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Psychological Consequences of Human Trafficking: Complex Posttraumatic Stress Disorder in Trafficked Children

Abstract

Trafficked children are frequently exposed to multiple traumatic events, including during their recruitment, transit, and exploitation. It has been hypothesised that such exposures can lead to the development of Complex Posttraumatic Stress Disorder (PTSD). Complex PTSD includes (in addition to the core PTSD symptoms of re-experiencing, avoidance and hyperarousal) disturbances in affect regulation, dissociation, self-concept, interpersonal relationships, somatisation, and systems of meaning. This historical cohort study aimed to investigate Complex PTSD in trafficked children with a diagnosis of PTSD and compare these with non-trafficked controls exposed to single or multiple trauma. Trafficked children were identified by keyword searches of the electronic health records of over 250,000 mental health service users; a matched cohort of non-trafficked children was randomly selected. Regression models compared the number of Complex PTSD symptoms in trafficked children and non-trafficked children who had experienced multiple or single trauma. Fifty-one trafficked children were identified: eleven with a diagnosis of PTSD (22%). A high proportion of trafficked children with PTSD had Complex PTSD symptoms. Trafficked and non-trafficked children with PTSD who had been exposed to multiple trauma showed a greater number of Complex PTSD symptoms compared to non-trafficked children with PTSD exposed to single-event traumas. Child trafficking and multiple trauma exposure are associated with more complex posttraumatic presentations. A thorough clinical assessment at intake is crucial to ensure additional symptoms can be meaningfully incorporated into treatment plans.

Key words: Child trafficking, complex posttraumatic stress disorder, human trafficking, childhood maltreatment
Introduction

Each year, millions of children around the world are caught up in a cycle of abuse and exploitative labour: it is estimated that worldwide 5.5 million children are in situations of forced labour and 1.2 million are trafficked\(^1\). Children are subjected to frequent and prolonged abuse whilst trafficked, with studies of survivors recruited from shelters and healthcare settings reporting that physical violence is experienced by 24-56\% during exploitation and sexual violence by 21-51\% \(^2\)-\(^4\). Yet, in spite of the great magnitude of the problem, and the accrued evidence from paediatric literature of the negative impact of early trauma on children’s health and development, relatively little is known about the health and wellbeing of trafficked children. The last decade has seen an increase in research about the psychological impact of trafficking on adult survivors, but research into the mental health needs of trafficked children, who constitute one third of all identified trafficked people,\(^5\) remains scarce\(^6\),\(^7\). The few studies that have explored the mental health consequences of child trafficking suggest a high prevalence of depression, post-traumatic stress disorder (PTSD) and anxiety disorders, as well as high rates of self-harm and suicidal ideation\(^2\)-\(^4\).

Severe stressful life experiences in early life are known to adversely affect the development of children’s stress response system and cause long-lasting ill health\(^8\),\(^9\). In particular, frequent and prolonged activation of the stress response system can disturb normal development and increase risk of stress-related disorders, as well as a range of other physical and mental health problems\(^10\),\(^11\). In the wider literature of traumatic stress reactions in non-trafficked individuals, large community studies have demonstrated a significant exposure-response relationship between the number of traumas an individual has experienced and the likelihood they will go on to develop PTSD\(^9\),\(^12\)-\(^15\). Prolonged interpersonal trauma, including war, terrorism, and violence, has also been consistently associated with higher rates of PTSD in
children than non-interpersonal trauma\textsuperscript{16}. However, some authors have argued that multiple exposure to traumatic events, particularly during developmentally sensitive periods, leads not only to a greater likelihood of developing PTSD but also to a qualitatively different posttraumatic response, coined Complex PTSD\textsuperscript{17-19}. In a seminal paper reviewing the consequences of prolonged victimisation, Judith Herman argued that in addition to the core PTSD symptoms of re-experiencing, avoidance and hyperarousal, these individuals also experience significant disturbances in (I) affect regulation, including anger and self-destructiveness; (II) attention and consciousness, e.g. dissociation; (III) self-perception, for instance evidenced by chronic shame and guilt; (IV) relationships with others; (V) somatisation and/or medical problems and (VI) adversely affected systems of meaning, including hopelessness\textsuperscript{20}. The nosological status of the proposed construct of Complex PTSD, however, remains controversial. In contrast to the DSM-5 diagnostic classification system, which decided not to include it due to a lack of supporting evidence\textsuperscript{21}, Complex PTSD is likely to be included as a new diagnosis in the forthcoming \textit{International Classification of Diseases} (ICD-11)\textsuperscript{22}. The ICD-11 taskforce defined Complex PTSD as the presence of the core symptoms of PTSD plus at least one symptom in each of the additional three domains of (1) affect dysregulation, (2) negative self-concept and (3) relational difficulties\textsuperscript{22} (Table 1).

Empirical support for a unique and separate Complex PTSD diagnosis remains mixed. Utilising latent profile analysis in a treatment-seeking sample of adults exposed to single incident or chronic interpersonal trauma, Cloitre and colleagues\textsuperscript{18} found three distinct classes of individuals: a frank PTSD class (31.8%), which scored high on symptoms of PTSD and low on the additional symptoms of Complex PTSD; a Complex PTSD class (36.1%), which endorsed both symptoms of PTSD as well as the additional Complex PTSD items; and a low
supporting Herman’s initial postulation, chronic and repeated trauma exposure, such as childhood sexual abuse, was more strongly predictive of Complex PTSD than of PTSD, and single-event trauma was more strongly predictive of PTSD than of Complex PTSD. In contrast, Wolf and colleagues\textsuperscript{23} analysis of data from 2,695 community participants and 323 veterans did not support a distinction between PTSD and Complex PTSD. They evaluated dimensional, categorical, and factor mixture (hybrid) models to capture the structural associations between ICD-11 PTSD and Complex PTSD items, and found that a factor mixture model with two latent dimensional variables and four latent classes provided the best fit in both samples. In this model classes differed from one another only in terms of severity of symptoms, and not by type of psychopathology (PTSD only vs PTSD + Complex PTSD). The study also found that Complex PTSD was associated neither with greater trauma exposure nor with exposure specifically to physical or sexual assault\textsuperscript{23}. In a vastly different cultural context, with a sample of 230 West Papuan refugees, Silove et al.\textsuperscript{24} similarly found that PTSD and Complex PTSD may best be conceptualised as components of a unitary traumatic response to extensive persecution and conflict, rather than separate constructs. The empirical status of Complex PTSD thus remains uncertain. Furthermore, although ICD-11 diagnostic criteria apply to children and adults, only one study so far has investigated Complex PTSD diagnostic criteria with a child sample. Using latent class analysis to explore symptom profiles of children and adolescents (n=155) seeking treatment after exposure to one or more traumatic event(s), Sachser et al\textsuperscript{25} provided preliminary evidence for the PTSD and Complex PTSD distinction in a clinical paediatric sample. More research is urgently needed to validate the usefulness of this new diagnostic entity in children and adolescents.
Due to their high level of exposure to early onset, repeated interpersonal trauma, trafficked children would be considered at high risk of developing Complex PTSD given current hypotheses about its aetiology and development\textsuperscript{17,19,26}. The present study explores the relationship of PTSD and Complex PTSD in a clinical sample of trafficked children and non-trafficked controls seeking treatment following exposure to single or multiple traumatic events. The first objective of this study was to investigate whether trafficked children with a diagnosis of PTSD also experience additional symptoms of Complex PTSD. The second objective was to investigate whether trafficked children and non-trafficked children with exposure to multiple trauma are more likely to experience additional symptoms of Complex PTSD as compared to traumatised children who had exposure to a single traumatic index event. We hypothesised that trafficked children and non-trafficked controls with a diagnosis of PTSD and a history of multiple trauma exposure will have more symptoms of Complex PTSD as compared to non-trafficked controls with and diagnosis of PTSD and a history of a single traumatic event.

**Methods**

**Study design and population**

Historical cohort study of trafficked and matched non-trafficked children in contact with secondary mental health services at South London and the Maudsley (SLaM) NHS Foundation Trust, the largest provider of secondary mental health care in Europe\textsuperscript{27}.

**Data source**

Data were obtained from the Clinical Record Interactive Search (CRIS) system, which allows for the search and retrieval of de-identified records for over 250,000 SLaM patients, including those of over 46,000 children and adolescents (M. Broadbent, personal
communication, 12/2/2016). Records include all clinical and socio-demographic information recorded during patients’ contacts with SLaM services and can be searched in structured fields (e.g. diagnosis) or in free text (e.g. clinical notes).

**Sample**

Children in contact with SLaM typically underwent a multidisciplinary assessment by clinicians specialising in child and adolescent mental health. Diagnoses were assigned by clinicians using the ICD-10 multi-axial classification system. Cases were trafficked children in contact with SLaM services during the period of interest and who had a primary diagnosis of PTSD. We defined children as patients younger than 18 years at first contact and diagnosis as primary ICD-10 diagnosis of PTSD at most recent assessment. Trafficking status was ascertained from mental health records and defined in accordance with the United Nations protocol as the recruitment or movement of people aged younger than 18 for the purposes of exploitation, and included international and domestic trafficking. In order to identify cases, we searched clinical records of children who had accessed care within SLaM since 1 January 2006 – 21 November 2014 (search upper date limit) using trafficking terms such as “trafficked” “domestic servitude” and “sexual exploitation”. Records that included one or more trafficking terms were screened for eligibility. Cases where trafficking was suspected but not confirmed by staff during the course of contact with services were included in order to arrive at as comprehensive a sample as possible. Cases where trafficking exposure was unclear were resolved by consensus with reference to a second reviewer.

Controls were SLaM service users matched to cases for gender, age (+/- 1 year), primary diagnosis (PTSD), type of initial care (inpatient or outpatient), and year of most recent
service contact. The matched cohort was selected using a computer-generated random sample from all potential controls that met the matching criteria for each case, aiming for a case-control ratio of 1:4.

**Measures**

Sociodemographic, clinical and service use data, and details about the trafficking characteristics were extracted from structured fields (e.g. dates, diagnosis) and by targeted keyword searches of free-text clinical notes and correspondence (reported more fully elsewhere\(^2^9\)). Trauma history was collected from referral letters and via self- and caregiver report as noted in free text clinical notes, and coded as a variable with three levels (trafficking, non-trafficking single trauma exposure and non-trafficking multiple trauma exposure). Traumas which were coded as non-trafficking single trauma exposure included road traffic accident; single sexual assault; and witnessing the traumatic death of a loved one. Examples of traumas which were coded as non-trafficking multiple trauma exposure included repeated sexual abuse; torture; and repeated exposure to domestic violence. If a child’s notes indicated a single index event to which they developed PTSD symptoms but their records indicated a prior history of abuse, they were included in the multiple trauma category.

As no validated tool to assess Complex PTSD symptoms in children has been published, we developed a coding framework to code symptoms of Complex PTSD documented within clinical records. This coding framework was then applied systematically to all clinical records and used to code if symptoms were either recorded as present or not recorded/were recorded as absent. The coding framework was based on the original six symptom clusters proposed by Herman\(^2^0\) and was based on the SIDES\(^3^0\), the only validated instrument used to measure Complex PTSD symptoms in adults. The SIDES is a 45 item structured interview
which measures the 24 additional symptoms proposed to characterise Complex PTSD. These are grouped into six symptom clusters: alterations in affect regulation, alterations in consciousness, alterations in self-perception, alterations in relations, somatisation, and alterations in meaning. Sample items evidencing symptoms in each domain were drawn from empirically validated and developmentally appropriate instruments, including the Adolescent Dissociative Experiences Scale-II (A-DES)\textsuperscript{31}, the Difficulties in Emotion Regulation Scale (DERS)\textsuperscript{32} and the McLean Screening Instrument for Borderline Personality Disorder\textsuperscript{33}. The coding framework was reviewed by two experts in the field of child traumatic stress (A. Danese, personal communication, 6 February 2015; P. Smith, personal communication, 13 March, 2015).

Data about symptoms of Complex PTSD were collected from free text clinical notes and correspondence, which included assessment reports, discharge letters, referrals to specialist or adult services, and medico-legal reports. Analogous to the SIDES algorithm, Complex PTSD was defined as presence of symptoms in all six domains proposed by Herman (1992). A secondary analysis was conducted based on the proposed ICD-11 criteria of having symptoms in each one of the three domains of affective dysregulation, negative self-concept and interpersonal problems in addition to symptoms in the 3 core PTSD symptom clusters. Due to the prolonged nature of some children’s involvement with mental health services, children were only coded as having Complex PTSD if the various symptoms counting towards the diagnosis were present concurrently or within six months of each other.

**Statistical analysis**

Linear regression models were fitted to compare the number of Complex PTSD symptoms in trafficked and non-trafficked children with a history of single or multiple trauma. A random intercept was used for the match identifier representing clusters of matched individuals to
account for possible non-independence of matched individuals. Prior contact with secondary mental health services, history of psychiatric admission, history of childhood abuse, substance misuse problems, and total duration of contact with SLaM were investigated as potential confounders and found to be correlated with outcomes of interest. Analyses were therefore adjusted for these covariates, and they were entered simultaneously into the regression model. All statistical analyses were conducted in Stata version 12.34.

Ethics

Ethical approval was granted by an independent Research Ethics Committee (Oxfordshire C, reference 08/H0606/71). The CRIS Oversight Committee granted approval for this study (11/025).

Results

Fifty-one trafficked children were identified. Most (N=40, 78%) were female and 53% fell in the 16-17 age range (mean 14.0±3.1 years, range 5-17). Children were most commonly trafficked for sexual exploitation (N=21, 41%) and domestic servitude (N=13, 25%), as well as other forms of labour including restaurant work and laundry (N=4, 8%). Data for type of exploitation was missing for 13 children (25%). Trafficked children came from 21 countries, most commonly Nigeria (N=13, 25%), Albania (N=4, 8%) and the Democratic Republic of Congo (N=4, 8%). The most frequently recorded clinical diagnoses were PTSD (N=11, 22%), mood disorders (N=11, 22%) and reaction to severe stress and adjustment disorders (N=7, 14%). Physical violence during trafficking was recorded for 27 children (53%), sexual violence by 25 (49%); having experienced either physical or sexual violence while trafficked was recorded for 38 children (74%).
The eleven trafficked children (22%) with a diagnosis of PTSD were matched with 30 non-trafficked children. The matching ratio 1:3.7 fell below the target ratio 1:4 because not all children could be matched to four non-trafficked controls. All trafficked children were matched with at least one control.

The final sample (n=41) for the Complex PTSD analysis consisted of 11 trafficked children (27%), 21 non-trafficked controls exposed to multiple trauma (51%), and 9 non-trafficked controls exposed to a single trauma (22%). Thirty of the children (73%) were girls, and the mean age of the same was 15 years (SD=1.9 years). Trauma characteristics of the sample are presented in Table 2.

The frequency of endorsing symptoms in each of the six domains of Complex PTSD\(^{20}\) is presented in Table 3. The most frequently endorsed symptom cluster was alterations in affect regulation, with 33 of the 41 children in the sample (80%) endorsing symptoms in this domain. Alterations in consciousness and somatisation were the least frequently endorsed domains, but were still present among 11 (27%) and 10 (24%) children, respectively. There was insufficient power to test for group differences in prevalence at the Complex PTSD symptom cluster level.

As shown in Table 4, the mean number of Complex PTSD symptoms endorsed were 3.5 (SD=1.6) by the trafficked children, 2.7 (SD=1.4) in the non-trafficked multiple trauma exposure group, and 1.6 (SD=1.0) in the non-trafficked single trauma exposure group. Of the 41 children, only one child (a trafficked child) met full criteria for Complex PTSD as evidenced by the manifestation of symptoms in all 6 clusters. Four children (10%) had symptoms in 5 clusters, 6 (15%) symptoms in 4 clusters, and 11 (27%) symptoms in 3
Eleven children (27%) had Complex PTSD based on the proposed ICD-11 criteria (i.e. having at least one symptom in each of the categories of disturbance in affect regulation, self-perception and interpersonal relationships). Four of these children were in the trafficked group, six were in the multiple trauma exposure group, and one was in the single trauma exposure group.

Our findings suggest some evidence for differences in the mean number of Complex PTSD domains between our three trauma groups, \( \chi^2 (2, 41) = 9.38, <p=0.01 \) (see Table 4 for means). Compared to non-trafficked children with exposure to a single trauma, trafficked children were more likely to endorse more domains of Complex PTSD \( z=-3.06, p=0.002 \) (see Table 4 for means). Non-trafficked children exposed to multiple trauma were also more likely to endorse more symptoms of Complex PTSD as compared to non-trafficked children exposed to a single trauma, \( z=1.94, p=0.05 \) (Table 5). However, we did not find evidence for similar differences between trafficked children and non-trafficked children that were exposed to multiple traumas \( z=-1.58, p=0.11 \).

**Discussion**

To our knowledge, this is the first study to test theory-driven hypotheses about Complex PTSD in children by comparing trafficked children’s posttraumatic reactions to a control group of children exposed single incident or multiple trauma. Using de-identified electronic medical records from a large mental health trust, we were able to sample a hard-to-reach population and introduce important findings in the emerging field of mental health in the context of human trafficking.
Our findings on the prevalence of PTSD in trafficked children are consistent with the small number of child trafficking studies conducted to date\textsuperscript{2,4}. Our research adds to this literature by providing a symptom-level description of the posttraumatic reaction in trafficked children, describing for the first time how Complex PTSD is experienced in this group. These findings indicate the need for comprehensive psychological screening and care to alleviate trafficked children’s emotional difficulties. Interventions for trafficked children should follow evidence-based protocols that take into account children’s substantial history of abuse, separation from caregivers and displacement. Established models of working with young refugees, survivors of childhood sexual abuse and looked-after children may prove particularly useful in this regard. However, trafficked children may experience additional stressors, including insecure legal status and insecure accommodation, which pose additional challenges in meeting their mental health needs.\textsuperscript{37}

Our analysis provides broad support for the presence of Complex PTSD in child survivors of multiple and prolonged trauma. Consistent with theory\textsuperscript{17,19}, children and adolescents with multiple, enduring or repeated trauma were found to have more symptoms of complex posttraumatic stress than children exposed to a single index traumatic event. As hypothesised, no significant differences in Complex PTSD symptoms were found between the trafficked children and matched controls who were also exposed to multiple traumas, for example survivors of childhood sexual abuse, torture, and domestic violence.

The most frequently recorded Complex PTSD symptom cluster was alterations in emotional regulation, which was noted in 82\% of the trafficked children and 86\% of the controls exposed to multiple trauma. Notably, symptoms of emotional dysregulation were also present in 67\% of the controls exposed to single trauma. A large proportion of trafficked children
reported somatic symptoms, which is consistent with the literature on the health of trafficked people which indicates high prevalence of headaches, back pain, and stomach aches.

Our finding that a high proportion of trafficked children present with Complex PTSD symptoms is in keeping with a study of Complex PTSD in adult survivors of human trafficking and other human rights abuses, which used the SIDES to demonstrate the extensive presence of current and lifetime Complex PTSD symptomatology. Supplemental information from the authors indicates that 20% of the human trafficking group in their sample met criteria for current presence of Complex PTSD, and the presence of Complex PTSD symptoms across all six domains was high. As in the present study, the authors found no significant differences between groups when comparing survivors of trafficking with survivors of other forms of multiple trauma, in their case domestic violence victims and survivors of torture.

Our study was subject to a number of limitations. The use of a psychiatric case register meant that much of the information relevant to the study questions had not been gathered or recorded in a systematic way, and it was not possible to collect additional data through interviews. In spite of using a comprehensive list of trafficking search terms, it is likely that this method did not identify all trafficked children in contact with SLaM services during the study period. This is both due to staff not always becoming aware of a child’s trafficking status, and also, in instances where they were aware, not necessarily using ‘trafficking’ or other key words when referring to the child’s exploitation whilst recording this in their clinical records. To date, no instruments to assess Complex PTSD presentations in children have been published. The study therefore used an idiosyncratic coding framework to
capture symptoms of Complex PTSD, and the reliability and validity of this tool has not been formally assessed. In addition, as the Complex PTSD diagnosis currently does not exist, clinicians did not systematically enquire about and record some of the symptoms of interest. This likely had the effect of underestimating the true prevalence of Complex PTSD symptoms in the sample. We attempted to control for this limitation by applying the coding framework in a consistent and standardised way and resolved cases where it was unclear if a child met criteria for a particular symptom by reference to a second clinician. The study should be replicated in a larger cohort of children exposed to single and multiple trauma using clinical interview to elicit symptoms. Finally, the study employed a clinical sample of children in contact with secondary mental health services, and further research is needed to see how our findings would generalise to other groups.

Despite potential limitations, our findings on the high prevalence of complex posttraumatic stress reactions in child survivors of multiple and prolonged trauma indicate the need for comprehensive psychological assessment of symptoms, which may extend beyond the current clinical descriptions of PTSD. There is also a matching need to investigate the most effective therapies for this vulnerable group.

**Conclusion**

Child trafficking and other forms of multiple and/or prolonged trauma are associated with more complex posttraumatic presentations, evidenced most notably by additional symptoms of affect dysregulation, alterations in self-concept, and relational difficulties. Such symptoms should be assessed at intake and incorporated into treatment plans. Evidence is urgently needed on the comparative effectiveness of interventions with children with complex posttraumatic reactions in order to best meet the needs of this highly vulnerable group.
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