

Aggression Among Male Migrant Farmworkers Living in Camps in Eastern North Carolina

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Abstract The living and working arrangements of migrant farmworkers in North Carolina are shaped by grower provided housing, codified by the US Department of Labor’s H-2A temporary worker program. Growers typically dictate all facets about residences, living conditions, and even food acquisitions. Farmworker camps likely contribute to aggression because of the forced relationships among a small group of people that live, work and recreate together for extended time periods. Participants in the study consisted of 371 farmworkers living in 183 camps. The Revised Conflict Tactics Scale was used to assess aggression among migrant farmworkers. Results indicated that aggressive acts were prevalent among the farmworkers, but the frequency of aggressive acts was low. The most common aggressive act was minor psychological aggression. Results also indicated that alcohol misuse was a common characteristic for both victims and perpetrators and the majority of aggressive acts occurred later in the agricultural season.

Keywords Migrant farmworker · Housing conditions · Aggression

Introduction

The everyday lives of migrant farmworkers are “in the shadows” [1]. Migrant farmworkers constitute a vulnerable population that endures economic hardships and occupational hazards [2, 3] with comparatively little known about the social context of their daily lives. The living and working arrangements of migrant farmworkers in North Carolina are shaped by grower provided housing, which is codified by the US Department of Labor’s temporary agricultural worker program (i.e., H-2A visa program). These living and working arrangements create a “total institution” environment [4].

The total institution is a lack of barriers that separate the spheres of work and home; it is when all aspects of life occur in the same place and in the company of the same people [4]. In contrast to the western notions of “separation” and “privacy,” in total institutions the same group of people work, sleep, and play in the same, often confined location. The original description of total institution applied to organizations like mental hospitals, prisons, and boarding schools. However, many other organizations can be characterized as total institutions, including ocean vessels, spacecrafts, deep-water oil drilling platforms, and military installments [5–10]. Migrant labor camps are highly similar to other total institution-like contexts where individuals who frequently do not know each other are placed into small groups that live, work and recreate together. In total institution-like environments studies have indicated that conflict is more likely to occur creating the potential to fuel aggression and violence that result

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in situations of psychological, verbal and physical aggression, the infliction of injury and homicide [8, 9, 11–16].

The majority of migrant farmworkers are from Mexico and Central America. A significant proportion of migrant farmworkers in North Carolina come under the auspices of the H-2A visa program. The H-2A visa program was established to address the shortage of agricultural workers on US farms by allowing employers to bring temporary foreign workers into the US to do agricultural work. About 140,000 of the approximately one million migrant and seasonal farmworkers in the US agricultural workforce each year have H-2A visas [17, 18]. In North Carolina about 9000 of the approximately 46,000 migrant farmworkers have H-2A visas [19]. Employers participating in the H-2A program are required to provide no-cost housing for their workers [20]. To meet this requirement employers frequently use older houses and mobile homes located on or near the farm: all of the workers granted an H-2A visa through the employer often reside together, sharing sleeping quarters, kitchens, and bathroom facilities. That migrant farmworker housing is often unclean and in poor condition [24, 25] may increase the level of aggression in the total-institution like farmworker camps.

Physical and Psychological Aggression Among Migrant Farmworkers

Daily life for farmworkers has the potential to fuel aggression. Physical violence is known to exist among farmworkers, however psychological aggression has not been examined. Three studies have directly assessed violence as a cause of injury in the context of overall health among farmworkers. Two studies specifically address Latinos and one addresses Black farmworkers. Villarejo and et al. [21] report threats in the workplace (2 % men; 4 % women), workplace violence (1 % men; 0 % women), and personal violence victimization (5 % men; 5 % women) among California farmworkers. Steinhorst and et al.' [22] analysis of eastern North Carolina trauma center data found that the majority of injuries and trauma among Hispanic farmworkers occurred in conjunction with recreational activity. These violent incidents occurred at a various locales including home (3.1 %) and on the farm (5.2 %). McDermott and Lee [23] found that personal violence among Black male farmworkers occurred more frequently among the migrant workers than among those living in other settings. The study also found that 83 % of the incidents of personal violence took place in the migrant camps in the evenings, suggesting that poor camp conditions and high levels of alcohol contribute to the high rates of injuries. This research demonstrates that psychological aggression does occur among migrant farmworkers and

that this conflict can result in injury. Psychological aggression often occurs prior to physical aggression, which provides evidence that psychological aggression could occur at higher rates than the reported physical aggression [45].

Despite this existing research, the actual prevalence of victimization and perpetration of aggressive acts in the migrant farmworker population is unknown. Previous research describes injuries sustained from physical violence [22], but it overlooks emotional and psychological violence, both of which can have a major impact on health and quality of life. Previous research has focused on injuries received, or victimization, but little attention has been given to the perpetration of aggression or acts that may result in injury. Finally, research has not given attention to individual or the environmental sources of variation that may perpetuate or dampen violent acts. This oversight is particularly meaningful from a total institution perspective because it offers insight into how migrant farmworker camps can be improved to minimize violence and aggression. This analysis documents the prevalence of psychological aggression in the migrant farmworker community, and it describes the individual and camp-level sources of variation in both perpetrating aggressive acts and being the victim of aggression.

Methods

Data are from a cross-sectional community-based participatory research project conducted during the summer and fall 2010 agricultural season. This project focused on the housing conditions in migrant farmworker camps [24, 25]. The study was completed in 16 counties in central and eastern North Carolina that include large numbers of migrant and seasonal farmworkers. Study counties were Caswell, Craven, Cumberland, Duplin, Edgecombe, Greene, Halifax, Harnett, Johnston, Lenoir, Nash, Person, Sampson, Wake, Wayne, and Wilson (Fig. 1). Community partners for this research were the North Carolina Farmworkers Project, Carolina Family Health Center, Kinston Community Health Center, and Piedmont Health Services, Inc. The Wake Forest Health Sciences Institutional Review Board reviewed and approved the study protocol.

Sample

Migrant farmworkers in North Carolina live in employer provided housing referred to as camps. Lists of camps were obtained from community partners. Over the course of data collection, field supervisors expanded the list as they encountered new camps. Field staff visited all identified camps. The staff explained the study to the camp residents

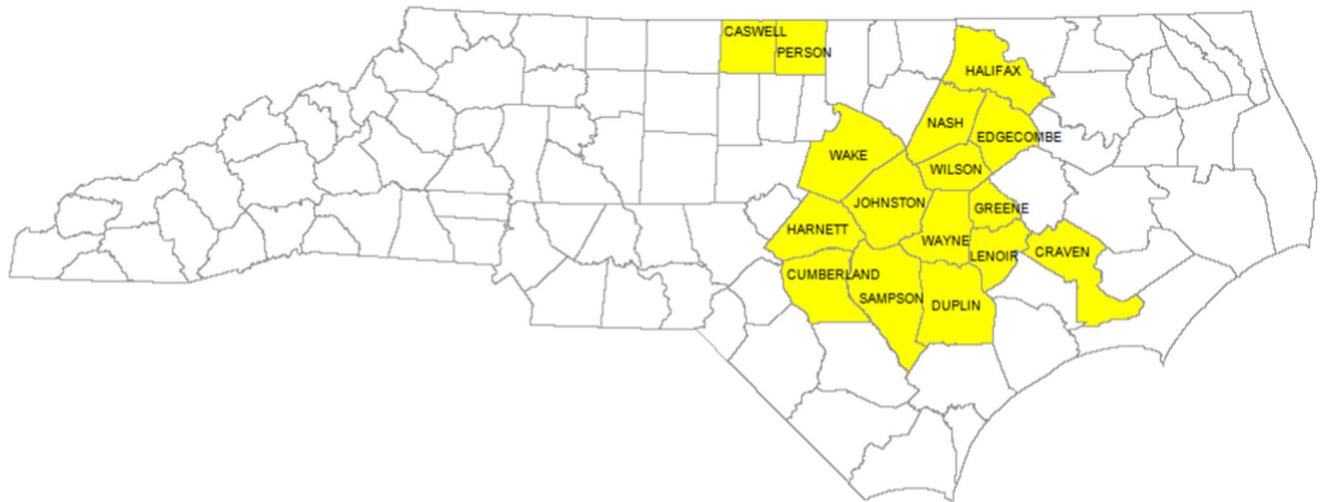


Fig. 1 Study Counties of migrant farmworkers, North Carolina, 2010

and if the residents reached a general consensus to participate, field staff completed a census of the camp, which provided general camp characteristics and eligibility.

A total of 186 camps enrolled in the study, and housing assessments were completed at 183 of these camps. Housing assessments were not completed at three camps because participants at one camp changed their minds and withdrew consent, and growers halted the study before housing assessments could be initiated at two camps. The participation rate was 82.3 % (186/226). All camps that participated in the study received a volleyball in appreciation.

Three participants from each camp volunteered to take part in the study. Inclusion criteria were being migrant, male, age 18 or over, currently employed in farmwork, and current resident of camp being inspected. One farmworker was asked to help conduct a camp and housing assessment, while the other two were asked to complete an interview questionnaire, help assess their sleeping rooms and to provide biological samples. A total of 371 men completed interviews; these participants are included in this analysis. An additional 182 men assisted in camp resident assessments. A total of 231 men refused to participate when asked. Reasons cited for refusal were lack of interest, the time commitment, being occupied with other activities such as watching a soccer game or cooking, and fear of repercussions from a grower or contractor. Overall participation rate was 70.5 % (553/784); this rate could be lower as individuals who did not want to participate could have avoided recruiters. Each farmworker that completed interviews and helped with assessments were provided with a \$30 cash incentive. All participants provided individual signed consent and they were provided a copy of the consent form.

Data Collection

Two data sources were used in this analysis: interviews completed with the two farmworkers in each camp and the camp housing assessment completed with one farmworker in each camp. Interviews lasted approximately 90 min. They assessed demographic information, work information, perceptions of housing quality, general health and specific conditions, mental health, and a number of other health and housing-related items. Interviews also included the Revised Conflict Tactics Scale [26].

The housing assessment in each camp measured compliance with 39 North Carolina Department of Labor (NCDOL) Introduction to Migrant Housing Inspections, as well as a number of other housing-quality related items [24, 25, 27] and was completed with the help of a resident farmworker. While assessing the residence, the inspector asked questions, observed, and used several instruments such as a flashlight and when needed an extending mirror to inspect behind appliances and cabinets to see signs of exposed wires and pest infestations. Divided into five sections, general camp, toilet facilities, bathing and showering facilities, kitchen/eating area, and laundry facilities, the form included 129 items, 79 were to assess compliance with the NCDOL migrant housing regulations.

All interviews and housing assessments were performed by trained staff members who were fluent Spanish speakers. The data collection forms and questionnaires were developed in English and translated into Spanish by a native Spanish speaker. Community partners reviewed all data collection forms in Spanish. Questionnaires were field tested with four male migrant farmworkers and the questionnaires were revised extensively based on feedback

from the project coordinator, community partner, and the participants themselves. Final materials were revised based upon the field tests.

Measures

Analysis uses three sets of measures: [1] personal characteristics; [2] camp characteristics; and [3] aggression. The personal characteristics included country of origin; age in four categories 18–24 years, 25–29 years, 30–39 years, and 40 years or older; educational attainment in two categories 0–6 year, 7 or more years; marital status in three categories not currently married, married/partnered and unaccompanied, and married/partnered and accompanied; alcohol misuse; and H-2A visa status. Personal storage was self reported as adequate or inadequate. Crowded sleeping room was measured by the observed number of people in each room, and classified as crowded if the number of individuals exceeded the NCDOL regulations. Alcohol misuse was defined by frequency, quantity, and misuse as measured by the first three items on the Alcohol Use Disorders Test Consumption (AUDIT-C) [28–30]. To calculate alcohol misuse we used the participant responses on how often they had a drink ranging from never (0) to four or more times a week [4], how many alcoholic drinks participants typically had on days they drank, ranging from 1 or 2 (0) to 10 or more [4], and finally participants reported on how often they had six or more drinks on one occasion from never (0) to daily or almost daily [4]. Scores were summed. Participants whose total scores were greater than 4 were classified as misusing alcohol while the others were classified as not misusing alcohol [28].

Camp characteristics included: NCDOL Certificate of Inspection posted, camp cleanliness, pest infestation in the camp, showerhead adequacy, toilet adequacy, and total camp violations. Several of the camp characteristics were based on NCDOL regulations on migrant farmworker housing. Having a Certificate of Inspection posted is required by regulations, as is having at least one showerhead for every 10 workers, and having at least one toilet for every 15 workers. Total camp violations are the number of violations based on 39 specific NC Department of Labor housing standards. Camp cleanliness was a dichotomous measure based on the data collector's evaluation. Pest infestation in the camp was a dichotomous measure based on the observation of pests (cockroaches or rodents) in kitchens, sleeping rooms, or bathrooms in a camp. Seasonality of data collection was assigned three categories: early season, mid season, or late season.

Aggression was measured with the Revised Conflict Tactics Scale (CTS2). The CTS2 has been used widely to assess the prevalence and frequency of aggressive acts and has been shown to be a valid and reliable measure even when

used with individuals from diverse cultural backgrounds [31]. The CTS2 has strong psychometric properties and addresses both current (over the past year) and past activities [26]. The CTS2 has 78 questions that are self reported behaviors on five different subscales (psychological aggression, sexual coercion, injury, physical assault, and negotiation). To adapt this scale for use among male migrant farmworkers, the term “partner” was replaced with “campmate.” The CTS2 asked participants to rate their own behavior and that of their campmates; for example “I pushed or shoved my campmate” and “My camp mate pushed or shoved me.” The 37 (16 for victim and 21 for perpetrator) scale questions used in this study were from the assault and injury sub-scales. The response categories for the CTS2 are: Never, Not since I've lived here but it has happened before, once, twice, 3–5 times, 6–10 times, 11–20 times, more than 20 times. The CTS2 is measured by adding the mid points for the participant responses in each category. Midpoints are the same as the response category numbers for Categories 0, 1, and 2. For category 3 (3–5 times) the midpoint is 4, for Category 4 (6–10 times) it is 8, for Category 5 (11–20 times) it is 15, and for Category 6 (more than 20 times in the past year) Straus and et al. [26] recommend using 25 as the midpoint. Prevalence variables were coded as 0–1, with 1 assigned if one or more of the acts occurred, while the frequency variable is the number of times the act occurred [26]. The CTS2 allowed the study team to assess the prevalence of aggressive psychological and physical acts, and the prevalence of perpetration as well as victimization.

Minor aggression occurred when at least one of the following was reported: insulting or swearing, shouting, stomping out during a disagreement, or doing something to spite the other. A victim is on the receiving end of these events from a camp mate (Cronbach's alpha = 0.83). A perpetrator does one of these acts towards a camp mate (Cronbach's alpha = 0.77).

A participant was a perpetrator of heightened aggression (Cronbach's alpha = 0.92) if he had done at least one of the following 12 items to a camp mate: destroying a personal belonging to another, threatening to hit or throw something at a camp mate, throwing something at a camp mate that could hurt, twisting a camp mate's arm or pulling their hair, pushing or shoving a camp mate, grabbing a camp mate, slapping a camp mate, using a knife or gun on camp mate, punching or hitting a camp mate with something that could hurt, slamming a camp mate against a wall, beating up a camp mate, or kicking camp mate. A victim of heightened aggression (Cronbach's alpha = 0.87) experienced one of the 12 events above or at least one of the following due to a fight with a camp mate (total of 17 items used): had a sprain, bruise, or small cut, physical pain that still hurt the next day, went to the doctor, needed to see a doctor but didn't, or had a broken bone.

Table 1 Participant and camp characteristics, migrant farmworkers, Eastern North Carolina 2010 (N = 371)

	n	%
Personal characteristics		
Country of origin		
Mexico	353	95.1
Other	18	4.9
Age		
18–24 years	99	26.7
25–29 years	66	17.8
30–39 years	107	28.8
40 years and older	99	26.7
Educational attainment		
0–6 years	183	49.3
7 or more years	188	50.7
Marital status		
Not currently married	130	35.0
Married/partnered, unaccompanied	211	56.9
Married/partnered, accompanied	30	8.1
Alcohol misuse		
No alcohol misuse	184	49.9
Alcohol misuse	185	50.1
H-2A visa		
No	129	34.8
Yes	242	65.2
Personal storage		
Adequate	311	83.8
Inadequate	60	16.2
Crowded sleeping room		
Not crowded	317	87.1
Crowded	47	12.9
Camp characteristics		
NC department of labor certificate of inspection posted		
Posted	62	34.4
Not posted	118	65.6
Camp cleanliness		
Not clean	86	48.9
Clean	90	51.1
Pest infestation		
Not infested	34	18.5
Infested	150	81.5
Showerhead adequacy		
Adequate	173	94.0
Inadequate	11	6.0
Toilet adequacy		
Adequate	169	92.3
Inadequate	14	7.7
Total camp violations		
4–9	44	23.9
10–14	109	59.2
15–22	31	16.8

Table 1 continued

	n	%
Seasonality		
Early season (June–Mid–July)	53	28.5
Mid season (Mid–July–August)	83	44.6
Late season (September–October)	50	26.9

Analysis

Descriptive measures were used to describe the aggression prevalence and frequency, characteristics of the farmworkers and their camps. Associations between participant and camp characteristics with aggression prevalence were examined using Chi square tests, while accounting for clustering of observations within camps. All analyses were performed using SAS 9.3 [32].

Results

Most (95.1 %) farmworkers were from Mexico, with 18 from other countries (Table 1). Almost 45 % of the participants were aged 29 or less, with 28.8 % aged 30–39 years and 26.7 % aged 40 years or older. Slightly more than half had attended school for 7 or more years. Almost 57 % were married but without their families in the United States, while 8 % were married and were accompanied by their families and 35 % were single. Half of the farmworkers reported alcohol misuse. The majority of participants (65.2 %) had H-2A visas. Almost 84 % of the participants reported having adequate personal storage in their residence and 87.1 % did not have crowded sleeping rooms. Participants were recruited at different times of the season with over 44.7 % interviewed during mid season and 28.3 and 27.0 % during early and late in the season, respectively.

Almost two-thirds (65.6 %) of participants lived in camps that did not have a NCDOL Certificate of inspection posted. Over half (51.1 %) of the camps were classified as not clean, and 81.5 % were infested with pests. Six percent of participants lived in camps that did not have an adequate number of showerheads, and 7.7 % did not have an adequate number of toilets. About one-quarter of the camps (23.7 %) had 4–9 housing regulation violations, 59.4 % had 10–14 violations, and 16.9 % had 15–22 violations.

Aggressive acts were prevalent among the farmworkers, but incidence of aggressive acts was low (Table 2). The most common aggressive act was minor aggression, with

Table 2 Aggression prevalence and frequency, migrant farmworkers, Eastern North Carolina, 2010 (N = 370)

	n	%	Median occurrences
Prevalence of minor aggression in current camp			
Victim	50	13.5	
Perpetrator	46	12.4	
Prevalence of heightened aggression in current camp			
Victim	24	6.5	
Perpetrator	16	4.3	
Frequency of aggressive acts in current camp (max response of items)			
Overall frequency of aggressive acts			
Victim	51		1
Perpetrator	46		1
Frequency of minor aggression in current camp			
Victim	50		1
Perpetrator	46		1
Frequency of heightened aggression in current camp			
Victim	24		2
Perpetrator	16		2

about 13 % reporting being the victim and about 12 % being the perpetrator of such aggression. About 6 % reported being the victim heightened aggression, and about 4 % reported being the perpetrator of heightened aggression. Participants reported a total of 51 aggressive acts as victims and 46 aggressive acts as perpetrators, with the median being one occurrence. Participants reported being victims of 50 minor aggressive acts, and being the perpetrator of 46 of these acts. They reported being the victim of 24 heightened aggressive acts, and the perpetrator of 16 such acts.

Age, educational attainment, and marital status were each associated with one measure of aggression (Table 3). A higher percentage of those aged 18–24 years (9.1 %) were perpetrators of heightened aggression, than were those aged 25–29 years (4.5 %), 30–39 years (1.9 %), and 40 years or older (2.0 %). A higher percentage of those with seven or more years of education (16.0 %) were perpetrators of minor aggression than of those with less education (8.8 %). More single men (10.8 %) were victims of heightened aggression than were married men (4.1 %).

Alcohol misuse and late season had the most consistent associations with aggression. More of those who misused alcohol were the victims of minor aggression (18.9 vs 8.2 %), the victims of heightened aggression (9.7 vs 3.3 %), the perpetrators of minor aggression (17.3 vs 7.7 %), and the perpetrators of heightened aggression (7.0 vs 1.6 %). More participants were the victims of minor aggression late in the season (23.2 %) versus in mid season (10.8 %) or early season (8.6 %). More were the victims of heightened aggression late in the season (12.1 %) versus in mid season (4.8 %) or early season (3.8 %). More participants were the perpetrators of minor aggression in the

late season (23.2 %) versus in mid season (8.4 %) or early season (8.6 %).

Only two camp-level characteristics were associated with the measures of aggression. Being a victim of heightened aggression was associated with camp cleanliness and pest infestation. For camps assessed as not clean, 8.7 % of camps had victims of heightened aggression while only 3.3 % of clean camps had victims of heightened aggression ($p < 0.05$). Similarly, for camps with pest infestations, 7.7 % of camps had victims of heightened aggression, whereas 1.5 % of camps without pest infestations had victims of heightened aggression ($p < 0.05$).

Discussion

This analysis provides an assessment of psychological aggression among migrant farmworkers, drawing on data collected as part of a larger study on farmworker housing and health. It examines the prevalence and incidence of psychological and physical aggression, distinguishing between being a victim and being a perpetrator while exploring individual and camp characteristics that may influence being a victim or being a perpetrator of aggressive acts.

Migrant farmworkers are largely male, separated from their families, and physically and socially isolated from the larger society. Migrant farmworker stress can be compounded by the strenuous and unstable nature of their work and, for many, insecurity created by lack of legal status. Farmworker migrant camps are total institution like environments [4], which contribute to psychological aggression because of the forced relationships among a small group of

Table 3 Associations of personal characteristics with aggression victims and perpetrator, migrant farmworkers, Eastern North Carolina, 2010

Personal characteristics	Total sample		Victim				Perpetrator			
			Minor aggression		Heightened aggression		Minor aggression		Heightened aggression	
	n	%	n	%	n	%	n	%	n	%
Age										
18–24 years	99	26.7	17	17.2	10	10.1	17	17.2	9	9.1*
25–29 years	66	17.8	7	10.6	4	6.1	7	10.6	3	4.5
30–39 years	107	28.8	15	14.2	5	4.7	13	12.3	2	1.9
40 years and older	99	26.7	11	11.1	5	5.1	9	9.1	2	2.0
Educational attainment										
0–6 years	183	49.3	20	11.0	12	6.6	16	8.8*	8	4.4
7 or more years	188	50.7	30	16.0	12	6.4	30	16.0	8	4.3
Marital status										
Single	130	35.0	24	18.5	14	10.8*	22	16.9	9	6.9
Married/partnered, accompanied	211	56.9	23	11.0	9	4.3	21	10.0	6	2.9
Married/partnered, unaccompanied	30	8.1	3	10.0	1	3.3	3	10.0	1	3.3
Alcohol misuse										
No alcohol misuse	184	49.9	15	8.2*	6	3.3*	14	7.7*	3	1.6*
Alcohol misuse	185	50.1	35	18.9	18	9.7	32	17.3	13	7.0
H-2A visa										
No	129	34.8	18	14.0	10	7.8	15	11.6	6	4.7
Yes	242	65.2	32	13.3	14	5.8	31	12.9	10	4.1
Sleep room crowding										
Not crowded	317	87.1	40	12.7	18	5.7	37	11.7	12	3.8
Crowded	47	12.9	6	12.8	3	6.4	5	10.6	1	2.1
Personal storage										
Adequate	311	83.8	46	14.8	22	7.1	43	13.9	15	4.8
Inadequate	60	16.2	4	6.7	2	3.3	3	5.0	1	1.7
Seasonality										
Early season	105	28.3	9	8.6*	4	3.8*	9	8.6*	4	3.8
Mid season	166	44.7	18	10.8	8	4.8	14	8.4	5	3.0
Late season	100	27.0	23	23.2	12	12.1	23	23.2	7	7.1

* $p \leq 0.05$

people for extended period of times at work and at play. This analysis finds that many aggressive acts occur in migrant farmworker camps, but individual farmworkers are rarely repeat victims or perpetrators of aggressive acts. Although direct comparative data are not available, our results are consistent with other studies that suggest psychological aggression in total institution-like environments can lead to aggression and violence [8, 9, 11–16, 33] but the high level of aggressive acts is consistent with information reported among migrant farmworkers [21–23].

Migrant farmworker camps have several structural characteristics of total institutions. They are typically located in isolated or remote areas and the residents of these camps are typically removed from family and community and residents can feel cut off from society. Often, the lack of transportation for farmworkers means they are trapped.

Residents of these camps often share personal spaces, including sleeping, cooking and toileting facilities with individuals who are their co-workers. The structure of these facilities (e.g. lack of privacy dividers between toilets and showers) exaggerates this shared space [25]. For farmworkers, all life functions occur in the same location and are set by the grower or crew leader. Those farmworkers who have H-2A visas are absolutely beholden to the company as they cannot switch employers. The employer decides if the worker can come to the USA and if that worker can stay [20]. By law, H-2A guest workers are to receive free housing, in good condition during their contract [20].

Migrant farmworker housing conditions are generally appalling [21, 24, 34, 35]. Housing problems include: overcrowding, serious structural damage, lack of privacy,

water quality, missing aspects in the residence such as toilet, stove, bathtub or refrigerator, the residences have broken windows, torn screens, water leakage and pest infestation [24, 35–37]. Our results reveal that two characteristics of farmworker camps are significant for aggressive acts. Camps that were assessed as not clean and camps with pest infestations were significant for heightened aggression. Camps that are not clean often have electrical, structural and water issues that can mean cracks in the wall or ceiling, problems with roof and window leaks, peeling plaster or paint, ventilation problems and a lack of window screens. Unclean camps also often mean communal bathrooms, lack of sufficient kitchen and laundry space for the amount of people present in camp [24]. Camps with pests often means cockroach and rodent infestations that in some situations infested the bathroom, sleeping rooms, kitchen, laundry room and other rooms creating an environment more closely related to a trash pile than a home [24]. While only two camp characteristics were significant for aggression, this demonstrates that it is not necessarily only the quality of camps, but overall the camps themselves that provide the context for aggressive acts.

The combination of isolation and extreme togetherness in tight quarters in migrant farmworker camps could lead to aggression. Our results demonstrate that the majority of aggressive acts occurred later in the season. This could be due to the third quarter phenomenon, which has been found in other total institution like conditions such as spacecraft [9], and polar expeditions [13, 38, 39]. The third quarter phenomenon is when the interpersonal tension is at its highest and mood is the lowest, occurring just after the midpoint of their duty, as members realize their time together is only half way completed and another period with the same isolation and togetherness still remains. As time goes on, there are more negative emotional expressions and tension [9]. Our results demonstrate that the majority of aggressive acts for both victim and perpetrator increased later in the season. Our study ended prior to the end of the season for the farmworkers. The majority still had time left at the camp, so our final data collection coincides with the third quarter and an overall increase in aggression.

Since the characteristics of the total institution create the dynamic for psychological aggression, these same characteristics can also lead to heavy drinking. In isolated living conditions, alcohol can be used as a release and similar heavy drinking behavior has been found in offshore oil drilling platforms, military installations, and logging camps [40]. Alcohol use among Latinos in the United States is a major issue that leads to health related problems, injury, work-related problems, accidents, and family-related problems [41, 42]. In North Carolina, it has been noted that many farmworkers misuse alcohol [22, 43]. For farmworkers living far from family working and living with the

same group of men, where 50 % misuse alcohol, heightened aggression is not unexpected. Alcohol use itself is a factor related to aggression [46], with the characteristics of the total institution and alcohol abuse combining to increase psychological aggression.

It is important to place migrant farmworkers in context the rates of psychological and physical aggression with other workplaces and industries. Overall, the prevalence of psychological and physical aggression among farmworkers are not high compared to other industries. The estimates for psychological aggression in the workplace range from 9 to 70 %, demonstrating that migrant farmworkers are at the low end of psychological aggression. However, the estimate for physical violence in the workplace estimates range from 1 to 5 %, placing migrant farmworkers with a much higher prevalence rate for physical aggression than other workplaces [44].

This study needs to be considered along with its limitations. Participants were recruited from only one region of one state, eastern North Carolina. Although the CTS2 can assess the prevalence and incidence of aggressive acts, it does not assess the context of aggressive behavior (why participants acted like they did—self-defense, retaliation, etc.). Aggressive acts were self-reported, and were not independently verified. The study is also limited by its focus on men; aggression among or toward the few women in these farmworker camps was not assessed. Lastly, due to the cross-sectional design, we cannot infer causality. Future research that needs to be addressed in order to advance our knowledge are ways to enforce camp cleanliness by growers, which could help curb aggression among farmworkers, wage amounts and wage theft of immigrant workers, as well as children and youth working in the fields and occasionally living on camps, and how to better address mental health for farmworkers.

Assessing conflict and the individual and environmental factors associated with aggression also can shed light on sources of violence that may be built into institutional programs that create the environment of a total institution such as a migrant farmworker camp. Psychological aggression also has important implications for worker health, safety, and performance, especially in the context of total institution groups where employees live and work together in close quarters. Understanding psychological aggression among farmworkers can improve our understanding of the health risk of this vulnerable population and improve the safety and wellbeing of farmworkers. These findings are applicable for the safety and wellbeing of farmworkers. A marginalized and hidden population that helps provides fresh produce to our nation. Specifically we can extend the discussion to explore how these findings can influence outreach workers who visit farmworker camps. Their work could involve support for psychological needs in camps to

curb aggression and isolation. This information must also be given directly to the public and to the employers to demonstrate the need to improve camp characteristics for safer, cleaner living environments for physical and psychological health. Pressure from the public directed towards growers to improve farmworker housing could prove vital in creating effective change.

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