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Is shame the missing link between traumatic experiences and post-traumatic stress disorder in Burundian children living on the streets?

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Abstract

Background: Shame is an emotion reflecting an anticipated social devaluation of the self. It is strongly associated with experiences of humiliation and rejection in early life. Individuals suffering from post-traumatic stress disorder (PTSD) often struggle with shame. However, little is known about how shame contributes to the development and maintenance of PTSD symptoms in children. The present study investigated the ways childhood exposure to human-induced traumatic events promotes a coping mechanism of defeat and withdrawal facilitated by the experience of shame. We tested a dose–response relationship between lifetime experienced traumatic event types and PTSD in children using shame as a mediator.

Methods: We conducted semi-structured interviews with 33 male children who lived and worked on the streets of Bujumbura, the capital of Burundi at the time of data collection. We assessed self-reported PTSD symptom severity, lifetime traumatic event load, violence experienced on the streets and shame intensity.

Results: Mediation analyses revealed a significant indirect effect of lifetime traumatic events on PTSD symptom severity through shame intensity and a significant indirect effect of violence experienced on the streets on PTSD symptom severity through shame intensity.

Conclusion: Our study suggests the mediating role of shame between traumatic experiences as well as violent experiences and PTSD symptom severity in children living on the streets. Shame in children suffering from PTSD seems to play a crucial role in the development and maintenance of PTSD symptoms.

KEYWORDS
Burundi, children in street situations, PTSD, shame, street violence, traumatic experiences

1 | BACKGROUND

Post-traumatic stress disorder (PTSD) is a widespread phenomenon in post-war countries like Burundi. In such contexts, children are a vulnerable group reporting high PTSD prevalence rates (pooled estimate of 47%; Attanayake et al., 2009). In the early aftermath of the Rwandan genocide, between 54% and 62% of children aged 8 to 19 were identified with a probable PTSD diagnosis (Neugebauer et al., 2009). A decade after the genocide, 44% of orphans still fulfilled the requirements of a PTSD diagnosis (Schaal & Elbert, 2006). Children living on the street represent a particularly vulnerable population. Prevalence rates for PTSD in Burundian children in street situations range from 46% to 63% (Crombach et al., 2014; Ziser & Nitanga, 2014). Exposure to multiple types of traumatic events has been identified as the most significant risk factor for the development of PTSD, a process known as the building block effect (Kolassa & Elbert, 2007; Neuner et al., 2004; Wilker et al., 2015). This dose–response relationship has also been confirmed in Burundian children with experiences of physical violence within their families and on the streets (Crombach & Elbert, 2014). In line with these results, two additional studies linked exposure to violence on the streets and polyvictimization to mental health issues and psychological distress (Bashir & Dasti, 2015; Shein-Szydlo et al., 2016). Most recently, Derivois et al. (2017) confirmed the relationship between physical and psychological abuse on the streets and PTSD symptoms in children.

There is evidence that the duration of exposure to childhood maltreatment throughout childhood and adolescence, particularly incidents of sexual abuse as well as early physical and emotional neglect, renders individuals vulnerable to developing PTSD symptoms (Schalinski et al., 2016). Children and adolescents may perceive experiences of neglect and emotional rejection as existential threats due to their dependence on their caretakers for survival. Hence, such a threat might trigger a survival reaction, including an elevated stress response promoting memory processes associated with PTSD symptomatology wherein context and stimuli information are memorized separately and disconnected from each other (Brewin et al., 2010; Elbert & Schauer, 2002). Due to their subordinate position in the family, children who are neglected, rejected and abused are often at the mercy of their perpetrator and have little chance in fighting back. Subsequently, early traumatic events, neglect and rejection during childhood trigger physiological shutdown reactions, including suppressing feelings such as anger to prevent children from fighting back and running the risk of being hurt or even killed in a confrontation. Such a shutdown reaction is typically associated with feelings of helplessness and shame (Schauer & Elbert, 2010).

Shame is a highly aversive and painful emotion which often occurs when experiencing a potential social rejection (Elison et al., 2006; Lewis, 2003). It involves a global negative self-evaluation and the anticipation of social devaluation (Lewis, 2003). At the neurocognitive level, shame may even share some activity in neuronal circuits that process the experience of pain. Indeed, social rejection increases sensitivity to physical pain and vice versa (Eisenberger et al., 2006). According to social rank theory (Gilbert, 1992, 1997, 2000), shame is related to defensive submissive strategies when individuals find themselves in unwanted subordinate positions (Gilbert, 2000; Gilbert et al., 2003). Furthermore, according to the evolutionary biopsychosocial model of shame (Gilbert, 2000), these defensive submissive strategies help to avoid more extreme social exclusions and/or attacks by others, thereby securing the individual's survival in perilous circumstances. Framing caregiver–child relationships as unbalanced power relationships, caregivers might use threats to ensure compliant and submissive behaviour in their children. Trying to avoid feeling shame due to parental rejection, these children may display submissive behaviour to appease their parents. Children must constantly be alert to potential threats in such a context because they cannot rely on their parents for safety, emotion regulation or secure attachment. Indeed, the parent themselves may be the origin of the threat (Gilbert et al., 2003). Subsequently, shameful experiences, particularly if originating from attachment figures during childhood, most likely mirror memory processes associated with traumatic events. This assumption has been confirmed by research conducted by Matos et al. (2013) and Matos and Pinto-Gouveia (2014), who demonstrated that early shame experiences do indeed reveal traumatic memory characteristics.

Evidence from research with infants and animals suggests that growing up in threatening environments alters the neurobiological stress response system of these children as they may perceive parental rejection and the associated social defeat as existential threats (Grant et al., 1998; Perry et al., 1995; Raleigh et al., 1984; Sapolsky, 2004; Schore, 2001; Shively, 1998). Subsequently, shame gets engrained in developing and existing schemas of the self. Affected children and adolescents were deprived of the opportunity to appropriately process shame, because they experienced ongoing rejection. That is, they never had the opportunity to learn to acknowledge shame and fear of rejection to overcome social defeat. Instead, they learned to identify themselves as the cause of a negative outcome, not taking specific circumstances into account for those negative and threatening experiences (Gilbert et al., 2003; Lewis, 1971). A traumatic experience and/or experiencing violence can confirm those existing schemas leading to feelings of guilt, avoidance symptoms and

Key Practitioner Message

- Clients suffering from PTSD experience often strong feelings of shame.
- Shame intensity mediates the impact of lifetime traumatic event types/violence experienced on the streets and PTSD symptom severity in children living on the streets.
- Shame intensity plays a crucial role in the development and maintenance of PTSD symptoms in vulnerable children and adolescents and hence needs to be addressed during therapy.
- Children living on the streets experience significant levels of violence and traumatic events.

shame intrusions linked to the event (Aakvaag et al., 2016; Lee et al., 2001; Shorey et al., 2011). Such symptoms are in line with the ongoing devaluation of the self and a loss of social status in connection with PTSD (Feiring et al., 2002; Sznycer et al., 2016).

Feelings of devaluation can become triggered and reinforced if survivors of traumatic experiences feel invalidated. For example, invalidation by caregivers to the disclosure of childhood sexual abuse in survivors predicted PTSD (Hong & Lishner, 2016). In addition, co-occurring negative appraisals of the abuse by survivors may lead to feelings of inferiority, inadequacy and powerlessness (Ehlers & Clark, 2000). Subsequently, these feelings may lead to a sense of stigmatization, social rejection and isolation.

The inclusion of shame as a symptom for PTSD in the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5; Taylor, 2015) is in line with findings of a significant relationship between shame and PTSD (Beck et al., 2011; Leskela et al., 2002). The presence of shame 6 months after the traumatic experience was found to be the only emotion to predict PTSD, even when controlling for shame and anger feelings assessed in the first month after the traumatic event (Andrews et al., 2000). Further, shame seems to be a considerable predictor for PTSD symptom severity (Cunningham, 2016; Leskela et al., 2002). However, it is not only shame following the experience of a traumatic event that has an impact on PTSD symptom severity. La Bash and Papa (2014) suggested that peritraumatic shame in interpersonal traumas presents a crucial factor for the development of PTSD symptoms, as it mediates their relationship. In addition, the authors also showed that peritraumatic shame mediated the relationship between the number of experienced traumatic events and PTSD symptoms. Unacknowledged shame in PTSD treatment may even worsen the symptoms experienced by the individual (Taylor, 2015). Indeed, peritraumatic cognitive mental defeat has been shown to be a key predictor for lifetime PTSD risk and current PTSD severity in individuals affected by the civil war in Northern Uganda (Wilker et al., 2017).

As shame seems to be a crucial factor in the development, maintenance and treatment of PTSD, the present study investigated the role of shame in connection to lifetime traumatic events, violence experienced while living on the streets, and PTSD symptomatology in children and adolescents. Children living on the street represent a population often affected by traumatic experiences, maltreatment and shaming experiences due to their living conditions. They are at a high risk of experiencing degrading treatment and physical, psychological and sexual violence, particularly in post-conflict settings (United Nations High Commissioner for Human Rights, 2012). Unsurprisingly, 60% of children in street situations in Rwanda reported having bad memories often or sometimes, 42% nightmares and 63% headaches, and 44% reported being worried or anxious (Veale & Donà, 2003).

In the present study, we interviewed a sample of children living in street situations in Bujumbura, Burundi's capital at the time of data collection. It is difficult to get reliable numbers on how many children live on the streets of Bujumbura, as official statistics are non-existent. Recent estimates by a local NGO working with this population suggest that approximately 5000 children regularly slept on the streets of Bujumbura (Hatcher, 2015). Further, Burundi experienced a 16 year long civil war, with repeated escalations of violence and oppression more recently (Amnesty International, 2017; Human Rights Watch, 2015). As conditions have continued to deteriorate in Burundi, the life of children in street situations has become increasingly difficult (Hatcher, 2015).

Based on the literature reviewed, the main aim of this study was to investigate the role of shame in the manifestation of PTSD symptom severity in children in street situations who experienced traumatic events and violence on the streets. Therefore, we have formulated the following hypotheses for two mediation models: (1) shame acts as mediator between lifetime traumatic events and PTSD symptom severity, and (2) shame mediates the relationship between violence experienced on the streets and PTSD symptom severity.

2 | METHODS

2.1 | Participants

The sample consisted of 39 children and adolescents between 12 and 20 years of age who were living on the streets of Bujumbura at the time of data collection. We excluded four participants from the analyses: two girls because they were the only female participants, and we wanted to omit a bias in the sample, one child due to concerns regarding the reliability of the data during the project and one due to a lack of transparency about his housing status which rendered him ineligible for inclusion. Furthermore, we excluded two additional children who did not report experiencing any shameful event during the previous 4 months. Due to these adjustments, analyses including shame intensity were conducted with $N = 33$. The children were recruited in three different areas of Bujumbura: Kamenge, Quartier Asiatique and Buyenzi, and originated from different provinces in Burundi. The majority of children ($n = 18$) came from Kayanza. See Table 1 for further details.

2.2 | Procedure and design

The data presented in this study were collected during the first psychological assessment of a project reintegrating children living on the

TABLE 1 Partition of participants by province of origin

Province/country	Kayanza	Gitega	Ngozi	Karuzi	Bujumbura Mairie	Bubanza	Bujumbura Rural	Muyinga	Rwanda
N (%)	18 (54.5)	4 (12.1)	3 (9.1)	2 (6.1)	2 (6.1)	1 (3.0)	1 (3.0)	1 (3.0)	1 (3.0)

Note: $N = 33$.

streets with their families. This project lasted 1 year and was implemented by the Burundian non-governmental organization (NGO) Psychologues sans Frontières Burundi (PSF-BU), in collaboration with the NGO Fondation Stamm, the international NGO vivo international e.V., the University of Konstanz, Germany, and the Université Lumière de Bujumbura, Burundi. Psychologists with extensive experience in psychological diagnostics and psychotherapy recruited children and adolescents for participation on the streets of Bujumbura under the supervision of an international mental health expert. Semi-structured diagnostic interviews were conducted at the office of PSF-BU, ensuring privacy and confidentiality for the participants. The project was explained to the children over the course of several group sessions, followed by an invitation to participate. Prior to the interview, each prospective participant received a detailed explanation of the informed consent for the associated research project and their related rights in the presence of a lawyer provided by our cooperation partner, the NGO Fondation Stamm. This was done to ensure the protection of the children's rights, including their right to refuse participation. The interviews took on average between 1.5 and 2 h with a break provided halfway through. The children received pastries and a soft drink during interviews, and 1000 Burundi franc (local currency corresponding to 0.55 euro at the time) as compensation for their time and to organize their transport. Most of the interviews took place in March 2017. As some children joined the project later, seven additional interviews were conducted in May 2017. The study was approved by the ethics board of the Université Lumière de Bujumbura.

2.3 | Material

Data for this study were collected using semi-structured interviews. Apart from the instrument assessing shame intensity, all measures in the interview protocol had been successfully used in previous studies with children and adolescents in Burundi (e.g., Crombach et al., 2014; Crombach & Elbert, 2015). The questionnaires were translated from French into Kirundi and vice versa through a process of blind back-translation. Differences in translations were discussed with local experts to find the optimal Kirundi formulation. As this study was part of a larger project, the diagnostic interviews used a variety of psychological variables relevant to the assessment of children's mental health. The instruments relevant to the present study are detailed in the following sections.

2.3.1 | Sociodemographic information

Questions to assess sociodemographic information included sex, age, province of origin, languages spoken, school level, time lived on the streets, reason(s) for leaving the family and age at which they first left their families.

2.3.2 | Violence experienced on the streets

To assess violence experienced on the streets, children were asked to answer an adapted version of the Domestic and Community Violence Checklist (DCVC; see Crombach & Elbert, 2014). A sum score was calculated which ranged from 0 to 28, with higher scores indicating greater levels of violence experienced. The utilized version had been successfully implemented in previous studies with children in street situations in Burundi (see Crombach & Elbert, 2014).

2.3.3 | Lifetime traumatic events

Lifetime exposure to traumatic events was assessed through the included event list of the University of California at Los Angeles (UCLA) PTSD Reaction Index for Children and Adolescents (Pynoos & Steinberg, 2013). This checklist includes 14 different events, covering war and non-war traumatic events (e.g., natural disasters, accidents, sexual violence, etc.). Responses are coded in a dichotomous manner (yes $=$ 1; no $=$ 0), with possible sum score ranging from 0 to 14.

2.3.4 | PTSD symptom severity

To diagnose PTSD, we used the UCLA PTSD Reaction Index for Children and Adolescents DSM-5 (Pynoos & Steinberg, 2013). The measure is a semi-structured interview consisting of 27 items which are rated on a 5-point Likert scale, ranging from 0 (none/never) to 4 (most/almost every day) for the past month. Following scoring protocols, possible sum scores ranged from 0 to 80. The DSM-IV version has been used successfully in the Burundian context with children in street situations (see Crombach & Elbert, 2014) and in Tanzanian settings (Hecker et al., 2016; Hermenau et al., 2011). Hecker et al. (2016) reported Cronbach's α of 0.92 in their study. Cronbach's α coefficient in our sample was 0.93.

2.3.5 | Shame intensity

The Shame Variability Questionnaire (SVQ; Brown et al., n.d.) assesses the experience of shame over the course of the 4 months preceding administration. This questionnaire does assess general shame proneness and is not specifically created for trauma-related shame. The person is asked to recall a specific event where they felt shame or felt worst about themselves in the last 4 months and the event's accompanying circumstances. These instructions are followed by 14 questions to be rated on a 5-point Likert scale ranging from 1 (= I did not feel this way) to 5 (= I felt very strongly that way). The responses to the items are averaged in order to obtain an average score from 1 to 5 for shame intensity. Stotz et al. (2015) reported a high internal consistency and test–retest reliability in a sample of refugees between

the ages of 11 to 20 years. Cronbach's α in our study was 0.86. Interviewers asked for a brief description of the event to make sure it is indeed a shame-related event. Examples of these events were: 'He thought somebody called him and he went to that person even though it was not the case. Other children mocked him for it.', 'My older brother saw me picking leftovers from the trash.' and 'While playing my trousers did break and the other children saw my private parts.'

2.4 | Data analysis

Statistical analyses were conducted using the statistical program SPSS version 24. The significance level for statistical analyses was defined as $\alpha = 0.05$. Apart from two participants who did not respond to the SVQ, there were no missing data present. We conducted Pearson product–moment correlations as well as mediation analyses using the computational tool PROCESS version 2.16 (Hayes, 2017). All relevant variables were tested for normal distribution using the Kolmogorov–Smirnov test. If the test was significant for a variable, the skewness and kurtosis and the p–p plots were consulted to decide whether the variable could still be considered normally distributed. Values under 1.96 for skewness and kurtosis in *z*-transformed variables were considered to be normally distributed when checked for abnormalities in p–p plots (Field, 2013). All *z*-transformed sum scores met the stated criteria and were therefore treated as being normally distributed.

3 | RESULTS

3.1 | Descriptive statistics

All children included in the analysis were male and between the ages of 12 and 20 ($M = 15.09$, $SD = 1.63$). On average, they had spent 2.56 years living on the streets ($SD = 2.25$, range = 1 month to 8 years). They had left their homes between the ages of 7 and 16 ($M = 12.44$, $SD = 2.02$). The majority (53.1%) of the children had left at some point during the ages 13 ($n = 9$) and 14 ($n = 8$). As illustrated in Figure 1, children reported a range of different reasons for why they had left their homes (multiple answers were possible). The most prominent reasons were poverty alone and influence of peers and promises with 27.3% each, closely followed by experienced/witnessed maltreatment as only reason (24.2%). For more details, refer to Figure 1.

The education level of the children ranged from 0 to 5 years ($M = 2.09$, $SD = 1.58$). As a comparison, the average time male Burundians attend school is 3.1 years (United Nations Development Programme, 2014). Notably, 20% of our sample had never attended school at any point at time of assessment. On average, the children had experienced $M = 7.55$ ($SD = 2.31$, range [2–11]) traumatic events during their lifetime and had experienced $M = 16.09$ ($SD = 4.53$, range [7–23]) violent events during their time on the streets. The average PTSD symptom severity was $M = 13.42$ ($SD = 9.37$, range [2–42]). Table 2 provides an overview of correlations between relevant variables for our analyses, namely, *PTSD symptom severity*, *shame intensity*, *lifetime traumatic events* and *experienced violence on the streets*.

3.2 | Mediation analyses

We conducted simple mediation analyses using ordinary least squares path analysis by means of the computation tool PROCESS for SPSS (Hayes, 2017). There was a significant indirect influence of *lifetime traumatic events* on *PTSD symptom severity* through *experienced shame intensity*. Figure 2 illustrates that the number of *lifetime traumatic events* is significantly associated with *shame intensity* ($a = 0.170$) and higher *shame intensity* in turn is related to increased *PTSD symptom*

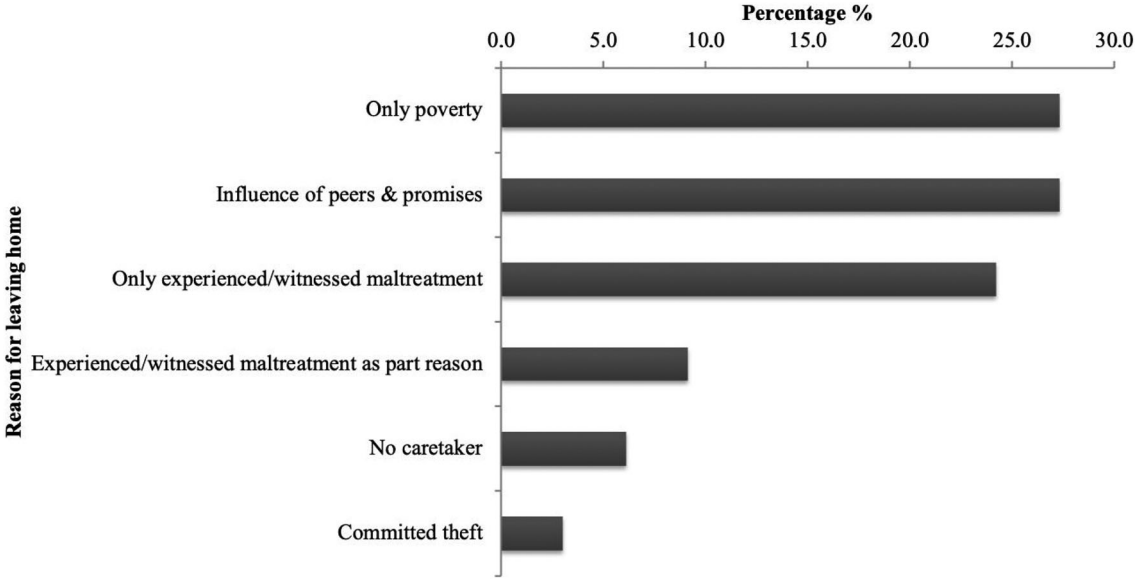

FIGURE 1 Children's stated reasons for leaving their home ($N = 33$)

Variables	1.	2.	3.	4.	*M*	*SD*
1. PTSD symptom severity	1	0.671**	0.479**	0.325	13.42	9.37
2. Shame intensity		1	0.491**	0.414*	2.99	0.80
3. Lifetime traumatic events			1	0.629**	7.55	2.31
4. Experienced violence on the streets				1	16.09	4.53

TABLE 2 Bivariate Pearson product–moment correlations, means and standard deviations for analyses relevant variables

Note: Bivariate product–moment correlations; the sample consisted of $N = 33$.
Abbreviations: *M*, mean; *SD*, standard deviation.
*$p = 0.05$.
**$p = 0.01$.

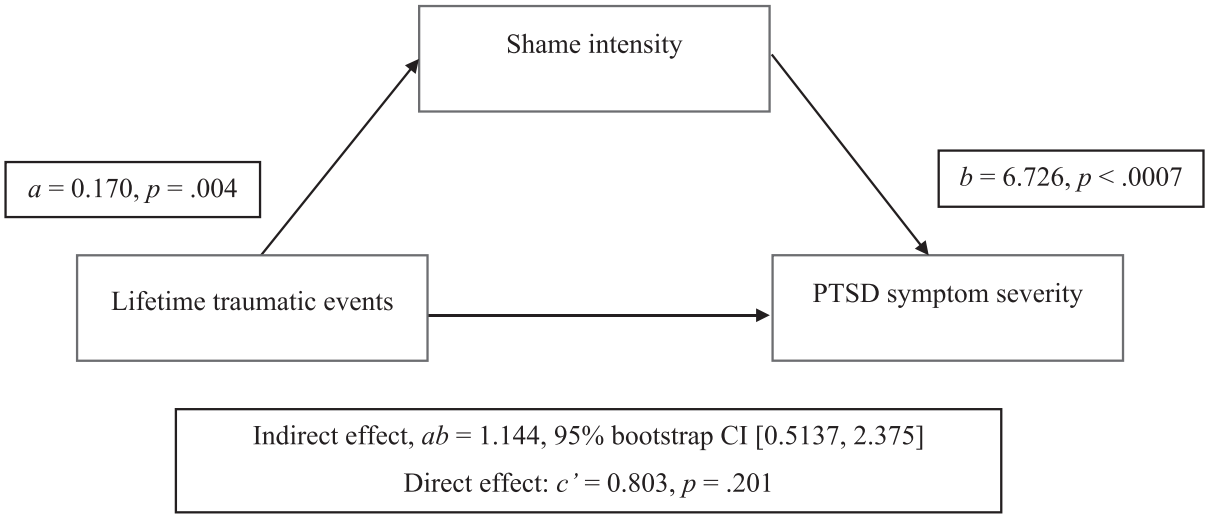

FIGURE 2 Model of *lifetime traumatic events* as predictor of *PTSD symptom severity*, mediated by *shame intensity*. The confidence interval reported for the indirect effect is a percentile bootstrap confidence interval based on 5000 bootstrap samples

severity ($b = 6.726$). The 95% bootstrap confidence interval based on 5000 bootstrap samples for the indirect effect ($ab = 1.144$) was entirely above zero (0.5137, 2.375). Lifetime *traumatic events* did not influence *PTSD symptom severity* independently of *shame intensity* ($c' = 0.803$, $p = 0.201$).

Violence experienced on the streets influenced *PTSD symptom severity* indirectly through *shame intensity*. As displayed in Figure 3, the number of times participants endorsed *violence experienced on the streets* is significantly related to *shame intensity* ($a = 0.073$), and a higher score in *shame intensity* on the other hand is linked with a higher *PTSD symptom severity* ($b = 7.588$). The indirect effect ($ab = 0.553$), tested through a 95% bootstrap confidence interval based on 5000 bootstrap samples, was entirely above zero (0.099, 0.942). The analysis showed no evidence that *experienced violence on the streets* influenced *PTSD symptom severity* independently of *shame intensity* ($c' = 0.118$, $p = 0.704$).

4 | DISCUSSION

This study investigated the mediating role of shame on the relationship of lifetime traumatic experiences and violence experienced on the streets and PTSD symptoms. The results of the analyses revealed that our study sample endorsed experiencing a substantial level of traumatic events and violence on the streets. Furthermore, the children suffered from considerable PTSD symptoms. These findings are comparable with previous studies conducted with children living on the street in Burundi (Crombach et al., 2014; Ziser & Nitanga, 2014). In comparison to children living with their families, children living in the streets participating in this study reported more traumatic events (7.55 vs. 3.3) and more severe PTSD symptoms (13.42 vs. 3.8; Crombach et al., 2014). With an average of 16.09 different types of violence, the high level of violence experienced on the streets was indicative of the constant threat to which these children were exposed due to their living circumstances. This violence originated from different actors, including police officers, an experience also reported in a similar sample of youth in Johannesburg, South Africa (Moolla et al., 2008).

In accordance with Stotz et al. (2015), we found a positive correlation between feelings of shame and the number of lifetime traumatic events. We also found a positive correlation between feelings of shame and PTSD symptoms. Further analyses revealed that general feelings of shame mediated the relationship between number of different lifetime traumatic events and PTSD symptoms in our study.

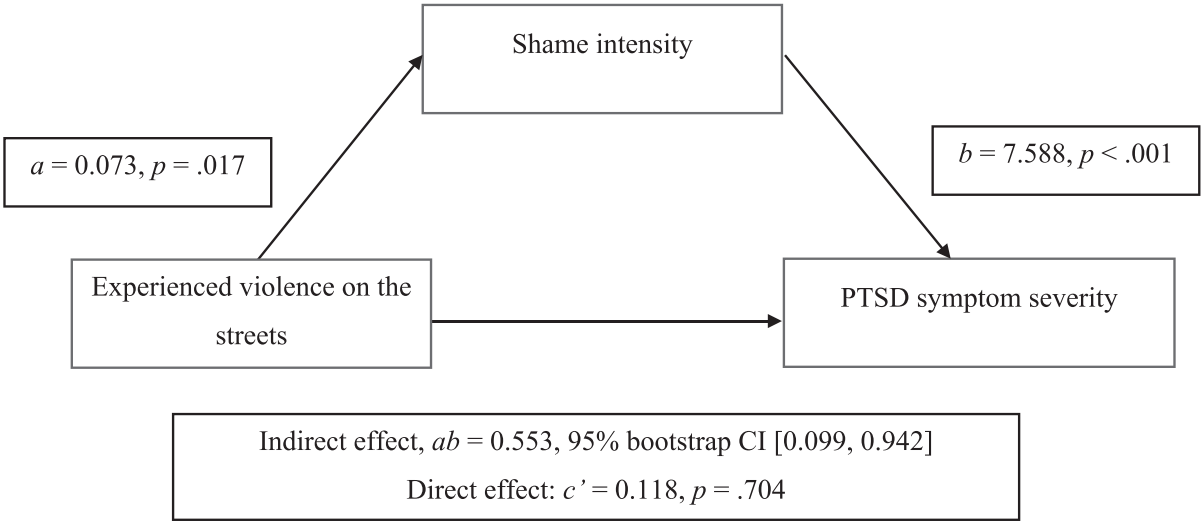

FIGURE 3 Model of *experienced violence on the streets* as predictor of *PTSD symptom severity*, mediated by *shame intensity*. The confidence interval reported for the indirect effect is a percentile bootstrap confidence interval based on 5000 bootstrap samples

This supports our hypothesis and extends the findings of La Bash and Papa (2014) that peritraumatic shame acts as a mediator between the number of experienced traumatic events and PTSD symptoms. Our findings also indicate a general link between lifetime traumatic experiences, shame and PTSD symptoms. This finding adds to our understanding of the mediating role of shame in general and not only related to traumatic experiences. This conclusion is in line with previous findings showing that shame and self-disgust mediate the relationship of childhood abuse and trauma (Drea, 2016).

As we assessed shame unrelated to traumatic experiences, several interpretations of our results are possible. For example, the findings of the present study may point to either a pre-existing vulnerability to experiencing shame in affected individuals or to a changed shame vulnerability in the aftermath of traumatic experiences. There is some support in the literature for the latter explanation. Lee et al. (2001) proposed a two-pathway model for the development of shame in PTSD through schema congruence or schema incongruence. The first pathway is characterized by the confirmation of existing schemata. In our study, this could be exemplified by a child who holds the schema that he is unlikeable. If he experiences severe punishment by his parents, then this may be congruent with his schema that he is an unlikeable person. From a clinical perspective, this experience leads to pervasive shame which culminates in avoidance (Lee et al., 2001). The second pathway proposes a link between shame and PTSD via schema incongruence. This pathway could be exemplified in our study by a child who holds the belief that he is strong and invincible. If this child was incarcerated and tortured by police officers, such a restriction of his agency would not be congruent with his belief that he is invincible. Such an experience leads to humiliation, associated with rage and feelings of revenge (Lee et al., 2001). It is likely that both pathways are activated in marginalized groups such as children in street situations due to the level of violence and degrading treatment they experience.

In support of our second hypothesis, we demonstrated that shame acted as a mediator between violence experienced on the streets and PTSD symptoms. Violence experienced on the streets, as well as many forms of human-induced traumatic experiences, have one common feature: They are linked to feelings of humiliation. If a traumatic experience co-occurs with humiliation, the individual is likely to feel ashamed. Shame is linked to observable body language, such as downcast eyes, blushing and avoidance of contact with others (Wilson et al., 2006). Such body language communicates subordination to signal that the ashamed individual is not a threat. In line with the evolutionary biopsychosocial model of shame, this behaviour might prevent further social exclusion and maltreatment, thereby increasing the odds of survival (Gilbert, 2000). Meanwhile, shame is associated with a loss of status (Herman, 2012), which, in turn, is associated with emotions occurring in individuals who suffer from PTSD (Wilson et al., 2006). Reviewing the role of shame in PTSD, Saraiya and Lopez-Castro (2016) conclude that shame is consistently related to post-traumatic stress and symptomatology. Furthermore, the literature indicates an additional link between shame and aggression in individuals suffering from PTSD. Aggression could serve either to regain social status and to protect the self against the perceived social rejection or to avoid the sensation of shame by projecting self-blame onto others (Saraiya & Lopez-Castro, 2016).

4.1 | Limitations

Although the present study has demonstrated findings that further supplement the existing body of literature, there are notable limitations. The study data are cross-sectional in nature, making it impossible to confirm causal relationships. Our study findings are based on a small sample size of male children in street situations, limiting generalizability of the findings and the possible range of statistical analyses

and raising questions of statistical power. This can lead to generating false negatives where significant results remain undetected. Therefore, it is important to interpret the results of our study with caution and to see our work as a pilot study investigating the mediating effect of shame on the relationship between lifetime traumatic events and experienced violence on the streets and PTSD symptom severity. On the other hand, this limitation also highlights the robust results which were observed despite a relatively small sample size. Further, the findings from the present study are in line with previous research regarding PTSD symptoms in children living in the streets of Bujumbura (Crombach & Elbert, 2014), which indicates additional support for the validity of the present results.

Our questionnaires relied on self-reported symptoms. Therefore, it cannot be discounted that children under-reported or over-reported their symptoms to satisfy social desirability. It should be noted, though, that the team of psychologists had worked with the children over a period of several months. If there were any uncertainties about the reported symptoms during this period, we excluded the respective data from our analysis.

4.2 | Conclusions and future research

Our study replicates existing findings between PTSD, lifetime traumatic events and shame and includes violence experienced on the street in these associations. Additionally, it stresses the importance of shame as a mediator between the number of traumatic experiences and PTSD symptoms, and between violence experienced on the streets and PTSD symptoms. Given that shame was only recently included in the diagnostic criteria for PTSD, more research is needed to deepen our knowledge of the interplay between these factors. Nevertheless, our results strongly support previous research suggesting that early shameful experiences need to be considered in the light of traumatic memory processes (Matos & Pinto-Gouveia, 2009), and highlight the significance shame might present for therapeutic work with individuals suffering from PTSD. The fear of devaluation from the therapist could interfere with a successful exposure therapy (Lammers, 2020). Bennett et al. (2010) suggest encouraging children that have been exposed to neglect and suffering from depressive symptoms to describe past situations that invoked shame feelings and to evaluate (non-)verbal messages they received. Narrating these experiences with a new normalizing reaction from an adult therapist could have beneficial implications on the mental well-being of the child as unhelpful self-beliefs can be adapted, and self-compassion can be promoted according to compassion-focused therapy (Gilbert, 2009).

A replication of our findings with a larger sample would allow for the confirmation of such a relationship. Future research should consider collecting longitudinal data to determine the development of PTSD symptoms over time and in response to treatment. Furthermore, assessing the schema of the self in addition to shame and PTSD might be helpful to gain more insight into the interplay of these variables. Ultimately, a better understanding of the mechanism connecting PTSD and shame would enable development of more specific and holistic therapeutic interventions for individuals suffering from PTSD.

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CONFLICT OF INTERESTS

The authors declare that they do not have any conflict of interest.

AUTHOR CONTRIBUTIONS

A. C. developed the study concept. A. C. R.-Z., H. M., J.-A. M., T. N., L. N. and A. A. R. conducted the study set-up and data collection under the supervision of A. C. and M. B. Statistical analyses and data preparation was done by A. C. R.-Z. with critical input from A. C. Authors A. C. R.-Z. and A. C. drafted the paper. All the authors critically revised the manuscript and approved the final version of the paper for submission.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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