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Original Investigation

Exploitation, Violence, and Suicide Risk Among Child and Adolescent Survivors of Human Trafficking in the Greater Mekong Subregion

Ligia Kiss, PhD; Katherine Yun, MD; Nicola Pocock, MSc; Cathy Zimmerman, PhD

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 To describe experiences of abuse and exploitation, mental health outcomes, and suicidal behavior among children and adolescents in posttrafficking services. We also examine how exposures to violence, exploitation, and abuse affect the mental health and suicidal behavior of trafficked children.

DESIGN, SETTING, AND PARTICIPANTS A survey was conducted with 387 children and adolescents aged 10 to 17 years in posttrafficking services in Cambodia, Thailand, or Vietnam, which along with Laos, Myanmar, and Yunnan Province, China, compose the Greater Melong Subregion. Participants were interviewed within 2 weeks of entering services from October 2011 through May 2013.

MAIN OUTCOMES AND MEASURES Depression, posttraumatic stress disorder, anxiety, suicidal ideation, self-injury, and suicide attempts.

RESULTS Among the 387 children and adolescent study participants, most (82%) were female. Twelve percent had tried to harm or kill themselves in the month before the interview. Fifty-six percent screened positive for depression, 33% for an anxiety disorder, and 26% for posttraumatic stress disorder. Abuse at home was reported by 20%. Physical violence while trafficked was reported by 41% of boys and 19% of girls. Twenty-three percent of girls and 1 boy reported sexual violence. Mental health symptoms were strongly associated with recent self-harm and suicide attempts. Severe physical violence was associated with depression (adjusted odds ratio [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).

CONCLUSIONS AND RELEVANCE Children and adolescents in posttrafficking care showed high symptom levels of depression, anxiety, and posttraumatic stress disorder, which are strongly associated with self-harm or suicidal behaviors. Mental health screening and reintegration risk assessments are critical components of posttrafficking services, especially in planning for family reunification and other social integration options.

Editorial at jamapediatrics.com

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Each year, millions of children experience extreme forms of exploitation and abuse in the context of human trafficking. In the most widely accepted definition of human trafficking, a United Nations 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 labor, 1.2 million are trafficked, and approximately 1.8 million are exploited in the sex industry.[3,4] Children and adolescents (hereafter collectively referred to as *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 labor[3,5,7] and a large body of research on the effects of violence on children's health and well-being,[8-10] there has been little convergence of evidence on violence and health in situations of child labor.[5,11] We still know relatively little about the health and well-being of children who have experienced violence in the context of child labor exploitation[12] and even less about the health needs of child survivors of extreme forms of labor 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[13-15] including depression, alcoholism, drug use, risky sexual behavior, sexually transmitted infections, self-injury, and suicide attempts.[8,10,16-19] Prior research on women and adolescents trafficked for sex and domestic labor indicated that childhood sexual abuse is an independent risk factor for probable mental health disorders.[20] However, this work has not been replicated among other populations of trafficked children, nor has prior research examined self-injurious behavior or suicide risk.

Estimates suggest that trafficking is highly prevalent in Southeast Asia.[21] For example, a small study with a sample of Vietnamese migrants found that 13% of respondents were trafficked[22] and children have been reported being trafficked for begging, sexual exploitation, fish processing, domestic work, and brides.[4,23] Cambodia and Vietnam are recognized source countries for child trafficking, and Thailand is a common source, transit, and destination country.[24]

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

At a Glance

- Approximately one-third of girls and boys in posttrafficking services in Cambodia, Thailand, and Vietnam have experienced physical and/or sexual violence while trafficked, with sexual violence more commonly reported by girls and physical violence more common among boys.
- Twelve percent of survivors tried to harm or kill themselves in the month before the interview; 56% screened positive for depression, 33% for an anxiety disorder, and 26% for posttraumatic stress disorder.
- Suicide attempts, self-harm, depression, and anxiety disorders are associated with highly abusive and exploitative conditions experienced during migration and with histories of abuse.
- Mental health screening and risk assessment are critical components of posttrafficking services, especially in planning for family reunification and other social-integration options.

Methods

Sample

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

Individuals in the sample were identified as trafficked by the local governmental and nongovernmental referral networks and posttrafficking service providers. Therefore, the sample delimitation was contingent on the definitions used by local organizations.

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, nonformal education, family tracing, and prereturn preparation (these are hereafter referred to as *service providers*).

Study outcomes were depression, posttraumatic stress disorder (PTSD), anxiety, suicidal ideation, self-harm, and suicide attempts. Symptom levels indicative of depression were measured using the Hopkins Symptoms Checklist, applying a cut point of 1.625.[25] Symptoms of PTSD were assessed using the Harvard Trauma Questionnaire,[26-28] with a cut point of 2.0.[29] Anxiety disorders were assessed using a cutoff 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 Hopkins Symptoms Checklist on participants' thoughts about ending their own life in the past week (classed positive for "quite a lot" or "extremely").

Self-injury was categorized as positive for participants reporting having tried to physically harm themselves in any way (eg, using sharp instruments and flame). 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 National Institute for Clinical Excellence clinical guidelines.[33,34]

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Participants were considered positive if they reported a 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 World Health Organization 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 a dog released to bite or scratch; being threatened with a weapon, cut with a knife, or being shot at; or being forced to have sex, with less severe violence coded as positive for experiencing punches, slaps, and hits. These categorizations are based on other violence studies[37] and trafficking and health research.[25]

Labor 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 categorized as 10 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 1 hazardous living condition, as described elsewhere.[25] Cheated wages were defined as not receiving cash payments.

Serious occupational injuries were self-reported and consisted of 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 Burmese, Khmer, Thai, Vietnamese, and Laotian by professional translators and through team discussions, adapted, piloted and revised, back-translated into English, and finalized by the study team.

Ethics and Safety

Interviewers were recruited from existing shelter staff and International Organization for Migration partners, and they were trained to follow a strict ethics protocol based on the World Health Organization Ethical Recommendations for Interviewing Trafficked Women.[44] Guidance included ensuring participation was voluntary and confidential, following child-sensitive consent procedures, assuring that declining participation would not affect services, and 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. Written consent was obtained from all participants or service staff who were responsible for their care.

Data Analysis

Preliminary analysis was conducted to describe patterns of abuse, exploitation, mental health outcomes, and self-harm. χ^2 Tests and the Fischer exact test were used to identify the distribution of violence, labor exploitation, mental health symptoms, and self-harm by sex and age (*P* values reported in the text). 95% CIs 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 (pretrafficking exposures, trafficking exposures, and posttrafficking concerns). This analysis was conducted to examine how exposure to violence and exploitation influence mental health symptoms and self-harm. All models were adjusted for sex and age, and models including variables on trafficking experiences and posttrafficking concerns were also adjusted for time in trafficking. Firth penalized 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 version 13 (StataCorp).

Results

Population Characteristics

Structured interviews were conducted with 387 children and adolescents aged 10 to 17 years, of whom 82% were female and 95% were older than 13 years (response rate >98%). The mean (SD) age of the boys was 15 (2.1) years and 16 (1.3) years for girls. Five percent were younger than 12 years (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%). Most 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 (eg, shrimp and other food processing and toy and garment manufacturing). Fifteen girls, all but 1 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% left because of the violence at home.

Children were identified and referred to services primarily by police, border guards, or government officers (86%). The mean (SD) duration of the trafficking situation was 4.5 (5.6) months, ranging from 9 days to 9 years. More than one-third (39%) said they had tried to escape and 15% reported they had successfully escaped.

Violence Prior to Trafficking

One in 5 participants (22%) reported physical or sexual violence before migrating. Physical violence was reported by both boys (25%) and girls (20%) (*P* = .35), of whom 54% identified a family member or intimate partner as the perpetrator. Predeparture sexual violence was reported solely by girls (n = 7) and the main perpetrators were boyfriends, acquaintances, and strangers.

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Table 1. Sample Characteristics[a]

Characteristic	No. (%)		
	Male	Female	Total
Total Sample			
No. of participants	70	317	387
Age, y			
10-12	12 (17.1)	6 (1.9)	18 (4.7)
13-15	23 (32.9)	109 (34.4)	132 (34.1)
16-17	35 (50.0)	202 (63.7)	237 (61.2)
Sample Who Reached Destination			
No. of participants	63	281	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)
Time working per day, h[b]			
<8	21 (33.9)	119 (44.2)	140 (42.3)
8-10	11 (17.7)	32 (11.9)	43 (13.0)
>10	19 (30.7)	29 (10.8)	48 (14.5)
No fixed time	11 (17.7)	89 (33.1)	100 (30.2)
No weekly rest day[c]	46 (73.0)	149 (53.0)	195 (56.7)
Cheated wages[d]	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	15 (21.4)	23 (7.3)	38 (9.8)

[a] Ellipses indicate there were no participants in a particular category.
[b] Thirteen missing values.
[c] Two missing values.
[d] Eleven missing values.

Violence During Trafficking

One-third of the sample (33%) reported physical and/or sexual violence while trafficked. Nearly half of boys (41%) and 19% of girls reported physical violence ($P < .001$). Sexual violence was reported by 23% of girls and 1 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 ($P < .001$). Thirty-four percent 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%).

Labor Exploitation During Trafficking

Children commonly worked 7 days per week (53% of girls; 73% of boys) ($P = .01$). The mean (SD) number of working hours per day was 10.3 (6.2) for boys and 7.2 (4.1) for girls. However, this

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Table 2. Prevalence and 95% CIs for Mental Health Outcomes and Self-harm by Sex

	No. (%)					
	Male (n = 70)		Female (n = 317)		Total (N = 387)	
Outcome	No. (%)	95% CI	No. (%)	95% CI	No. (%)	95% CI
PTSD[a]	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[b]	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

Abbreviation: PTSD, posttraumatic stress disorder.

[a]Two missing values.

[b]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 Odds Ratios (95% CIs) for Associations With Violence and Mental Health Outcomes (N=387)

	No (%)			
Outcome	Self-harm	No Self-harm	Crude Odds Ratio (95% CI)	*P* Value
Physical or sexual violence prior to trafficking[a]	16 (37.2)	62 (20.3)	2.32 (1.18-4.58)	.02
Severe physical violence during trafficking				
Less severe	2 (4.4)	33 (9.7)	0.40 (0.09-1.74)	.40
More severe	5 (10.9)	49 (14.4)	0.68 (0.25-1.80)	
Sexual violence during trafficking[b]	13 (28.3)	61 (17.9)	1.80 (0.90-3.62)	.11
PTSD[c]	25 (54.4)	73 (21.5)	4.34 (2.30-8.19)	.000
Depression	36 (78.3)	182 (53.4)	3.15 (1.51-6.54)	.001
Anxiety	24 (52.2)	102 (29.9)	2.56 (1.37-4.77)	.004
Suicidal ideation	21 (45.7)	40 (11.7)	6.32 (3.24-12.3)	.000

Abbreviation: PTSD, posttraumatic stress disorder.

[a] Thirty-nine missing values.

[b] One missing value.

[c] Two missing values.

probably underestimates girls' true working hours because one-third of girls (33%) stated they did not have fixed working hours (**Table 1**). Serious occupational injuries were sustained by 21.4% of boys and 7.3% of girls ($P < .001$). Boys more often reported at least 1 bad living condition (84%) compared with girls (40%) ($P < .001$); for example, 54% of boys had nowhere to sleep or slept on the floor and 22.2% had inadequate drinking water.

Posttrafficking Concerns and Hopes for the Future

Children (54%) worried about how they would be treated on return home and reported feelings of guilt or shame (55.8%). One in 3 (34.1%) were still afraid of the trafficker or his or her associates.

Most (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 20 children (5%) said they had no hopes.

Mental Health

One in 4 children (25.5%) had symptom levels indicative of PTSD (18.8% of boys and 26.9% of girls; $P = .16$) (**Table 2**). More than half of the children (56.3%) had probable depression, with symptoms more common among girls (59.9%) than boys (40%) ($P = .002$). One in 3 children (32.6%) had symptom levels of an anxiety disorder, with similar prevalence among boys and girls (32.9% and 32.5%, respectively; $P = .95$). Suicidal ideation in the past month was reported by 15.8% of children (18.3% of girls and 4.3% of boys; $P = .004$).

Signs of hostility were reported by 22% (13% of boys; 24% of girls; $P = .02$), with 16% of children feeling easily annoyed or irritated (7% of boys and 18% of girls; $P = .02$); 8% uncontrollable temper outbursts (7% of boys and 8% of girls; $P = .77$); 4% urges to beat, injure, or hurt someone (1% of boys and 4% of girls, $P = .28$); and 4% reported getting in frequent arguments (3% of boys and 5% of girls; $P = .49$).

Self-injury in the past month was reported by 8.8% of children (7.1% boys; 9.2% girls; $P = .82$). At least 1 suicide attempt in the past month was reported by 5.4% (2.9% boys; 6% girls; $P = .39$). Twelve percent had self-injured or attempted suicide and 2% reported both. There was no significant relationship between self-harm and age group ($P = .53$).

Associations Between Violence, Mental Health, and Self-harm

Children reporting premigration physical or sexual violence were at increased risk for self-harm (odds ratio [OR], 2.32; 95% CI, 1.18-4.58) (**Table 3**). However, severe physical and sexual violence during trafficking did not significantly increase the

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Table 4. Adjusted Odds Ratios and 95% CIs for Associations of Pretrafficking and Trafficking Exposures and Posttrafficking Stress With Mental Health Outcomes and Self-harm

Exposure	Frequency, No. (%)	Adjusted Odds Ratio (95% CI)				
		Posttraumatic Stress Disorder[a]	Depression[a]	Anxiety[a]	Suicidal Ideation[b]	Self-harm[b]
Pretrafficking exposures (n = 387)[c]						
Physical or sexual violence prior to migration[d]	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)[e]						
Severe physical violence during trafficking[f]						
No violence	297 (76.9)	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
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	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[g]						
Standard legal working time	140 (42.3)	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
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	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[f]	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 1 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	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)
Posttrafficking concerns (n = 344)[e]						
Fear of trafficker	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	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[h]	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] Results from logistic regression.
[b] Firth penalized likelihood.
[c] Models adjusted by age and sex.
[d] Thirty-nine missing values.
[e] Models adjusted by age, sex, and time in the trafficking situation.
[f] One missing value.
[g] Thirteen missing values.
[h] Nine missing values.

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 suicidal ideation (OR, 6.32; 95% CI, 3.24-12.3) (**Table 4**).

In multivariable analysis, violence prior to migration was significantly associated with PTSD (adjusted OR [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), suicidal 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 (AOR, 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 posttrafficking setting, self-harm was associated with feelings of guilt or shame (AOR, 2.06; 95% CI, 1.00-4.25). Fear of being trafficked was associated with anxiety (AOR, 1.90; 95% CI, 1.16-3.11).

Discussion

To our knowledge, this is the largest quantitative survey to date on child trafficking survivors. Children and adolescents in this

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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 with 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 years.[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, vs lifetime prevalence in the community-based samples, and they represent only children younger than 18 years (vs up to 25 years).

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 fatalities,[34] and help child survivors cope with a frightening and uncertain future. Primary care professionals for survivors should incorporate mental health screening into routine care, with ongoing surveillance for distress even after the immediate posttrafficking period. Respectfully soliciting a comprehensive migration history, starting with the child's premigration 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 pretrafficking experiences because PTSD, depression, anxiety, suicidal ideation, and self-harm were each associated with premigration 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, reintegration may be challenging, especially because 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 for re-recruitment for further exploitation.[46-48]

Simultaneously, programs 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 posttrafficking 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 was subject to a number of limitations. First, the sample included only individuals in posttrafficking 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 owing to technical problems in the database set up and, therefore, estimates are likely to be reliable.

Second, self-harm and suicide attempts are relatively rare phenomena, even among highly traumatized populations. We used appropriate methods for analysis of rare outcomes to avoid small-sample bias (Fisher exact test and Firth penalized likelihood). However, the sample size may have limited the power to detect significant effects. Third, 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 the mental health of Vietnamese refugees, Cambodian civilians in the Mekong region, and women attending posttrafficking services in Europe.[46,49]

Conclusions

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

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