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# Cancer Health Education Preferences among Miami-Dade County Construction Workers

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## ABSTRACT

*Construction work is a high-risk, transient occupation. Worksite outreach programs for cancer risk assessment are highly warranted because workers are exposed to both occupational and environmental carcinogens. We examined the feasibility and acceptability of conducting a paired cancer risk assessment and cancer prevention intervention using “lunch trucks” among construction worksites as the delivery mechanism. Among the 57 completed questionnaires from construction workers on a Miami-Dade County construction high-rise apartment building site, there were 50 (88%) males and 29 (51%) white Hispanics. Over 54% of the construction workers were current smokers of cigarettes, 3.5% chewed tobacco, and 19.3% smoked cigars. Of the current smokers, 80.1% expressed interest in quitting smoking, and 64.9% were willing to receive smoking cessation materials free of charge from a lunch truck at the construction site. Based on the results of this study, lunch trucks would be welcomed by construction workers as delivery mechanism to disseminate health education, cancer screening and smoking cessation information to this difficult to reach and highly underserved occupational group.*

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## Introduction

The new National Institute for Occupational Safety and Health (NIOSH) National Occupational Research Agenda (NORA) has partitioned workers into eight industry sector groups (NIOSH <http://www.cdc.gov/niosh/nora>). One of these groups is the construction sector (NIOSH, <http://www.cdc.gov/niosh/NORA/councils/const/default.html>). The construction sector has been assigned a high risk designation by NIOSH given elevated rates of fatal and nonfatal injury (National Research Council and Institute of Medicine, 2008). Construction workers are also at risk for a range of carcinogenic exposures (Cherrie, van Tongeren, & Semple, 2007; Rushton, Hutchings, & Brown, 2008; Siemiatycki, Richardson, Straif, Latreille, Lakhani, & Campbell, 2004; Tomatis, 2006). Not only are they often exposed to high UV radiation associated with skin cancer risk (Antoine, Pierre-Edouard, Jean-Luc, & David, 2007; Nordström, Hardell, Magnusson, Hagberg, & Rask-Andersen, 1997; Rosenthal, Phoon, Bakalian, & Taylor, 1988), they also have high rates of tobacco use and can be occupationally exposed to synergistic carcinogens, such as asbestos and other dusts (LeBlanc, Vidal, Kirsner, Lee, Caban-Martinez, McCollister et al., 2008; Lee, Fleming, Arheart, Leblanc, Caban, Chung-Bridges et al., 2007). Furthermore, work by researchers using the National

Health Interview Survey (NHIS) has demonstrated that construction workers are less likely than other U.S. workers to have health insurance. Even if they do have health insurance and visit a healthcare provider, they are less likely to be told by a doctor to stop smoking or receive a skin examination (LeBlanc et al., 2008; Lee, Fleming, McCollister, Caban, Arheart, LeBlanc et al., 2007). Thus, effective and feasible cancer risk assessment and prevention strategies to reach construction workers are needed.

As of March 2007, Hispanic construction workers constituted 38.2% of the Florida construction workforce (U.S. Census Bureau, 2007). This concentration of Hispanic construction workers is higher still in South Florida, where approximately three-fourths of construction workers in Miami-Dade County are Hispanic (U.S. Census Bureau, 2007). The growth of immigrant and Hispanic workers in construction has implications for safety conditions in this NORA sector (Dong & Platner, 2004). Statistics show that Hispanic (and presumably, immigrant) construction workers face especially dangerous working conditions and often lack health care coverage and health care access opportunities (Dong & Platner, 2004; U.S. Census Bureau, 2007). In the study described herein, we examined the feasibility and acceptability of conducting a paired cancer risk assessment and cancer prevention intervention using

lunch trucks as the delivery medium at a Miami-Dade county construction site.

### Methods

Construction workers from a large Miami-Dade county high-rise apartment building worksite were invited to participate in a brief written questionnaire (administered in Spanish or English) in January 2007. Recruitment was completed across two separate work days at the lunch hour break by trained interviewers on the construction site and under the supervision and guidance of the site foreman. Following the invitation phase, discussion of the study purpose, and willingness to participate, the construction workers were provided with a written consent form.

The questionnaire was designed to assess demographics, smoke exposure status, interest in obtaining health education information on smoking cessation, skin cancer prevention, acceptance of using onsite lunch trucks for information delivery, as well as the most acceptable form of recruitment incentives. Two survey questions assessed sun exposure protection behaviors - "When you go outside on a very sunny day, for more than one hour, how often do you use sunscreen?" and "When you go outside on a very sunny day, for more than one hour, how often do you wear a long sleeved shirt?" Both had Likert-type scale responses: *always, most of the time, sometimes, rarely, and never*. For analyses, response variables were re-coded to be dichotomous. Responses of *always* or *most of the time* were re-coded as *always/most of the time* for the sunscreen or wearing long sleeves at work items, whereas responses of *sometimes, rarely, or never* were re-coded as *no*. Descriptive statistics using *SPSS 16.0 for Windows* were calculated for all study variables. Institutional review boards of the University of Miami and Florida International University both approved this study.

### Results

Among the 57 completed questionnaires (no refusals) from construction workers on a private Miami-Dade county construction site, 7 were female (12.3%) with 29 white Hispanic (50.9%), 2 black Hispanic (3.5%), 10 black non-Hispanic (17.5%), and 10 white non-Hispanic (17.5%) working an average of 45.7 ( $\pm 1.5$  standard deviation) hours per week (range 18-80 hours).

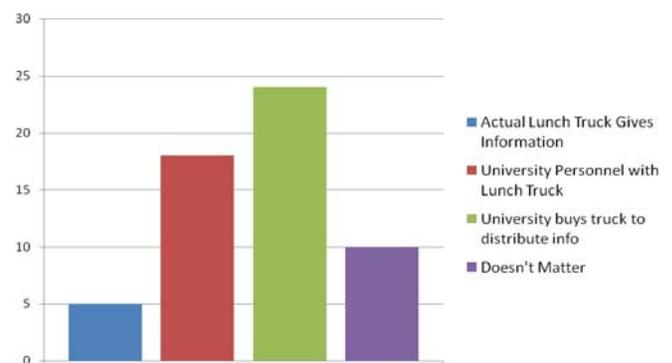
Over 54% of the construction workers were current smokers of cigarettes, 3.5% chewed tobacco, and 19.3% smoked cigars (Table 1). In addition, of those construction workers that were current smokers, 80.1% expressed interest to quit smoking and 64.9% were willing to receive smoking cessation materials free of charge from a lunch truck at the

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construction site. Nearly 16% (15.8%) reported using sunscreen while on the construction site, 26.3% using long sleeve shirts, and 7.0% wearing a hat or other garment which shaded or covered most of the neck and ears.

When asked which approach they thought would be most effective to distributing information on lowering their exposure risk, 42.1% of construction workers thought having a university-owned truck to disseminate information would be the most useful (Figure 1). If information on helping them or their family member to quit smoking or lower their risk of getting skin cancer were made available free of charge on the lunch truck, 64.9% and 86.0% would accept it, respectively. Lastly, when asked about which incentives would increase their willingness to visit the lunch truck and take information on lowering their risk of cancer 7.0% indicated a \$10 bill, 5.3% a \$10 certificate to McDonalds restaurant, 3.5% a \$10 certificate for the Lunch Truck, 3.5% a \$10 phone card, 1.8% a \$5 bill, and 1.8% a \$5 certificate to McDonalds restaurant.

**Figure 1. Best Methods for Disseminating Information on Risk Exposure to Construction Workers**



### Discussion

Construction workers are underserved by preventive medicine services, yet have high rates of smoking and UV exposure (LeBlanc et al., 2008; Lee, Fleming, Arheart et al., 2007; Lee, Fleming, McCollister et al., 2007). In the present study, we found high rates of cigarette smoking, which is consistent with estimates found in national health surveys for Hispanic construction workers (Lee, Fleming, Arheart et al., 2007). In addition, almost 20% of the study sample self-reported smoking cigars, raising the concern of the compounded effects of cigarette, cigar and ambient construction work exposure. A large proportion of the workers also did not engage in safe UV protection habits such as periodic applications of sunscreen, use of long

sleeves shirts, or wearing a garment which shades most of the neck and ears when on the construction site for more than one hour.

Quitting tobacco is difficult, but construction workers may have an even tougher time. For example, some studies of American workers have shown that 37% of blue collar men and 31% of blue

collar women smoke as compared to 21% of men and 20% of women in white collar professions (Levin, Silverman, Hartge, Fears, & Hoover, 1990). Some recent studies indicates that the work environment may be a key factor as to why the smoking rate for white collar workers is declining faster than for blue collar workers (Allwright, 2008; Cahill, Moher, &

**Table 1. Smoke Exposure and UV Protection Use among 57 Miami-Dade Construction Workers**

|                       | Smokes cigarettes | Smokes cigars | Chews tobacco | Uses sunscreen at work | Uses long sleeve shirt at work | Uses protective cloth under hard hat to protect ears and neck |
|-----------------------|-------------------|---------------|---------------|------------------------|--------------------------------|---|
| <b>Total</b>          | 31 (54.4%)        | 11 (19.3%)    | 2 (3.5%)      | 9 (15.8%)              | 15 (26.3%)                     | 4 (7.0%)  |
| <b>Gender</b>         |                   |               |               |                        |                                |   |
| Male                  | 27 (87.1%)        | 8 (72.7%)     | 0 (0.0%)      | 8 (88.9%)              | 11 (73.3%)                     | 2 (50.0%)   |
| Female                | 4 (12.9%)         | 3 (27.3%)     | 2 (100.0%)    | 1 (11.1%)              | 4 (26.7%)                      | 1 (25.0%)   |
| <b>Race/Ethnicity</b> |                   |               |               |                        |                                |   |
| White Hispanic        | 12 (38.7%)        | 8 (72.7%)     | 0 (0.0%)      | 4 (44.4%)              | 11 (73.3%)                     | 1 (25.0%)   |
| Black Hispanic        | 1 (3.2%)          | 1 (9.1%)      | 1 (50.0%)     | 1 (11.1%)              | 2 (13.3%)                      | 1 (25.0%)   |
| Black non-Hispanic    | 6 (19.4%)         | 0 (0.0%)      | 1 (50.0%)     | 0 (0.0%)               | 2 (13.3%)                      | 0 (0.0%)  |
| White non-Hispanic    | 9 (29.0%)         | 1 (9.1%)      | 0 (0.0%)      | 4 (44.4%)              | 0 (0.0%)                       | 0 (0.0%)  |
| Other                 | 1 (3.2%)          | 0 (0.0%)      | 0 (0.0%)      | 0 (0.0%)               | 0 (0.0%)                       | 0 (0.0%)  |

Lancaster, 2008). In a cohort of about 2,600 workers, blue collar workers were less likely to work in an environment that bans or restricts smoking, and are also less likely to have smoking cessation programs available, particularly those that respond to their specific needs and concerns (Sorensen, Goldberg, Ockene, Klar, Tannenbaum, & Lemeshow, 1992).

We found that a significantly large proportion of the construction workers were willing to quit smoking, and interested in receiving information about smoking cessation and skin cancer prevention via a lunch truck at the construction site. In addition to incentives that serve as a motivational factor to attract construction workers to learn about the deleterious effects of UV and smoke exposure, these construction workers indicated that a University-owned lunch truck, disseminating health promotion materials and contact information for smoking cessation programs would be largely favorable among their peers. Blue collar workers need health promotion programs that build support for nonsmoking workplace environments, particularly among co-workers and supervisors, as well as support for quitting, thus identifying interventions and approaches to reaching this high-risk worker group is paramount.

The sample size for the present pilot study was small. A larger sample size would enable us to determine if our results are influenced by factors

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specific to the Miami area or whether the results have greater generalizability to the greater South Florida construction workforce. In addition, having just one private construction site for only two days of the work week does not provide adequate representation of this largely transient worker group. These limitations notwithstanding, findings from this study provide a first step in developing effective strategies to reach this high-risk group in a manner amenable to their work structure. Further research would provide insight into factors leading to cancer prevention interventions at the construction workplace for all construction workers in South Florida. As immigrants become an ever-larger proportion of the construction workforce across Florida, the topic can be expected to be one of increasing importance.

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