**TITLE**

**Exploitation, violence and suicide risk among child and adolescent survivors of human trafficking in the Greater Mekong subregion**

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**ABSTRACT**

**Importance.** Human trafficking and exploitation of children have profound health consequences. To our knowledge, this study represents the largest survey on the health of child and adolescent survivors of human trafficking.

**Objective.** This study describes experiences of abuse and exploitation, mental health outcomes and suicidal behavior among children and adolescents in post-trafficking services. It also examines how exposures to violence, exploitation and abuse affect the mental health and suicidal behavior of trafficked children.

**Design, setting and participants.** A cross-sectional survey was conducted with 387 children and adolescents 10 to 17 years of age in post-trafficking services in Cambodia, Thailand or Vietnam. Participants were interviewed within two weeks of entering services from October 2011 through May 2013.

**Main outcomes.** Outcomes included depression, PTSD, anxiety, suicidal ideation, self-injury, and suicide attempts.

**Results.** The majority (82%) of the sample were female. 12% had tried to harm or kill themselves in the month before the interview. 56% screened positive for depression, 33% for anxiety disorder and 26% for PTSD. Abuse at home was reported by 20%. Physical violence while trafficked was reported by 41% of boys and 19% of girls. 23% of girls and one boy reported sexual violence. Mental health symptoms were strongly associated with recent self-harm and suicide attempts. Severe physical violence was associated with depression (AOR 3.55; 95%CI: 1.64-7.71), anxiety (AOR 2.13; 95%CI: 1.12-4.05) and suicidal ideation (AOR 3.68; 95%CI: 1.77-7.67). Sexual violence while trafficked was associated with depression (AOR 2.27; 95%CI: 1.22-4.23) and suicidal ideation (AOR 3.43; 95%CI: 1.80-6.54).

**Conclusion and relevance.** Children and adolescents in post-trafficking care show high symptoms levels of depression, anxiety and PTSD, which are strongly associated with self-harm or suicidal behaviours. Mental health screening and re-integration risk assessments are critical components of post-trafficking services, especially in planning for family reunification and other social integration options.

**INTRODUCTION**

Each year millions of children are subjected to extreme forms of exploitation and abuse in the context of human trafficking. In the most widely accepted definition of human trafficking, the UN Protocol,1 defines human trafficking as the use of force or coercion for the purposes of exploitation.2 Estimates suggest that 5.7 million boys and girls are in situations of forced or bonded labour, 1.2 million are trafficked and approximately 1.8 million are exploited in the sex industry.3,4 Children and adolescents (hereafter ‘children’) are commonly drawn into hazardous work because of poverty, and this vulnerability may be exacerbated by illness or death of a family member, economic shock, natural disasters, and civil unrest.5,6

Despite growing documentation of child labour3,5 and a large body of research on the effects of violence on children’s health and wellbeing,9–11 there has been little convergence of evidence on violence and health in situations of child labour.5,12 We still know relatively little about the health and wellbeing of children who have experienced violence in the context of child labour exploitation,13 and even less about the health needs of child survivors of extreme forms of labour and sexual exploitation.

Research on violence and traumatic events in childhood and adolescence has shown that abuse is an important predictor of short- and longer-term poor health,8,14,15 including depression, alcoholism, drug use, depression, risky sexual behaviour, STIs, self-injury and suicide attempts.9,11,16–19 Research on women and adolescents trafficked for sex and domestic labour indicated that childhood sexual abuse is an independent risk factor for probable mental health disorders20. However, this work has not been replicated among other populations of trafficked children. Nor has prior research examined self-injurious behaviour or suicide risk.

Estimates suggest that trafficking is highly prevalent in South East Asia.21 For example, a small study with a sample of Vietnamese migrants found that 13% of respondents were trafficked22 and children have been reported being trafficked for begging, sexual exploitation, fish processing, domestic work and brides.4,23 Cambodia and Vietnam are recognised source countries for child trafficking, and Thailand is a common source, transit and destination country.24

The present study aims to describe patterns of abuse and exploitation prior to and during trafficking, as well the mental health of children in the immediate post-trafficking setting. It examines how exposure to violence and exploitation influence mental health symptoms and self-harm, specifically self-injury rpand suicide attempts. Findings are intended to support targeted responses for post-trafficking care, health recovery, suicide prevention and social (re-)integration of trafficked children.

**METHODS**

**Sample**

A cross-sectional survey was conducted with a consecutive sample of children aged 10-17 in post-trafficking services in Thailand, Cambodia and Vietnam. The sample was selected in two stages: (1) 15 post-trafficking services were purposively selected based on diversity of clientele, service relationship with International Organization for Migration (IOM) country teams and agreements with government agencies; (2) a consecutive sample of individuals were invited to participate in structured interviews within two weeks of service admission between October 2011 and May 2013.

Individuals in the sample were identified as trafficked by the local governmental and non-governmental referral networks and service providers. The sample delimitation is, therefore, contingent on the definitions used by local organisations.

**Data collection and measures**

Children were identified and interviewed in 13 of the 15 services participating in the overall research. The participating services offered different services to children, varying by provider, such as accommodation, medical services, legal assistance, psychosocial rehabilitation, vocational training, non-formal education, family tracing and pre-return preparation.

Study outcomes were depression, PTSD, anxiety, suicidal ideation, self-harm, and suicide attempts. Symptom levels indicative of depression were measured using the Hopkins Symptoms Checklist (HSCL), applying a cut-point of 1.625.25 Symptoms of Post Traumatic Stress Disorder (PTSD) were assessed using the Harvard Trauma Questionnaire,26–28 with a cut- point of 2.0.29 Anxiety disorders were assessed used cut off point of 1.75.30,31 A subscale of the Brief Symptom Inventory assessed hostility items, coded positive for “quite a lot” or “extremely”.32

We identified suicidal ideation using an item of the HSCL on participants’ thoughts about ending his/her own life in the past week (classed positive for “quite a lot” or “extremely”).

Self-injury was categorised as positive for participants reporting having tried to physically harm themselves in any way (e.g., using sharp instruments, flame, etc.). Suicide attempt was classed positive for participants who reported trying to take their own lives in the month before the interview. Self-harm was considered independently of suicidal intent, following recent NICE clinical guidelines.33,34 Participants were considered positive if they reported suicide attempt or self-harm, irrespective of suicidal intent.

Questions about violent acts before and during trafficking and the participant’s relationship to the perpetrator(s) were adapted from the WHO study on domestic violence.35,36 “Severe” violence was coded positively for participants who experienced either; being kicked, dragged or beaten up, being tied or chained, choked or burned, having dog released to bite or scratch, threatened with a weapon, cut with a knife, being shot at, or forced to have sex, with “less severe” violence coded as positive for experiencing punches, slaps and hits. These categorizations are based on other violence studies37 and trafficking and health research.25

Labour exploitation exposures included excessive working time, restricted freedom, cheated wages, and hazardous living conditions. Excessive working time followed the International Labour Organisation’s International Standards.38–43 Extremely excessive time was categorised as ten or more hours per day or no fixed hours. Restricted freedom included being locked in a room, or never free to do what they wanted or go where they wanted. A dichotomous variable was classed positive for at least one hazardous living condition, as described elsewhere.25 Cheated wages was defined as not receiving cash payments.

Serious occupational injuries were self-reported and comprised any of the following injuries resulting from work or accidents at work: a deep or very long cut, a very bad burn, serious head injury, back or neck injury, skin damage, broken bone, body part lost, eye injury/damage, or ear damage.

The study instrument was translated into Khmer, Thai, Vietnamese, and Laotian by professional translators and through teams discussions, adapted, piloted and revised, back-translated into English, and finalised by the study team.

**Ethics and safety**

Interviewers were recruited from existing shelter staff and IOM partners, and were trained to follow a strict ethics protocol based on the WHO Ethical Recommendations for Interviewing Trafficked Women.44 Guidance included ensuring participation was voluntary and confidential, assurance that declining participation would not affect services, avoiding and managing distress and options for supported referral. Survey participants were identified and interviewed by experienced service providers, who first consulted with each child care’s team and who were trained to respond appropriately to distress and make necessary referrals. Consent procedures highlighted study content and option to refuse or interrupt participation without consequences to the services provision. Data were anonymized and questionnaires were stored securely in each country.

The study received ethical approval from the London School of Hygiene and Tropical Medicine and national ethical boards in Cambodia, Thailand and Vietnam.

**Data analysis**

Preliminary analysis was conducted to describe patterns of abuse, exploitation, mental health outcomes and self-harm. Chi-square tests and Fischer’s exact test were used to identify the distribution of violence, labour exploitation, mental health symptoms and self-harm by sex and age (p-values reported in the text). 95% confidence intervals were calculated for the prevalence of the main outcomes. Multivariable logistic regression models were fitted for each predictor to identify factors associated with outcomes in each domain (pre-trafficking exposures, trafficking exposures, and post-trafficking concerns). This analysis was conducted to examine how exposure to violence and exploitation influence mental health symptoms andself-harm*.* All models were adjusted for sex and age, and models including variables on trafficking experiences and post-trafficking concerns were also adjusted for time in trafficking. Firth penalised likelihood was used in the logistic regression models for self-harm to avoid small sample bias, which is common in the analysis of rare outcomes. The analysis was conducted using STATA 13.

**RESULTS**

**Population characteristics**

Interviews were conducted with 387 children and adolescents ages 10-17 years, of whom 82% were female and 95% were older than 13 years (response rate over 98%). The mean age of boys was 15 years (SD=2.1) and girls was 16 years (SD=1.3). Five percent were younger than 12 years-old (12 boys and 6 girls). Boys were predominantly from Cambodia (44%), Myanmar (21%) and Vietnam (18%). Girls were mainly from Thailand (43%), Laos (23%) and Vietnam (18%). The majority of the children and adolescents in the sample (52%) were exploited in sex work. Boys were most commonly trafficked for street begging (29%) and fishing (19%). Girls were trafficked primarily for forced sex work (63%). Twenty boys and girls (5%) were trafficked into factory work (e.g., shrimp and other food processing, toy and garment manufacturing). Fifteen girls, all but one from Vietnam, were trafficked as brides to China.

When asked about reasons for leaving home, 67% reported economic concerns and 24% reported they wanted a new experience. Importantly, 5% of children were abducted, 4% left because of alcohol problems in the family and 4% because of the violence at home.

Children were identified and referred to services primarily by police, border guards or government officers (86%). The mean duration of the trafficking situation was 4.5 months (SD=5.6), ranging from nine days to nine years. Over one-third (39%) said they had tried to escape and 15% reported they had successfully escaped.

**Violence prior to trafficking**

One in five participants (22%) reported physical or sexual violence before migrating. Physical violence was reported by both boys (25%) and girls (20%) (p=0.35), of whom 54% identified a family member or intimate partner as the perpetrator. Pre-departure sexual was reported solely by girls (n=7) and the main perpetrators were boyfriends, acquaintances and strangers.

**Violence during trafficking**

One-third of the sample (33%) reported physical and/or sexual violence while trafficked. Nearly half (41%) of boys and 19% of girls reported physical violence (p<0.001). Sexual violence was reported by 23% of girls, and one boy (1%). Employers or traffickers were commonly identified perpetrators (39%). Severe forms of physical violence were reported by 17% of boys and 13% of girls (p<0.001). 34% of girls trafficked into sex work experienced physical violence and 71% sexual violence by a client. Among children reporting physical or sexual violence, 23% sustained a serious injury. Many were subjected to threats against themselves or someone they cared about (30%) and witnessed the trafficker beat or intentionally hurt someone else (17%).

**Labour exploitation during trafficking**

Children commonly worked seven days per week (53% of girls; 73% of boys) (p=0.01). The mean number of working hours per day was 10.3 (SD=6.2) for boys and 7.2 (SD=4.1) for girls. However, this probably underestimates girls’ true working hours, as one-third of girls (33%) stated they did not have fixed working hours (see Table 1). Serious occupational injuries were sustained by 21% of boys and 7% of girls (p<0.001). Boys more often reported at least one bad living condition (84%) compared to girls (40%) (p<0.001), for example, 54% of boys had nowhere to sleep or slept on the floor and 22% had inadequate drinking water.

<< INCLUDE TABLE 1 >>

**Post-trafficking concerns and hopes for the future**

Children(54%) worried about how they would be treated upon return home and reported feelings of guilt or shame (56%). One in three (34%) were still afraid of the trafficker or his/her associates.

The majority (59%) said their best hope for the future was to go home, 57% to have a job, 38% to have money, and 29% to have a family. One in twenty children (5%) said they had no hopes.

**Mental health**

<< INCLUDE TABLE 2 >>

One in four children (26%) had symptom levels indicative of PTSD (19% of boys and 27% of girls, p=0.16). Over half of children (56%) had probable depression, with symptoms more common among girls (60%) than boys (40%) (p=0.002). One in three (33%) children had symptom levels of an anxiety disorder, with similar prevalence among boys and girls (respectively 33% and 33%; p=0.953). Suicidal ideation in the past month was reported by 16% of children (18% of girls and 4% of boys; p=0.004).

Signs of hostility was reported by 22% (13% of boys; 24% of girls; p=0.02), with 16% of children feeling easily annoyed or irritated (7% of boys and 18% of girls; p=0.02), 8% uncontrollable temper outbursts (7% of boys and 8% of girls; p=0.77), 4% urges to beat, injure or hurt someone (1% of boys and 4% of girls, p=0.28), and 4% reported getting in frequent arguments (3% of boys and 5% of girls; p=0.49).

Self-injury in the past month was reported by 9% of children (9% boys; 7% girls; p=0.82). At least one suicide attempt in the past month was reported by 5% (3% boys; 6% girls; p=0.39). 12% had self-injured or attempted suicide and 2% reported both. There was no significant relationship between self- harm and age group (p=0.53).

**Associations between violence, mental health and self-harm**

<< INCLUDE TABLE 3 >>

Children reporting pre-migration physical or sexual violence were at increased risk of self-harm (OR 2.32, 95%CI 1.19-4.58). However, severe physical and sexual violence during trafficking did not significantly increase likelihood of self-harm. Children symptomatic for PTSD (OR 4.34, 95%CI 2.30-8.19), depression (OR 3.15, 95%CI 1.51-6.54) and anxiety (OR 2.56 95%CI 1.37-4.77) were more likely to report self-harm, as well as children reporting suicide ideation (OR 6.32 95%CI 3.24-12.3).

**<<** INCLUDE TABLE 4 >>

In multivariable analysis, violence prior to migration was significantly associated with PTSD (AOR 1.93, 95%CI 1.11-3.39), depression (AOR 2.26, 95%CI 1.30-3.91), anxiety (AOR 2.02, 95%CI 1.20-3.41), suicide ideation (AOR 2.67, 95%CI 1.41-5.07) and self-harm (AOR 2.31 95%CI 1.18-4.53). Trafficking experiences significantly associated with PTSD symptoms included: extremely excessive work hours (AOR 2.08 95%CI 1.20-3.61), poor living conditions (AOR 2.10, 95%CI 1.24-3.56), and having been threatened (AOR 1.92 95%CI 1.12-3.29). Experiences during trafficking associated with depression included: severe physical violence (AOR 3.55, 95%CI 1.64-7.71), sexual violence (AOR 2.27 95%CI 1.22-4.23), extremely excessive work hours (AOR 1.78, 95%CI 1.08-2.92), restricted freedom (AOR 1.61, 95%CI 1.00-2.60), living conditions (AOR 1.93, 95%CI 1.17-3.19) and having been threatened (AOR 3.00, 95%CI 1.71-5.26). Anxiety was associated with severe physical violence (AOR 2.13, 95%CI 1.12-4.05), restricted freedom (AOR 1.73, 95%CI 1.07-2.78), living conditions (AOR 3.20, 95%CI 1.91-5.34) and having been threatened (95%CI 2.06, 95%CI 1.24-3.44). Trafficking experiences associated with suicidal ideation included: severe physical violence (AOR 3.68, 95%CI 1.77-7.67), sexual violence (AOR 3.43, 95%CI 1.80-6.54), extremely excessive work hours (AOR 2.69, 95%CI 1.38-5.26), restricted freedom (AOR 2.44, 95%CI 1.34-4.44), and threats by trafficker (AOR 3.59, 95%CI 1.92-6.73). In the post trafficking setting, self-harm was associated with feelings of guilt or shame (AOR 2.06, 95%CI 1.00-4.25). Fear of trafficked was associated with anxiety (AOR 1.90, 95%CI 1.16-3.11).

**Interpretation**

To our knowledge, this is the largest quantitative survey to date on child trafficking survivors. Children and adolescents in this study were exposed to serious health hazards and violence while exploited and a worrisome proportion emerged from these situations wishing to harm themselves or end their lives. Strikingly, 46 children, or 12% of participants, said that within the previous month, they had tried to harm or kill themselves. The meaning of this prevalence becomes clear by comparing this percentage to figures from community-based studies that indicate that the lifetime prevalence of self-harm, with and without suicide intent, is approximately 10% among youth up to age 25.34 That is, the rates of reported self-harm and suicide attempts among the minors in this study represent acts over the past month only, versus lifetime prevalence in the community-based samples—and represent only children younger than 18 years old (versus up to age 25).

These findings on children’s mental health indicate the need for psychological screening and psychosocial and medical care to alleviate children’s suffering, prevent recurrence of self harm and potential fatalities34 and to help child survivors cope with a frightening and uncertain future. Primary care providers for survivors should incorporate mental health screening into routine care, with on-going surveillance for distress even after the immediate post-trafficking period. Respectfully soliciting a comprehensive migration history, starting with the child’s pre-migration social situation, may help clinicians identify risk factors, such as violence, and children’s corresponding mental health and social service care needs.

Like other research on early abuse, our findings also indicate the value of understanding children’s pre-trafficking experiences, as PTSD, depression, anxiety, suicidal ideation and self-harm were each associated with pre-migration violence.5,45

It is worth noting that a large proportion of children were not highly symptomatic for PTSD or anxiety disorders, and most were able to express some hopes for their future. Yet, for many, re-integration may be challenging, especially as many issues that pushed children to migrate, including family financial difficulties, are likely to remain unresolved. Reintegration of children should consider potential risks at each survivor’s place of origin, including possible abusive home situations and risks of re-recruitment for further exploitation. 46–48

Simultaneously, programmes will undoubtedly also wish to build on the determination and courage that children showed by leaving home in the first place and the strengths some may have gained from surviving their ordeal.

These findings reflect the situation of children in post-trafficking services in the Greater Mekong Subregion, however, we believe they may also offer insights for similarly vulnerable children and adolescents globally who are working in low-paid, hazardous conditions.

This study is subject to a number of limitations. First, the sample included only individuals in post-trafficking services and does not represent a general population of trafficked children, although children of various ages and nationalities exploited in different sectors were included. Findings on violence prior to migration have a relatively high percentage of missing values (10.1%), but these were random, due to technical problems in the database set up, and therefore estimates are likely to be reliable.

Self-harm and suicide attempts are relatively rare phenomena, even among highly traumatised populations. We used appropriate methods for analysis of rare outcomes to avoid small-sample bias (Fisher exact test and Firth’s penalized likelihood). However, the sample size may have limited the power to detect significant effects. Additionally, because the aim of the study was to identify important influences on mental health and self-harm, the effect of multiple exposures was measured. Multiple comparisons can increase false positive results and, for this reason, we recommend caution when interpreting these associations. Suicidal ideation, self-harm, and suicide attempts were assessed using a single item. Data were limited to single-item assessments rather than validated instruments. Finally, mental health scales are not diagnostic or validated in the study population but have been used to measure mental health of Vietnamese refugees, Cambodian civilians in the Mekong and women attending post-trafficking services in Europe.46,49

Despite potential limitations, these findings confirm what many service providers have witnessed so often: children in post-trafficking services have been exposed to unimaginably traumatic events and are struggling to cope with haunting memories and deep distress as they try to forge ahead into an uncertain future.

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LK had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

**CONTRIBUTORS**

LK was the lead epidemiologist of the study. LK and CZ conceived and designed the study, analysed and interpreted data, and wrote the report. KY and NSP analysed and interpreted data and reviewed the manuscript.

**CONFLICT OF INTEREST DISCLOSURE**

We declare no competing interests.

**BIBLIOGRAPHY**

1. United Nations. United Nations Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children.; 2003.

2. UNODC. Optional Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, Supplementing the United Nations Convention Against Transnational Organized Crime.; 2004. http://www.unodc.org/documents/treaties/UNTOC/Publications/TOC%20Convention/TOCebook-e.pdf. Accessed February 2, 2015.

3. ILO. Global Estimate of Forced Labour: Results and Methodology. Geneva: International Labour Organization (ILO); 2012.

4. USDOS. Victims of Trafficking and Violence Protection Act of 2000: Trafficking in Persons Report 2007. United States Department of State (USDOS) http:// www.state.gov/g/tip/rls/tiprpt/2007. Accessed August 1, 2007.

5. Pinheiro PS. World Report on Violence against Children. United Nations Secretary-General’s Study on Violence against Children; 2006.

6. UNICEF. Africa’s Orphaned Generation. New York, USA: UNICEF; 2003.

7. ILO, IPEC. Estimates on Child Labour. Geneva: International Programme on the Elimination of Child Labour (IPEC), International Labour Organization (ILO); 2002.

8. Singer MI, Anglin TM, Song LY, Lunghofer L. Adolescents’ exposure to violence and associated symptoms of psychological trauma. JAMA. 1995;273(6):477-482.

9. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. Am J Prev Med. 1998;14(4):245-258.

10. Krug EG, Mercy JA, Dahlberg LL, Zwi AB. The world report on violence and health. The Lancet. 2002;360(9339):1083-1088. doi:10.1016/S0140-6736(02)11133-0.

11. Norman RE, Byambaa M, De R, Butchart A, Scott J, Vos T. The Long-Term Health Consequences of Child Physical Abuse, Emotional Abuse, and Neglect: A Systematic Review and Meta-Analysis. PLoS Med. 2012;9(11):e1001349. doi:10.1371/journal.pmed.1001349.

12. Parker DL, Overby M. A Discussion of Hazardous Child Labor. Public Health Rep. 2005;120(6):586-588.

13. Hesketh T, Gamlin J, Woodhead M. Policy in child labour. Arch Dis Child. 2006;91(9):721-723. doi:10.1136/adc.2006.096263.

14. Ouellet-Morin I, Fisher HL, York-Smith M, Fincham-Campbell S, Moffitt TE, Arseneault L. INTIMATE PARTNER VIOLENCE AND NEW-ONSET DEPRESSION: A LONGITUDINAL STUDY OF WOMEN’S CHILDHOOD AND ADULT HISTORIES OF ABUSE. Depress Anxiety. February 2015. doi:10.1002/da.22347.

15. Rossiter A, Byrne F, Wota AP, et al. Childhood trauma levels in individuals attending adult mental health services: An evaluation of clinical records and structured measurement of childhood trauma. Child Abuse Negl. January 2015. doi:10.1016/j.chiabu.2015.01.001.

16. Fliege H, Lee J-R, Grimm A, Klapp BF. Risk factors and correlates of deliberate self-harm behavior: a systematic review. J Psychosom Res. 2009;66(6):477-493. doi:10.1016/j.jpsychores.2008.10.013.

17. Miller AB, Esposito-Smythers C, Weismoore JT, Renshaw KD. The Relation Between Child Maltreatment and Adolescent Suicidal Behavior: A Systematic Review and Critical Examination of the Literature. Clin Child Fam Psychol Rev. 2013;16(2):146-172. doi:10.1007/s10567-013-0131-5.

18. Nock MK. Self-injury. Annu Rev Clin Psychol. 2010;6:339-363. doi:10.1146/annurev.clinpsy.121208.131258.

19. Van der Kolk BA, Perry JC, Herman JL. Childhood origins of self-destructive behavior. Am J Psychiatry. 1991;148(12):1665-1671.

20. Abas M, Ostrovschi NV, Prince M, Gorceag VI, Trigub C, Oram S. Risk factors for mental disorders in women survivors of human trafficking: a historical cohort study. BMC Psychiatry. 2013;13:204. doi:10.1186/1471-244X-13-204.

21. UNODC. Global Report on Trafficking in Persons. United Nations Office on Drugs and Crime (UNODC); 2012. http://www.unodc.org/documents/data-and-analysis/glotip/Trafficking\_in\_Persons\_2012\_web.pdf. Accessed March 15, 2015.

22. Bélanger D. Labor Migration and Trafficking among Vietnamese Migrants in Asia. Ann Am Acad Pol Soc Sci. 2014;653(1):87-106. doi:10.1177/0002716213517066.

23. Rafferty Y. Children for sale: Child trafficking in Southeast Asia. Child Abuse Rev. 2007;16(6):401-422. doi:10.1002/car.1009.

24. UNODC. Trafficking in Human Beings: Global Patterns. United Nations Office on Drugs and Crime (UNODC); 2006. http://www.unodc.org/unodc/en/ trafficking\_persons\_report\_2006-04.html. Accessed December 8, 2006.

25. Kiss L, Pocock NS, Naisanguansri V, et al. Health of men, women, and children in post-trafficking services in Cambodia, Thailand, and Vietnam: an observational cross-sectional study. Lancet Glob Health. 2015;3(3):e154-e161. doi:10.1016/S2214-109X(15)70016-1.

26. Bolton P. Cross-cultural validity and reliability testing of a standard psychiatric assessment instrument without a gold standard. J Nerv Ment Dis. 2001;189(4):238-242.

27. Lee B, Kaaya SF, Mbwambo JK, Smith-Fawzi MC, Leshabari MT. Detecting depressive disorder with the Hopkins Symptom Checklist-25 in Tanzania. Int J Soc Psychiatry. 2008;54(1):7-20.

28. Mollica R, Caspi-Yarvin Y, Lavelle J, et al. Harvard Trauma Questionnaire (HTQ) Manual: Cambodian, Lao, and Vietnamese Versions. 1991.

29. Hossain M, Zimmerman C, Abas M, Light M, Watts C. The relationship of trauma to mental disorders among trafficked and sexually exploited girls and women. Am J Public Health. 2010;100(12):2442.

30. Mollica RF, Wyshak G, de Marneffe D, Khuon F, Lavelle J. Indochinese versions of the Hopkins Symptom Checklist-25: a screening instrument for the psychiatric care of refugees. Am J Psychiatry. 1987;144(4):497-500.

31. Tsutsumi A, Izutsu T, Poudyal AK, Kato S, Marui E. Mental health of female survivors of human trafficking in Nepal. Soc Sci Med 1982. 2008;66(8):1841-1847. doi:10.1016/j.socscimed.2007.12.025.

32. Derogatis LR. BSI Brief Symptom Inventory: Administration, Scoring, and Procedure Manual. 4th Ed. Minneapolis, MN: National Computer Systems; 1993.

33. NICE. National Collaborating Centre for Mental Health. Self-Harm: Longer Term Management. London: National Institute for Clinical Excellence (NICE); 2011.

34. Hawton K, Saunders KEA, O’Connor RC. Self-harm and suicide in adolescents. Lancet. 2012;379(9834):2373-2382. doi:10.1016/S0140-6736(12)60322-5.

35. Garcia-Moreno C, Jansen HAFM, Ellsberg M, Heise L, Watts C. WHO Multi-Country Study on Women’s Health and Domestic Violence against Women. Geneva, Switzerland: World Health Organization (WHO); 2005.

36. Devries KM, Mak JYT, García-Moreno C, et al. Global health. The global prevalence of intimate partner violence against women. Science. 2013;340(6140):1527-1528. doi:10.1126/science.1240937.

37. Hossain M, Zimmerman C, Kiss L, et al. Men’s and women’s experiences of violence and traumatic events in rural Cote d’Ivoire before, during and after a period of armed conflict. BMJ Open. 2014;4(2):e003644. doi:10.1136/bmjopen-2013-003644.

38. ILO. C001 - Hours of Work (Industry) Convention, 1919 (No. 1).; 1919. http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\_ILO\_CODE:C001.

39. ILO. C030 - Hours of Work (Commerce and Offices) Convention, 1930 (No. 30).; 1930. http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\_ILO\_CODE:C030.

40. ILO. C047 - Forty-Hour Week Convention, 1935 (No. 47).; 1935. http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\_ILO\_CODE:C047.

41. ILO. R116 - Reduction of Hours of Work Recommendation, 1962 (No. 116).; 1962. http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\_ILO\_CODE:R116.

42. ILO. C106 - Weekly Rest (Commerce and Offices) Convention, 1957 (No. 106).; 1957. http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\_ILO\_CODE:C106.

43. ILO. C014 - Weekly Rest (Industry) Convention, 1921 (No. 14).; 1921. http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\_ILO\_CODE:C014.

44. Zimmerman C, Watts C. WHO Ethical and Safety Recommendations for Interviewing Trafficked Women. Geneva, Switzerland: World Health Organization (WHO); 2003.

45. Herman JL. Trauma and Recovery. Basic Books; 1997.

46. Zimmerman C, Hossain M, Yun K, Roche B, Morison L, Watts C. Stolen smiles: a summary report on the physical and psychological health consequences of women and adolescents trafficked in Europe. Lond Sch Hyg Trop Med Eur Unions Daphne Programme Int Organ Migr. 2006:23 pp.

47. Rigby P, Whyte B. Children’s Narrative within a Multi-Centred, Dynamic Ecological Framework of Assessment and Planning for Child Trafficking. Br J Soc Work. 2015;45(1):34-51. doi:10.1093/bjsw/bct105.

48. Schloenhardt A, Loong M. Return and Reintegration of Human Trafficking Victims from Australia. Int J Refug Law. 2011;23(2):143-173. doi:10.1093/ijrl/eer003.

49. Mollica RF, Brooks R, Tor S, Lopes-Cardozo B, Silove D. The enduring mental health impact of mass violence: A community comparison study of Cambodian civilians living in Cambodia and Thailand. Int J Soc Psychiatry. February 2013. doi:10.1177/0020764012471597.

**TABLES**

**Table 1. Sample characteristics**

|  |  |
| --- | --- |
|  | **Total sample N(%)** |
|  | **Male (n=70)** | **Female (n=317)** | **Total (n=387)** |
| **Age** |
| 10 to 12 | 12 (17.1) | 6 (1.9) | 18 (4.7) |
| 13 to 15 | 23 (32.9) | 109 (34.4) | 132 (34.1) |
| 16 to 17 | 35 (50.0) | 202 (63.7) | 237 (61.2) |
|  | **Sample who reached destination N(%)** |
|  | **Male (n=63)** | **Female (n=281)** | **Total (n=344)** |
| **Sector of exploitation** |
| Sex work | - | 201 (63.4) | 201(51.9) |
| Entertainment/karaoke | - | 23 (7.3) | 23(5.9) |
| Animal farming/meat packing | 2(2.9) | 1 (0.3) | 3(0.8) |
| Agriculture/farming/plantation | 2(2.9) | 1(0.3) | 3(0.8) |
| Begging | 20(28.6) | 2(0.6) | 22(5.7) |
| Car care | 3(4.3) | - | 3(0.8) |
| Domestic worker/cleaner | - | 10(3.2) | 10(2.6) |
| Construction | 8(11.4) | - | 8(2.1) |
| Factory | 9(12.9) | 11(3.5) | 20(5.2) |
| Fishing | 13(18.6) | - | 13(3.4) |
| Home business | 1(1.4) | - | 1(0.3) |
| Restaurant/hospitality | - | 7(2.2) | 7(1.8) |
| Street seller/shop | 5(7.1) | 9(2.8) | 14(3.6) |
| Wife | - | 15(4.7) | 15(3.9) |
| Other | - | 1(0.3) | 1(0.3) |
| Not reached destination | 7(10.0) | 36(11.4) | 43 (11.1) |
| **Number of hours working per day\*** |
| 8 or fewer hours | 21(33.9) | 119(44.2) | 140(42.3) |
| Between 8 and 10 hours | 11(17.7) | 32(11.9) | 43(13.0) |
| More than 10 hours | 19(30.7) | 29(10.8) | 48(14.5) |
| No fixed hours | 11(17.7) | 89(33.1) | 100(30.2) |
| **No weekly rest day\*\*** |
| Yes | 46 (73.0) | 149(53.0) | 195 (56.7) |
| **Cheated wages\*\*\*** |
| Yes | 27(42.9) | 86(30.6) | 113(32.9) |
| **Living conditions** |
| Living and sleeping in overcrowded rooms | 18(28.6) | 56(19.9) | 74 (21.5) |
| Sleeping in dangerous conditions | 9(14.3) | 14(5.0) | 23 (6.7) |
| Nowhere to sleep/sleeping on the floor | 34(54.0) | 46(16.4) | 80 (23.3) |
| Poor basic hygiene | 22(34.9) | 22(7.8) | 44 (12.8) |
| Inadequate water for drinking | 14(22.2) | 14(5.0) | 28 (8.1) |
| Insufficient food | 11(17.5) | 36(12.8) | 47(13.7) |
| No clean clothing items | 18(28.6) | 15(5.3) | 33(9.6) |
| Overexposure to sun or rain | 35(55.6) | 17(6.1) | 52 (15.1) |
| **Serious occupational injuries**  |
| Yes | 15(21.4) | 23(7.3) | 38(9.8) |

\* 13 missing, \*\* 2 missing, \*\*\*11 missing

**Table 2. Prevalence and 95% Confidence Intervals for mental health outcomes and self-harm by sex (n=387)**

|  |  |
| --- | --- |
|  | **N(%)** |
|  | **Male (n=70)** | **Female (n=317)** | **Total (n=387)** |
|  | N(%) | 95% CI | N(%) | 95% CI | N(%) | 95% CI |
| PTSD\* | 13(18.8) | 11.2-29.9 | 85(26.9) | 22.3-32.1 | 98(25.5) | 21.3-30.1 |
| Depression | 28(40.0) | 34.8-45.6 | 190(59.9) | 54.4-65.2 | 218(56.3) | 51.3-61.2 |
| Anxiety | 23(32.9) | 22.8-44.8 | 103(32.5) | 27.5-37.9 | 126(32.6) | 28.1-37.4 |
| Suicidal Ideation | 3(4.3) | 1.4-12.6 | 58(18.3) | 14.4-23.0 | 61(15.8) | 12.4-19.8 |
| Self-harm\*\* | 6(8.6) | 3.8-17.9 | 40(12.6) | 9.4-16.8 | 46(11.9) | 9.0-15.5 |
| Self-injury | 5(7.1) | 3.0-16.2 | 29(9.2) | 6.4-12.9 | 34(8.8) | 6.3-12.1 |
| Suicide attempt | 2(2.9) | 0.7-10.9 | 19(6.0) | 3.8-9.2 | 21(5.4) | 3.6-8.2 |

\* 2 missing, \*\* Variable includes self-injury or suicide attempt

**Table 3. Frequency of children with and without reports of self-harm according to levels of violence and symptoms of mental health outcomes and Crude OR (95% CI) for associations with violence and mental health outcomes (n=387)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Self-harm** | **No self-harm** |  |  |
|  | No (%) | Crude OR (95% CI) | p-values |
| **Physical or sexual violence prior to trafficking\*** |  |  |  |  |
| Yes  | 16(37.2) | 62(20.3) | 2.32(1.18-4.58) | 0.018 |
| **Severe Physical Violence during trafficking** |  |  |  |  |
|  |  |  |  |  |
| Less severe | 2(4.4) | 33(9.7) | 0.40(0.09-1.74) |  |
| More severe | 5(10.9) | 49(14.4) | 0.68(0.25-1.80) | 0.400 |
| **Sexual Violence during trafficking\*\*** |  |  |  |  |
| Yes | 13(28.3) | 61(17.9) | 1.80(0.90-3.62) | 0.110 |
| **PTSD\*\*\*** |  |  |  |  |
| Yes | 25(54.4) | 73(21.5) | 4.34(2.30-8.19) | 0.000 |
| **Depression** |  |  |  |  |
| Yes | 36(78.3) | 182(53.4) | 3.15(1.51-6.54) | 0.001 |
| **Anxiety** |  |  |  |  |
| Yes | 24(52.2) | 102(29.9) | 2.56(1.37-4.77) | 0.004 |
| **Suicidal Ideation** |  |  |  |  |
| Yes | 21(45.7) | 40(11.7) | 6.32(3.24-12.3) | 0.000 |

\* 39 missing

\*\*1 missing

\*\*\*2 missing

**Table 4. Adjusted odds ratio and 95% confidence interval for associations of pre-trafficking and trafficking exposures, and post-trafficking stress with mental health outcomes and self-harm**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **PTSD** | **Depression** | **Anxiety** | **Suicide ideation** | **Self-harm** |
|  | Freq n(%) | AOR(95%CI)\* | AOR(95%CI)\* | AOR(95%CI)\* | AOR (95%CI)\*\* | AOR (95%CI)\*\* |
| PRE TRAFFICKING EXPOSURES(n=387) |  |  |  |  |  |  |
| **Physical or sexual violence prior to migration#** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Yes | 78(22.4) | 1.93(1.11-3.39) | 2.26(1.30-3.91) | 2.02(1.20-3.41) | 2.67(1.41-5.07) | 2.31(1.18-4.53) |
| TRAFFICKING EXPOSURES (n=344) |  |  |  |  |  |  |
| **Severe physical violence during trafficking##** |  |  |  |  |  |  |
| No violence | 297(76.9) | 1 | 1 | 1 | 1 | 1 |
| Less severe | 35(9.1) | 0.32(0.09-1.12) | 1.47(0.65-3.31) | 0.78(0.32-1.90) | 1.45(0.45-4.68) | 0.58(0.15-2.30) |
| Severe | 54(14.0) | 1.81(0.93-3.51) | 3.55(1.64-7.71) | 2.13(1.12-4.05) | 3.68(1.77-7.67) | 0.83(0.32-2.16) |
| **Sexual violence** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Yes | 74(19.2) | 1.45(0.80-2.61) | 2.27(1.22-4.23) | 1.53(0.86-2.70) | 3.43(1.80-6.54) | 1.43(0.68-3.01) |
| **Overtime££** |  |  |  |  |  |  |
| Standard legal working time | 140(42.3) | 1 | 1 | 1 | 1 | 1 |
| Excessive  | 43(13.0) | 1.17(0.50-2.77) | 1.96(0.91-4.18) | 1.89(0.90-3.99) | 1.55(0.55-4.37) | 0.89(0.26-3.07) |
| Extremely excessive | 148(44.7) | 2.08(1.20-3.61) | 1.78(1.08-2.92) | 1.64(0.98-2.75) | 2.69(1.38-5.26) | 2.11(1.04-4.26) |
| **Restricted freedom** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Yes | 132(38.4) | 1.59(0.96-2.65) | 1.61(1.00-2.60) | 1.73(1.07-2.78) | 2.44(1.34-4.44) | 0.82(0.42-1.62) |
| **Cheated wages##** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Yes | 114(33.2) | 1.57(0.94-2.63) | 1.50(0.92-2.46) | 1.61(0.99-2.62) | 2.04(1.12-3.72) | 0.63(0.30-1.32) |
| **Living conditions** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| At least one bad situation | 164(47.7) | 2.10(1.24-3.56) | 1.93(1.17-3.19) | 3.20(1.91-5.34) | 1.71(0.94-3.11) | 1.17(0.60-2.28) |
| **Threats** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Yes | 102(29.7) | 1.92(1.12-3.29) | 3.00(1.71-5.26) | 2.06(1.24-3.44) | 3.59(1.92-6.73) | 1.22(0.60-2.47) |
| POST TRAFFICKING CONCERNS (n=344) |  |  |  |  |  |  |
| **Fear of trafficker** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Yes | 132(34.1) | 1.25(0.74-2.11) | 1.44(0.88-2.36) | 1.90(1.16-3.11) | 1.57(0.86-2.86) | 1.74(0.91-3.35) |
| **Guilt or shame** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Yes | 216(55.8) | 1.36(0.81-2.29) | 1.52(0.96-2.42) | 1.44(0.88-2.34) | 0.98(0.54-1.80) | 2.06(1.00-4.25) |
| **Concern about stigma+** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Yes | 208(55.0) | 1.02(1.00-1.04) | 1.02(0.99-1.04) | 1.02(1.00-1.03) | 1.01(0.99-1.03) | 1.01(0.99-1.03) |

a. Models adjusted by age and sex; b, c Models adjusted by age, sex and time in the trafficking situation

\* Results from logistic regression; \*\* Firth penalized likelihood

# 39missing; ##1 missing; £ 7 missing; ££13 missing; + 9 missings