Document Title:	**Labor Trafficking in North Carolina: A Statewide Survey Using Multistage Sampling**
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Summary Overview

Labor Trafficking in North Carolina: A Statewide Survey Using Multistage Sampling

(Award #: 2013-IJ-CX-0047)

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Abstract

The primary goal of this study is to produce reliable estimates of the prevalence of labor trafficking victimization among farmworkers in North Carolina. An innovative sampling method that relies on a combination of geographical aggregation of census blocks and consideration of official agricultural statistics to identify concentration of agricultural activities was developed and used. Over 400 migrant farmworkers participated in interviews, the goal of which was to identify potential trafficking cases as well as indicators that trafficking may be occurring. The results reveal that about one-quarter of the sample experienced some type of employment abuse; nearly 18% reporting incidents that could rise to the level of labor trafficking and 22% reporting lesser forms of labor abuse and exploitation. Given an estimated annual average of 61,455 migrant farmworkers in NC over the 3-year data collection period, over 17,000 migrant farmworkers in NC each year may have experienced some form of labor exploitation in their lifetime, with nearly 11,000 experiencing labor trafficking and over 13,000 experiencing other forms of abuse and exploitation. The most common type of abuse was a form of intimidation, threats, and fear (13%), followed by fraud and deception (12%) and exploitative labor practices (12%). The least common type of abuse was restrictions on physical or communicative freedom (7%). Being undocumented was the strongest predictor of experiencing labor abuse. The implications of these findings and recommendations for future research are discussed.

Introduction

The U.S. government, labor rights groups, and many international organizations claim that human trafficking is a widespread problem, subjugating tens of millions of people around the world (ILO 2012; U.S. Department of State 2008). In response to such claims, the U.S. passed the Trafficking Victims Protection Act (TVPA) of 2000, and since then, all 50 states have passed legislation to combat human trafficking activities (Chacon, 2017). In the first decade since the passing of TVPA, the U.S. government spent $500 million worldwide in the fight against human trafficking activities (Chin & Finckenauer 2012). Despite these grim claims and the two-decade rise of a global anti-trafficking movement, some have argued that these estimates are unsubstantiated. For example, Weitzer (2014, p. 11) states that, “The glaring evidentiary problems are so severe that even rough estimates of the worldwide magnitude of

this hidden enterprise are destined to be fatally flawed." Critics point to the extreme variation in estimates disseminated by various organizations. For example, estimates in the past several years have ranged from 12.3 million (U.S. Department of State, 2010) to 20.9 million worldwide (International Labour Organization, 2012) to 40.3 million people (Walk Free Foundation, 2018). By 2016 (p. 10), the State Department ceased reporting estimates and instead recognized that, "Given the complex nature of human trafficking, it is difficult to amass reliable data to document local, regional, and global prevalence."

Current Study

The primary goal of the current study is to build on the small research base by producing reliable estimates of the prevalence of labor trafficking victimization among farmworkers in North Carolina. The scope of this project is intentionally limited to one state to overcome some of the barriers in conducting rigorous empirical research on a national or global scale. We further limited the study's scope by focusing on one industry. Assuming that the rate of trafficking victimization varies across different labor markets, measurement precision should be greater by focusing on one economic sector. More specifically, the objectives of the current project were to:

1. Demonstrate the feasibility of enumerating farmworker dwellings to produce a probability sample of migrant farmworkers
2. Produce reliable estimates of the prevalence of trafficking victimization among migrant farmworkers in North Carolina
3. Investigate the types of victimization experienced

Research Methods

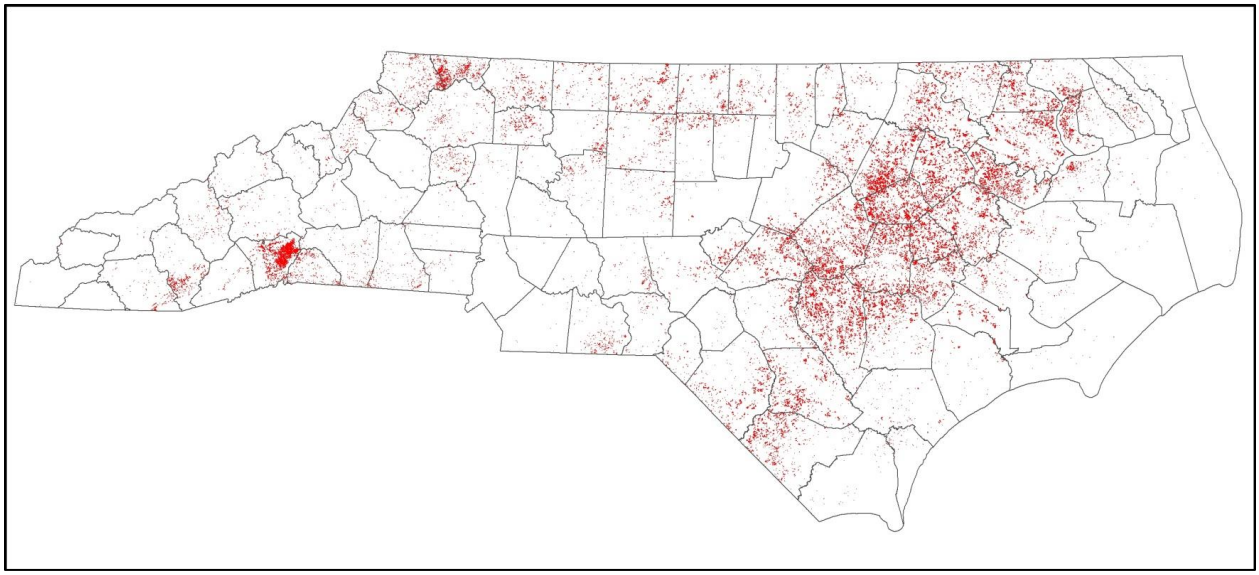
Zhang's (2012b) groundbreaking work on the prevalence of labor trafficking in San Diego used respondent-driven sampling to identify the hidden population of those at risk for labor trafficking.

Although that technique was successfully used, we were not optimistic it would work for the current study. Respondent-driven sampling has gained much popularity in recent years (Wejnert 2009) and is best suited for studying "hidden populations" within well-defined geographical areas. It depends on a structured referral process that relies heavily on subjects' immediate social networks, thus making it difficult to apply to larger regions or to situations in which the target population is physically and socially isolated. Given the statewide scope of the current project and the remote location of agriculture in NC, we developed an alternate approach. The sampling method developed relies on a combination of geographical aggregation of census blocks and consideration of official agricultural statistics to identify concentration of agricultural activities. The study involved first selecting the geographic areas that would be included in the study and then developing a sampling frame.

Multi-Stage Sampling Process

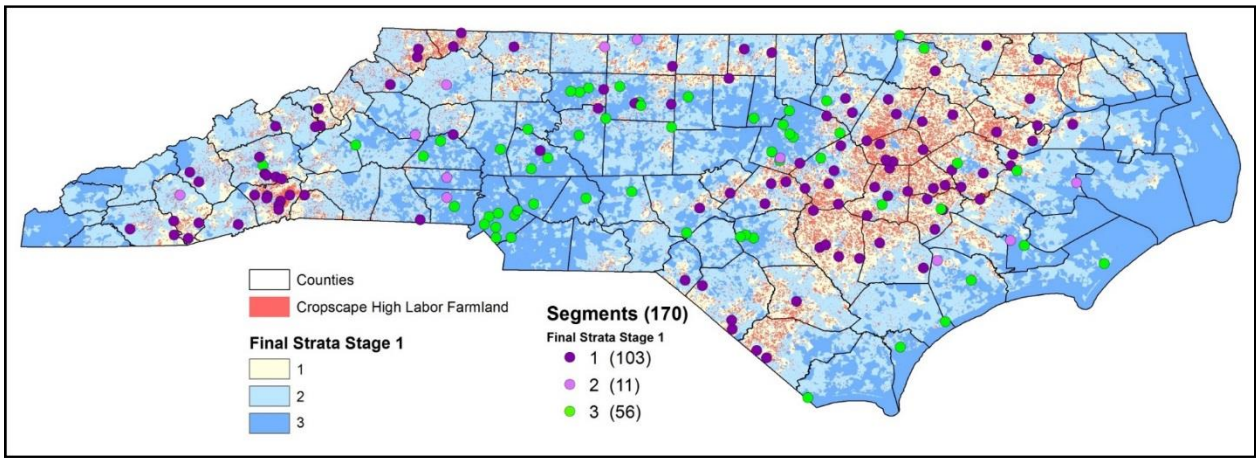
The first stage involved sampling geographic areas. This selection was informed by location of crop farms in North Carolina that require manual planting or harvesting (e.g., tomatoes, sweet potatoes, tobacco). We extracted geographic data at the census block level from the U.S. Department of Agriculture's CropScape data, which provides detailed information about types of crops grown across the country. **Map 1** presents the distribution of these crops across the state. We then applied spatial aggregation techniques to divide North Carolina into custom geographies ("segments") by combining an average of 8 adjacent Census blocks (an area that makes field enumeration feasible).

Map 1. Distribution of Crops Requiring Manual Labor in North Carolina



We then assigned each of these segments to 1 of 3 strata, using probability-proportional-to-size sampling (PPS), with land area for high labor crops as our measure of size (MOS), and oversampled Strata 1. All aggregated geographic segments in the state were eligible for inclusion in the study. Strata 1 was oversampled because it had the highest proportion of land area for high labor crops and thus were expected to be the most productive for identifying migrant farmworkers. We initially selected 170 segments across North Carolina for inclusion in the sample (**Map 2**). We anticipated being able to conduct at least 400 interviews with migrant farmworkers with this sample.

Map 2. Distribution of Selected Segments



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After selecting the geographic areas to be included in the study, we used an innovative approach to develop a sampling frame of migrant farmworkers. We dispatched field staff to each selected geographic segment to drive all roads (paved and gravel) to create a list of dwelling units. In this process, the field team photographed all dwelling units in each segment using an Android tablet that captures both digital images and GPS coordinates. Simultaneously, they made a determination about the likelihood that a dwelling is farmworker housing was recorded. Prior to beginning field work, the team was trained on how to identify potential farmworker housing. Criteria included location (e.g., proximity to fields), type of housing (e.g., mobile homes and barracks are common types of farmworker housing in NC), presence of vehicles for transporting workers (e.g., old school bus or large vans), or other personal effects outside a home (e.g., a large number of work boots). We developed an application for the tablets that allowed field staff to take a picture with any of 3 color-coded camera icons. When one of the camera buttons was pressed, it both took a picture and recorded the color of the camera icon. The green camera icon was used when the team determined the dwelling was likely farmworker housing, yellow when it was possibly farmworker housing, and red when it was unlikely to be farmworker housing. The photographed dwellings constituted the original sampling frame. It included 175 green photos (i.e., likely farmworker dwellings) and 717 yellow dwelling photos (i.e., possible farmworker dwellings).

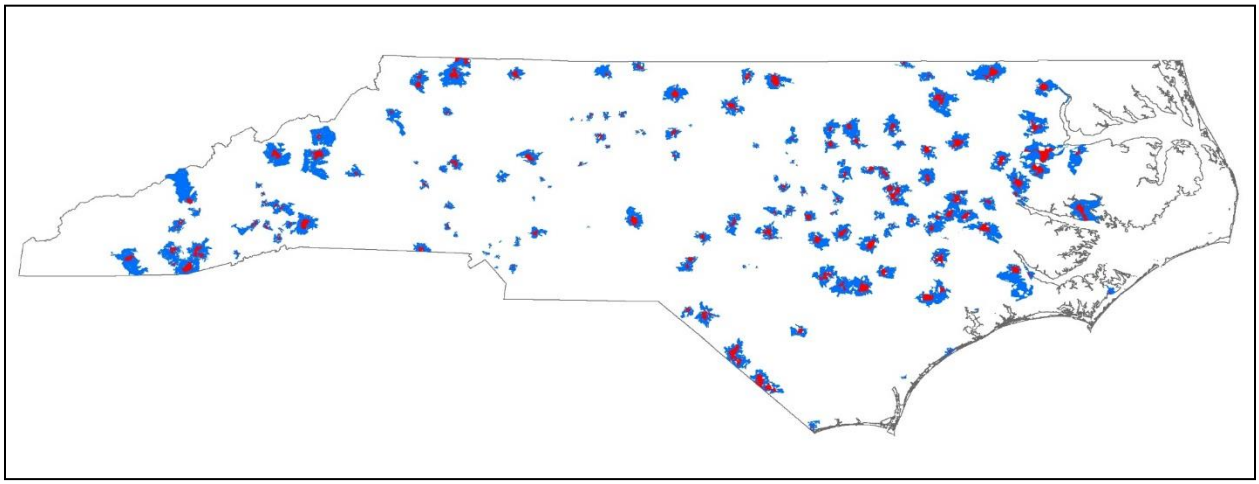
After the sampling frame was developed, we proceeded to conduct interviews with eligible individuals. We selected all dwellings that were coded as green or yellow (i.e., high or medium possibility of being farmworker housing). For each selected dwelling unit, interviewers were provided with GPS coordinates, a map, and the photograph taken during the sampling phase to help more easily identify the selected unit. Interviewers first confirmed that the dwelling was occupied by migrant farmworkers. At least one eligible household member was then randomly selected to participate in the interview, by asking who had the most recent birthday. A second interview was conducted if multiple

eligible household members in order to help us better understand the similarities and differences in experiences among workers who live and work together. The instrument used the core items from Zhang's (2012) San Diego labor trafficking study to measure trafficking and exploitation (described in detail below).

Data Collection Challenges and Solutions

We partially achieved Objective 1, which was to demonstrate the feasibility of enumerating farmworker dwellings to produce a probability sample of migrant farmworkers. An innovative method was used to identify a sampling frame of migrant farmworker dwellings. While we demonstrated that this method is possible, it was neither productive nor efficient. We had originally planned on conducting 400 interviews in 2 years. When the sampling frame was finalized, we had 175 "likely" farmworker dwellings and 717 "potential" farmworker dwellings. Given the target of 400 interviews, we included all of these dwellings rather than drawing a random sample from the frame. However, even with this strategy we did not reach our target with the original sample. Our solution was to develop and apply an adaptive cluster sampling approach to add new census blocks to the geographic sample. To this end, we included census blocks that were adjacent to a block where we had identified an eligible respondent. We then enumerated the new blocks and conducted additional interviews. We continued the process of adding adjacent blocks to all blocks with an eligible respondent. **Map 3** shows original geographic sample as well as the blocks that were added through the adaptive sampling approach. This was somewhat productive, but did not increase our sample size enough to reach our target. In the 3rd year of data collection, we returned to dwellings with eligible respondent in Year 1 or 2. We asked about eligibility and whether an eligible person had completed the interview in a prior year. In total, we conducted 404 interviews over 3 years; 165 interviews were conducted in the original segments and 239 were conducted in the adaptively added census blocks.

Map 3. Additional Blocks Supplementing Original Sample



While this adaptive cluster sampling approach yielded the target number of interviews, it substantially complicated the statistical analyses needed to generate weighted prevalence estimate of trafficking. The design was eventually stratified with adaptive sampling two blocks away from segments/blocks of initial sample which contained at least one eligible respondent. Typically, in adaptive cluster sampling the design would be stratified with adaptive sampling only one block out. We first tried this approach, but it did not yield enough respondents. Given these challenges, we developed estimates first using only the initial sample and then using both the initial and adaptive samples. Estimates based solely on the initial sample are evaluated as follows:

1. First-stage sampling weights are appended to all respondents. These are equal to the corresponding probability of selecting the segment, which is 103/2128.
2. An adjustment for non-response is made based on the "nonresponse".
3. The finite population correction factor is not used here (which would have likely been based on the number of segments in the study region), primarily because not all adjustments can be made and hence the generalized ratio estimator is used instead of the usual Horvitz-Thompson estimator.

Estimates based on the full sample are evaluated as follows:

1. We are only interested in the relative size of the sampling weights, because the generalized ratio estimator will be used. Therefore, first-stage selection probabilities are set equal to one.

2. Evaluating the actual selection probabilities for all individuals selected for the final sample is impossible given the data that was observed. Therefore, for those selected adaptively, the size of the sampling weight is set to be inversely proportional to the number of respondents within the corresponding block of the respondent. This is reminiscent of the weights that would arise with a random walk-like sampling design.

3. Similar non-response adjustments that are made for the initial sample are made for this part of sample.

We evaluated the key findings from both the initial and full samples. Noticeable improvement is made with estimation based on the full sample but very little change in the point estimates occur. Given the similarity in point estimates, we present the results from the full sample here.

Measures

The primary purpose of the interviews was to identify potential trafficking cases as well as indicators that trafficking may be occurring. An interview instrument with over 500 questions, based on Zhang's (2012) San Diego study, was developed to cover the following issues:

- Respondent demographics (e.g., sex, year of birth, place of birth, language, marital status, education, etc.)
- Housing situation (e.g., type, who they live with, ability to receive visitors)
- Information about their immigration experience (e.g., first and last time in the U.S. and North Carolina, legal documentation, and reasons for coming to NC, and plans to settle in the area)
- Information about their agricultural work (e.g., type of crops, how many others they work with, hours worked, and earnings)
- Trafficking or exploitation experiences
    - Restriction of physical or communicative freedom (e.g., being forbidden from leaving the workplace, having identification documents confiscated)
    - Fraud and deception (e.g., type of work was different than promised, work environment was different than promised)

- Exploitative labor practices (e.g., denied pay, received a bad check, told to work in hazardous environments without proper protection)
- Intimidation, threats and fear (e.g., physical or sexual abuse, threats of harm, forbidden from socializing with outsiders)
- Debt bondage

- Reasons for staying after experiencing abuse or exploitation

Results

Characteristics of the 404 farmworkers who participated in the research are presented in **Table 1**. Most of the participants were male (94%) and born in Mexico (93%), about half were married, and the average age at the time of interview was 35 years old. Most participants spoke Spanish as their primary language (97%) and 3% spoke an indigenous language. English fluency was relatively low; 30% of the participants spoke no English and about 60% only spoke a few words. About two-thirds of participants indicated that they worked in agriculture in their home country; nearly all primarily worked in agriculture in the U.S. About one in five participants lived in some type of group housing, such as barracks. Most respondents were allowed to have visitors to their residence (84%) and to make private and personal phone calls (96%). On average, participants had entered the U.S. nearly 7 times. Unexpectedly, only 17% of participants did not have legal documentation when they entered the U.S. this trip. Among the 327 respondents with legal documentation, 307 were on a temporary H2A work visa. This visa is particularly important in North Carolina where the Farm Labor Organizing Committee has a union contract that covers all migrant farm workers recruited through the North Carolina Growers Association under the H2A program (FLOC, 2018). This union contract provides protections for workers,

including protection from retaliation and the right to appeal unjust firings. FLOC also provides a grievance mechanism and helps workers resolve employment issues.

Table 1. Characteristics of Interviewed Farmworkers (*n=404*)

Variable	Number of Respondents	Mean or %	Std. Dev.
Sex	404	6.2%	.241
Male	379	93.8%	
Female	25		
Age	402	35.4	10.575
Marital status	403		.903
Single	99	24.5%	
Married	199	49.3%	
Living together	92	22.8%	
Widowed	1	0.2%	
Divorced	8	2.0%	
Separated	4	1.0%	
English fluency	404		.735
No English	121	30.0%	
Only a few words	241	59.7%	
Simple sentences	29	7.2%	
Proficient	8	2.0%	
Fluent	5	1.2%	
Birth country			.520
Mexico	375	92.8%	
El Salvador	6	1.5%	
Guatemala	13	3.2%	
Honduras	6	1.5%	
United States	2	0.5%	
Primary language	403		0.344
Spanish	390	96.5%	
English	1	0.2%	
Indigenous	12	3.0%	
Primary employment in country of origin	403		2.955
Agriculture or crop farming	270	66.8%	
Poultry or hog farming	4	1.0%	
Construction	60	14.9%	
Street vendor	2	0.5%	
Manufacturing	7	1.7%	
Salaried job	9	2.2%	
Other	51	12.6%	
Primary employment in NC	404		.689
Agriculture or crop farming	400	99.0%	
Poultry or hog farming	1	0.2%	
Other	3	0.7%	

Variable	Number of Respondents	Mean or %	Std. Dev.
Type of housing in NC	404		1.633
House	162	40.1%	
Apartment	2	0.5%	
Trailer	141	34.9%	
Group housing/barracks	97	24.0%	
Other	2	0.5%	
Allowed to have visitors on property	396		.732
Yes, during non-working hours	339	83.9%	
Yes, but I have to ask permission first	15	3.7%	
Yes, but I do not have friends or family in the area	30	7.4%	
No, I am not permitted to have any visitors	12	3.0%	
Allowed to make personal or private phone calls	389		.088
Yes	386	95.5%	
No	3	0.7%	
Total # of visits to the US	364	6.7	6.891
Undocumented last visit	394		.376
Yes	67	16.6%	
No	327	80.9%	
Temporary work visa (H2A)	307	76.0%	

Prevalence and Types of Victimization Experienced

To address Objective 2, produce reliable estimates of the prevalence of labor trafficking victimization, we first estimated the prevalence of experiencing any exploitative or trafficking incident (**Table 2**). About one-quarter of the sample reported experiencing some type of employment abuse; nearly 18% reporting incidents that could rise to the level of labor trafficking and 22% reporting lesser forms of labor abuse and exploitation. This distinction between trafficking and other abuse is consistent with Zhang (2012); however, an argument could be made to include fraud and deception as trafficking. As such, we consider this a conservative estimate. Given an estimated annual average of 61,455 migrant farmworkers in NC over the 3-year data collection period, over 17,000 migrant farmworkers in NC each year may have experienced some form of labor exploitation in their lifetime, with nearly 11,000 experiencing labor trafficking and over 13,000 experiencing other forms of abuse and exploitation.

The most common type of abuse was a form of intimidation, threats, and fear (13%), followed by fraud and deception (12%) and exploitative labor practices (12%). The least common type of abuse was restrictions on physical or communicative freedom (7%).

Table 2. Lifetime Prevalence of Labor Trafficking and Exploitation, Weighted Estimates using Full Sample

Type of Violation	Weighted %	SE	Estimated Prevalence
Any violation	27.72	0.0579	17,212
Labor trafficking	17.56	0.0493	10,906
Restriction of physical or communicative freedom	9.48	0.0376	5,888
Intimidation, threats, and fear	10.65	0.038	6,615
Abusive labor practices	21.94	0.0545	13,623
Exploitative labor practices	11.6		7,139
Fraud and deception	16.13	0.049	10,016

To address Objective 3, investigating the types of victimization experienced, we examined the specific items with each of these categories of trafficking and exploitation. Given the relatively small cell sizes, we present the raw data for the remaining tables. **Table 3** presents the prevalence of experiencing restrictions to physical or communicative freedom. Being restricted from where one could go during non-work hours was the most common type of abuse (2.5%), followed by being forbidden from leaving the workplace (2.0%), having identification papers taken away (1.7%), and not being allowed visitors (1.5%). The other types of restrictions (e.g., being prevented from communicating with family, workers, and others outside work) were experienced by 1% or less of the participants.

Table 3. Lifetime Prevalence of Restrictions of Physical or Communicative Freedom, Raw Data

Type of Restriction	Number of respondents	Frequency	%

Forbidden from leaving the workplace	404	8	2.0
Restricted where you could go during nonwork hours	404	10	2.5
Identification papers taken away	404	7	1.7
Not allowed adequate food, water, sleep	404	3	0.7
Prevented/restricted from communicating freely with family	404	0	0
Prevented/restricted from communicating with workers	404	1	0.2
Prevented/restricted from communicating with others outside work	404	1	0.2
Not allowed to seek/receive medical services or medications	404	4	1.0
Not allowed to make a call when you needed to contact family/friend	404	1	0.2
Not allowed to have visitors	404	6	1.5

Table 4 presents the prevalence of being lied to, deceived, or defrauded. The most common types of deception included the amount of work being different than promised (4.5%) and the housing situation being different than promised (4.2%). Nearly 3% of participants indicated that the type of work was different than promised, that they were told they would not be believed if they sought help from authorities, and that the pay was less than promised. Less than 1% of participants indicated that they were instructed to lie about their identity, their employer's identity, to the consulate, or to any other official.

Table 4. Lifetime Prevalence of Fraud and Deception, Raw Data

Type of Fraud and Deception	Number of respondents	Frequency	%
Pay was less than promised	404	10	2.5
Type of work was different than promised	403	11	2.7
Work environment was different than promised	404	8	2.0
Amount of work was different than promised	404	18	4.5
Told you would not be believed if you seek help from authorities	404	11	2.7
Instructed to lie about your identity	403	3	0.7
Instructed to lie about employer's identity	403	2	0.5
Housing was different than promised	403	17	4.2
Work conditions were different than promised	403	7	1.7
Instructed to lie to consulate about recruitment conditions	403	3	0.7
Instructed to lie to any other official	403	2	0.5

Experiences of exploitative labor practices are presented in **Table 5**. The most common type of exploitation was being denied pay for work performed in the U.S. (5.7%). Around 4% of participants

indicated that they were told to work in hazardous environments without proper protection, received less pay than promised, or experienced something else they considered abusive. About 1% or less of participants indicated having received a bad check from an employer, having an employer disappear before paying for work performed, or being paid for things other than money.

Table 5. Lifetime Prevalence of Exploitative Labor Practices, Raw Data

Type of Exploitative Labor Practice	Number of respondents	Frequency	%
Denied pay for work performed in the U.S.	404	23	5.7
Received less pay than promised	404	14	3.5
Received a bad check from employer	404	4	1.0
Employer disappeared before paying you	404	3	0.7
Told to work in hazardous environments w/o proper protection	404	16	4.0
Paid with things other than money	404	1	0.2
Other work experience you considered abusive or exploitative	396	16	4.0

Table 6 presents the types of intimidation, threats, and fear experienced by participants. The most frequently reported experiences were having been belittled, humiliated, or put down (6.2%) and having been threatened to behave or they or their co-workers could not return to North Carolina (5.2%). Less common experiences included physical and sexual abuse or threats thereof. No respondents indicated having been kept in an enclosed environment or physically restrained or receiving threats to their family, to deny food, or to harm co-workers.

Table 6. Lifetime Prevalence of Intimidation, Threats and Fear, Raw Data

Type of Intimidation, Threats and Fear	Number of respondents	Frequency	%
Threatened to behave or 'bad' things will happen	402	8	2.0
Told 'stories' about bad things that happened to others	402	15	3.7
Threatened to behave or you/co-workers could not return to NC	401	21	5.2
Belittled, humiliated, or put down	402	25	6.2
Suffered 'consequences' for failing to follow orders	402	6	1.5
Forbidden/prevented from socializing with outsiders	402	5	1.2
Physical abuse	402	3	0.7
Sexual abuse	402	1	0.2

Threats of physical abuse	402	4	1.0
Threats of sexual abuse	402	1	0.2
Kept in enclosed environment or physically restrained	401	0	0.0
Threats of harm to you	402	3	0.7
Threats of harm to your family	402	0	0.0
Threats to get deported	402	5	1.2
Threats to call the police on you	402	6	1.5
Threats to family	402	0	0.0
Threats to deny you food	402	0	0.0
Threats to harm co-workers	402	0	0.0
Physically harmed when trying to leave, complain, or seek help	402	1	0.2
Threatened when trying to leave, complain, or seek help	402	5	1.2

Patterns of and Risk Factors for Victimization

After estimating prevalence and investigating the types of victimization experienced, we explored whether there were patterns of victimization and developed social profiles of individuals experiencing different types of victimization. An exploratory factor analysis was conducted on the exploitation and human trafficking items to help manage the low frequency of positive responses among the 39 items. A 2-factor grouping was the best fit, combining items reflecting less serious forms of abuse in one group (Factor 1) while the other contained more serious forms of abuse and vulnerabilities to human trafficking (Factor 2). A confirmatory factor analysis was completed with the groups to ensure a good fit for the data. Each factor was then used in a logistic regression to predict respondent membership based on the following characteristics:

- Sex
- Age
- Marital status
- English fluency
- Type of housing
- Allowed to have visitors
- Documentation status
- Number of coworkers in the field

We also ran a logistic regression model to predict experiencing any type of victimization. The results are presented in **Table 7**. Consistent with prior research (Barrick, Lattimore, Pitts, & Zhang, 2014), being

undocumented was a significant correlate of experiencing less serious forms of victimization or any victimization. This finding underscores the additional vulnerability experienced by those without temporary work visas. Although participating in a visa program does not completely protect workers from labor abuses and exploitation, it is protective.

Not being permitted to have visitors was associated with increased odds of experiencing any victimization. This is an important finding as it suggests that there may be early indicators of trafficking risk. For example, farmers who engage in more minor forms of restrictions, such as not allowing outsiders to visit, may be a red flag that more serious forms of exploitation could occur. This has real implications for health and legal outreach workers, who are in a position to assist at-risk workers. If practitioners are not permitted to visit workers on a particular farm, they may consider notifying law enforcement and labor officials to further investigate work and living conditions on the farm.

Although we focused primarily on individual characteristics, we were able to control for the number of coworkers in the field as a proxy for the size of the farm operation. This was an exploratory measure as there is no research on whether larger or smaller work crews are more vulnerable to abuse. This measure was not significant for any of the victimization measures. This suggests that workers on both large and small operations are at risk, but additional research is needed to validate this exploratory finding.

Surprisingly, there were *no* significant predictors of experiencing the more serious types of victimization. The lack of significant predictors, particularly documentation status, was unexpected. This finding could suggest that migrant workers engaging in farm work are equally at risk for experiencing serious victimization. However, fewer survey respondents indicated having these experiences, which reduces the statistical power available to identify significant differences. For example, the odds ratio for documentation status was greater than 2 and not being permitting visitors greater than 4. However,

these identified patterns appear to match those of an earlier study in San Diego, which found agriculture to have the lowest reported incidents of trafficking violations relative to other industries such as construction and janitorial services (Zhang, Spiller, Finch, & Qin, 2014). The authors from the San Diego study speculated that the dynamics of agricultural labor (e.g., close-knit membership and predictable farming routines) may serve as a protective factor.

Table 7. Logistic Regression Models of Individual Level Indicators of Trafficking and Abusive Practices

		Odds Ratios		
Reference	Variable	Factor 1: Less serious victimization	Factor 2: More serious victimization	Any victimization
Married	Intercept	0.063	0.091	0.083*
	Male	1.119	0.778	1.199
	Age	1.000	1.006	1.010
	Single	2.389*	1.767	1.903
	Living Together	2.064	1.784	1.338
	Divorced	2.576	4.469	2.667
	Separated	1.177	2.744	0.823
Only a Few Words	No English	0.734	NA	0.897
	Can Make Simple Sentences	1.520	NA	1.079
	Proficient	2.539	NA	2.074
	Fluent	5.610	NA	1.467
House	Trailer	1.043	NA	NA
	Migrant Labor Camp	1.583	NA	NA
	Other	9.351	NA	NA
Yes, allowed visitors during non-working hours	Yes, allowed visitors with permission	0.583	3.227	1.485
	Yes, allowed visitors but I do not have family or friends in the area	0.995	1.125	1.284
	No, I am not permitted to have any visitors	0.566	4.137	4.537*
	Undocumented	2.696*	2.180	2.349*
	How many others worked in the fields with you?	1.147	0.973	1.098

*p<.05

The importance of documentation status and temporary work visas cannot be overstated. Given the findings from the regression analyses, we separately looked at the prevalence of trafficking and other abuse separately for documented and undocumented migrant farmworkers (Table 8). The findings underscore the benefits of the H2a visa and the vulnerabilities of those who are undocumented. For example, whereas 39% of undocumented workers experienced some type of labor violation, only 22% of documented workers indicated the same experience. Similarly, 24% of undocumented workers experience violations that could rise to the level of trafficking whereas only 15% of those with legal status experienced trafficking violations.

Table 8. Lifetime Prevalence of Labor Trafficking and Exploitation, by Documentation Status, Raw Data

	Undocumented			Documented		
Type of Violation	**Number of Respondents**	**Frequency**	**%**	**Number of Respondents**	**Frequency**	**%**
Any violation	64	25	39.1	318	70	22.0
Labor trafficking	67	16	23.9	324	50	15.4
Restriction of physical or communicative freedom	67	9	13.4	327	18	5.5
Intimidation, threats, and fear	67	11	16.4	324	39	12.0
Labor abuse and exploitation	64	20	29.9	321	44	13.7
Exploitative labor practices	65	16	24.6	322	26	8.1
Fraud and deception	66	12	18.2	326	32	9.8

Conclusions

More than one-quarter of the 404 interviewed migrant farmworkers indicated that they had experienced some type of abusive employment practices in the United States. The most common types were fraud and deception (16%) and exploitative labor practices (12%). The least common type of abuse was restrictions on physical or communicative freedom (9%). The prevalence of exploitation and

trafficking were lower than we had anticipated given prior research on this topic. For example, in our prior study on migrant farmworkers in North Carolina that relied on a convenience sample, 45% of the sample indicated that they had experienced some type of labor exploitation (Barrick, Lattimore, Pitts, & Zhang, 2014). However, findings from this study were very similar to the those of the San Diego study, which found 28.5% of the respondents in agricultural sector having experienced some forms of abusive and exploitative labor practices whereas 16.3% of these respondents experienced serious violations that could rise to the level of human trafficking, such as intimidation, threat, and fear (Zhang, Spiller, Finch, & Qin, 2014). Although the prevalence of trafficking was lower than we anticipated, it is still unacceptably high. At this rate, in a given year, more than 17,000 migrant farmworkers in North Carolina will have experienced some form of labor abuse during the lifetime, including nearly 11,000 who will have been subjected to labor trafficking violations.

One potential explanation for our finding is that conditions have improved over time. However, this difference may also be due, in part, to varying demographic characteristics of the sample. More specifically, the proportion of the sample that was undocumented was 42% in the earlier study and only 17% in the current study. This is in contrast to what we had originally expected. The original study relied on a convenience sample and many interviews were conducted at farmworker festivals and in labor camps that are frequently visited by outreach organizations. We anticipated that we would uncover a larger population of undocumented, and potentially abused, workers using the current methodology, which involved identifying labor camps that may be unknown to outreach workers and advocates. This demographic difference between the studies is important to note as documentation status was found to be a strong predictor of abuse in both such that undocumented workers are far more vulnerable to abuse and exploitation.

There are a couple of potential explanations for the relatively small number of undocumented workers identified. First, it is possible that there has been an overall shift in the population of

farmworkers in North Carolina between the prior (2012) and the current (2014-2016) data collections such that fewer undocumented migrants work in agriculture. Another potential explanation is that workers have become less comfortable sharing their documentation status and may not have been honest about this question during the interview.

Given the link between documentation status and abuse, additional work is needed to determine whether (and how) temporary work visa may protect workers and whether this impact varies across states and by industry. Future research should further explore the extent to which immigration policies and visa programs may impact experiences of labor trafficking and exploitation among migrant workers. These relationships should also be explored outside of North Carolina. The Farm Labor Organizing Committee (FLOC) has a collective bargaining agreement with the North Carolina Growers Association (NCGA), which is the largest user of the H2a visa program in the United States. All workers recruited by NCGA are covered by a union contract with FLOC (FLOC, 2018). Workers with an H2a visa in other states may not be protected by similar agreements.

This study has several limitations that readers should take into consideration when interpreting the findings. The small sample size, while geographically dispersed, limits our ability to make much statistically out of the low reported incidents of abusive and exploitative labor practices. While elaborate, our multistage sampling strategy turned out to be inadequate to generate sufficient leads for our interviewing teams. However, we still feel that this method is more productive than alternative sampling techniques, including respondent driven sampling. Given the physical and social isolation of migrant farmworkers and the scattered nature of the population distribution across the state, it is unlikely that referrals under RDS would be fruitful. The San Diego study using a conventional RDS design reported significant geographical barriers where social networks of the respondents seemed constrained and unable to go beyond the local communities (Zhang, et al., 2014). Future research on

migrant farm workers needs to explore other innovative techniques to improve the use of geospatial data to identify potential vulnerable populations (e.g., unmanned aerial vehicles to identify barracks in fields). The similarities between the findings from this study and those of the San Diego study, which used the respondent-driving sampling, provide some affirmation about the prevalence of labor abuses and exploitation in the agricultural sector. Much more research is needed for this labor sector. Our field experience suggests that access to migrant farm workers will remain a challenge for any such research attempts, since one cannot approach farm owners for recruitment purposes due to the nature of the subject matter.

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