

OCCUPATIONAL CARCINOGENIC EXPOSURE AMONG MIGRANT WORKERS IN THE UNITED ARAB EMIRATES

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INTRODUCTION

Occupational illnesses, such as cancer, cause more deaths each year than occupational accidents and the disease burden related to occupational cancer cases is increasing worldwide. Workplace carcinogens include physical, chemical, biological and organizational hazards. In the United Arab Emirates (UAE), migrant workers, who account for the majority of labor, may have increased exposure and vulnerability to workplace hazards, including carcinogenic agents.

AIM

This study aimed to estimate the prevalence of occupational exposure to workplace carcinogens among migrant workers in the UAE.

METHODS

Design: cross-sectional survey

Population: employees working in construction, cleaning, dry cleaning, mechanic workshops and hair salons in Al Ain (Emirate of Abu Dhabi) and in Sharjah (Emirate of Sharjah) in the UAE

Data collection: interviewer assisted completion of the OccIDEAS online assessment tool

Information collected: demographics, work history, regular tasks, preventive measures, lifestyle, self-rated health

Exposure assessment: automatic assessment of the probability ('none', 'possible'* or 'probable') and level ('low', 'medium', 'high') of exposure to 38 carcinogens

Data analysis: descriptive statistics and ordinal logistic regression

*Reclassified to 'none' or 'probable'

RESULTS

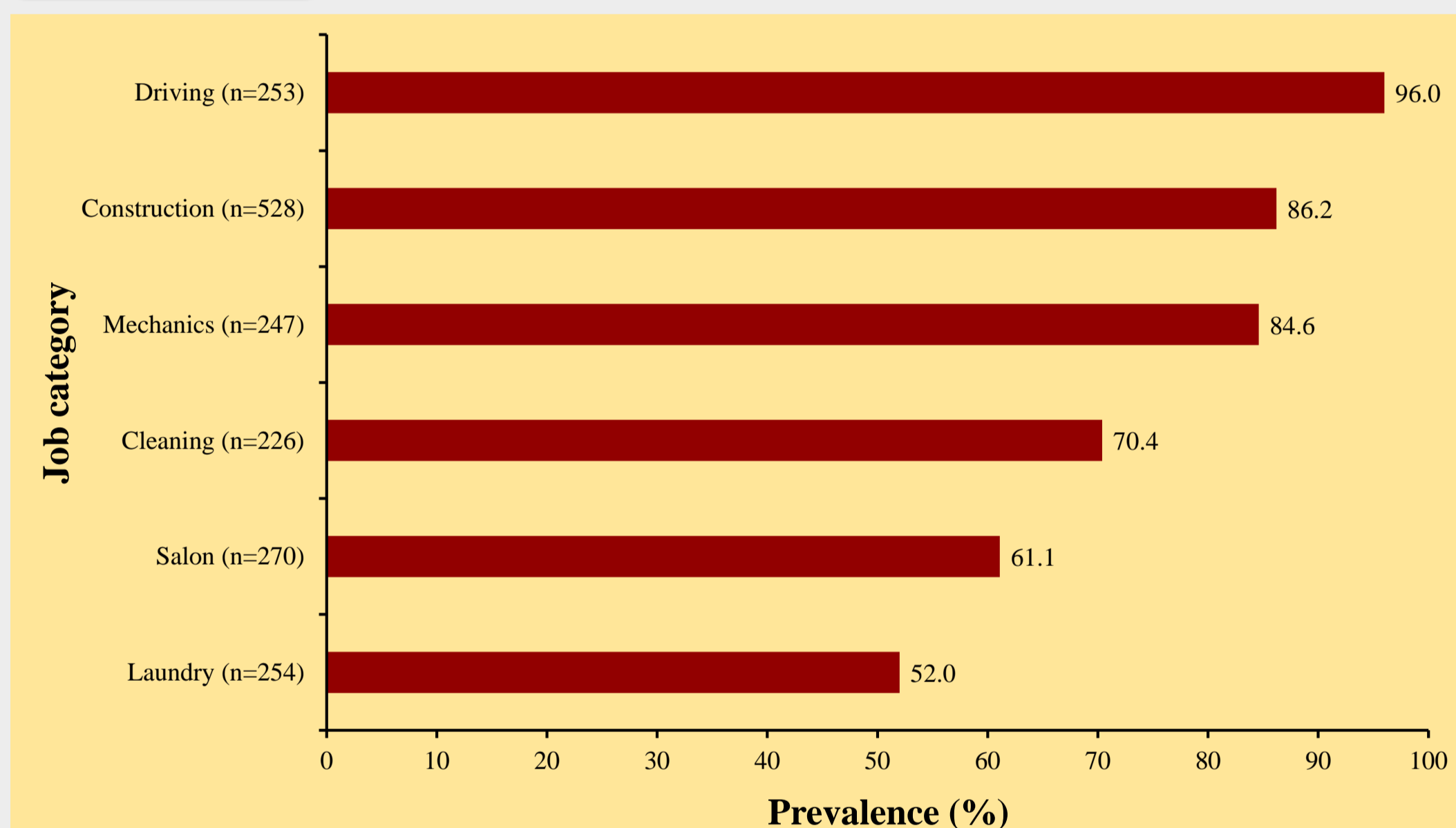


Figure 1. Prevalence of exposure to any carcinogens in various jobs held by migrant workers in the UAE.

Table 2. Prevalence of exposure to specific carcinogens by estimated exposure level among migrant workers in the UAE (N = 1778).

Carcinogen	Level of Exposure							
	Low		Medium		High		Total	
	n	%	n	%	n	%	n	%
Formaldehyde	121	6.8	45	2.5	0	0	166	9.3
Asbestos	9	0.5	46	2.6	0	0	55	3.1
Silica	92	5.2	43	2.3	161	9.1	296	16.6
Arsenic	11	0.6	6	0.3	0	0	17	0.9
Cadmium	3	0.2	1	0.1	0	0	4	0.3
Chromium VI	166	9.3	13	0.7	1	0.1	180	10.1
Lead	72	4	9	0.5	1	0.1	82	4.6
Nickel	7	0.4	6	0.3	1	0.1	14	0.8
Mineral Oils	103	5.8	122	6.9	0	0	225	12.7
Wood Dust	15	0.8	26	1.5	103	5.8	144	8.1
Organochlorines	2	0.1	4	0.2	0	0	6	0.3
Environmental Tobacco Smoke	390	21.9	27	1.5	0	0	417	23.4
Diesel Exhaust	108	6.1	399	22.4	103	5.8	610	34.3
Artificial UV	1	0.1	6	0.3	0	0	7	0.4
Ocular UV	18	1	10	0.5	3	0.2	31	1.7
Solar UV	22	1.2	32	1.8	38	2.1	92	5.1
Benzene	22	1.2	32	1.8	38	2.1	92	5.1
Chlorinated Solvents	133	7.5	24	1.3	41	2.3	198	11.1
Tetrachloroethylene	65	3.7	4	0.2	38	2.1	107	6
Trichloroethylene	50	2.8	3	0.2	21	1.2	74	4.2

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Table 1. Prevalence of exposure to specific carcinogens in various jobs held by migrant workers in the UAE (N = 1778).

Carcinogen	Driving (n = 253)	Construction (n = 528)	Mechanics (n = 247)	Cleaning (n = 226)	Salon (n = 270)	Laundry (n = 254)
Formaldehyde	0	15.7	1.2	0	29.6	0
Asbestos	0	2.7	16.6	0	0	0
Silica	13.4	48.5	2.4	0	0	0
Arsenic	0	3.2	0	0	0	0
Cadmium	0	0	1.6	0	0	0
Chromium VI	0	31.6	5.3	0	0	0
Lead	0	9.5	2	0	10	0
Nickel	0	0.4	4.9	0	0	0
Mineral oils	4.7	0.4	43.7	46.5	0	0
Wood dust	0	27.3	0	0	0	0
Organochlorines	0	1.1	0	0	0	0
Environmental tobacco smoke	14.6	33.7	15.4	23.5	28.9	13
Diesel exhaust	95.7	32.6	62.3	17.7	0	0.8
Artificial UV	0	0.4	2	0	0	0
Ocular UV	2	16	1.6	2.7	0	0
Solar UV	10.3	8.7	2	6.6	0	0
Benzene	10.3	8.7	2	6.6	0	0
Chlorinated solvents	0	0.8	10.5	18.1	9.6	39.8
Tetrachloroethylene	0	0	0.8	2.2	2.6	36.6
Trichloroethylene	0	0	0	0	0.7	28.3

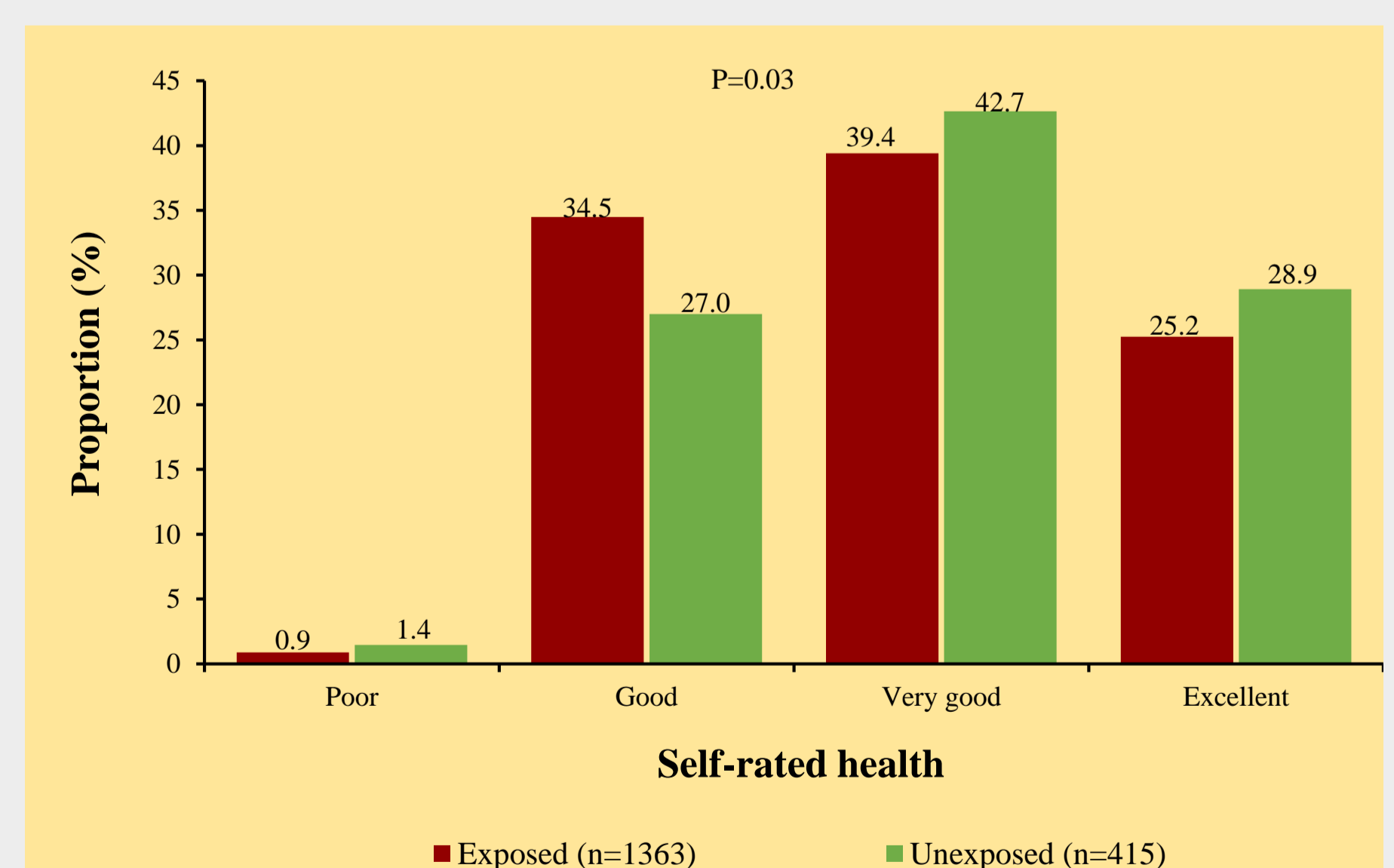


Figure 2. Exposure to carcinogens by self-rated health in migrant workers in the UAE.

CONCLUSIONS

- Migrant workers are exposed to several different carcinogens in the UAE, mainly environmental tobacco smoke, diesel exhaust, asbestos and formaldehyde.
- Workers exposed to carcinogens have significantly lower self-rated health.
- The results of the study provide gap-filling information for evidence-based planning and implementation of preventive measures.