

# Workplace exposures and skin symptoms in nail technicians in Toronto, Canada

Sadaf Sanaat<sup>1,2</sup>, Victoria H Arrandale<sup>1,2</sup>, D Linn Holness<sup>2-5</sup>

<sup>1</sup>Occupational Cancer Research Centre, Ontario Health; <sup>2</sup>Dalla Lana School of Public Health, University of Toronto; <sup>3</sup>Centre for Urban Health Solutions, Li Ka Shing Knowledge Institute, St Michael's Hospital, <sup>4</sup>Division of Occupational Medicine, Department of Medicine, University of Toronto, <sup>5</sup>Divison of Occupational Medicine, Department of Medicine, St Michael's Hospital

## BACKGROUND

- The nail salon industry has grown rapidly in recent years
- There are currently almost 1400 licensed nail salons in Toronto, Ontario
- A nail technician's typical day involves sanitizing tools, prepping workstations, cleaning, clipping, filing and polishing nails as well as massaging the hands and feet
- Regulation surrounding the products that are used in these settings is complex and contact with the occupational health and safety system is minimal
- Exposures in salons include chemical, physical, biological and ergonomic hazards but little is known about nail technician's health or occupational health and safety practices

## OBJECTIVES

- The objective of this study was to determine work practices and skin symptoms in nail technicians in Toronto, Canada

## METHODS

- The study was approved by the Research Ethics Board at the University of Toronto
- Participants provided implied informed consent through the submission of a completed anonymous questionnaire
- Participants received a \$5 Cdn coffee shop gift card upon completion of the questionnaire

### Recruitment

- The salons were visited in person by the research team, including a member who spoke either Vietnamese or Chinese
- All study materials, including consent form and questionnaire, were developed in English then translated into Vietnamese and Chinese (simplified)

### Questionnaire

- The paper questionnaire was self-completed anonymously in the salons
- The questionnaire gathered information on demographics, work training, workplace characteristics, symptoms, occupational health and safety awareness and occupational health and safety practices
- Symptoms were deemed work-related when they were reported to be worse at work or better away from work

### Data Analysis

- Descriptive statistics were completed
- Between group differences were explored for hours worked, years worked, and services provided.
- Statistical analysis was completed using R 3.4.1

Table 1. Demographics of study population

Characteristic	n (%)
Female	143 (95%)
Salon owner	17 (11%)
Employed in salon >5yrs	31 (21%)
Worked over 30 hrs/wk	90 (59%)
Ever use mask at work	136 (88%)
Ever use gloves at work	146 (96%)



## RESULTS

- Overall, 208 nail salons were visited during the summer of 2018 in Toronto, Ontario
- A total of 155 nail technicians completed the questionnaire from 66 salons

### Services Provided

- Most technicians reported providing manicures (99%), pedicures (96%) and using shellac polishes (86%)
- Fewer technicians applied acrylic artificial nails (34%) or gel artificial nails (66%)

### Personal Protective Equipment (PPE) Use

- The majority of participants reported using personal protective equipment: 88% reported ever using a mask during and 96% ever using gloves at work (Table 1)

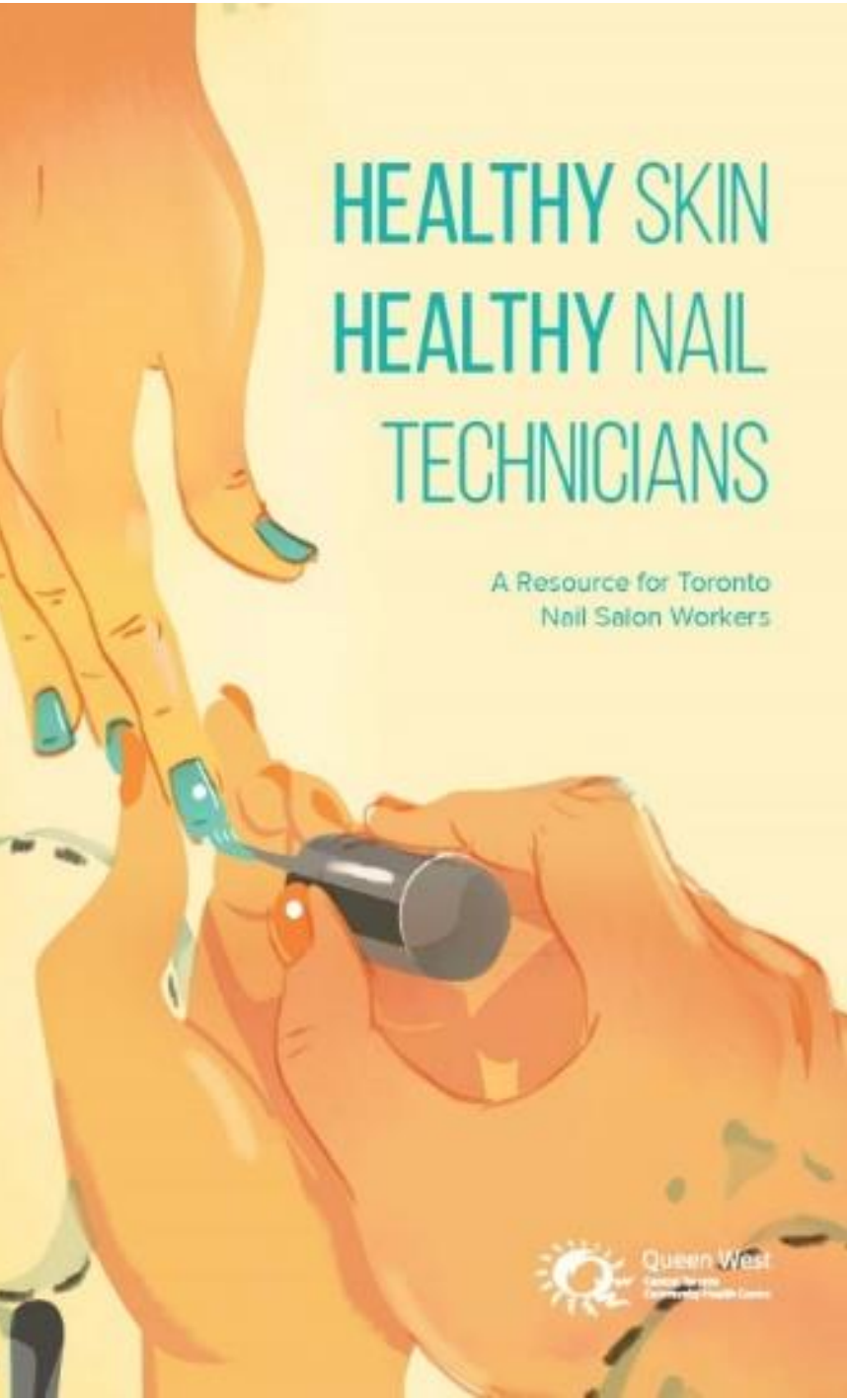
### Symptoms

- The most common symptom reported was neck pain (44%) followed by back pain (38%) with 52% and 57% considered to be work-related, respectively (Table 2)
- A small group of technicians reported a current rash (5%) and of these, 57% reported that it was work-related
- Technicians working more than 30 hours a week tended to be more likely to report neck pain (52% vs. 32%, p<0.05), back pain (45% vs. 28%, p<0.10) as well as both current (8% vs. 0%, p<0.10) and previous rash (13% vs. 3%, p<0.10)
- Technicians who reported using acrylic nail products seemed more likely to report wheeze (14% vs. 5%) and burning eyes (24% vs. 13%) but this did not reach statistical significance
- Technicians who used shellac polishes were more likely to report a runny nose (25% vs. 0%, p<0.05)

Table 2. Self-reported symptoms and work-relatedness

		Overall n (%)	Work-related n (%)
Pain	Head Pain	22 (17%)	7 (32%)
	Neck Pain	62 (44%)	26 (42%)
	Back Pain	53 (38%)	26 (49%)
	Hand/Wrist Pain	36 (27%)	23 (64%)
Respiratory	Cough	8 (6%)	5 (63%)
	Phlegm	4 (3%)	2 (50%)
	Wheezy Chest	12 (8%)	7 (58%)
Skin	Current rash	7 (5%)	4 (57%)
Other	Burning eyes	25 (17%)	14 (56%)
	Runny nose	31 (21%)	15 (48%)

Figure 1. Skin resource for nail technicians



## CONCLUSIONS

- Many symptoms were reported by nail salon workers in Toronto, including skin symptoms that may be work-related
- With an industry growing so quickly, it is important to implement appropriate prevention practices in order to improve and protect the health and safety of nail salons technicians
- Community groups in Toronto are providing training and education for nail salon technicians (Figure 1)
- While exposure to chemicals remains a concern, ergonomic hazards and resulting musculoskeletal symptoms should not be overlooked as they are prevalent within this occupational group



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[linn.holness@utoronto.ca](mailto:linn.holness@utoronto.ca)