University of Chicago

Children in Crisis: Exposure to Violence and Development of Prosociality in the Congo

By

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Abstract

It has been well documented that exposure to violence across a number of contexts has a number of adverse impacts on mental health. Children who are exposed to violence are more likely to be aggressive and violent themselves, which would suggest that their development of normal moral reasoning and prosocial attitudes are impacted. There is a dearth of research investigating moral and prosocial development in those who are exposed to violence, and even less conducted in non-western countries. In this study, we examine the development of empathetic concern, equity and equality preferences, and sharing preferences in children in the Democratic Republic of Congo. The Democratic Republic of Congo was named the second most dangerous crisis for children in 2021, and has been plagued by pervasive, politically motivated violence. Questionnaires were used to assess violence exposure, and all prosocial tasks have been extensively validated in cross-cultural research. Exposure to violence was shown to be significantly positively correlated with sharing behaviors, and significantly negatively correlated with emotional reward following sharing, empathetic concern, and equity in a wealth based context.

Introduction

Children face significant exposure to and victimization from violence globally, with some estimating that there are as many as one billion children each year are exposed to violence globally, and nearly a quarter of children are exposed to violence in early childhood (Moffitt & The Klaus-Grawe 2012 Think Tank, 2013; *Research Brief*, 2019). Furthermore, it has been estimated that in the last decade alone 30 million children have been displaced by war, 6 million have been injured, and 2 million have been killed (Wainryb & Pasupathi, 2008). Exposure to violence constitutes significant developmental concerns, as even exposure without direct

victimization has been shown to lead to negative outcomes, though proximity to the event is strongly correlated to the severity of symptomology (Dowd et al., 2006; Fowler et al., 2009). Exposure to violence has been shown to result in poor mental health, poor physical health, antisocial behaviors, desensitization, and abnormal social and moral development (see Figure 1 for an overview of observed outcomes in the literature contained in this paper) (Cairns, 1996; Fowler et al., 2009; Guo et al., 2013; Moffitt & The Klaus-Grawe 2012 Think Tank, 2013; Office of the Special Representative of the Secretary-General on Violence against Children, 2016; Osofsky, 1997; Tarabah et al., 2016; Ullmann & Hilweg, 1999; Wainryb & Pasupathi, 2008). There may be particular concern for children in areas plagued by war conflict, as exposure is likely to be chronic, severe, and divided by group status (Bauer et al., 2014; Flannery et al., 2007; Osofsky, 1997; Wainryb & Pasupathi, 2008). Group based politically motivated violence may also cause children to evaluate and act on in-group and out-group status differently than they would otherwise, which may be a contributing factor in prolonged and cyclical violence in particularly troubled areas (Bauer et al., 2014; Taylor et al., 2020). With an estimated 74.9 million children impacted by the top 7 crises worldwide, research into maladaptive

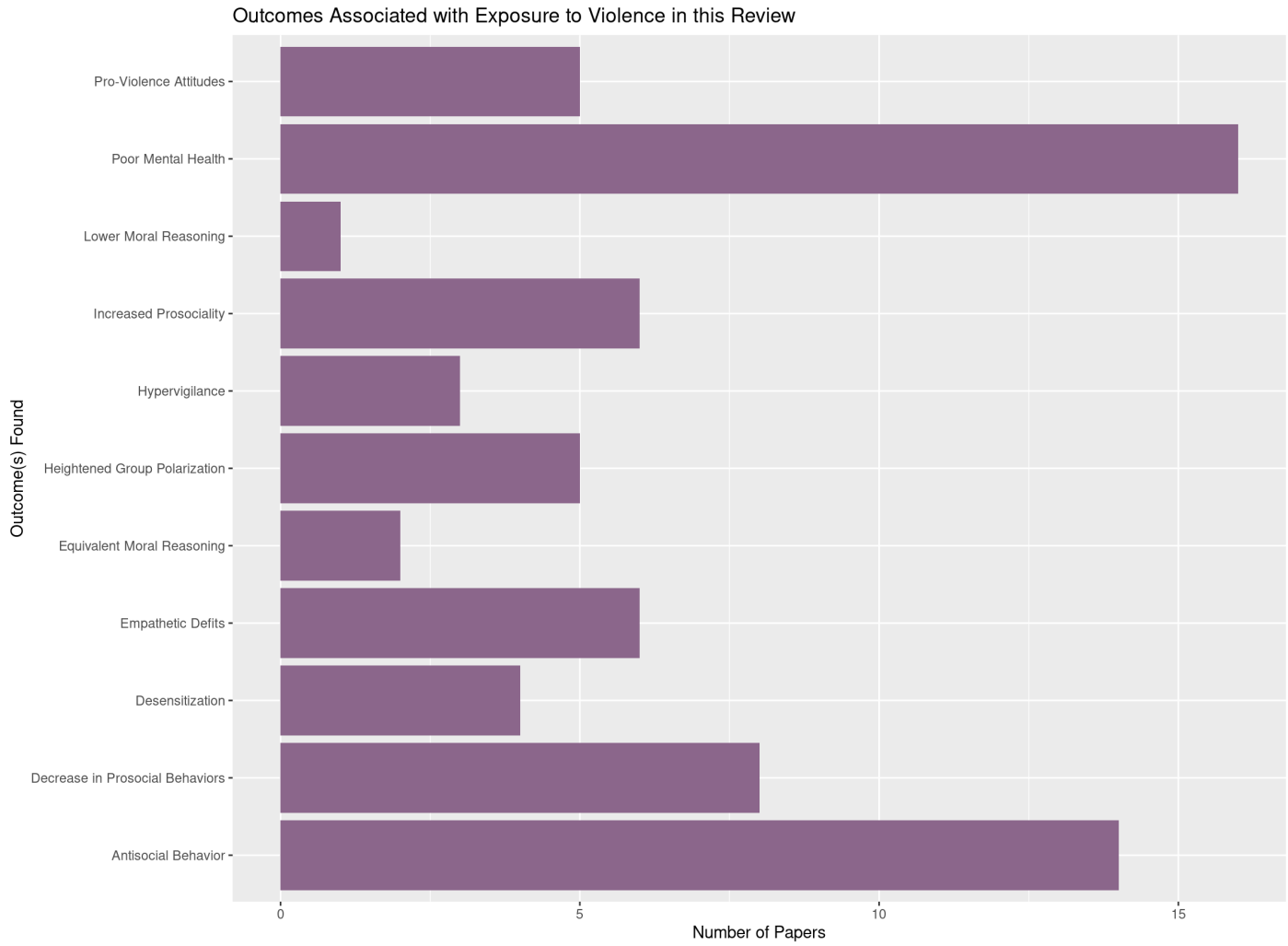

Figure 1: Graph displaying the number of book chapters and research papers which observed each social outcome

development patterns and possible interventions stands to improve tens of millions of lives (*NEW ANALYSIS – Afghanistan Tops List of 7 Countries Where Children Were Most in Need in 2022*, 2022). Most of the research in empathetic development and prosocial behavior has been carried out in safe, western, European, industrialized, rich, democracies, and there is a relative dearth of research in areas like the Democratic Republic of Congo. Failure to conduct research on social development in locations such as the Democratic Republic of Congo, which has been named the second most dangerous crisis for children with nearly 14 million children needing humanitarian aid, is an egregious oversight which may complicate peacemaking and recovery efforts in war torn areas globally (*NEW ANALYSIS – Afghanistan Tops List of 7 Countries Where*

Children Were Most in Need in 2022, 2022). Additionally, much of the research examining mental outcomes for children in perpetually violent environments centers on the development of mood regulation disorders such as post-traumatic stress disorder, depression, and anxiety disorders rather than empathetic development and prosociality, despite the fact that social preference outcomes may be linked to cycles of violence and comprehensive intervention strategies. It is critical the gap in current literature is addressed to improve these children's lives in addition to building a more comprehensive body of knowledge about prosociality.

Adverse Outcomes Associated with General Exposure to Violence

There is a wealth of data linking violence exposure to adverse psychological and social outcomes. One of the most common mental health outcomes is the development of internalizing behaviors or disorders, which occur when an individual struggles to deal with a stressor and then directs that negative emotion inwards. Internalizing disorders common in children who have been exposed to violence include depressive disorders, anxiety disorders, and post-traumatic stress disorder (Cummings et al., 2017; Flannery et al., 2004; Graham-Bermann & Levendosky, 2011; Panter-Brick et al., 2009; Trujillo et al., 2021; Wainryb & Pasupathi, 2008). Though it is important to note that some who develop PTSD due to violence exposure, though it is often considered an internalizing disorder, may display externalizing behaviors such as aggression and antisocial behavior (Graham-Bermann & Levendosky, 2011). The development of internalizing disorders and behaviors has been observed across a wide variety of violence exposure types. It has been found that children who witnessed severe physical interpersonal violence were as much as 2.16 times more likely to be in a clinical range for internalizing behaviors than children who had not witnessed violence (Graham-Bermann & Levendosky, 2011). Higher levels of depression, anxiety, and loneliness have also been observed in children persistently victimized

by peer violence such as bullying in schools when compared to children not victimized by violence in this context (Flannery et al., 2004). In research from Trujillo et al. (2021) those who had been exposed to armed conflict experiences were characterized by a high proportion of anxiety disorders and PTSD. For families plagued by urban violence in the United States, it was found that parents who had been traumatized were more likely to have children who felt unsafe or developed PTSD symptoms (Fowler et al., 2009). Though younger children tend to report higher levels of depressive symptoms when exposed to more community violence, some studies have found that there is no moderating effect of age on negative outcomes associated with community violence (Fowler et al., 2009). Some research suggests that community violence exposure may have a stronger immediate internalizing behavior and PTSD symptom development while cumulative exposure over the lifetime appears to be more likely to lead to externalizing behaviors (Fowler et al., 2009). Children do not necessarily have to witness violence firsthand, in some cases awareness of mass violence or disaster in the vicinity may be enough to cause clinical level disorder; research from Hoven et al. (2005) showed that six months after the September 11th attacks a high proportion of children in the New York City public school system had a probable mental disorder, despite not watching the attack happen. Furthermore, exposure to trauma prior to the September 11th attacks was a major risk factor for probable mental disorder following the attacks, which may suggest that children who have been previously exposed to violence may be more psychologically sensitive to subsequent knowledge of nearby attacks (Hoven et al., 2005). In one study by Flannery et al. (2004) both witnessing and being directly victimized by violence at school were significantly positively correlated with psychological trauma symptoms, and witnessing violence at school accounted for approximately 9% of the variance in trauma symptoms. In other research, groups who had experienced high

levels of armed conflict exposure had a higher probability of presenting with clinical level mental health issues (Trujillo et al., 2021).

Exposure to violence across multiple contexts has also been associated with difficulties in appropriately regulating emotions (Graham-Bermann & Levendosky, 2011; Greenbaum et al., 2021; Leavitt & Fox, 1993; Osofsky, 1997; Straus, 2014; Wainryb & Pasupathi, 2008). Preschool children who have witnessed intimate partner violence have been shown to have greater difficulty in emotional regulation (Graham-Bermann & Levendosky, 2011). Children who are victimized by war have also been found to be more likely to have difficulties with emotional regulation (Greenbaum et al., 2021; Leavitt & Fox, 1993). Being spanked has been linked to higher feelings of anger and rage, as has exposure to violence without direct victimization (Osofsky, 1997; Straus, 2014; Wainryb & Pasupathi, 2008). Families who consider themselves to be victimized by the deprivation inherent in a war torn environment may also exhibit rage reactions (Leavitt & Fox, 1993).

Repeated exposure to violence is also strongly correlated with externalizing behaviors across a number of contexts (Chuah et al., 2019; Cummings et al., 2017; Flannery et al., 2004, 2007; Fowler et al., 2009; Graham-Bermann & Levendosky, 2011; Kithakye et al., 2010; Mrug et al., 2016; Pandey, 2007; Straus, 2014). Externalizing behaviors are directed outside the self, and involve things such as aggression, antisocial behavior, defiance, delinquency, and violence. Having higher levels of externalizing symptoms and lower levels of internalizing symptoms at age 13 predicted more violent behaviors at age 18 (Mrug et al., 2016). Children who reported a lower degree of internalizing distress symptoms in early adolescence after exposure to violence also reported higher levels of violent behavior five years after exposure (Fowler et al., 2009). Adolescent samples have generally shown the strongest effect sizes for externalizing behaviors,

however as it is known that cumulative exposure is a risk factor for externalizing behaviors, it is unclear whether initial exposure in adolescence is more likely to lead to externalizing behaviors or if these effect sizes are primarily a result of many adolescents having many exposures (Fowler et al., 2009). Children who have witnessed severe physical intimate partner violence were a startling 2.38 times more likely to be in a clinical range for externalizing behaviors than children who had not witnessed intimate partner violence (Graham-Bermann & Levendosky, 2011). These children are more likely to be aggressive, fight, and behave antisocially in both peer and interpersonal relationships, and exposure in this context increased the likelihood of peer aggression as an externalizing behavior in both boys and girls (Graham-Bermann & Levendosky, 2011). In fact, aggressive behavior is one of the most commonly discussed externalizing behaviors of children who are exposed to domestic violence (Dowd et al., 2006; Graham-Bermann & Levendosky, 2011; Rosemary Campher, 2008). Both early and late exposure to domestic violence have been shown to predict future violent behavior directed towards one's child, which may be of particular importance to antisocial tendencies in childhood as there is also a close relationship between child maltreatment and aggression, and children who are exposed to violence through abuse victimization consistently show higher rates of aggression than children who have not been abused (Pandey, 2007; Rosemary Campher, 2008). High schoolers who reported being victims of child maltreatment prior to the age of 12 were 24% more likely to report engaging in violent behavior (Flannery et al., 2004). Exposure to community violence has also been consistently linked to the externalizing behaviors of deviance and aggression in children, adolescents, and young adults in both cross sectional and longitudinal studies (Fowler et al., 2009). Both witnessing and being victimized by violence at school have both been shown to be significantly positively related to violent behaviors (Flannery et al., 2004). Adolescents

who reported having attacked others with a knife or shooting at them were found to be significantly more likely to have been exposed to high levels of violence compared to their peers who do not engage in violent behaviors (Flannery et al., 2004). In Afghanistan, children who had greater war exposure rated themselves as more aggressive than children who had less war exposure, which was consistent with teacher ratings of behavior (Keresteš, 2006). When asking children to evaluate the acceptability of provoked violence in hypothetical scenarios, the group categorized as violent based on past behavior focused more on the immorality of a verbal provocation preceding physical violence, and considered the subsequent violence to be a form of reciprocal justice whereas nonviolent children perceived the physical violence to be worse than the psychological harm of the verbal provocation (Astor, 1994).

Children who have been exposed to violence are more prone to hyperarousal, and overattribute hostility in benign situations which may play a part in increased aggression and violent behaviors (Astor, 1994; Fowler et al., 2009; Hall et al., 2021). For example, prolonged exposure to violence in war increases general perceptions of threat, caused by exaggerated amygdala responses to threatening stimuli (Hall et al., 2021). Reactive aggression tends to be done in a state of high emotional arousal, so over attribution of hostility biases may result in higher levels of reactive aggression, partially explaining increases in aggression following exposure to violence(Patrick, 2006). Interestingly, children who show high levels of reactive aggression also show high levels of proactive aggression in some cases, making it unlikely that hyperarousal is the only mechanism working to increase aggression and violence in children exposed to violence (Patrick, 2006). Children with high levels of reactive aggression also tend to have heightened rates of anger reactivity, a low frustration tolerance, and tend to react with very high levels of negative emotion when presented with aversive stimuli (Patrick, 2006).

In stark contrast to the hyperarousal that some children experience, some children exposed to violence will instead experience a psychic numbing, which may be related to the process of desensitization that often occurs with repeated exposure to aversive stimuli (Leavitt & Fox, 1993; Osofsky, 1997; Wainryb & Pasupathi, 2008). Desensitization theory is commonly used to explain the increased propensity for aggression and violence among individuals who are exposed to violence, positing that repeated exposure to violent stimuli results in habituation, meaning that violent stimuli no longer elicit strong emotional reactions, which decreases the inhibition of violent behavior (Mrug et al., 2016). The frequency and severity of exposure(s) are significant predictors of desensitization, and those with more frequent or severe exposure are more likely to experience desensitization (Tarabah et al., 2016). Desensitization may be particularly relevant in cyclical violence and areas faced with prolonged violent conflict, as these are likely to be contexts in which there is a high likelihood of repeated exposure to a significant portion of the community. Some research suggests that exposure to violence across multiple different contexts may contribute more strongly to desensitization, meaning that children who are in environments where violence is more pervasive are at the greatest risk for desensitization (Mrug et al., 2016). Desensitization and the corresponding deficits in empathetic responses for victims of violence and helping behaviors have been shown in experiments using media exposure to violence, such as violent video games and movies, however it is important to note that more intense the stimuli the less likely habituation is to occur, and real-life violence is likely much more intense than media violence (Guo et al., 2013; Mrug et al., 2016). Additionally, after exposure to violent media participants viewing images of painful scenarios tended to rate other's pain as lower than those who were not exposed to violent media beforehand (Guo et al., 2013). This research clearly shows that is not necessary that exposure be chronic, even short term

exposure to violence reduced empathy for pain in others (Guo et al., 2013). The failure to recognize pain in others as effectively as those who are not exposed to violence may also result in a decreased appraisal of the impact of aggressive or violent behavior, as they are likely to view it as imparting less pain than it does. This may help to explain increases in violent behavior and aggression because the negative emotional reactions that witnessing violence would typically result in should serve to inhibit violent and aggressive behaviors, so when these emotional responses are diminished so too are inhibitions and perceived impacts regarding these behavior patterns (Mrug et al., 2016). Results from a meta-analysis from Fowler et al. (2009) suggest that children and adolescents who are exposed to high levels of violence experience a lower degree of emotional distress than those who are exposed to moderate levels of violence, suggesting that high levels of violence are more likely to result in desensitization.

Some have also posited that witnessing violence may also prime aggressive behaviors as a mechanism of social learning (Fowler et al., 2009). In the famous Bobo Doll experiment it was observed that children who watched an adult behave aggressively towards a large doll prior to being allowed to play with the doll imitated the particular patterns of aggression that they saw, and engaged in more aggressive play with the doll than children who did not watch an adult behave aggressively with the doll beforehand (Bandura et al., 1961). As such, it is also plausible that exposure to violence contributes to increases in antisocial and aggressive behavioral patterns via social learning processes that establish violence in some contexts as permissible, particularly if the violence that is moralized. It has been suggested that exposure to community violence in particular serves to model that violence is an acceptable and appropriate behavior within the broad community (Fowler et al., 2009). Some research also suggests that the more a child is exposed to violence the more proviolence their attitudes will be, although this has not been found

when the exposure is via video games or internet violence (Tarabah et al., 2016). Proviolence attitudes may be more closely linked to moralized violence exposure; for example, spanking is one of the most common forms of moralized violence exposure, and in nations where spanking is more prevalent, higher proportions of students tended to approve of hypothetically slapping a romantic partner in certain contexts, have actually assaulted a romantic partner in the past, and have injured a romantic partner in the past (Straus, 2014). Children who have witnessed intimate partner violence, which tends to be moralized by the perpetrator, are also more likely to hit a dating partner, as well as get into physical fights with their peers and attack a parent (Graham-Bermann & Levendosky, 2011). It has been suggested that in conflict ridden environments in particular children may begin to rationalize and justify aggression against out-group members if they internalize cultural messages against an identifiable out-group (Greenbaum et al., 2021). Some research has shown that in the context of areas affected by political violence intergroup conflict leads to a reduction in out-group prosocial behavior (Taylor et al., 2020). It is most likely that a combination of social learning and desensitization both contribute simultaneously to the commission of violent and aggressive behavior in those exposed to violence.

Empathy also appears to be affected by exposure to violence across multiple contexts, and diminished empathy may contribute to cycles of violence. Empathetic concern is associated with helping behaviors, and has been shown to be impacted by violence desensitization in laboratory research (Fowler et al., 2009; Hoffman, 2000). Even short term, relatively mild exposure to violence in a lab setting via watching videos containing violence has shown to reduce empathy for pain in others (Guo et al., 2013). Children, college students, and adults have all showed slowed helping responses after being exposed to violent videos or video games (Fowler et al., 2009). Abnormal empathetic profiles have been observed in ex-combatants from

armed conflicts when compared to those who were not exposed to armed conflict (Trujillo et al., 2021). Some young children who are exposed to intimate partner violence show deficits in empathetic ability as well as failure to attend accurately to emotional cues in others (Graham-Bermann & Levendosky, 2011). Empathy is often also implicated as a mechanism of prosocial behavior. Higher levels of dispositional empathy have been shown to be positively related to prosociality towards out-group members even during times of intergroup conflict in children aged 5 to 10 (Taylor et al., 2020). Some research has shown that intergroup conflict can increase both prosocial rewards for helping and cooperative behavior and punishments for those who fail to cooperate or act in a sufficiently prosocial manner within groups (Gneezy & Fessler, 2012).

Children and Politically Motivated Violence

While there is a high level of agreement on the effects of exposure to violence on psychological outcomes across many contexts of exposure, the ways in which long term widespread politically motivated violence and warfare, such as that in the Democratic Republic of Congo, is less clear. There is a relative dearth of research conducted in war-torn areas when compared to the robust body of violence exposure research in western, educated, industrialized, rich, democratic societies. This may, in part be due to the difficulty of gathering data in areas plagued by violence, as there are serious concerns for the safety of researchers in areas with violence that may at times be swiftly changing and unpredictable. Furthermore, the current literature regarding how exposure to long-term politically motivated violence and war impacts the development of empathy and prosociality remains somewhat mixed. It is agreed that children who experience long term political violence still develop basic moral concepts, and understand basic moral principles (Wainryb & Pasupathi, 2008). Some researchers have theorized that growing up in an environment plagued by political violence may lead children to be more

morally astute, and actually develop and enhanced capacity for sensitivity while others have hypothesized that it is not possible for a child to be successfully socialized when their environment is based on subjugating a portion of the population (Cairns, 1996).

There is a significant amount of research conducted in Ireland both during and following The Troubles, though it has had mixed results. In northern Ireland, children given objective moral reasoning tests tended to score lower than both their English and American counterparts, which would seem to support the hypothesis that typical moral development is impaired in these conflicts (Cairns, 1996). Contradictorily, however, in another study in which children had to rate the morality of violence to or from authority figures such as parents, teachers, or security forces results between northern Irish and English children were very similar, with the Irish children actually tending to rate the violence as slightly more morally wrong than the English children (Cairns, 1996).

In yet other research, children in two regions of Ireland had different scores on objective moral reasoning, with those exposed to more violence scoring somewhat lower, but these differences across many contexts were not statistically different (Cairns, 1996). In research outside of Ireland, some children from areas plagued by political violence have reported beliefs that aggression is wrong, but that it is acceptable when it is inflicted on people whom they considered to be their enemies (Wainryb & Pasupathi, 2008). It is important to note that research suggests that children's conceptions of morality and right and wrong in these politically violent and turbulent areas were separate from their expectations of what others and they themselves would actually do and were also applied only to select groups of people, but not others; suggesting a conceptualization that people generally do not follow ethical or moral principles

(Wainryb & Pasupathi, 2008). As such, moral reasoning may not be consistent with actual behaviors, and may not reliably predict prosocial behavior in these populations.

Research investigating general prosocial behavior has been nearly equally as mixed. General violence exposure research would suggest that children will become less prosocial with more exposure to violence, but this may not be the case in politically motivated violence exposure. Some research has shown that exposure to particularly intense or severe violence in political conflicts are related to decreases in prosocial behavior and increases in aggression (Kithakye et al., 2010). In another study, children who had been through greater war trauma rated themselves as less prosocial and more aggressive, and their teachers rated them in the same way (Keresteš, 2006). Some evidence suggests that exposure to traumatic war events may result in more ineffective emotional regulation, resulting in heightened aggressive response rates in Kenyan children, however Palestinian children in contrast showed primarily distracting behaviors and therefore did not exhibit heightened aggression (Greenbaum et al., 2021). In recent research it appears that an increasing number of studies are finding that exposure to war violence may increase prosocial and helping tendencies (Hall et al., 2021). Increases of prosocial behavior, activism, and civic engagement have all been linked to exposure to political violence in youth (Cummings et al., 2017). Some research has suggested that exposure to political violence results in more prosocial behavior directed towards neighbors (Voors et al., 2012). In Nepal, communities who had higher levels of exposure to fatal violence were substantially more prosocial in relations with each other than the groups who had been exposed to less fatal violence (Gilligan et al., 2014). Finally, some research has failed to find any conflict-related impacts on prosocial behaviors at all in children aged 3 to 6 (Bauer et al., 2014).

Political conflict by necessity follows group membership lines, and prosociality in those affected by warfare may be more related to group dynamics than others. Social support is considered to be a very strong protective factor against many of the suboptimal outcomes associated with political violence, however, the strong in-group identification that is likely to accompany comprehensive social support may also amplify discriminatory attitudes about out-group members and aggression against out-group members (Greenbaum et al., 2021). In research examining social preferences, introducing intergroup conflict results in increased in-group solidarity, but also shows increases in punishment of deviants and higher valorization of self-sacrificial heroes within the in-group (Gneezy & Fessler, 2012). Research has also shown that while intergroup conflict decreased prosocial behavior to the out-group, intragroup conflict actually increases in both overall and outgroup specific prosociality (Taylor et al., 2014). Some research has found that in groups affected by war, egalitarian sharing increased among in-group members but decreased or remained unchanged for out-group members (Bauer et al., 2014). There is also some evidence to suggest that the psychological reactions to war during particular developmental windows serve to generate either a greater internalization of egalitarian social norms or an increase in in-group oriented egalitarian norms regardless of the community social norms (Bauer et al., 2014). In fact, in some tasks participants affected by conflict were more willing to sacrifice both personal and group payoff in order to reduce inequality between groups, regardless of whether the inequality was detrimental or advantageous to their own group, showing a strong commitment to egalitarian ideals (Bauer et al., 2014). However, in contrast, in other tasks participants affected by war made more egalitarian choices only when interacting with in-group members, and showed a greater in-group out-group gap than participants unaffected by the war (Bauer et al., 2014).

Other research has suggested that strong identification with communal ideals, while protective against some of the negative effects of violence exposure, can also lead to the development of polarized understandings of the world around them and dehumanize out-groups which may lead to the justification of violence and revenge (Wainryb & Pasupathi, 2008). It has been hypothesized that prolonged exposure to a conflict prone environment may change children's reasoning about reconciliation and retaliation with long term rivals (Taylor et al., 2020). Having negative beliefs or perceptions about out-groups may encourage intergroup violence as well as promoting group directed aggression throughout middle school and adolescence (Taylor et al., 2020). Children's out-group attitudes have been found to be a significant mediator between out-group prosocial behavior and empathy (Taylor et al., 2020). While it does appear that many recent findings support the idea that war increases prosociality, it also appears that this primarily happens in the context of in-group prosociality, while levels of altruism towards threatening groups are still lowered (Hall et al., 2021). However, certain members of the out-group, such as deprived families or children in need, may still benefit from heightened prosociality (Hall et al., 2021).

The Present Study

The present study investigates the role that exposure to political violence plays in the development of empathy and prosociality in children residing in the Democratic Republic of Congo. This region has been selected due to the intense violence that has been taking place for a substantial period of time, and is considered to be one of the most dangerous crises for children globally (*DR Congo Says More than 270 Killed in Massacre by Rebels*, n.d.; *NEW ANALYSIS – Afghanistan Tops List of 7 Countries Where Children Were Most in Need in 2022*, 2022; *Security 'One of the Most Significant Challenges' in DR Congo, Security Council Hears*, 2022; *UN Chief*

Condemns Recent Deadly Armed Group Attacks in Eastern DR Congo, 2022). We will measure empathetic concern, sharing preferences, and equity and equality preferences, and levels of violence exposure. I hypothesize that greater exposure to violence will be associated with lowered empathetic concern, a stronger preference for equity, and greater sharing behaviors, in line with trends in the most recent literature in the field.

Methods

Participants

The participants consisted of 476 children from the eastern region of the Democratic Republic of Congo. Data from three children was omitted from this analysis, as they did not have violence exposure data. We children were between the ages of 6 and 10 years of age, with an approximately equal gender split. In order to ensure ecological validity in the tasks, all tasks have been reviewed by researchers at our partner university in Rwanda, and all research materials have been converted into the local language and dialect by these researchers as well. Local research assistants will also be responsible for data collection, ensuring that there are no cultural or communication barriers or difficulties when completing the tasks or answering questionnaires.

Procedure

The children will be asked to complete an empathy task, dictator game, and distributive justice game in addition to a questionnaire measuring their exposure to violence. These tasks will measure emotional identification, empathetic concern, prosocial behaviors, and preferences in equality and equity with regards to wealth, merit, and health disparities. All of behavioral tasks have been validated in prior research (Cowell et al., 2017; Huppert et al., 2019). In order to minimize children who have completed tasks discussing the nature of the tasks with children yet

to participate, data collection will only take place for one day in a particular location. This should stop children from discussing the "best" or "desirable" choices, and will keep data more reliable. Local research assistants will carry out the data collection in the local language, which will then be translated into English for analysis.

Dictator Game

In the dictator game, children are instructed to pick 6 stickers that they would like to keep from a pool of ten, and are given an envelope in which to store their stickers. They are then presented with a second envelope and told that it is for another child of the same age and gender that was unable to be present on the day of data collection. The children are then told that they may place some of their stickers in the envelope for the other child if they would like to, but that no one will know if they do or do not decide to share. The experimenter then turns away from the child while they divide the stickers, so that the children are not influenced by observation. Once they have finished dividing the stickers, the children indicate how good or bad they feel about

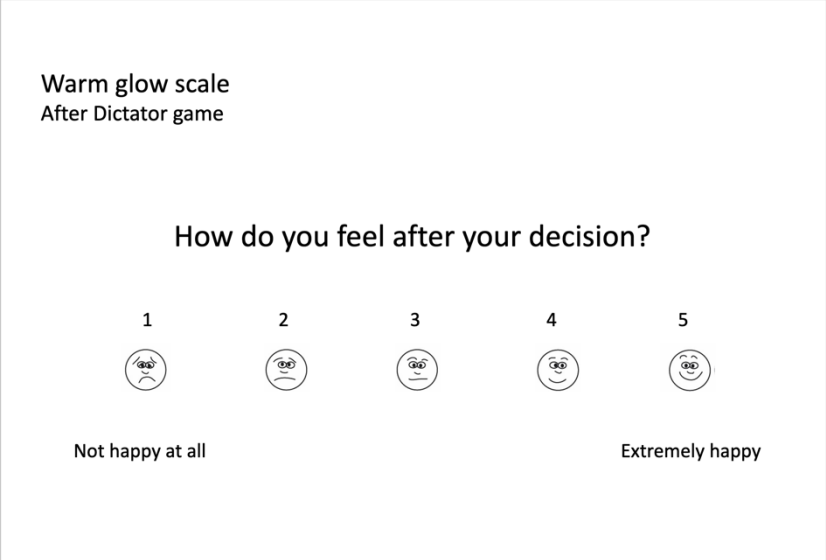

Figure 2: Warm Glow Scale

their decision on a five-point Likert scale, which will measure warm glow (See Fig 2 for warm

glow scale). Children then leave with their stickers, and the experimenter will record the number of shared stickers in the envelope left behind. This measures prosocial behavior.

Distributive Justice Game

In the distributive justice game, children are given tokens to represent money. They are shown two figures in three conditions and are told each figure represents a child of the same age and gender. The three conditions are wealthy and poor, hardworking and lazy, and sick and healthy. The children are told that they must distribute all of the tokens, and they cannot keep any for themselves. They then distribute the six tokens between the two figures for each conditional pair. This measures equality and equity preferences across wealth, merit, and empathy disparities.

Empathy Task

In the empathy task, children are shown an illustrated photo and read a story describing the image (See Fig 3 for example of story page). There are five positive scenarios and five negative scenarios, each child will respond to all ten scenarios. After being read the story and looking at the illustration, children are asked “What does ___ feel?” the experimenter will record both the emotional word that the child gives as well as the valence of the named emotion. Children are then asked “How do you feel for ___?” and presented with a Likert scale ranging from 5, representing very sad to 1, representing very happy (See Fig 3 for empathetic concern scale). This task measures empathetic concern.

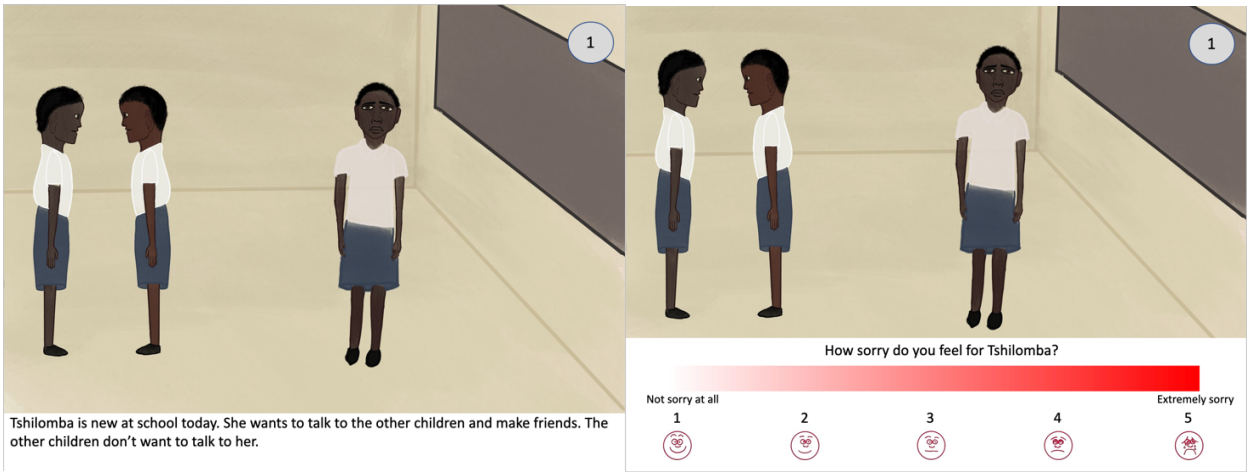

Figure 3: Story page and concern scale

Violence Exposure Questionnaire

The exposure to violence questionnaire consists of 10 questions from Richters' "Things I have Seen and Heard" that are answered on a 0-4 scale, with 0 being never having been exposed to the event and 4 being having been exposed to the event 4 or more times. The questions measure forms of violence that are relevant and common to the context of politically motivated large scale conflict.

Results

Levels of violence exposure in the sample were approximately normally distributed and ranged from 0 (no violence exposure at all) to 32 with a median of 12 and a mean of 12.7.

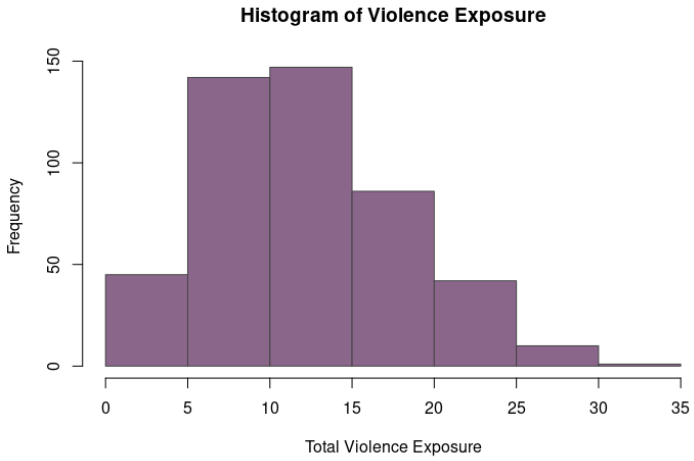

Figure 4: Histogram of violence exposure

Although there was a high level of variability in the data, all but two task outcomes were found to be significantly correlated with exposure to violence. In the Dictator Game, exposure to violence was positively correlated with sharing behavior, $r(471) = .19$, $p < .001$. Exposure to violence was also significantly negatively correlated with warm glow following sharing, despite the fact that they tended to share more, $r(471) = -.14$, $p = .002$. In the Distributive Justice task,

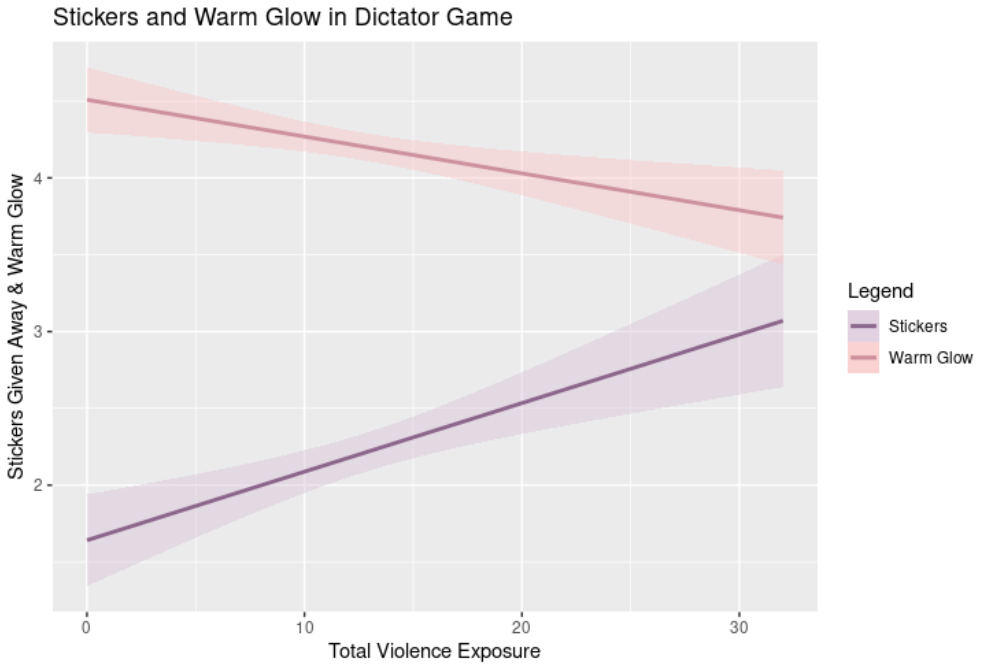

Figure 5: Linear modeling of dictator game outcomes

exposure to violence was only found to be statistically significant in the wealth condition, in which there was a weak negative correlation between exposure to violence and equity focused token distribution (determined as more than half of the tokens being allotted to the needier/more deserving recipient), $r(471) = -.09$, $p = .04$. Overall, there was no significant correlation found between the total number of equity-focused choices and exposure to violence. In the empathy task, exposure to violence was statistically significantly negatively correlated with correct identification of the emotional valence of stories presented $r(471) = -.11$, $p = .02$. There was a statistically significant negative correlation between exposure to violence and empathetic concern in stories that the children identified as negatively valanced $r(471) = -.17$, $p = < .001$.

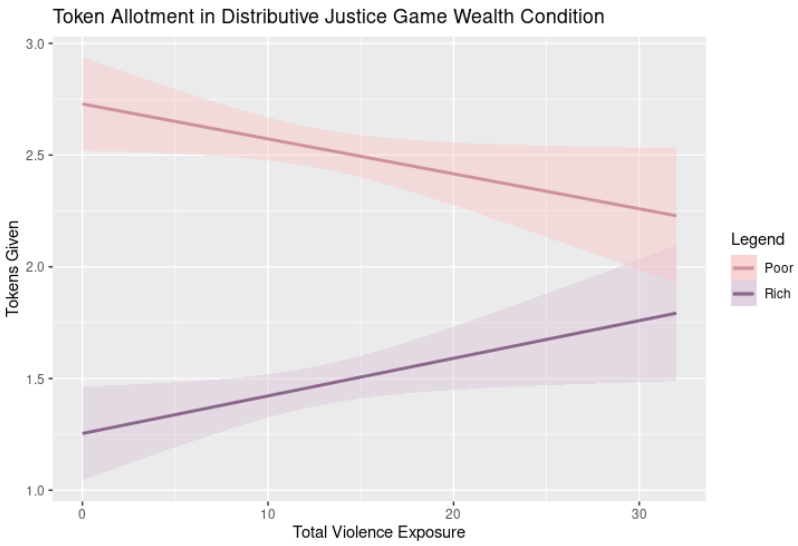

Figure 6: Linear model of token allotment in wealth condition

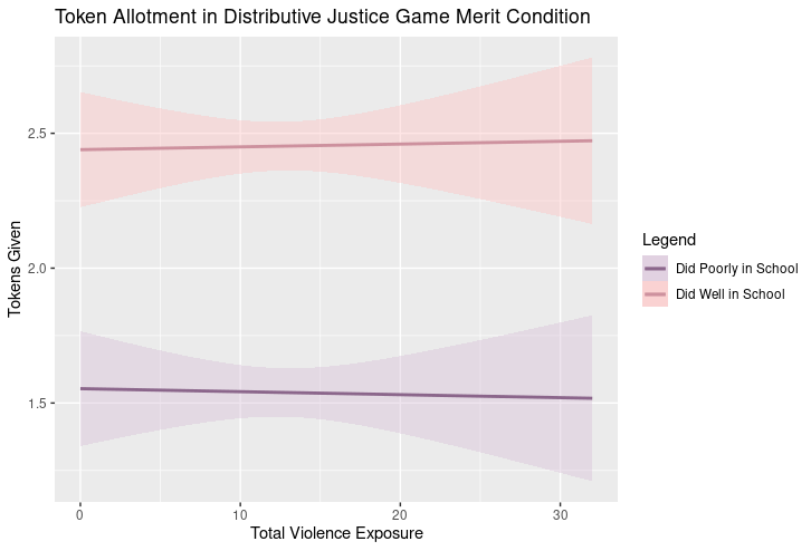

Figure 7: Linear model of token allotment in merit condition (not significant)

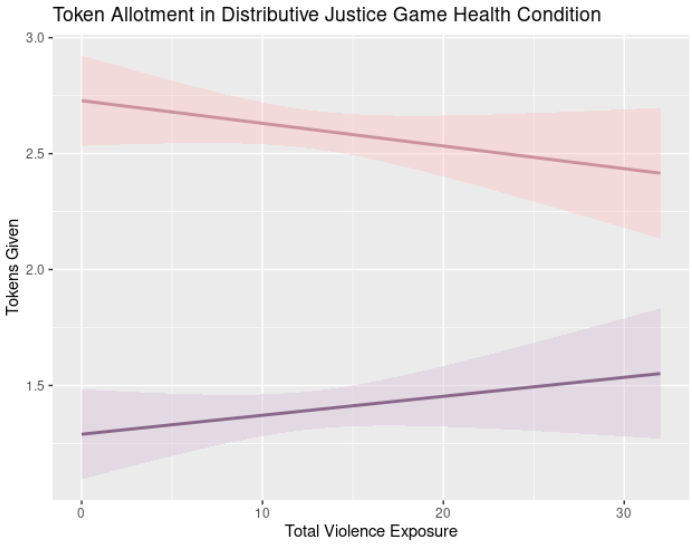

Figure 8: Linear model of token allotment in merit condition (not significant)

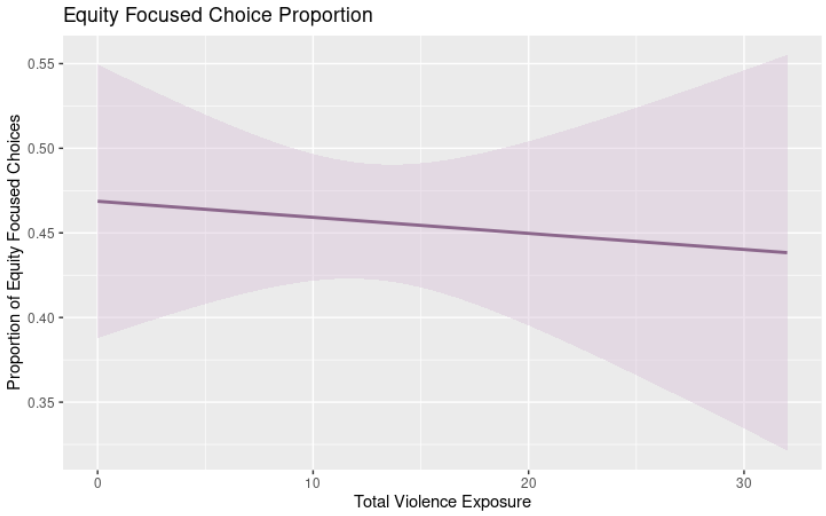

Figure 9: Linear model of proportion of equity focused choices (not significant)

Discussion

It is clear that exposure to violence has an effect on the development of prosociality and empathy in children. The results of this study support the hypotheses that exposure to violence impacts sharing behavior, the emotional rewards of sharing, equity preference in some contexts,

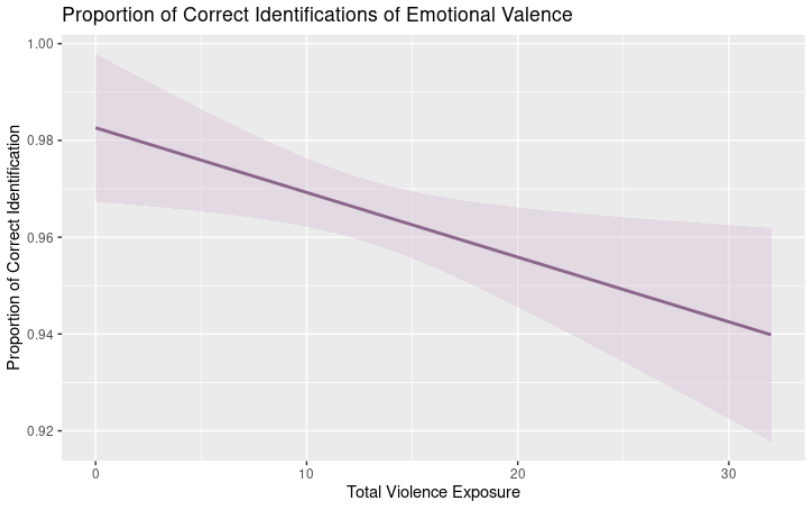

Figure 10: Linear model of the proportion of correct emotional valence identification

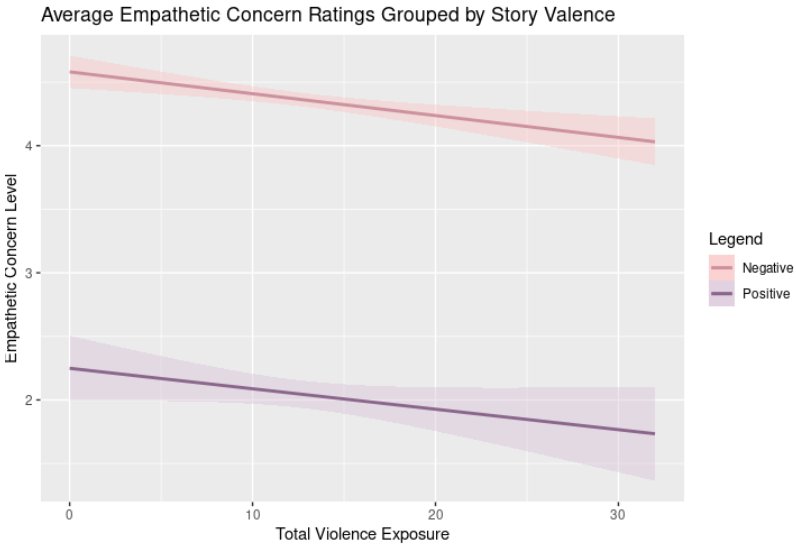

Figure 11: Linear model of empathetic concern levels in stories identified as positive and negative

and empathetic concern. In particular, in this study, exposure to political violence is associated with increases in sharing behavior and decreases in empathetic concern, emotional recognition, equity preference in some contexts, and emotional rewards for sharing. These results highlight the importance of further research concerning political violence exposure and prosociality going forward. The results of this study are in conflict with the recently growing body of literature suggesting that exposure to political violence significantly increases equity preferences. Further research could benefit from more rigorous investigations of mediating and moderating variables associated with equity preferences in order to yield a more complete understanding of the interactions between political conflict and equity preferences. Further inquiry into the driving mechanisms resulting in the increase in sharing and a simultaneous decrease in warm glow may also shed light on the mechanisms governing changes in equity preferences in children exposed to political violence. Decreases in empathetic concern were observed, and are consistent with the existing body of research regarding empathetic impairments in individuals exposed to political violence across a variety of ages. However, as there was still significant variability in the sample,

more research regarding protective and risk factors for empathetic concern changes specific to the context of political violence would be beneficial in the future.

Conclusion

It is critical to have a sophisticated understanding of the ways that being exposed to the violence of chronic armed conflict affects development in order to create adequate intervention programs. The creation and implementation of intervention programs for children impacted by political violence could stand to improve the lives of millions; in 2022 alone there were nearly 75 million children estimated to need humanitarian aid in war torn locations (*NEW ANALYSIS – Afghanistan Tops List of 7 Countries Where Children Were Most in Need in 2022*, 2022). Not only would interventions help millions of children currently in crisis, but given that there is evidence that traumatized parents are more likely to have children who feel unsafe, successful implementation of programs mitigating the impact of political violence may improve the lives of future generations as well (Fowler et al., 2009). These interventions will not only have relevance abroad; cycles of violence plague many urban communities in the United States as well. It is consistently estimated that between 50% and 96% of children in urban areas are exposed to some form of violence in their neighborhoods. Though these conflicts are not as directly politically motivated, the ongoing violence in these areas is often politicized within the United States. As such, more in depth research investigating protective and risk factors in political violence may also elucidate ways in which patterns of politicization of community violence in the United States impacts children living in these areas. Hundreds of millions of children worldwide stand to gain lifelong benefits from the development of comprehensive empirically supported intervention plans aimed at reducing the long term effects of violence exposure. The mixed body of literature that currently exists in political violence research suggests that responses to political

violence may be more sensitive to other environmental factors than other kinds of violence exposure. As such, it is critical research consciously look to investigating mediating and moderating variables that may have not previously been investigated, rather than merely researching social behavioral outcomes. While the present study does add valuable insight to the existing body of literature, it also highlights the importance of further research moving forward.

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