childhood maltreatment in parents and their offspring is the social learning theory (Bandura, 1977). Specifically, the social learning theory posits children learn to model behaviors of their caregivers in that maltreated children learn to normalize abusive behavior and use similar maladaptive parenting practices (e.g., Marshall et al., 2011). Several protective and risk factors either alleviate or increase the likelihood of spillover of maltreatment. For instance, developing positive parent-child connectedness is known to alleviate the risk of child abuse by a parent with a history of childhood maltreatment (Crombach & Bambonye, 2015; Thornberry et al., 2013).

Alternatively, studies have shown that indicators of psychological challenges such as parental emotion dysregulation strategies and trauma symptoms, including symptoms of depression play a role in the transmission of maltreatment (Anderson et al., 2018). For example, in a large sample of mothers receiving welfare in the United States, maternal histories of childhood physical abuse (CPA) and physical neglect were associated with perpetration of physical abuse against their offspring through symptoms of depression (Yang et al., 2018).

Similarly, maternal exposure of childhood sexual abuse (CSA) and adulthood depression increased the likelihood of spillover of maltreatment from parents to their offspring (Leifer et al., 2004). Thus, several factors in parents with childhood maltreatment histories, including parent-child connectedness and symptoms of depression play a role their children reporting greater maltreatment.

Child maltreatment, posttraumatic stress symptoms, and aggression (Child trauma model)

Child maltreatment is one of the most robust predictors of posttraumatic stress symptoms (PTSS, Catani et al., 2009; Kerig et al., 2016; Lagdon et al., 2021) and aggressive behavior (Charak et al., 2019). A recent meta-analytic study indicated that exposure to any child maltreatment and CSA increased the odds by three times of having a diagnosis of child maltreatment-related DSM-IV PTSD (Gardner et al., 2019). Similarly, studies indicate that exposure to severe forms of emotional maltreatment in infancy and toddlerhood and CPA during preschool years are predictors of later externalizing behavior and aggression (Manly et al., 2001). However, not all children with exposure to maltreatment develop PTSS (Day & Kearney, 2016) or display aggressive behavior suggesting that there are factors that explain the reasons associated with why some maltreated children develop PTSS and aggression while others do not.

Child abuse and peer/sibling victimization: Spillover hypothesis

Subsystems within a family (e.g., parent-child, sibling-sibling) and non-familial (e.g., peer-peer) are interactional and constantly influence each other. These interactions can be explained via the spillover hypothesis that posits that there is transference of emotional and behavioral patterns of interaction among various subsystems (Erel & Burman, 1995), and transfer occurs in the same valence in that negative affect or aggression in one subsystem leads to negative affect or aggression in another (e.g., Margolin & Gordis, 2003). In line with this

hypothesis, experiences of child maltreatment can create mental representations reinforcing the child to be submissive and accepting of violence that in turn can potentially increase the risk of being a target or a perpetrator of further victimization in other settings, such as by peers and/or siblings (Glatz et al., 2019; van Berkel et al., 2018).

Peer/sibling victimization, posttraumatic stress symptoms, and aggression

Peer and sibling relationships play a prominent role in influencing children and adolescents' daily experiences and mental health (Tucker et al., 2014). Studies have consistently indicated that sibling and peer victimization are linked to mental health challenges, such as symptoms of PTSS, depression, anxiety, and self-harm (Baldry et al., 2019; Bowes et al., 2014; Tucker et al., 2013). A nationally representative study from the United States indicated that sibling victimization led to mental health problems and delinquent behavior even after controlling for the effect of maltreatment in children and adolescents (van Berkel et al., 2018). Similarly, in a large sample study of 5,058 adolescents from Italy, it was found that peer bullying/perpetration and victimization at school and via cyberspace were associated with PTSS (Baldy et al., 2019). These studies indicate that sibling and/or peer victimization experiences are associated with anger, aggression, and PTSS among children and adolescents. Notably, these studies are primarily conducted in western and politically stable environments, and less is known of the effect of peer/sibling victimization on mental health challenges in politically volatile and under resourced settings as found in Burundi.

PTSS and aggression

Anger that can lead to aggression is a symptom of posttraumatic stress. It critically differentiates PTSS from other anxiety disorders, and longitudinal research indicates that PTSS predicts anger while anger does not predict PTSS (Orth et al., 2008). Exposure to traumatic

events, such as child maltreatment, and PTSS are associated with increased risk of aggressive externalizing behavior in adolescents (Ford et al., 2018). Studies further suggest that trauma exposure and PTSS can produce biases and social information processing deficits (e.g., hostile attribution) that can lead to aggressive behavior (Dodge et al., 2013; Fite et al., 2008). For instance, in a longitudinal study on 135 children who survived a residential fire, it was found that posttraumatic stress symptoms, specifically, reexperiencing symptoms, predicted higher levels of aggression (Sullivan et al., 2017). These studies suggest an association between PTSS and aggressive behavior in children and adolescents.

The current study

The present study had two aims: Aim 1: To examine the association of childhood maltreatment in parents' and their offspring in parent-child dyads from Burundi, Africa using a cross-sectional design. Two hypotheses were proposed in this regard: first, it was hypothesized that parents' histories of childhood maltreatment would be associated with exposure to child maltreatment in their offspring through symptoms of depression, such that higher depression score would be associated with an increased risk of maltreatment in the offspring (hypothesis 1a; Crombach & Bambonye, 2015). Second, it was hypothesized that association between parents' histories of childhood maltreatment and maltreatment of their offspring would be through parent-child connectedness, such that greater levels of parent-child connectedness would be associated with lower risk of maltreatment in children with parents with maltreatment histories (hypothesis 1b; Thornberry et al., 2013). Aim 2: To examine the presence of spillover effect of victimization, and its accumulating detrimental effect on traumatic stress symptoms, including PTSS and aggression. It was hypothesized that adolescents with exposure to child maltreatment would be at a greater risk of victimization by a peer or a sibling (hypothesis 2a; Tucker et al., 2014) which in

turn would be associated with an increase in PTSS and aggression (hypothesis 2b; Tucker et al., 2014).

Method

Participants

The present study comprises participants from a larger study, which had 359 parent-child dyads that were part of a nationwide study examining parental caregiving practices in Burundi. Selection of participants was from five provinces out of the seventeen, namely, Muyinga (Northern Burundi), Bururi, Makamba (Southern Burundi), Bubanza and Cibitoke (Western Burundi). All 17 provinces (today there are 18 provinces) of Burundi were severely affected by the civil war and political violence. Selection of households was based on information shared by a research-team who randomly selected 2,050 households (1,350 original and 700-split-off households, cf. Jeusette & Verwimp, 2017) from the Multiple Indicator Cluster Survey (MICS-3) implemented in 2005 by the Burundi National Institute of Statistics and Economics (ISTEEBU). The selection criteria for the 359 parent-child dyads were (i) those living in the five provinces of Muyinga, Bururi, Bubanza, Cibitoke, and Bujumbura Rural, (ii) with at least one child in the age range of 8-21 years, and (iii) an adult parent (either mother or father). For the present study, children in the age range of 12-18 years were included as the childhood maltreatment question required the index child to be at least 12 years old.

A final sample of 227 parent-child dyads was part of the present study. All parents were 18 years or older (51.1% mothers); we did not inquire about the exact age of the parents at the time of the study. On an average, a household comprised 6.6 members ($SD = 2.27$, range 2-12) as reported by the parent. The age range of the children was from 12-18 years ($M = 14.76$, $SD = 1.88$; 57.7% female). Nearly 19% ($n = 42$) of the dyads were living in the province of Bubanza,

25.6% ($n = 58$) in Bururi, 18.5% ($n = 42$) in Cibitoke, another 16.7% ($n = 38$) were residing in Makamba, and 20.7% ($n = 47$) were living in the Muyinga provinces of Burundi.

Procedure

Data were collected by 8 male and 8 female bilingual (French-Kirundi) interviewers with a university degree and prior experience in survey methodology in Burundi. They received a half-day of additional training on the methodology and measures used in the present study. The training and the interviews took place in March and April 2015, just before the political turmoil related to elections in Burundi commenced.

All questionnaires were translated and back translated by two bilingual French and Kirundi speaking psychologists. Notably, French and Kirundi are the two most widely spoken official languages in Burundi. English as a third official language was only introduced in 2014 and has little active presence in Burundi (IWACU English News, 2014). The translation of measures was further refined in the group of bilingual (French-Kirundi) interviewers. This group was moderated by the two bilingual psychologists who made the translation and back translation in Kirundi and French. Each item in Kirundi was followed by extensive discussions in the group until all participants reached an agreement on semantic, concept and content equivalence among different socio-economic strata of the society. All items in the measures used were discussed by the group of bilingual professionals, and slightly adapted when the group thought it to be necessary. Informed consent from the parent and assent of the index child was sought, and questionnaires were administered in person and separately for parent and their child. The study protocol is in line with the ethical guidelines provided by [Masked for review] and the University of [Masked for review]. The [Masked for review] in Burundi also approved the study.

Measures

Childhood maltreatment. The present study utilized the 25-item short version of the Childhood Trauma Questionnaire (CTQ-SF, Bernstein et al., 2003) to measure childhood maltreatment histories across five domains, namely, emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. Each of the five facets of child maltreatment comprise five items that are measured via a 5-point Likert scale (1 = *never true*; 5 = *very often true*). Emotional and physical abuse and neglect items inquires of instances where the perpetration is by a family member, whereas sexual abuse includes all instances irrespective of the relationship with the perpetrator. The five-factor structure of the CTQ-SF has been previously established in a sample of adolescents from Burundi after dropping one item on ‘molestation’ (Charak et al., 2017). In the present study, the summed score of the 24-items in the five-factor structure proposed by Charak et al. (2017) was used. Related, the Cronbach’s alpha (α) for the total score was 0.87. Notably, due to an error in administration 1-item from emotional abuse and physical neglect, and 2-items from emotional neglect were not administered in the parent sample. Sexual abuse was not inquired from parents/adults as it is considered a taboo to inquire about sexual behavior including abuse from adults in the Burundian context. We continued to use the cut-off score proposed by the authors of CTQ-SF and prorated the cut-off score for the subscales where fewer items were administered (see Table 1).

Symptoms of depression in the parent. The Patient Health Questionnaire (PHQ) (Kroenke & Spitzer, 2002) is a nine-item instrument that screens for depression as characterized by the DSM-IV criteria (American Psychiatric Association [APA], 1994) which remains the same in DSM-5 (APA, 2013). Frequency of depressive symptoms (e. g., *little interest or pleasure in doing things*) experienced in the past month was rated on a 4-point Likert scale (0 = *not at all*; 3 = *nearly every day*). Responses were summed to provide a PHQ-9 total score. PHQ-

9 scores ranged from 0 to 27. Consistent with prior research, a cut-off score of 10 was used to indicate depression (Kroenke et al., 2001). Increase in PHQ-9 depression severity scores is associated with deteriorating functionality in primary care patients, demonstrating adequate construct validity. Internal consistency reliability for the PHQ-9 scale in the present sample was $\alpha = 0.85$.

Parents' connectedness with child. The present study examined parent-child connectedness via 10-items with a 3-point Likert scale (1 = *not true* to 3 = *very true or often true*) based on the family-connectedness scale used previously in Burundi (Jordans et al., 2013). Examples of some items are "*Does your child get along with all adults in the household?*" "*Most of the time, do you and your partner show warmth and love towards your child?*" and "*Do you and your partner understand your child?*" The total score was used in the present study and the corresponding Cronbach's α was 0.90.

Peer or sibling victimization. Peer and sibling victimization were each gauged via 6-items measuring physical victimization. Additionally, 3-items were used to measure sexual victimization by a peer. For both peer and sibling victimization, the subscale of physical victimization comprised item-content inquiring about slapping/throwing things that could hurt, pushed/shoved, hit with fist/object, kick/beat-up, and intentionally choking/burning. Similarly, the subscale of sexual victimization by a peer comprised item-content inquiring sexual intercourse under threat, physically force to have sexual intercourse, and any sexual activity that was degrading/humiliating. These items were adapted from the questionnaire used to gauge partner abuse in the World Health Organization's 2003 Multi-Country Study on Women's Health and Life Experiences conducted across 15 sites in 10 countries (see Garcia-Moreno et al., 2006). In the present study, all items were answered as yes (coded as 1) or no (coded as 0), and all 15-

items were added to create an overall score for victimization either by a peer or a sibling that ranged from 0 to 15. Finally, those with no victimization were coded as 0, and with any victimization (i.e., score of 1-15) were coded as 1.

Posttraumatic stress symptoms in children. The Child PTSD Symptom Scale-Part-I (CPSS; Foa et al., 2001) assesses symptoms of DSM IV Posttraumatic stress disorder (APA, 1994) with 17 items. Participants are instructed to rate the symptoms for the past two weeks from 0 = *Not at all or only at one time* to 3 = *5 or more times a week/almost always* in the context of an upsetting event. The cut-off score of 11 or greater was established by inspecting the distribution of total scores for children with high and low PTSD symptoms, and the Cronbach's alpha was .84 for the total score (Foa et al., 2001). The test-retest reliability for the PTSD was moderate, with a kappa of .55 (Foa et al., 2001). Previously, this instrument was translated, back translated, piloted, and validated in Kirundi in a sample of school-going children from Burundi, and the cut-off score of 26 demonstrated good sensitivity and specificity (71% vs. 83%, respectively; Ventevogel et al., 2014). Notably, the cut-off for the Burundian children is much higher than that used in conflict-affected region of Nepal (cut off score 20; Kohrt et al., 2011) and western countries like United States (cut off score 11; Foa et al., 1997). In the present study, the total score of CPSS was used and the Cronbach's alpha was 0.87.

Aggression in children. Drawing from the Buss-Perry aggression questionnaire (Buss & Perry, 1992), 9-items were adapted to measure aggression in children during the past two weeks. The content measured difficulty in controlling anger, attack when being challenged, physically hit back, quarrelsome in comparison to others, getting violent to protect oneself, physically hit back when being bullied, hit others without reasons, threaten acquaintances, and destructive

when angry. The response options comprised a 5-point Likert scale ranging from 0 = *none of the time* to 4 = *all of the times*. The Cronbach's alpha for the scale in the present study was 0.82.

Data Analysis

First, descriptive statistics and bivariate correlations were conducted in IBM SPSS version 25 (IBM SPSS, 2017). Second, using *Mplus* version 8.0 (Muthén & Muthén, 2017) serial mediation analyses were carried out to evaluate the four indirect effects operating between parents' histories of childhood maltreatment, child maltreatment, and aggression in the child (Figure 1). All variables were treated as manifest/observed variables. The magnitude of the indirect effects was examined using the product of the regression coefficients (Bishop et al., 1975). The coefficient of the indirect effect is divided by its standard error and compared to a critical value with a *z*-test. As recommended by Preacher and Hayes (2008), bias-corrected bootstrapping procedures for confidence intervals with a total of 5,000 bootstrapped samples were used. Use of bootstrapping method is recommended over the traditional causal steps approach, as the former has higher power while maintaining reasonable control over the Type I error rate (MacKinnon et al., 2004). A 95% confidence interval not containing a zero was considered statistically significant. Third, all significant specific indirect effects were compared with each other, with the Model constraint option in *Mplus* that calculates a Wald test to examine differences between parameters under consideration (each pair of statistically significant indirect effects) using bootstrapping ($n = 5,000$ iterations).

Results

Details regarding child maltreatment types are provided in Table 1. No missing data were found after receiving consent and assent from the parent and index child, respectively. Based on the four types of childhood maltreatment (i.e., abuse and neglect), in the parent sample, only four

participants (1.8%) reported no exposure to maltreatment, 33 (14.5%) had experienced one type of maltreatment, and 101 (44.5%), 57 (25.1%), and 32 (14.1%) had experienced two, three, and four different types of childhood maltreatment, respectively. Using the PHQ-9 cut-off score, 40 (17.6%) parents had levels of depression in the clinical range. Based on the five types of childhood maltreatment, in the adolescent sample, only four participants (1.8%) reported no exposure to abuse or neglect, 28 (12.3%) reported exposure to one type of abuse/neglect, 105 (46.3%), 42 (18.5%), 35 (15.4%), and 13 (5.7%) had exposure to 2, 3, 4, and 5 types of child maltreatment, respectively. Using 26 as the cut-off score on CPSS, 3.1% of the adolescents had a probable diagnosis of PTSD (Ventevogel et al., 2014). Bivariate correlations are presented in Table 2 and indicate a significant correlation between parents' histories of CM with their depression scores, parent-child connectedness (negative correlation), maltreatment in their children, and PTSS in children (Table 2). Children's maltreatment scores, peer/sibling victimization, PTSS and aggression were significantly and positively correlated.

For the mediation model the goodness-of-fit indices were well-fitting (CFI/TLI = 1.00/1.04, 90% CI of RMSEA = .00-.05, $\chi^2(9) = 5.50, p = .79$). Figure 1 depicts the serial mediation model with pathways reaching a statistically significant level ($p < .05$). In the present model, all pathways were significant except for the association between child's victimization by peer or sibling and child's PTSS (Figure 1). Four indirect effects are presented in Table 3, and three of the indirect effects were significant (Table 3). **Parent maltreatment → Child maltreatment (Aim 1)**. Two indirect effects of parents' maltreatment on child maltreatment through parents' depression score and parent-child connectedness were found to be significant (hypothesis 1a: Parent maltreatment → Parent depression → Child maltreatment; hypothesis 1b: Parent maltreatment → Parent-child connectedness → Child maltreatment). Comparison of these

two indirect effects indicated no difference in the strength of the indirect effects, that is, the indirect effect of parents' maltreatment histories on maltreatment in children through parents' depression and connectedness with the child were similar in strength although with opposite valence. Specifically, symptoms of depression in parents were associated with increase in the risk of maltreatment in offspring, and parent-child connectedness alleviated risk of maltreatment in children with parental histories of childhood maltreatment.

Child maltreatment → Aggression in the child (Aim 2). The association between child maltreatment and peer/sibling victimization was significant and positive (hypothesis 2a). While the association between peer/sibling victimization and aggression was significant, it was non-significant between peer/sibling victimization and PTSS (Figure 1). Hypothesis 2b was not supported as indirect effect of child maltreatment on aggression through peer/sibling victimization was not significant (see M3 in Table 3). Thus, the association of child maltreatment with aggression was stronger in magnitude through PTSS than peer/sibling victimization.

Discussion

The nation of Burundi has faced many cycles of political violence and armed conflicts leading to poverty, corruption, and ethnic divisions (Berckmoes 2014, 2015). The brunt of the burden of such wars and conflicts largely falls on families as they face several challenges, including economic loss, disruption of family relations, and breakdown of the social fabric including public health, educational, and welfare services (De Jong, 2020). Using a cross-sectional design, the present study found significant indirect effects of parents' histories of childhood maltreatment on maltreatment of their offspring/child via parents' symptoms of depression and parent-child connectedness in parent-child dyads from Burundi. Support for the spillover hypothesis was found in that there was a positive association between child/offspring

exposure to maltreatment with exposure to peer/sibling victimization, and with higher levels of PTSS. Notably, only PTSS and not peer/sibling victimization was significantly and positively associated with aggressive behavior. Thus, only through PTSS did child maltreatment have an indirect effect on aggressive behavior. Findings are discussed below in detail.

The present findings support hypotheses 1a-1b as depression emerged as a risk factor and parent-child connectedness was a protective factor in the associations between parents' histories of maltreatment and maltreatment in their child. Our findings are in line with studies from Burundi and other regions demonstrating a link with parents'-and their child's maltreatment experiences (Crombach & Bambonye, 2015; Morelli et al., 2020; Negriff et al., 2020) and adds to the extant literature by highlighting the role of depression and parent-child connectedness that can facilitate clinical interventions. Findings suggest that there are opportunities to break the cycle of maltreatment, even in conflict-affected regions and politically volatile environments, by considering parents' childhood maltreatment histories in identifying at risk families/children in need of preventative interventions (Assink et al., 2018). Two qualitative studies from Burundi suggest that corporal disciplining and emotional abuse are largely viewed as acceptable practices, which are often seen as a sign of care and for the wellbeing of the child (Berckmoes et al., 2017; Hendriks et al., 2020). As victims of childhood maltreatment, parents may be unaware of ways to apply adequate and effective parenting techniques for improving parent-child connectedness or attachment patterns.

When examining the associations between child/offspring maltreatment and PTSS and aggression, there was support for the spill-over hypothesis (hypothesis 2a supported) in that exposure to child maltreatment was associated with exposure to peer or sibling victimization. The present finding is the first to demonstrate this among Burundian youth and is in line with a

growing body of research studies indicating an association between child maltreatment and sibling victimization, albeit these studies are from developed nations (Tucker et al., 2014). However, there was no significant indirect effect of child maltreatment on PTSS and aggression via peer/sibling victimization (hypothesis 2b not supported). Notably, it was found that child maltreatment had an indirect effect on aggression through PTSS. This again is in line with existing studies that suggest that PTSS are associated with deficits in social information processing (Kerig & Becker, 2010) that in turn can lead to aggressive and externalizing behavior in children/adolescents (Calvete & Orue, 2011; Ford et al., 2018; McLaughlin & Lambert, 2017). One prior qualitative study on Burundian children found that while children can be submissive and accepting of violence from elders (to prevent further violence), they did engage in externalizing behavior such as stealing, damaging materials, jealousy, and harming others (peer) because of poverty and animosities related to ethnic conflicts (Hendriks et al., 2020). Thus, children on one hand maybe vulnerable to violent acts but can also aggress in the context of social hierarchies and structural factors of poverty, ethnic divisions, and gender that render some more powerful than the others. The present findings warrant replication in a longitudinal design as PTSS and aggression can be both, a consequence, and a risk factor of maltreatment in children (Rodriguez et al., 2019). Notably, a recent longitudinal study examining intergenerational transmission of maltreatment demonstrated that maltreatment in children is prospectively associated with mental health outcomes, including PTSS, depression and externalizing problems in adolescence (Negriff et al., 2020); however, the study did not consider mental health outcomes as potential risk factors of child maltreatment.

The present findings should be considered with the following limitations in mind. First, the current study findings may not be generalizable to the whole population of Burundi as this

study was based on households from five out of the then 17 provinces of Burundi. Notably, all provinces in Burundi have been affected by the civil war and [the] political violence; however, the effect of the conflict was not directly investigated in the present study. Second, this study was initially designed as a longitudinal study. However, data collection was interrupted due to eruption of political violence leading to the present cross-sectional design. The causality of maltreatment types leading to depression, PTSS, and aggression is an assumption based on the theory of traumatic stress. Thus, parameters investigated in the present study are associations gauged cross-sectionally. Additionally, the present study is limited in information on demographic details of parents', such as age, education, socio-economic status, family structure and density of household, variables that are identified risk factors for childhood abuse and neglect (Charak & Koot, 2014). Third, childhood maltreatment was inquired through a self-report questionnaire (i.e., CTQ-SF) that may introduce the possibility of response bias resulting from the inability of an individual to recall victimization experiences (Widom & Morris, 1997). Notably, the self-report maltreatment questionnaire used in the present study, namely the CTQ-SF, has most items that inquire behavior specific questions, which tend to reduce response bias. Additionally, in the parent sample emotional abuse and neglect were inquired using fewer items than proposed by the authors of the CTQ-SF (Bernstein et al., 2003) and sexual abuse was not inquired. This could have led to underreporting of maltreatment by parents in the present study. Fourth, maltreatment histories of other household members were not inquired. Fifth, the correlations between the study variable were low-to-moderate that can reduce the power needed to reject the null hypothesis.

It is clear from prior studies that there is an enormous scarcity of mental health professionals in regions with armed conflict, such as in Burundi (De Jong, 2011, 2020). Our

findings have potential clinical implications in that children with exposure to maltreatment who are at risk of greater levels of PTSS, and aggression should be provided with evidence based cognitive behavioral therapies (CBT), such as Trauma-focused CBT that have been found to effectively reduce PTSS, depression, and anxiety in children and youth with traumatic experiences in randomized control trials carried out in some LMICs (e.g., Zambia; Murray et al., 2015). A study also found support for brief interventions comprising psychoeducation of parents in preventing child maltreatment and reducing behavioral problems in Burundian children (Jordans et al., 2013). Additionally, the Problem Management Plus (PM+; Dawson et al., 2015), which is a brief, transdiagnostic, and non-specialist helper delivered psychological intervention, has been found to reduce symptoms of depression, anxiety, and posttraumatic stress in violence-affected communities (e.g., Kenya, Bryant et al., 2017). Randomized control trials of PM+ should also be conducted in the Burundian context. Prior studies also propose multisectoral collaborations to alleviate issues of economic crisis, establish equitable opportunities for education, building safety nets for the most vulnerable, legal and women's rights for appropriate governance and upkeep of human rights (De Jong et al., 2015). Resources also need to be directed towards making health care services accessible to survivors of child maltreatment, while simultaneously developing child maltreatment preventative strategies and culturally sensitive clinical interventions. Future studies should investigate the role of these previously proposed interventions in curbing child maltreatment and posttraumatic stress and other mental health challenges in parents and children from Burundi.

In conclusion, this study is the first to investigate the role of parent's depression and their connectedness with their children as factors effecting the association between parental histories of childhood maltreatment and maltreatment in children in parent-child dyad from Burundi.

While depression in parents increased the association between parental histories of childhood maltreatment and maltreatment in children, parent-child connectedness decreased the association. Exposure to child maltreatment was a risk factor for victimization by a peer or sibling (i.e., spillover hypothesis), but it was PTSS that increased the association between maltreatment and aggression in children.

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Table 1

Descriptive statistics of the study variables

Study variable	% (n)	Mean (SD)
<i>In parents</i>		
Total child maltreatment	98.2 (223)	30.86 (8.62)
Emotional abuse (cut-off ≥ 7)	27.3 (45)	6.70 (2.86)
Physical abuse (cut-off ≥ 8)*	20.7 (47)	6.86 (3.20)
Emotional neglect (cut-off ≥ 6)	27.8 (60)	8.02 (2.57)
Physical neglect (cut-off ≥ 7)	69.5 (155)	9.28 (2.87)
Depression (PHQ cut-off >10)	17.6 (40)	6.21 (4.98)
Connectedness with child	n/a	23.15 (4.60)
<i>In children</i>		
Total child maltreatment	98.2 (223)	44.57 (10.27)
Emotional abuse (cut-off ≥ 9)*	32.2 (73)	7.97 (3.34)
Physical abuse (cut-off ≥ 8)*	21.1 (48)	6.77 (2.77)
Sexual abuse (cut-off ≥ 5)	14.5 (33)	5.52 (1.74)
Emotional neglect (cut-off ≥ 10)*	93.4 (212)	13.26 (3.39)
Physical neglect (cut-off ≥ 8)*	89.4 (203)	11.05 (2.93)
Victimization by peer or sibling	61.7 (140)	4.22 (2.83)
Aggression	82.8 (188)	5.42 (4.46)
PTSD (cut-off ≥ 26)**	3.1 (7)	8.82 (6.88)
PTSD (cut-off ≥ 11)***	36.6 (83)	

Note. PTSD = Posttraumatic stress disorder. Sexual abuse in parents was not measured.

*based on the original cut-off scores on the CTQ-SF (Bernstein et al., 2003)

**based on Ventevogel et al. (2014) cut-off score developed using a Burundian sample of children.

***based on Foa et al. (1997) cut-off score in children from the United States.

Table 2

Correlation between the study variables

Variables	PCM	PDepress	PConn	CCM	CVictim	CPTSS	CAgg	Age (child)	Gender (child; male = 1, female = 2)
PCM	1	0.26***	-0.21***	0.29***	0.04	0.14*	0.05	-0.07	0.07
PDepress		1	-0.11	0.31***	0.03	0.11	-0.04	0.03	-0.03
PConn			1	-0.23***	-0.13	-0.05	-0.05	0.001	0.01
CCM				1	0.17**	0.59***	0.36***	0.10	0.004
CVictim					1	0.18**	0.26***	-0.07	-0.08
CPTSS						1	0.41***	0.23***	0.10
CAgg							1	-0.10	-0.11
Age (child)								1	0.05
Gender (child; male = 1, female = 2)									1

Note. PCM = Parents' histories of childhood maltreatment. PDepress = Parent depression scores. PConn = Parent connectedness with child. CCM = child maltreatment. CVic = Victimization by peer or sibling in child. CPTSS = Child's posttraumatic stress symptom score. CAgg = Child's aggression score.

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

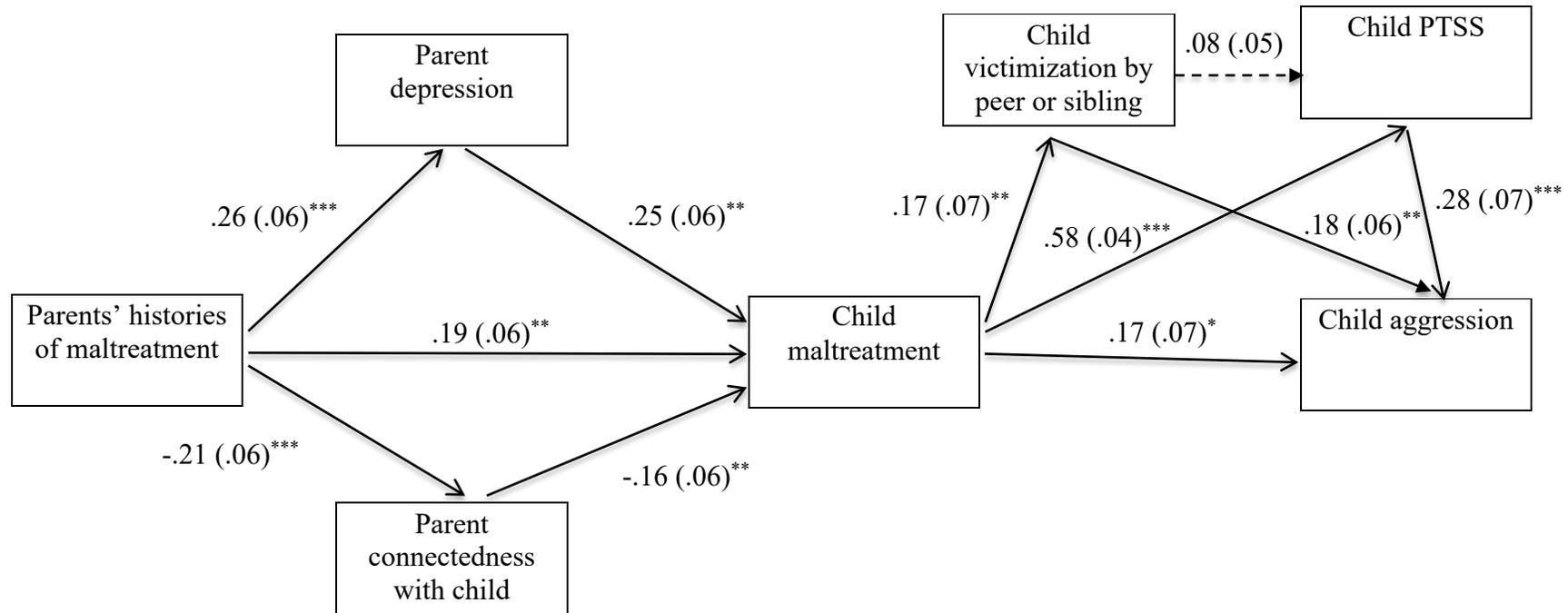
Table 3

Indirect effects of parents' maltreatment histories on maltreatment in their children, and of maltreatment experiences on aggression in children in parent-child dyads from Burundi

<i>Indirect effects</i>		<i>Estimate</i>	<i>95% CI</i>	<i>Comparison of indirect effects</i>
Parent maltreatment → Child maltreatment				
M1	Parent maltreatment → Parent depression → Child maltreatment	0.08	0.03- 0.15	M1 = M2
M2	Parent maltreatment → Parent connectedness → Child maltreatment	0.04	0.01- 0.10	
Child maltreatment → Aggression in child				
M3	Child maltreatment → Peer/sibling victimization → Child aggression	0.002 ^{ns}	0.000- 0.006	M4 > M3
M4	Child maltreatment → Child PTSS → Child Aggression	0.07	0.04- 0.11	

Note. Estimates presented are standardized coefficients. ns = non-significant at $p < 0.05$

Figure 1



Standardized coefficient (Standard error) of the associations between parents' histories of childhood maltreatment, maltreatment, and posttraumatic stress symptoms and aggression in children in parent-child dyads from Burundi.

Note. PTSS = Posttraumatic stress symptoms.
 Non-significant pathways ($p > .05$) by dashed lines.

* $p < .05$
 ** $p < .01$
 *** $p < .001$