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Research article

Nursing students' knowledge of and exposure to human trafficking content in undergraduate curricula

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ABSTRACT

Background: Human trafficking is a public health crisis. Perpetrators of human trafficking gross billions of dollars annually from the sale of human cargo. Due to its pervasive and hidden nature, these crimes are happening at exponential rates, but go undetected. Lack of identification of these victims are seen across numerous disciplines such as law enforcement, social services, education, judicial services, and healthcare. One of these barriers in identification is lack of proper education. Within the healthcare disciplines, a majority of victims are seen by a healthcare professional during their trafficking, yet remain unidentified. With over 4 million nurses in the U.S., they are ideally situated to identify and treat these individuals, if properly educated.

Objective: This study examined RN nursing students' knowledge of and exposure to human trafficking content in pre-licensure undergraduate curricula.

Design/setting/participants: A cross-sectional quantitative study using the National Student Nurses' Association was conducted. Data were collected electronically via email recruitment of its members yielding a total sample population of $n = 644$, which included current and recently graduated RN undergraduate nursing students.

Methods: The researchers' developed tool, *Student Nurse Human Trafficking Education Assessment Tool* (Cronbach alpha coefficient of 0.828), was sent via email. Descriptive statistics, *t*-tests, one-way between groups ANOVA, correlation procedures, and multiple regressions were conducted using SPSS 27.

Results: Findings showed approximately all participants reported minimal to no human trafficking content taught in undergraduate nursing curricula. Over three-quarters of participants reported some to no human trafficking knowledge. <5 % of participants reported having full confidence in recognizing signs or clinical presentations of human trafficking in a client, as well as executing their role as a current/future healthcare professional in intervention and response to a victim. Multiple linear regressions showed significant predictors for outcome variables of confidence in recognizing signs or clinical presentations of human trafficking in a client, and in executing the role as a current/future healthcare professional in intervention and response to a victim as number of minutes taught on human trafficking, perceived human trafficking knowledge, and attending a school in a mandated state for continuing education on human trafficking for licensed healthcare professionals.

Conclusions and implications: Human trafficking content is taught at a minimal to zero amount in pre-licensure RN nursing curricula. Only eight states mandate continuing education on human trafficking for healthcare professionals. Once licensed, nurses who live in non-mandated states continue to be irregularly/inadequately educated on this topic. The data suggest that human trafficking content is not present in most pre-licensure RN nursing curricula. The implications of this study strongly suggest that human trafficking content be taught across all undergraduate RN programs with continuing education mandated in all U.S. states and U.S. territories.

1. Introduction

Human trafficking (HT) is a public health crisis that infiltrates all demographics, cultures, societies, and geographical locations (Toney-Butler et al., 2023). It is a form of modern-day slavery that is occurring at alarming rates. As one of the fastest-growing criminal enterprises around the globe, grossing approximately $150 billion annually (U. S. Department of Homeland Security, 2022), the pervasiveness of HT is

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unparalleled, as it is estimated that 50 million individuals are trafficked worldwide (International Labour Organization, 2022).

Cases of HT have been reported in every state and all U.S. territories (Office on Trafficking In Persons, 2020). A majority of these victims are seen by a healthcare professional (HCP) during their trafficking (Jones Day, 2022a), yet they remain unidentified. With over 4 million nurses currently employed in the U.S. (U. S. Bureau Labor of Statistics, 2022a; 2022b; 2022c; 2022d; 2022e) and voted the most trusted profession for the past 22 years (Gallup, 2023), nurses are ideally situated to identify, treat, and empower these individuals, if properly educated.

2. Background

HT is an exploitation-based crime against a person for commercial sex, labor, or services. Across the world, millions of victims are held in physical or psychological bondage and are exploited through various forms of trafficking (Shift, 2022). Blinded by the myth that HT only occurs in foreign lands or remote places in the world, the American people remain largely unaware of these crimes taking place in their own country (Nurses United Against Human Trafficking [NUAHT], 2022; Shift, 2022).

2.1. The intersection of human trafficking in healthcare

Although HT has been long recognized as a law enforcement, social service, and judicial issue, it is known that a majority of trafficked persons in the U.S. access healthcare at some point during their exploitation (Grace et al., 2014; Jones Day, 2022a). Healthcare settings provide a point of intersection and a unique opportunity to identify, treat, and assist victims of HT. HCPs have access to this population while they are being trafficked, as these victims can experience emergent medical conditions, opioid use disorder, overdose injuries, sexually transmitted infections, unwanted pregnancies, medically unsafe abortions, and mental health issues such as suicidality, depression, and anxiety disorders (Toney-Butler et al., 2023). Although this intersection occurs, data show that HCPs routinely fail to recognize these trafficked patients and fail to mandatory report in cases involving a minor.

Identification failure stems from victim nondisclosure and, more importantly, from providers failing to recognize the signs of trafficking (Chisolm-Straker et al., 2016). In a study by Chisolm-Straker et al. (2012), emergency department (ED) HCPs with $n = 180$ filled out a self-report of prior knowledge about HT, relating to patient care. Nearly all ($n = 176$, 97.8 %) reported never having received formal training on the clinical presentation of trafficking victims, and 95 % reported never having received formal training on the appropriate treatment of trafficking victims (Chisolm-Straker et al., 2012). Only 4.8 % of emergency care professionals reported confidence in their ability to identify HT victims, and only 7.7 % of respondents reported feeling confident treating a victim of HT (Chisolm-Straker et al., 2012). These statistics highlight missed opportunities for identifying victims of HT and illustrate the need to improve anti-HT education in healthcare settings.

A qualitative study by Long and Dowdell (2018) examined the interactions and experiences of nurses working in an ED in a level one trauma center with a large HT population. The sample consisted of 10 registered nurses (RNs) with experience ranging from 3 to 38 years in practice. Four were certified emergency nurses (CENs) and one was a sexual assault nurse examiner (SANE). Some themes that emerged were, HT "exists in the patient population" yet no nurse screened or treated a victim; HT victims were stereotyped as "young, female, and foreign-born", victims of violence as "sad and grieving", and prostitutes as "hard and tough"; and ED nurses did not have education on HT victims' needs or resources (Long and Dowdell, 2018, p. 375). In addition, all 10 participants in the study reported never having received prior formal education on HT, nor did they know how to identify victims of HT (Long and Dowdell, 2018).

Lederer and Wetzel (2014) conducted a mixed-method study looking at the health consequences and healthcare experiences of women and girls trafficked in the U.S. for commercial sex. Qualitative data from focus groups and structured interviews with quantitative analysis through the use of surveys were obtained. Of the $n = 106$ survivors who participated, $n = 105$ (99.1 %) reported at least one physical health problem during their trafficking and $n = 98$ (87.8 %) reported being seen by an HCP during that time (Lederer and Wetzel, 2014). Despite the red flags manifested by the participants as high indices of suspicion indicators of sex trafficking, they were not identified as possible trafficked persons (Lederer and Wetzel, 2014).

In an anonymous retrospective study of survivors of HT ($n = 173$), Chisolm-Straker et al. (2016) examined how frequently survivors interacted with an HCP while being trafficked. Sixty-eight percent of respondents ($n = 117$) reported being seen by an HCP. The most common complaints requiring treatment were physical abuse, self-diagnosed depression, headache, and back pain (Chisolm-Straker et al., 2016). Similar to the results found in Lederer and Wetzel (2014), a majority of trafficked persons sought healthcare while in "the life" but HCPs missed an opportunity for a life-changing intervention with this population.

2.2. Human trafficking education for healthcare professionals

The education of HCPs on HT remains significantly low despite the endless recommendations to have it implemented (Powell et al., 2017). Numerous barriers exist to its implementation, some of which include a lack of uniformity in regulatory statutes and specific curricular standards (Peck and Doiron, 2022). While the American Hospital Association and Joint Commission have started to issue alerts, education, and preliminary guidance regarding HT education for HCPs; the lack of policy standards continues to make its realization a significant challenge. Additionally, educational materials, albeit well-intentioned, may be inaccurate or insufficient which "can contribute to continued HCP misperceptions and perpetuate implicit bias, impeding culturally responsive and trauma-informed care" (Peck and Doiron, 2022, p. 969).

2.3. Federal- and state-level legal regulations on anti-trafficking education of healthcare professionals

The federal-level policy that addresses HT education for HCPs, which is the sole federal policy in existence, is 42 U.S. Code § 300d–54 - Stop, Observe, Ask, and Respond (SOAR) to Health and Wellness Training Program. In 2013, the U.S. Department of Health and Human Services released the program to provide training on HT to healthcare and other related professionals (Jones Day, 2022b). Although an inclusive and comprehensive program, it is not mandated on a national level. It is solely in place for those seeking training on HT.

When looking at the state-level, as of July 2022, only 8 states mandate anti-HT training for HCPs (Jones Day, 2022b). This lack of uniformity equates to limited awareness and inadequate education of HCPs. The states without mandates allow HCPs the autonomy to choose HT as a focus of professional development, should they elect to. This results in a lack of HT education dissemination and poor homogeneity in anti-trafficking training for HCPs.

2.4. Nursing students' exposure to human trafficking content

The literature search on HT education in nursing students shows a significant gap. One study was found by Raker (2022) who examined academic nurse educators' knowledge, attitudes, instructional beliefs, and instructional practices of HT in undergraduate and graduate nursing programs. With a total $n = 332$, 40 % of participants ($n = 132$) indicated that the curriculum in which they taught did not include HT content and an $n = 236$ (71 %) reported having no personal experience teaching on HT (Raker, 2022). These findings suggest HT content is minimally to not delivered at all in nursing curricula nationwide.

2.5. Background summary

The intersection of HT in healthcare is significant and these missed opportunities are profound. HCPs have access to this population while they are being trafficked, as these victims can experience emergent healthcare conditions and needs (Toney-Butler et al., 2023). Although this intersection occurs, studies consistently show that providers routinely fail to recognize these trafficked patients (Lederer and Wetzel, 2014; Long and Dowdell, 2018). Given the minimal research found on the topic of HT knowledge and education in undergraduate RN nursing students, and the vast number of nurses currently working in the U.S. in all facets along the healthcare continuum, the researchers found there was a great need to explore this line of study.

3. Methods

3.1. Study design

A cross-sectional quantitative study was conducted using the membership of the National Student Nurses' Association (NSNA) to obtain a nationally representative sample of current or recently graduated RN nursing students in the U.S. The inclusion criteria were: 1) any currently enrolled nursing student in a diploma, associate, or baccalaureate degree program leading to an RN license, 2) any recently graduated nursing student (within the past year) from a diploma, associate, or baccalaureate degree program leading to an RN license, and 3) the participant had to be a member of the NSNA. The study was conducted during November and December of 2022 using an online anonymous survey. An explanation of the study, a request to participate, and the survey link were sent out via email by the NSNA to the members meeting the eligibility criteria. Three subsequent emails were sent, one week apart, to serve as reminders to optimize the response rate from those members.

3.2. Population and sample

In this study, diploma, associate, and baccalaureate degree nursing students and recently graduated diploma, associate, and baccalaureate degree nursing students (within the past year) seeking to obtain an RN license, who were members of the NSNA, were invited to participate. A total of $n = 49{,}000$ who met the eligibility criteria were emailed by the NSNA. Of the $n = 49{,}000$ invited, $n = 852$ consented to participate. After reviewing the data, $n = 167$ surveys were completely blank, and $n = 41$ were missing several data points. A total $n = 644$ remained fully completed, and of which all participants met the inclusion criteria.

3.3. Survey

The data were collected via an anonymous online survey which was created using Qualtrics. The survey, *Student Nurse Human Trafficking Education Assessment Tool* (SNHTEAT) was created by the researchers. A reliability analysis was conducted, resulting in a Cronbach alpha coefficient of 0.828.

The SNHTEAT was comprised of two parts. The first part of the tool consisted of 21 questions about knowledge of and exposure to HT content in undergraduate nursing curricula. Question types include Yes/No, 5-point Likert-type scales, and visual analog scales (VASs). Fourteen of the questions were created by the researchers to obtain data relating to the amount of exposure to HT content (in didactic delivery, required self-guided study, and/or simulation-based experiential learning), and knowledge of HT. Seven questions of the SNHTEAT were guided by the Health Care Provider Human Trafficking Training: Assessment Tool (Laboratory To Combat Human Trafficking and HEAL Trafficking, 2018). These questions looked to gather data pertaining to undergraduate RN nursing students' knowledge of HT. The last three questions, created by the researchers, were VASs seeking to obtain data pertaining to the level of confidence in recognizing signs or clinical presentations of HT in a client; level of confidence in executing the role as a current/future healthcare professional in intervention and response to a victim of HT; and level of importance in learning HT content in undergraduate nursing curricula. VASs were scored between 0 and 100. The second part of the SNHTEAT was used to collect data pertaining to demographics and personal characteristics of the participants.

3.4. Data analysis

Using SPSS version 27 for statistical data processing, with inferential results interpreted at a two-tailed significance level of $p \leq .05$, the following statistical analyses were performed: descriptive statistical analyses, independent sample *t*-tests, and one-way between groups ANOVA using select demographics and SNHTEAT scores and measures. Spearman's and Pearson's correlational analyses were performed to identify the existence of any relationships among the variables of interest. In addition, multiple linear regressions were conducted to examine predictors for outcomes of level of confidence in recognizing signs or clinical presentations of HT in a client, and level of confidence in executing the role as a current/future healthcare professional in intervention and response to a victim of HT.

3.5. Ethical considerations

Approval for this study was obtained from the Institutional Review Board (IRB) at Molloy University. Throughout the study, adherence to ethical principles was upheld. All subjects provided consent and participated on a voluntary basis, having the capability to withdraw at any time and for any reason. Anonymity was assured in the invitation to participate and maintained, along with all data collected.

4. Results

A total sample of $n = 644$ was used, for which the analyses were run. G*Power software was used to conduct a priori power analysis, using an effect size of 0.3, a significance level of 0.05, and a power level of 0.8. The results showed that the study's sample of $n = 644$ provided sufficient statistical power for the various analyses performed.

4.1. Sample characteristics and demographics

Study participants included a sample of prelicensure RN nursing students or those recently graduated within the past year who were members of the NSNA. To obtain a representative sample of nursing students across the U.S., members of the NSNA meeting inclusion criteria were contacted electronically. The personal characteristics identified are shown in Table 1 and in which state they attend/attended nursing school is shown in Table 2. Representation was noted in all U.S. states except from Maine, Wyoming, and the District of Columbia.

4.2. Academic characteristics

The results for degree attainment/attained were as follows: diploma degree $n = 10$ (1.6 %), associate degree $n = 190$ (29.5 %), baccalaureate degree $n = 409$ (63.5 %), and other (noted were master 's degree and doctoral degree) $n = 35$ (5.4 %). Table 3 offers additional details on the academic standing of the participants.

4.3. Exposure to HT content in undergraduate nursing curricula

The amount of HT content taught in undergraduate nursing curricula, based on number of minutes, was examined. The scale used was as follows: 0 = zero minutes (Never taught HT content), 1 = <15 min, 2 = 16–30 min, 3 = 31–60 min, 4 = 61–120 min, and 5 = >120 min. The findings (Fig. 1) showed a mean score of 0.99 (range 0–5, *SD* =

Table 1
Sample demographics: personal characteristics.

		n	Percent
Gender	Female	578	89.8
	Male	54	8.4
	Non-binary/third gender	6	0.9
	Prefer not to say	6	0.9
	Total	644	100
Age	18–24	234	36.3
	25–34	193	30
	35–44	137	21.3
	45–54	70	10.9
	55–64	8	1.2
	>65	2	0.3
	Total	644	100
Race/ethnicity	American Indian or Alaska Native	8	1.2
	Asian	26	4
	Black or African American	54	8.4
	Hispanic or Latino	89	13.8
	Native Hawaiian or Pacific Islander	7	1.1
	White	430	66.8
	Other	30	4.7
	Total	644	100

1.43).

In addition, the researchers examined the number of minutes spent on HT content for which participants were held responsible in a self-directed manner. Using the same scale, the findings showed a mean score of 0.55 (range 0–5, $SD = 1.21$) with $n = 479$ (74.4 %) reported zero minutes, $n = 40$ (6.2 %) reported <15 min, $n = 32$ (5 %) reported 15–30 min, $n = 47$ (7.3 %) reported 31–60 min, $n = 24$ (3.7 %) reported 61–120 min, and $n = 22$ (3.4 %) reported >120 min.

The researchers explored the use of a HT-based simulation as a learning method to teach on HT. Of the $n = 542$ who responded that they had experienced the use of simulation in their RN program, $n = 522$ (96.3 %) reported never having a HT-based simulation, and $n = 20$ (3.7 %) reported a HT-based simulation experience.

4.4. Perceived level of HT knowledge

Eleven questions obtained the sample's perceived level of knowledge of HT using a 5-point Likert scale with 1 = No knowledge, 2 = Minimal knowledge, 3 = Some knowledge, 4 = Moderate knowledge, and 5 = Full knowledge. Sum scores were calculated with achievable scores of 11 to 55. The mean perceived knowledge sum score was 25.8 (range 11–55, $SD = 8.42$). Sum scores were then recoded into the following categories: 11 = No knowledge at all, 12–21 = No to Minimal knowledge, 22–32 = Minimal to Some knowledge, 33–43 = Some to Moderate knowledge, 44–54 = Moderate to Full knowledge, and 55 = Full Knowledge. The results of the recoded data are shown in Fig. 2.

4.5. Formal training on HT outside of undergraduate nursing studies

The researchers examined the participants' exposure to formal training on HT outside of prelicensure undergraduate nursing studies using a yes/no question with 0 = No and 1 = Yes. The findings showed a mean score of 0.25 (range 0–1, $SD = 0.43$) with $n = 486$ (75.5 %) responding no, and $n = 158$ (24.5 %) responding yes.

4.6. Level of confidence

The researchers examined the sample population's perceived level of confidence pertaining to their interactions with a victim of HT in 1) recognizing signs or clinical presentations of HT in a client, and 2) executing their role as a current/future HCP in intervention and response to a victim of HT. VASs were used to obtain the data with scores ranging from 0 = No confidence to 100 = Full confidence. The findings showed a mean score of 37 (range 0–100, $SD = 24.89$) in recognizing signs or clinical presentations of HT in a client, and a mean score of 39.5 (range 0–100, $SD = 27.99$) in executing their role as a current/future HCP in intervention and response to a victim of HT. The data for both VAS questions were recoded and participants were grouped into categories as 0 = No confidence, 1–25 = Minimal confidence, 26–50 = Some confidence, 51–75 = Moderate confidence, 76–99 = High confidence, and 100 = Full confidence. The recoded results for level of confidence in recognizing signs or clinical presentations of HT in a client are shown in Fig. 3. The recoded results for level of confidence in executing their role as a current/future HCP in intervention and response to a victim of HT are shown in Fig. 4.

Table 2
Sample demographics: US state in which attending/attended nursing school.

State	*n*	Percent
Alabama	11	1.7
Alaska	1	0.2
Arizona	11	1.7
Arkansas	13	2
California	55	8.5
Colorado	6	0.9
Connecticut	6	0.9
Delaware	2	0.3
District of Columbia	0	0
Florida	48	7.5
Georgia	19	3
Hawaii	7	1.1
Idaho	8	1.2
Illinois	10	1.6
Indiana	7	1.1
Iowa	8	1.2
Kansas	5	0.8
Kentucky	11	1.7
Louisiana	13	2
Maine	0	0
Maryland	12	1.9
Massachusetts	2	0.3
Michigan	51	7.9
Minnesota	16	2.5
Mississippi	6	0.9
Missouri	15	2.3
Montana	2	0.3
Nebraska	3	0.5
Nevada	7	1.1
New Hampshire	2	0.3
New Jersey	7	1.1
New Mexico	5	0.8
New York	41	6.4
North Carolina	14	2.2
North Dakota	7	1.1
Ohio	13	2
Oklahoma	5	0.8
Oregon	8	1.2
Pennsylvania	60	9.3
Rhode Island	3	0.5
South Carolina	17	2.6
South Dakota	2	0.3
Tennessee	17	2.6
Texas	30	4.7
Utah	11	1.7
Vermont	1	0.2
Virginia	22	3.4
Washington	7	1.1
West Virginia	6	0.9
Wisconsin	10	1.6
Wyoming	0	0
Other/prefer not to say	1	0.2
Total	644	100

4.7. Level of importance in learning HT content

The perceived level of importance in learning HT content in prelicensure undergraduate nursing curricula was examined. Using a VAS to obtain the data with scores ranging from 0 = Not important at all to

Table 3
Sample demographics: academic characteristics.

		n	Percent
Degree attainment	Diploma	10	1.6
	Associate degree	190	29.5
	Baccalaureate degree	409	63.5
	Other	35	5.4
	Total	644	100
Academic standing (diploma)	First year student	2	20
	Second year student	4	40
	Third year student	1	10
	Fourth year student	1	10
	Newly graduated	2	20
	Other	0	0
	Total	10	100
Academic standing (associate)	First year student	66	34.7
	Second year student	63	33.2
	Third year student	16	8.4
	Fourth year student	16	8.4
	Newly graduated	21	11.1
	Other	8	4.2
	Total	190	100
Academic standing (baccalaureate)	First year student	64	15.6
	Second year student	47	11.5
	Third year student	90	22
	Fourth year student	130	31.8
	Newly graduated	43	10.5
	Other	35	8.6
	Total	409	100
Academic standing (other)	First year student	12	34.3
	Second year student	6	17.1
	Third year student	1	2.9
	Fourth year student	3	8.6
	Newly graduated	8	22.9
	Other	5	14.2
	Total	35	100

100 = Extremely important, the findings showed a mean score of 86.3 (range 0–100, *SD* = 24.05) of which *n* = 377 (58.5 %) responded with a score of 100.

4.8. *t-tests, one-way ANOVA, correlations, and multiple regressions*

The researchers further examined the variables of interest. A one-way between groups ANOVA was conducted to compare the groups based on number of minutes taught on HT content with the perceived HT knowledge sum scores, level of confidence in recognizing signs or clinical presentations of HT in a client, and level of confidence in executing the role as a current/future HCP in intervention and response to a victim of HT (Table 4). The first statistically significant finding noted was a difference found at the $p < .001$ level for perceived knowledge scores for the different groups based on number of minutes taught on HT content $F(5, 638) = 25.58$, $p < .001$. Post-hoc comparisons using the Tukey HSD test indicated statistically significant differences at the $p < .001$ level between the zero minutes (Never taught HT content) group and all other groups except for the <15 min group, and between the >120 min group and all other groups (except the 61–120 min group) with $p \leq .001$.

Another statistically significant finding noted was a difference found at the $p < .001$ level for scores of level of confidence in recognizing signs or clinical presentations of HT in a client based on number of minutes taught on HT content $F(5, 638) = 28.49$, $p < .001$. Post-hoc comparisons using the Tukey HSD test indicated statistically significant differences at the $p < .001$ level between the zero minutes (Never taught HT content) and all other groups except for the <15 min group, and between the >120 min group and all other groups (except the 61–120 min group) with a $p \leq .001$.

An additional statistically significant finding noted was a difference found at the $p < .001$ level for scores of level of confidence in executing their role as a current/future HCP in intervention and response to a victim of HT $F(5, 638) = 22.49$, $p < .001$. Post-hoc comparisons using the Tukey HSD test indicated statistically significant differences at the $p < .01$ level between the zero minutes (Never taught HT content) and all other groups, with the most profound difference again noted between the >120 min group and all other groups (except the 61–120 min group) with a $p \leq .01$.

A one-way between groups ANOVA was conducted to compare the groups based on degree attainment/attained with the perceived HT knowledge sum scores. No statistically significant differences were noted between the groups. An independent sample *t*-test was conducted

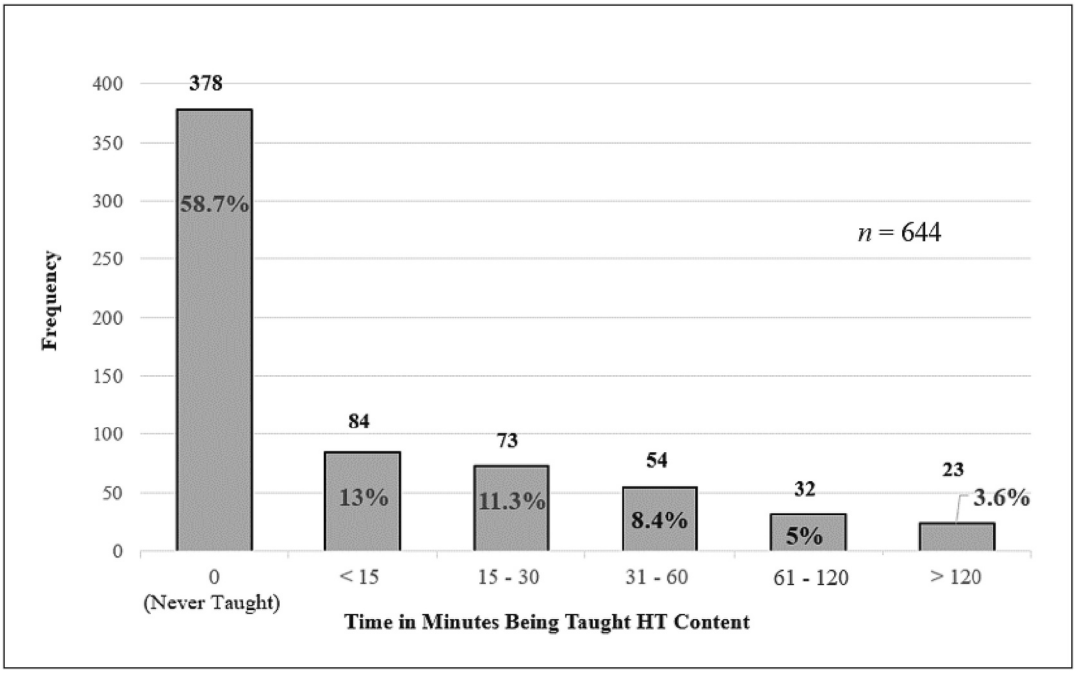

Fig. 1. Amount of human trafficking content taught in undergraduate RN curricula.

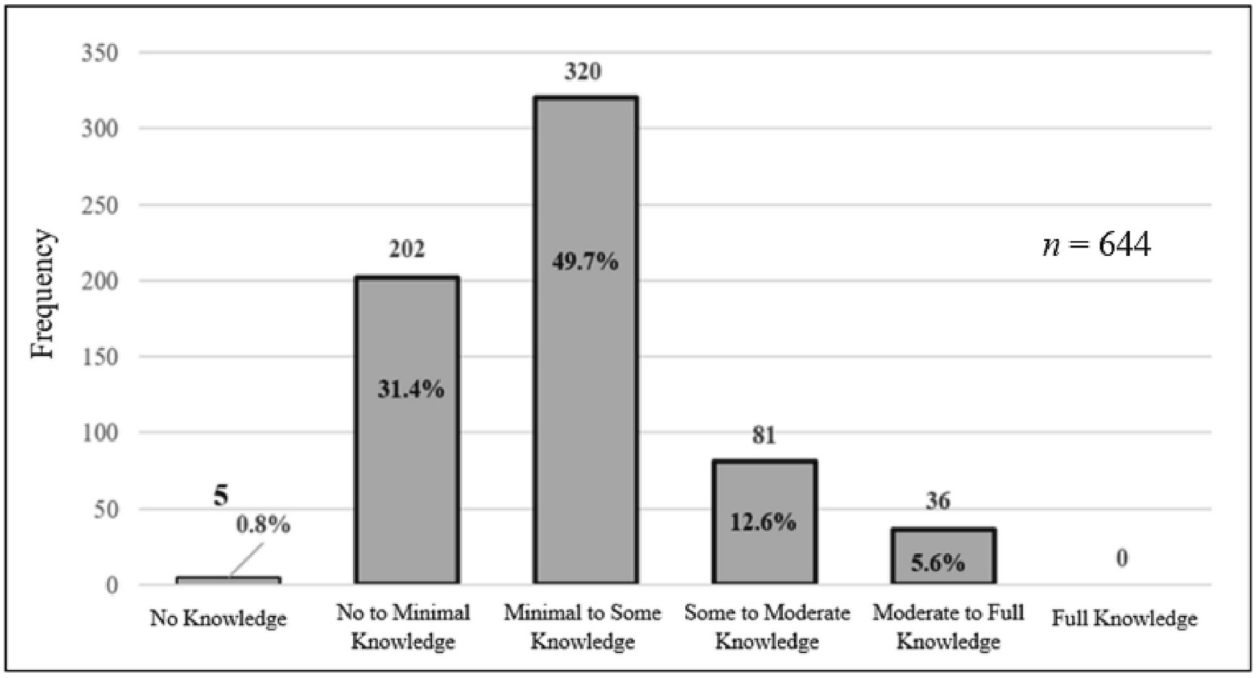

Fig. 2. Perceived HT knowledge sum sores.

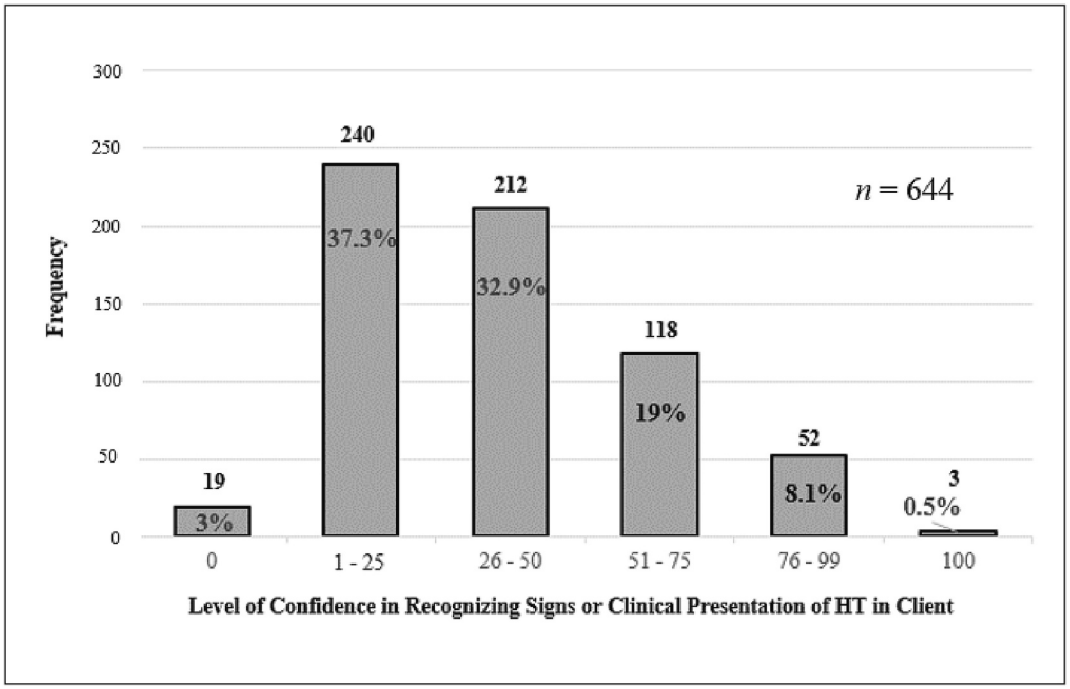

Fig. 3. Level of confidence in recognizing signs or clinical presentations of HT.

to compare the perceived HT knowledge sum scores of the participants for those who responded yes to having formal training to those who responded no. The results showed a statistically significant difference in perceived HT knowledge sum scores for participants who reported yes to formal training ($M = 31.39$, $SD = 8.96$) and no to formal training ($M = 24.05$, $SD = 7.40$), with t (434) = 10.26, $p < .001$. The magnitude of the differences in the means (mean difference = 7.34, 95 % CI: 5.93 to 8.74) was large (Cohen's $d = 0.94$).

A statistically significant moderate positive correlation was found between the number of minutes of HT content taught and perceived HT knowledge sum score with ($rs(644) = 0.408$, $p < .001$). The perceived HT knowledge sum score and level of confidence in recognizing signs or clinical presentations of HT in a client showed a strong positive correlation with ($rs(644) = 0.802$, $p < .001$). The level of confidence in recognizing signs or clinical presentations of HT in a client and level of confidence in executing the role as a current/future HCP in intervention and response to a victim of HT showed a strong positive correlation with ($r(644) = 0.816$, $p < .001$).

Multiple linear regressions were conducted with significant predictors found for both outcome variables of level of confidence in

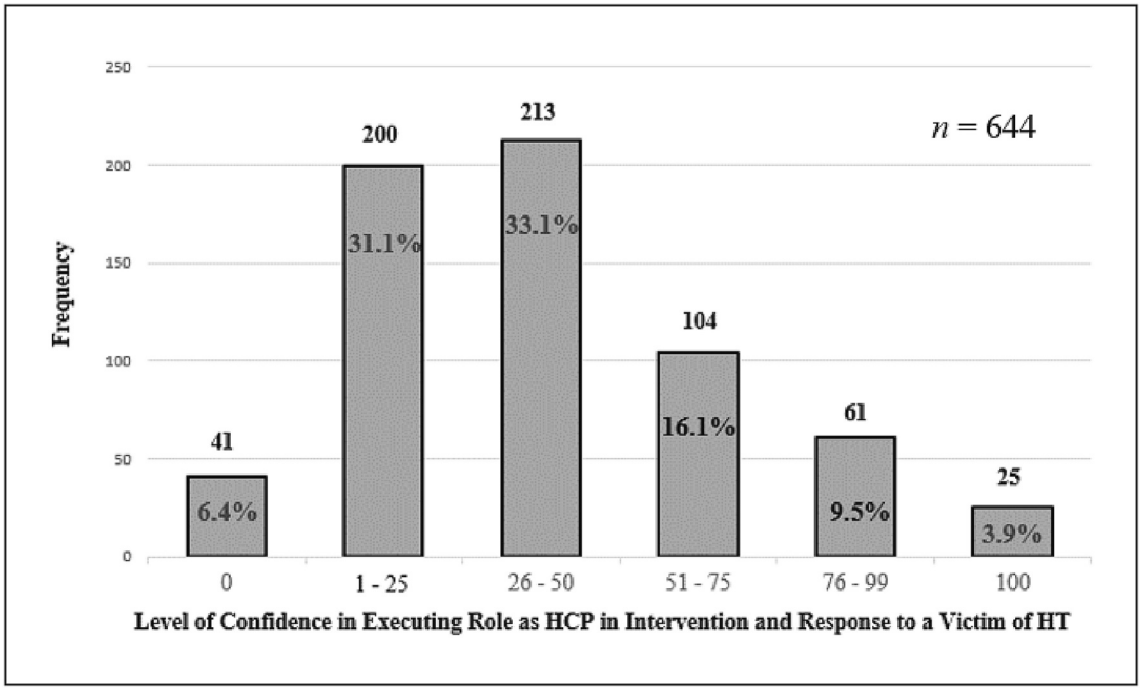

Fig. 4. Level of confidence in executing role as HCP in intervention and response to HT.

Table 4
ANOVA table for minutes taught on HT content.

		Sum of squares	df	Mean squares	*F*	Sig
Perceived HT knowledge sum scores	Between groups	7614.104	5	1522.821	25.582	0.000**
	Within groups	37,978.286	638	59.527		
	Groups total	45,592.390	643			
Level of confidence in recognizing signs or clinical presentation of HT in a client	Between groups	72,682.964	5	14,536.593	28.491	0.000**
	Within groups	325,521.986	638	510.223		
	Groups total	398,204.950	643			
Level of confidence in executing role as current/future HCP in intervention and response to a victim of HT	Between groups	75,488.540	5	15,097.708	22.491	0.000**
	Within groups	428,280.870	638	671.287		
	Groups total	503,769.410	643			

* Correlation is significant at the p ≤ .05 level.
** Correlation is significant at the p ≤ .01 level.

recognizing signs or clinical presentations of HT in a client, and level of confidence in executing the role as a current/future HCP in intervention and response to a victim of HT. Using an $n = 643$ (one participant selected "Prefer not to say" in which state he/she attended nursing school), results for level of confidence in recognizing signs or clinical presentations of HT in a client showed a collective significant effect between minutes taught on HT, perceived HT knowledge, minutes of self-directed learning, and attending a school in a mandated state, ($F(5, 637) = 193.99$, $p < .001$, $R^2 = 0.604$). The individual predictors were examined further and indicated that minutes taught ($t = 4.79$, $p < .001$), perceived HT knowledge sum score ($t = 22.111$, $p < .001$), and attending a school in a mandated state ($t = 2.113$, $p < .001$) were significant predictors in the model. Self-directed learning was not a predictor with $p > .05$. Another multiple regression was conducted for level of confidence in executing the role as a current/future HCP in intervention and response to a victim of HT which showed a collective significant effect between minutes taught on HT, perceived HT knowledge, minutes of self-directed learning, and attending a school in a mandated state, ($F(5, 637) = 99.194$, $p < .001$, $R^2 = 0.438$). The individual predictors were examined further and indicated that minutes taught ($t = 4.342$ $p < .001$), perceived HT knowledge sum score ($t = 16.063$, $p < .001$), and attending a school in a mandated state ($t = 2.132$, $p < .001$) were significant predictors in the model. Self-directed learning was not a predictor with $p > .05$.

5. Discussion

The overall intent of this study was to examine nursing students' knowledge of and exposure to HT content in prelicensure undergraduate RN curricula. Due to the minimal amount of literature and research on this topic and with this population, this study has increased the depth and breadth of understanding regarding exposure to HT content in undergraduate nursing curricula. This study fully illuminates the lack of HT content being taught in undergraduate RN studies. Student nurses are leaving the academic setting ill-prepared to treat this population once licensed, as over 90 % of respondents reported minimal to no HT content being taught, and over 80 % are reporting merely some to no knowledge of HT. With approximately 90 % of this population intersecting with healthcare (Lederer and Wetzel, 2014; Long and Dowdell, 2018), these missed opportunities to identify and treat this population

further exacerbates the victims' complex trauma, cause worsening physical and mental conditions, and ultimately is deemed as negligence on the part of HCPs, as they are missing these victims and failing as mandated reporters of minors.

5.1. Limitations

There are some limitations to the current study. One limitation is that the study population was from a national student nurses' organization. This sample population, as they are all members of the NSNA which supports advancing nursing education, may be more inclined to participate in professional development and stay up to date on current practices. Thus, this population of student/recently graduated nurses may not be reflective of non-NSNA members in terms of their level of knowledge of HT.

Another limitation to this study is that all data were obtained through self-reporting. As this method was used to collect the data, response bias may have occurred. Response bias (also called survey bias) is the tendency of a person to answer questions untruthfully or misleadingly on a survey. In essence, they may have felt pressured to give answers that are socially acceptable and may have wanted to portray themselves in the best light (Glen, 2021).

5.2. Recommendations for future research

The use of evidence-based research guides the development and design of educational interventions. It is imperative that appropriate education on HT be included in standard undergraduate nursing curricula. Future research is needed to determine whether or not HT content is required in RN nursing programs, as well as the number of undergraduate nursing programs across the nation that have integrated HT education and the outcomes of knowledge and level of confidence in their students to identify and treat this population. Additionally, this study can be replicated using other prelicensure healthcare professions' students to examine their knowledge of and exposure to HT content taught in various healthcare disciplines.

6. Conclusion

Nurses play a critical role in identifying, assisting, and advocating for victims of HT. Unfortunately, this population of victims too often remains unrecognized due to HCPs' lack of education on HT. Undergraduate nursing programs are uniquely positioned to address this problem by educating nursing students on HT which will yield improved abilities to identify and care for this population. Unlike an illicit drug or arms trade that once sold it is gone, humans can be sold over and over again, leading to significant physical ailments and complex trauma. These victims need to be promptly identified and treated appropriately with trauma-informed care, but without proper education of HCPs, these victims go unidentified and remain hidden, compounding their toxic stress, and negatively affecting overall health.

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Declaration of competing interest

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