Chemical exposures are of high concern for nail salon workers, who handle nail care products that contain many hazardous compounds, including some linked to cancer, reproductive harm, and respiratory problems. In response, San Francisco (SF), California passed a ground-breaking ordinance to establish a voluntary program for salons that adhere to the program’s criteria. This program was one of the first of its kind, and other local municipalities in California were interested in adopting a similar program. Thus, it was important to evaluate the program with respect to its impact on the salon environment and workers themselves. The recognition criteria for San Francisco’s Healthy Nail Salon Recognition Program include:

1. Choose nail polishes that do not contain the “toxic trio” ( dibutyl phthalate, toluene, and formaldehyde).
2. Use safer nail polish removers, including but not limited to acetone.
3. Avoid using nail polish thinners, especially those containing toluene and methyl ethyl ketone.
4. Ensure that all nail salon staff wear nitrile gloves.
5. Ventilate the salon to improve air quality. Designate a specific area for artificial nail services and properly ventilate the area.
6. Install mechanical ventilation unit(s) within 1 year of entering program, if one does not already exist.
7. Train all nail salon staff onsite and owners on safer practices.
8. Allow SF program staff to monitor air quality within the salon.
9. Be committed to trying and adopting safer artificial nail products.
10. Do not allow customers to bring in products unless they meet program criteria.

**RESULTS**

- **Data analysis:** conducted with two workers per salon from each of six intervention group nail salons and five control group nail salons.
- Conducted personal air monitoring using passive organic vapor monitors.
- Administered surveys in Vietnamese to assess knowledge and behaviors.

**Data analysis:** conducted standard descriptive statistics.

**Air monitoring data:** used Wilcoxon signed rank test to compare differences between pre-and post-training results for each group and Wilcoxon random sum test to compare differences between intervention and control groups.

**Survey data:** used McNemar’s test to evaluate differences between pre- and post-training results for each group and Fischer exact test to test differences between intervention and control groups.

**Summary of Results:**
- Reduction in toluene (−46% vs. 0%), TVOC (−19% vs. +47%) levels in the intervention group as compared to the control group, respectively. An increase in MMA (−10% vs. +2%) in the intervention as compared to the control group, respectively. None of the differences were statistically significant.
- Statistically significant increase in knowledge of DBP in nail products (+55%) for intervention group as compared to the control group, respectively.
- No statistically significant differences in mean pre- and post-training air sampling results in MMA, toluene, and TVOCs between intervention and control groups.

**CONCLUSIONS**

- The study results suggest that the Program may have helped to reduce levels of toluene and TVOCs measured in the salon (not statistically significant) and increased knowledge regarding healthy workplace practices.
- Air monitoring results were much lower than the Permissible Exposure Limits (PEL) set by California’s Division of Occupational Safety and Health (Cal/OSHA) for toluene and MMA. Cal/OSHA PEL for toluene is 10 ppm TWA, and for MMA is 50 ppm TWA.
- The SF Healthy Nail Salon Recognition Program was one of the first of its kind to use an incentive-based approach to encourage salons to apply source reduction strategies to reduce chemical exposures. Other counties in California are following suit. More research is needed to fully evaluate the impacts of the program on the salon environment and worker knowledge.

**Study Considerations:**
- Sample size was modest—this pilot study did not have the power to detect significant differences, especially given the low and variable chemical concentration levels.
- The post-training assessment was conducted only two months after the SF training, which may have been an insufficient amount of time for salon owners to switch out products. Information from training may have been easier to recall in this shorter period.
- The participating nail salon owners were not chosen at random, and were instead selected from a list of salons planned to participate in the SF program (intervention) and salons contacted by SFE but declining to participate in the program (control). This affects generalizability of our findings.