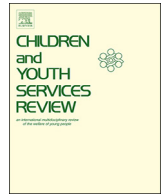




ELSEVIER

Contents lists available at ScienceDirect

Children and Youth Services Review

journal homepage: www.elsevier.com/locate/childyouth

A supportive adult may be the difference in homeless youth not being trafficked

Makini Chisolm-Straker^{a,*}, Jeremy Sze^a, Julia Einbond^b, James White^b, Hanni Stoklosa^c

^a Department of Emergency Medicine, Icahn School of Medicine at Mount Sinai, 3 East 101st St, 2nd Floor, NYC, NY 10029, USA

^b Covenant House New Jersey, 330 Washington St Newark, NJ 07102, USA

^c Department of Emergency Medicine, Brigham and Women's Hospital, Harvard Medical School, 75 Francis, St. Boston, MA 02115, USA

ABSTRACT

Purpose: To explore the factors that differentiate trafficked homeless youth from not-trafficked homeless youth. **Methods:** From November 2015–February 2017, homeless youth served by Covenant House New Jersey, aged 18–22, received a trafficking assessment. Youth were stratified based upon trafficking experience, and their responses to demographic and social history questions were examined for association with trafficking occurrence.

Results: Of 344 participants, 9.6% had a trafficking experience. Having an Individualized Education Program/504 plan was, for the first time in anti-trafficking literature, associated with a trafficking experience in bivariable analysis. IEP/504 plans are developed for school-aged children whose ability to succeed in traditional educational formats is challenged by learning, social, or functional problems. In the multivariable analysis, a history of arrest was associated with being trafficked while the presence of a supportive adult was associated with *not* being trafficked. Gender was not associated with a trafficking experience.

Conclusions: This study is the largest to specifically assess homeless youth's demographic and social variables for association with trafficking experience. Homeless youth who are and are not trafficked share similar life experiences, but those with a supportive adult in their life had lower odds of being trafficked. Building upon our research, future investigations exploring order of occurrence will elucidate the risk factors for and protective factors against trafficking among homeless youth, contributing to evidence-based prevention efforts.

1. Introduction

Human trafficking — the use of a person through force, fraud, and/or coercion for the purpose of labor and/or sexual exploitation (TVPA, 2000) — is a public health issue (American Public Health Association, 2015; Chon, 2016) which directly affects society's most vulnerable (Chisolm-Straker & Stoklosa, 2017). United States-based prevalence rates are biased and methodologies rely on convenience data at best or are obscure. In the early 2000s, the U.S. Department of State reported estimates of 14,500 to 50,000 people being trafficked into the country annually (U.S. Dept of State, 2002; U.S. Dept of State, 2006). These numbers did not account for those trafficked into the U.S. in previous years, people who came to the U.S. by other means and were then trafficked, or those who are U.S. citizens or residents. In 2006, 46,849 individuals were estimated by a National Institute of Justice-funded study to be trafficked for labor across the Southwest U.S. border (Clawson, Layne, & Small, 2006). In another study, 313,000 people were estimated to be affected by trafficking in the state of Texas alone (Busch-Armendariz et al., 2016). Given the criminal nature of the problem, accurate

estimates of those trafficked within U.S. borders is not possible. Still, more rigorous and transparent methodologies are warranted.

Even without knowing the precise prevalence, it is clear that labor and sex trafficked individuals experience myriad of medical and psychological pathologies because they are trafficked. They may experience chronic pain, repeated sexually transmitted infections, unwanted pregnancies, unsafe abortions, substance use disorders, anxiety, depression, post-traumatic stress disorder, and malnutrition, among other ailments (Kiss et al., 2015; Macias-Konstantopoulos & Ma, 2017; Oram et al., 2012a; Oram, Stöckl, Busza, Howard, & Zimmerman, 2012b; Zimmerman et al., 2008). Many of these problems continue to negatively impact their lives even if they are able to leave their trafficking situation. Trafficked persons also struggle with complications of chronic medical conditions like diabetes, asthma, and hypertension that are inadequately treated (Grant, 2012; Littenberg & Baldwin, 2017). Successful anti-trafficking endeavors demand a public health response because public health recognizes the ways in which diverse factors contribute to wellness, recovery, illness, and injury. A public health framework facilitates relevant prevention strategies to prevent trafficking

* Corresponding author.

E-mail addresses: MChisolm-Straker@HEALTrafficking.org (M. Chisolm-Straker), Jeremy.Sze@mssm.edu (J. Sze), JEinbond@covenanthouse.org (J. Einbond), JWhite@covenanthouse.org (J. White), HStoklosa@mail.harvard.edu (H. Stoklosa).

<https://doi.org/10.1016/j.childyouth.2018.06.003>

Received 19 January 2018; Received in revised form 1 June 2018; Accepted 3 June 2018
Available online 05 June 2018

0190-7409/© 2018 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

and mitigate downstream harms at societal, community, and individual levels (Centers for Disease Control and Prevention, 2018; Dahlberg & Krug, 2002).

Human trafficking affects people from all demographic and social groups, but society's runaway and homeless youth are thought to be especially vulnerable (Bigelsen & Vuotto, 2013; IOM & NRC, 2013; Middleton, Gattis, Frey, & Roe-Sepowitz, 2018; Murphy, 2017; Murphy, Taylor, & Bolden, 2015). Youth (minors and young adults) are homeless for a variety of reasons, including being kicked out of their home for a sexual orientation or gender minority identity; running away to escape physical, sexual, or emotional abuse, or neglect, or other unsafe living conditions; and/or the death of a parent or caregiver (Dank et al., 2015). Many young adults are homeless due to an inability to support themselves, and a lack of meaningful, long-term support networks. In the Morton, Dworsky, and Samuels (2017) study, 29% of youth surveyed reported having substance use problems and 69% reported having mental health difficulties while being homeless (Morton, Dworsky, & Samuels, 2017). Unmarried, parenting youth; gender minority and sexual orientation minority youth; impoverished youth; undereducated youth (having less than a high school diploma or GED); and youth of color are more likely to experience homelessness (Fernandes, 2007; Grieco & Cassidy, 2001; Morton, Dworsky, & Samuels, 2017). Duration of homelessness varies among youth, with 73% of those in the Morton, et al. study reporting being homeless for more than a month.

Homeless youth, lacking stable and safe social support mechanisms (Morton, Dworsky, & Samuels, 2017) are exploited by traffickers for forced labor and/or commercial sex. However, among this highly vulnerable population, little is understood about why some homeless youth may be more vulnerable to being trafficked than others. In two studies of homeless youth, while a significant minority did experience trafficking, the majority (> 80%) did not (Bigelsen & Vuotto, 2013; Murphy, Taylor, & Bolden, 2015). It is not clear what factors protect some homeless youth from being trafficked and make others vulnerable

to this form of exploitation. Understanding which homeless youth are most at risk for trafficking is integral to a public health response to trafficking, including the design of prevention interventions.

This study explored which demographic and lifetime social factors may differentiate homeless youth with a labor and/or sex trafficking experience from homeless youth without one.

2. Material and methods

2.1. Setting

Covenant House New Jersey (CHNJ), a nongovernmental organization (NGO), is part of Covenant House. Covenant House is an international federation of NGOs that serves homeless youth with wrap-around services, including housing. Specifically, CHNJ serves 18 to 22-year olds who are homeless in New Jersey. Only clients of CHNJ, during the study enrollment period of November 2, 2015 through February 21, 2017, were eligible to participate in this study. While CHNJ's clinical protocol requires all clients to receive an assessment for trafficking, clients could choose to share their de-identified data with the research team, thereby becoming a study participant.

The Icahn School of Medicine at Mount Sinai Institutional Review Board deemed the study "Not Human Subjects Research" as the investigative team only received anonymous data, from the existing CHNJ clinical protocol, for analysis. Study subjects received no remuneration for their participation.

2.2. Study protocol

All CHNJ clients receive a standard set of assessments as part of their individualized plans. These assessments include the Human Trafficking Assessment and CHNJ's Initial Basic/Behavioral Health Assessment (IBBHA), the latter of which captures a variety of the

- age
- race
- ethnicity
- gender
- type of homelessness
- number of times homeless
- duration of homelessness
- homelessness cause
- age when first left home
- reason for first leaving home
- disabling condition
- income and type
- noncash benefits and type
- experiences of domestic violence
- family drug use
- personal drug use
- witnessed violence in home
- identified learning disability (had an IEP or 504)*
- bullied by peers in school
- bullied peers in school
- emotional, physical, or sexual abuse
- foster care
- mental health issues
- suicidal thoughts
- family criminal history
- personal criminal history
- sexual orientation
- caring-adult relationships

Fig. 1. Standard topics addressed in CHNJ's initial basic/behavioral health assessment. * IEP/504 plans are developed for school-aged children whose ability to succeed in traditional educational formats is challenged by learning, social, or functional problems.

Table 1
Demographic variables of study participants, 2015–2017.

Descriptor	Percentage (n = 344)
Race/ethnicity^a	
Black	68.6% (236)
Latino	26.7% (92)
White	16.0% (55)
Asian/American	0.9% (3)
Native American	0.9% (3)
Other	12.5% (43)
Gender	
Female	50.9% (175)
Male	47.4% (163)
TGGNC ^b	1.7% (6)
Sexual Orientation Minority^d	
	14.8% (51)
Age	
18 years old	21.9% (75)
19 years old	28.6% (98)
20 years old	28.6% (98)
21 years old	20.1% (69)
22 years old	0.9% (3)
Age Left Home	
< 10 years old	2.9% (10)
10–13 years old	10.8% (37)
14–17 years old	44.2% (152)
≥ 18 years old	26.2% (90)
Ever Trafficked (n = 33)^c	
Sex Trafficked	9.6% (33)
Labor Trafficked	63.6% (21)
Sex and Labor Trafficked	51.5% (17)
	15.2% (5)

^a Race and ethnicity categories not mutually exclusive; participants could select multiple categories.

^b Transgender and gender nonconforming.

^c Some participants reported more than one type of trafficking experience. Trafficking experiences were sometimes co-occurring and sometimes consecutive through the lifecourse.

^d Sexual Orientation Minority: Identifying as not heterosexual.

clients' lifetime experiences. Fig. 1 lists the topics covered by the questions of the Initial Basic/Behavioral Health Assessment. The CHNJ Human Trafficking Assessment uses the Human Trafficking Interview and Assessment Measure (HTIAM-14). HTIAM-14 was developed and validated by Covenant House New York for use among the homeless youth population seeking social services (Bigelsen & Vuotto, 2013). Both the CHNJ's IBBHA and HTIAM-14 were usually completed within the first seven days of a participant's arrival to CHNJ, but almost always within 14 days. To explore which factors were associated with homeless youth having a trafficking experience, the results of each participants' HTIAM-14 (positive or negative for trafficking) were compared to their answers to demographic and social history questions in CHNJ's IBBHA.

2.3. Trafficking definition used

For this investigation, based in New Jersey, the HTIAM-14 was used to assess each participant for a trafficking experience, as defined by the Trafficking Victims Protection Act of 2000. In this definition, trafficking is the recruitment, harboring, transportation, obtaining, and/or provision of a person, by the use of force, fraud, and/or coercion, for the purpose of labor and/or sexual exploitation. In the case of minors, regardless of emancipation status or third-party involvement (e.g. a "pimp"), any form of commercial sexual exploitation is trafficking (TVPA, 2000). As our study's cohort were all 18 or older, those who reported a past history of "survival sex"¹ or any other form of

¹ Survival Sex: When adults (18 years or older) perform sex acts in exchange for basic necessities (e.g. food, shelter, medications, etc.) because they believe they cannot otherwise access these resources. As per federal definition of human trafficking, when a minor (under the age of 18 years) uses "survival sex" this is sex trafficking of the minor (a third, facilitating party is not required).

Table 2
Factors associated with homeless youth being trafficked, a bi-variable analysis; 2015–2017.

Variables	Chi Square	P-value	n
Female or TGGNC	0.3601	0.55	344
White	0.0190	0.89	344
Latino	1.7240	0.19	344
Sexual Orientation Minority	0.3256	0.57	344
Supportive Adult	0.2878	0.59	336
Individualized Education Program/504 Plan	6.3673	0.01 _*	312
Emotional Abuse	14.7429	0.00 _*	341
Physical Abuse	10.5114	0.00 _*	338
Sexual Abuse	20.9562	0.00 _*	337
Ever Arrested	7.1372	0.01 _*	338
Foster Care	6.1573	0.01 _*	344
Witness Violence at Home	4.9097	0.03 _*	340
Mental Health Issue	11.3692	0.00 _*	333
Suicidality	11.4533	0.00 _*	341
Family Problem with Law	5.6980	0.02 _*	316

* Significant at $p < .05$.

commercial sex while under the age of 18 years old were classified as having experienced sex trafficking. Staff that administered the HTIAM-14 were extensively trained, by a trafficking expert (MCS), on the federal definition of trafficking and how to interpret the HTIAM-14 as either positive or negative for a trafficking experience.

2.4. Analysis

Data were analyzed via Stata 14.2 (StataCorp, 2015). Descriptive statistics were calculated for demographic and associated factor variables. In addition, bivariable analysis using chi-square was conducted on the associated factors. The outcome was a positive trafficking determination on the HTIAM-14 and we tested for significance at the 5% level. Gender was dichotomized: those who identified as female or having a transgender or gender nonconforming (TGGNC) life experience were grouped together as these identities are commonly considered "risk factors" (Albright & D'Adamo, 2017; IOM & NRC, 2013). This group was compared to participants who identified as male, as the male gender, by default, is viewed as "protective" against trafficking. We specified a multivariable model guided by the trafficking literature (Banks & Tracey, 2008–2010; Bigelsen & Vuotto, 2013; Chisolm-Straker & Stoklosa, 2017; Murphy, Taylor, & Bolden, 2015), this study's bi-variable analysis (Sun, Shook, & Kay, 1996), and input from the study's advisory board (see Acknowledgements). Many iterations of a multivariable model were examined, and the final, best-fit model included statistically significant variables from bivariable analysis and expert recommendations.

3. Results

Over 15 months, a total of 530 Covenant House New Jersey clients were eligible to participate but 186 left before receiving or chose to not share the de-identified results of their assessments. Of the 344 participants who responded to both the IBBHA and Human Trafficking Assessment, 9.6% (33) had a trafficking experience at some point in their lives. The majority of study participants were youth of color, with < 20% identifying as white; 1.7% had a TGGNC life experience (see Table 1). One participant with a trafficking experience identified as TGGNC.

Of the 344 who participated in the investigation, 258 answered all of the IBBHA questions. The analysis examining factors associated with a trafficking experience was limited to these 258 participants; 29 participants with a trafficking experience were included among the 258. The bivariable analysis found each of the following to be significantly associated with a trafficking experience: having an Individualized Education Program (IEP)/504 plan; a history of emotional, physical, or

Table 3
Factors associated with homeless youth being trafficked, a multivariable model; 2015–2017.

Variables	Odds ratio	95% confidence intervals
Female or TGGNC	1.293	(0.498–3.356)
White	0.509	(0.118–2.189)
Latino	1.573	(0.580–4.263)
Sexual Orientation Minority	2.081	(0.573–7.559)
Supportive Adult	0.345*	(0.136–0.875)
IEP/504 Plan	2.384	(0.936–6.073)
Emotional Abuse	8.042	(0.930–69.56)
Physical Abuse	1.967	(0.508–7.621)
Sexual Abuse	1.866	(0.664–5.241)
Ever Arrested	5.910**	(1.994–17.52)
Foster Care	1.300	(0.399–4.230)
Witness Violence at Home	1.637	(0.555–4.828)
Mental Health Issue	1.780	(0.536–5.916)
Suicidality	2.011	(0.696–5.809)
Family Problem with Law	1.692	(0.583–4.913)
Observations	258	

* $p < .05$.

** $p < .01$.

sexual abuse; a history of being arrested; having been in foster care; having witnessed violence at home; having a mental health issue; ever having suicidal thoughts; and having family problems with the law (see Table 2).

Our multivariable model was developed based upon the insights of our study's advisory board, the trafficking literature, and the bivariable analysis. Other models were also evaluated, but this iteration (see Table 3) reflects the best model fit with regards to the Akaike Information Criterion (AIC) (Akaike, 1970) and the Bayesian Information Criterion (BIC) (Schwarz, 1978). This model shows that having a supportive adult is associated with a reduction in the odds (0.345) of having a trafficking experience, while having a history of being arrested yields higher odds (5.910) of homeless youth having experienced trafficking.

4. Limitations

Though this study included 344 participants who completed both the Human Trafficking Assessment and IBBHA, not all subjects answered all social history questions, so we limited multivariable analysis to the 258 complete observations. With respect to age, race, ethnicity, and gender, there was no statistically significant difference between participants who did and did not answer all IBBHA questions. The social factors analyzed were limited to those in the data already collected as part of CHNJ's standard practice. Because of this, there are potential confounders like family income and parental education levels which, had the data been collected, may have further strengthened the multivariable model. There may be other, as yet unidentified, variables associated with, or protective against trafficking experiences that were not collected in this investigation.

A "supportive adult" was not explicitly defined for participants and was left to them to interpret. As part of their usual practice of administering the IBBHA, CHNJ staff asked youth who the supportive adult or adults were in their lives. In a minority of cases, participants considered CHNJ staff, who entered their lives *after* being trafficked, to be the only supportive adults in their lives. In no case was a trafficker identified as a supportive adult.

This study did not assess for temporality of factors and trafficking experience. That is to say, for those who answered "yes" to a lifetime experience query and scored positive for a trafficking experience on HTIAM-14, it is not known if the experience preceded, succeeded, or co-occurred with the trafficking experience. As such, only correlation not causation can be inferred. Future research endeavors should examine the order of occurrence, to further examine the risk and protective

factors for homeless youth to experience trafficking.

This study is of a small cohort of homeless youth served in one state; the results may not be generalizable to populations that are significantly different from this one. For example, members of this study population are largely youth of color, many of whom are from or were living in an urban setting at the time of study participation. Their experiences and resultant data may not be similar to a predominantly white population, or a suburban, rural, or reservation setting. Finally, many youth (186) did not stay at CHNJ long enough or chose not to participate in the study. It is possible that youth with a trafficking experience were more likely to leave prior to being identified and receiving their complete Initial Basic/Behavioral Health Assessment, or were more likely to decline study participation, limiting data acquisition.

5. Discussion

A bivariable analysis found many factors were independently associated with homeless youth having a trafficking experience. Of note, a history of having an IEP/504 plan was an unexpected factor significantly associated with a trafficking experience. The multivariable analysis revealed the presence of a supportive adult as protective against a trafficking experience for homeless youth. In neither analysis was gender associated with being trafficked.

5.1. The bivariable analysis

Anti-trafficking experts have predicted some of the factors examined in this study as associated with being trafficked, like an experience of child maltreatment or a history of foster care involvement (Bigelsen & Vuotto, 2013; Chisolm-Straker & Stoklosa, 2017; Hannan, Martin, Caceres, & Aledor, 2017; Murphy, Taylor, & Bolden, 2015). However, the emergence of an IEP/504 plan as a factor associated with trafficking is novel. IEP/504 plans are developed for school-aged children whose ability to succeed in traditional educational formats is challenged by learning, social, or functional problems (Understood, n.d). Not all children with an IEP/504 plan have a cognitive disability or intellectual developmental delay (IDD), but convenience data indicate and experts suspect that children with IDD are more vulnerable to being trafficked than children without IDD (IOM & NRC, 2013; Reid, 2018). A history of having an IEP/504 plan, however, has not previously been linked to trafficking experiences and given the observational nature of this study, temporality, or order of occurrence, cannot be determined. That is to say, based on the available data, it is not known if study participants who were trafficked and had IEP/504 plans, had their IEP/504 plans before, during, or after their trafficking experience(s). As IEP/504 plans are designed for youth with learning, social, or functional difficulties, this group may represent a population more vulnerable to exploitation. These children may not have the skills necessary to recognize and avoid potentially exploitative situations orchestrated by strangers or kin. The same difficulties that precipitate the need for IEP/504 plans may also facilitate these children's manipulation by exploiters. Regardless, depending on whether an IEP/504 plan preceded, co-occurred, or succeeded a young person's trafficking experience(s), the IEP/504 plan may present a structured group of professionals the opportunity for primary, secondary, or tertiary prevention of the trafficking of a young person who, at some point, experiences homelessness.

5.2. The multivariable analysis

In the final, best-fit multivariable model, we included all statistically significant variables from the bivariable analysis as well as those postulated to be important based upon the literature and input from the advisory board (Banks & Tracey, 2008–2010; Bigelsen & Vuotto, 2013; Chisolm-Straker & Stoklosa, 2017; Murphy, Taylor, & Bolden, 2015; Sun, Shook, & Kay, 1996). When these life experiences were considered

together, only a history of arrest correlated with a trafficking experience at a statistically significant level (< 0.01). That trafficked youth had higher odds (5.91) of being arrested may be due to the trafficking experience itself resulting in their arrest. Many with a trafficking experience are made to execute illegal acts and may be arrested because of activities performed while being labor and/or sex trafficked (Bigelsen & Vuotto, 2013; Cole, Sprang, Lee, & Cohen, 2016). This finding highlights the need for law enforcement arresting homeless youth for illegal activity to consider human trafficking victimization of those detained. Service providers serving homeless youth with a history of arrest should consider attempting to identify those trafficked; identifying otherwise unrecognized trafficking victimization could broaden resources available to youth in need (Lennon & Milliner, 2017). Future studies must investigate the temporality of the relationship between arrest history and trafficking experience, in order to determine causation (Glass, Goodman, Hernán, & Samet, 2013).

The presence of a supportive adult became significant, as a protective factor, at the 0.05 significance level in our multivariable model. CHNJ asks about the presence of a supportive adult in the IBBHA because existing literature shows this is a significant component of resilience in youth (Center on the Developing Child at Harvard University, 2015; Jim Casey Youth Opportunities Initiative, 2011; Tierney & Grossman, 2000). Perhaps it is not the absence of childhood trauma that prevents or a particular trauma that leads to trafficking, but rather that in the presence of childhood trauma(s), a supportive adult may help to mitigate (Jim Casey Youth Opportunities Initiative, 2011) the risk of being trafficked. While the two groups studied (homeless youth trafficked and not trafficked) appear different when examined at singular components of their life experiences, the reality is that these variables co-occur and intermingle in the lives of those studied. When multiple factors found and thought to be important are examined together, the two groups (homeless youth trafficked and not trafficked) are more similar than different. This makes sense, as many of the factors that push youth to homelessness (our entire study population) may also drive them into trafficking situations. Identifying risk factors is a useful way to determine how to prevent a negative outcome but such an approach is not yet possible for this particular population; there is much more to learn about what leads some homeless youth to be trafficked. Future research should explore the temporality of factors of interest. In particular, Does history of arrest, which was significant in bi- and multivariable models, precede, co-occur, or follow a trafficking experience? That supportive adults may be helpful in mitigating multiple traumas to prevent trafficking, allows communities a different mechanism of prevention. No other data currently exists specifically examining how supportive adults may prevent a trafficking experience. Future studies should explore when and how supportive adults can intervene in the lives of youth with significant trauma, to moderate the risk of trafficking.

5.3. Demographic variables

While convenience sample data suggest that race and ethnicity are associated with a trafficking experience (Banks & Tracey, 2008–2010; CAST, 2014; Pember, 2014; Sweet, 2015), we did not find these variables to be statistically significant in either the bi- or multivariable analyses. This may be because, while the majority of those trafficked were youth of color, so too were the majority of all those in this small study sample. Significantly though, and despite the dominant media narrative of women and girls being the main ones victimized by trafficking (Albright & D'Adamo, 2017), there was no association of gender identity with a trafficking experience.

6. Conclusions

As public health practitioners endeavor to design evidence-based trafficking prevention interventions for homeless youth, a crucial step is to understand risk factors underpinning the trafficking experience.

Similarly important is to determine what, if any, factors protect these youth against being trafficked. To the best knowledge of the authors, to date, this study has the largest sample of longitudinally collected data specifically exploring the differences and similarities between trafficked and not trafficked homeless young adults in the United States. Many previously postulated risk factors were empirically found in bivariable analysis to be associated with a trafficking experience in this population. In addition to examining hypothesized risk factors, we identified a history of having an IEP/504 plan, which had not been previously discussed in the literature, as a potential trafficking risk factor. When the demographic and social variables were examined together, the presence of a supportive adult in the life of a homeless youth appears protective against a trafficking experience. Perhaps dedicated efforts to identify children who are experiencing trauma or have an IEP/504 plan and purposeful pairing of these children with a supportive adult can shield against trafficking. Gender was not related to a trafficking experience, indicating program prevention and recognition efforts may need to be reassessed to ensure meaningful inclusion of youth of all genders.

Given the small sample size of this study, future studies should build upon this hypothesis-generating data, include more participants, explicitly operationalize the term “supportive adult,” and determine order of event occurrence to strengthen or clarify this study's findings. Ultimately, once causal and protective factors are delineated, evidence-based prevention efforts and policies may be designed, implemented, and monitored for effect so that the trafficking of homeless youth can be mitigated and prevented.

Acknowledgments

The investigative team is thankful to the advisory board members, Mark Canavera, George Loo MPA, MPH, DrPH, Lynne D. Richardson MD, and Carmen Vargas-Torres MA for their guidance and input on the development of the study instruments and protocol (including analysis), and interpretation of the results.

The investigative team is eternally appreciative of the Covenant House New Jersey clients who allowed their de-identified data to be examined during this inquiry. Their contributions will help service providers provide evidence-based, high-quality care and service to future homeless youth with a trafficking experience.

Dr. Stoklosa would like to acknowledge the generous support of the Tynan Fellowship, Connors Center for Women's Health, Brigham and Women's Hospital.

Grant numbers and funding information

Anonymous Donor to Covenant House New Jersey and Sabre.

References

- Akaike, H. (1970). Statistical predictor identification. *Annals of the Institute of Statistical Mathematics*, 22(1), 203–217.
- Albright, E., & D'Adamo, K. (2017). The media and human trafficking: a discussion and critique of the dominant narrative. In M. Chisolm-Straker, & H. Stoklosa (Eds.). *Human Trafficking is a Public Health Issue: A Paradigm Expansion in the United States* (pp. 363–378). Cham, Switzerland: Springer Int.
- American Public Health Association (2015). Expanding and coordinating human trafficking-related public health research, evaluation, education, and prevention. *Policy Number 201516*. Available at <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2016/01/26/14/28/expanding-and-coordinating-human-trafficking-related-public-health-activities>. Accessed 6 September 2017.
- Banks, D., & Tracey, Kyckelhahn (2008–2010). (2011) *Characteristics of suspected human trafficking incidents*. Washington, DC: Bureau of Justice Statistics, U.S. Department of Justice. Retrieved from <http://www.bjs.gov/content/pub/pdf/cshti0810.pdf>, Accessed date: 12 October 2012.
- Bigelsen, J., & Vuotto, S. (2013). Homelessness, survival sex and human trafficking: As experienced by the youth of covenant house New York. *Covenant House New York*. Available at <https://humantraffickinghotline.org/sites/default/files/Homelessness%20C%20Survival%20Sex%20and%20Human%20Trafficking%20-%20Covenant>

- %20House%20NY.pdf (Accessed 28 December 2017) .
- Busch-Armendariz, N. B., Nale, N. L., Kammer-Kerwick, M., Kellison, B., Torres, M. I. M., Cook Heffron, L., & Nehme, J. (2016). *Human trafficking by the numbers: The initial benchmark of prevalence and economic impact for Texas*. Austin, TX: Institute on Domestic Violence & Sexual Assault, The University of Texas at Austin.
- Center on the Developing Child at Harvard University. *Supportive Relationships and Active Skill-Building Strengthen the Foundations of Resilience: Working Paper No. 13. (2015)*. Retrieved from www.developingchild.harvard.edu (Accessed 30 August 2017).
- Centers for Disease Control and Prevention. *Violence prevention-the social-ecological model: a framework for prevention. (2018)*. Available at <https://www.cdc.gov/violenceprevention/overview/social-ecologicalmodel.html> Accessed 23 May 24, 2018.
- Human trafficking is a public health issue. In M. Chisolm-Straker, & H. Stoklosa (Eds.). *A Paradigm Expansion in the United States*. Switzerland: Springer Int. Cham.
- Chon, K. *The Power of Framing Human Trafficking as Public Health Issue. Office on Trafficking in Persons. (2016)*. Available at: <https://www.acf.hhs.gov/otip/resource/publichealthlens> (Accessed 6 September 2017) .
- Clawson, H. J., Layne, M., & Small, L. *Estimating human trafficking in the United States: development of a methodology. Department of Justice. (2006)*. Available at <https://www.ncjrs.gov/pdffiles1/nij/grants/215475.pdf> (Accessed 12 Mar 2016).
- Coalition to Abolish Slavery and Trafficking (CAST) (2014). A serious problem—around the globe and in the USA. Available at castla.org/key-stats.
- Cole, J., Sprang, G., Lee, R., & Cohen, J. (2016). The trauma of commercial sexual exploitation of youth: A comparison of CSE victims to sexual abuse victims in a clinical sample. *Journal of Interpersonal Violence, 31*(1), 122–146.
- Dahlberg, L. L., & Krug, E. G. (2002). Violence-a global public health problem. In E. Krug, L. L. Dahlberg, J. A. Mercy, A. B. Zwi, & R. Lozano (Eds.). *World report on violence and health* (pp. 1–56). Geneva, Switzerland: World Health Organization.
- Dank, M., Yahner, J., Madden, K., Bañuelos, I., Yu, L., Ritchie, A., ... Conner, B. (2015). *Surviving the Streets of New York: Experiences of LGBTQ Youth, YMSM, and YWSW Engaged in Survival Sex*. Urban Institute. Available at <https://www.urban.org/sites/default/files/publication/42186/2000119-Surviving-the-Streets-of-New-York.pdf> (Accessed 23 May 24, 2018) .
- Fernandes, A. L. (2007). Runaway and Homeless Youth: Demographics, Programs, and Emerging Issues. *Congressional Research Service Report for Congress. Order Code RL33785*. Available at: https://www.everycrsreport.com/files/20070615_RL33785_998803589e285a5a6081f39535571bd1f632d1b4.pdf, Accessed date: 8 May 2018.
- Glass, T. A., Goodman, S. N., Hernán, M. A., & Samet, J. M. (2013). Causal inference in public health. *Annual Review of Public Health, 34*, 61–75.
- Grant, Melissa G. (2012, Oct 24). The truth about trafficking: it's not just about sexual exploitation. *The Guardian*. Available at: <http://www.theguardian.com/commentisfree/2012/oct/24/truth-about-trafficking-sexual-exploitation> Accessed 22 March 2016.
- Grieco, E. M., & Cassidy, R. C. (2001). Overview of race and Hispanic origin: Census 2000 brief. U.S. Department of Commerce economics and statistics administration. *US Census Bureau*. Available at <https://www.census.gov/prod/2001pubs/c2kbr01-1.pdf> Accessed 8 May 2018 .
- Hannan, M., Martin, K., Caceres, K., & Aledor, N. (2017). Children at risk: foster care and human trafficking. In M. Chisolm-Straker, & H. Stoklosa (Eds.). *Human trafficking is a public health issue: a paradigm expansion in the United States* (pp. 105–121). Cham, Switzerland: Springer Int.
- IOM (Institute of Medicine) and NRC (National Research Council) (2013). *Confronting commercial sexual exploitation and sex trafficking of minors in the United States*. Washington, DC: The National Academies Press.
- Jim Casey Youth Opportunities Initiative. *The adolescent brain: New research and its implication for young people transitioning from Foster Care. (2011)*. Available at: <http://www.aecf.org/m/resourcedoc/AECF-theAdolescentBrain-2011.pdf> Accessed 23 May 24, 2018 .
- Kiss, L., Pocock, N. S., Naisangsri, V., Suos, S., Dickson, B., Thuy, D., Koehler, J., Sirisup, K., Pongrunsee, N., Nguyen, V. A., Borland, R., Dhavan, P., & Zimmerman, C. (2015). Health of men, women, and children in post-trafficking services in Cambodia, Thailand, and Vietnam: An observational cross-sectional study. *The Lancet Global Health, 3*(3), e154–e161.
- Lennon M, Milliner B (2017). Legal Supports for trafficked persons: assisting survivors via certification, state/federal benefits, and compensation. In Chisolm-Straker M, Stoklosa H (Ed.). *Human trafficking is a public health issue: a paradigm expansion in the United States* (pp 251–262). Cham, Switzerland: Springer Int.
- Littenberg, N., & Baldwin, S. (2017). The ignored exploitation: labor trafficking in the US. In M. Chisolm-Straker, & H. Stoklosa (Eds.). *Human trafficking is a public health issue: a paradigm expansion in the United States* (pp. 67–92). Switzerland: Springer Int. Cham.
- Macias-Konstantopoulos, W., & Ma, Z. (2017). Physical health of human trafficking survivors: unmet essentials. In M. Chisolm-Straker, & H. Stoklosa (Eds.). *Human trafficking is a public health issue: a paradigm expansion in the United States* (pp. 185–210). Switzerland: Springer Int. Cham.
- Middleton, J. S., Gattis, M. N., Frey, L. M., & Roe-Sepowitz, D. (2018). Youth experiences survey (YES): Exploring the scope and complexity of sex trafficking in a sample of youth experiencing homelessness. *Journal of Social Service Research, 42*(2), 141–157. <http://dx.doi.org/10.1080/01488376.2018.1428924>.
- Morton, M. H., Dworsky, A., & Samuels, G. M. (2017). *Missed opportunities: Youth homelessness in America. National estimates*. Chicago, IL: Chapin Hall at the University of Chicago.
- Murphy, L. T. *Labor and sex trafficking among homeless youth: A ten-city study. Modern Slavery Research Project. (2017)*. Retrieved from <https://www.modernslaveryresearch.org/> (Accessed 16 May 2018).
- Murphy, L. T., Taylor, R., & Bolden, C. L. (2015). Trafficking and exploitative labor among homeless youth in New Orleans. *Covenant House*. Available at <https://static1.squarespace.com/static/5887a2a61b631bfbbc1ad83a/t/59498effe4fcb553cd3bd5cc/1497992978429/HomelessYouthNewOrleans.pdf> (Accessed 28 December 2017) .
- Oram, S., Ostrovski, N. V., Gorceac, V. I., Hotineanu, M. A., Gorceac, L., Trigub, C., & Abas, M. (2012a). Physical health symptoms reported by trafficked women receiving post- trafficking support in Moldova: Prevalence, severity and associated factors. *BMC Womens Health, 12*(20), 26. 1186/ 1472-6874-12-20 PMID:22834807 PMID:PMC3460745 <https://bmcwomenshealth.biomedcentral.com/track/pdf/10.1186/1472-6874-12-20>.
- Oram, S., Stöckel, H., Busza, J., Howard, L. M., & Zimmerman, C. (2012b). Prevalence and risk of violence and the physical, mental, and sexual health problems associated with human trafficking: Systematic review. *PLoS Medicine, 9*(5), e1001224 Epub 2012 May 29. 22666182 PMID:PMC3362635.
- Pember, M. A. (2014). Mapping the market for sex: new report details minneapolis sex trade. *Indian Country Today*. Available at <https://indiancountrymedianetwork.com/culture/health-wellness/mapping-the-market-for-sex-new-report-details-minneapolis-sex-trade/> Accessed 27 March 27, 2017 .
- Reid, J. A. (2018). Sex trafficking of girls with intellectual disabilities: An exploratory mixed methods study. *Sexual Abuse, 30*(2), 107–131.
- Schwarz, G. (1978). Estimating the dimension of a model. *The Annals of Statistics, 6*(2), 461–464.
- StataCorp (2015). *Stata Statistical Software: Release 14*. College Station, TX: StataCorp LP.
- Sun, G. W., Shook, T. L., & Kay, G. L. (1996). Inappropriate use of bivariable analysis to screen risk factors for use in multivariable analysis. *Journal of Clinical Epidemiology, 49*(8), 907–916.
- Sweet, V. (2015). Trafficking in native communities. National Council of juvenile and family court judges newsletter. *Synergy, 18*(1), Available at: <https://www.ncjfcj.org/resource-library/publications/synergy-vol-18-no-1>, Accessed date: 27 March 2017.
- Tierney, J. P., & Grossman, J. B. (2000). Making a difference: An impact study of big brothers, big sisters. Public/private ventures. Available at http://www.ppv.org/ppv/publications/assets/111_publication.pdf.
- Understood. (n.d.). The Difference Between IEPs and 504 Plans. Retrieved from: <https://www.understood.org/en/school-learning/special-services/504-plan/the-difference-between-ieps-and-504-plans>. Accessed 30 August 2017.
- US Department of State. *Trafficking in Persons: A Guide for Non-Governmental Organizations, 2002. (2002)*. Available at <http://www.dol.gov/wb/media/reports/trafficking.htm> (Accessed May 21, 2014).
- US Department of State. *Trafficking in Persons Report. (2006)*. Available at <http://www.state.gov/j/tip/rls/tiprpt/2006/index.htm> (Accessed June 4, 2014).
- Victims of Trafficking and Violence Protection Act of 2000 (P.L. 106–386), Reauthorized by the Trafficking Victims Protection Reauthorization Act (TVPRA) of 2003 (P.L. 108–193), the TVPRA of 2005 (P.L. 109 164), and the William Wilberforce Trafficking Victims Protection Reauthorization Act (WW-TVPA) of 2008 (P.L. 110–457) and the TVPRA of 2013 (P.L. 113–4).
- Zimmerman, C., Hossain, M., Yun, K., Gajdadziew, V., Guzun, N., Tchomarov, M., ... Watts, C. (2008). The health of trafficked women: A survey of women entering post-trafficking services in Europe. *American Journal of Public Health, 98*(1), 55–59. Epub 2007 Nov 29 <https://doi.org/10.2105/AJPH.2006.108357> PMID:18048781 PMID:PMC2156078 .