

No Youth Left Behind to Human Trafficking: Exploring Profiles of Risk

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The objective of this study was to analytically identify risk profiles for juvenile human trafficking (JHT) based on adverse childhood experiences (ACEs) and health risk behaviors. First, the study examined which types of ACEs and health risk behaviors were more prevalent among trafficked adolescents using a sample of 913 male and female juvenile-justice-involved adolescents with suspected or verified JHT abuse reports documented between 2009 and 2015 and a comparison group (matched by age, gender, race, ethnicity, and location). Second, latent class analysis was used to identify profiles of risk for JHT. Finally, associations between JHT risk profiles and demographic characteristics provided a more comprehensive depiction of various types of trafficked adolescents. Study findings indicate that adolescents with JHT abuse reports were more likely to report child maltreatment and internalizing health risk behaviors reflective of self-harm and attempts to cope with trauma. Trafficked youth were less likely to report externalizing health risk behaviors related to violence or harming others. Six distinctive profiles of risk for JHT were identified. Three JHT risk profiles were characterized by extensive child maltreatment and health risk behaviors and were differentiated by placement in foster care and substance use. Three JHT risk profiles were characterized by less extensive histories of child maltreatment and were differentiated by drug use. In conclusion, these findings highlight that the current depictions of adolescent victims of human trafficking are too narrow and may lead to critical health care and service provision disparities for many trafficked adolescents.

Public Policy Relevance Statement

The current predominate risk profile of adolescent victims of human trafficking is narrowly focused on a severely abused, runaway girl. However, six distinct risk profiles emerged from a sample of male and female trafficked youth, providing a more inclusive understanding of adolescents at risk for victimization in human trafficking that show important heterogeneity across victims.

Although estimates vary widely, and are difficult to come by, global reports indicate that at any given time approximately 8 million children and adolescents are victimized in juvenile human trafficking (JHT), with 5.7 million

exploited in forced and bonded labor and 1.8 million exploited in commercial sexual activities (Estacio & Marks, 2005; International Labour Organization (ILO), 2002; Noguchi, 2002). Children and adolescents residing in the United States are not exempt (Gibbs, Henninger, Tueller, & Kluckman, 2018; O'Brien, Li, Givens, & Leibowitz, 2017; Smolenski & Ingerman, 2017). JHT is profit-driven sexual or labor exploitation of persons under 18 years of age (UNODC, 2009). Commercial sexual exploitation of children or adolescents encompasses child pornographic exploitation, live or online sex shows, or commercial sexual exploitation (in prostitution; ILO, 2002; Kotrla, 2010; Miller-Perrin & Wurtele, 2017). Labor exploitation of children or adolescents occurs in many sectors of the U.S. economy including forced begging/peddling, domestic work, agricultural, or service industries (Greenbaum, 2016;

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Kaufka Walts, 2017; NHTRC, 2016). Traffickers of minors may be strangers, boyfriends, girlfriends, employers, drug dealers, or relatives (Carpinteri, Bang, Klimley, Black, & Van Hasselt, 2017; Raphael, Reichert, & Powers, 2010; Reid, 2016a; Serie et al., 2018 Sprang & Cole, 2018).

Response to U.S. adolescents exploited in JHT has gradually evolved from applying a criminal justice driven response (i.e., arrest and detain) to legislating a child protective driven response (i.e., providing shelter and care) (Barnert et al., 2016; McMahon-Howard, 2017; Musto, 2013; Reid, 2013; Roby & Vincent, 2017). Despite these legislative changes mandating that JHT victims involved in commercial sexual exploitation be treated as trafficking victims rather than juvenile delinquents (Greenbaum & Bodrick, & the Committee on Child Abuse and Neglect, & the Section on International Child Health, 2017; Trafficking Victims Protection Act of 2000), adolescents entrapped in JHT continue to be arrested and detained for several reasons. First, some law enforcement personnel continue to contend with JHT victims as offenders rather than victims, and as a result JHT victims become deeply entangled in the juvenile justice system (Adelson, 2008; U.S. Department of State, 2011, 2014, 2017; Halter, 2010; Mitchell, Finkelhor, & Wolak, 2010; O'Brien et al., 2017). The 2017 U.S. Trafficking in Persons Report recommendations for the United States "reported the continued criminalization of victims for crimes committed as a direct result of being subjected to trafficking, and urged federal, state, local, and tribal agencies to adopt policies not to criminalize victims" (p. 416). Second, human traffickers often manipulate youth and coerce their involvement in criminal operations leading to their arrests and detention for misdemeanors or status offenses such as shoplifting, loitering, or truancy (O'Brien et al., 2017; Reid, 2016a). Lastly, victims of JHT frequently use alcohol or illegal drugs leading to their arrest on drug-related charges (O'Brien et al., 2017; Raphael et al., 2010; Reid & Piquero, 2013).

More recently, researchers have investigated JHT from a public health perspective using the Adverse Childhood Experiences (ACE) framework (Felitti, 2013; Felitti & Anda, 2010) by examining ACEs most prevalent among adolescents exploited in JHT, health risk behaviors impacting JHT, and health consequences of JHT (Cannon, Arcara, Graham, & Macy, 2018; Greenbaum, 2016; Greenbaum & Crawford-Jakubiak, 2015; Lederer & Wetzel, 2014; Oram, Stöckl, Busza, Howard, & Zimmerman, 2012; Reid, Baglivio, Piquero, Greenwald, & Epps, 2017; Varma, Gillespie, McCracken, & Greenbaum, 2015). Childhood histories of sexual and physical abuse are commonly reported by trafficked youth (Gibbs et al., 2018; Reid et al., 2017). Numerous studies have documented the medical needs of sexually exploited adolescents (Curtis et al., 2008; Goldberg, Moore, Houck, Kaplan, & Barron, 2017). For example, adolescent victims of commercialized sexual exploitation seeking health care services in emergency rooms and pediatric hospitals were diagnosed with mental health disorders (93.6%) including suicidal ideation (37.9%), physical injuries (52.3%), sexually transmissible infections (69.8%), and substance use (79.3%; Hornor & Sherfield, 2018).

Less information is available regarding ACEs, or health risk behaviors common among child or adolescent victims of labor trafficking (Littenberg & Baldwin, 2017). Emerging research indicates that victims of labor trafficking, on average, are older than

victims of sex trafficking (Owens et al., 2014); however, minors exploited in labor trafficking may be forced to lie about their age, preventing detection of the exploitation of minors in the United States (Polaris Project, 2015). Victims of labor trafficking are commonly young adults, unskilled workers, and/or individuals facing financial crises (Littenberg & Baldwin, 2017; Polaris Project, 2015). Victims of labor trafficking in the United Kingdom reported homelessness, little familial support, and addictions to drugs or alcohol (Cockbain & Brayley-Morris, 2017). Medical needs of labor trafficking victims may result from violence, prolonged exposure to hazardous working conditions, and lack of access to routine medical care (Macias-Konstantopoulos & Ma, 2017).

Taken together, these findings emphasize behavioral and medical health professionals' critical role in the recognition, treatment, and referral of victims of human trafficking as many, if not all, victims seek health care services at some point during their exploitation (Baldwin, Eisenman, Sayles, Ryan, & Chuang, 2011; Greenbaum, 2016; Greenbaum et al., 2017; Hornor & Sherfield, 2018). Most importantly, information on existing JHT risk profiles based on a combination of ACEs and health risk behaviors could assist in the recognition of potential JHT victims by behavioral and medical health care professionals. Due to limited data from victims of JHT, the current predominate risk profile of JHT victims may be incorrectly constrained to runaway adolescents who are trafficked by a nonrelative sex trafficker (Mitchell, Finkelhor, & Wolak, 2013). There have been calls for the use of innovative analytic methods and data from respondents outside of the social service assistance framework to ensure that additional JHT profiles of atypical victims are not being systematically overlooked and neglected (Brunovskis & Surtees, 2010; Cannon et al., 2018; Greenbaum & Bodrick, & the Committee on Child Abuse and Neglect, & the Section on International Child Health, 2017; Reid & Piquero, 2013). In response to this need, the purpose of this study was to analytically identify a more inclusive set of JHT risk profiles based on ACEs and health risk behaviors drawn from a larger sample of juvenile-justice-involved JHT victims. A more inclusive risk profile, based on ACEs and health risk behaviors, expands prior work, and better ensures victim identification and improves targeting of prevention and intervention services.

Research Objectives

Using the ACE framework (Felitti & Anda, 2010), the research objectives of the study were to inform recognition, treatment, and referral of trafficked youth by:

Determining which types of ACEs and health risk behaviors are associated with JHT;

Identifying JHT risk profiles based on (a) ACEs such as child maltreatment, family violence and foster care; and (b) youth engagement in health risk behaviors such as chronic running away and drug or alcohol use;

Examining the associations between the analytically identified profiles of risks and demographic characteristics in order gain a more comprehensive depiction of types of trafficked youth.

Method

Participants and Procedures

Data used for this study were collected from a sample of all adolescents in Florida with a history of arrest between 2007 and 2015 who were administered the Full Community Positive Achievement Change Tool (C-Pact) risk/needs assessment upon arrest and intake into the juvenile justice system (Baglivio, 2009). The C-PACT system offers two versions of the assessment tool—a Full C-PACT and a Pre-Screen C-PACT. Only the Full C-PACT collects data required to create ACE measures. As such, the 68,218 adolescents assessed using the Full C-PACT compose the study sample.

The Full C-PACT requires approximately 45 minutes to complete and is administered using semistructured interview protocols drawing from motivational interviewing techniques. Prior to conducting the C-PACT interview with the youth, assessors review all available documentation, including any child welfare system exposure records. The Full C-PACT is completed in consultation with the youth and administered by juvenile probation officers or contracted provider staff who have received at least two days of training on risk assessment theory and case planning, and an additional two days on the technique of motivational interviewing. The assessor uses the C-PACT interview guide that includes specific lead-ins and probes to ensure that all required topic areas are covered during the interview. After the interview is completed, the assessor interfaces with the PACT software and selects the appropriate responses to each question based on the information elicited during the interview (Baglivio, 2009). Previously collected information, such as youth demographic information and prior criminal history data, is auto-populated into the assessment increasing accuracy while allowing assessors more time to gather new information.

Measures

Demographic measures. Demographic characteristics included gender (male = 1; female = 2), race/ethnicity (White = 1; Black = 2; Hispanic = 3; other = 4), age at first offense documented by Florida DJJ (12 and under = 1, 13–14 = 2, 15 = 3, 16 = 4, over 16 = 5); annual family income (0 ≤ 15,000; 1 = ≥ 15,000); enrolled in special education (no = 0, yes = 1), and judicial circuit where the youth was processed by Florida DJJ. These measures were used to create a matched sample and to provide further information on trafficked youth placement in the analytically derived risk profiles.

Adverse childhood experience (ACE). Data drawn from the closest Full C-PACT assessment administered after arrest were used to create 10 ACE items. The ACEs include three types of abuse (physical, sexual, and emotional), two types of neglect (physical and emotional), and five types of household dysfunction (parental mental health problems, parental separation/divorce, parental substance abuse, parental jail/prison history, and violent treatment toward mother/domestic violence). The process of creating ACE indicators, including the exact items, responses, and coding, from C-PACT data have been reported elsewhere (Baglivio et al., 2014, Appendix A). Lead-in questions and probes

from the C-PACT interview guide were used by assessors to determine the appropriate response to the items used to create the ACE indicators. For example, lead-ins and probes used to determine whether youth has experienced physical neglect include: [for example, “Have you always been taken care of, and given enough to eat?”; “Who is there when you get home?”]. Based on findings and recommendations of prior ACE studies demonstrating the long-term health consequences of foster care placement (Stinson, Quinn, & Levenson, 2016; Zlotnick, Tam, & Soman, 2012), one additional ACE item—youth experience in foster care—was added. Moreover, prior research regarding JHT in the United States has noted heightened vulnerability to JHT for adolescents in foster care (Pasko & Chesney-Lind, 2016; Reid, 2016a, 2016b). The foster care measure was based on information available from the Department of Children and Families (DCF; the Florida child welfare agency) indicating if the youth has a “history of court-ordered or DCF voluntary out-of-home and shelter care placements exceeding 30 days.” Each of the 11 ACE types was coded as a binary measure (no = 0; yes = 1).

Health-risk behaviors. Data drawn from closest Full C-PACT assessment to the arrest were also used to create 10 health-risk behavior indicators. As noted earlier, criminal history items are auto-populated into the C-PACT assessment based on official charges. These items include weapon use during offense (none = 0, ≥1 = 1), misdemeanor adjudications (none or one = 0, >1 = 1), and felony adjudications (none = 0, ≥1 = 1). Additional health-risk behaviors were drawn from the responses to lead-in and prompts asked during the C-PACT interviews with youth or collateral interviews. Reports or evidence of violence not in criminal history [for example, “When have you had to resort to violence?”; “Have you ever set fires that could have got you in trouble? Threatened anyone? Violently destroyed property?”] (none = 0, ≥1 = 1); alcohol use [for example, “Were you drinking or using drugs when you committed the crime?”; “What are some of the not-so-good things you get from substance use?”; “Has the use ever caused problems at home or in school?”] (no = 0, yes = 1); drug use [for example, “Does it take more drugs for you to get the same “high” as when you started using?”] (no = 0, yes = 1); suicidal ideation or attempt [for example, “Have you ever thought about hurting yourself?”] (no = 0, yes = 1); current romantic involvement with an antisocial or criminal person [for example, “I’m going to try and sketch a map of your main friends and companions and try to identify who all is in your network” with youth identifying closest prosocial or criminal peers] (no = 0, yes = 1); and chronic running away defined as more than 5 instances of running away or getting kicked out of home [for example, “How many times have you left (runaway) or had to be removed?”] (no = 0, yes = 1).

Juvenile human trafficking (JHT). In Florida, the Department of Children and Families and the Department of Juvenile Justice use common identifiers across state data systems, providing the unique opportunity to create a dataset comprised of adolescents who have been reported as potential or identified victims of human trafficking based on reports accepted by the Florida Abuse Hotline. When an abuse report is received by the Florida Abuse Hotline, personnel at the central abuse hotline determine if the report received meets the statutory definition of human trafficking. Hu-

man trafficking reports accounted for less than 1% of abuse reports accepted between 2009 and 2015, indicating a highly selective process for accepting human trafficking reports. Youth with JHT abuse reports were included in the analyses regardless of the investigation status of their abuse report (i.e., verified, not substantiated, no indicators or open). For more information on the measure, see detailed description of the human trafficking indicator in prior research (Reid et al., 2017).

A binary measure of human trafficking (no = 0; yes = 1) was created using data collected by the Florida Abuse Hotline between 2009 and 2015 that identified 913 adolescents in the sample who were subjects of abuse reports involving human trafficking. The age distribution of 913 adolescents at first abuse call involving human trafficking included 2.1% ($n = 19$) youth who were 12 years old or younger, 6.8% ($n = 62$) were 13 years old, 15.0% ($n = 137$) were 14 years old, 21.0% ($n = 192$) were 15 years old, 29.8% ($n = 272$) were 16 years old, 25.1% ($n = 229$) were 17 years old, and 0.2% ($n = 2$) youth were over 17 years of age.

Analysis

The analytic plan began with the creation of a comparison group using a one-to-one matching procedure to find an exact match for each adolescent with report of JHT. Using SPSS (IBM, 2015), 913 exact matches from the dataset of 68,218 juvenile-justice involved adolescents were found based on gender, race, age of first offense, need for special education, and family income. Exact matches were found for 901 adolescents on judicial circuit. The 12 youth without exact matches on judicial circuit were retained in the sample with one-to-one matches on the remaining matching variables. Accounting for differences in demographics through the use of a matched comparison group reduced the likelihood of bias when examining the associations between ACEs, health-risk behaviors, and JHT. Once matching was completed, the two subgroups were compared to ensure there were no significant differences on the matching variables. Bivariate analyses were conducted comparing the prevalence of occurrences of specific ACE types and health risk behaviors of adolescents with and without a JHT abuse report.

Following the bivariate analyses of ACE types and health-risk behaviors across adolescents with and without JHT abuse reports, latent class analysis (LCA) was utilized to analytically identify a taxonomy based on JHT adolescents' patterns of responses to ACE types and health-risk behaviors found to be significantly more prevalent among adolescents with JHT reports when compared to adolescents without JHT reports. LCA permits the exploration of ACE types and health-risk behaviors of trafficked youth using a person-focused technique to assess the presence of types of JHT victims rather than simply presenting the overall prevalence of ACEs and health-risk behaviors. The benefit of this individual-centered analytic approach is its potential for offering a fuller portrayal of JHT victims by probabilistically sorting this population into mutually exclusive classes, providing information on the distinguishing qualities of the various groups (Lanza, Collins, Lemmon, & Schafer, 2007). LCA has been used previously by researchers in the classification of adolescents based on ACE types (Shevlin & Elklit, 2008), mental health symptoms (Althoff, Rettew, Boomsma, & Hudziak, 2009; Wadsworth, Hudziak, Heath, & Achenbach, 2001), health-risk be-

haviors (Denny et al., 2013; Sherman et al., 2009), and in the identification of juvenile victimization and offending types (Hasking, Scheier, & Abdallah, 2011; Reid & Sullivan, 2009). These models identify taxonomies by analyzing association among item responses, capturing the clustering of individuals associated with an underlying, categorical construct (McCutcheon, 1987).

The first step of the analysis involved determining which latent class model provided the best fit to the observed patterns of ACEs and health-risk behaviors in the data. To accomplish this, a series of models was estimated with Mplus (Muthén & Muthén, 1998–2012). Comparisons of several model fit indicators were made to ascertain which latent class model provided the best fit to the observed patterns in the data. A combination of criteria from several indices was used to determine best model fit including: (a) lower values of the Bayesian Information Criterion (BIC) indicated superior classification quality; (b) values closer to 1 on the "entropy" statistic (which ranges from 0 to 1) indicated a clearer delineation of classes; (c) higher level of concurrence between the predicted and actual classification of cases in each of the derived classes indicated better classification; (d) the Lo-Mendell-Rubin (LMR) test signified whether a given k class model fits better than a $k-1$ class model; and (e) the bootstrapped likelihood ratio test (BLRT), which is similar to the LMR, tests whether a given k -class model demonstrates a superior fit compared to a $k-1$ class model by using bootstrapped samples to estimate the log likelihood difference test statistic. The LMR and BLRT provided a p value denoting whether fit improved between the k and $k-1$ class models, with lower values signifying better fit in k (Nylund, Asparouhov, & Muthén, 2007).

Upon the identification of the best latent class model with the appropriate number of classes, the estimation of the percentage of adolescents belonging in each class provided its relative prevalence. In addition, conditional probabilities signify the likelihood of responding "yes" to each ACE and health-risk behavior given membership in a specified class. Identified probabilities for class membership or conditional classification of each youth were also calculated based on his or her pattern of responses and the model estimates. The modal class membership of each youth informed these probabilistic assignments. Following the identification of the best latent class model, assessments of the association of demographic characteristics with classes generated a greater substantive understanding of adolescent placement within the analytically identified classes. Lastly, assessment of the association of classes with status of JHT abuse report (e.g., verified, not substantiated, no indicators/open) was conducted to determine if investigation status impacted class placement.

This study was approved by the Institutional Review Board (IRB) of the University of South Florida, IRB# Pro00029743; Title: Exploring Profiles of Risk for Domestic Minor Human Trafficking. The research was limited to secondary data analysis of previously collected data.

Results

Descriptive and Latent Class Model Statistics

Characteristics of adolescents in the full sample and the JHT subsample are displayed on Table 1. Statistically significant dif-

Table 1. Descriptive Statistics and Bivariate Analyses Comparing Youths Who Had Human Trafficking Abuse Reports With the Full Sample and With the Matched Sample: Florida, 2009–2015

Demographics/Matched variables	With human trafficking report % (n = 913)	No human trafficking report % (n = 67,305)	p value	No human trafficking matched sample % (n = 913)	p value
Gender					
Male	12.3	78.2	<.001	12.3	1.00
Female	87.7	21.8		87.7	
Race/Ethnicity					
White/Non-Hispanic	36.8	36.1	.43	36.8	1.00
Black/Non-Hispanic	49.5	48.3		49.5	
Hispanic	13.4	15.3		13.4	
Other	.3	.4		.3	
Age at first offense					
12 and under	28.9	27.0	<.001	28.9	1.00
13–14	47.4	38.0		47.4	
15	14.9	16.9		14.9	
16	7.3	11.5		7.3	
Over 16	1.4	6.6		1.4	
Need of special education	36.8	33.0	.02	36.8	1.00
Family income (<\$15,000)	44.1	29.1	<.001	44.1	1.00
Judicial circuit					
Top	17 th /Broward (12.5)	11 th /Dade (9.7)	<.001	17 th /Broward (12.2)	1.00
2 nd	11 th /Dade (10.1)	13 th /Hillsborough (8.2)		11 th /Dade (10.0)	
3 rd	9 th /Orange/Osceola (9.7)	6 th /Pasco/Pinellas (8.1)		9 th /Orange/Osceola (9.7)	
4 th	13 th /Hillsborough (9.0)	9 th /Orange/Osceola (8.0)		13 th /Hillsborough (9.0)	
5 th	6 th /Pasco/Pinellas (8.0)	17 th /Broward (7.6)		6 th /Pasco/Pinellas (8.0)	

Note. Retrieved from Reid, Baglivio, Piquero, Greenwald, and Epps (2017), Table 1, p. 308. Copyright 2017 by American Public Health Association (APHA) Publications. Reprinted with permission.

ferences were observed between the JHT subsample and the full sample of non-JHT youth on demographic characteristics. In comparison to the full sample, the JHT subsample contained a higher percentage of girls, slight differences in race/ethnic distribution, higher prevalence of adolescents with first arrest at younger ages, higher percentage of adolescents in special education, higher percentage of adolescents from lower income families, and different distribution across judicial circuits. Table 1 also displays results of the bivariate analysis of JHT sample and the matched sample (compare columns 2 and 5). After matching, there were no significant differences between the two groups on any matching variables.

Descriptive statistics and bivariate comparisons of ACE types and health-risk behaviors across the JHT subsample and the matched comparison group are summarized in Table 2. Statistical differences were found between the two groups on 7 of 11 ACE types, with larger percentages of adolescents in JHT group reporting emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, family violence, and foster care placement. All other ACE types were also experienced at higher prevalence by adolescents in the JHT group, but were not statistically significant. Regarding health-risk behaviors, higher percentages of adolescents in JHT group reported alcohol use, drug use, suicidal ideation or attempt, current romantic involvement with an antisocial or criminal person, and chronic running away. Compared to the matched sample, smaller percentages of adolescents in JHT group reported the other health-risk behaviors, including weapon use, history of violence, and more than one misdemeanor adjudication.

The model fit statistics for the iterative latent class analysis of two-, three-, four-, five-, and six-class models ($N = 913$) are summarized in Table 3. By making comparisons across several indicators, a determination was made regarding the number of classes that best fit the observed patterns in the data. After consideration of model fit statistics, it was decided that the six-class model best fit the data. The Bayesian Information Criterion for that model ($BIC = 12,801.23$) was the lowest of all such results, indicating superior fit. Results of the Lo-Mendell-Rubin (LMR) test and the Bootstrapped Likelihood Ratio Test (BLRT) for the six-class model suggested that the five-class model can be rejected in favor of the six-class specification. The seven-class model was also estimated and the fit statistics indicated worsening fit and poorer mean classification probabilities. Collectively, the indicators, while suggesting some degree of fit for multiple specifications, converged around the six-class model.

The Six-Class Model

Figure 1 displays the conditional item probabilities for each type of ACE and health-risk behavior across the six analytically derived classes. Youth placed in the first identified class ($n = 249$) were highly and universally abused, very likely to have been in foster care, with high and extensive involvement in substance use and chronic running away. Labeled *Multiply-Abused Foster Child with Extensive Health-Risk Behavior*, class members ranked high on all ACEs and health-risk behavior probabilities.

Members of the second identified class ($n = 86$) were highly and universally abused, likely to have been in foster care, with

Table 2. Descriptive Statistics and Bivariate Analyses of ACEs and Health-Risk Behaviors for Adolescents With Reported JHT and Matched Sample ($N = 1826$)

ACE Items and health risk behaviors	JHT sample ($n = 913$)	Matched sample ($n = 913$)	Chi-square/t-test statistic	Odds ratio [95% CI]
Emotional abuse	41.6%	35.9%	$\chi^2(1) = 6.24^*$	1.27 [1.05, 1.54]
Physical abuse	44.5%	33.8%	$\chi^2(1) = 21.63^{***}$	1.56 [1.30, 1.89]
Sexual abuse	49.5%	27.2%	$\chi^2(1) = 96.41^{***}$	2.69 [2.16, 3.20]
Emotional neglect	36.1%	27.1%	$\chi^2(1) = 17.46^{***}$	1.53 [1.25, 1.86]
Physical neglect	27.2%	16.4%	$\chi^2(1) = 30.86^{***}$	1.90 [1.51, 2.38]
Family violence	87.5%	78.5%	$\chi^2(1) = 26.13^{***}$	1.92 [1.49, 2.47]
Household substance abuse	19.8%	21.2%	$\chi^2(1) = .45$	.92 [.73, 1.15]
Household mental illness	9.5%	8.7%	$\chi^2(1) = .42$	1.12 [.81, 1.53]
Parental separation/Divorce	93.4%	92.3%	$\chi^2(1) = .36$	1.18 [.83, 1.69]
Household member incarceration	35.9%	35.4%	$\chi^2(1) = .06$	1.02 [.85, 1.24]
Foster care placement	50.4%	31.4%	$\chi^2(1) = 67.80^{***}$	2.22 [1.83, 2.68]
Weapon use	5.8%	9.9%	$\chi^2(1) = 10.39^{**}$	.56 [.40, .80]
History of violence	10.3%	13.4%	$\chi^2(1) = 4.12^*$	.74 [.56, .99]
Misdemeanor adjudication >1	61.0%	66.8%	$\chi^2(1) = 6.67^*$	.78 [.64, .94]
Felony adjudication >0	62.9%	63.9%	$\chi^2(1) = .19$	.96 [.79, 1.16]
Alcohol use	59.1%	50.6%	$\chi^2(1) = 13.46^{***}$	1.41 [1.17, 1.70]
Drug use	79.2%	63.7%	$\chi^2(1) = 53.39^{***}$	2.16 [1.76, 2.67]
Suicidal ideation/Attempt	39.1%	26.3%	$\chi^2(1) = 34.07^{***}$	1.80 [1.48, 2.20]
Romance w/Anti-social criminal	25.2%	18.5%	$\chi^2(1) = 11.93^{**}$	1.48 [1.19, 1.86]
Chronic running away >5	45.5%	22.9%	$\chi^2(1) = 103.31^{***}$	2.81 [2.29, 3.44]

Note. ACE = Adverse Childhood Experience; JHT = Juvenile Human Trafficking.

* $p < .05$. ** $p < .01$. *** $p < .001$.

very low probability of alcohol and drug use in comparison to the other classes. Labeled *Multiply-Abused Foster Child with Less Substance Use*, class members had among the lowest probabilities of alcohol use, drug use, and romance with an antisocial partner. However, members of this class had moderate probabilities of suicidal ideation/attempt and chronic running away.

Members of the third identified class ($n = 134$) experienced sexual and physical abuse, engaged in health-risk behaviors, yet were not in foster care. Labeled *Multiply-Abused Non-Foster Child with Extensive Health-Risk Behavior*, class members had the highest conditional probabilities on sexual and physical abuse, substance use, suicidal ideation/attempt, and romance with antisocial partner with the second highest conditional probability of chronic running away. The high conditional class probabilities for the substance use items equaled those of the first class.

Members of the fourth identified class ($n = 193$) experienced emotional abuse and engaged in drug use. Labeled *Emotionally-Abused Drug User*, class members had the highest conditional

probability of emotional abuse and family violence along with high probabilities of alcohol use, substance use, and romance with an antisocial partner in comparison with the other classes.

Members of the fifth identified class ($n = 99$) were less likely to experience abuse or engaged in health-risk behaviors in comparison to other classes. Labeled *Less Abused Absterainer from Health-Risk Behavior*, class members had low conditional probabilities of each type of ACE and all indicators of health-risk behaviors compared to the other five classes. The highest risk probability for this class was for family violence.

Members of the sixth identified class ($n = 152$) were less likely to experience abuse in comparison to other classes. However, the conditional probability of drug use shared the highest probability with one other class (Class 1). Labeled *Less Abused Drug User*, class members had low conditional probabilities of each type of ACE and all health-risk behaviors except drug use when compared to those of the other classes.

Table 3. Comparative Model Fit Statistics for Iterative Latent Class Analysis ($N = 913$)

Model	Log likelihood	Bayesian Information Criterion	Entropy	Lo-Mendel-Rubin Adjusted Test	Bootstrapped Likelihood Ratio Test (BLRT)	Mean LC Probabilities—Likely Class Membership
2 Class	−6439.66	13049.74	.74	772.19 (.000) [^]	780.91 (.000) [^]	.93, .92
3 Class	−6329.87	12918.78	.83	217.13 (.000) [^]	219.58 (.000) [^]	.91, .94, .93
4 Class	−6243.74	12835.14	.82	170.34 (.000) [^]	172.26 (.000) [^]	.91, .79, .95, .91
5 Class	−6187.75	12811.77	.83	110.74 (.028) [^]	111.99 (.000) [^]	.87, .89, .90, .92, .80
6 Class	−6138.17	12801.23	.82	111.09 (.009) [^]	112.34 (.000) [^]	.87, .87, .87, .89, .90, .91
7 Class	−6108.77	12831.05	.82	59.06 (.092) [^]	59.72 (.000) [^]	.92, .83, .85, .81, .86, .94, .88

[^] H_0 : $k-1$ Class best fit.

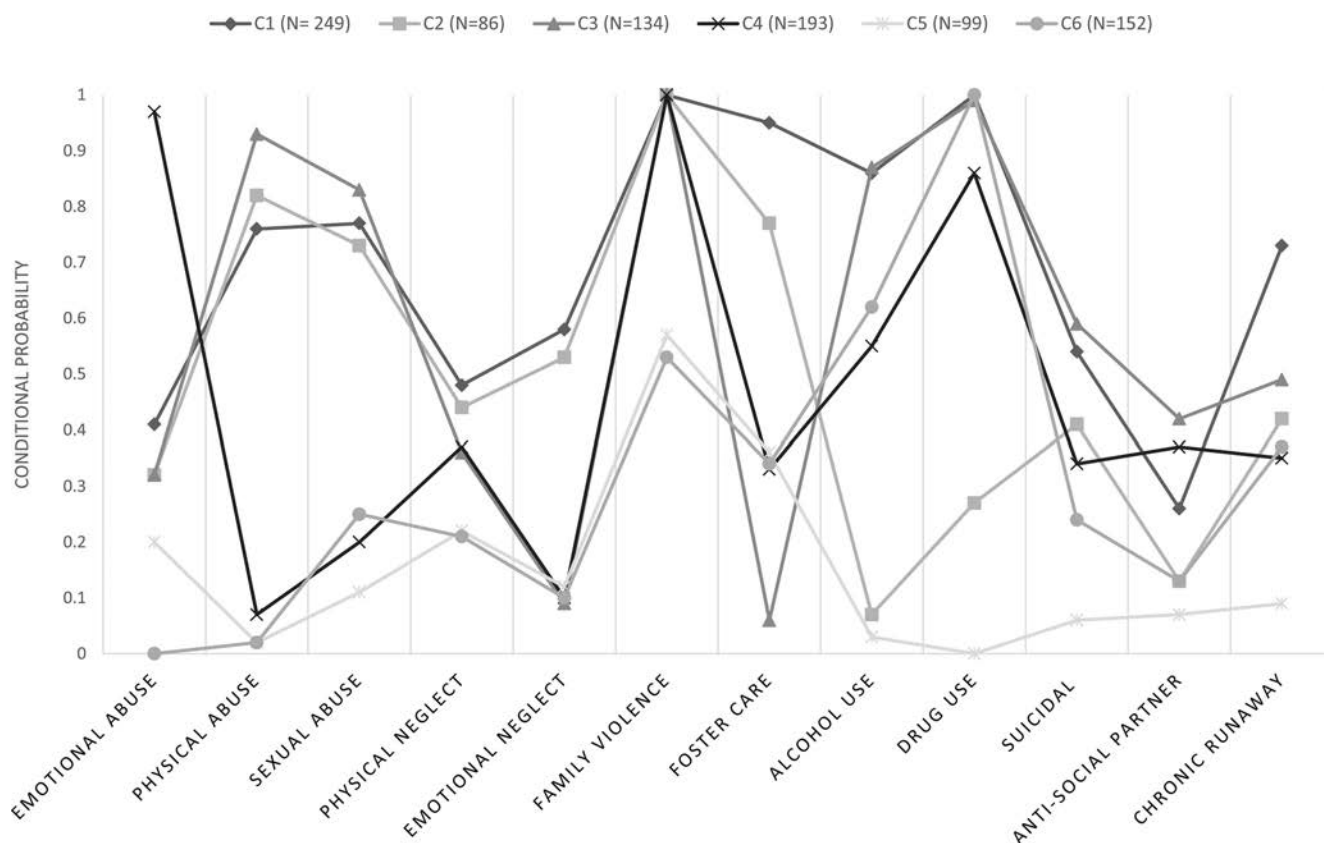


Figure 1. Latent class profiles for the six-class model.

Results of chi-square test of independence indicated that race/ethnicity, household annual income, and special education needs were significantly associated with class placement. African American adolescents were more likely to be placed in Classes 2 and 5 – classes with low substance use. Caucasian adolescents were more likely to be placed in Classes 1 and 3 – classes with high substance use. Adolescents from low income families were more likely to be placed in Class 1 – the largest class; and less likely to be placed in Classes 3 and 6 – two classes with the lowest levels of foster care involvement and highest probabilities of drug use. Adolescents with special education needs were more likely to be placed in Classes 1, 2, and 3 – classes with the highest levels of abuse; and less likely to be placed in Classes 5 and 6 – classes with the lowest levels of abuse. Sex and judicial circuit were not associated with class placement. Lastly, there was no association between class placement and abuse investigation status, ($\chi^2(10) = 6.39, p = .79$).

Discussion

Addressing the study's first research objective, differences were found in the prevalence of child maltreatment and certain health risk behaviors when comparing adolescents with histories of JHT and similar adolescents without such histories. As observed in other studies (Reid et al., 2017), the prevalence of numerous types of child maltreatment was higher among trafficked adolescents

when compared to adolescents in a matched sample without a JHT report. In comparison to similar, nontrafficked adolescents, trafficked adolescents were more likely to engage in internalizing behaviors, such as self-harming behaviors and health risk behaviors that are indicative of coping with emotional distress resulting from abuse, such as alcohol and drug use (Anda et al., 2002). In contrast, externalizing, health risk behaviors related to violence, such as weapon use, were less prevalent among trafficked adolescents in comparison to similar, nontrafficked adolescents.

Juvenile Human Trafficking Risk Profiles

In line with the purpose of the study, six distinctive profiles of risk of JHT victims were analytically identified based on ACE indicators and health-risk behaviors. As was the case in a recent six-site study of young persons engaged in the sex trade (Swaner, Labriola, Rempel, Walker, & Spadafore, 2016), our sample JHT victims exhibited a diverse, heterogeneous profile of risk. Thus, identification and intervention efforts centered on a single JHT victim type will likely result in an incomplete portrayal of the risk profiles of many trafficked adolescents. Each of the risk profiles had a unique and clarifying pattern of endorsements on ACE items and health risk behaviors, and each profile represented more than a trivial segment of JHT victims.

Class 1, the largest risk profile with approximately one fourth of JHT victims ($n = 249$), resembles the current predominately

featured risk profile of the highly vulnerable runaway adolescent with an extensive history of childhood, involvement in foster care, and engagement in multiple health risk behaviors (Mitchell et al., 2013). Law enforcement, child protection investigators, and child protection service providers are most likely to be in the position to provide appropriate services or referrals for services required to protect maltreated children from JHT exploitation. Often these professionals and their agencies lack the necessary personnel, resources, and training to respond to this most vulnerable population (Vieth, 2006). Ensuring that these first responders are adequately equipped to fulfil their responsibilities is critically important.

Two additional risk profiles shared similar histories of extensive childhood abuse with the largest profile but with key differences. Class 2 ($n = 86$) was not likely to have engaged in substance use and Class 3 ($n = 134$) had little to no involvement with foster care. The high likelihood of child maltreatment among three out of the six JHT risk profiles confirms previous research regarding the long-term impact of child maltreatment and the high likelihood that being maltreated as a child serves a gateway to further interpersonal exploitation including JHT (Arata, 2000; Reid, 2011; Reid & Piquero, 2013; Wilson & Widom, 2008). Two health risk factors differentiated the three JHT risk profiles with extensive child maltreatment histories—substance use and foster care. One JHT risk profile was characterized by extensive child maltreatment histories and high risk of substance use, yet with little likelihood of contact with child protection investigators. Due to their limited contact with child protective investigators, this subgroup of JHT may be at prolonged risk for exploitation in JHT unless identified by other service providers such as behavioral or medical health providers.

The remaining three JHT risk profiles were comprised of youth with very different endorsement patterns of child maltreatment and health-risk behaviors. Class 4 ($n = 193$) experienced the highest rates of emotional abuse and family violence among the risk profiles but much lower endorsement of other types of child maltreatment more commonly linked to JHT - sexual and physical abuse. Nonetheless, this profile had a high probability of drug use. The key features of this JHT risk profile validate prior research regarding the links between emotional abuse, witnessing family violence, and illicit drug use (Dube, Anda, Felitti, Edwards, & Williamson, 2002; Ford, Hartman, Hawke, & Chapman, 2008; Iwaniec, Larkin, & Higgins, 2006; Widom & White, 1997), and indicate that the combination of these risk factors heighten vulnerability to JHT.

Two profiles had low probabilities of childhood maltreatment in comparison to the other risk profiles. Class 6 ($n = 152$) was characterized by a high probability of drug use. It is important to note the high probability of alcohol and drug use in four of the six risk profiles, which underscores both potential use of substances as a coping mechanism in response to childhood adversity (Anda et al., 2002) and the ensnaring effect of substance use on adolescent involvement in criminal environments (Hussong, Curran, Moffitt, Caspi, & Carrig, 2004). Research has repeatedly documented a strong association between substance use and commercial sexual exploitation—one form of JHT (Reid & Piquero, 2013, 2014). Reid and Piquero (2014) found that among 114 male youth with histories of commercial sexual exploitation, 93% began using substances prior to or at the same time of their initial exploitation. These findings underscore the critical role of behavioral health professionals in JHT prevention and intervention.

Lastly, Class 5 ($n = 99$) reported less extensive child maltreatment and had limited to no engagement in the health risk behaviors included in the study model. This finding could indicate that JHT risk factors exist that were not measured and included in the study model, or this class may indicate that all youth are vulnerable to JHT regardless of their adverse childhood experiences or tendencies to engage in health risk behaviors. Researchers have noted that youthfulness itself is an important JHT risk factor (Reid & Jones, 2011). Human traffickers seek out those who are easy to manipulate (Cockbain, Brayley, & Laycock, 2011) and the inherent vulnerabilities of adolescence increase the likelihood of exploitation (Reid & Jones, 2011).

As further evidence of distinct JHT risk profiles, there were differences in the placement of adolescents in the risk profiles based on race/ethnicity, special education needs, and family income level. For example, African American adolescents were more prevalent in JHT risk profiles with little to no engagement in substance use, while Caucasian adolescents were more prevalent in risk profiles characterized by high probabilities of substance use. Adolescents from low income families were more prevalent in risk profiles characterized by placement in foster care and drug use. Adolescents with special education needs were more prevalent in classes with the higher levels of child maltreatment.

In summary, while the JHT risk profile that reflects the current predominate depiction of JHT victims was the largest profile in the analytically identified taxonomy, 73% of trafficked adolescents in this sample were placed in a different risk profile. The identification of varying profiles among trafficked adolescents suggests that screening tools for human trafficking based solely on victim characteristics may result in a large percentage of trafficked youth being overlooked and neglected. Human traffickers target individuals who have a vulnerability that can be exploited; and the vulnerability may or may not be obvious or what would be considered severe.

Validated screening tools for identifying trafficking victims do not yet exist (Rothman et al., 2017). When seeking to identify victims of exploitive victimization, recognition of high risk populations can be extremely beneficial (Cutter-Wilson & Richmond, 2011; Rothman et al., 2017). However, it is possible that screening questions describing the most common of trafficking conditions, such as the use of threats and violence to control victims (Reid, 2016b), may enable behavioral and medical health care providers to identify potential victims more efficiently (Baldwin et al., 2011; Mostajabian, Bocchini, Wiemann, & Maria, 2017). For example, Greenbaum and Crawford-Jakubiak (2015) recommend that medical professionals ask three direct questions to identify child sex trafficking victims: “1) Has anyone ever asked you to have sex in exchange for something you wanted or needed (money, food, shelter, or other items)?; 2) Has anyone ever asked you to have sex with another person? 3) Has anyone ever taken sexual pictures of you or posted such pictures on the Internet?” (p. 568).

These sorts of screening tools, asking questions about exploitive experiences, are most commonly used to screen for other types of exploitive victimization (Cutter-Wilson & Richmond, 2011; Rabin, Jennings, Campbell, & Bair-Merritt, 2009). When considering screening for teen dating violence, universal screening is considered the “gold standard” (Cutter-Wilson & Richmond, 2011, p. 4). The most commonly used screening tools for Intimate Partner Violence ask questions about experiences of abuse rather than

screening for risk factors (Rabin et al., 2009). The results of this study indicate that universal screening tools for human trafficking (i.e., screening for exploitive experiences rather than victim characteristics) should be considered the gold standard.

Conclusion

Although these findings add to our understanding of the diversity of adolescents who are vulnerable to exploitation in human trafficking, there are several study limitations. Although the use of a matched comparison group is a key strength of this study, there may be undetected victims of JHT among the comparison group. The abusive experience inherent in JHT may have been reported by participants as abuse, resulting in overlap between JHT and ACEs measures. Additionally, this sample was comprised solely of adolescents involved with the juvenile justice system in the State of Florida. Future studies are needed to replicate these findings using data from trafficked adolescents from other locations who are not involved with juvenile justice, as trafficked youth detained by law enforcement may differ in important ways from those not involved with juvenile justice. Characteristics of trafficked youth may also vary dependent by location and local demand for exploited services (Reid, 2012).

In conclusion, human trafficking of adolescents is among the most egregious forms of exploitation occurring throughout the world—including within the United States (Gibbs et al., 2018; UNODC, 2009). An illusionary profile of a “good or worthy” human trafficking victim (Farrell et al., 2012) that precludes boys (Greenbaum & Bodrick, & the Committee on Child Abuse and Neglect, & the Section on International Child Health, 2017; Jones, 2010; O’Brien et al., 2017; Swaner et al., 2016), or less severely abused adolescents may result in deficient responses to trafficking victims (Mitchell et al., 2013). Similar to disparities in the criminal justice response and health care treatment for those considered victims of “real rape” compared to all others (Du Mont, Miller, & Myhr, 2003), JHT victims who do not fit into society’s idealized depiction of human trafficking victims are systematically overlooked, even criminalized, and fail to receive needed behavioral and medical health care services (Kittling, 2005; Reid, 2010; Reid & Jones, 2011). While we recognize scholars who are critical of criminal justice response, particularly to youth street vendors (Estrada, 2013) and youth involved in sex work (Marcus, Horning, Curtis, Sanson, & Thompson, 2014), and who question the ethics of collaboration between social services with carceral state systems (Marcus et al., 2014; Musto, 2013), we do believe that understanding that a range of distinctive risk profiles of trafficked youth exists could help prevent health disparities and assist behavioral and medical health care professionals to more effectively recognize, treat, and refer potentially trafficked adolescents encountered in clinical settings. JHT is a deleterious public health issue and deserves all the attention it can receive from a varied constituency. Anything less would be irresponsible.

Keywords: human trafficking; adverse childhood experiences; health risk behaviors; typology; foster care

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