Red Light: A Review of Interventions for Detecting Victims of Human Trafficking in U.S. Healthcare Facilities

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Abstract

Introduction: In the U.S., where there is a growing prevalence of human trafficking reports, an estimated 85% of trafficking victims visit the emergency department during their captivity. Healthcare facilities may be an impactful setting for using interventions to detect victims because of the privacy and intimacy of patient-provider interactions. This modified systematic review seeks to understand what efforts are being made in healthcare facilities across the U.S., how they differ or are consistent, and how they have affected identification rates of victims in order to shed light on what gaps exist and how more facilities in the U.S. should adopt necessary measures.

Research question: *What are the characteristics of existing interventions for detecting victims of human trafficking in healthcare facilities in the United States, and what is their demonstrated impact?*

Methods: A modified systematic review was conducted by first searching and selecting articles containing key search terms related to the research question through the databases PubMed, ClinicalKey, Embase, EBSCOHost, Web of Science, and JSTOR. Inclusion and exclusion criteria were then applied. A data extraction table was created to synthesize the literature.

Findings: Twelve studies met inclusion criteria. The synthesis of evidence yielded four key themes that differentiate the characteristics of existing interventions: (1) the type of intervention method, (2) the type of healthcare facility, (3) the topics assessed by the intervention, and (4) the intervention outcomes reported. The studies assessed revealed a lack of consistency among the few existing interventions: the vast majority were surveys, they occurred in various types of healthcare settings, they addressed varying risk factors for human trafficking, and most were not analyzed for validation measurements, but the ones that were had high tendencies for false positives.

Conclusion: The findings indicate that healthcare settings show potential as being an effective setting for breaking barriers to illuminate victims and connecting them with services, but there is a need for a standardized, coordinated U.S. healthcare intervention for human trafficking and further collaboration with other sectors such as mental health research and services, and immigration and social services, and law enforcement.

INTRODUCTION

Background of Human Trafficking

Human trafficking is the fastest growing criminal industry in the world.[1] As defined by the United Nations Office on Drugs and Crime, human trafficking is the recruitment, transportation, transfer, harboring or receipt of people through force, fraud or deception, with the aim of exploiting them for profit.[2] It is estimated that 27.6 million people worldwide are currently victims of human trafficking,[3] but given the complex nature of the crime, traffickers often operate under the radar and the vast majority of victims remain hidden sufferers. Victims are also unlikely to self-report the realities of their captivity to authorities because of feelings of self-blame for their situation, fear of punishment from their trafficker, or fear of being punished for being involved in a crime from authorities themselves.[4] Identification can also be difficult because over one-third of traffickers are family members or legal guardians to victims, which complicates the ability to crack the relationship and break the personal loyalties between traffickers and the victim.[5] Healthcare facilities may be an impactful setting in which to implement measures for detecting victims of human trafficking because of the personal information shared and the intimacy of the patient-provider interaction.

The United States officially recognizes two main forms of human trafficking: forced labor and sex trafficking.[6] Forced labor, or labor trafficking, entails the use of violence, fraud, or coercion to force or exploit services of another person.[6] Sex trafficking involves the use of violence, fraud, or coercion to force a person to engage in a commercial sex act, and child sex trafficking is the commercial sexual exploitation of minors.[6] Almost half of the victims of victims of human trafficking in the U.S. are children.[7] Though various other forms of human trafficking exist, this paper will focus on these two and the subgroup of child sex trafficking.

United States Context

It is difficult to know the exact prevalence of human trafficking in the United States, but the U.S. National Human Trafficking Hotline identified and confirmed 14,844 victims or survivors of trafficking in 2020 and 164,839 victims since its inception in 2007.[8] California is the state in which most victims of trafficking have been identified, followed by Texas, Florida, and New York.[8] According to Polaris, the nonprofit non-governmental organization operating the National Human Trafficking Hotline, 72% of these cases were situations of sex trafficking.[7] The National Human Trafficking Hotline statistics reports approximately 25% of identified victims in the US were minors, and approximately 85% were female-identifying. Nearly twice as many identified victims in the US were foreign nationals, as opposed to US citizens.[8] Polaris also reported that 54% of victims were characterized with the vulnerability of being a recent migrant or having recently been relocated, making this the most prevalent risk factor.[7]

The United States government self-reports to "fully meet the minimum standards for the elimination of trafficking in persons".[6] The first comprehensive anti-trafficking federal legislation to pass in the U.S. was the Trafficking Victims Protection Act (TVPA) of 2000, which outlined a coordinated approach to combat trafficking in all states and provided the federal government with the resources to lead such a campaign.[9] The U.S. has also officialized two significant types of immigration authorizations to support foreign nationals who experienced human trafficking in the U.S.: the T-1 Nonimmigrant Status (T Visa) and Continued Presence. The T-Visa allows victims of human trafficking identified by law enforcement to remain in the U.S. for a preliminary period of four years with full federal and state benefits and services to the same extent as refugees with a guaranteed lawful permanent residence card and citizenship after compliance with the law over the period.[10] Continued Presence is a two-year immigration

designation which allows uncertified foreign nationals who were victims of trafficking to lawfully remain in the U.S. temporarily on a free work permit with eligibility for other federal benefits and services to the same extent as refugees, granted they provide witness support for helping law enforcement to track their traffickers[11].

The Bureau of Justice Statistics reports that in the last decade, arrests for human trafficking offenses rose by 62% and prosecutions increased by 84%.[12] This indicates that efforts to control human trafficking have been effective and growing. However, the U.S.'s response to human trafficking is still limited by certain legislative gaps that are not enforced at the federal level, and therefore vary by state governments, such as policies on criminal records relief for victims of trafficking.[13]

The U.S. embodies a complex healthcare system, mixing both a for-profit private health insurance market coverage and a publicly financed government plan. However, the public system is selective and does not cover all people in the country. While the U.S. is renowned worldwide for its stellar private healthcare quality, disparities in access to healthcare are vast and extreme. Particularly, victims with some of the key vulnerabilities for human trafficking (poverty, broken family life, and undocumented immigrant status, among others) may be susceptible to impaired access to healthcare in the United States.[14]

Summary of Existing Literature

This systematic review is in conversation with existing literature that examine the intersection between human trafficking and healthcare. Various articles and reviews have been developed to explore risk factors and characteristics for sex trafficking relevant to the healthcare field[15–17], which have substantiated an informed base to prepare for further research of this topic.

Others reviewed gaps and barriers to identification of victims of human trafficking and the relevance to healthcare services by reviewing the experiences of identified victims.[18,19] Another relevant review assessed the prevalence and risk of public health impairments as a result of human trafficking.[18] Three other reviews were found that specifically addressed interventions to detect victims of trafficking in healthcare facilities. One assessed all identifiable tools developed for use in healthcare settings created by large agencies such as the nonprofit Polaris or the U.S. Department of State but varied from the current review in that the interventions were not examined for their demonstrated effectiveness or application in a healthcare facility, only their contents.[20] Another similar integrative review examined interventions for detecting victims of sex trafficking in adult emergency departments.[21] The third similar paper performed a scoping review to cover only validated screening tools for human trafficking identification in healthcare settings.[22] In all three of these related reviews, very few studies met their criteria (nine, eleven, and eight, respectively) and they all came to a similar consensus in their discussion that too few interventions exist for combatting this crime in healthcare settings, and among them, there is little consistency in composition or effectiveness. They all emphasized the need for the validation of appropriate interventions that encompass multifaceted approaches to identifying victims. This current systematic review intends to expand upon existing literature and contribute to academic discussion regarding the human trafficking and healthcare.

Purpose

Human trafficking is a critical concern to public health because it directly and indirectly sabotages the health and wellbeing of victims through various annexes: violence-related injuries, sexually transmitted infections, pregnancy, malnourishment, forced substance abuse, mental

health impairments from trauma, and more.[5] Sex trafficking particularly has serious societal consequences as it plays a role in the accelerated spread of HIV.[23]

Existing literature suggests that healthcare facilities are a critical setting in which to implement efforts to detect victims of trafficking because providers possess the potential to unearth intimate, personal details about an individuals' life and health that may indicate signs of trafficking.[24] Emergency departments or other urgent health clinics are particularly key settings in which protocols for detecting victims are necessary because while some victims may avoid non-urgent healthcare visits in order to maintain the secrecy of their trafficker, no one can avoid the need for emergency healthcare.[21] However, a U.S.-based study estimates that up to 85% of victims of human trafficking come into contact with a provider by seeking healthcare in the U.S. during the time they are being trafficked, while going undetected.[25] This means that healthcare facilities often encounter victims of human trafficking without ever knowing so, and therefore not being able to intervene. Healthcare facilities should be equipped with adequate protocols, interventions, and resources to detect these hidden victims and connect them with necessary support and resources.

This modified systematic review seeks to answer the research question, *what are the existing interventions for detecting victims of human trafficking in healthcare facilities in the United States, and what is their demonstrated impact?* Through a thoughtful and comprehensive review of existing literature and empirical studies on the subject, this paper hopes to understand what efforts are being made in healthcare facilities across the country, how they differ or are consistent, and how they have affected identification rates of victims. Ultimately, this paper hopes to shed light on what gaps exist among the developed interventions and how more facilities in the United States should adopt necessary measures.

METHODS

Study Design

This modified systematic review was conducted by one researcher between January and May 2024. The design pursued a similar procedure to a full systematic review but analyzed fewer sources and consulted fewer contributors. Similar to a full systematic review, the researcher defined the research question, applied inclusion and exclusion criteria, performed a search strategy, searched for relevant sources through verified databases, and then extracted relevant data for evaluation and synthesis.

Defining the Research Question

This review sought to answer the research question: "What interventions have been developed for detecting victims of human trafficking in healthcare settings in the US and what is their demonstrated impact?" *Human trafficking* was defined as the illegal use of force, fraud, or coercion to compel a person into commercial sex acts or labor against their will.[6] *Interventions* were defined as any screening tool or protocol that aimed to detect or increase detection of this population in settings where healthcare services are provided. *Healthcare settings* were defined broadly as any facility providing healthcare, such as emergency departments, pediatric offices, and specialty clinics. *Impact* was specified as the observed numbers of victims of sex trafficking identified with the help of the particular intervention.

Search Strategy

The search strategy for this paper entailed searching various combinations of the key search terms *sex trafficking* (or alternative terms *trafficking, human trafficking, sexual exploitation*); *identification* (or alternatives *screening* or *detection*); *tool* (or alternatives *screening tool* or *intervention* or *strategy*); *health care* (or *hospitals, clinics, urgent care,*

gynecology, women's health, medical); and *USA* (or *US* or *United States*). The searching was conducted in the databases PubMed, ClinicalKey, Embase, EBSCOHost, Web of Science, JSTOR, as well as the Google Scholar search engine. This search strategy originally yielded (n=16) potential sources, which were then evaluated on their eligibility as defined by the inclusion criteria.

Inclusion and Exclusion Criteria

To meet the inclusion criteria, the source must have been a peer-reviewed, empirical study. Included sources were required to have been conducted in the United States. They must have addressed any form of human trafficking. It was required that they assessed a specific intervention or screening tool, and occurred in a setting where healthcare services are provided. Studies were excluded if they addressed medical services but did not occur in facilities where services are directly provided (for example, educational interviews in a medical school), or they were survey-based studies evaluating the comfort levels or perceived preparedness of healthcare providers in the hypothetical scenario of suspecting a patient victim of sex trafficking. After this selection process, (n=4) studies were ultimately excluded, yielding (n=12) studies remaining for inclusion in the core systematic review of this paper.

Data extraction

A Microsoft Excel spreadsheet was manually created to extract data from the twelve empirical studies that addressed the research question and satisfied the specified inclusion criteria. This spreadsheet was organized to extract general, defining information about each empirical study in logical categories. Data were retrieved on the publication information of each study, the study sample demographics and characteristics, the study location and characteristics of the setting, the components and details of the studied intervention, and the data collection

methods and type of data. The spreadsheet format of this data extraction allowed for comprehensive scanning of the studies for preliminary synthesis and the identification of patterns, deviations, and key themes among the results.

RESULTS

Study characteristics

II. Data type and data collection methods

All twelve studies included in this review[26–37] met the specifications for the inclusion criteria and were deemed acceptable in quality by the status of their publication in an academic journal. The studies were analyzed and screened thoroughly by the researcher and appropriate results were extracted for synthesis. All twelve of the studies were sources of primary data analysis and all used quantitative methods in their study design. Eleven of the studies collected data from healthcare patients[26–28,30–37] and one collected data from healthcare providers.[29] The studies varied in their data collection methods and all but one[26] utilized more than one method. Five studies collected data through interviews from interviews[30,31,33,34,37], three collected from technical screening software[28,32,37], seven from patient-provider interactions[28,30,31,33,34,36,37], five from medical chart reviews[26,28,34,35,37], ten from surveys[27,29–37], and one utilized a focus group.[27] Eleven of the studies used descriptive statistics for data analysis[26,28–37], while one used psychometric analysis.[27] Seven of the studies were prospective studies[27,29–33,36] while the other five were retrospective.[26,28,34,35,37]

III. Sample characteristics

The interventions in the studies varied in their specificity of the type of trafficking or exploitation they aimed to detect. Six specifically addressed victims of child sex trafficking[26,30–

[33,37], three addressed adult or general sex trafficking[27,34,36], three addressed the broader genre of human trafficking [28,29,35], and one additionally specified victims of labor trafficking in addition to sex trafficking[27]. Three of the studies specified their sample of interest to only females[26,35,36], six applied to only children[26,30,31,33,34,37], and four included a sample of adults 18 and older, regardless of gender[27–29,34]. One study evaluated only female children.[26] Among the studies with samples of children, the patients' ages ranged from eleven to eighteen, and they all addressed child sex trafficking as the form of trafficking of interest. Of the studies that specifically studied females, one aimed to detect child sex trafficking[26], one aimed to detect sex trafficking[36], and one aimed to detect human trafficking.[35]

In regards to the demographics of the studies, seven collected data on the race and ethnicity of the patients included in their study[26,27,30–32,36,37], of which four were composed of mainly white patients (with sample compositions of 40%[32], 31%[36], 37%[30], and 45%[37] white patients), two were mainly composed of Black patients (63%[31] and 24%[27]), and one was mainly composed of Asian patients (57.5%[26]). One study did not address race and ethnicity, but addressed financial demographics, and the sample comprised 53.4% patients in financial vulnerability who made less than $15,000 a year.[35]

All 12 studies specified that for eligibility of patient inclusion in the study, they must have sought care or currently be seeking care at the healthcare facility. Four of the studies included patients based on if they were reported with high-risk chief complaints.[30,31,33,34] Two studies included patients whose electronic health records were flagged for including predefined red flag keywords by an electronic screening tool.[28,37] Nine studies used convenience sampling to select their sample,[26,28,32,33,35–37] two used random sampling[27,34], one used a group randomized controlled trial.[29] The sample sizes ranged across the studies from 108[31] to 26,974[34], with a

median sample size of 462.5. Four studies had sample sizes greater than 1,000[27,28,34,37], and the remaining eight had between 100 and 1,000.[26,28,30–33,35,36]

All studies occurred in the United States. Four studies took place in California [26,28,29,36], with one specifying the geographic location as the San Francisco Bay Area.[29] One occurred in an unspecified southeastern U.S. city[33], one occurred in Atlanta, Georgia[31], and one occurred in Minnesota.[37] One occurred at two sites in New York City and Fort Worth, Texas.[27] Four studies occurred in unspecified locations in the U.S.[30,32,34,35] Eight studies specifically stated they took place in an urban setting.[26–28,30–34]

Study results

This systematic review has identified three main themes through which the characteristics of the studied interventions and their demonstrated impact are distinguished: the intervention method, type of healthcare facility, the topics assessed by the tool, and intervention results. A subtheme of administration method was developed within the intervention method theme to further distinguish results. Results, as understood through these themes, are presented below.

1. Intervention method

The intervention method was defined as the structured approach, tool, protocol, or methodology implemented and utilized in a healthcare setting that served the goal of identifying potential victims of sex trafficking. The types of intervention methods identified among the included studies were surveys, interviews, electronic tools, medical record examinations, and educational programs. While the specific intervention methods are distinguished, the overall interventions in the studies could encompass the utilization of various methods in combination. Seven out of the

twelve studies incorporated two methods in their studied intervention[28–32,34,35], and one incorporated three: survey, electronic tool, and medical record examination.[37]

Surveys

Ten out of the twelve studies utilized surveys or questionnaires as an intervention component.[27,29–37] There was variation in the administration strategy among these surveys, which will be discussed as a subtheme in this section. Of these ten intervention studies, three were based exclusively on the survey as the sole screening tool[27,33,36], two were implemented in conjunction with an electronic tool[32,37], three in conjunction with an educational program[29,34,35], and two in conjunction with a medical record examination.[31,37]

In all but one study, the surveys were administered to patients with the intention of collecting personal data that may indicate possible trafficking victim status. Grace et. al's 2014 study was the only one where the survey was administered to emergency department healthcare providers.[29] In this study, two surveys assessing providers' knowledge on human trafficking and understanding of how to detect victims were actually administered before and after their attendance of the educational presentation. The increase in score between these surveys were also compared against a control group of providers who were not given the educational intervention at the time. Results from the study showed that healthcare providers in the intervention group increased their knowledge on human trafficking from the educational intervention.

Among the remaining nine studies with surveys for patients, the number of questions ranged from four[36] to seventeen[32], with a median of six questions. Despite this wide range, all of these surveys had positive screening qualifications falling into two categories: an answer of

"yes" to at least one question was considered a positive screening for four of the studies[27,34–36], and an answer of "yes" to two or more questions was considered positive for the remaining five.[30–33,37] These studies are distinguished along with their number of total questions below.

Table 1: Studies with a positive screening qualification of an answer of "yes" to ≥ 1 questions

Study	Chisolm-Straker et. al, 2021	Kalitso et. al, 2021	McDow et. al, 2021	Mumma et. al, 2017
No. of questions	4	11	5	14

Table 2: Studies with a positive screening qualification of an answer of "yes" to ≥ 2 questions

Study	Greenbaum et. al, 2018	Greenbaum et. al, 2018 #2	Hurst et. al, 2021	Kalitso et. al, 2018	Peterson et. al, 2022
No. of questions	17	6	6	6	11

Administration Methods of Surveys

The surveys across the studies varied in their administration method, whether it was verbal, written, or electronic. One study used a combination of two administration methods because the intervention included both a written self-reported questionnaire and a follow-up interview with a physician.[30]

Verbal

Six of the ten surveys in the intervention studies were administered verbally.[27,30,31,33,34,37] This was defined as the spoken delivery of screening questions from the data collector to the patient. In two of these studies, the survey was verbally administered by specialized researchers conducting the study.[33,34] In the other four, the survey was verbally delivered by a healthcare provider to the patient in a confidential encounter.[27,30,31,37] The type of

healthcare provider varied among the studies; some surveys were administered by physicians[27,30,31], nurses[27,37], advanced practice practitioners[25], and nurses specifically trained for sexual assault and/or human trafficking[30].

Written

Four of the ten surveys were administered through a printed sheet of paper and completed by patients self-reporting written answers.[29,30,35,36]

Electronic

One survey was administered via an electronic tablet, wherein results were directly computed and evaluated.[32]

Electronic tools

Three out of the twelve studies utilized electronic screening tools[28,32,37], which varied in their technicality and purpose. One study used an electronic tablet to administer a survey, the only study to do so of all the studies reviewed in this paper.[32] This survey was administered confidentially on an electronic tablet in Research Electronic Data Capture (REDCap), a software designed for rapid development and processing of electronic data to support translational research.[32,38]

One study[28] intervened to detect potential victims through utilizing a developed software application called Octavia to scan all incoming hospital patient electronic medical records (EMRs) for any predefined "computational phenotypes" of human trafficking (which was defined as any combination of established red flag keywords). Any patient that matched these criteria was forwarded for review by a specially trained High-Risk Patient Navigator (HRPN)

nurse. The results of this study show that over a 23 month period, Octavia alerted the HRPN system of 1-8 potential victims daily, and overall the HRPN identified a total of 184 highly suspicious or confirmed cases of human trafficking.

Another study[37] incorporated an electronic screening tool to detect potential risk patients, who were then surveyed by healthcare providers to further investigate their victim status. The electronic tool was coded to trigger a best practice alert (BPA) whenever chief complaints commonly associated with exploitation were electronically detected in the patients' EMR.

Medical Record Examinations

Four studies[26,28,31,37] employed medical record examinations as a component of their intervention; only one study[26] used this method exclusively. This study involved the development of a chart abstraction method for abstracting information from patient medical charts that may highlight sex trafficking risk factors. A detailed chart abstraction training manual was created to establish the process for accessing patient medical charts, the protocols for interpreting and reporting provider notes, and documenting data. Researchers manually conducted the chart abstractions and identified suspected victims of trafficking.

One study[31] performed a medical record review in conjunction with a survey administered to child patients to further inform their analysis. The extraction of additional data from patients' medical records was conducted by research personnel. Two studies[,35] used electronic screenings to conduct medical record evaluations, as described previously.

Educational Program

Three studies[29,34,35] applied an educational program or training to their intervention. Two of these[34,35] developed lessons and sessions to educate staff on human trafficking risk factors and

methods of identification, in addition to the administration of surveys to patients to detect victims. One study, however, centered around an educational program as the main impactful intervention.[29] This intervention involved an educational PowerPoint developed in partnership with the police department which taught about local cases of human trafficking, clinical signs to identify potential victims, and referral options for potential victims. Healthcare providers attending the lecture were given a pre- and post- session survey to assess gained knowledge, and their improvement was compared with a control group who were not given the presentation until a later time.

II. Type of Healthcare Facility

The type of healthcare facility in which the intervention was executed varied among the twelve evaluated studies, and all fell into one of the defined categories: emergency department (ED), pediatric ED, pregnancy crisis clinic, teen or child clinic, or a hospital or medical office. ED and pediatric ED were explicitly distinguished to specifically characterize the intervention setting. The vast majority of studies occurred in emergency departments (pediatric and general), and two studies occurred in two different medical settings.

Emergency Department (ED)

Four out of the twelve studies occurred in general EDs in the U.S.[27,29,34,36]. All of these interventions involved a survey questionnaire. Three interventions in the general EDs addressed all adult patients regardless of gender[27,29,34] and one addressed only adult females.[36] Three specifically addressed sex trafficking[27,34,36] and one addressed human trafficking.[29]

Pediatric ED

Five studies took place in pediatric EDs[30–33,37], which all specifically targeted child sex trafficking and all utilized surveys as their screening tool. In two studies, the intervention was implemented in a pediatric ED as well as in a child protection clinic[31] or child advocacy centers and teen clinics.[30]

Pregnancy Crisis Clinic

One study was conducted in a non-profit pregnancy crisis center.[35] This intervention was a quality improvement project consisting of a survey administered to patients as well as staff training and updated methods for recording and screening keywords in patients' medical records. It addressed human trafficking and its population of interest was women in child-bearing years seeking pregnancy care.

Teen or Child Clinic

Two studies took place in a teen clinic[26,30] and one took place in a child protection clinic.[31] One study occurred in an Asian Health Services Teen Clinic that was founded to address and intervene against the increase in teen pregnancies and sexual activity among Asian youth in California, and the intervention was exclusively run in this setting.[26] Another study introduced its intervention in pediatric ED as well as in a general teen clinic providing medical evaluations and care for adolescents with suspected maltreatment.[30] Another occurred in a pediatric ED and its extended child protection clinic.[31]

Hospital or Medical Office

One study occurred in a comprehensive hospital with no further specification.[28] In this intervention, EHRs of all hospital patients were scanned electronically for keywords pertaining to human trafficking.

III. Topics Assessed by Intervention

The topics assessed by the intervention were defined as criteria or characteristics screened in order to detect possible victim status. Interventions were considered to assess a topic if they were survey-based and asked a question pertaining to the topic or if they screened for keywords or risk factors pertaining to a topic through medical record examination or EHR screening. Eight main topics were identified across the twelve interventions evaluated in this review: *physical or sexual abuse; sexual history; history or presence of sexually transmitted infections (STIs); substance use; mental health; family life; behavioral tendencies of secrecy or lying;* and *history of law enforcement involvement*. All interventions except for the educational program for healthcare providers[29] were evaluated for the topics they screened for.

		Topics assessed by intervention							
Author	Article title	Physical/ sexual violence	Sexual history	History/ presence of STIs	Substance use	Mental health	Family life	Coercion, secrecy, lying	History of law enforcement involvement
Chang	Using a Clinic-Based Screening Tool for Primary Care Providers to Identify Commercially Sexually Exploited Children		x	x				x	
Chisolm-Straker	Validation of a Screening Tool for Labor and Sex Trafficking among Emergency Department Patients	x						x	x
Duke	Automated Informatics May Increase the Detection Rate of Suspicious Cases of Human Trafficking-a Preliminary Study.	x	x	x		x		x	
Grace	Educating Health Care Professionals on Human Trafficking								
Greenbaum	Evaluation of a Tool to Identify Child Sex Trafficking Victims in Multiple Healthcare Settings	x	x	x			x		x
Greenbaum	A Short Screening Tool to Identify Victims of Child Sex Trafficking in the Health Care Setting	x	x	x	x		x	x	x
Hurst	Confidential Screening for Sex Trafficking Among Minors in a Pediatric Emergency Department	x	x		x	x	x	x	x
Kalitso	Evaluation of a Screening Tool for Child Sex Trafficking Among Patients With High-Risk Chief Complaints in a Pediatric Emergency Department.	x	x	x	x		x		x
Kalitso	Feasibility of a Screening Tool for Sex Trafficking in an Adult Emergency Department	x	x					x	
McDow	Implementation of a Human Trafficking Screening Protocol	x	x	x				x	
Mumma	Screening for Victims of Sex Trafficking in the Emergency Department: A Pilot Program.	x	x					x	
Peterson	Implementation of a Screening Tool for Child Sex Trafficking among Youth Presenting to the Emergency Department – A Quality Improvement Initiative	x	x		x	x	x		

Physical or Sexual Violence

Ten out of eleven of the screening tools for patients inquired about physical or sexual violence in order to gain insight on the possibility of a patients' victim status.[27,28,30–37] Some of the most common questions asked across the surveys were variations of "have you ever traded sex for money?"[27,32–36], "have you ever been asked or forced by a significant other to have sex with someone else?"[32,33,36], and "have you been hit/ yelled at / raped / threatened / been physically harmed by someone you work with?"[32,34], "have you ever been asked or forced to do some sexual act in public?"[32,33], "Have you ever been knocked unconscious?" [32,33], and "have you ever been forced to pose in a sexy way for a photo or video?".[32] Some surveys inquired about their history of relationship abuse.[26,30–32,35]

Sexual History

Ten interventions screened for sexual history to detect trafficking victims.[26,28,30–37] Some survey interventions screened for sexual history by asking about a patients' total number of sexual partners. Some studies designed the question to be categorical, with the patient answering "one to five partners" or "more than five partners".[30] Another study included the options of "zero" and "more than ten".[32] Some studies asked for an open-ended response of their number of sexual partners.[33] In one study, the intervention scanned electronically for keywords in patient's EHRs such as "sexual exploitation" and "sexual abuse".[28]

History of or Presence of Sexually Transmitted Infections (STIs)

Six studies assessed STI history as to identify victims.[26,28,30,31,33,35] Surveys asked patients variations of the question "have you ever had an STI like herpes or gonorrhea or chlamydia?".[30,33,35] Some studies provided STI testing during the intervention as well.[32,35]

Substance Use

Four interventions assessed substance use.[31–33,37] Most surveys asked about substance use by asking if the patient had used drugs and/or alcohol in the last 12 months[32,33], but one asked generally if the patient had any history of drug use or multiple drug use.[31]

Mental Health

Three studies considered mental health in their screening.[28,32,37] Two surveys asked about the patients' medical history of depression or suicide attempts.[32,37] An electronic screening tool of EHRs flagged patients with depression, suicide attempt, or other mental health disorders in their record.[28]

Family Life / Living Situation

Six studies addressed family life in their intervention.[26,30–32,34,35] Two surveys asked if the patient had ever run away from home[31,32] and five inquired about history of child abuse.[26,30–32,35] One survey asked patients, "do you have permission to eat, sleep, and use the bathroom whenever you want?".[34]

Behavioral Tendencies of Secrecy or Lying

Eight studies incorporated elements to detect a patients' behavioral tendencies of secrecy or lying that might indicate some influence of coercion.[26–28,31,32,34–36] Many surveys asked iterations of the question "have you ever had to lie about the kind of work you do?".[34,35] Some studies got more contextually specific and asked more niche questions like "have you ever had to lie or been afraid to leave an unsafe situation due to fears of violence or threats of harm to yourself or your family?".[27]

History of Law Enforcement Involvement

Five studies considered a patients' history of law enforcement involvement as an indicator to detect trafficking victims. Some studies explicitly asked if the patient had any problems with the police in the past or if they had ever been involved in a crime.[31,33] Some surveys asked questions related to trafficking stemming from migrant smuggling and immigration laws, such as variations of "Is someone else in control of your identification documents (passport, birth certificate, and other IDs)?"[34–36], "Do you owe someone money for making you able to travel to this country?" and "have you ever been threatened with deportation?".[36]

IV. Intervention outcomes

The interventions' effectiveness were evaluated through two distinct measurements: the detection results (defined as the number of positive screens and confirmed victims), and the validation of the tool. These two factors are displayed in table 3 below.

Table 3: Results and Validation Measurements

	Intervention method	**Healthcare setting**	**Sample size**	**Number of positive screens**	**Number of confirmed victims**	**Sensitivity**	**Specificity**	**PPV**	**NPV**
Chang et. al, 2015	MR examination	Teen clinic	621	177	13				
Chisolm-Straker, 2021	Survey	ED	4,127	36		**100%** (95% CI, 100%–100%)	**61%** (95% CI, 56%–65%)		
Duke et. al, 2023	MR examination	Hospital	1,763	184					
Greenbaum, Livings, et al., 2018	Survey	Pediatric ED, child clinics	810		90	**84.4%** (95% CI, 75.3% - 91.2%)	**57.5%** (95% CI, 53.8 - 61.1%)	**19.9%** (95% CI, 16% - 24.3%)	**96.7%** (95% CI, 94.6% - 98.2%)
Greenbaum, Dodd, et al., 2018	Survey	Pediatric ED, child clinic	108			**92%**	**73%**	**51%**	**97%**
Hurst et. al, 2021	Survey	Pediatric ED	212	26		**84.6%** (95% CI 70.8%–98.5%)	**53.2%** (95% CI 46.1%–60.4%)	**20.2%** (95% CI 12.7%–27.7%)	**96.1%** (95% CI 92.4%–99.9%)
Kaltiso et. al, 2018	Survey	Pediatric ED	203	100	11	**90.9%** (95% CI 58.7%–99.8%)	**53.1%** (95% CI 45.6%–60.4%)	**10.0%** (95% CI 5.0%–17.6%)	**99.0%** (95% CI 94.7%–99.9%)
Kaltiso et. al, 2021	Survey	ED	26,974	189	42				
McDow and Dols, 2021	Survey	Pregnancy crisis clinic	304	14	5				

Mumma et. al, 2017	Survey	ED	143	39	10	**100%** (95% CI 70%-100%)	**78%** (95% CI 70%-85%)		
Peterson et. al, 2022	Survey	Pediatric ED	4,354	1,759	18				

Detection results

Nine studies reported the number of patients who screened positive from their screening tool.[26–28,32–37] This number ranged from fourteen positive screens[35] to 1,759[37], with an average of 280 positive screens and a median of 100. Seven studies reported the number of patients that they ultimately confirmed to be victims of trafficking through further investigation after the positive screen. [26,30,33–37] Among these, six were survey interventions[30,33–37] and one was a comprehensive medical record examination.[26] One survey was able to identify, confirm, and support 90 victims of child sex trafficking through their intervention during their study period of eighteen months.[30] The number of true victims of human trafficking detected from these interventions ranged from five[35] to 90 [30], with a mean of 27 and median of 13. Results are displayed above in table 3.

Validation measurements

Six studies performed validation measurements on their tool. The four main validation evaluations assessed were sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV). The sensitivity of a screening tool was the probability of a positive screening in a patient who really was a victim of human trafficking.[39] The sensitivity of the interventions reviewed ranged from 84.4%[30] to 100%[27,36]. Specificity was the probability of a negative screening in a patient who is not considered a victim,[39] which ranged from 53.1% [33] to

78% [36] across these studies. The PPV was the probability that a patient with a positive screening is truly a victim of sex trafficking, and the NPV was the probability that a patient with a negative screening is not a victim. Four studies evaluated all four measurements[30–33] and two evaluated only for sensitivity and specificity.[27,36] The results of these measurements are shown in table 3.

Two interventions with validation evaluations had sensitivities of 100% (95% CI, 100%-100%)[27,36], indicating a very strong probability that these interventions would correctly identify a victim of trafficking. However, of these two interventions, one had a specificity of 61% (95% CI, 56%-65%), indicating that nearly 40% of patients screened produce false positives, which reflects a design that might need to be tailored a bit more.[27] The other study had a specificity of 78%, which reflects a more definitive test.[36] The lowest intervention specificity among the studies was 53.1% (95% CI 45.6%–60.4%)[33] and the mean specificity among the six studies with evaluations was 62.63%. This reflects that overall, the existing interventions developed to detect victims of human trafficking in healthcare settings are characterized by a high probability for false positives.

DISCUSSION

Summary of Findings

The characteristics of existing interventions for detecting victims of human trafficking and their demonstrated impact were processed, reported and distinguished by their instrument type, type of healthcare facility, the topics assessed by the tool, and their results. The vast majority of interventions reviewed were surveys that were either administered verbally by a healthcare provider or researcher or completed by hand by the patient. They occurred in various different healthcare settings, but the majority took place in an adult or pediatric emergency

department. The topics that were questioned or evaluated most commonly throughout the interventions regarded the patients' experiences of physical and/or sexual violence and their sexual history, followed by any behavioral tendencies to lie or be secretive and their history of STIs. This reflects how these topics are most commonly recognized as indicators of possible victimization.

Comparison to Previous Reviews and Literature

Of the three systematic reviews similar to the current one that were identified, a common finding consistent with this review is that there is a lack of stability, uniformity, and reliability among the existing screening tools for human trafficking detection in healthcare settings.[20-22] This finding was also apparent in this modified review. The similar systematic reviews were also comparably limited with the number of studies that matched their inclusion criteria and were acceptable for review. This reflects the general lack of existence of screening tools for trafficking in healthcare and consequent lack of academic knowledge on their characteristics and effectiveness. Furthermore, this implicates a lack of data on knowing how to create the best screening tool or "how to determine the optimal length of questionnaires".[22]

Two systematic reviews mainly found and discussed the lack of consensus in the content and validation of existing tools.[20,22] These findings are in discussion with this review which illuminated the various characteristics of the existing interventions, and no one intervention was the same. Another systematic review, which explored the best practices for identifying victims of sex trafficking in adult emergency departments, found that multifaceted screening tools for identifying victims of human trafficking in healthcare were more effective than standardized screening questions, and called upon the importance of implementing more multidimensional, multi-step comprehensive interventions.[21] This review also found that detection rates are

improved when all emergency department staff receive training on sex trafficking, and acknowledged that the vast majority of emergency departments do not fulfill this important characteristic. Though technical comparisons of validation and effectiveness of the included studies while weighing for their content and characteristics was out of the scope of this review, these findings do appear to be consistent with the general trend that can be evaluated through preliminary synthesis of the extracted data from the included studies. The vast majority of interventions included in this modified review were multifaceted but only a fraction were evaluated for validation and effectiveness.

This modified systematic review fundamentally differed from the compared literature because of its modified nature, while the others were full systematic reviews. This variation accounts for some gaps in more specific conclusions, but overall this review seems to be consistent in conversation with others with its general findings that there is a lack of consistency in the content and characteristics of existing interventions for detecting victims of trafficking in health facilities, and there is a need for further research in order to develop more consistent and reliable tools.

Implications of Findings

This modified systematic review's findings corroborate the necessity for heightened policy development and action towards human trafficking support, as well as the need for further research for implementing screening protocols and resources in healthcare settings. These findings provide insight on the characteristics and impact of existing interventions to detect victims of sex trafficking in the setting of healthcare, and the recognized shortcomings and limitations of these tools implicate the need for more advanced efforts.

First, the ability to ensure reliable impact and detectability of interventions screening for human trafficking in healthcare goes hand in hand with the need for improved equitable access to healthcare in the United States. The studies reviewed in this paper, alongside other literature and general knowledge, indicate that victims of trafficking tend to be minority groups, whether socially or financially.[7,35] This implies that victims of sex trafficking may be less likely to access healthcare, and therefore will never be detected under such interventions. The fact that not everyone can access healthcare services in the U.S. is a barrier to expanding the reach and impact of human trafficking efforts. By not being available or accessible to vulnerable populations, the U.S. is limited in its ability to truly stop trafficking networks.

With that being said, the mission to truly address human trafficking through screening interventions cannot occur only in the healthcare realm. Trafficking is a multifaceted, complex organized crime which means that healthcare must operate within the context of and in collaboration with other public service departments. None of the studies reviewed in this paper acknowledged or discussed T Visa or Continued Presence, the U.S. 's types of immigration authorizations provided to non-citizen victims of human trafficking given that they remain compliant with law enforcements' investigation efforts to locate and arrest traffickers.[40] One study in this review specifically addressed the high rates of potential human trafficking among Asian immigrant populations, yet did not discuss incorporating any mention of or education on government resources to patients as part of the intervention.[26] The social and language barriers that keep immigrants separated from American society are also barriers to education about resource options. Previous literature reveals that immigrants are particularly vulnerable to trafficking in the U.S.[7], so it is crucial that these immigration authorization options are communicated to victims. It may be particularly impactful to emphasize educating patients on

this option or providing pamphlets with information in multiple languages in non-profit healthcare settings, which non-citizen, lower income immigrants are more likely to access.[35]

Another method to increase multidimensional intervention and support to victims of human trafficking is to increase efforts to collaborate between the public health and law enforcement sectors. The law enforcement sector has developed and validated two interventions that should be further drawn upon and restructured for application in healthcare settings. The Enhanced Collaborative Model (ECM) to Combat Human Trafficking, launched in 2010, is a federally-backed, state-based task consisting of protocols for increasing trafficking prosecutions and improving collaboration between local and state law enforcement and victim service providers.[41] This multi-pronged approach to tackling trafficking emphasizes implementing victim-centered approaches to identify survivors of human trafficking, providing services to identified victims, and investigating and prosecuting all forms of trafficking (findings from an evaluation).[42] Though there exists limited research, initial findings indicate that federally funded task forces have the potential to aid in augmenting the number of human trafficking prosecutions. [42] Elements of this multifaceted, comprehensive task force may be impactful for incorporating into healthcare operations, which implies that they should be employed more in the processes of monitoring, aiding, and managing interventions to detect human trafficking in healthcare facilities, both in the stages of detection and connecting victims with necessary resources. Knowledge and resources from federal and state agencies have the power to accentuate the performance of healthcare-based interventions.

The Department of Justice has endorsed a screening tool designed to identify human trafficking created by the Vera Institute of Justice called the Trafficking Victim Identification Tool (TVIT).[43] As of date, this is the only screening tool officially recognized and validated by

the National Institute of Justice. Vera Institute has determined that the tool can reliably identify victims and has been used mainly in law enforcement interactions.[43] This tool was not discussed by any studies synthesized in this review, which reflects a gap in consistent intervention between the healthcare and law enforcement center. This implies a need for more standard application of singular interventions and tools across disciplines for more reliable and validated investigation.

Unfortunately, the nature of human trafficking is a challenge that no governments or research have been able to fully, successfully tackle, and there are no interventions that have been proven to be completely, concretely effective. However, interventions pertaining to relatively comparable problem spaces (such as drug trafficking, domestic violence, substance abuse, and other situations that involve breaking down a barrier of secrecy) can be analyzed and drawn upon to better inform approaches to detecting human trafficking. CRAFFT is the most widely validated and confirmed screening tool for detecting substance abuse in adolescents aged 12 through 21 in the United States.[44] It is a standard in pediatric offices around the country. CRAFFT is a six-item, self-administered questionnaire designed to screen for substance-related risks and concerns in youth.[44] Because of its consistent completion for hundreds of thousands of American adolescents, its results are comparable, standardized and applicable.[45] Developers of interventions for human trafficking should gain insight from problem spaces that also aim to sneak through barriers of patients disclosing vulnerable personal and potentially convicting information. CRAFFT's validity and impact for detecting substance abuse in minors, and the lack thereof in the realm of human trafficking, imply that its structure and characteristics should be evaluated and applied to detecting victims of human trafficking.

When put in conversation with existing policies, interventions, and related contexts, this review suggests the need for greater collaboration and partnership between the healthcare and

law enforcement sectors, while maintaining a balanced and victim-centered approach emphasis. It also emphasized the need for a standardized method to incorporate into healthcare facilities. The difficulty in properly addressing and acting on human trafficking stems from its secretive and complex nature, which has prohibited any concrete interventions to improve detection anywhere in the world. Though some interventions and protocols exist, they are not concretely validated because of a lack of research. For this reason, it is most beneficial to expand to guidance from relatively similar problem spaces– as suggested, tools such as CRAFFT used in detecting substance abuse among minors. Nonetheless, the most important necessities for action in the U.S. are increased accessibility of information and services to potential victims of human trafficking, heightened funding for research, more open-mindedness in designing tools and protocols, and greater cross-discipline collaboration.

Limitations of the Studies

In interpreting the studies reviewed, it is critical to acknowledge the limitations that may confound the reliability and generalizability of the results. First and foremost, the complex and underground nature of human trafficking is a major constriction on the applicability functionality of the interventions studied. This limited the impact of the methodology of the studies because many studies used self-reporting surveys as their screening instrument, which are limited in nature by their potential for false answers. Considering the pressure victims of trafficking are under to not expose their situation, it is reasonable to believe that victims may not share the full truth about their experience with their healthcare provider so as not to draw attention to themselves and run the risk of facing punishment. This is exacerbated by the fact that the patient may not have a trusting relationship with their healthcare provider, especially in settings such as adult or pediatric emergency rooms, where the provider and patient interact in emergency

situations but typically have not worked together and built a bond over time. The majority of studies in this review occurred in EDs, which raises questions about the possibility of untruthful responses in many of the ED surveys. Some studies also reported that they found patients contradicting their answers later on.[32] Furthermore, the final determination of the patients' victim status was not always possible or available, because it takes time and resources to uncover that truth, and because true victims may have lied.[32,36] Since the nature of human trafficking imposes fear on victims' truthfulness, and because many of the symptoms or topics assessed were self-reported, there was the risk for purposeful human error in the patients' action of not disclosing the truth.

The representativeness of the studies were also limited by their samples. Many studies were only able to work with convenience samples, which restricted their generalizability.[30–33,35,36] One study also cited a potential "limitation in screening was the potential unconscious bias that trafficking primarily involves women, which may have led clinicians to preferentially screen female patients".[34] Socioeconomic barriers also placed a significant restriction on generalizability. Given the U.S.'s mixed system healthcare model and the extreme out of pocket prices, not all victims of human trafficking are able to access healthcare because of inability to pay. More specifically, they may be limited by a lack of health insurance, lack of citizenship, or prohibition from their trafficker. Furthermore, language barriers constrained the ability of interventions to serve their true community. According to one study, "only 4 Spanish-speaking patients were enrolled, although a large percentage of the local population is Spanish-speaking only".[32] Thus, analysis of the true impact of the interventions was limited by factors impairing their ability to reach the true population of affected individuals.

Limitations of the Review

This modified systematic review is limited by the nature of its restrictions. It was carried out by one researcher instead of a team, confined within a time bound of less than three months (from the middle of January to early May). The researcher was also confined by a lack of resources and could only draw the review from sources found on academic databases or public search engines. Furthermore, the scope of the research question had to be narrowed to be appropriately answerable within these constraints. It may have been beneficial to consult expert resources to run comprehensive statistical analyses across the reviewed studies to process outcome results and assess the detection rate impact among interventions of varying characteristics. Lastly, this review only covered interventions to combat human trafficking in healthcare facilities in the U.S., but a more wide-scale and impactful review could have been done if all interventions developed across the world could be compared and synthesized together. This would have opened up more content for understanding the true characteristics of tools for detecting victims in healthcare than what could have been accomplished in this review.

Recommendations for Future Research

To understand how to detect victims of human trafficking better, research into the topic and efforts to address it must also incorporate consideration from related problem spaces such as substance abuse identification, as discussed previously. In terms of research for constructing interventions, gaining more well-rounded insight into how to crack victims' tendencies to fear disclosing personal information to untrusted authorities would be beneficial for designing the most impactful possible interventions. This may also involve psychological or psychiatric consultations and analysis of how to know when a victim may be lying. Researchers should also consider conducting studies implementing previously validated or used interventions in healthcare settings to generate more research on already existing resources. This would be more

time and cost effective and provide the opportunity for both saving more potential victims, and gaining more meaningful insight that could lead to more widespread application of an intervention.

Future research should also aim to address and study populations that tend to be more vulnerable to human trafficking, specifically migrant populations. This may mean targeting the implementation of interventions in more migrant-dominated zones, low-income neighborhoods, and urban settings. Moreover, future research should aim to incorporate interventions in non-profit healthcare settings to strive for representation of persons without health insurance in the United States, a group that is likely to be at higher risk. This would also necessitate the administration of interventions in languages other than English in order to attempt to overcome language barriers.

CONCLUSION

This modified systematic review sought to understand the characteristics of existing interventions for detecting victims of human trafficking in healthcare settings in the United States and their demonstrated impact in order to draw a bigger picture of the United States' healthcare systems' official recognition and organized effort to address human trafficking. The review synthesized twelve interventions addressing human trafficking in health services, which shed light into answering the research question and also highlighted the various significant shortcomings of current intervention options. Among the few existing tools and protocols, the vast majority were surveys, they occurred in various types of healthcare settings, they addressed multiple varying risk factors for human trafficking, and most were not analyzed for validation measurements. The findings indicate that the healthcare sector shows potential as being an

effective setting for breaking barriers to illuminate victims and connecting them with services, but the U.S. healthcare system needs a standardized, coordinated approach or method to address human trafficking, such as CRAFFT is a standardized method for detecting substance abuse among minors. This would be most effective with collaboration from other disciplines, notably the mental health sector, immigration and social services, and law enforcement. Most importantly, human trafficking is a serious problem for global public health, justice, and security that necessitates more advanced research efforts and recognition.

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