Occupational Health Clinics for Ontario Workers

Centre de Santé des Travailleurs(ses) de l'Ontario

Institute for Work & Health

Research Excellence Advancing Employee Health

Workers Experience During a Pandemic - Survey Results

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& the COVID-19 ad-hoc Survey Group

September 25, 2020

Institute for Work & Health

Research Excellence Advancing Employee Health

OUR RESEARCH

- Working conditions & health
- Vulnerability at work
- Workplace OHS programs & practices
- OHS regulation & enforcement
- Clinical treatment & health measurement
- Workplace disability management
- Compensation & benefit policy
- Selected topics
- Project directory

Research that matters to protecting the health and safety of workers

The Institute for Work & Health (IWH) is a Canadian leader in work injury and disability prevention research. An independent, not-for-profit organization, IWH conducts and shares actionable research to promote, protect and improve the health and safety of working people.

Occupational Health Clinics for Ontario Workers (OHCOW)

- An inter-disciplinary occupational health team:
  - occupational physicians
  - occupational health nurses
  - ergonomists
  - occupational hygienists
  - community organizer
  - customer service coordinators
  - leadership/administration
- Funded by MOL Prevention Branch
- BOD from organized labour

Occupational Health Clinics for Ontario Workers

Centre de Santé des Travailleurs(ses) de l'Ontario

Clinic Services:

1. **individual client** (clinical)
2. answer **questions** (work/health related)
3. **informational presentations**
4. workplace **visits**
   - requested by co-chairs of JH&SC
5. exposure/health **investigations**
   - medical/hygiene/ergonomic combined

Pandemic Survey Background:

- Invited to help with the **healthcare unions** in responding to draft infection control procedures from the **PHO & PHAC**
- Based on previous work done with them during **SARS**, **2009-nH1N1** and **Ebola** (also involved with PHO & MOH in organizing a **summit** to address infection control issues between pandemics – 2014-15)
- While reviewing the **literature** coming out of China, we noted a number of surveys done to characterize mental health risks to HCW's
- Floated the idea of doing a survey with Ontario HCW unions & the CFNU and created an **ad hoc team** to devise a survey

Members of COVID-19 ad hoc Survey Group:

- Ontario healthcare unions' H&S staff reps (ONA, SEIU, OPSEU, CUPE, Unifor, USW)
- Canadian Federation of Nurses Unions (CFNU)
- OFL, BCNU, HSABC
- Guy Potter, occupational psychologist with Duke University Hospital in North Carolina (COPSOQ International Network)
- Peter Smith, researcher with Institute for Work and Health (IWH)
- A variety of interested academics and activists from Canada and the US
- Valerie Wolfe, Daryl Stephenson & myself (OHCOW)

Survey Purpose:

- To capture the experiences of workers during the pandemic in “real time”
- After the pandemic, experiences will likely be re-interpreted (“spun”) so try to collect a record captured in real time
- Designed survey to be filled in repeatedly as conditions change
- Launched April 6th responses still trickling in
- Non-healthcare workers survey launched April 26th responses also still trickling in

Pandemic Survey content:

- COPSOQ (StressAssess) scales measuring **burnout**, [**stress**] and **sleep symptoms** (2 questions each);
- GAD-2 and the PHQ-2 scales to measure **anxiety** and **depression** symptoms (2 questions each);
- 3 questions from the [DSM5 **acute stress** scale] (pre-PTSD);
- 3 questions from a German **self-efficacy** scale (General Self-Efficacy Short Scale (ASKU));
- custom made **exposure** scales (**PPE adequacy/availability**, similar for **preventive measures/procedures**, and **training**)
- COPSOQ scales for [**quantitative demands**], **work pace**, **predictability**, **role conflict**, **supervisor support**, **colleague support** (created a similar question for **family support**)
- StressAssess questions about **psychological H&S climate**, and organizational **culture's tolerance of behaviours harmful to mental health**

Study samples

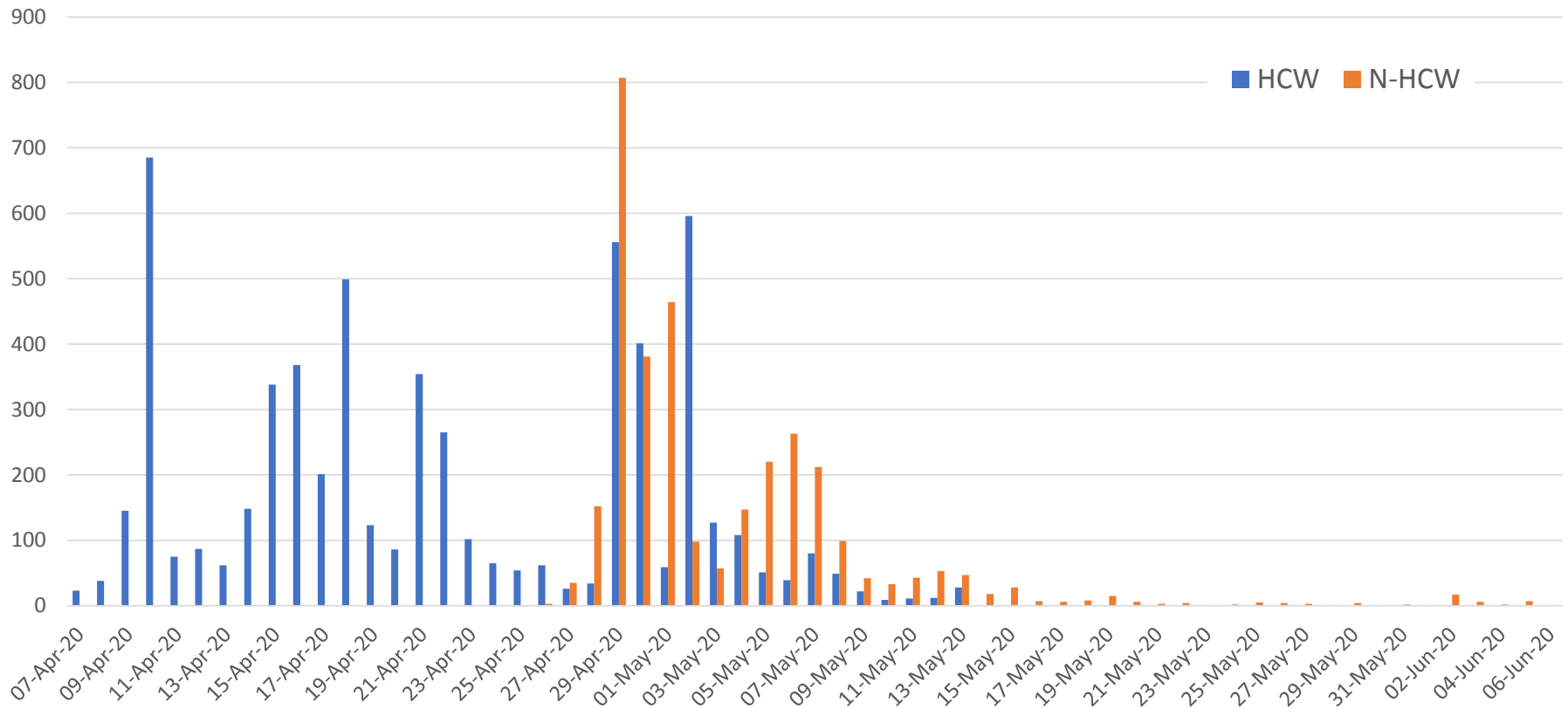
Healthcare Workers

- Responses between April 7th and May 13th, 2020
- 7,298 respondents started the survey, of which 5,988 were used

Non-Healthcare Workers

- Responses between April 26th and June 6th
- 5,180 respondents started the survey, of which 3,779 were employed on March 2nd, 2020.
- Education (32%), Government (18%), Healthcare and social services (18%), Retail and food service (7%); Manufacturing (5%)

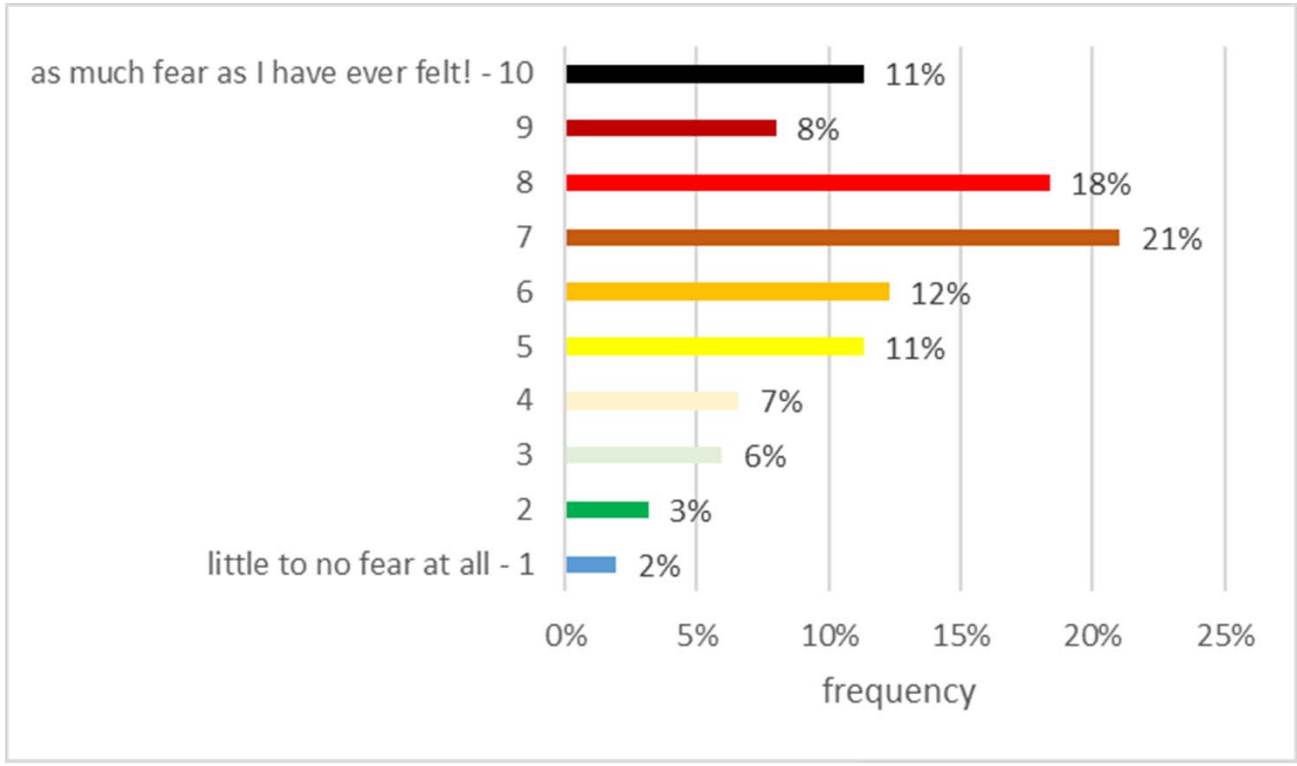
Number of responses over time

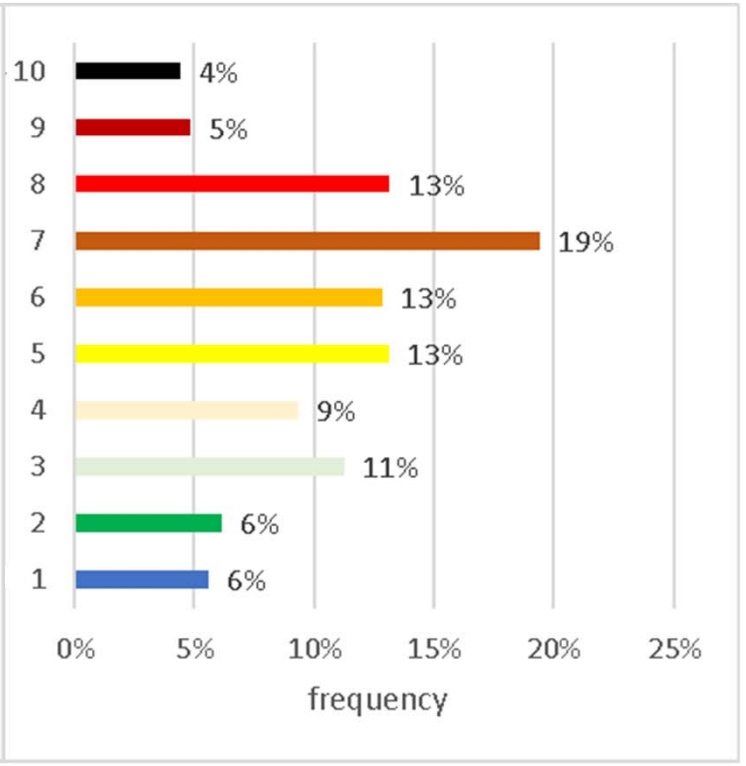


		# of infected patients in organization		exposure to patients with COVID			# of infected workers at work		tested positive for COVID	rating of fear
	n=	at least 1 or more	don't know	direct contact	in same room	on same floor	at least 1 or more	don't know		
all	5904	58.7%	21.6%	34.1%	4.7%	11.5%	33.2%	35.2%	0.4%	6.6
cleaning	109	56.0%	19.3%	9.3%	25.0%	16.7%	29.6%	29.6%	0.0%	7.3
clerk	238	58.8%	29.0%	7.2%	10.5%	17.7%	35.7%	39.5%	0.0%	6.8
contact tracing	13	30.8%	30.8%	8.3%	16.7%	0.0%	23.1%	46.2%	0.0%	5.3
cook	26	38.5%	0.0%	0.0%	0.0%	7.7%	23.1%	11.5%	0.0%	6.7
coordinator	188	44.7%	29.8%	9.6%	7.4%	14.9%	29.4%	34.2%	0.0%	6.4
counsellor	66	31.8%	36.4%	6.1%	6.1%	7.6%	32.3%	27.7%	0.0%	6.3
dietary aid	72	47.9%	8.5%	5.6%	2.8%	31.0%	35.2%	19.7%	4.7%	7.6
LPN	485	56.2%	16.1%	30.9%	4.4%	11.6%	32.6%	32.6%	0.8%	6.8
maintenance	17	76.5%	5.9%	11.8%	11.8%	29.4%	41.2%	35.3%	0.0%	7.1
mgmt	106	55.7%	17.9%	13.3%	6.7%	20.0%	31.1%	30.2%	0.0%	5.1
paramedic	80	61.3%	31.3%	88.8%	1.3%	1.3%	43.0%	34.2%	0.8%	5.6
professional	298	69.5%	18.1%	27.5%	6.4%	18.8%	38.1%	39.1%	1.0%	6.1
PSW	710	28.9%	25.4%	12.6%	2.8%	4.5%	20.3%	35.0%	0.9%	7.2
RN	2425	65.1%	20.9%	42.3%	3.1%	11.0%	32.3%	35.9%	0.4%	6.5
RPN	78	35.9%	37.2%	23.4%	3.9%	11.7%	21.8%	35.9%	0.0%	6.3
SW	89	67.4%	14.6%	7.9%	15.7%	11.2%	49.4%	32.6%	1.1%	6.2
technician	706	75.4%	19.7%	64.3%	3.1%	10.7%	46.1%	36.3%	0.1%	6.7

		personal COVID experiences								
	n=	contact with COVID patient at work	contact with COVID patient outside work	told to work despite exposure	experienced symptoms similar to COVID	told to work despite symptoms	told to self-isolate	tested for COVID	tested positive for COVID	submitted workers' compensation for COVID
all	5904	19.7%	1.6%	15.3%	21.6%	5.3%	18.1%	15.9%	0.4%	0.8%
cleaning	109	20.9%	4.5%	25.4%	14.9%	4.5%	13.4%	16.4%	0.0%	0.0%
clerk	238	12.9%	1.2%	18.4%	27.0%	6.7%	17.8%	14.7%	0.0%	1.2%
contact tracing	13	0.0%	0.0%	0.0%	35.7%	7.1%	35.7%	21.4%	0.0%	0.0%
cook	26	12.5%	6.3%	12.5%	6.3%	0.0%	37.5%	25.0%	0.0%	0.0%
coordinator	188	10.5%	0.6%	11.0%	27.3%	5.2%	29.1%	16.3%	0.0%	0.0%
counsellor	66	8.3%	2.1%	18.8%	18.8%	2.1%	39.6%	10.4%	0.0%	0.0%
dietary aid	72	25.6%	0.0%	23.3%	7.0%	4.7%	14.0%	14.0%	4.7%	7.0%
LPN	485	17.6%	2.0%	15.9%	20.7%	7.4%	18.4%	16.0%	0.8%	1.2%
maintenance	17	25.0%	0.0%	25.0%	0.0%	0.0%	25.0%	16.7%	0.0%	8.3%
mgmt	106	19.7%	3.9%	11.8%	25.0%	7.9%	13.2%	18.4%	0.0%	0.0%
paramedic	80	34.7%	3.3%	14.9%	13.2%	1.7%	16.5%	8.3%	0.8%	6.6%
professional	298	17.7%	1.6%	14.2%	21.6%	5.5%	20.6%	17.4%	1.0%	0.3%
PSW	710	11.5%	2.4%	20.9%	22.4%	5.4%	20.2%	14.6%	0.9%	1.6%
RN	2425	20.3%	1.3%	13.8%	23.0%	5.0%	18.0%	17.5%	0.4%	0.7%
RPN	78	7.9%	1.1%	10.1%	34.8%	6.7%	19.1%	20.2%	0.0%	0.0%
SW	89	9.2%	4.6%	18.4%	21.8%	8.0%	18.4%	18.4%	1.1%	0.0%
technician	706	31.3%	1.3%	18.0%	17.7%	4.8%	13.8%	12.8%	0.1%	0.2%

On a scale from **1 to 10**, how would you rate your **current level of fear** about this whole **pandemic** situation:

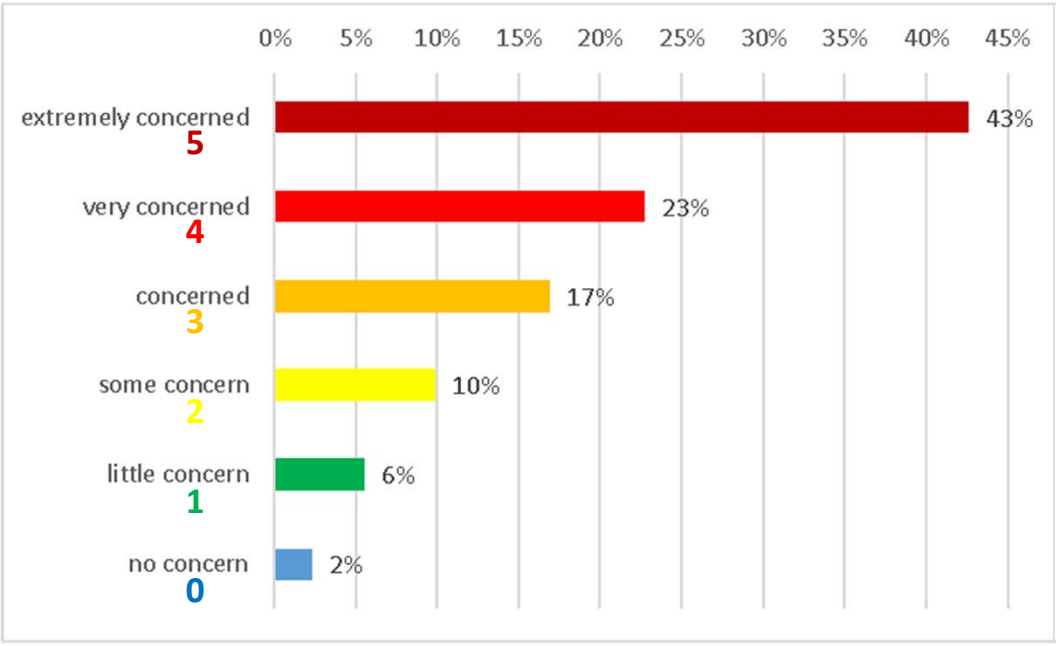




Healthcare average: **6.6**

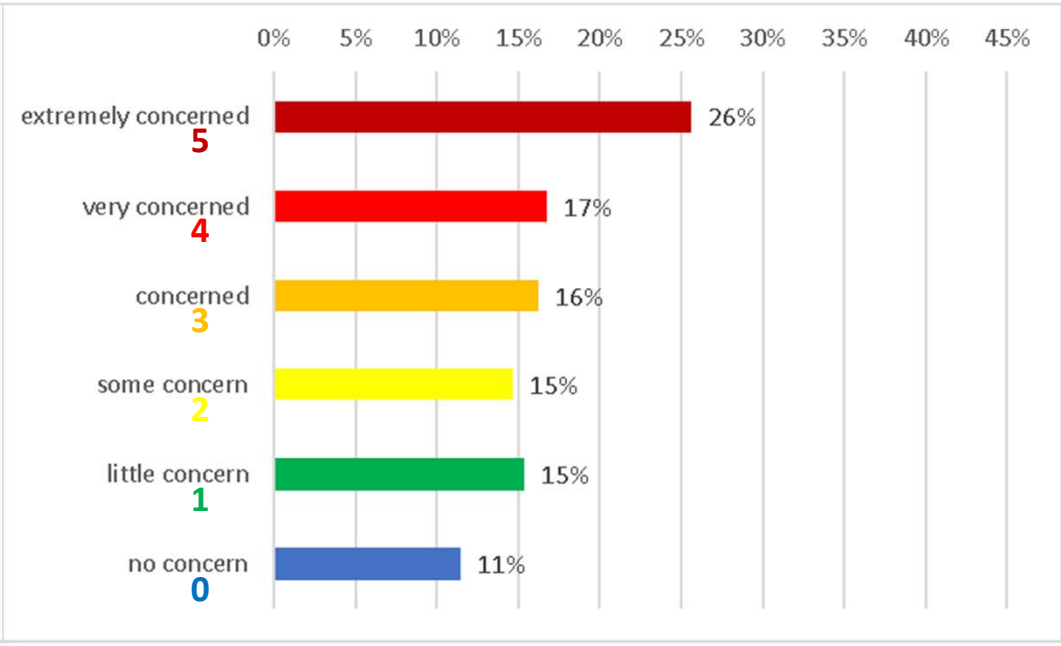
non-Healthcare average: **5.6**

How **concerned** are you about **bringing the virus home** to those with whom you live and/or friends?



Healthcare average: **3.8**

very concerned



non-Healthcare average: **2.9**

concerned

Main Outcomes

Generalized Anxiety Disorder screener (GAD-2)

Over the past 7 days how often have you been bothered by the following problems:

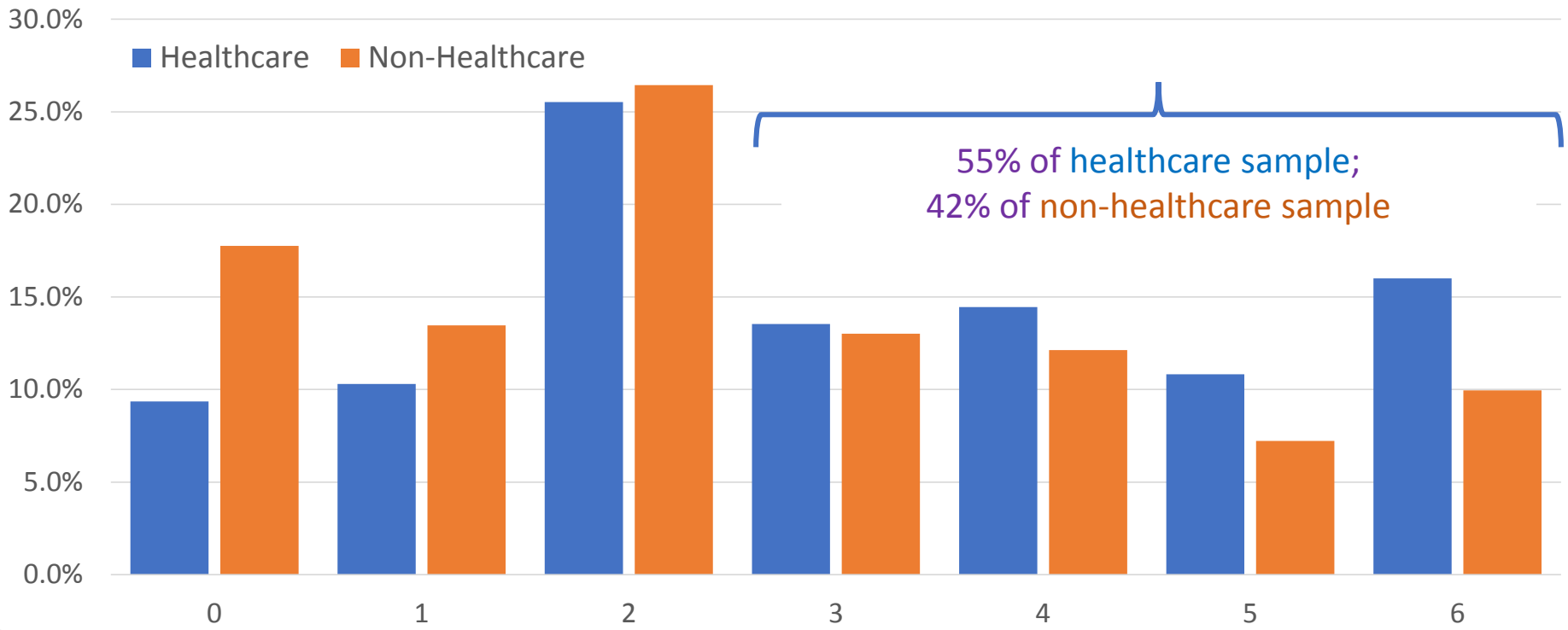
- Feeling nervous, anxious or on edge
- Not being able to stop or control worrying

Patient Health Questionnaire screener (PHQ-2)

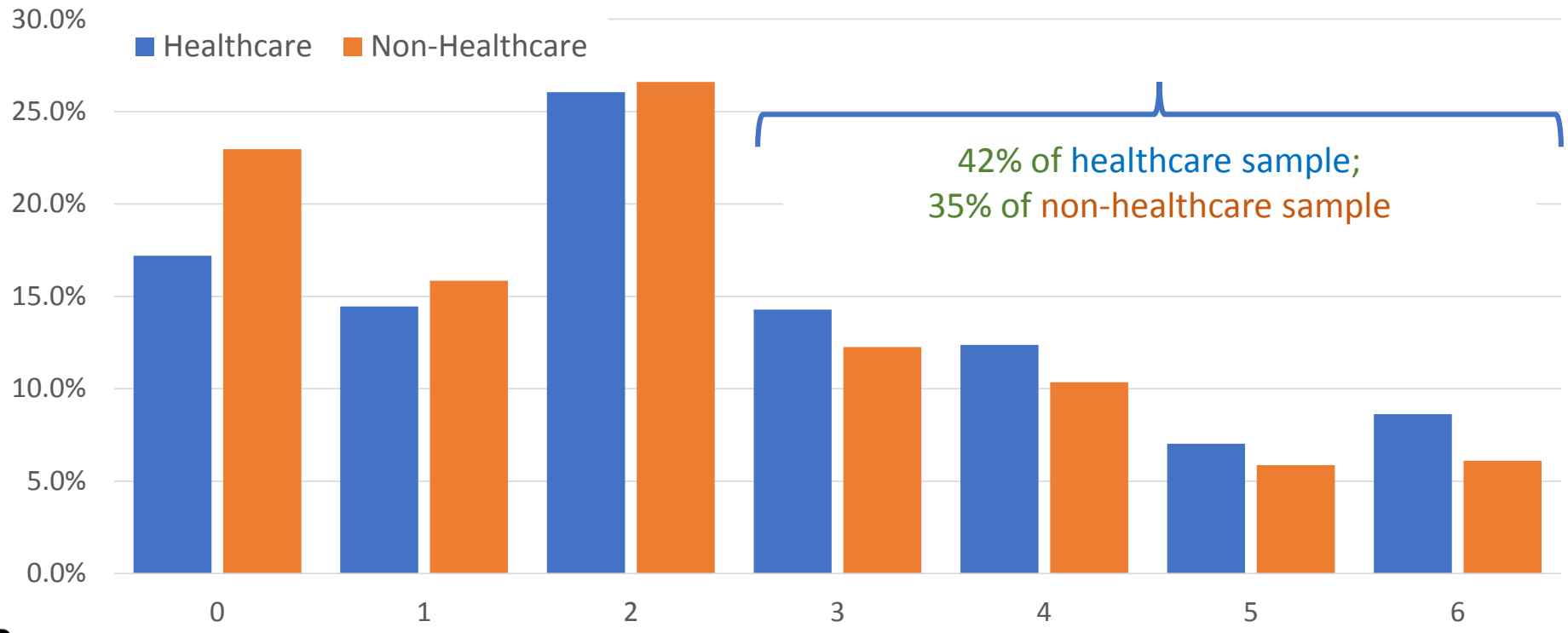
- Little interest or pleasure in doing things
- Feeling down, depressed or hopeless

Response options: not at all (0), several days (1), more than half the days (2), nearly every day (3). Both scales scored 0 to 6

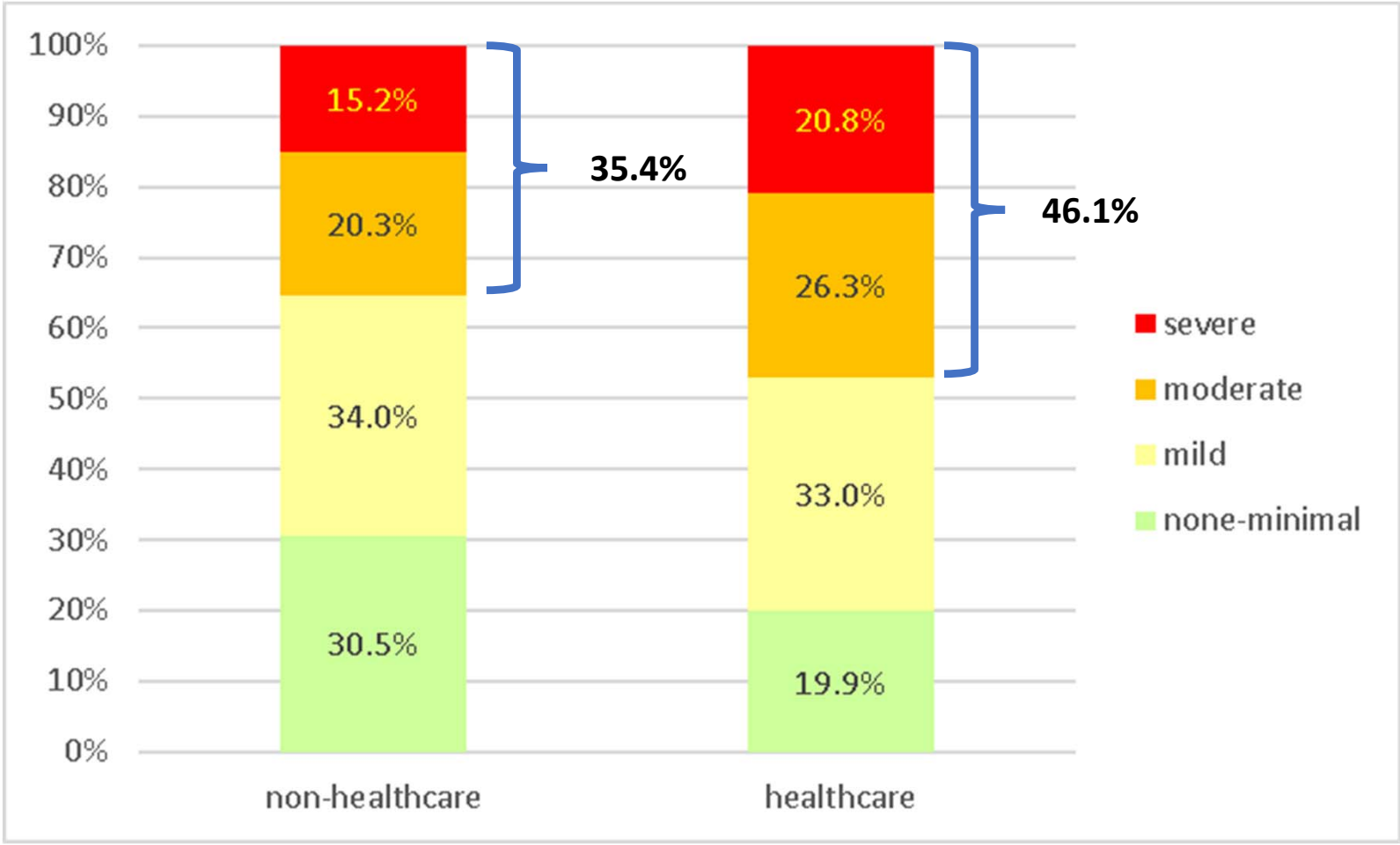
Distribution of GAD-2 scores. Healthcare (N = 5,988) and non-healthcare (N = 3,305) samples



Distribution of PHQ-2 scores. Healthcare (N = 5,988) and non-healthcare (N = 3,305) samples



PHQ-4 (= PHQ-2 + GAD-2) : Screening Scale for Anxiety and Depression:



Copenhagen Psychosocial Questionnaire (COPSOQ) scales:

COPSOQ Psychosocial Factor Scales (range of scale: 0 to 100):

	non-healthcare	healthcare	EKOS 2019
burnout symptoms	56	66	50
stress symptoms	n/a	62	49
sleep symptoms	52	60	47
quantitative demands	48	n/a	45
work pace	57	70	61
predictability	52	45	54
role conflicts	45	51	48
supervisor support	64	61	67
colleague support	75	79	70
family support*	70	73	*

* not a COPSOQ question

		symptom scales								
		COPSOQ symptom scales			DSM5 acute stress		GAD-2		PHQ-2	
	n=	burnout	stress	sleep troubles	acute stress score (%≥2)	acute stress score (%≥3)	anxiety score (%≥3)	anxiety score (%≥4)	depression score (%≥3)	depression score (%≥4)
all	5904	67	62	60	29.1%	5.7%	54.0%	40.3%	41.4%	27.3%
cleaning	109	70	66	69	41.3%	9.2%	59.6%	46.8%	58.7%	42.2%
clerk	238	66	61	66	28.6%	4.2%	55.0%	42.9%	42.4%	29.4%
contact tracing	13	67	55	43	7.7%	0.0%	53.8%	30.8%	23.1%	7.7%
cook	26	59	57	54	23.1%	11.5%	42.3%	30.8%	36.0%	28.0%
coordinator	188	67	61	57	26.6%	6.4%	47.3%	38.8%	33.5%	21.3%
counsellor	66	61	56	52	21.2%	4.5%	45.5%	31.8%	31.8%	22.7%
dietary aid	72	67	62	62	36.6%	8.5%	56.3%	46.5%	46.5%	35.2%
LPN	485	68	63	64	30.4%	7.0%	58.1%	41.5%	44.2%	27.6%
maintenance	17	57	57	51	23.5%	5.9%	52.9%	29.4%	17.6%	17.6%
mgmt	106	61	58	55	21.7%	5.7%	43.4%	31.1%	35.8%	22.6%
paramedic	80	61	60	56	32.5%	7.5%	43.8%	31.3%	39.2%	22.8%
professional	298	64	60	56	20.5%	4.4%	46.6%	34.6%	34.7%	20.9%
PSW	710	69	62	61	36.7%	8.4%	56.6%	44.2%	46.9%	32.8%
RN	2425	65	62	59	27.8%	4.6%	54.0%	40.5%	39.4%	25.7%
RPN	78	65	61	57	19.7%	2.6%	52.6%	37.2%	41.0%	30.8%
SW	89	68	62	56	21.3%	3.4%	46.1%	32.6%	30.3%	21.3%
technician	706	70	65	63	31.2%	6.3%	57.1%	42.2%	47.1%	30.0%

Personal protective equipment (PPE) supply and adequacy

Appropriate type and adequate supply	Appropriate type but inadequate supply	Inappropriate type, but adequate supply	Inappropriate type and inadequate supply	Needed, but not available	Not sure/don't know what is appropriate	Not applicable
Type of PPE is needed					**Type of PPE is not needed**	
Needs Met	**Needs not Met**	**Needs not Met**	**Needs not Met**	**Needs not Met**	**Not Applicable**	

(1) Gloves; (2) Eye protection/goggles; (3) face shield; (4) gown; (5) hand sanitizer; (6) soap and running water* (7) surgical or procedure masks; (8) N95 masks; (9) regular (half/full face) cartridge respirators* (10) Powered air particulate respirators (PAPRs)

overall % of PPE needs met		n=	gloves	eye protection/ goggles	face shield	gown	hand sanitizer	surgical/ procedure masks	N95 masks
	all	5904	80.4%	52.6%	43.4%	56.8%	70.1%	43.3%	29.9%
54.7%	cleaning	109	78.3%	56.0%	43.8%	66.0%	79.8%	34.3%	24.4%
49.7%	clerk	238	72.0%	42.2%	41.9%	50.9%	71.3%	41.0%	28.5%
61.9%	contact tracing	13	80.0%	40.0%	60.0%	60.0%	76.9%	50.0%	66.7%
60.1%	cook	26	79.2%	50.0%	41.2%	66.7%	80.0%	63.6%	40.0%
55.6%	coordinator	188	78.9%	53.4%	45.5%	58.4%	67.2%	53.6%	31.9%
59.7%	counsellor	66	79.2%	61.3%	45.2%	70.6%	71.7%	58.3%	31.8%
56.2%	dietary aid	72	72.3%	52.4%	44.4%	54.1%	84.1%	50.9%	35.6%
48.3%	LPN	485	77.9%	44.0%	33.0%	52.1%	74.2%	37.7%	19.2%
54.0%	maintenance	17	56.3%	69.2%	50.0%	50.0%	70.6%	46.7%	35.3%
64.9%	mgmt	106	82.2%	69.6%	55.9%	57.9%	68.6%	67.0%	52.9%
70.6%	paramedic	80	88.8%	90.0%	75.0%	58.2%	75.0%	59.5%	47.5%
59.5%	professional	298	81.3%	59.6%	49.8%	59.1%	74.0%	56.3%	36.6%
47.0%	PSW	710	74.9%	49.7%	28.6%	50.9%	66.3%	38.1%	20.8%
54.8%	RN	2425	82.9%	52.7%	45.3%	58.0%	68.3%	43.3%	32.9%
43.4%	RPN	78	69.7%	41.4%	36.6%	50.0%	52.6%	29.9%	23.3%
55.3%	SW	89	79.2%	50.9%	46.6%	64.3%	65.1%	53.4%	27.9%
56.3%	technician	706	84.4%	54.9%	48.9%	61.5%	74.7%	40.4%	29.2%

Adequacy of preventive infection control procedures (ICP) Healthcare survey

Appropriate and adequately implemented	Appropriate type but inadequately implemented	Inappropriate	Lacking	Not sure/don't know what is appropriate	Not applicable
Type of ICP is needed				**Type of ICP is not needed**	
Needs Met	**Needs not Met**	**Needs not Met**	**Needs not Met**	**Not Applicable**	

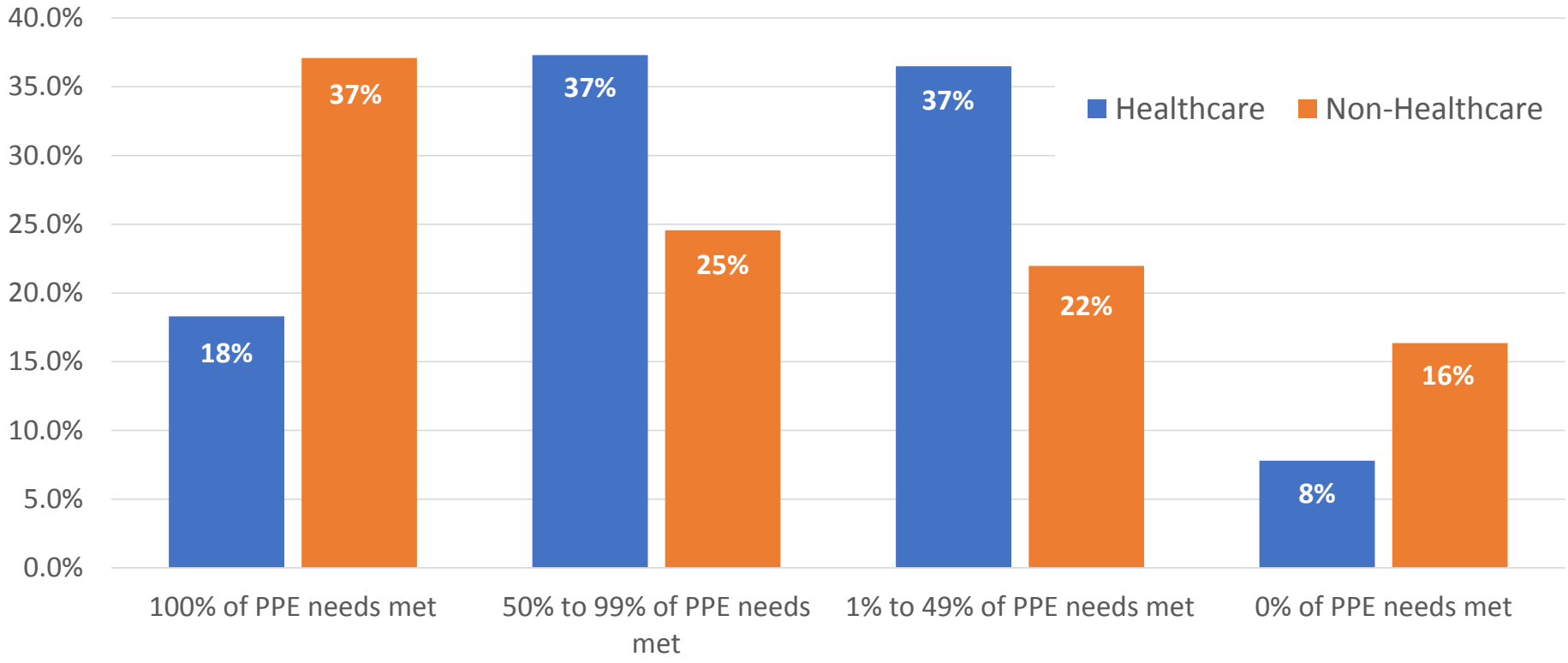
(1) Screening incoming patients; (2) Symptomatic patients wearing masks; (3) cohorting patients; (4) restrict access and control flow of COVID patients; (5) ventilation system; (6) Airborne infection isolation rooms (AIIR); (7) Personal hygiene facilities; (8) house cleaning practices; (9) laundry cleaning practices; (10) waste disposal practices

Adequacy of preventive infection control procedures (ICP) Non-Healthcare survey

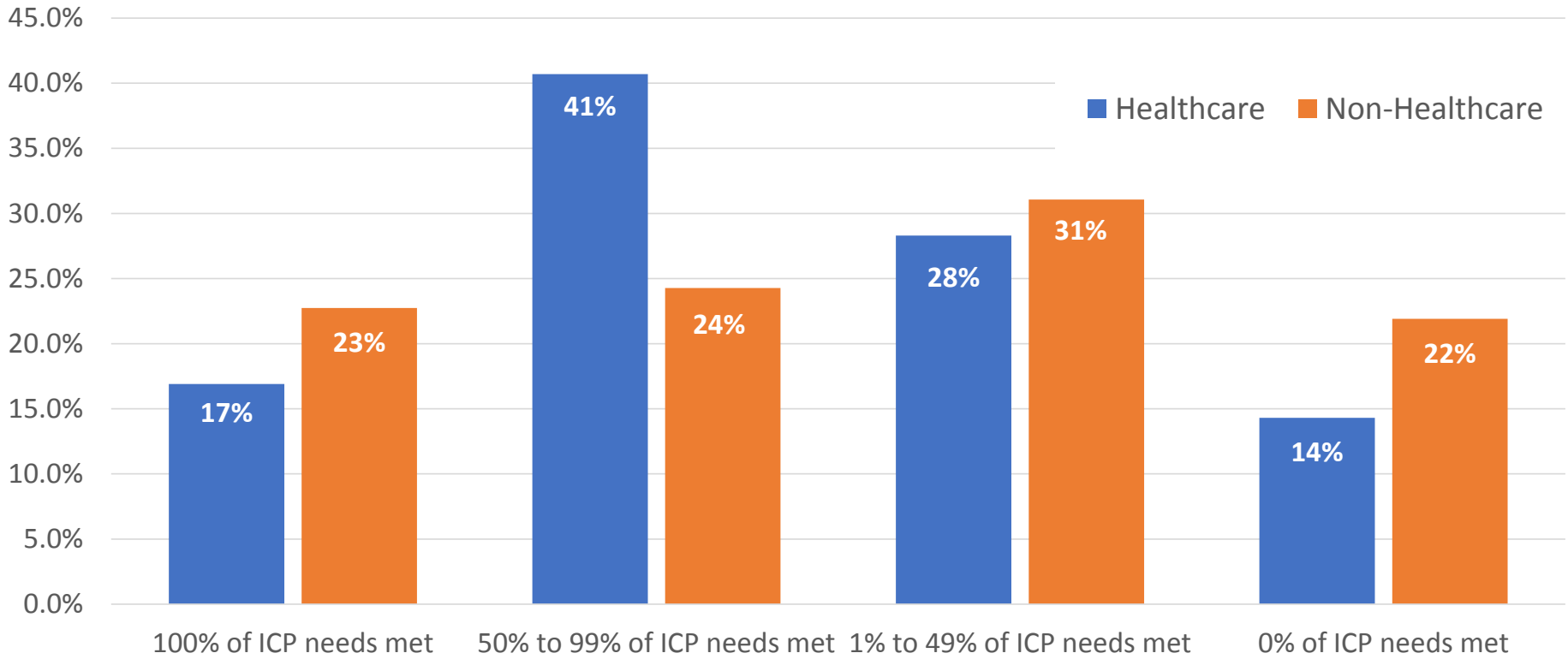
Appropriate and adequately implemented	Appropriate type but inadequately implemented	Inappropriate	Lacking	Not sure/don't know what is appropriate	Not applicable
Type of ICP is needed				**Type of ICP is not needed**	
Needs Met	**Needs not Met**	**Needs not Met**	**Needs not Met**	**Not Applicable**	

(1) Reporting procedures; (2) isolation of people; (3) physical distancing from clients/customers; (4) physical distancing from co-workers; (5) regular cleaning; (6) sanitising food preparation surfaces; (7) disinfecting high-touch surfaces; (8) laundry for work clothes; (9) laundry for work-related materials; (10) waste disposal practices; (11) staggered schedules; (12) places to change to/from work clothes; (13) installation of physical barriers; (14) increased ventilation

Perceived adequacy of PPE among healthcare workers (N = 5,988) and on-site workers (N = 1,693)



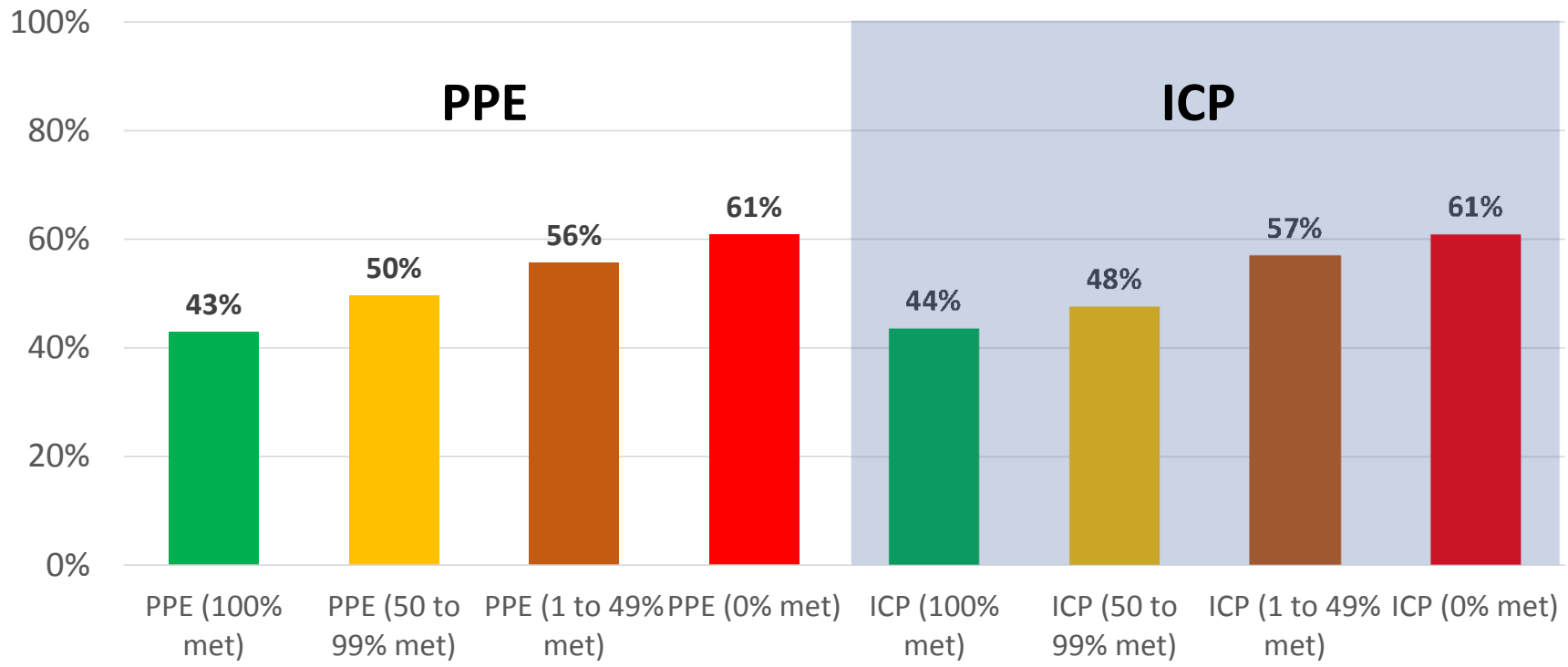
Perceived adequacy of ICP among healthcare workers (N = 5,988) and on-site workers (N = 1,693)



Other covariates

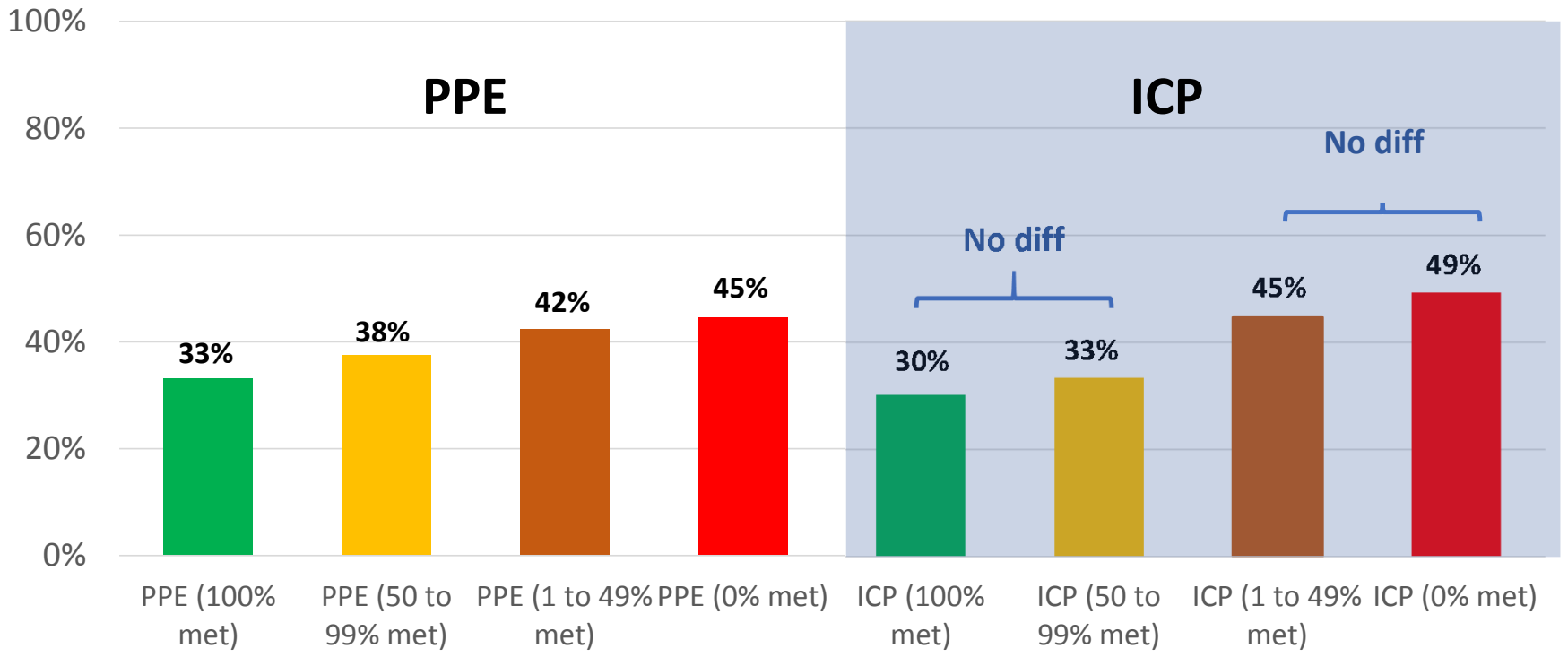
- Age, gender, visible minority status
- Province of residence, living location (urban, suburban or rural community).
- Working on site, working remotely, no longer employed*
- Type of health care facility*, current job tenure, current hours of work per week, supervisor or manager*, workplace size*
- Contact with COVID-19 patients*, the number of patients* and workers at their workplace who have been infected with COVID-19 (suspected, presumed or confirmed), whether they had experienced COVID-19 symptoms, if they had contact with someone who was later diagnosed with COVID-19*
- Received training in relation to COVID-19 and in the donning and doffing of PPE*
- Date of survey

Adjusted* proportion of sample with anxiety (GAD-2) scores 3 and over by PPE needs met, ICP needs met (N = 5,988)



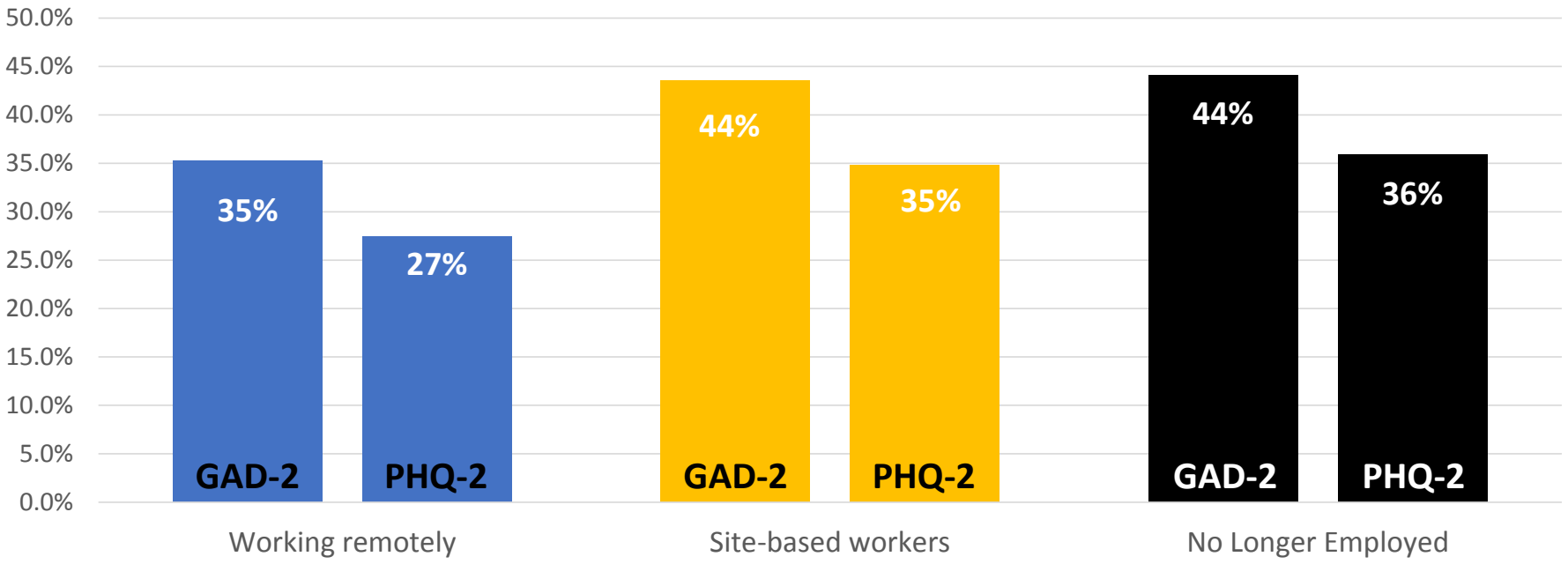
* Adjusted for age, sex, visible minority status, province, population density, type of healthcare facility, job tenure, current work hours, interactions with COVID-19 patients, patients at workplace with COVID-19, co-workers at workplace with COVID-19, experiencing COVID-19 symptoms, training related to COVID-19 and training in donning and doffing PPE.

Adjusted* proportion of sample with depression (PHQ-2) scores 3 and over by PPE needs met, ICP needs met (N = 5,988)



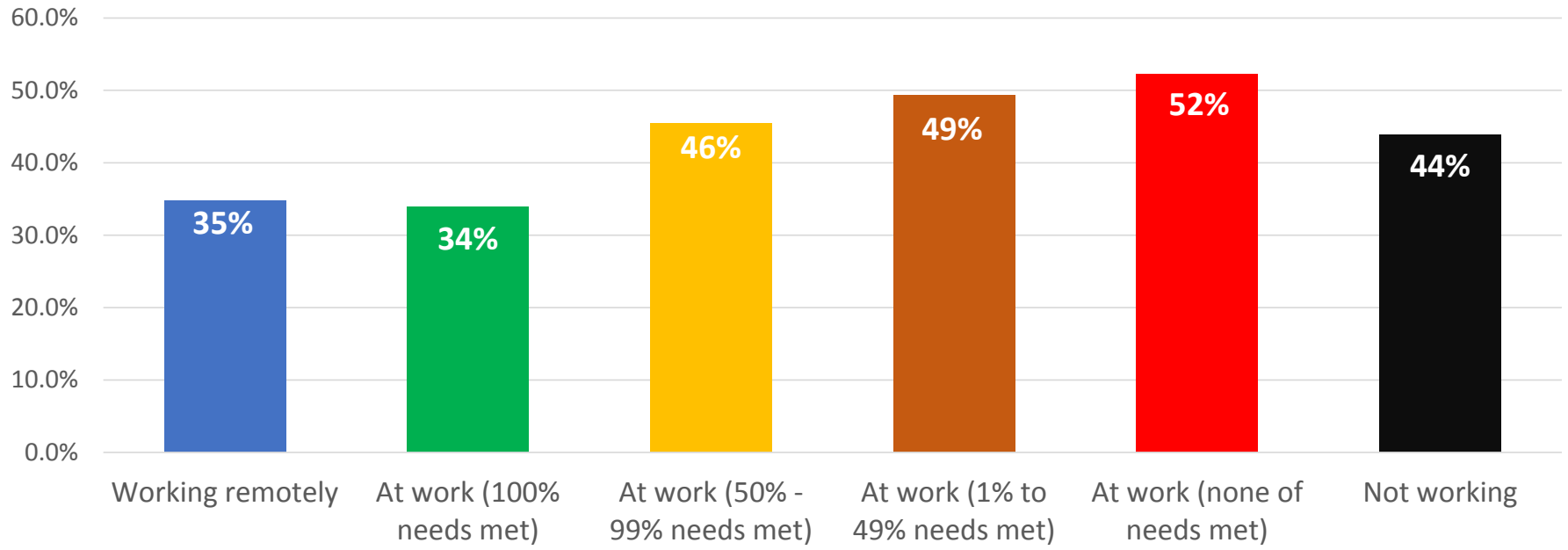
* Adjusted for age, sex, visible minority status, province, population density, type of healthcare facility, job tenure, current work hours, interactions with COVID-19 patients, patients at workplace with COVID-19, co-workers at workplace with COVID-19, experiencing COVID-19 symptoms, training related to COVID-19 and training in donning and doffing PPE.

Adjusted* proportion of respondents with GAD-2 and PHQ-2 scores of three and higher by working status (N = 3,305)



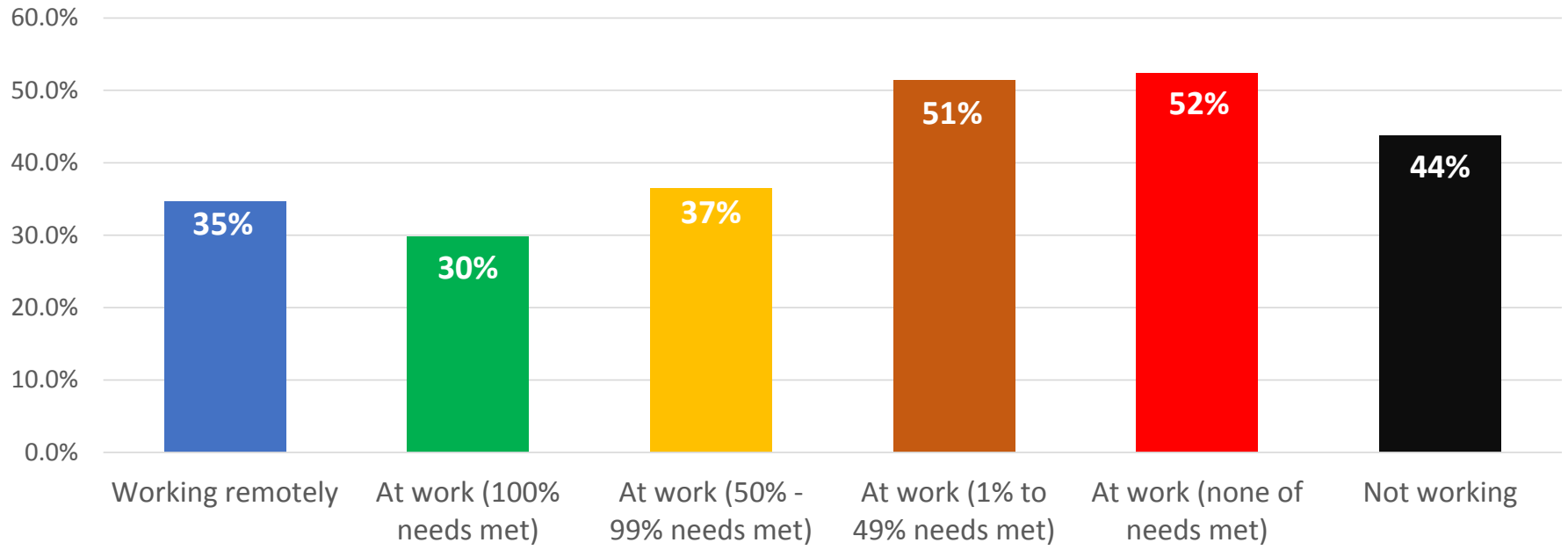
* Adjusted for age (grouped), sex, visible minority status, presences of disability, population density, province of residence, supervisory status, job tenure, coworkers with COVID-19, experiencing symptoms of COVID-19, being exposed to someone with COVID-19, workplace size and date of survey.

Adjusted* proportion of respondents with GAD-2 scores of three and higher by working and PPE needs being met (N = 3,305)



* Adjusted for age (grouped), sex, visible minority status, presences of disability, population density, province of residence, supervisory status, job tenure, coworkers with COVID-19, experiencing symptoms of COVID-19, being exposed to someone with COVID-19, workplace size and date of survey.

Adjusted* proportion of respondents with GAD-2 scores of three and higher by working and ICP needs being met (N = 3,305)



* Adjusted for age (grouped), sex, visible minority status, presences of disability, population density, province of residence, supervisory status, job tenure, coworkers with COVID-19, experiencing symptoms of COVID-19, being exposed to someone with COVID-19, workplace size and date of survey.

Key Messages

- PPE and ICP are not just about infection control, but are also associated with mental health symptoms
- Strengthening and monitoring employer-based infection control procedures is important for both healthcare and non-healthcare workplaces (meeting PPE needs is especially important for the mental health of HCWs)
- Working at the workplace with all ICP needs meet is associated with less anxiety than working at home
- The ongoing monitoring of the mental health of workers is also warranted

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The Association between the Perceived Adequacy of Workplace Infection Control Procedures and Personal Protective Equipment with Mental Health Symptoms: A Cross-sectional Survey of Canadian Health-care Workers during the COVID-19 Pandemic

L'association entre le caractère adéquat perçu des procédures de contrôle des infections au travail et de l'équipement de protection personnel pour les symptômes de santé mentale. Un sondage transversal des travailleurs de la santé canadiens durant la pandémie COVID-19

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Abstract

Objectives: To examine the relationship between perceived adequacy of personal protective equipment (PPE) and workplace-based infection control procedures (ICP) and mental health symptoms among a sample of health-care workers in