

The Impact of Human Trafficking Training on Healthcare Professionals' Knowledge and Attitudes

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ABSTRACT

OBJECTIVES: The objective of this study was to evaluate a CME-accredited human trafficking didactic and discussion-based training for healthcare professionals by comparing participant knowledge and attitudes on human trafficking before and after attending the training.

METHODS: A novel 18-item survey was developed to test the knowledge of and attitudes towards human trafficking. Participants of 17 standardized trainings delivered by 4 physician-trainers over a two-year period were invited to take a pre-test and 2 post-tests at 1-week and 6-months post training. Surveys were anonymously collected and linked to each participant with a de-identified number. Data were analyzed using SPSS software with scores given to the overall and knowledge and attitude subscales. Data are presented as mean \pm standard deviation. Comparisons were made using paired t-tests or ANOVA, as appropriate.

RESULTS: Total of 424 participants submitted the pre-test and were predominantly female (81%) and students in healthcare fields (55%). Of these participants, 237 (56%) submitted the 1-week post-test. Scores increased from pre-test to 1-week post-test in both knowledge ($54.7 \pm 18.7\%$ - $84.5 \pm 12.8\%$, $P = .001$) and attitude ($49.4 \pm 14.7\%$ - $71.0 \pm 12.8\%$, $P < .001$) subscales. Forty-seven participants (11%) submitted the 6-month post-test, which demonstrated a decrease in knowledge score from the 1-week post-test ($84.5 \pm 12.8\%$ - $50.0 \pm 13.6\%$, $P < .001$). However, improvements in attitude scores were sustained across time ($71.0 \pm 12.8\%$ - $68.8 \pm 12.4\%$, $P < .001$).

CONCLUSIONS: Among health professionals, the CME-accredited LIFT training leads to a short-term improvement in knowledge of human trafficking and a sustained improvement in awareness and attitudes about human trafficking.

KEYWORDS: Human trafficking, medical education, continuing education

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Introduction

Human trafficking (HT) is defined by the United Nations as the recruitment, transportation, transfer, harboring, or receipt of persons by improper means, such as force, abduction, fraud, or coercion, for the purpose of exploitation.¹ Exploitation manifests itself in many forms, including forced labor, sexual exploitation, military involvement, or harvesting of organs. HT is not only a criminal justice issue—it is an important public health issue. Within 2018, Polaris reported that they investigated over ten thousand cases of HT across all fifty states and the District of Columbia.²

A trafficked person's interface with a healthcare professional provides a unique opportunity for identification, intervention, and assistance.³⁻⁶ Studies report that 68% to 88% of trafficked persons encounter a healthcare professional during their period of exploitation.^{4,7} Many physicians, however, continue to miss signs of trafficking primarily because of lack of training,⁸⁻¹⁰ and

most report lack of confidence in their ability to identify and treat victims.^{11,12}

Several training programs have been developed over recent years in response to this lack of provider education, and many states are now responding to the call for education by mandating that medical students and any healthcare professionals renewing their state licenses undergo HT training.¹³ In response to this need, the American Medical Women's Association and Physicians Against Trafficking of Humans (AMWA-PATH) developed the Stand Up to Sex Trafficking: Awareness, Implementation, and Networking (SUSTAIN) curriculum in 2017. The SUSTAIN curriculum was a free, level 1 CME-accredited training presented by physician-experts in HT to healthcare professionals across the United States. In 2019, the training was updated to include labor trafficking, and the curriculum was subsequently retitled Learn to Identify and Fight Trafficking (LIFT); for the



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purpose of this paper, the training will henceforth be referred to as LIFT.

If these training programs are to be mandated, evaluation of their content, quality and efficacy is essential. The Health-Education-Advocacy-Linkage (HEAL) organization has created an assessment tool to assist curriculum creators in ensuring accuracy and comprehensiveness of their trainings.^{14,15} The LIFT training program meets all the criteria of the HEAL assessment. However, to truly understand the impact of these trainings on their target audience—healthcare professionals who may be caring for trafficked individuals—these curricula need to be evaluated for their impact on knowledge, attitudes and confidence in responding to HT in clinical practice.

The primary objective of our study was to evaluate the LIFT training curriculum by describing and comparing attendee knowledge and attitudes towards HT from baseline to immediately post-training. Our secondary objective was to determine whether changes in knowledge and attitudes are sustained 6 to 8 months following training by comparing immediate post-training scores to long-term post-training scores. We hypothesized that participants' knowledge and attitudes towards identifying and managing victim-survivors of HT would improve immediately post-training and be maintained at long-term follow-up.

Methods

This was a prospective cohort study of healthcare providers who self-registered to attend 1 of 17 LIFT training events held between January 2018 and November 2019. Trainings were held in Philadelphia, PA (2); Honolulu, HI; Houston, TX (2); Piedmont, CA; Sacramento, CA; San Diego, CA; Phoenix, AZ; Indianapolis, IN; Tacoma, WA; San Antonio, TX; Santa Barbara, CA; Des Moines, IA; New York, NY; Ivins, UT; Austin, TX. The training events were open to adults of all ages, genders, races, professions, and education levels, and offered 4.0 CME credits to physicians, physician assistants, nurses, nurse practitioners, and social workers at all levels of training; these credits were provided through the Indiana University School of Medicine.

The LIFT training events provided education on identification of and assistance for HT victims. The learning objectives included being able to describe the scope and prevalence of problems of HT in the United States, recognize the warning signs that raise suspicion for possible HT victimization, prepare to identify and assess trafficked persons who present to the healthcare setting, and recall trauma informed methods to clinically evaluate and treat patients suspected of HT. The first portion of the session consisted of didactic PowerPoint content to meet objectives of the training with the incorporation of active group discussion to facilitate learning. The second portion of the session included panel discussion by community partners engaged in HT work. Community partners were identified through The Referral Directory by the National Human Trafficking Hotline,¹⁶ Antislavery Directory by End

Slavery Now,¹⁷ and state coalitions. The aim was to include representatives from each of the following areas: nonprofit or shelter system service provider, law enforcement usually within the police department sex crime unit, legal system, and state coalition. If no community partners were identified by the above method, a Google search was conducted, followed by a phone or email communication to ensure the organization was appropriate to function as a panelist. Trainings were conducted over 4 hours in a single session and led by 1 of 4 LIFT physician trainers. To ensure consistency between training, each trainer was trained by the lead trainer (KT) and was required to co-lead a training with the lead trainer prior to independently leading a session. Trainers also followed a general script that highlights necessary teaching points. After each training session, the CME-accrediting institution conducted quality analysis.

Participants attending the LIFT training were asked to complete a pre-training questionnaire regarding their knowledge (8 questions) and attitudes (10 questions) around HT (Appendix 1). The questionnaire was written by the LIFT physician-experts to cover key concepts taught in the training and to capture the confidence of trainees in identification and evaluation of HT. Surveys were provided on paper for the first 3 trainings and then converted to electronic format. The baseline questionnaire was distributed to individuals registered for the training 24 to 48 hours prior to the event. Immediately following the training, participants were sent an identical post-training questionnaire which was open to completion for 1 week. About 6 months following the training, participants were sent an identical third questionnaire which was available for completion for 2 months. Surveys were anonymous and participants were given a four-digit identifier that would be used to link pre-, post- and follow up tests across time. Participation in all surveys was voluntary, and attendees were informed that PATH would donate 5 dollars to the National Survivor Network for every individual that completed all 3 surveys.

Data were collected and analyzed in SPSS Version 25 (Chicago, IL). Knowledge questions were scored as "correct" or "incorrect" with 1 point given for correct answers. Total possible points for knowledge questions were 8 points. Knowledge score data are reported as mean \pm standard deviation (SD). Attitude scores were assessed on a seven-point Likert scale with higher scores indicating greater agreement with the question. Attitude scores are presented as median interquartile range [IQR] but were also converted to percentage scores to score the overall test. Percentage score conversion was performed by adding the Likert value given to each question (questions where a "definitely no" answer was preferred were scored in the inverse) and dividing by a possible total score of 70 (10 attitude questions). The overall points from knowledge and attitude were weighted equally. Continuous variables were analyzed with independent or paired samples *t*-tests or Mann Whitney *U*, as appropriate. For the primary outcome

Table 1. Demographics of LIFT survey responders.

	PRE-TEST ONLY (N=422) %	PRE- AND POST-TEST (N=224) %	P-VALUE (COMPARED TO PRE-TEST)	PRE-, POST-, AND 6-MONTH TESTS (N=62) %	P-VALUE (COMPARED TO POST-TEST)
Demographics					
Gender			.72		.08
Male	19	14		13	
Female	81	86		87	
Professional role			.12		.32
Undergraduate student	4	5		3	
Graduate student (MD, RN, APP, SW)	55	54		61	
Medical/surgical resident	4	4		0	
Non-medical graduate student	2	1		2	
Practicing physician	34	34		34	
Other	1	1		0	
Specialty (*of those differentiated)	n=149	n=89	.97	n=34	.81
Pediatrics	23	23		26	
Adolescent medicine	5	4		3	
Psychiatry	5	6		0	
OB/GYN	20	20		8	
Emergency medicine	25	22		21	
Internal medicine	7	9		21	
Family medicine	15	16		21	

Abbreviations: AAP, advanced academic program; LIFT, learn to identify and fight trafficking; MD, doctor of medicine; OB/GYN, obstetrics and gynecology; RN, registered nurse; SW, social work.

comparing baseline to immediate post-test scores, only 33 paired participant scores were needed to find an effect size of .5 with 80% power and an alpha of .05.

Results

A total of 422 HT trainees attended 17 separate training sessions between January 2018 and November 2019. About 81% of participants identified as female. The majority (55%) of participants were students (medical, nursing, social work, physician assistant) or physicians who had completed medical training and were in practice (34%). Of the healthcare professionals who had differentiated into a specialty, 25% practiced emergency medicine, 22% were in pediatrics, 20% in obstetrics, and 15% in family medicine (Table 1).

Mean \pm SD score on the pre-test was $49.7 \pm 14.0\%$ overall with knowledge subscale score of $51.3 \pm 20.4\%$ and attitude subscale score of $48.3 \pm 14.3\%$. Questions with the lowest percentage of correct answers on the knowledge pretest section were “What percentage of U.S. trafficking victims are U.S. citizens?” (11% answered correctly) and “The number for the

National Human Trafficking Resource Center is:” (11% answered correctly). The question with the lowest median IQR scores on the attitude section was “I feel comfortable training/teaching other professionals about sex trafficking” (1 [1-1]) (Table 2).

There were no differences in pretest scores between male and female participants ($P=.61$) or between participants in various specialties ($P=.86$) but those who identified as physicians in practice had higher pre-test scores than those who identified as students ($55.6 \pm 14.4\%$ vs $49.7 \pm 12.5\%$, $P=.01$).

Two hundred and twenty-four participants (53%) completed the post-course test within 1 week of the training. There were no demographic differences between those who completed the post-test and the baseline cohort of pre-test takers (Table 1). There were no differences in overall post-test scores between the 4 training facilitators ($P=.26$).

Among these 224 participants, mean \pm SD score on the post-test improved from $50.18 \pm 13.0\%$ to $79.9 \pm 9.2\%$ overall with knowledge subscale score improvements $53.1 \pm 18.9\%$ to $84.8 \pm 13.8\%$ and attitude subscale score improvements from

Table 2. Change in knowledge and attitude between tests.

	PRE-TRAINING (N=422)	1-WEEK POST-TRAINING (N=224)	6-MONTHS POST-TRAINING (N=62)
Knowledge (Mean \pm SD) %	51.3 \pm 20.4	84.8 \pm 13.8	76.9 \pm 15.6
Attitude (Mean \pm SD) %	48.3 \pm 14.3	75.1 \pm 10.5	71.2 \pm 10.4
Attitude (Scale 1-7 with 1: Definitely No; 7: Definitely Yes)	Median (IQR)	Median (IQR)	Median (IQR)
I am aware of the issues of sex trafficking and its victims.	4 (2-5)	6 (5-7)	6 (5-6)
I know the warning signs of human trafficking	3 (2-4)	6 (5-6)	6 (5-6)
I know how to interview patients who I suspect have been trafficked for sex	2 (1-3)	5 (4-6)	5 (4-5)
I feel comfortable talking with patients who I suspect have been trafficked for sex.	2 (1-4)	5 (4-6)	5 (4-6)
I know techniques to provide safety for sex trafficking victims when intervening or providing resources.	2 (1-3)	5 (4-6)	5 (4-6)
I have at least one resource for patients who are victims of sex trafficking	2 (1-5)	7 (6-7)	7 (5-7)
I feel comfortable training/teaching other professionals about sex trafficking	1 (1-3)	4 (3-5)	4 (2-5)
Healthcare professionals are duty-bound to rescue patients who are victims of sex trafficking	5 (3-7)	3 (1-5)	3 (2-5)
We can rid the world of human trafficking	4 (2-5)	4 (3-6)	5 (5-6)
I can make a difference in the fight against human trafficking	7 (5-7)	7 (6-7)	7 (6-7)

Abbreviation: IQR, interquartile range.

47.2 \pm 13.9% to 75.1 \pm 10.5% ($P < .001$ for all 3 comparisons). The greatest improvement was seen in the knowledge question, “The number for the National Human Trafficking Resource Center is” (11% correct–95% correct, $P < .001$).

At 6-months after the training, 62 participants (15%) completed a third assessment. Overall mean \pm SD score on this “retention of information test” decreased from 80.6 \pm 11.2% on the immediate post-test to 74.1 \pm 10.7% at 6 months ($P = .01$) with a significant reduction in the knowledge subscale score from 86.2 \pm 15.1% to 76.9 \pm 15.6% ($P < .001$) and a small but significant decrease in the attitude subscale score from 75.0 \pm 12.8% to 71.2 \pm 10.4% ($P = .01$).

However, for the 62 participants surveyed prior to the training, their overall knowledge and attitude scores around HT improved significantly from 51.3 \pm 13.6% (baseline) to 74.1 \pm 10.7% at 6 months follow-up ($P < .001$).

Discussion

Our study supports the efficacy of the LIFT curriculum in improving both short and long-term knowledge about human trafficking as well as attitudes towards identifying and intervening in cases of human trafficking among a multidisciplinary group of healthcare professionals. Our data demonstrated that

within a week of training, there was a 30-point improvement in overall questionnaire scores and while scores decreased slightly by the 6-month timepoint, they were still significantly higher than pre-training scores.

The LIFT curriculum was developed to address the lack of training on human trafficking among healthcare professionals. In one study that surveyed healthcare providers across specialties most likely to interface with victim-survivors of HT, 68% reported never having received training regarding identification.⁸ Another study, which assessed HT training specifically within Family Medicine residency programs, revealed that it was required in only 35% of programs.¹⁸ A study in England found that 78% of study respondents indicated they lacked sufficient training in how to identify victim-survivors of HT.¹² Several curricula have been developed to address this need in recent years, however, as Coughlin et al¹⁹ assert, there remains the need for published outcomes data for these curricula on immediate and sustained changes in knowledge, attitudes, and practices in the professionals they attempt to educate.

Additionally, since care of the trafficked individual requires interdisciplinary collaboration between legal, medical, and social services, effective trainings need to be individualized to include local laws and introduction to local organizations and

stakeholders.¹⁹ LIFT uniquely connects these key stakeholders with training attendees at each event during the final hour of the training. This individualization, along with the other unique aspects of LIFT (role-playing interactions, problem-based learning style, developed together with survivors of HT) contributes to its high-quality and its ability to meet all HEAL Trafficking and Laboratory to Combat Human Trafficking criteria and has earned it CME credit.¹⁵

Our finding of long-term attrition of knowledge is consistent with what Nordstrom²⁰ found in their assessment of human trafficking training in another group of multidisciplinary professionals—key knowledge declines over time without repetition. In addition to formally reviewing information surrounding HT, experience or practice-based learning is important for long-term retention. One way to utilize this type of pedagogy may be incorporation of HT cases in an Objective Structured Clinical Exam (OSCE). Many participants (54%) of the study were students in a healthcare field. Thus, survey data presented here are likely very applicable to student learners and could address and resolve the lack of HT training in US medical schools.²¹ Incorporation of HT cases in OSCE may be more likely to influence changes in clinical practice than discussion or lecture-based learning because it facilitates competence in caring for trafficked patients in tandem with establishing one's practice habits and routines. Thus, including HT victimhood or survivorship in the differential diagnosis for any given patient, particularly those with evident risk factors, becomes increasingly likely. For practicing clinicians, practice-based learning is likely more difficult to implement, particularly on a national level. Nonetheless, it is possible, and a CME-accredited learning opportunity for healthcare providers such as LIFT training can provide one such avenue for this to occur.

Lastly, in the era of advanced technology and circumstances where social distancing limits in-person training opportunities, online or video training is becoming an essential method of content delivery. Studies have shown that online training improved subjective confidence of healthcare professionals in identifying victims of HT.^{8,22-24} AMWA-PATH recently published the LIFT curriculum through education webinars. Unlike in-person training, the pre-recorded online training may be more consistent but lacks the role-playing and local resources portion of the training. As with in-person training, separate evaluation of the impact of the online training modules would provide the best insight about strengths and limitations of the online HT educational environment.

This study is strengthened by the diversity of participants included. The study included participants from fifteen different cities across the United States and was open to participants of all disciplines within the healthcare profession and different levels of training. No differences in the knowledge and attitudes scores were observed between training sites across the United States nor among participants of varying levels of training nor from various specialties. Thus, the results of the study can be generalized to the larger population.

The study has several important limitations. First, despite assessing attendee knowledge and attitudes changes, actual practice changes were not evaluated. This remains a commonly neglected marker of training efficacy, as only one study has assessed practice changes of healthcare providers at 3 months post-HT training and measured by appropriate patient referrals and, unfortunately, the researchers found no change in provider practices.²⁵ However, according to Powell et al,²⁶ the number of healthcare professionals calling the National Human Trafficking Hotline has surpassed that of the general population. In conjunction with increasing training during the same period, one can infer that increase in awareness by healthcare professionals has led to some level of change in practice. The fact remains, however, that this is an important and persistent gap in curriculum evaluation. Second, enrollment in the LIFT training was voluntary and based on participant interest. As evident from the demographics, trainees were predominantly female and those who were not students primarily represented several primary care specialties. It is unclear how much personal interest in the subject impacted the results of the training and whether the results would be consistent if the training were mandatory for all healthcare providers. Because the pre- and post-tests were developed with the first version of the training (SUSTAIN) the knowledge and attitude questions more heavily emphasized sex trafficking over labor trafficking, and this would need to be changed in the future. Finally, the survey response rate was 53% of baseline for the immediate post-training survey and 15% of baseline for the long-term survey; nonetheless, we exceeded the necessary sample size at both time points to show a significant change in paired scores.

Despite these limitations, this study provides much-needed evaluation and quantitative analysis of a national HT training for healthcare professionals. The LIFT curriculum demonstrates a significant and sustained improvement in participant knowledge and attitudes regarding identifying and responding to HT in a clinical setting. Furthermore, the study confirms that LIFT is a standardized and consistent training for multidisciplinary healthcare professionals across the United States.

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Author Contributions

Study concept and design: HL, JG, SH, KT. Interpretation of data: HL, JG, SH, EA, SC. Drafting of the manuscript: HL, JG, SH, EA, KT. Critical revision of the manuscript: HL, JG, SH, EA, SC, KT.

Data Availability Statement

Data and supplemental contents are available for this article.

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Appendix 1. Eighteen item survey questions.

Knowledge questions
In the following section we will ask you about your knowledge, skills and attitudes regarding sex trafficking. Please do NOT use any outside resources to answer these questions, as they are intended to test your basic knowledge.
<p>Q1. Human trafficking is occurring:</p> <ol style="list-style-type: none"> Internationally in countries such as Thailand, Nepal, Czech Republic, and Honduras. Internationally, and domestically in border states and in major U.S. cities. Internationally and in all 50 states and the District of Columbia. Internationally in developing nations, and in the U.S. among immigrant and minority populations.
<p>Q2. Children trafficked for sex:</p> <ol style="list-style-type: none"> Are seen in a variety of medical settings including family medicine and pediatrics clinics, adult and children's hospital emergency departments, operating rooms, obgyn clinics, and delivery rooms. Do not see healthcare workers routinely, since many of them are poor, non-English speaking, and/or illegal immigrants whose documentation has been taken from them. Are seen in clinics and adult hospital emergency departments; because they always try to pass for older, they do not present to children's hospitals or clinics. Only present with the most severe injuries, since they are frequently held captive
<p>Q3 According to the U.S. State Department, what percentage of U.S. trafficking victims are U.S. citizens?</p> <ol style="list-style-type: none"> 10% 30% 55% 85% 95% I don't know
<p>Q4. The number for the National Human Trafficking Resource Center is:</p> <ol style="list-style-type: none"> 1-800-422-4453 1-888-373-7888 1-800-273-8255 1-888-656-5656 1-800-656-4673 I don't know

(Continued)

Appendix 1. (Continued)

<p>Q5. Which of the following is NOT part of a trauma-informed gynecological exam?</p> <ol style="list-style-type: none"> Allow the patient to keep on any clothing (s)he wants Start with the smallest speculum and size up as needed. Allow the patient to insert the speculum Perform the exam as quickly as possible. Perform a bimanual exam from the side of the patient.
<p>Q6. A 16-year-old boy is brought into care by his uncle. During the confidential history-taking, he discloses that he is being trafficked for sex. He does not wish for anyone to know about his circumstances. After reminding him of the limits of patient-physician confidentiality in the case of minors, what is the next best step?</p> <ol style="list-style-type: none"> Respect his wishes and provide a follow-up appointment. Report to your state child welfare office, ask him if he would like you to call the police, and contact the National Human Trafficking Hotline. State openly and compassionately that you will need to perform a forensic exam and call the police immediately. Inform the patient that you will need to speak with his uncle and call the police immediately
<p>Q7. Please select Yes/True or No/False for the following statements: The state where I primarily practice/study has a human trafficking reporting law.</p>
<p>Q8. Please select Yes/True or No/False for the following statements: The entry point into sex trafficking for most victims is being kidnapped by their traffickers.</p>
<p>Attitude questions (7 point Likert scale)</p>
<p>Q9. I am aware of the issues of sex trafficking and its victims.</p>
<p>Q10. I know the warning signs of human trafficking</p>
<p>Q11. I know how to interview patients who I suspect have been trafficked for sex</p>
<p>Q12. I feel comfortable talking with patients who I suspect have been trafficked for sex.</p>
<p>Q13. I know techniques to provide safety for sex trafficking victims when intervening or providing resources.</p>
<p>Q14. I have at least one resource for patients who are victims of sex trafficking</p>
<p>Q15. I feel comfortable training/teaching other professionals about sex trafficking</p>
<p>Q16. Healthcare professionals are duty-bound to <i>rescue</i> patients who are victims of sex trafficking</p>
<p>Q17. We can rid the world of human trafficking</p>
<p>Q18. I can make a difference in the fight against human trafficking</p>