Nail Salons: Health Effects and Work Environment Characteristics

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Background: Project Origin

- Researchers’ interests in nail salon sector and Asian immigrant workers
  - Hazardous products in small businesses
  - Poorly characterized hazards/exposures
  - Immigrant worker H&S
- Vietnamese community interest in economic development and reducing hazards
- Advocacy group interested in promoting “green” economic development
Background: Population

- 20,000 Vietnamese in Greater Boston
  - 10,000 live in Dorchester
- Most are refugees and immigrants who came in late 1970s until now
- Difficulty entering job market
- Employment concentrated in nail salon and hardwood floor refinishing industries
  - 11,000 nail techs in MA; 2,620 had one of 4 common VN surnames
Methods

• Community-based collaborative research in Boston-area Vietnamese community
• Instrument: 93 item work, occupational health and work environment questionnaire
  – Open and closed ended questions
  – From standardized questions where possible
  – Piloted with 10 subjects, revised to shorten
• Grocery card incentive
Methods: Sampling

- Network and snowball
  - Community, rather than workplace-based
  - Population difficult to access and enroll
  - Sought representative rather than random sample
- Inclusion: 17 yrs old+, worked in past year, lived in Boston area
- Target: 1/3 nail techs, 1/3 floor finishers, 1/3 any other
Methods: Interviewers

• 10 interviewers recruited by Viet-AID
  – Trained by researchers and Viet-AID
  – Recruited participants from own networks
• Surveys and Informed Consent conducted in Vietnamese (translated by project staff)
• Debrief on participation factors, instrument, process and bias
Preliminary Results

• 141 surveys completed over 8 months
• Results here from 71 surveys collected from nail techs
Respondent Background

- 65 female, 6 male
- Age range: 17-55 yrs, mean: 34 yrs
- Median arrival yr 1998, 24% arrived in 2000 or later
- Language: 100% Vietnamese 1st Language
- Hours worked per wk: range: 12-80, mean: 46
- General health: 65% rated their health “good” or better; 31% “fair”; 4% “poor”, 0% “very poor”
Respiratory Health Effects

- 21 (30%) reported a respiratory symptom that got better away from work
- 4 (6%) reported asthma
  - 2 Doctor-diagnosed
- 13 (18%) reported difficulty breathing
  - 8 (11%) said got better away from work (additional 4 weren’t sure)
- 22 (31%) reported respiratory irritation
  - 16 (23%) reported that it gets better away from work
- Only 1 smoker
Allergies and More

• 17 (24%) reported being allergic to something at work
  – 7 (10%) answered “don’t know”
  – 12 identified “nail liquid” as the allergen, remaining 5 said it was other nail product chemicals, e.g. acetone, primer

• Seen a doctor for job-related health problem? 15 (21%) said “Yes”

• Know others with work-related health problems? 24 (34%) said “Yes”
More Health Effects

• Skin problems: 22 (31%); 12 said it gets better when away from work for 2 days
  – 11 mentioned face/cheeks, 9 mentioned hands
• Aches and pains: 32 (45%); hands/wrists 16, back 12, shoulders 11, neck 12
  – Causes: sitting, bending, holding filing machine, giving massage, non-work
  – 18 (56% of achers) said gets better away from work
• Reproductive: Tried to conceive for 12 months without success: 1 “yes”, 18 (25%) said “Don’t know”
• 31 (44%) reported work-related headaches
Exposures

- 12 (17%): average air quality “terrible” or “needs improvement”
- 14 (20%): not enough fresh air
- 41 (58%): chemicals in the air
- 65 (92%): dust
- 56 (79%): named something with a strong or irritating smell
- 45 (63%): said there were odors at work that made them feel bad
Responses to “Name a strong or irritating smell”

22 mention artificial nail liquid/paste

“When making the paste, I have to use the primer; this liquid has a really bad smell that makes me very uncomfortable”

“No, I'm used to the smell of the chemicals but the other customers are not used to it.”

“Besides the bad smell, the process of filing the toe nails is uncomfortable because sometimes I have to hold my breath so my body gets tired.”

“Acetone to remove nail polish, liquid and powder to make paste to put on the nail, soap used during pedicure, toxic and smelly.”

“No smell”
What has your employer told you about the hazards of the chemicals in your work?

Most had no response or “None”

“We know chemicals are dangerous, owner tells us to wear mask.”

“Owner said you should wear mask so you will not inhale liquid smell.”

“Says that the chemicals are harmful so always need to keep the ventilator on and close lids, covers of chemicals surely.”

“Owner doesn't address issue because employee doesn't bring it up.”
Prevention and Controls

- 59 (83%): said that there was fresh air from the outside
- 44 (62%): ventilation system
- 38 (54%): “other” ventilation device
- 64 (90%) reported wearing a mask
  - 89% of those: “A paper or cloth mask like a medical or surgical mask”
Describe “other” Ventilation

“One large fan located by the back door and each nail table has a ventilating machine, under the table with a bag that filters dust.”

“Six small fans to suck up. I bought a ventilator that filters toxic chemicals and dust and install it close to the entrance door. Pump in clean air.”

“Don't have ventilation system, when weather warm, open windows. Stores with air vent machines are better.”

“Two fans to dry nails, two ventilators to suck up air behind the wall.”

“There is a ventilator on the ceiling that sucks dirty air outside.”

“Two fans filtering the air placed by front and back door, bad air goes in and is filtered into good air.”
Why do you wear a mask?

- 35 mentioned dust
- 36 mentioned “bad smell,” “odor” or “chemicals”
- Others: “To protect my health,” smelly feet
Why do you wear a mask?

“Because I am young and pregnant and I don't want to breathe in the dust and chemicals; I'm afraid that it might affect my child later on.”

“Keep hygiene for self and others.”

“Polite way to protect health, avoid chemicals.”

“Prevent coughing, itching of neck, redness of skin, itching of face, tearing.”

“Prevent dust, bad odors when sanding and filing acrylic nails, I have to bend very close.”
Significant Associations

- Fisher’s Exact Test
  - Work-related Respiratory Symptom AND Air Terrible or Bad (p=0.003)
  - Work-related Respiratory Symptom AND Not Enough Fresh Air (p=0.003)
Discussion

• Results suggest significant prevalence of work-related health effects and exposures
  – Respiratory irritation
  – Skin problems
  – MSDs
• Limited knowledge of hazards and controls
• Unclear situation with ventilation
• Major problem with inappropriate ppe – possible “cause” of skin problems?
Limitations

- Sample not random
  - Representative? Large enough?
- Lack of comparison group
- Labor intensive design (open ended; many questions; language issues)
- Self-report
Strengths

• Positive, learning experience with collaborative community-based research
• Accessed a hard-to-reach population
• May be highly representative because of participation rate
• Open-ended responses provide rich data set
• Highly informative for further assessment targets and interventions
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