Analyses of Occupational Illnesses and Implementation of Preventive Strategies at a Connecticut Tobacco Farm

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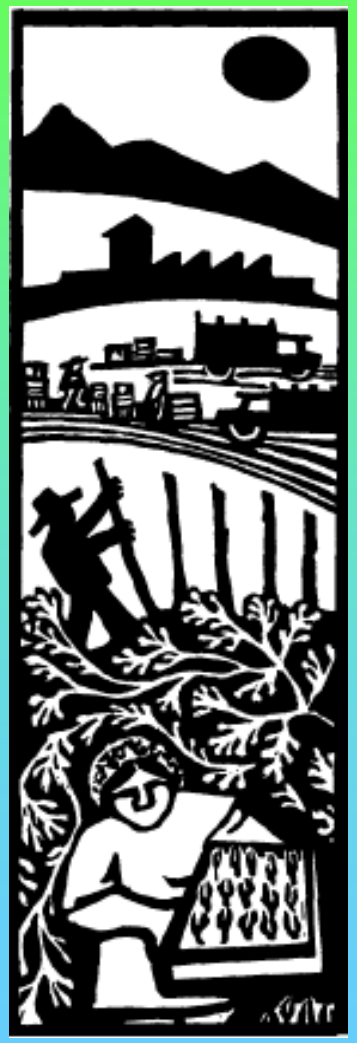
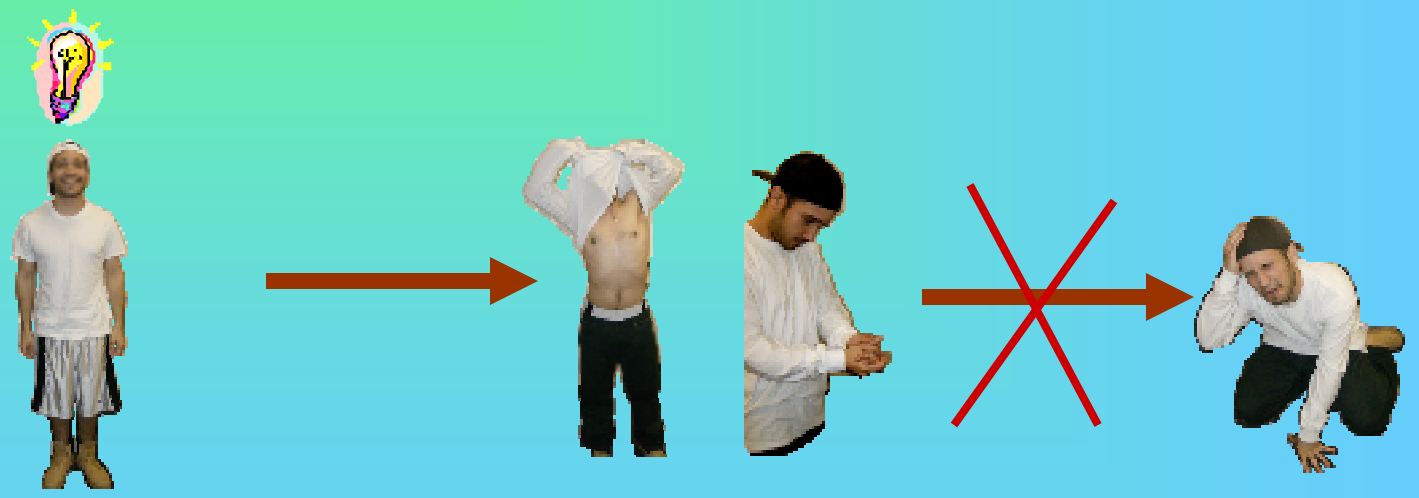
Migrant Farm Workers



- Essential Role in Society
- Low Job Security
- Low Income
- Undocumented
- No Union
- Often Seasonal
- Harsh Outdoor Working Conditions
- High occupational illness/injury rate per year
- Regulations poorly enforced
- Lack of knowledge & preventive behaviors

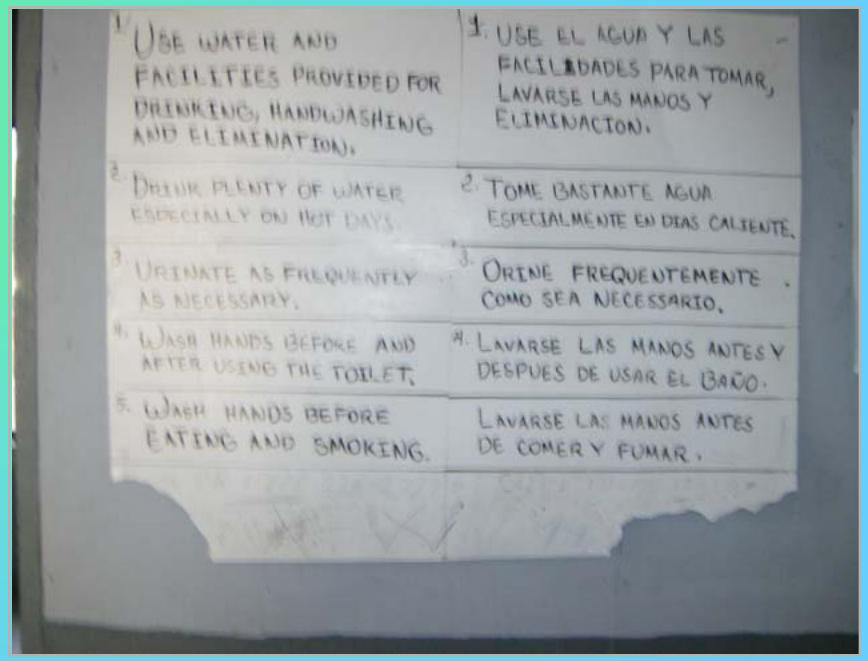
Paradigm

Knowledge → Preventive Behavior → Health Outcomes



Background

- Absence of training
- Role of PPE
- Cost /effectiveness where should funding be placed?
  - Outreach workers?
  - Pamphlets?
  - Posters?
  - Other resources?
- UCONN migrant farm worker clinic



Specific Aims

1st Summer

- To gain a better understanding of the health knowledge and attitudes, behaviors, and exposures which influence Migrant Farm Workers' health in CT.
- To identify health-related **knowledge** and **behavioral** gaps
- Review previously used published educational methods

2nd Summer

- To evaluate methods for addressing these gaps and implementing an appropriate intervention

Methods

1st Summer

- 1 farm
- Observation
- 2 focus groups (n=15)
- Open-ended interviews
  - Pictorial quiz (n=34)

2nd Summer

- 4 farms
- Educational Posters
- Pre/Post-poster surveys w/ quiz
- Paired & unpaired analysis

Survey Contents

1. Demographics
2. Education on subjects of interest
3. PPE owned / access to
4. Pesticide & heat exposure quiz
5. Behaviors (Stay in shade? Wear hat, long sleeves, sunglasses, gloves? Change clothes within 15 min after returning from fields?)

Demographics

	Jamaican N=42	**Spanish** N=149
Age	46.7 ±9.8	29.5 ±10.4
Years School	9.6 ±3.3	6.8 ± 3.1
Year in US Agriculture	14.3 ± 9.3	4.0 ± 4.3
Taught about sun exposure	48%	52%
Taught about pesticides	90%	55%
At every farm?	*54%*	*36%*
Ever Applied pesticides	31%	27%

Knowledge about Heat Exposure & Pesticide Exposure Risks

	Jamaican		Spanish	
	Heat	Pestic	Heat	Pestic
Age >28	NS	NS	0.006*	NS
Grade >6	NS	NS	NS	NS
Yrs in US Agriculture >2	0.008*	0.029*	NS	NS
Taught about	0.108	NS	NS	0.079

Behaviors – all p values NS with knowledge scores

How to Protect Against Heat Stress

Prevention

Wearing long-sleeved shirts and pants in the summer may seem uncomfortable but they can protect you from the sun and reduce the risks of heat stress.

Salt prevents cramps
NOTE: If you have high blood pressure, eating a lot of salt is not good for your health

A HAT

LONG-SLEEVED SHIRT

REST IN THE SHADE DURING BREAKS

1HR

Drink 1-2 liters of water every hour worked, depending on the heat and humidity. This is the best way to replace body fluid lost .

Bright colored clothes are better than dark.

On a hot day or while working very hard, it is normal to lose more than 2 liters of water every hour.

BETTER!

GOOD

WORSE

Alcohol makes you more dehydrated which can increase the effects of heat stress.

Signs of Heat Stress

When it is hot outside a person that is working hard may feel weak, nauseous, dizzy, have a headache, sweat more than normal, and sometimes faint. Their skin will be cool and moist.
Treatment: Place the person in a cool area, raising the legs and feet above their head. Give them water with salt.

Sweating cools the body but is ineffective when humid outside.

HEADACHE OR DIZZINESS

FATIGUE & VOMITING

SWEATING

MUSCLE PAINS AND CRAMPS

Cramps

While working and sweating a lot people may get painful cramps in their legs, arms, or stomach. The cramps are due to not having enough salt as well as water in the body. Therefore, water with salt and sugar (Gatorade for example) is better to drink than pure water while working.

Knowledge Quiz Results Before and After Educational Posters Display

	Jamaican		Spanish	
	Heat	Pestic	Heat	Pestic
Pre vs post **All workers (n= 68, 301)**	0.086	0.984	0.004*	0.378
Pre vs post **Paired (n=66)**	-	-	0.056	0.378

Quiz Scores of Jamaicans compared with Spanish Workers

- **Heat Exposure risks** 0.017*
- **Pesticide Exposure risks** <0.001*

Jamaicans are older, speak the English language, had more years working in tobacco farms

Impact of Knowledge on Behavior?

- Those who owned PPE (hat, sunglasses, long sleeved shirt for work, gloves) reported greater desire to wear. All $p < 0.005$
- Past education about subject had NS impact on behavior
- Posters had little impact on reported behavior
  - Negative significance: $P < 0.05$ with pre-poster scoring better than post-poster for 'change within 15 min' & 'Stay in Shade'
  - Other behaviors NS impact including with paired analysis

Discussion

- Educational posters about occupational health problems raised by workers had no significant impact on behavior changes
- Were posters too complex for the workers to get the message?
- PPE access significantly increased the chance that workers would practice preventive behaviors
- Past education about heat and pesticides exposure risks had no significant impact on preventive behaviors
- Limited significance based on demographics within groups

Limitations and Barriers

- Limited diversity of Spanish speaking workers
- Demographics of the Jamaicans and Spanish speaking workers were different
- May not apply to other educational topics
- Survey as opposed to interview

Conclusion

- Farmworkers access to PPE seems to have a positive impact on preventive behaviors related to heat and pesticide exposures
- This study suggests limited value of educational posters and workers' training without the availability of protective gears

Future Studies

- Making PPEs available and measuring their effectiveness in preventing occupational injuries and illnesses
- Evaluating behavioral changes with PPEs
- Monitoring outcomes of changed behaviors

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