

Rosemary Bryant AO Research Centre

# COVID-19 and workforce wellbeing: A survey of the international nursing workforce

May 2022



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# **The Rosemary Bryant AO Research Centre**

(the Centre) is a partnership between the University of South Australia, the Australian Nursing and Midwifery Federation (SA Branch), and the Rosemary Bryant Foundation. The Centre aims to strengthen the role of the nursing and midwifery profession across the health system through the development of a research-driven, evidence-based platform of healthcare. To achieve this, the Centre has developed a comprehensive research program focused on advancing the discipline of nursing and midwifery and patient care in the domains of population and public health, workforce reform, safety and quality, clinical practice, patient outcomes, and integration into education.

# COVID-19 and workforce wellbeing: A survey of the international nursing workforce

**Report prepared for:** Nursing Now

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**Report date:** 5 May 2022

**Suggested citation:** Sharplin G, Adelson P, Jarvi K, Moreno-Casbas T, Kodippili T, Grinspun D, Eckert M, Stilwell B. COVID-19 and workforce wellbeing: A survey of the international nursing workforce. A report prepared for Nursing Now. Adelaide, SA: University of South Australia, 2022.

## **Acknowledgement of country**

We acknowledge the Traditional Custodians of the lands on which we work and live, and recognise their continuing connection to land, water, and community. We pay our respects to Elders past, present, and emerging. We acknowledge the stories, traditions, and living cultures of Aboriginal and Torres Strait Islander peoples on this land and commit to building a brighter future together.

*“The emerging evidence suggests that there is a global phenomenon of mass trauma experienced by nurses working in the COVID-19 response. The phenomenon is complex and intertwined with various issues including persistently high workloads, increased patient dependency and mortality, occupational burnout, inadequate personal protective equipment, the fear of spreading the virus to families and relatives, an increase in violence and discrimination against nurses, COVID19 denial and the propagation of misinformation, and a lack of social and mental health support...the potential longer term impacts of COVID-19 including PTSD and long COVID are currently unknown but potentially extremely significant.”(International Council of Nurses)<sup>1</sup>*

## Acknowledgements

The success of this study was always dependent on a strong, collaborative partnership between multiple stakeholders. To this end, we have many people to acknowledge. First, we acknowledge and thank the Nursing Now Executive Group for supporting the conduct of this research and the Registered Nurses' Association of Ontario (RNAO) for providing funding towards the research. Second, we acknowledge the Rosemary Bryant Foundation, the Australian Nursing and Midwifery Federation (SA Branch) and Investén-isciii for their strong support of this research and their international network linkages.

We must also thank the following individuals for generously contributing their time towards the study in order to make it such a success:

- Ms Catherine Jewell (RNAO)
- Mr Matthew Kellway (RNAO)
- Ms Hannah Finch (Nursing Now)
- Dr Agnes Vitry (University of South Australia)

Finally, we acknowledge and thank the 1600 nurses, midwives and nursing support workers who donated time out of their very busy schedules to undertake the survey. Your input is invaluable in ensuring that, collectively your voice is heard regarding the frontline working challenges faced by the COVID-19 pandemic internationally.

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## Abbreviations

Below is a list of abbreviations used throughout the report.

Abbreviation	Full name
<b>ANMF</b>	Australian Nursing and Midwifery Federation
<b>BRS</b>	Brief Resilience Scale
<b>CEO</b>	Chief Executive Officer
<b>COPSOQ-III</b>	Copenhagen Psychosocial Questionnaire Version 3
<b>COVID-19</b>	Coronavirus disease 2019
<b>DASS-21</b>	Depression Anxiety Stress Scale
<b>EN</b>	Enrolled Nurse
<b>GP</b>	General Practice
<b>HCW</b>	Health Care Workforce
<b>HREC</b>	Human Research Ethics Committee
<b>ICN</b>	International Council of Nurses
<b>ICU</b>	Intensive Care Unit
<b>MERS</b>	Middle East Respiratory Syndrome
<b>MMSS</b>	McCloskey/Mueller Satisfaction Scale
<b>NGO</b>	Non-Government Organisation
<b>OLBI</b>	Oldenburg Burnout Inventory
<b>PCW</b>	Personal Care Worker
<b>PES-NWI</b>	Practice Environment Scale – Nursing Work Index
<b>PPE</b>	Personal Protective Equipment
<b>REDCap</b>	Research Electronic Data Capture
<b>RBRC</b>	Rosemary Bryant AO Research Centre
<b>RN</b>	Registered Nurse
<b>RNAO</b>	Registered Nurses Association of Ontario, Canada
<b>RM</b>	Registered Midwife
<b>SA</b>	South Australia
<b>SARS-CoV-2</b>	Severe acute respiratory syndrome coronavirus 2
<b>UniSA</b>	University of South Australia, Australia
<b>WHO</b>	World Health Organization

## Executive summary

### Background

Nursing Now was a global awareness campaign which in collaboration with the World Health Organization (WHO) and the International Council of Nurses (ICN) aimed to improve health by raising the status and profile of nursing, influencing policymakers and advocating for more nurses in leadership positions globally. Nursing Now has since evolved into the Nursing Now Challenge and through its ongoing partnerships with over 125 countries across the globe it is working to encourage health leaders to invest in nursing leadership and introduce new models of care that maximise nurses' contributions to achieving Universal Health Coverage. Throughout the campaign, and especially since the start of the COVID-19 pandemic, Nursing Now has been actively engaged in advocating for safe and fair working conditions for the nursing and midwifery professions.

In 2021, the Rosemary Bryant AO Research Centre (RBRC) at the University of South Australia, Australia partnered with the Nursing Now global campaign and the Registered Nurses' Association of Ontario (RNAO) to conduct an international survey of nurses and midwives during the COVID-19 pandemic. The survey was promoted through the Nursing Now website, its network of members and its social media platforms.

The purpose of the survey was to describe and assess the impact of the COVID-19 pandemic on the workforce.

The objectives of the research were to:

- i)** undertake a cross-sectional assessment of the impact of COVID-19 on the International nursing and midwifery professions;
- ii)** assess indices of occupational wellbeing, including stress, anxiety, and burnout in nurses and midwives, across different work settings;
- iii)** determine contributory factors related to occupational wellbeing; and
- iv)** identify opportunities to improve the international healthcare workforce preparedness for significant future health crises such as COVID-19, and how international nursing and healthcare bodies can lead or support these efforts.

### Method

An online, anonymous, cross-sectional international survey ran over a 6-week period from 20 March to 30 April 2021. The timing of the survey was approximately one year after the peak of the first European Union (EU) wave in April 2020 and the falling back of the second wave which occurred in late 2020. The second wave hit many countries harder than the first, however temporal variations in peak and spread make international comparisons difficult. For example, the Americas had an extended first wave that folded into a second wave. The survey period was before the emergence of the Omicron variant in late November 2021.

The survey was developed by RBRC with input from Nursing Now and RNAO to ensure relevance and generalisability to the international context. The English language survey was translated into Spanish

and French. Promotion of the survey was primarily through the Nursing Now website and social media channels (e.g., Twitter and Facebook). There was a total of 250 questions in the survey, divided into two parts:

- **Part I** focused on demographic and COVID-19 factors, including: workplace preparedness, personal and family concerns, workplace care for COVID-19 patients, workplace changes due to COVID-19, testing and missed work, Personal Protective Equipment (PPE) issues, and community support. Questions included adaptations of international health workforce COVID-19 questions for benchmarking.
- **Part II** assessed indices and domains of the workplace and occupational wellbeing, including: the nursing and midwifery practice environment, psychosocial workplace conditions, job satisfaction, resilience, burnout, and mental health. Original and modified versions of validated instruments were used, including: the Practice Environment Scale – Nursing Work Index (PES-NWI), Copenhagen Psychosocial Questionnaire Version 3 (COPSOQ-III), McCloskey/Mueller Satisfaction Scale (MMSS), Brief Resilience Scale (BRS), Depression Anxiety Stress Scales (DASS-21), and the Oldenburg Burnout Inventory (OLBI).

Data analyses in this report are descriptive and reported for the overall sample, as well as by four major workplace categories: hospitals, residential aged care facilities, primary/community health, and “other” workplaces. Data in this report are reported at the level of large geographical regions.

## Results

Internationally, 1,533 nurses and midwives logged into the survey. After data cleaning 1,335 respondents were included in data analysis and reporting. There was periodic dropout across the survey and not all questions were applicable to all respondents; hence, data reported below are based on valid percentages (i.e., missing data are excluded from denominators).

### Part I: Demographic and COVID-19 factors

#### *Respondents*

**The majority of respondents were registered nurses, female and from North America or Europe.**

- The largest proportion of responses were from registered nurses (78.2%), followed by registered / licensed practical nurses (7.1%), and dual registered nurse and midwives (5.2%), nurse practitioners (4.7%) and registered psychiatric/mental health nurse (2.8%).
- The majority of respondents were female (87.6%) with a mean age of 44.5 years.
- Just over half were married (57.1%) followed by single (20.6%), common law union (12.0%) or cohabitating (5.8%).
- Most respondents were from either North America (44.1%) or Europe (31.3%).
- Twenty percent of respondents identified as a First Nations person.

**Most respondents worked full time in patient/client care roles, in medium-sized public or private hospital settings (100-500 beds) and were very experienced with an average of 20.6 years of nursing practice.**

- Most respondents were full-time employed (66.8%), followed by permanent part-time (11.9%) then full-time contract (10.3%).
- Most respondents (71.8%) worked entirely or partly in patient or client care.
- Respondents worked across a variety of facilities/organisations; the largest proportion (58.0%) being public or private hospitals.
- For comparative purposes work setting was reduced to four groups: hospitals (56.8%), community / primary care (14.3%) long-term / aged care (6.2%), and other organisations (22.7%); e.g., defence, university, health departments, non-government organisations.
- Eight (8.2%) percent of respondents had migrated to another country for work.
- Of those working in hospitals, 12.7% worked in very large hospitals (>1000 beds), 23.3% in large hospitals (500-1000 beds), 43.9% in medium-sized hospitals (100-500 beds), 10.6% in small hospitals (50-100 beds) and 9.4% in very small hospitals (<50 beds).
- The mean number of years worked was 20.6 years ( $SD = 12.3$ ). Years of work was evenly distributed ranging from <5 years to 35 years or more.
- Approximately 7 in 10 people (71.1%) reported that their caregiver responsibilities increased during the COVID-19 pandemic.

**Findings related to healthcare leadership and policy suggested that the quality of the health system response to the COVID-19 threat was varied and that more could have been done to address key resourcing issues like staffing levels and skill mix to strengthen the support functions required to protect the safety of staff and address issues of violence and abuse towards staff.**

- Across all respondents, 45.3% reported that their workplace had a plan or protocol in place *when the pandemic was declared* to respond to those with known or suspected COVID-19 cases. This proportion had increased to 95.7% at the time of the survey.

- The majority of workplace plans, or protocols were known to have been reviewed since the start of the pandemic (84.1%).
- When rating organisational preparedness for COVID-19 with respect to policies and procedures, most (73.2%) respondents rated screening of staff for risk factors/symptoms, cleaning protocols of isolation rooms (75.5%), access to other equipment (67.5%), communication (67.3%) and responding to an outbreak (66.5%) as good to excellent.
- Areas that were rated very poor, poor or fair by at least 40% of staff were: access to alternative accommodation (68.9%), ability to deploy more staff if required (62.6%), debriefing processes (61.0%), access to workplace psychological or mental health support (60.1%), preventing abuse of staff (58.5%), support for new graduates (45.1%), isolation of vulnerable patients/clients (42.8%), and social distancing (42.6%).
- Approximately 8 in 10 people (81.0%) had received infection prevention and control training.
- Nearly half (49.1%) of respondents were moderately or extremely confident to practice safely as a result of the training they had received. However, 18.4% of respondents reported being either not at all or somewhat confident.
- Approximately 7 in 10 respondents (69.9%) indicated that they had provided direct patient care to a *confirmed* and/or *suspected* COVID-19 patients.
- Most respondents (74.9%) reported their workplace had provided care to one or more patients/clients with *confirmed* COVID-19.
- Most respondents (83.2%) reported their workplace had provided care to one or more patients/clients with *suspected* COVID-19.
- Nearly half (44.3%) reported that their organisation had cared for 100 or more confirmed or suspected COVID-19 cases since the start of the pandemic, 26.2% reported caring for 500 or more and 10.9% reported caring for more than 2000 COVID-19 cases.
- One in five (21.5%) reported caring for only 1-10 COVID-19 cases since the start of the pandemic.
- More than half (56.9%) reported that their organisation had asked or assigned dedicated staff to care for COVID-19 patients.
- The settings most frequently cited in which care was provided to suspected or confirmed COVID-19 cases were hospital speciality units (18.6%), hospital designated COVID wards (16.9%), hospital ICUs (15.1%), community healthcare facilities (13.1%), and home-based care (10.3%).
- More than 62% of respondents rated the COVID-19 information provided by their workplace as good, very good or excellent with respect to being timely, trustworthy, clearly written, comprehensive and consistent with other sources (range: 62.7% - 68.9%).
- Respondents gathered information from multiple sources outside of their workplace, most commonly government sources i.e., national government ministry (71.3%) or regional health departments (46.7%), the World Health Organization (WHO; 57.6%) and internet resources (44.5%).
- Over half of respondents were moderately or extremely concerned about having adequate staff (67.4%) and skills mix (57.6%), managing their workload (54.9%), and the welfare of their colleagues (51.4%).
- One third of respondents were moderate or extremely concerned about job security (32.4%) or experiencing financial hardship (33.7%).
- Respondents were generally not concerned or only slightly concerned about having access to hand sanitiser at work (68.6%) or having supplies to disinfect themselves before going home (60.7%).
- Most respondents (63.5%) experienced or felt community support for the work they do.

- Just over one-third of respondents (36.3%) had experienced abuse or been threatened by members of the public or patients at work. Proportions were highest in hospitals (41.8%) and aged care (39.7%).
- A small proportion (16.2%) had also experienced abuse or felt threatened by members of the public in settings outside of work.
- The mean number of hours worked at the time of the survey was 37.8 hours ( $SD = 11.6$ ) per week.
- Nearly 1 in 5 (19.0%) reported working double-shifts in the past month. For those who did, the mean number of shifts were 3.6 ( $SD = 3.5$ ).
- More than half (56.9%) did not work any paid overtime per week. A small proportion (14.3%) worked more than 10 hours paid overtime per week.
- Over 60% (61.5%) worked unpaid overtime each week. Over 1 in 5 (21.1%) worked more than 6 hours unpaid overtime per week.
- More than half (57.4%) of all respondents felt their workload had significantly, moderately or slightly increased since the pandemic. One in five (21.9%) reported a significant decrease in workload.
- Nearly half (47.2%) of all respondents reported that their organisation had either significantly, moderately or slightly increased the number of staff rostered onto shifts to cope with extra demand.
- Near half (48.5%) of respondents reported working more than they would like, and a further 47.2% thought the amount they worked was about right.
- More than half (55.1%) would like their hours to remain about the same after the pandemic, while a further 39.8% would like their hours to decrease after the pandemic.
- Approximately one quarter (25.5%) reported recruiting student nurses or midwives to support the regular workforce to cope with demand.
- Six in ten (60.8%) respondents indicated that their organisation had limited staff vacations / time away from work to assist with demand.
- Just over one third (37.0%) of respondents reported their work schedule has been unaffected, and just under half reported an increase in paid (23.1%) or unpaid (22.9%) hours.
- For respondents whose work roster had been affected (hours either increased or decreased), the most frequently cited reasons were lack of staff (64.2%), increased patient numbers (44.9%), changes to / closure of specific services (37.2%) and bed occupancy reduced (34.6%).
- Approximately 1 in 4 (27.3%) of respondents indicated they were employed at more than one workplace at the beginning of the pandemic. Of those respondents, approximately one-third (30.7%) were asked to give up working at one of the places. Just over one quarter of those respondents (28.6%) received advice on their rights in those situations.

**While the environment was generally considered one that a nursing philosophy of care was supported, the pandemic created a new risk to both staff and to patients whereby it was not uncommon for nurses to be asked to work outside of scope of practice and where this did occur, it was not always supported with education or training.**

- On average, there was agreement that nursing and midwifery philosophy for quality care, praise and supervisory support and nursing and midwifery leadership were present within the practice environment, but there was neither agreement nor disagreement that resource and staffing adequacy were present in the workplace.
- Respondents reported that the working environment was often fast paced and cognitively demanding, and sometimes emotional demanding and quantitatively demanding.
- There was largely role clarity (i.e., work objectives, direction and expectations were clear), but also some role conflict (i.e., contradictory demands or performing tasks that ought to have been performed differently). Work-life conflict was also reported some of the time.
- Those working in residential aged care facilities reported the highest levels of workplace demand, emotional demand, work pace and cognitive demand. Those working in hospitals reported the highest level of role clarity and role conflict.
- Approximately one third (34.3%) of respondents reported they were asked to work outside of their scope of practice. Of those that were asked to work outside of their scope of practice, 42.8% were given education or training to do so.
- Overall, 12.1% of respondents were redeployed to a different geographic area, hospital, or speciality of work because of COVID-19. Nearly one-quarter (22.6%) of respondents who reported being redeployed, were redeployed to COVID-19 screening clinics, or drive through screening services.
- Nearly half (46.6%) had not received education or training as part of their redeployment.
- At the time of the survey (21.1%) of respondents had been tested for COVID-19 in the past four weeks. The mean number of times tested was 2.3 ( $SD = 2.1$ ).
- Approximately 8.6% ( $n = 18$ ) of respondents to this question had tested positive for COVID-19. Most of these people ( $n = 12$ ) believe this was due to workplace exposure.
- Most respondents (76.9%) had been vaccinated at the time of completing the survey.
- More than half (55.0%) reported not having to miss work due to COVID-19. The most common reasons for missing work were showing symptoms of COVID-19 (40.0%) or having screened for COVID-19 (30.6%).
- Where leave was taken, it was usually covered by the workplace (40.1%), personal/sick leave (23.2%) or government funded (17.6%).
- Job satisfaction was measured using a modified version of the McCloskey/Mueller Satisfaction Scale (MMSS). Respondents expressed moderate satisfaction with work and

scheduling flexibility and collegial relationships, and moderate dissatisfaction with extrinsic rewards and leadership and career opportunities.

- Work engagement was measured using the Utrecht Work Engagement Scale (UWES-9). Respondents felt dedication and absorbed with their role approximately once per week, and vigour a few times per month. Those working in aged care had cumulatively lower levels of dedication, absorption, and vigour, when compared to other sectors.
- Burnout was assessed using the Oldenburg Burnout Inventory (OLBI) instrument. Subscale scores indicated moderately high levels of exhaustion, and low levels of disengagement. Respondents working in hospitals, primary care and aged care showed the greatest risk of burnout compared with those working in “other” work settings such as government, university sector and non-government organisations (NGOs).
- Over half of respondents (55.1%) planned to leave their current position within the next 5 years. Of these, nearly one quarter (23.9%) plan to retire.
- Of those that intended to leave their current position, 17% intended to exist the profession to work in another field.

**PPE availability was an issue for most countries at the beginning of the pandemic. While most nurses and midwives reported having the right type, size and a sufficient amount of PPE at the time of the survey (March-April 2021), over half had reported PPE concerns to their employer and over a third of workplaces did not have a policy for breaks while working in full PPE.**

- At the time of the survey, most respondents reported that they often or always had the right types (87.5%), the right size (77.5%) and a sufficient amount (82.5%) of PPE.
- Overall, 27.3% of respondents reported they had not had to reuse any single-use, disposable PPE. This varied somewhat by main workplace, with hospital workers more likely than other sectors to have reused single-use PPE.
- Of those who reported re-using single-use PPE, the most frequently reused single-use items reported were goggles/glasses (71.5%), masks (65.0%), face shields (54.7%) and N95 respirators (35.9%).
- Just over half (53.4%) indicated that they had reported PPE concerns to their employer. The majority (58.5%) of respondents agreed or strongly agreed that they were supported by their workplace regarding PPE concerns and requirements.
- An approximately equal proportion of people reported that their workplace either had (37.4%) or did not have (37.0%) a policy for breaks while working in full PPE, and one-quarter (25.6%) did not know.

**Mental health has declined during the pandemic with approximately one-third experiencing some form of depression (35%), anxiety (40%), or stress (33%). Nurses were most concerned with keeping their family and people they lived with safe.**

- Approximately 4 in 10 (40.1%) of respondents reported that at the beginning of the pandemic they were not at all or only slightly concerned about risks to their *physical health* due to their work role and 40.6% reported they were extremely concerned.
- Physical health perceptions improved across the pandemic; with nearly half (48.3%) of respondents reported that at the time of completing the survey they were not at all or only slightly concerned about risks to their *physical health* due to their work role and 28.9% reported they were extremely concerned.
- Mental health perceptions due to their work role and COVID-19 deteriorated across the pandemic time-period. Approximately half (52.9%) of respondents reported that at the beginning of the pandemic that they were not at all or only slightly concerned about risks to mental health. This had dropped to 36.9% being not at all or only slightly concerned about risks to mental health at the time of completing the survey.
- Just over a third of respondents (37.1%) were extremely concerned with keeping their family or the people they lived with safe, with a further 25.6% moderately concerned. Other personal concerns that were of moderate or extreme concern were risk to vulnerable family members (61.1%), managing family needs (51.7%), and their psychological wellbeing (50.4%).
- Since the pandemic, most nurses and midwives (76.4%) did not choose to isolate from those they lived with. Of those who did, the majority isolated at their own residence (83.5%).
- Respondents reported a moderate level of resilience. Resilience levels were similar across all sectors.
- While the mean stress, depression, and anxiety symptoms were all in the normal range as recorded by validated instruments, there were nurses and midwives who reported severe or extremely severe stress (11.8%), depression (10.4%) or anxiety (17.5%) symptoms.
- Respondents working in primary care reported the highest scores on stress, depression and anxiety of all workplace groups.
- Respondents who were moderately or extremely concerned about staffing levels, skill mix, and workload had significantly higher indicators for exhaustion, disengagement, depression, anxiety and stress, compared with those who had a lower level of concern for these factors.
- The proportion of respondents that had sought mental health or wellbeing support from external providers was 22.8%. The most frequented support services accessed were workplace support programs (36.8%) or their primary care provider (30.4%).

## Considerations for policy, practice, support and research

Based on the findings of this research, the following considerations are made to advance policy and practice and to support future research direction for the health, wellbeing, and safety of the nursing workforce. These considerations are primarily focused on the leadership, management and coordination, safety, and support and wellbeing of frontline staff. While they have been derived at a time of significant health system challenge, they can also be extended to health system improvement more broadly. Recognising and committing to the resources required to maintain a thriving working environment in healthcare will lead to better outcomes for all.

Area	Consideration
<b>Healthcare leadership and policy</b>	
	<ol style="list-style-type: none"><li>1. <b>Leadership:</b> Empowering strong nursing and/or midwifery leadership in healthcare settings from mid-level clinicians through to the executive level to ensure nurses/midwives and their colleagues have a place at decision-making tables and a strong voice regarding current challenges and suggestions for improvements to policy and practice of organisations and the health system more broadly.</li><li>2. <b>Staffing and skill mix:</b> It is imperative that governments actively plan to improve both staffing and skill-mix to address current and future workforce shortages and to have the capacity to respond to post-pandemic needs and future emergencies.</li><li>3. <b>Workforce coordination:</b> The deployment of staff across the healthcare sector should be considered within the context of minimizing multi-site placements that result in increased risk and exposure for the clinician and community.</li></ol>
<b>The practice environment and its impact</b>	
	<ol style="list-style-type: none"><li>4. <b>Prioritise worker safety:</b> Active engagement from healthcare administration to ensure the health, wellbeing and safety of staff is prioritised as a core business objective. This to include violence and abuse of staff, vaccine access, secured time away from work (e.g., vacation time), and a PPE policy that includes adequate and appropriate PPE, breaks from wearing PPE and long-term use of PPE.</li><li>5. <b>System design:</b> Design effective systems for the rapid deployment of staff across the healthcare system to respond to emergencies. Key considerations are to identify and address major system or industrial barriers that may hinder movement, flexibility, and protection of workers during a pandemic or other prolonged health care situations.</li><li>6. <b>Education:</b> Provide standardised, consistent messaging, education and training regarding PPE use, donning, wearing, and doffing that is tailored to the working environment.</li><li>7. <b>Communication:</b> Provision of consistent, evidence-informed information through trusted communication channels and to relevant staff to ensure accuracy of information and direction.</li></ol>

### Wellbeing and access to support

8. **Evidence-based support:** Adoption of evidence-based programs designed to provide structured, tailored and meaningful support including regular debriefing processes, and that actively engage staff, especially during times of significant disruption and/or significant trauma.
9. **Wellbeing monitoring systems:** Systems established to periodically monitor occupational health and wellbeing are adopted, monitored, and embedded as part of business activity reporting, and that include both predictors and performance outcomes of wellbeing. This is to be considered as a standardised approach to the health and wellbeing of staff, pre, during, and post the management of a pandemic (or significant disruption to the health care environment) to monitor long term impact and staff sustainability.

### Strategic research

10. **Longitudinal research:** Large, longitudinal research studies are undertaken (e.g., cohort studies) that focus on the inter-relationship between health system and organisational policies, the working environment, and the health, safety, and wellbeing of its workforce.
11. **Cross-sectional monitoring:** Undertake a repeat concise workforce and wellbeing survey biennially. Comparators can be considered at national, regional or international levels.
12. **Policy-setting research:** a structured program of policy-focused research that engages key stakeholders internationally to address current challenges related to workforce sustainability and wellbeing.

## Conclusion

The *Nursing Now COVID-19 and Nursing Workforce Wellbeing Survey* has provided an indication of challenges experienced by the nursing and midwifery professions globally over the first year of the COVID-19 pandemic. This report adds evidence to the reported impact of the COVID-19 pandemic on the nursing workforce internationally, as well as the working environments, and wellbeing of the workforce.

The survey identified a relatively robust, resilient, and dedicated workforce. However, challenges to better support nurses and midwives were also identified. Of note, the mental health of nurses and midwives appears to have deteriorated over the course of the pandemic. They are concerned with the increased exposure risk they are placing their families and loved ones in by working in healthcare; the health and wellbeing of their colleagues; staffing levels and skills mix; and managing their own workload. Workplace exhaustion and disengagement levels are at concerning high levels given these measures can be an early indicator of nurses and midwives exiting their position or the professions entirely.

Practices where stronger leadership and policy would help mitigate personal risk were identified in areas of PPE practices, working within scope of practice, and reported incidences of threats or abuse by members of the public. It is vital that governments and employers continue to ensure the safety and wellbeing of the nursing workforce by advocating for nurses, improving plans, policies, and

procedures for future health crises, providing an abuse-free working environment, and continuing to provide appropriate and adequate PPE. It is imperative that employers of nurses and midwives actively engage with their workforce, especially during such extreme events, by seeking their feedback and concerns, and working to support and maintain their safety and wellbeing as a priority.

Alongside similar surveys conducted in Australia in 2020 and Canada in 2021, these findings suggest that there is a near global invariance that characterises the working experience of nurses and midwives with respect to workforce demand, resources and wellbeing aspects. The profession is characterised by high levels of work pace, cognitive and emotional demand, and challenges with accessing resources, which can all lead to poorer occupational performance and impact on health and wellbeing. Resource and staff adequacy were not favourably rated, and there was general dissatisfaction with extrinsic rewards, and leadership and career opportunities. An under-investment in the wide range of resources required for a person to thrive on the job can lead to poor organisational performance, which, in healthcare, can lead to unfavourable outcomes for patients/clients and add to the health service's bottom line.

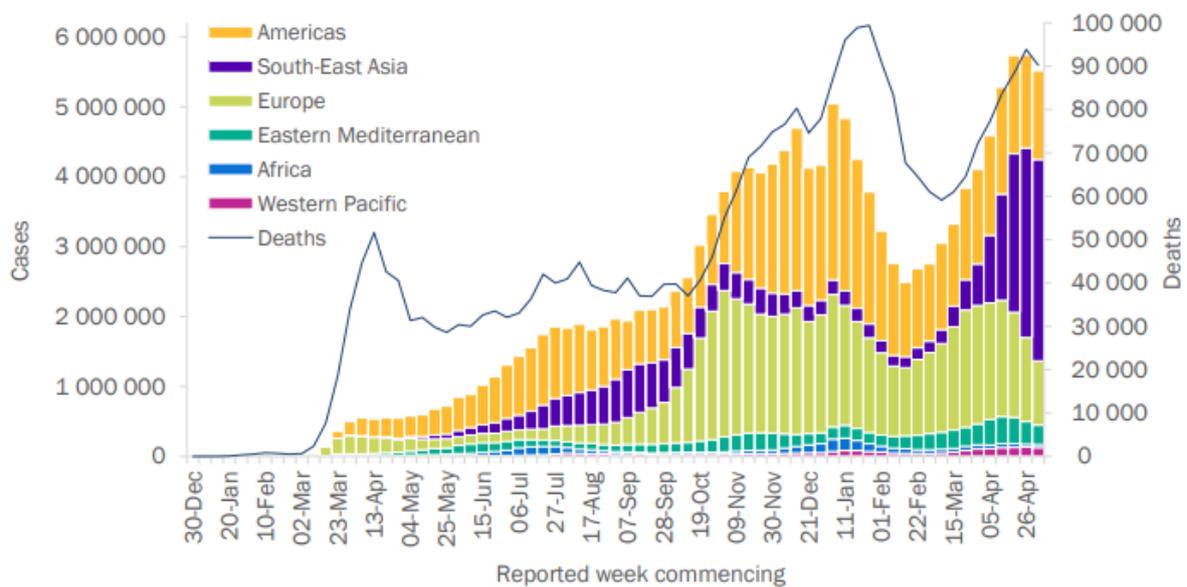
The findings describe the near universality of a health workforce under immense strain and support key policy messages of organisations like the International Council of Nurses, the International Congress of Midwives, and the World Health Organization.

## Background

In 2020, the International Year of the Nurse and Midwife, healthcare professionals across the globe faced unprecedented challenges with the COVID-19 pandemic. COVID-19 is an infectious respiratory illness caused by the SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) virus. It was first identified in December 2019 as the cause of a cluster of pneumonia cases in the city of Wuhan, Hubei province, China.<sup>1,2</sup> In the months that followed, COVID-19 spread to every inhabited continent and was declared a pandemic on 11 March 2020 by the World Health Organization (WHO).<sup>3</sup>

Since this time, numerous variants, or strains, of the virus have been detected. The Delta variant of COVID-19, first detected in India in late 2020, was the dominant strain in much of the world for 2021. Since this time, the Omicron variant and its sub-variants, has since become the dominant variant of concern globally.

At the time of the survey, approximately one year after the pandemic was declared by the WHO, second and third waves of COVID-19 were being experienced across the world, fuelled, in part, by low vaccination rates. Populations with low vaccine rates, especially among low-income countries challenged by vaccine access and distribution, faced the greatest risk for disease containment. In the week of 9 May 2021, the time when the survey was closed, the WHO reported 5.5 million cases and over 90,000 deaths with case and death incidence at the highest level since the beginning of the pandemic (Figure 1). Cases worldwide were at 200 million with 4.25 million deaths recorded.



**Figure 1.** COVID-19 cases reported weekly by WHO Region, and global deaths, as of May 2021.<sup>4</sup>  
Source: WHO COVID-19 Weekly Epidemiological Update

### The impact of COVID-19 on Healthcare workers including nurses and midwives

The impact of the COVID-19 pandemic has been wide-ranging beyond dealing with immediate cases. Healthcare workers (HCWs), and nurses in particular, are at increased risk of COVID-19 infection because of increased patient contact time and close contact with people who have contracted COVID-19.<sup>5</sup> By April 2020, one month into the pandemic, the International Council of Nurses (ICN)

reported 90,000 healthcare workers had been infected and 260 nurses had died.<sup>6</sup> There has been no reprieve since the pandemic emerged, with outbreaks, surges and the emergence of highly transmissible strains like the Delta and Omicron variant. The exact toll on nurses and midwives in terms of infection and death is unknown.

Healthcare workers in clinical settings are confronted not only with their own personal safety but also working in highly stressful environments. They are exposed to increased patient loads, uncertainty around disease outcomes, fast changing organisational policies and practices and other significant challenges that impact their physical, mental, and emotional safety, health, and wellbeing.<sup>7-10</sup> Long shifts, wearing PPE, risk of infection, community aggression and abuse, concerns for the safety of family, and lack of access to resources and support pose a heavy burden for HCWs.

A Nursing Times survey conducted in January 2021 in the UK showed that almost all nurses were working shifts that were short-staffed due to colleagues being too unwell or isolating.<sup>11</sup> A European Federation of Nurses (EFN) Associations report identified concerns including inconsistency and uncertainty with regard to steady provision of PPE and COVID-19 testing for nurses.<sup>12</sup> The impact of the pandemic on nurses has been substantial with many EFN members concerned about the increasing levels of burnout among nurses coupled with psychological and social support not readily available in all countries.<sup>12</sup>

In other settings, elective surgeries have been cancelled as a preparatory measure for anticipated surges in COVID-19 cases. Nurses have been redeployed to fill critical staff shortages caused by illness isolation measures. There has been uncertainty around the best way to retain existing staff and provide employment for those under casual working arrangements. Moreover, for nurses and midwives who were already experiencing significant job strain, the pandemic has likely contributed additional work stress, impacted their physical and mental wellbeing and on the job performance, and created concern for the health and safety of their own family and friends when they leave work.

## Research objectives

The Rosemary Bryant AO Research Centre (RBRC), South Australia, in partnership with Nursing Now, the Registered Nurses' Association of Ontario, Canada and Investén-isciii, Barcelona, Spain undertook an international survey of the nursing and midwifery workforce. The purpose of the survey was to identify and assess what effects the COVID-19 pandemic has had on the nursing and midwifery professions globally by reaching out to Nursing Now member countries. The objectives of the survey were to:

- i. undertake a cross-sectional, self-reported assessment of the impact of COVID-19 on the international nursing and midwifery professions;
- ii. assess indices of occupational wellbeing, including stress, anxiety, and burnout in nurses, midwives, and personal care workers across different work settings;
- iii. determine contributory factors related to occupational wellbeing; and
- iv. identify opportunities to improve the international healthcare workforce preparedness for significant health crises such as COVID-19 in the future, and how international nursing and healthcare bodies can lead or support here.

## Methodology in brief

An online, anonymous, cross-sectional international survey ran over a 6-week period from 20 March to 30 April 2021. The timing of the survey was approximately one year after the peak of the first European Union (EU) wave in April 2020 and the falling back of the second wave which occurred in late 2020. The second wave hit many countries harder than the first, however temporal variations in peak and spread make international comparisons difficult with respect to COVID-19 surge events across countries and regions.

The survey was developed by RBRC with input from Nursing Now and RNAO to ensure relevance and generalisability to the international context. The English language survey was translated into Spanish and French. Promotion of the survey was primarily through the Nursing Now website and social media channels (e.g., Twitter and Facebook). There was a total of 250 questions in the survey, divided into two parts:

- **Part I** focused on demographic and COVID-19 factors, including: workplace preparedness, personal and family concerns, workplace care for COVID-19 patients, workplace changes due to COVID-19, testing and missed work, Personal Protective Equipment (PPE) issues, and community support. Questions included adaptations of international health workforce COVID-19 questions for benchmarking.
- **Part II** assessed indices and domains of the workplace and occupational wellbeing, including: the nursing and midwifery practice environment, psychosocial workplace conditions, job satisfaction, resilience, burnout, and mental health. Original and modified versions of validated instruments were used, including: the Practice Environment Scale – Nursing Work Index (PES-NWI), Copenhagen Psychosocial Questionnaire Version 3 (COPSOQ-III), McCloskey/Mueller Satisfaction Scale (MMSS), Brief Resilience Scale (BRS), Depression Anxiety Stress Scales (DASS-21), and the Oldenburg Burnout Inventory (OLBI).

Data analyses in this report are descriptive and reported for the overall sample, as well as by four major workplace categories: hospitals, residential aged care facilities, primary/community health, and “other” workplaces.

After analyses, results were reported under the following areas:

- Respondents and occupational demographics
- Healthcare leadership and policy
- The nursing practice environment and its impact
- Nurse wellbeing and access to support
- Comparison with other RBRC COVID-19 and workforce wellbeing survey.

A detailed description of the methodology for the study is provided in Appendix A.

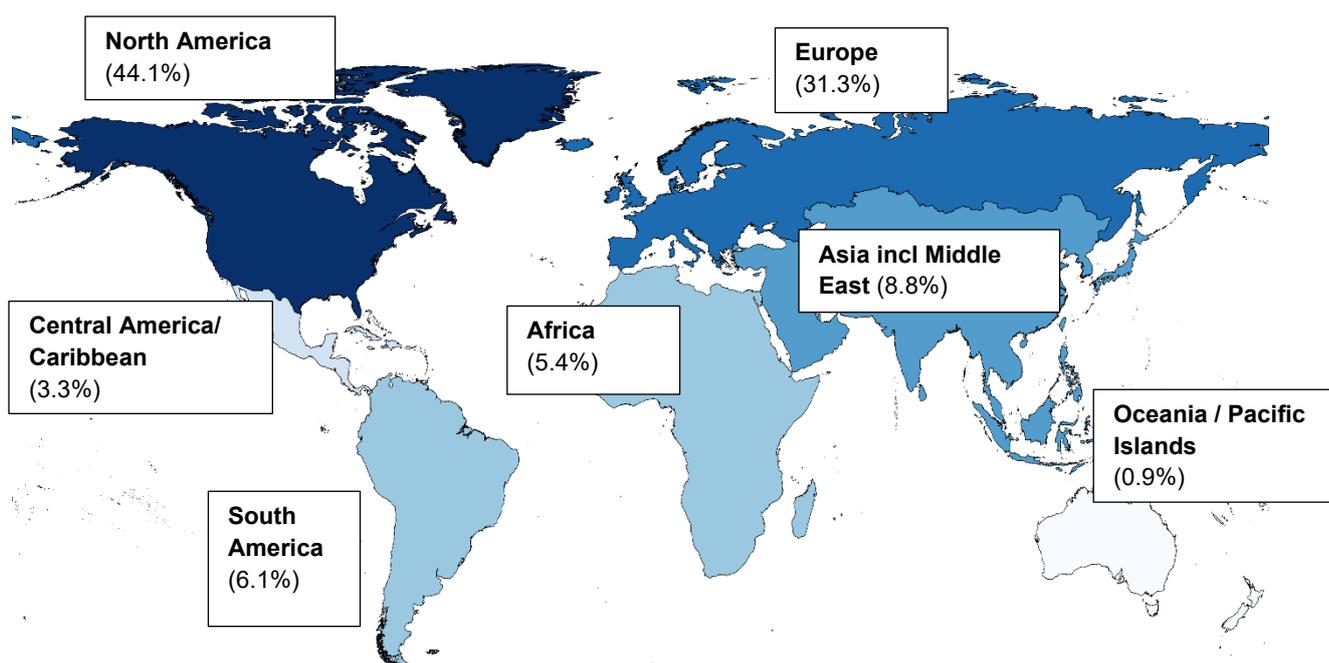
## Results

### Respondents

The Nursing Now COVID-19 survey ran over 6 weeks from 20 March to 31 April 2021 with 1,533 nurses and midwives from across the world opening the survey. Of those, 1,335 consented to participate and answered at least one question.

Response rates to questions varied with a downward trend as the survey progressed; the number of responses to the last prompted question was 810, representing a 40% decrease in responses across the survey. The number of responses to each question (or average number over a series) is reflected in the reporting of results.

The mean age of respondents was 44.5 years ( $SD = 12.1$  years), the majority were female (87.6%) and nearly three quarters (74.8%) were in a relationship (i.e., married, common law union, cohabitating). Most respondents were born in North America (44.1% or Europe (31.3%) with a small proportion of respondents from other regions of the world (Figure 2). See Appendix B for additional demographic information.



**Figure 2.** Region of birth of respondents ( $n = 1289$ ).

## Occupational demographics

### Primary job classification

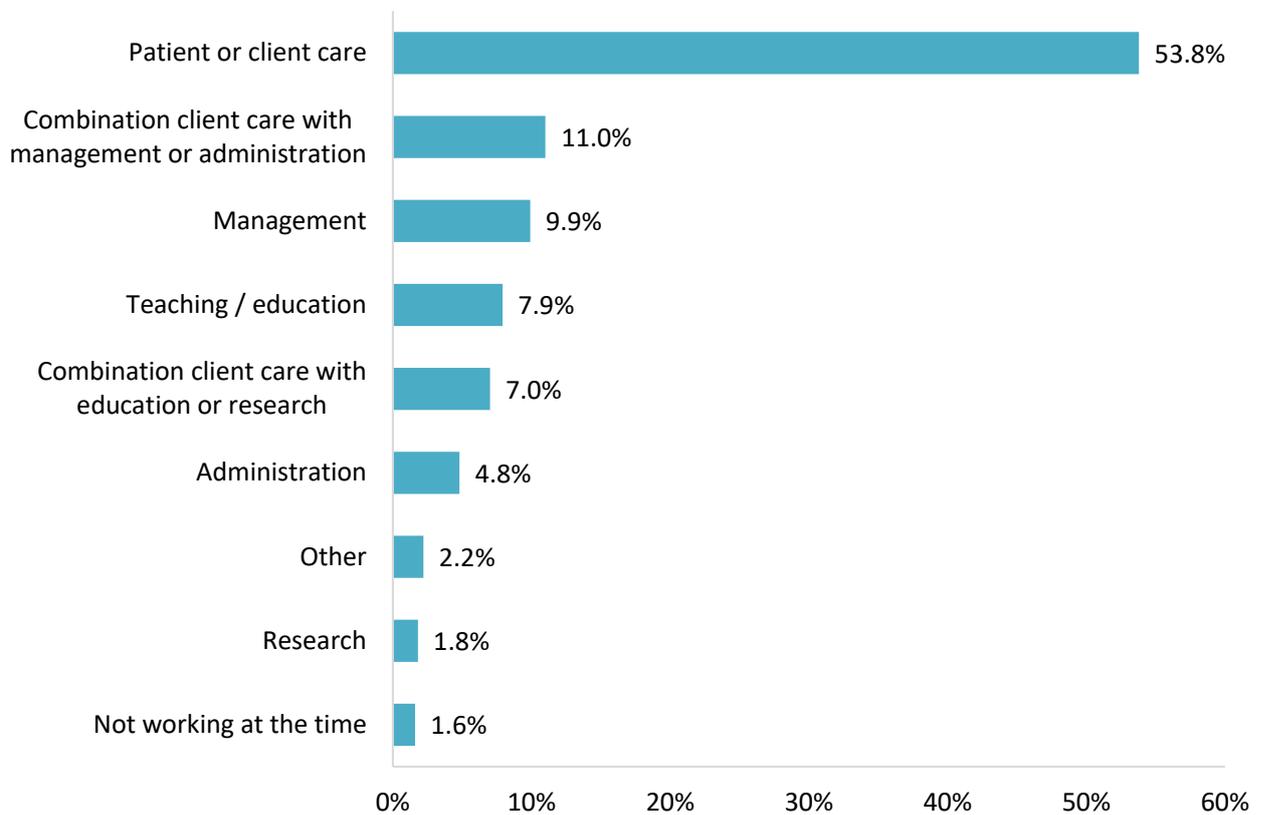
Respondents are reported at the aggregate level by job classifications as identified in Table 1. The majority of respondents had a nursing qualification, including those with a midwifery registration ( $n = 65$ ). There were few people reporting nursing assistant or student backgrounds ( $n = 13$ ). Hence, results largely reflect the experiences of the nursing profession.

**Table 1.** Main job classification of respondents

<b>Classification</b>	<b>Frequency (<i>n</i>)</b>	<b>Percent (%)</b>
Registered Nurse	985	78.2
Registered Practical Nurse / Licensed Practical Nurse	90	7.1
Registered Nurse and Midwife (dual registration)	65	5.2
Nurse Practitioner	59	4.7
Registered Psychiatric Nurse / Registered Mental Health Nurse	35	2.8
Enrolled Nurse	8	0.6
Certified Nursing Assistant	5	0.4
Midwife	4	0.3
Assistant in Nursing	4	0.3
Nursing or Midwifery Student	4	0.3
Total	1259	100

### Primary role

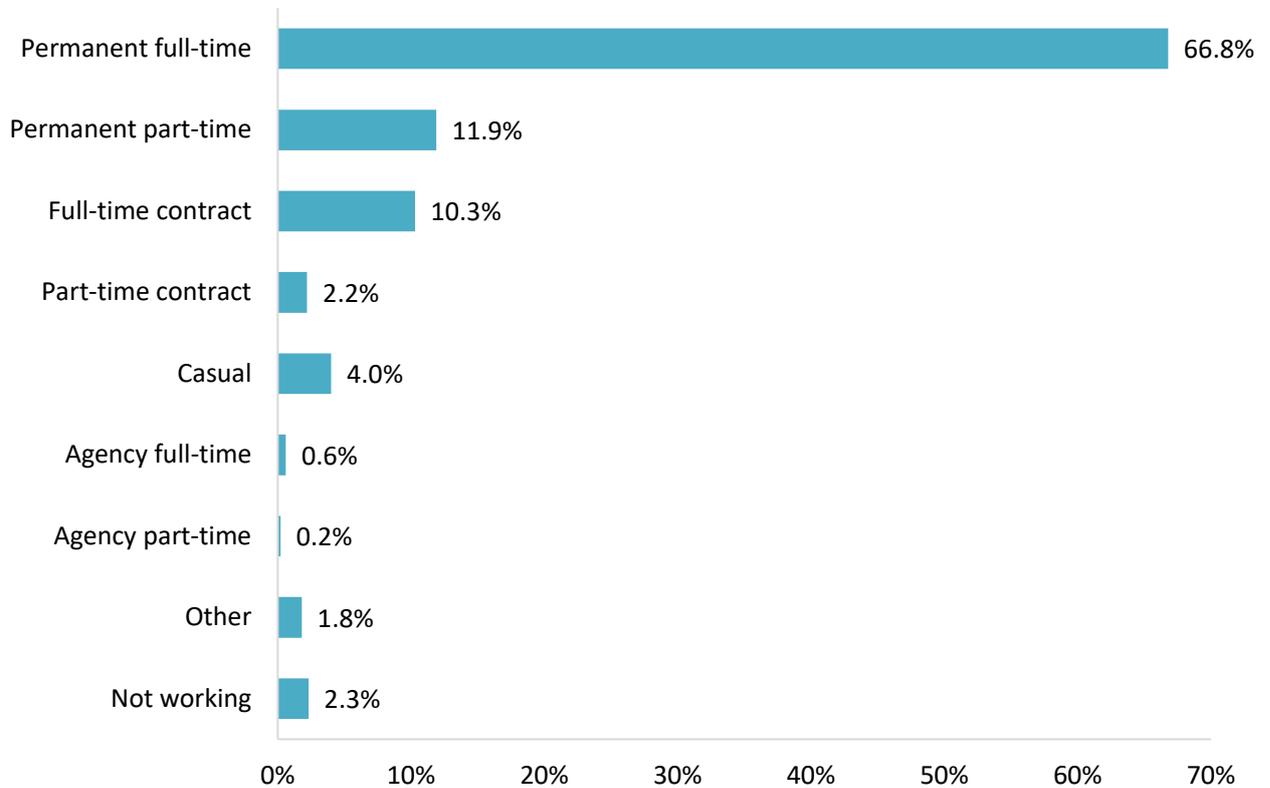
Respondents were asked to indicate their role at their primary place of employment prior to the start of the pandemic (Figure 3). The majority of respondents ( $n = 904$ , 71.8%) worked entirely or partly in patient or client care prior to the pandemic.



**Figure 3.** Primary employment role of respondents ( $n = 1259$ ).

## Working hours

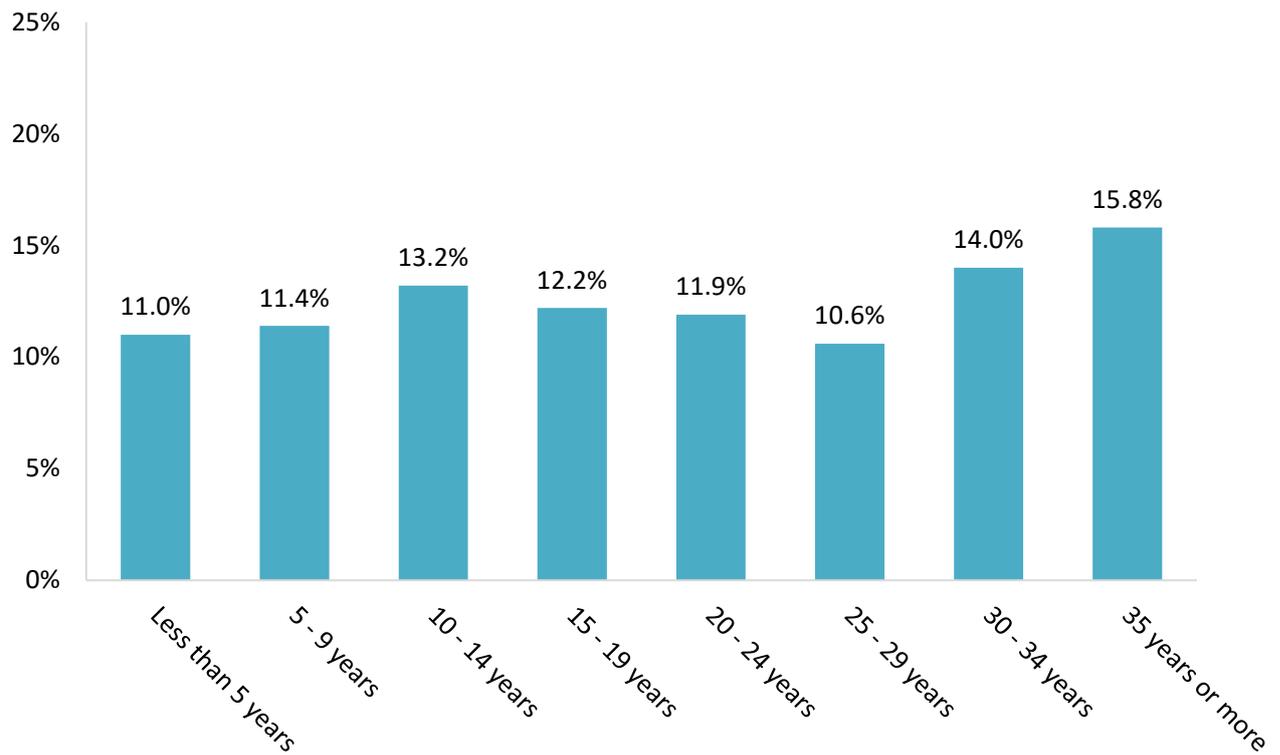
Respondents were asked to indicate their employment status before the pandemic (Figure 4). Nearly four out of five respondents worked full-time: whether in a permanent position (66.8%), contracted arrangement (10.3%), or as an agency nurse (0.6%). Approximately 14% worked in part-time positions. Few people worked in casual positions (4.0%).



**Figure 4.** Employment status prior to the pandemic of respondents ( $n = 1252$ ).

### Healthcare experience

Overall, respondents were highly experienced healthcare professionals. The mean number of years that respondents had worked as a nurse, midwife, or personal care worker was 20.6 years ( $SD = 12.3$  years). Thirty percent of respondents ( $n = 372, 29.8\%$ ) reported having 30 years or more experience working in healthcare (Figure 5). Only 11.0% had less than five years of experience or were a new graduate.



**Figure 5.** Healthcare work experience of respondents ( $n = 1247$ ).

## Workplace

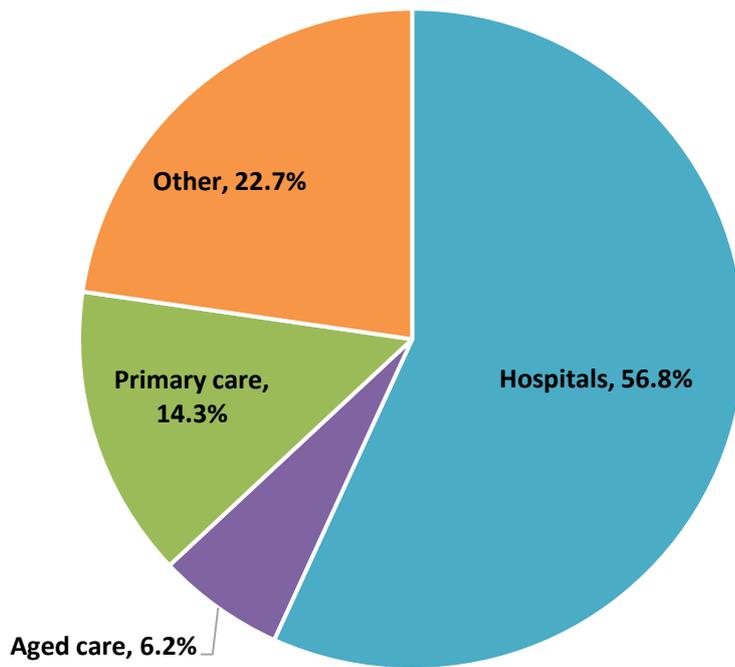
Respondents were asked to report the workplace/organisation type for their *primary* place of work. Respondents worked across a variety of facilities and organisations; the largest proportion being public or private hospitals (Table 2).

**Table 2.** Main workplace / organisation type of respondents

<b>Setting</b>	<b>Frequency (n)</b>	<b>Percent (%)</b>
Public hospital (excluding outpatients)	568	45.5
Community healthcare service	115	9.2
Private hospital	97	7.8
Outpatient services	79	6.3
Long term care / Aged care	74	5.9
Tertiary education facility	68	5.4
Public health	54	4.3
Other Government Department or Agency	34	2.7
Other Private Health service	27	2.2
Mental health services	26	2.1
Other	24	1.9
General practitioner (GP) practice	19	1.5
Disability services	18	1.4
Specialist women's and/or children's hospital	14	1.1
Retirement care / Retirement home	9	0.7
Correctional services	8	0.6
Agency	6	0.5
First Nations health services	5	0.4
Defence	4	0.3
Total	1249	100

Primary workplace was collapsed into four categories for analyses across selected variables and outcomes where appropriate (Figure 6). The four workplace categories were:

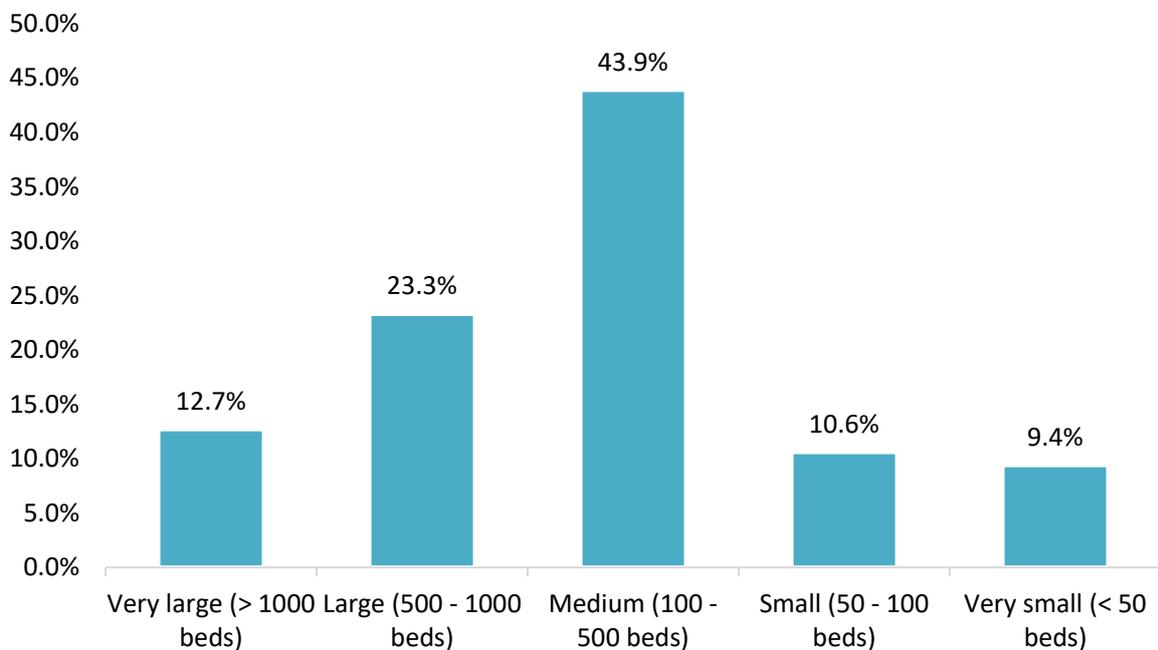
- (1) Hospitals (including outpatient services),
- (2) Primary care / Community healthcare)
- (3) Aged care
- (4) Other (those working in universities, government, not-for-profit, not working, "other" and where no response was provided, i.e., missing).



**Figure 6.** Main workplace of respondents ( $n = 1335$ ).

Note. Some participants ( $n = 86$ ) were missing data on the workplace comparison variable; these participants were included in the "other" subgroup.

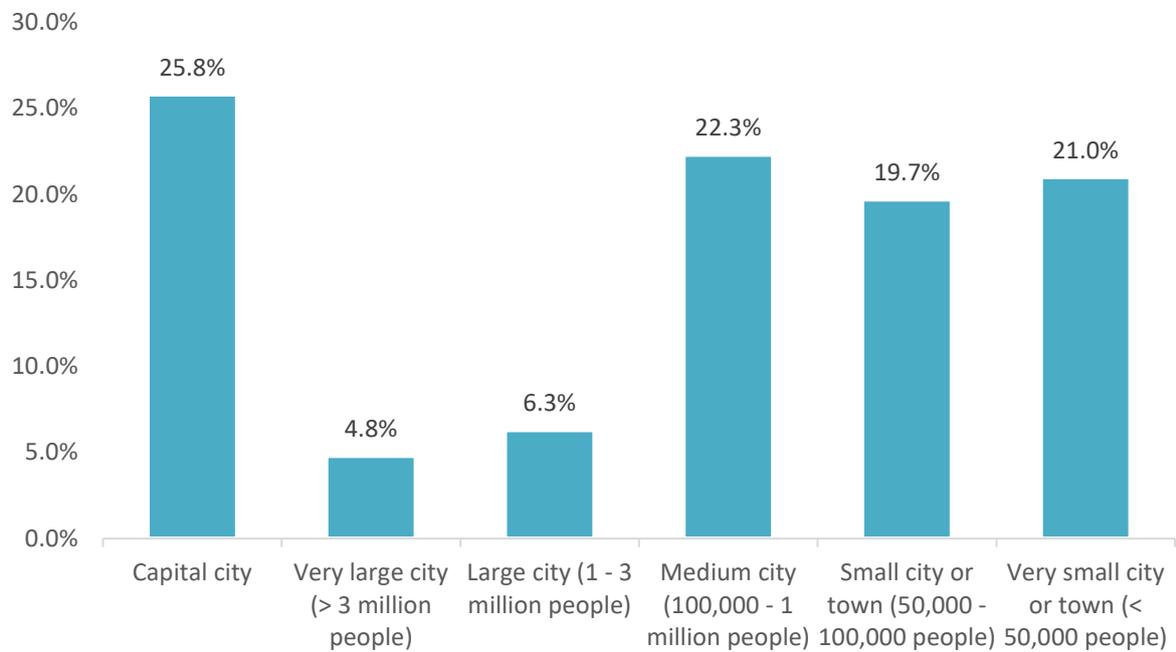
Respondents who reported working in hospitals, aged care, and primary care or community healthcare services, were asked the size of the hospital or clinic in which they worked. Most respondents most worked in a medium to large sized hospital or clinic (Figure 7).



**Figure 7.** Size of employment facility of respondents working in hospitals, aged care, and primary care ( $n = 818$ ).

## Work location

Respondents were asked to report the location for their primary place of work (Figure 8). Respondents most frequently reported working in a capital city or medium-sized city (100,000 – 1,000,000 people). Only a small proportion of respondents reported working in a large (1 – 3 million) or very large city (>3 million people).



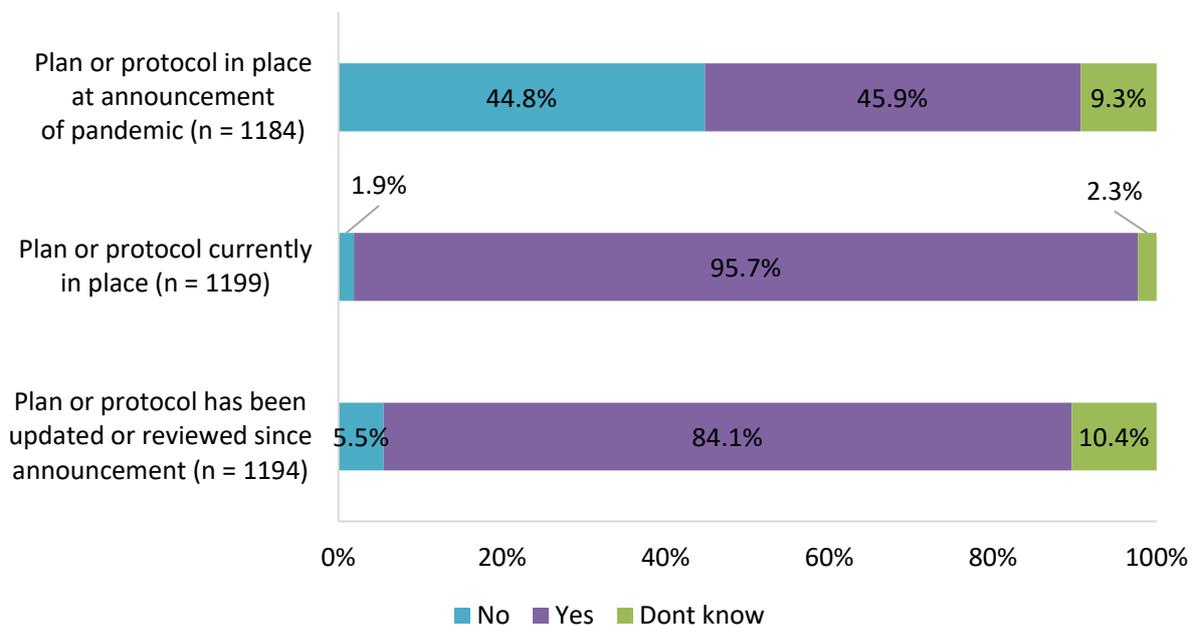
**Figure 8.** Location of primary employer of respondents ( $n = 1247$ ).

## Healthcare leadership and policy

### COVID-19 workplace plan

Respondents were asked several questions about their workplace plans and protocols regarding responding to known or suspected COVID-19 cases (Figure 9). Just under half of all respondents ( $n = 544$ , 45.9%) stated their workplace had a COVID-19 plan or protocol in place to respond to known or suspected cases when the pandemic was announced.

When asked whether their workplace *currently* has a COVID-19 plan or protocol, most respondents ( $n = 1148$ , 95.7%) reported their work place has a plan and are aware that it has been reviewed or updated since the start of the pandemic ( $n = 1004$ , 84.1%).

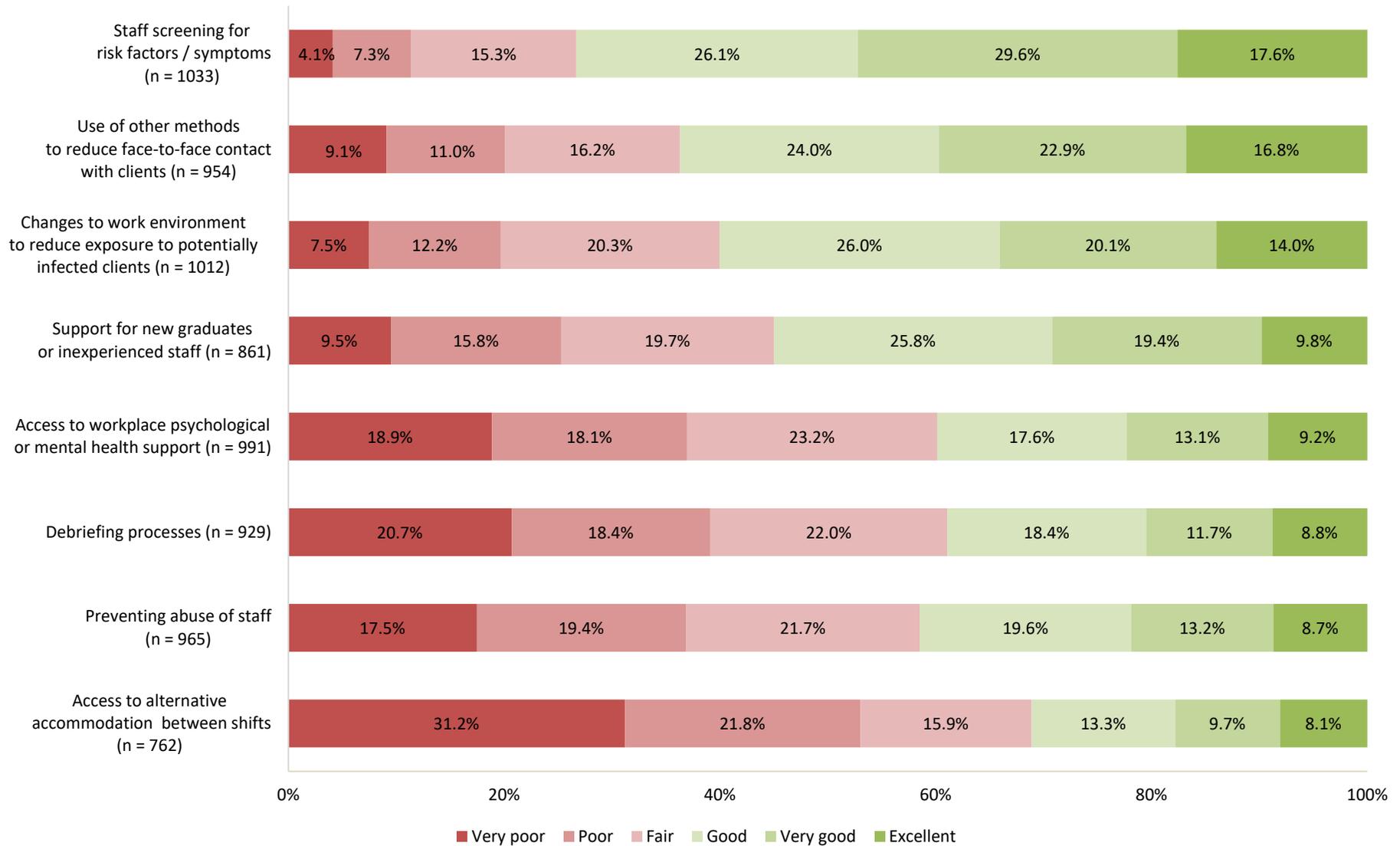


**Figure 9.** Awareness of workplace COVID-19 plans or protocols in place at announcement of the pandemic and at the time of the survey of respondents.

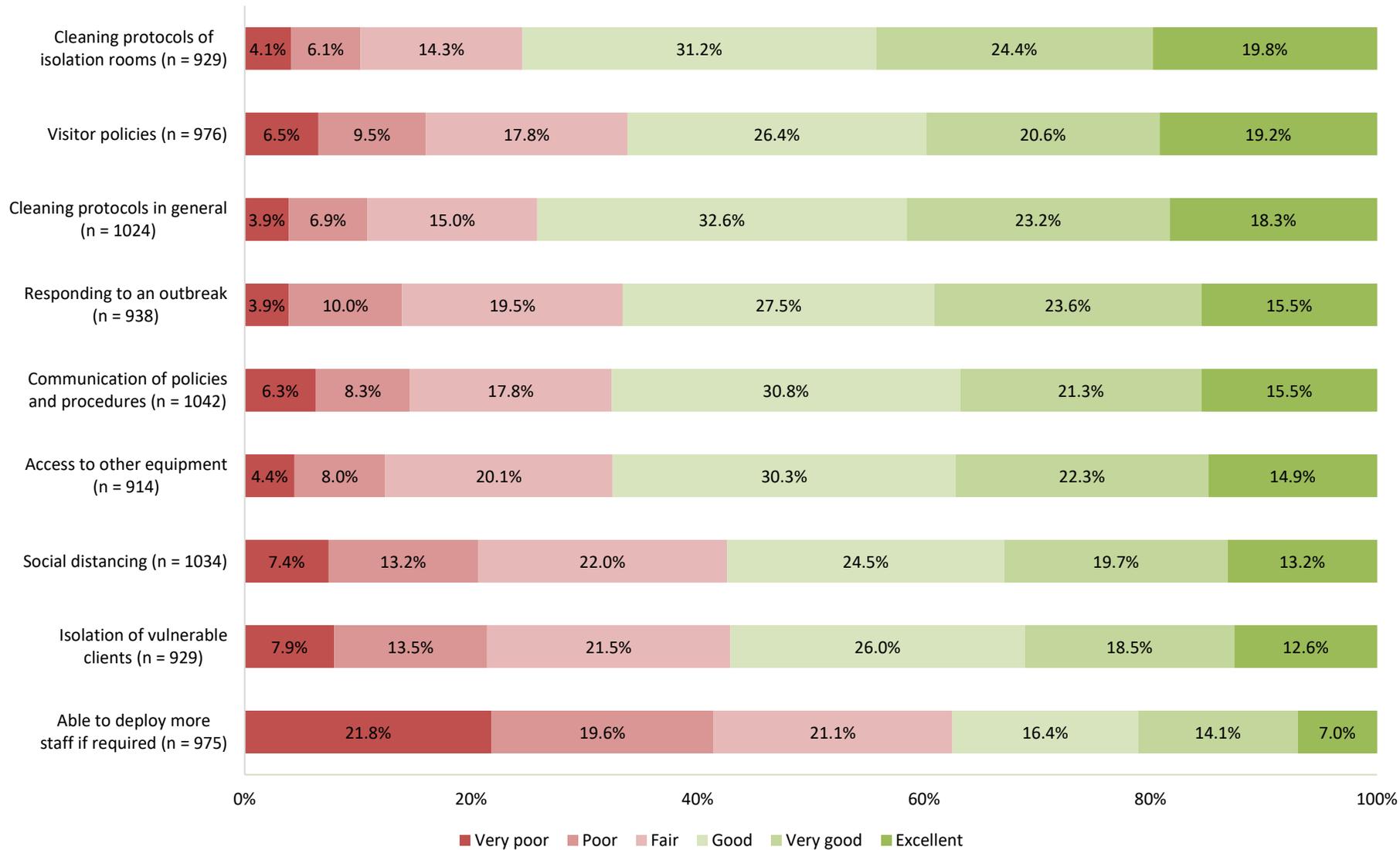
### Organisational preparedness

Survey respondents were asked to rate their organisation's preparedness with respect to policies and procedures across a range of areas on a 6-point scale ranging from very poor to excellent (Figure 10 and Figure 11).

Procedures for staff screening for risk factors or symptoms of COVID-19 ( $n = 758$ , 73.4%), general cleaning ( $n = 759$ , 74.1%), and cleaning of isolation rooms ( $n = 701$ , 75.5%) were rated as good to excellent by a majority of respondents. In contrast, over half of respondents rated policies and procedures as very poor to fair in regard to preventing staff abuse (e.g., physical or verbal harassment;  $n = 565$ , 58.5%), access to workplace psychological or mental health support ( $n = 596$ , 60.1%), debriefing processes ( $n = 567$ , 61.0%), being able to deploy more staff if required ( $n = 610$ , 62.6%), and access to alternative accommodation between shifts ( $n = 525$ , 68.9%).



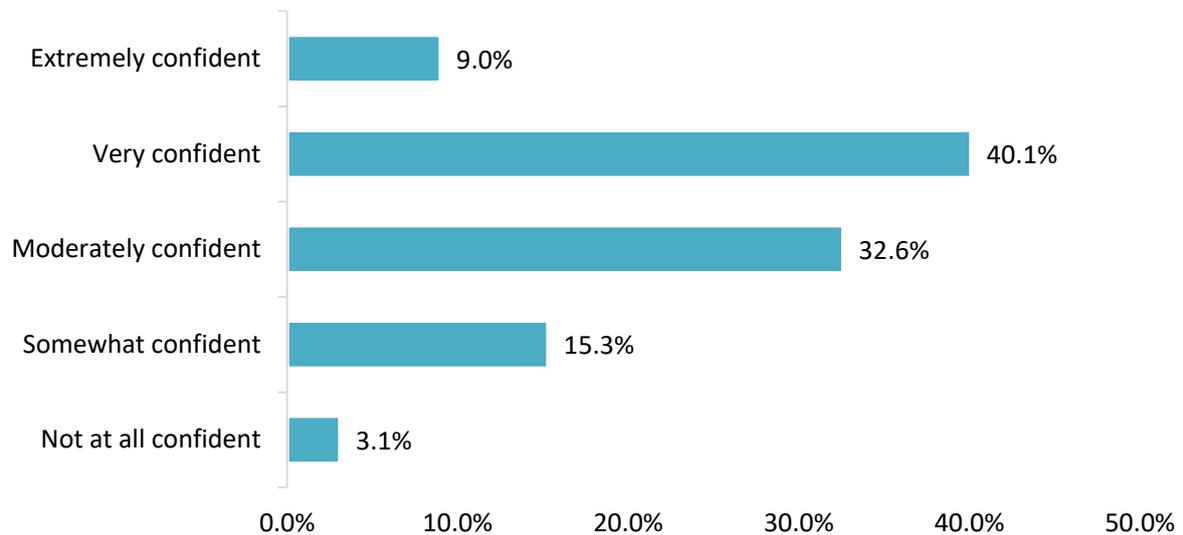
**Figure 10.** Ratings of primary workplace staff screening, exposure and support policies and procedures.



**Figure 11.** Ratings of primary workplace COVID-19 workplace environment policies and procedures.

### COVID-19 infection prevention and control training

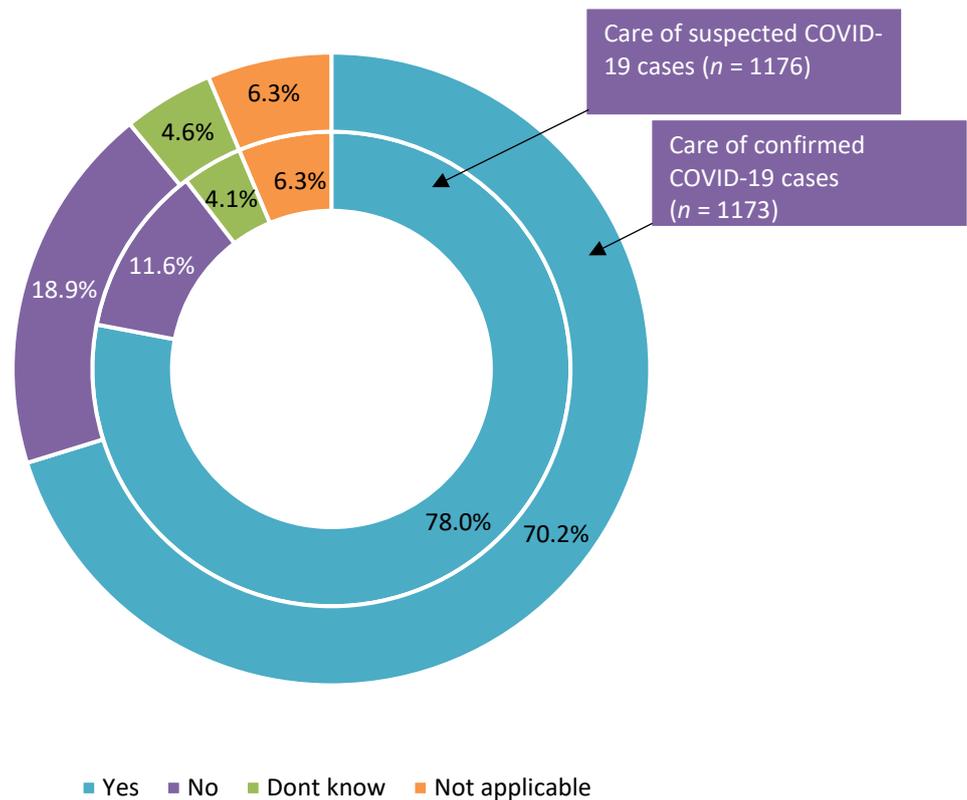
Respondents were asked to indicate whether they had received COVID-19 infection prevention and control training. Overall, 81% ( $n = 969$ ) of respondents reported receiving training. For those who received COVID-19 infection prevention and control training, approximately half reported feeling very confident to extremely confident in their ability to practice safely as a result of the training they received (Figure 12).



**Figure 12.** Confidence in ability to practice safely because of COVID-19 infection prevention and control training received by respondents ( $n = 948$ ).

### COVID-19 in the workplace and care of COVID-19 patients

Respondents were asked two questions regarding the presence of COVID-19 patients in their workplace: (i) if their workplace had provided care for *suspected* COVID-19 patients and (ii) whether their workplace had provided care for confirmed COVID-19 patients (Figure 13). Most respondents ( $n = 917$ , 78.0%) reported their workplace had provided care to one or more patients/clients with *suspected* COVID-19 with slightly less ( $n = 823$ , 70.2%) reported having cared for cases with *confirmed* COVID-19.



**Figure 13.** The proportion of workplaces that provided care to patients/clients with known or suspected COVID-19 as stated by respondents.

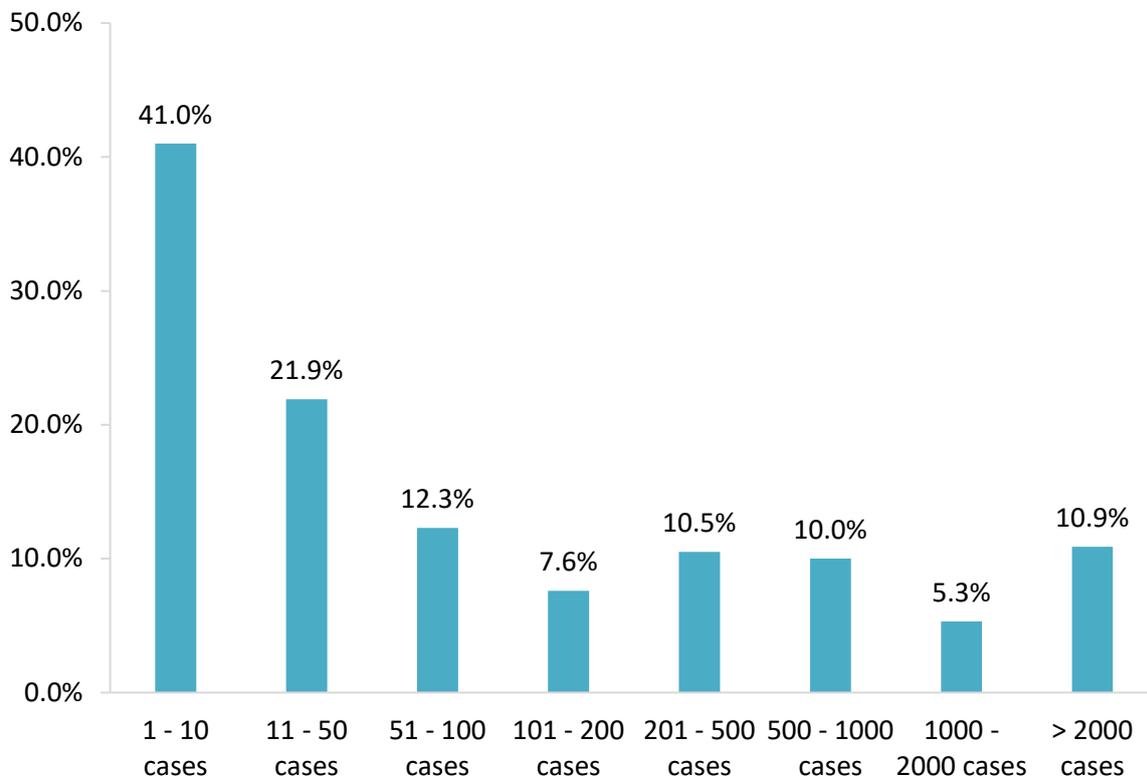
Regarding the care of patients with COVID-19, just over half of the respondents ( $n = 665$ , 56.9%) indicated that their workplace had assigned or asked for dedicated staff to care for COVID-19 patients. The remainder replied that their workplace had *not* assigned dedicated staff to care for COVID-19 patients ( $n = 324$ , 27.7%), were unsure ( $n = 74$ , 7.2%), or this was not applicable to their situation ( $n = 95$ , 8.1%).

Those respondents who worked in a place where care was provided to one or more patients with confirmed or suspected COVID-19 were also asked if they had provided direct care to a patient/client with confirmed or suspected COVID-19 (Table 3). Just under half of respondents ( $n = 422$ , 43.7%) indicated they had provided direct care to a patient/client with confirmed COVID-19.

**Table 3.** Experience providing direct care to a confirmed/ suspected COVID-19 case of respondents ( $n = 965$ )

Response	Frequency ( <i>n</i> )	Percent (%)
No	280	29.0
Yes, confirmed cases	234	24.2
Yes, suspected cases	227	23.5
Yes, both confirmed and suspected cases	188	19.5
Not applicable	36	3.7
Total	965	100

For those whose workplace had cared for one or more patients/clients with suspected or confirmed cases of COVID-19, just under half ( $n = 405$ , 43.4%) of workplaces had only cared for 1-50 cases since the start of the pandemic (Figure 14). Sixteen per cent ( $n = 151$ ) of respondents estimated that their workplace had cared for over 1,000 cases of suspected or confirmed COVID-19.



**Figure 14.** Proportion of confirmed or suspected COVID-19 cases cared for at workplaces since the start of the pandemic as stated by respondents ( $n = 933$ ).

The respondents who provided care to confirmed and/or suspected COVID-19 cases were asked in what care setting they provided this care (Table 4). Of the options provided, the most frequently reported sites were hospital specialty units, designated COVID-19 wards/wings, hospital ICUs, and community health care facilities.

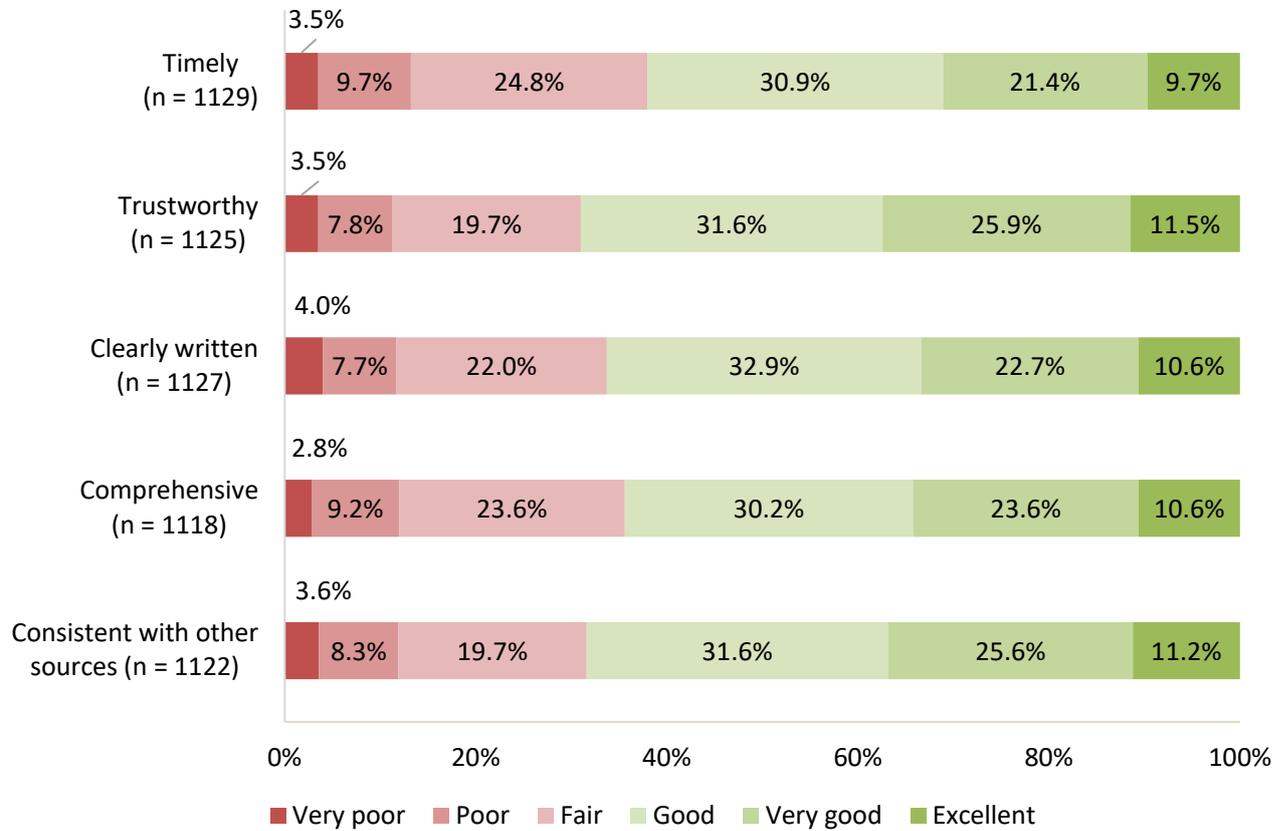
**Table 4.** Care setting for confirmed or suspected COVID-19 cases of respondents (*n* = 474)

<b>Setting</b>	<b>Frequency (<i>n</i>)</b>	<b>Percent (%)</b>
Hospital Specialty Unit (e.g., respiratory)	128	27.0
Hospital designated COVID-19 ward/wing	116	24.5
Hospital ICU	104	21.9
Community health care facility	90	19.0
Home-based care	71	15.0
Residential aged care facility	65	13.7
Hospital CCU	27	5.7
Disability health care facility	22	4.6
Family practice / GP / Doctor's office	21	4.4
Hospital paediatric ICU	16	3.4
Designated COVID-19 hotel accommodation	14	3.0
Hospital neonatal ICU	13	2.7

Note. Multiple responses permitted; hence percent sum greater than 100.

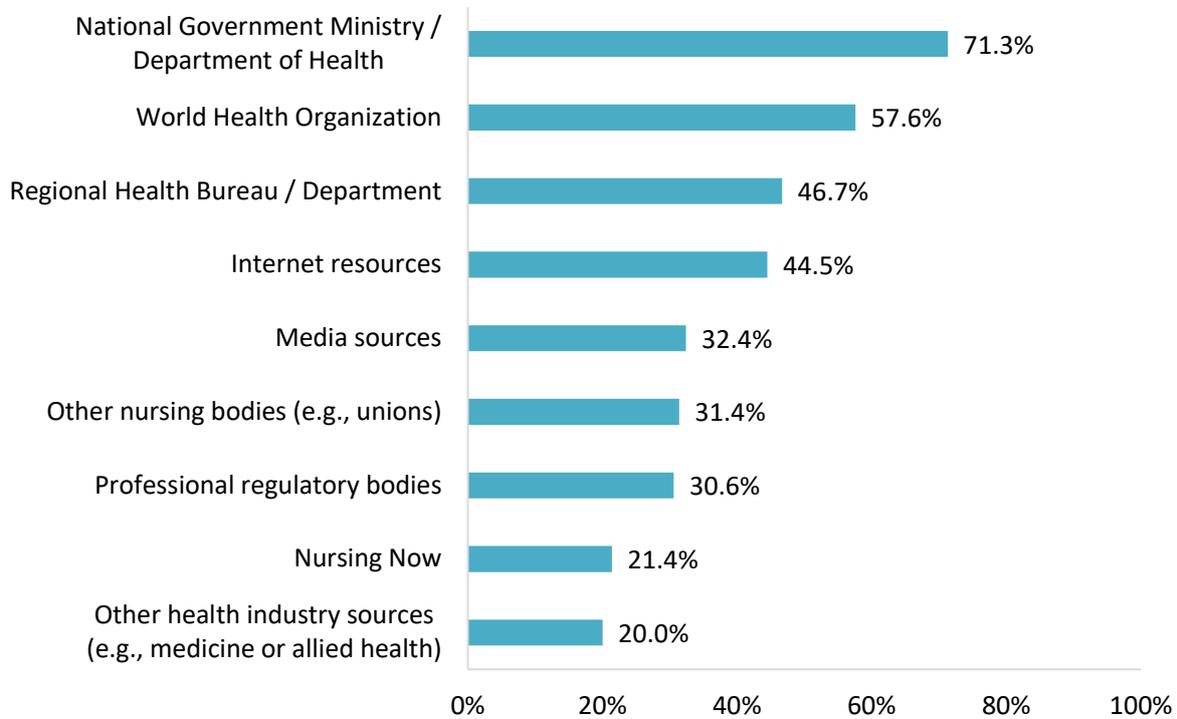
## COVID-19 Information at your workplace

Respondents were asked to rate the COVID-19 information provided at their workplace in terms of being timely, trustworthy, clearly written, comprehensive, and consistent with other sources. Across all categories, at least 60% of respondents rated the information as good to excellent (Figure 15).



**Figure 15.** Ratings of COVID-19 information provision at respondents' workplaces.

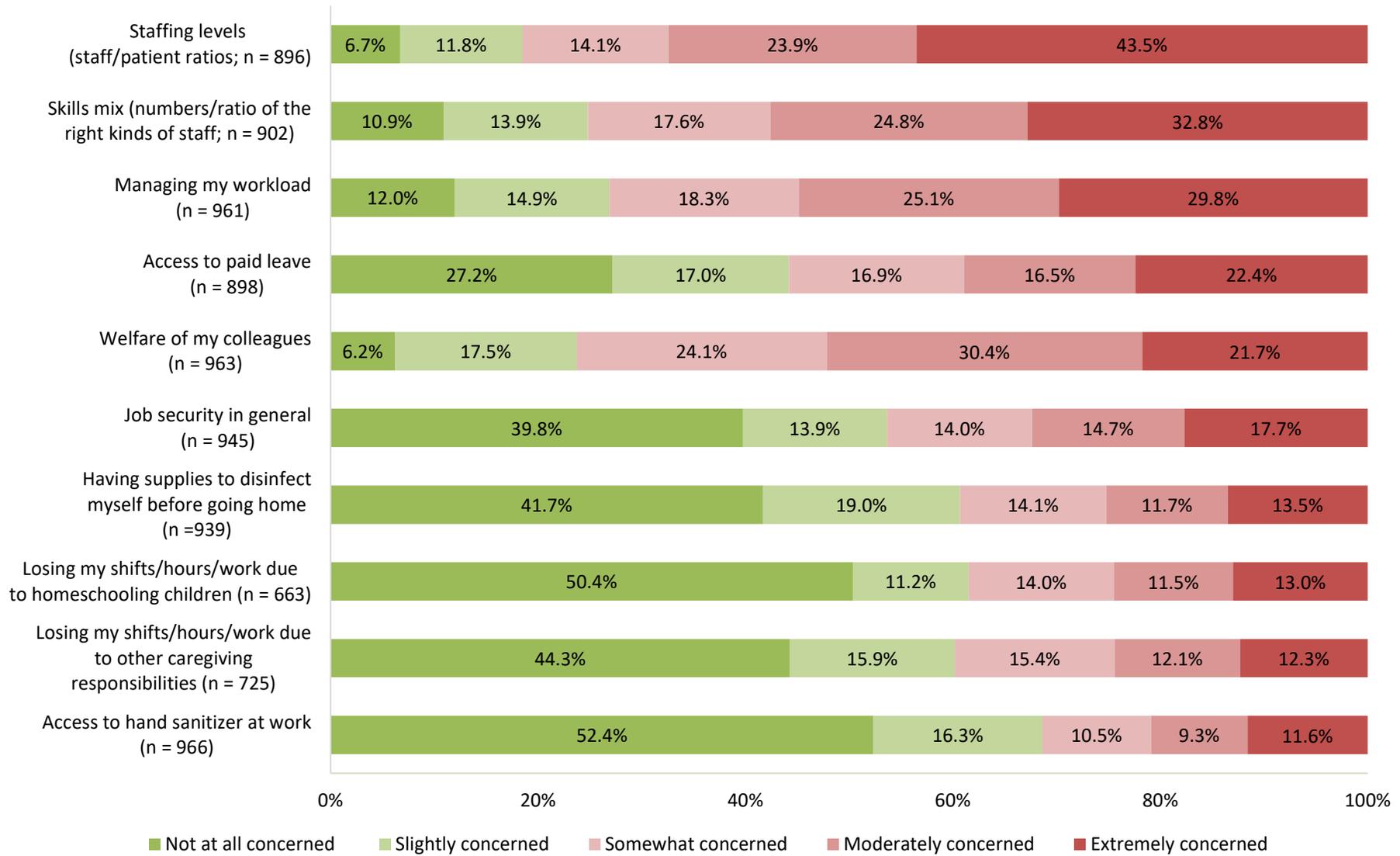
Respondents were asked to indicate any other sources they found to be useful for workplace-related information regarding COVID-19 (Figure 16). The most selected sources were national government ministries or departments of health ( $n = 778$ , 71.3%) and the World Health Organization ( $n = 628$ , 57.6%).



**Figure 16.** Useful workplace-related information sources about COVID-19 ( $n = 1091$ ).  
*Note.* Multiple responses permitted; hence percent sum greater than 100.

### Concerns about the workplace because of COVID-19

Respondents were asked to indicate their level of concern in response to a series of statements related to the workplace as a result of COVID-19 (Figure 17). Over two-thirds of the respondents were moderately to extremely concerned about having adequate staffing levels (i.e., number of staff/ratios of staff to patients or clients;  $n = 604$  67.4%). Over half of the respondents were moderately to extremely concerned about the right skills mix (i.e., number/ratio of the right kinds of staff) in their workplace ( $n = 520$ , 57.6%), and about their ability to manage their workload ( $n = 527$ , 54.8%). Respondents were generally less concerned about having access to hand sanitizer at work, losing their shifts/work either due to home-schooling children or other caregiving responsibilities, or having supplies to disinfect themselves before going home.

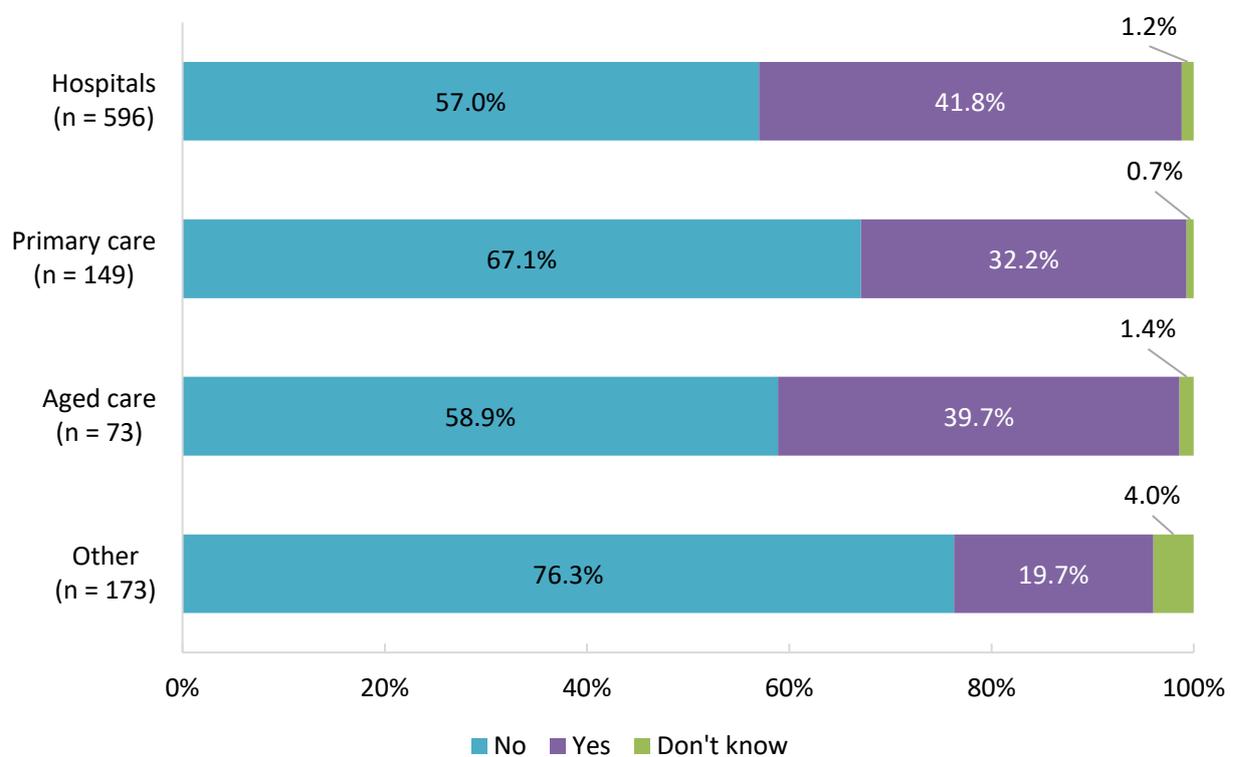


**Figure 17.** General workforce concerns because of COVID-19 among all respondents.

## Community support and harassment

Respondents were asked three questions regarding: (i) community support for their work, (ii) experiences of abuse or threats at work from the public or patients, and (iii) experiences of abuse or threats outside of work. Approximately two-thirds of respondents ( $n = 629$ , 63.5%) had experienced or felt community support for the work they do. Over one-third of respondents ( $n = 360$ , 36.3%) had experienced abuse or been threatened by members of the public/patients at work. Respondents working in hospitals ( $n = 249$ , 41.8%) and aged care ( $n = 29$ , 39.7%) more frequently reported abuse at work compared with those working in primary care or other workplaces (Figure 18).

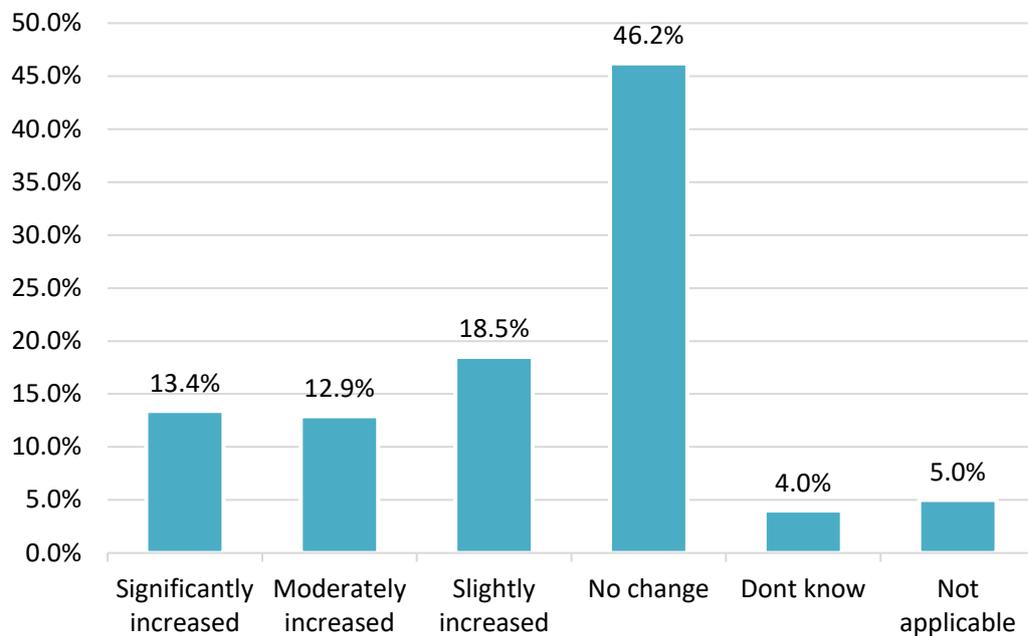
Approximately 16% ( $n = 159$ ) of respondents had also experienced abuse or felt threatened by members of the public in settings outside of work.



**Figure 18.** Abuse or threats by members of the public or patients in the work setting according to main workplace.

## Staffing levels

Respondents were asked whether their organisation had to increase the number of staff scheduled on shifts to cope with demand (Figure 19). For nearly half of respondents ( $n = 441$ , 44.9%) there had been a slight, moderate or significant increase in staff rostered on shifts. A similar proportion also reported no change ( $n = 454$ , 46.2%). No respondent reported a reduction in number of staff.

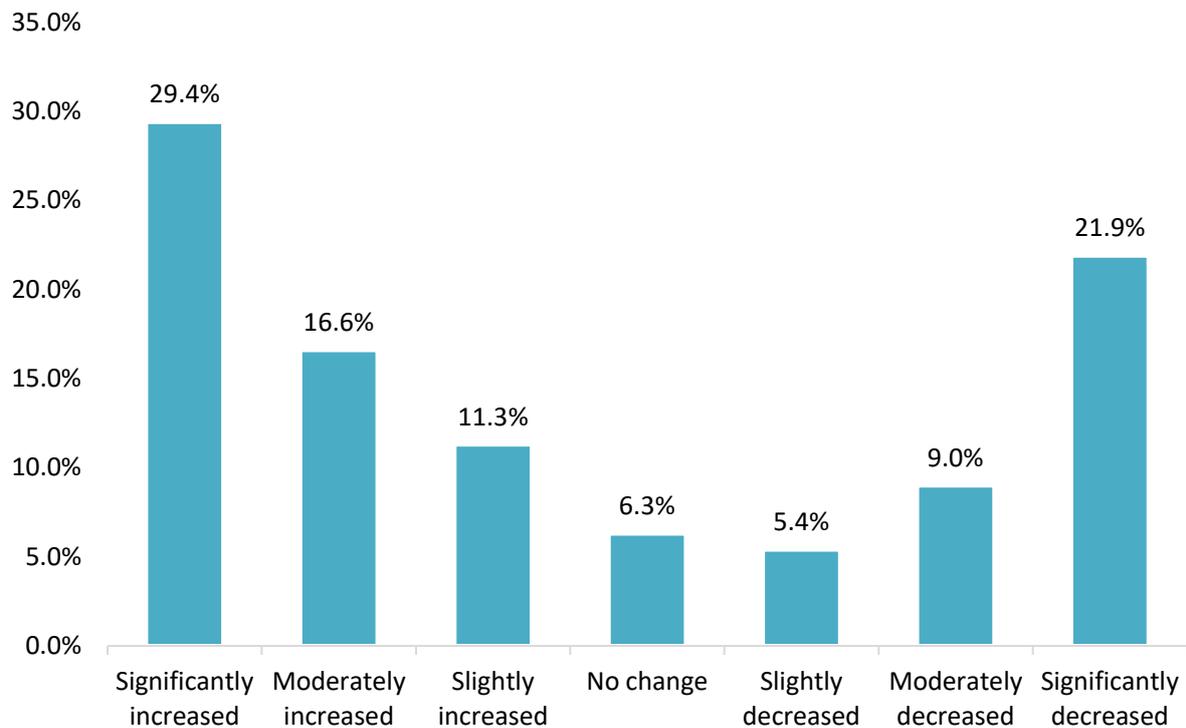


**Figure 19.** Changes to staffing levels to cope with demand as indicated by respondents ( $n = 983$ ).

One-quarter of respondents ( $n = 249$ , 25.5%) reported that their workplace had recruited student nurses and midwives to support the regular workforce to cope with demand. More than half the of respondents ( $n = 581$ , 60.8%) indicated that their organisation had limited staff vacation time or time away from work to assist with the increase in demand.

## Workload changes

Respondents were asked to indicate to what degree their workload had changed during the pandemic. Almost half ( $n = 454$ , 46.1%) of respondents felt their workload had significantly or moderately increased since the pandemic (Figure 20). Under one-third of respondents ( $n = 305$ , 31%) reported their work had moderately or significantly decreased. While patterns across workplace categories were similar, aged care ( $n = 41$ , 56.1%) and primary care ( $n = 70$ , 53.7%) more frequently reported moderate or significant increases in workload.



**Figure 20.** Workload changes during the pandemic of all respondents

## Multiple jobs

Of those respondents who worked at more than one workplace ( $n = 365$ ), approximately one-third ( $n = 112$ , 30.7%) were asked to give up working at one of the places. Of those respondents who were asked to give up working at one of their workplaces, 28.6% ( $n = 32$ ) were provided advice on their rights, and 23.2% ( $n = 26$ ) continued to work at both workplaces.

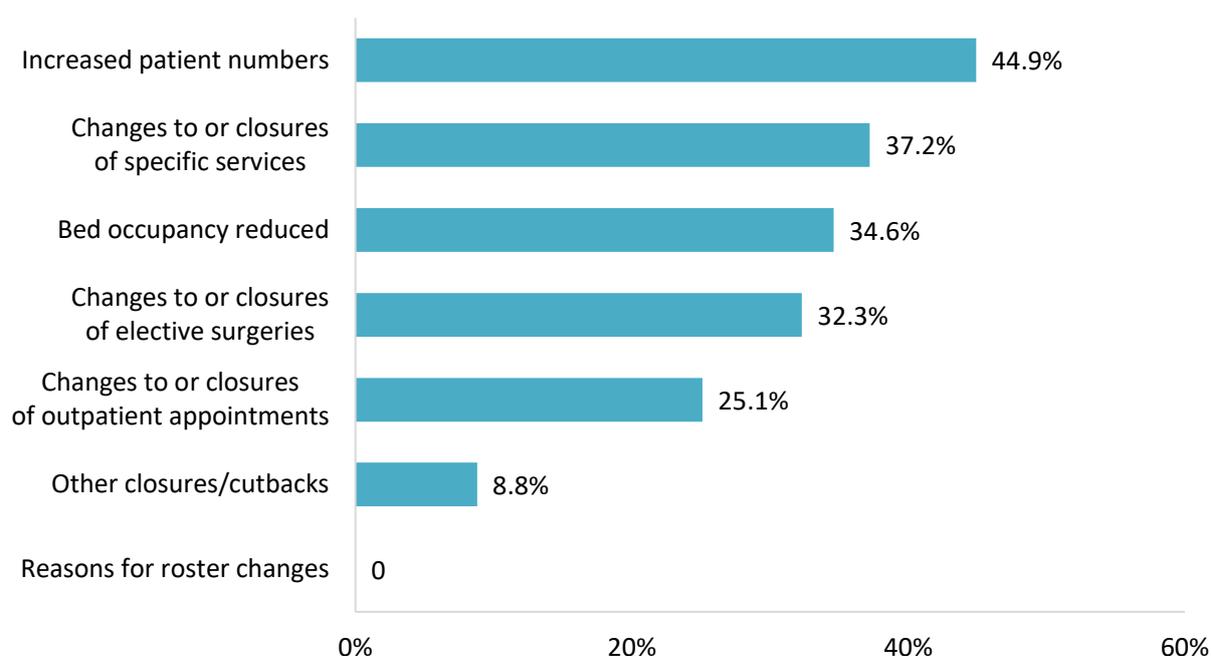
## Roster changes

When respondents were asked if their work schedule had been impacted by the pandemic, one-third reported their employment roster had been unaffected (Table 5). Just under half (46.0%) of respondents reported an increase in paid or unpaid hours.

**Table 5.** Impact of pandemic on work schedules of respondents ( $n = 958$ ).

Impact on employment/ roster	Frequency ( <i>n</i> )	Percent (%)
My work schedule has been unaffected	354	37.0
Increase in paid hours	221	23.1
Increase in unpaid hours	219	22.9
Alternative or flexible working arrangements put in place	63	6.6
No longer employed in the position	16	1.7
Hours reduced, no reimbursement	14	1.5
Hours reduced, topped up by government program	11	1.1
Took unpaid leave	11	1.1
Hours reduced, topped up through employer payments	3	0.3
Paid special leave	2	0.2

Respondents whose work schedule had been impacted by the pandemic (i.e., either increased or decreased hours) were asked which workplace factors had affected those changes (Figure 21). The most frequently reported impacts were lack of staff (64.2%) and increased patient numbers (44.9%).



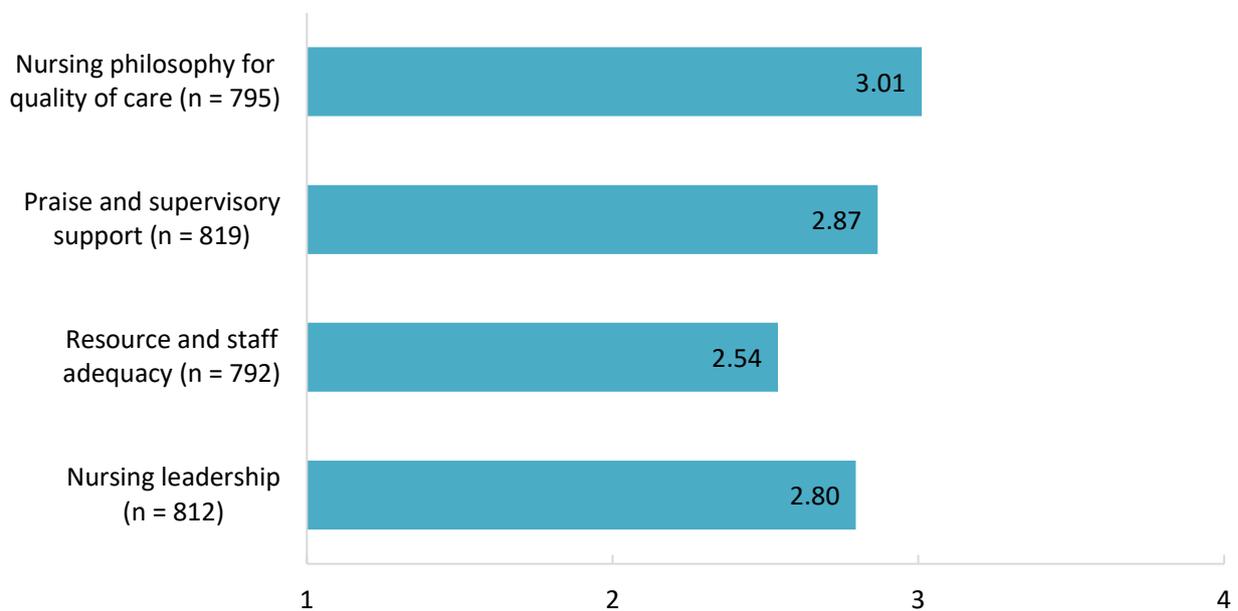
**Figure 21.** Factors affecting work schedule changes as indicated by respondent ( $n = 486$ ).

## The nursing practice environment and its impact

### Practice environment

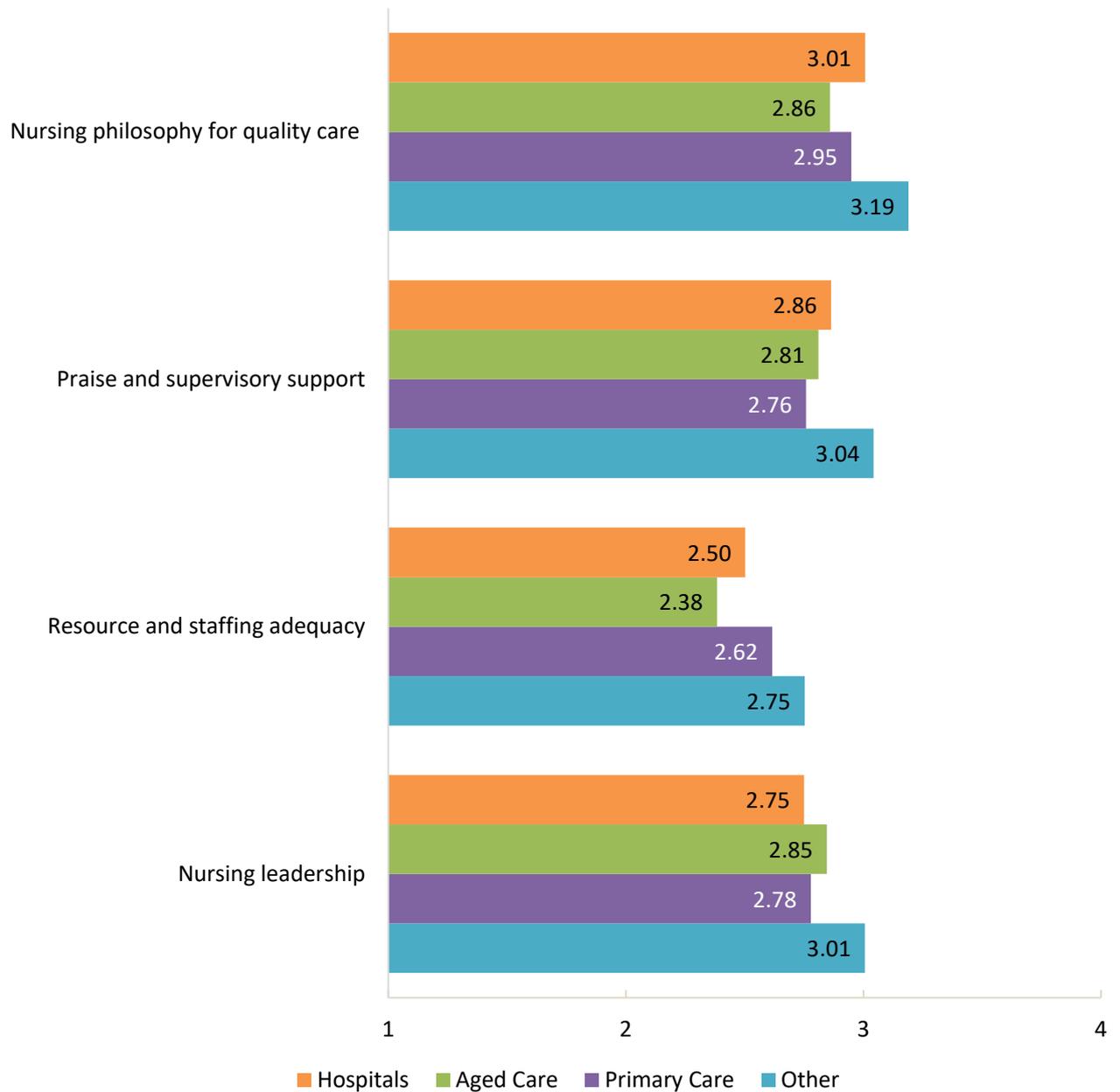
The quality of nursing practice environments was assessed using a modified version of the Practice Environment Scale – Nursing Work Index (PES-NWI).<sup>13</sup> Revised subscales assessed whether nursing philosophy for quality care, praise and supervisory support, nursing leadership, and resource and staffing adequacy were present in the workplace. Scores above 2.5 indicated a tendency to agree that the desirable practice characteristic was present in the workplace, while scores below 2.5 indicated a tendency to disagree.

On average, there was agreement that nursing philosophy for quality care ( $M = 3.01, SD = 0.79$ ), praise and supervisory support ( $M = 2.87, SD = 0.92$ ) and nursing leadership ( $M = 2.80, SD = 0.92$ ) were present in the practice environment for all respondents. Resource and staffing adequacy ( $M = 2.54, SD = 1.01$ ) was closer to the neutral midpoint, indicating neither agreement nor disagreement that it was present in the workplace across the sample (Figure 22).



**Figure 22.** Practice environment factor mean scores for all respondents, as measured by the PES.

The quality of nursing practice environments was investigated according to main workplace (Figure 23). Respondents working in aged care ( $M = 2.38, SD = 0.94$ ) and hospitals ( $M = 2.50, SD = 1.02$ ) were less likely to agree that resource and staffing adequacy were present in the practice environment compared with those working in primary care ( $M = 2.62, SD = 1.04$ ) and other workplaces ( $M = 2.75, SD = 0.94$ ). Respondents in aged care ( $M = 2.86, SD = 0.74$ ) were also the least likely to agree that a nursing philosophy for quality care was present in the practice environment.



**Figure 23.** PES subscale mean scores by main workplace.

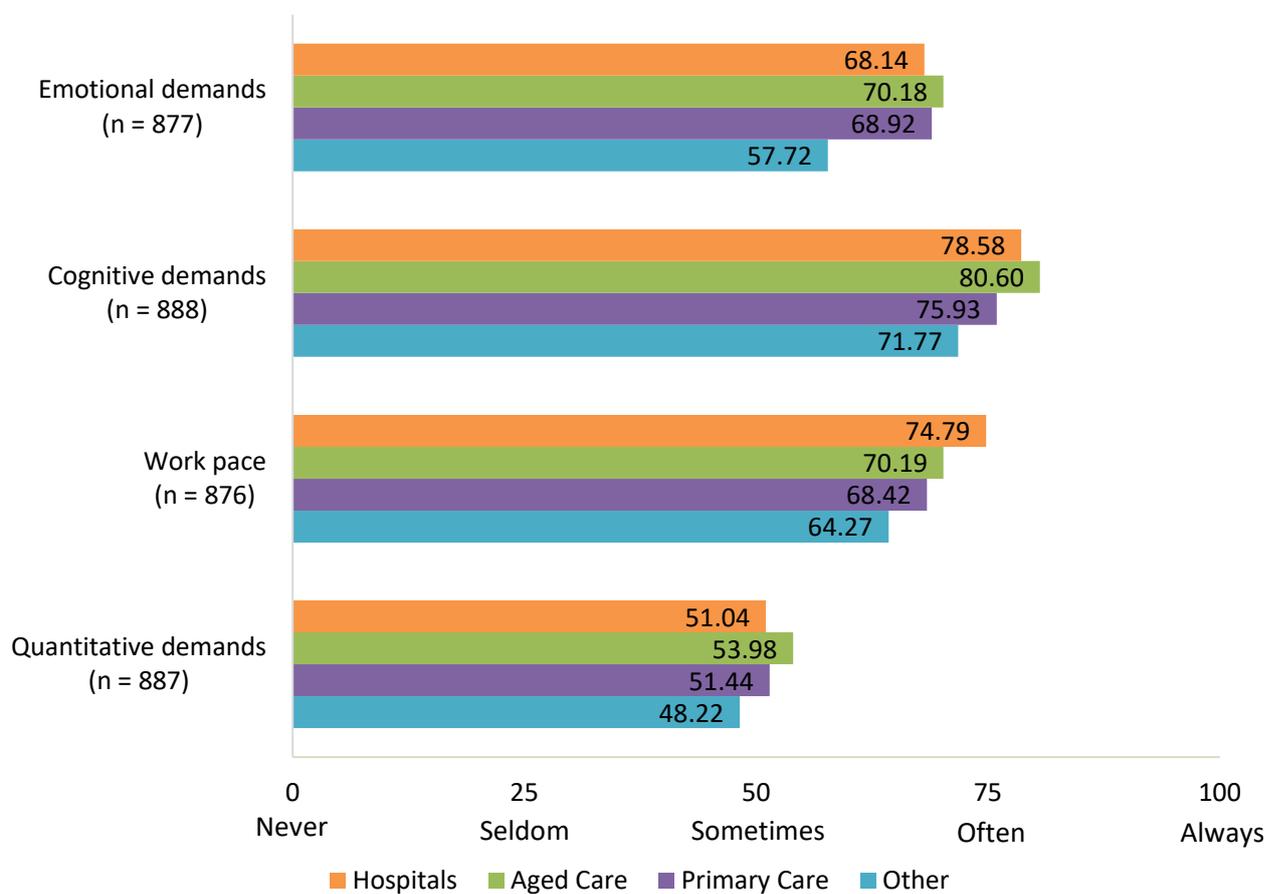
## Workplace conditions

Workplace conditions were measured using the Copenhagen Psychosocial Questionnaire Version 3 (COPSOQ-III).<sup>14</sup> Higher scores (range: 0 – 100) indicated greater demand (cognitive, emotional, workload and pace), role clarity, role conflict, work-life balance or general health.

### Workplace demands

On average, respondents reported often experiencing a high level of cognitive ( $M = 77.1$ ,  $SD = 19.8$ ) and emotional demand ( $M = 66.6$ ,  $SD = 20.5$ ) at work, frequently working at a fast pace ( $M = 71.7$ ,  $SD = 21.3$ ), and sometimes experiencing a high level of quantitative demand ( $M = 50.8$ ,  $SD = 19.9$ ).

Workplace demands were also compared across workplaces (Figure 24). Respondents working in aged care reported the highest level of workplace demand, with higher scores on emotional demand ( $M = 70.1$ ,  $SD = 16.4$ ), quantitative demand ( $M = 53.9$ ,  $SD = 20.9$ ), and cognitive demand ( $M = 80.6$ ,  $SD = 18.0$ ) compared to all other workplaces.

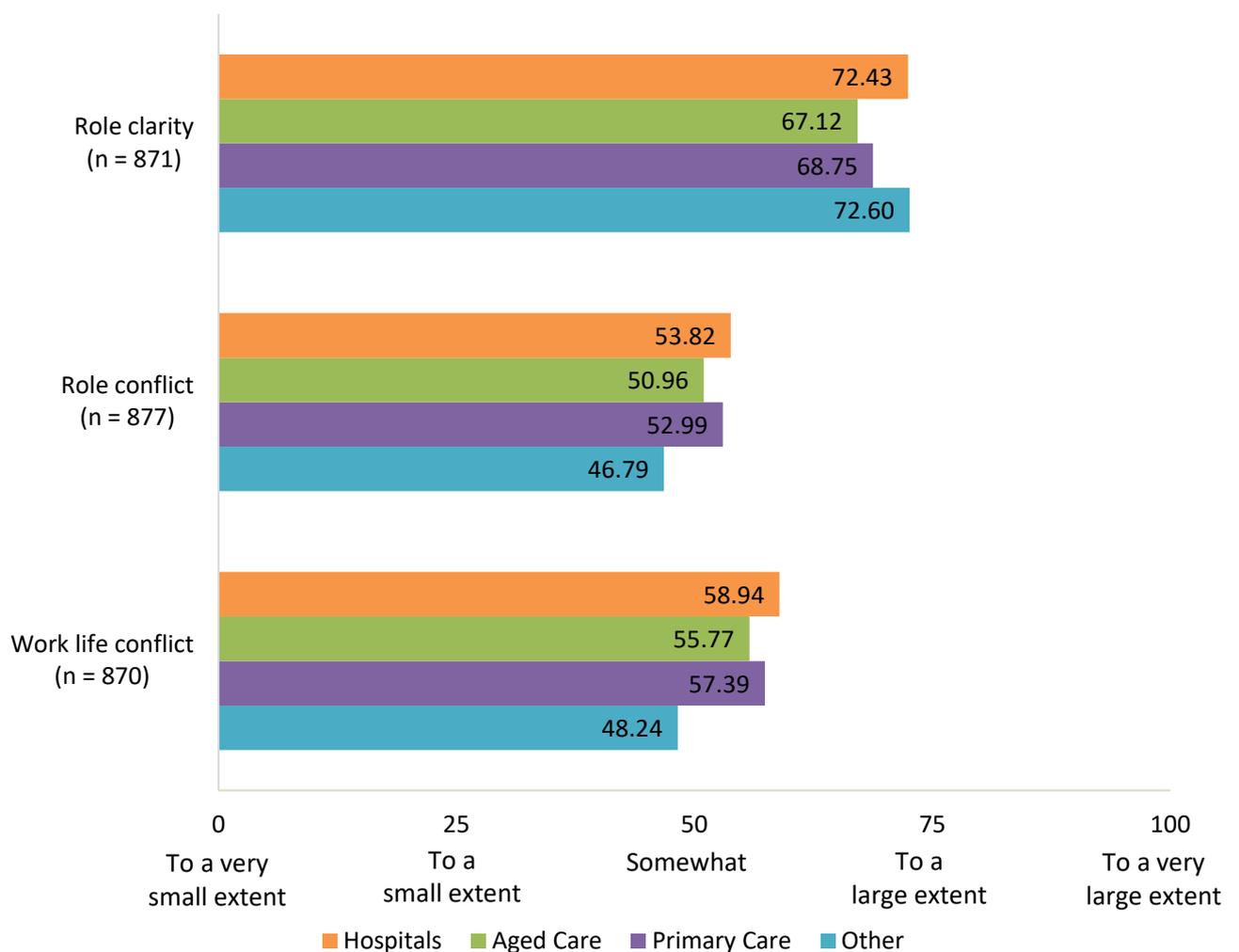


**Figure 24.** COPSOQ-III workplace demand mean scores by main workplace.

### Role clarity, role conflict and work-life conflict

Overall, respondents ( $n = 871$ ) expressed a high level of role clarity ( $M = 71.5, SD = 20.0$ ) and moderate levels of role conflict ( $n = 877, M = 52.2, SD = 25.2$ ). Role clarity and conflict were compared across workplaces (Figure 25). Respondents working in aged care ( $n = 65$ ) reported the lowest role clarity ( $M = 67.1, SD = 19.2$ ). Respondents working in hospitals ( $n = 530$ ) reported the highest level of role conflict ( $M = 53.8, SD = 24.1$ ). Respondents working in “other” types of workplaces reported the greatest role clarity ( $M = 72.6, SD = 23.1$ ) and the lowest role conflict ( $M = 46.7, SD = 25.5$ ).

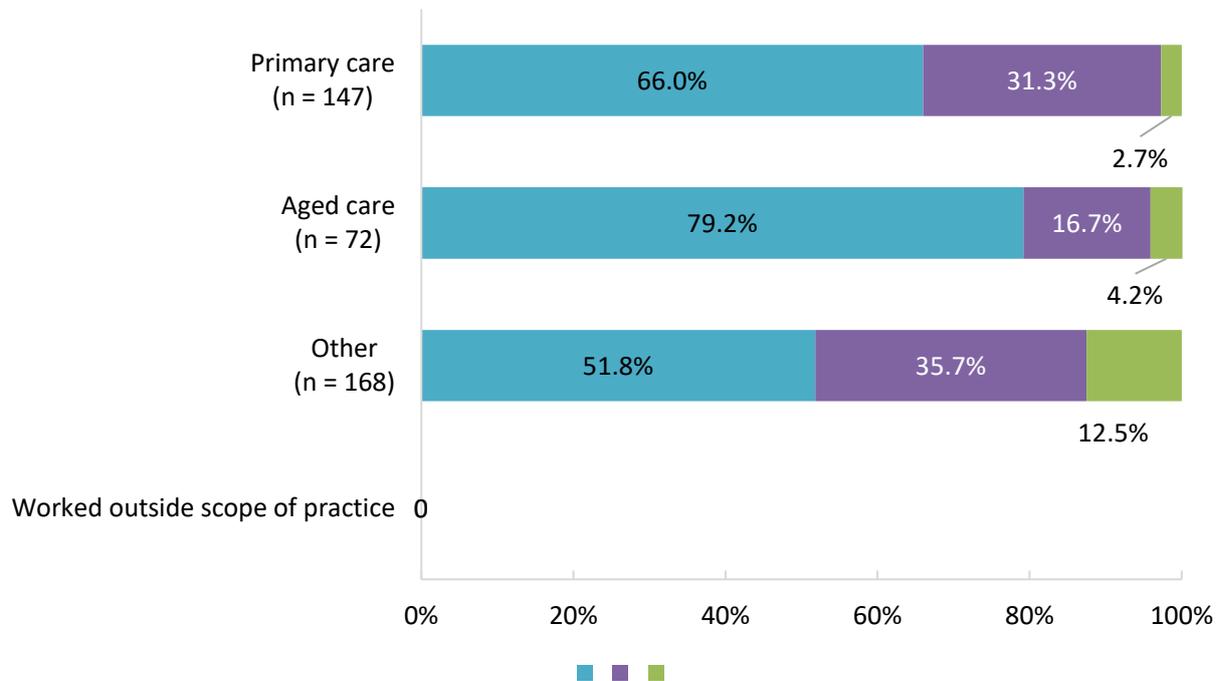
A moderate level of work life conflict ( $n = 870, M = 56.6, SD = 29.6$ ) was reported by all respondents. Work life conflict was highest for respondents ( $n = 526$ ) working in hospitals ( $M = 58.9, SD = 28.2$ ), followed by primary care ( $n = 132, M = 57.3, SD = 31.2$ ), and aged care ( $n = 65, M = 55.7, SD = 30.4$ ).



**Figure 25.** COPSOQ-III role clarity, role conflict, and work life conflict mean scores by main workplace.

## Scope of practice and education

Respondents were asked whether their employer had requested that they work outside of their usual scope of practice (Figure 26). Just over one-third of respondents ( $n = 335$ , 34.3%) reported being asked to work outside of their scope of practice. Those working in hospitals (36.8%) and other settings (35.7%) were the groups who most frequently indicated being asked to work outside of their scope of practice.



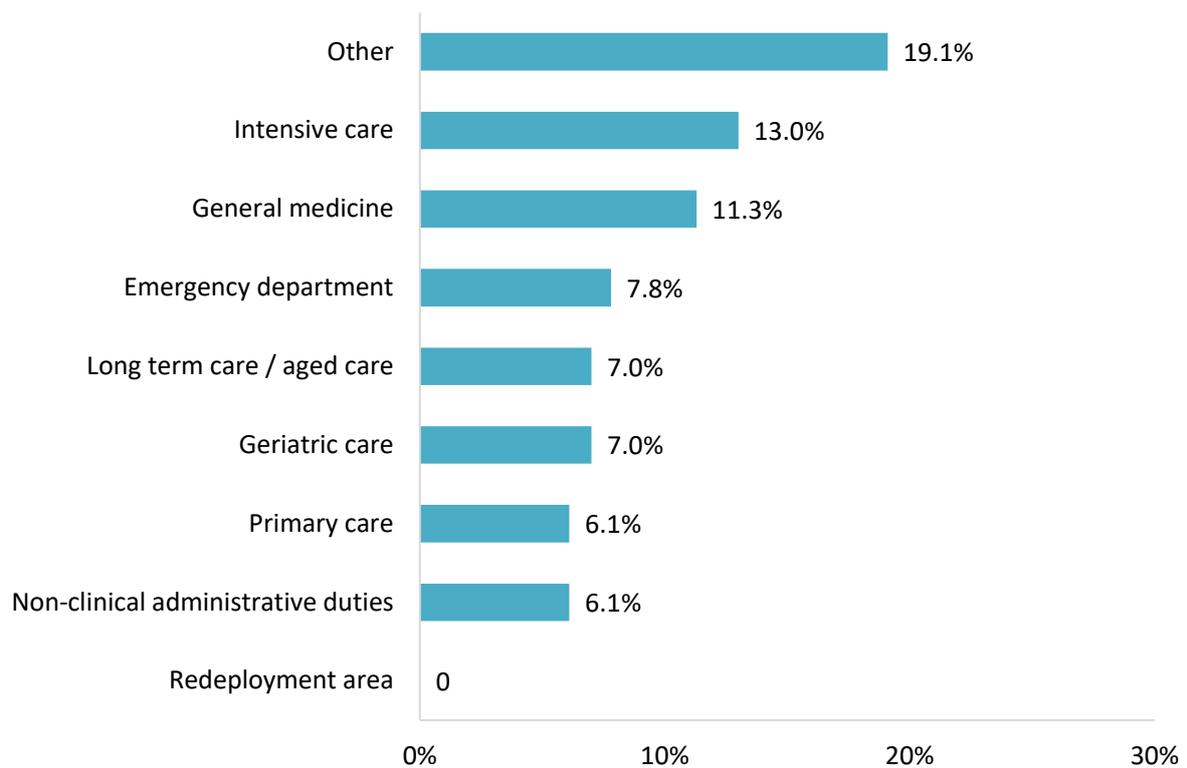
**Figure 26.** Proportion of respondents requested by employer to work outside of scope of practice.

Of the respondents who were asked to work outside of their scope of practice, half ( $n = 169$ , 50.9%) did not receive appropriate education or training to work in the role. Those working in hospitals were least likely to have received education for the role (54.9%). When respondents were asked if they trained staff to advance their scope of practice for the pandemic (i.e., to work in a different clinical area should this be required), one-third of respondents ( $n = 326$ , 33.4%) responded they had.

### Workplace redeployment

A minority of respondents ( $n = 117$ , 12.1%) reported being redeployed to a different geographic area, long-term care, or other speciality of work due to COVID-19. Those who worked in aged care (5.6%) were the least likely to be redeployed to another area, compared with respondents working in hospitals (13.3%), primary care (12.3%), and other workplaces (10.2%). Of the respondents who were redeployed, nearly half ( $n = 54$ , 46.6%) reported they had not received any education or training for that position.

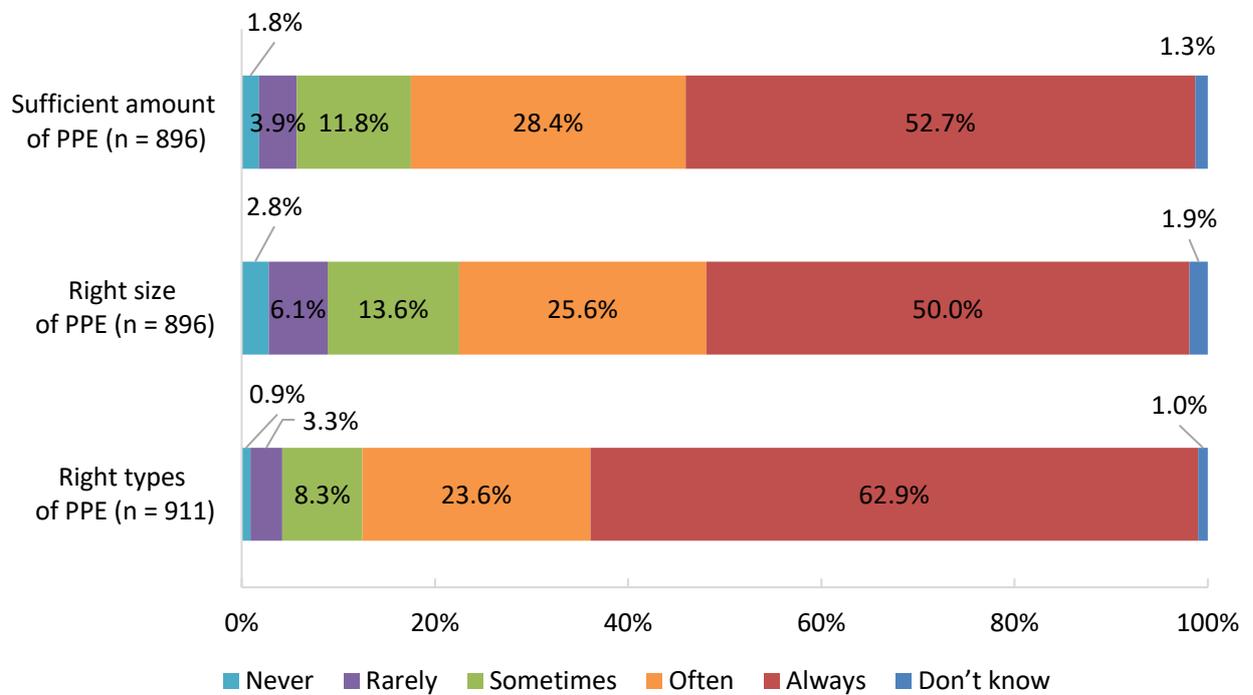
Respondents who were redeployed were asked to which area, hospital, or specialty of work they were redeployed (Figure 27). Most commonly respondents were redeployed to a COVID-19 screening clinic or drive-through (22.6%).



**Figure 27.** Re-deployment areas for those respondents who were re-deployed ( $n = 115$ ).

### Personal Protective Equipment availability and policies

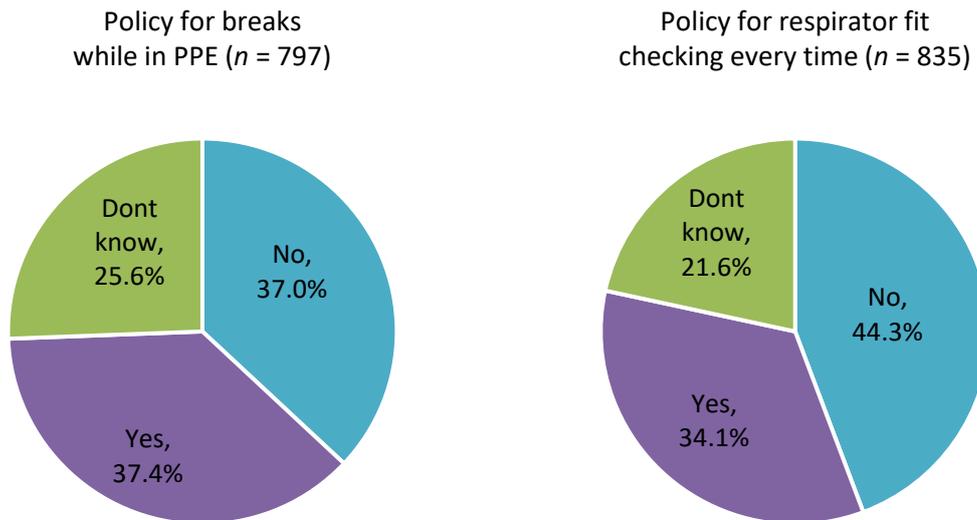
Respondents were asked a series of questions regarding personal protective equipment (PPE) at their primary workplace (Figure 28). At the time of the survey, most respondents reported that they often or always had the right types of PPE ( $n = 788$ , 86.5%), had the right size of PPE ( $n = 677$ , 75.6%), and sufficient supplies of PPE ( $n = 728$ , 81.2%).



**Figure 28.** PPE size, type, and availability at primary workplace of respondents.

Respondents were also asked about PPE policies and processes at their workplace. Over one-third of respondents ( $n = 295$ , 37.0%) answered that their workplace did not have a policy for break while working in full PPE (i.e., gloves, mask / N95 respirator, gown as minimum) and a similar proportion ( $n = 298$ , 37.4%) replied they did have breaks (Figure 29).

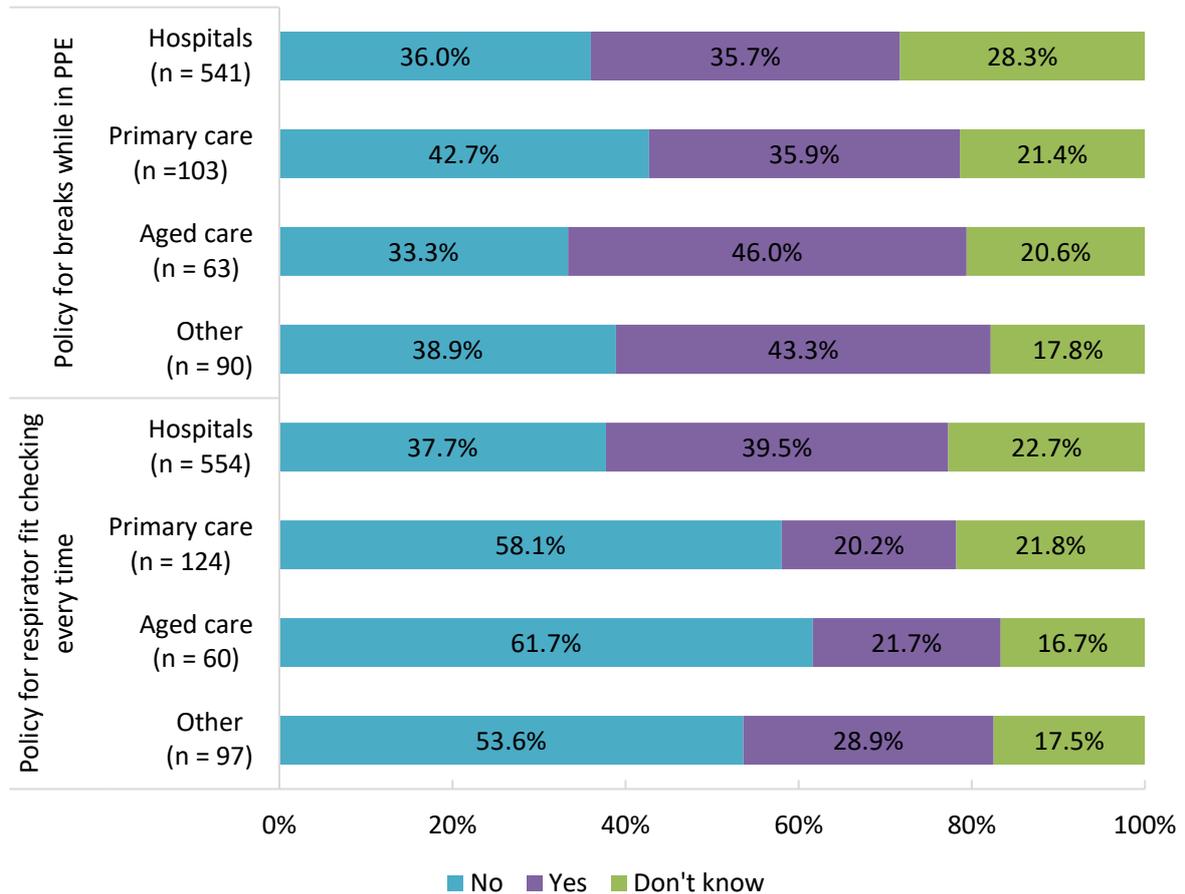
Over 40% of respondents ( $n = 370$ , 44.3%) reported there was not a policy at their workplace for respirator fit checking every time PPE is used (Figure 29). Approximately half of respondents ( $n = 419$ , 53.4%) indicated that they had reported PPE concerns to their employers.



**Figure 29.** Policies and processes for breaks while in full PPE and respirator fit checking every time PPE is used as indicated by respondents.

Policies and processes for breaks and respirator fit checking were explored through workplace comparisons (Figure 30). Respondents working in hospitals ( $n = 193$ , 35.7%) and primary care settings (35.9%) less frequently reported that their workplace had a policy for breaks while working in full PPE compared with aged care ( $n = 29$ , 46.0%) and other workplaces ( $n = 39$ , 43.3%).

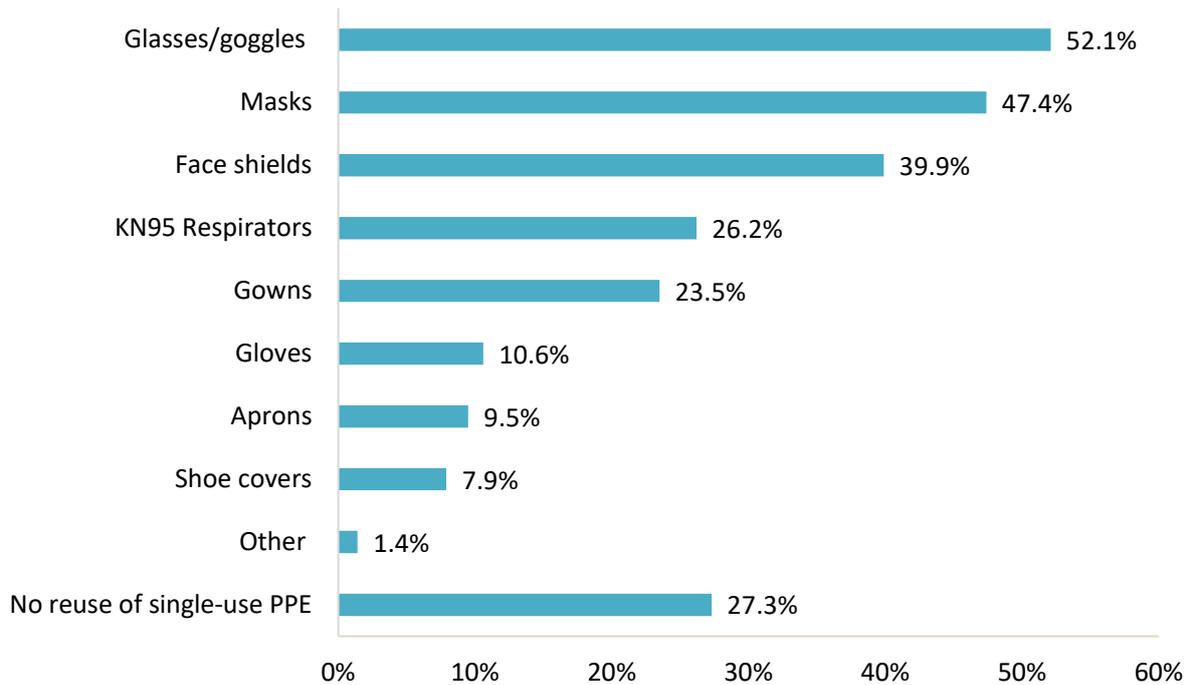
Respondents working in primary care settings ( $n = 25$ , 20.2%) were least likely to report a workplace PPE policy that included respirator fit checking every time PPE is used (Figure 30).



**Figure 30.** Policies and processes for breaks while in full PPE and respirator fit checking every time PPE is used according to workplace.

### Personal Protective Equipment reuse

Respondents were asked if they had ever had to reuse any single-use, disposable PPE with approximately three-quarters 27.3% ( $n = 875$ ) reporting they had not reused single-use PPE (Figure 31). Reuse of single-use PPE varied across workplaces; 40.9% ( $n = 27$ ) of aged care workers reported they had not reused PPE, followed by respondents working in other settings ( $n = 41$ , 36.0%), primary care workers ( $n = 36$ , 26.1%), and hospital workers ( $n = 136$ , 24.2%). The most frequently reused item was glasses/goggles followed by masks and face shields, however it is important to note these are often not designated as single use items

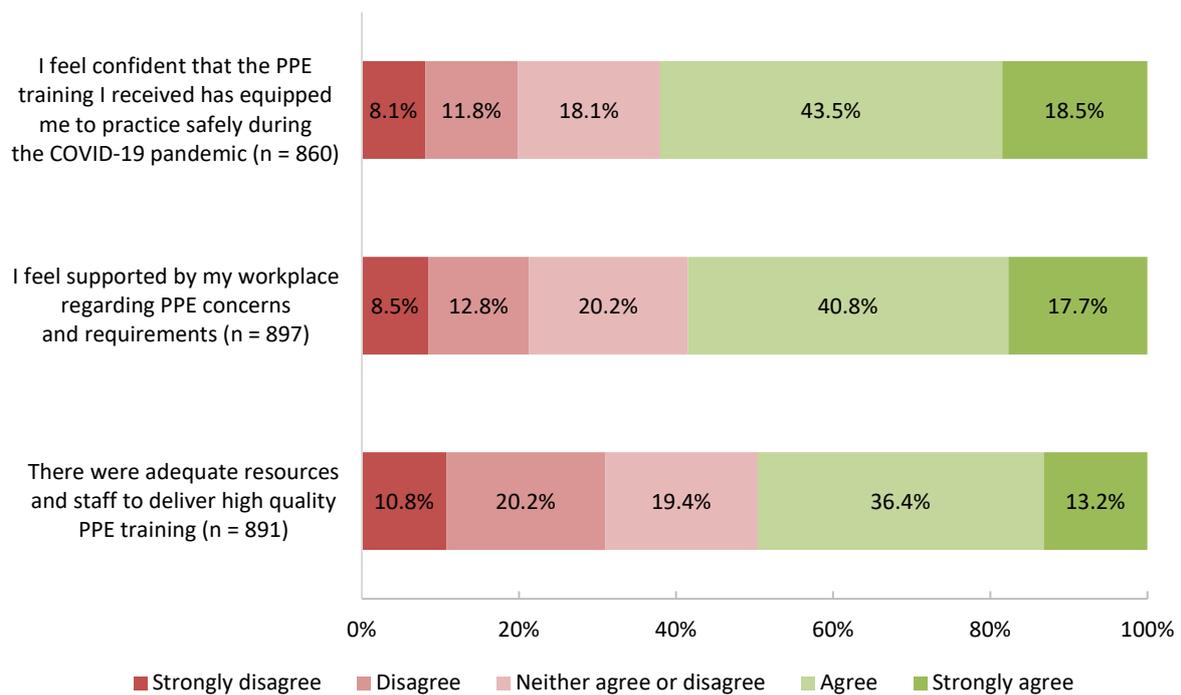


**Figure 31.** Reuse of single-use, disposable PPE for all respondents ( $n = 875$ ).

## Personal Protective Equipment support and training

Respondents were asked about the workplace support and training they had received regarding PPE use (Figure 32). Most respondents agreed or strongly agreed that the PPE training they received had equipped them to practice safely during the pandemic ( $n = 546$ , 62.0%), and that they were supported by their workplace regarding PPE concerns and requirements ( $n = 525$ , 58.5%). Just under one-third of respondents ( $n = 276$ , 31.0%) disagreed or strongly disagreed that there were adequate resources and staff to deliver high quality PPE training.

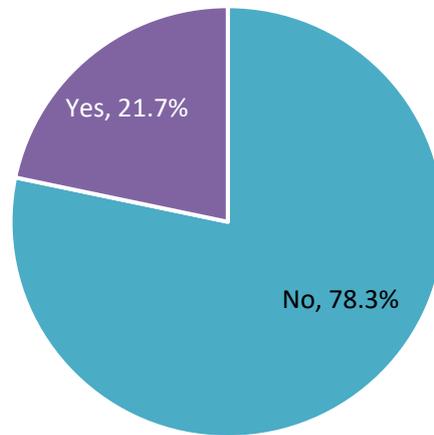
Respondents working in primary care ( $n = 54$ , 39.1%) were the most likely to disagree or strongly disagree that there were adequate resources and staff to deliver high quality PPE training.



**Figure 32.** Perceptions of PPE training and support received among respondents.

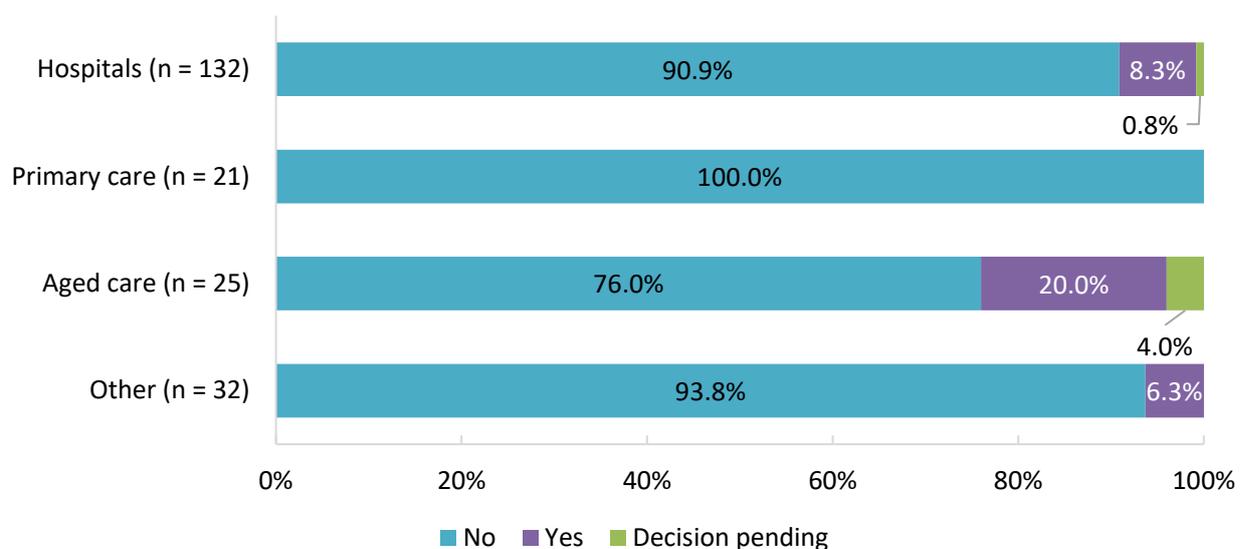
### Staff testing for COVID-19

At the time of the survey, 21.7% ( $n = 224$ ) of respondents had been tested for COVID-19 in the past four weeks (Figure 33). The mean number of times respondents had been tested was 2.28 ( $SD = 2.15$ ). Most respondents ( $n = 787$ , 76.9%) reported that they have been vaccinated for COVID-19.



**Figure 33.** Proportion of respondents who were tested for COVID-19 in past four weeks ( $n = 1031$ ).

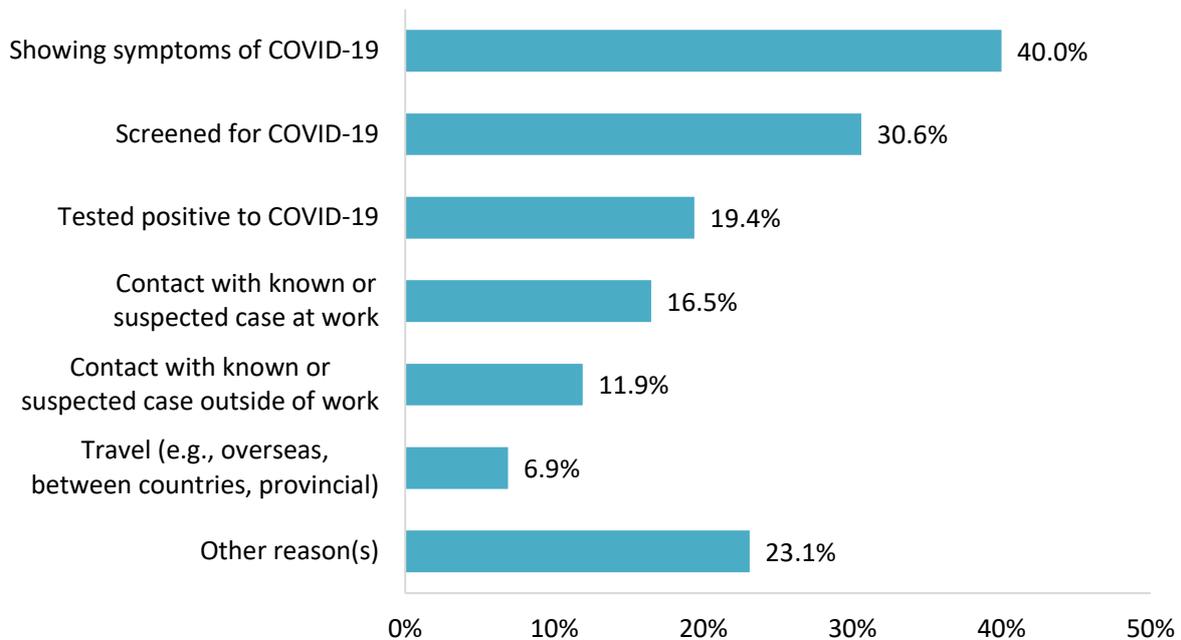
Those that had been tested in the past 4 weeks were asked if they had tested positive for COVID-19 (Figure 34). Overall, 8.6% reported testing positive for COVID-19 in the past 4 weeks with a further 1% awaiting test results. Respondents working in aged care reported the highest proportion of positive COVID-19 test results (20%). When respondents were asked if they thought they may have contracted COVID-19 through workplace exposure, the majority ( $n = 12/18$ , 66.7%) believed that they had. Over half ( $n = 10/17$ , 58.8%) of these respondents also indicated that they had experienced work-related distress associated with their test result (e.g., stigma for being COVID-19 positive, sense of letting colleagues down).



**Figure 34.** Positive COVID-19 test result according to main workplace in past four weeks

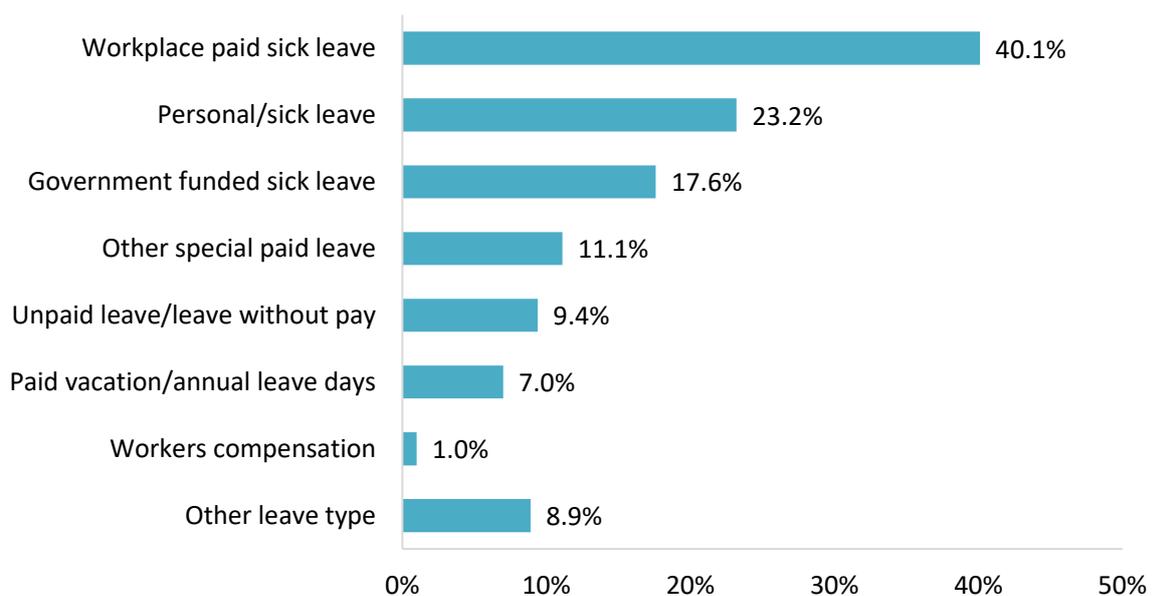
### Missed work due to the pandemic

More than half of respondents ( $n = 557/1013$ , 55.0%) indicated that they had not missed any days of work due to reasons associated with COVID-19. Of those that reported they had missed days of work because of COVID-19 ( $n = 480$ ; Figure 35), the most common reason for missing work was because they were showing symptoms of COVID-19 (40.0%) with a further 19.4% (93/480) who missed work due to testing positive for COVID-19.



**Figure 35.** COVID-19 associated reasons for missing days of work among respondents ( $n = 480$ ).

When respondents were asked what type of leave they took to cover their missed days (Figure 36), the most common type selected was workplace paid sick leave, followed by personal/sick leave.

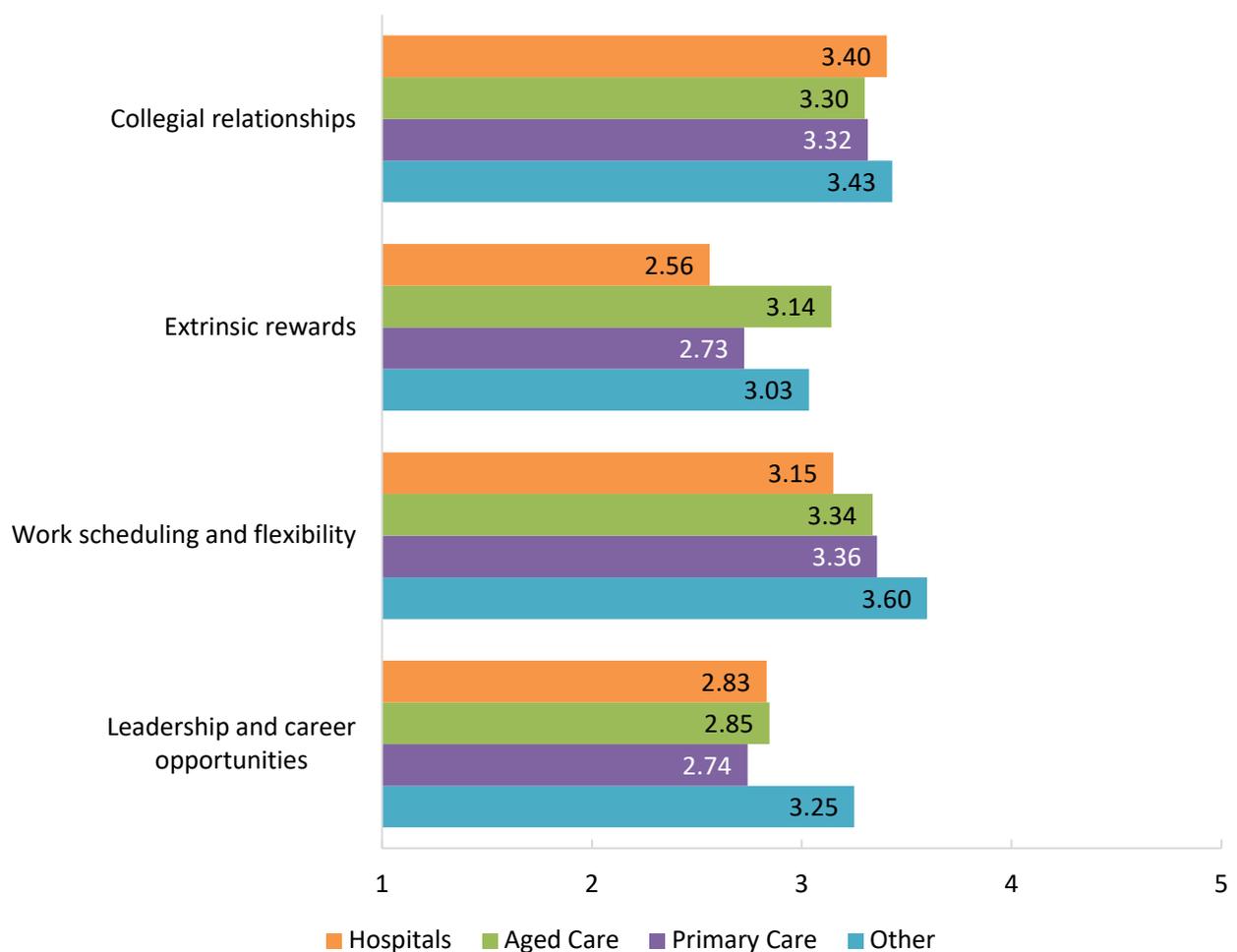


**Figure 36.** Type of leave taken by respondents who missed days due to COVID-19

## Job satisfaction

Job satisfaction was assessed using a modified version of the McCloskey/Mueller Satisfaction Scale (MMSS).<sup>15</sup> Respondents indicated their satisfaction with leadership and career opportunities, work and scheduling flexibility, extrinsic rewards, and collegial relationships. A higher score (range: 1 – 5) indicated greater satisfaction with the aspect of work. Overall, respondents indicated some satisfaction with collegial relationships ( $n = 817$ ,  $M = 3.39$ ,  $SD = 1.02$ ) and work and scheduling flexibility within their workplace ( $n = 740$ ,  $M = 3.26$ ,  $SD = 1.18$ ). In contrast, respondents expressed some dissatisfaction with leadership and career opportunities ( $n = 838$ ,  $M = 2.89$ ,  $SD = 1.18$ ) and extrinsic rewards ( $n = 810$ ,  $M = 2.70$ ,  $SD = 1.25$ ).

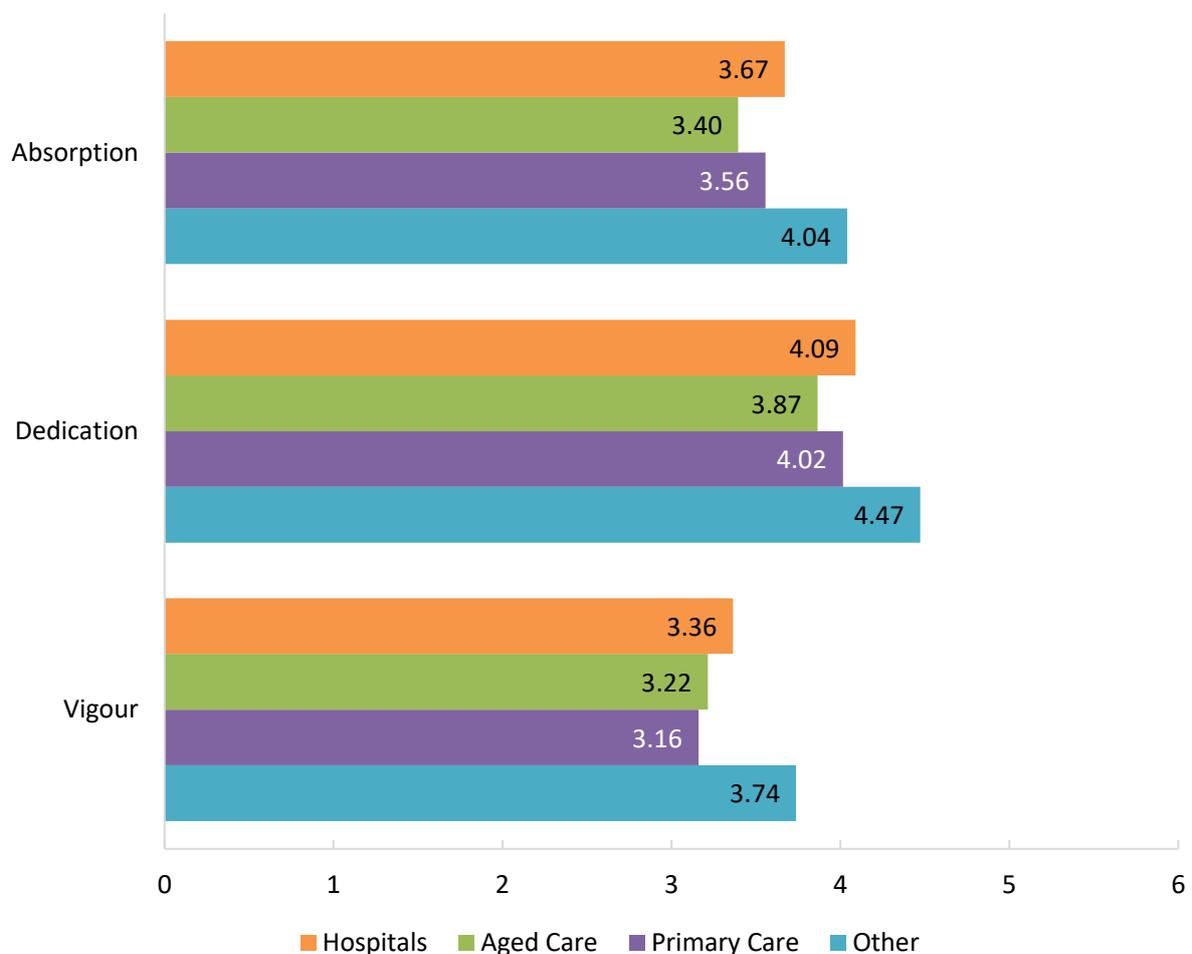
Job satisfaction was investigated according to workplace groups (Figure 37). Respondents working in “other” types of workplaces reported the greatest satisfaction with leadership and career opportunities ( $M = 3.25$ ,  $SD = 1.21$ ), work and scheduling flexibility ( $M = 3.60$ ,  $SD = 1.25$ ), and collegial relationships ( $M = 3.43$ ,  $SD = 1.15$ ). In contrast, the remaining workplace groups expressed some dissatisfaction with leadership and career opportunities. Respondents working in hospitals indicated the lowest satisfaction with extrinsic rewards ( $M = 2.56$ ,  $SD = 1.17$ ) and work and scheduling flexibility ( $M = 3.15$ ,  $SD = 1.16$ ) compared with other workplace groups.



**Figure 37.** Job satisfaction subscale mean scores by main workplace, as measured by the MMSS.

## Work engagement

Work engagement was measured using the brief version of the Utrecht Work Engagement Scale (UWES-9).<sup>16</sup> Higher subscale scores (range 0 – 6) indicate greater frequency of feeling vigour, dedication, and absorption within their work. On average, respondents reported feeling dedication ( $n = 841$ ,  $M = 4.12$ ,  $SD = 1.33$ ) and absorption ( $n = 840$ ,  $M = 3.69$ ,  $SD = 1.29$ ) often or approximately once per week. Vigour ( $n = 841$ ,  $M = 3.38$ ,  $SD = 1.43$ ) was experienced sometimes or approximately a few times per month. Workplace comparisons showed that those working in aged care less frequently felt engagement with work, with the lowest scores on absorption and vigour compared to other sectors (Figure 38).



**Figure 38.** Work engagement subscale mean scores by main workplace, as measured by the UWES-9.

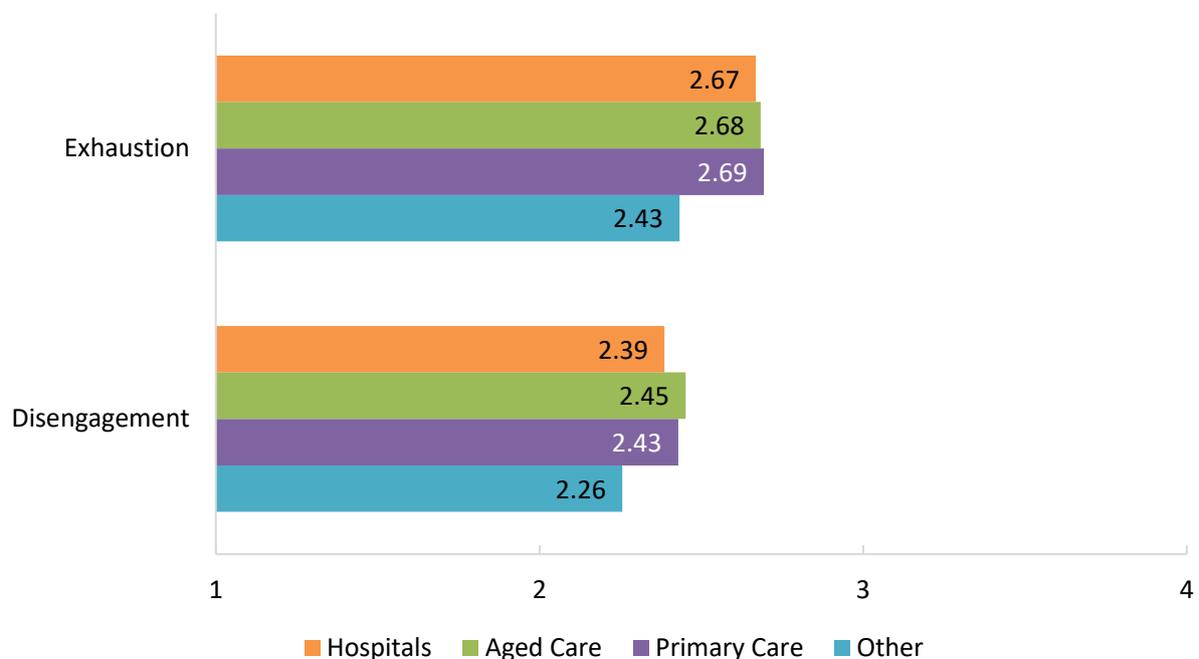
## Burnout

Job-related burnout was assessed using the Oldenburg Burnout Inventory (OLBI).<sup>17</sup> The OLBI is designed to measure exhaustion (i.e., level of emotional, cognitive, and physical strain) and disengagement (i.e., negative attitudes and level of disconnection from work; score range 1 – 4). The measure is job-related, but not occupationally specific, therefore items did not address working with people specifically. Overall, respondents indicated slightly higher levels of exhaustion ( $n = 856$ ,  $M = 2.63$ ,  $SD = 0.55$ ) than disengagement ( $n = 854$ ,  $M = 2.38$ ,  $SD = 0.52$ ). Just over two-thirds of the respondents were burnt out (Table 6).

**Table 6.** Classification of burnout based on OLBI cut-offs

Classification	n	%
Normal	118	13.8
Exhausted	110	12.9
Disengaged	53	6.2
Burnt out	573	67.1

The OLBI burnout dimensions were also investigated according to main workplace category (Figure 39). Exhaustion subscale scores were similar for respondents working in hospitals ( $M = 2.67$ ,  $SD = 0.53$ ), aged care ( $M = 2.68$ ,  $SD = 0.52$ ), and primary care ( $M = 2.69$ ,  $SD = 0.58$ ). Respondents from “other” workplaces reported the lowest exhaustion ( $M = 2.43$ ,  $SD = 0.54$ ). Disengagement was highest among respondents working in aged care ( $M = 2.45$ ,  $SD = 0.54$ ) and primary care ( $M = 2.43$ ,  $SD = 0.55$ ), followed by hospitals ( $M = 2.39$ ,  $SD = 0.52$ ) and those working in “other” workplaces ( $M = 2.26$ ,  $SD = 0.51$ ).



**Figure 39.** Burnout subscale mean scores by main workplace, as measured by the OLBI.

## Intentions to leave

Overall, 55.1% ( $n = 457$ ) of respondents reported they intended to leave their current work position within the next 5 years, with 22.0% intending to leave their position with the next 12 months (Table 7).

Of those that intended to leave, 17.1% ( $n = 78$ ) intended to exit the profession all together with a further 22.5% undecided if they would exit the profession. These proportions were highest in the age-group 40-49. Close to a quarter (23.9%) of those that intended to leave the profession planned to retire, with most of these being in the age group 50+ years.

**Table 7.** Intention to leave current position and profession

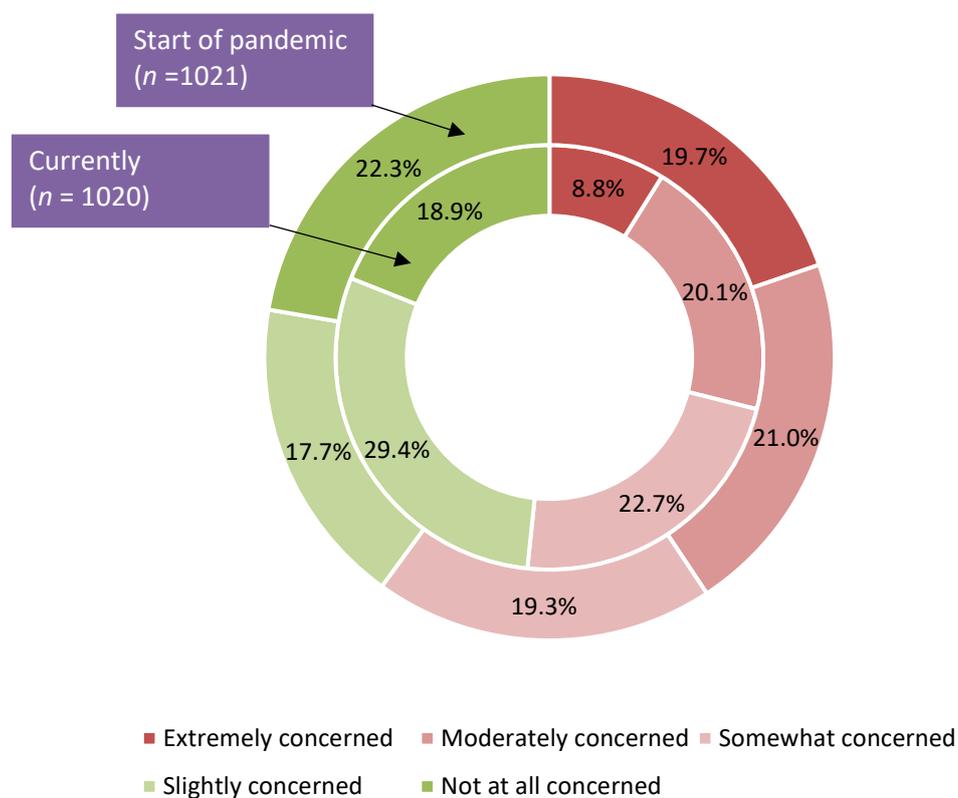
	Frequency ( <i>n</i> )	Percent (%)
Intention to leave current position		
Yes, within the next 12 months	182	22.0
Yes, within the next 1-5 years	275	33.2
No plans to leave within the next 5 years	372	44.9
Total	829	100.0
Intention to leave profession*		
No	167	36.5
Yes	78	17.1
Undecided	103	22.5
Plan to retire	109	23.9
Total	457	100.0

\* This question was only asked of those who intended to leave their position within the next 12 months or 1-5 years ( $n = 457$ ).

## Nurse wellbeing and access to support

### Physical health concerns

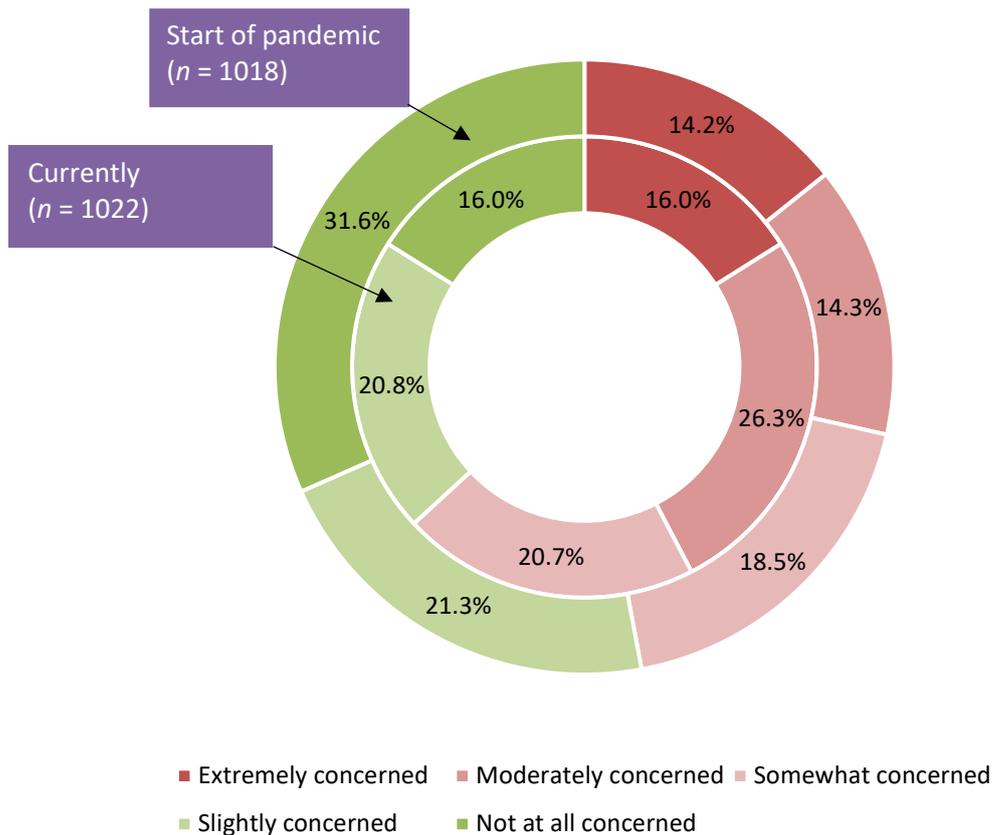
Participants were asked how concerned they were about risks to their physical health given their work role and COVID-19 both at the beginning of the pandemic and currently (i.e., at the time of completing the survey). At the beginning of the pandemic, 40.1% ( $n = 409$ ) of respondents were not at all or only slightly concerned about risks to physical health due to their work role and 40.7% ( $n = 415$ ) were moderately or extremely concerned (Figure 40). Concerns for physical health were lower at the time of the survey, with 48.3% ( $n = 493$ ) of respondents not at all or only slightly concerned about risks to physical health due to their work role at the time of the survey, and 28.9% ( $n = 295$ ) of respondents were moderately or extremely concerned at the time of the survey.



**Figure 40.** Concern about risks to physical health at the start of the pandemic and at the time of the survey.

## Mental health concerns

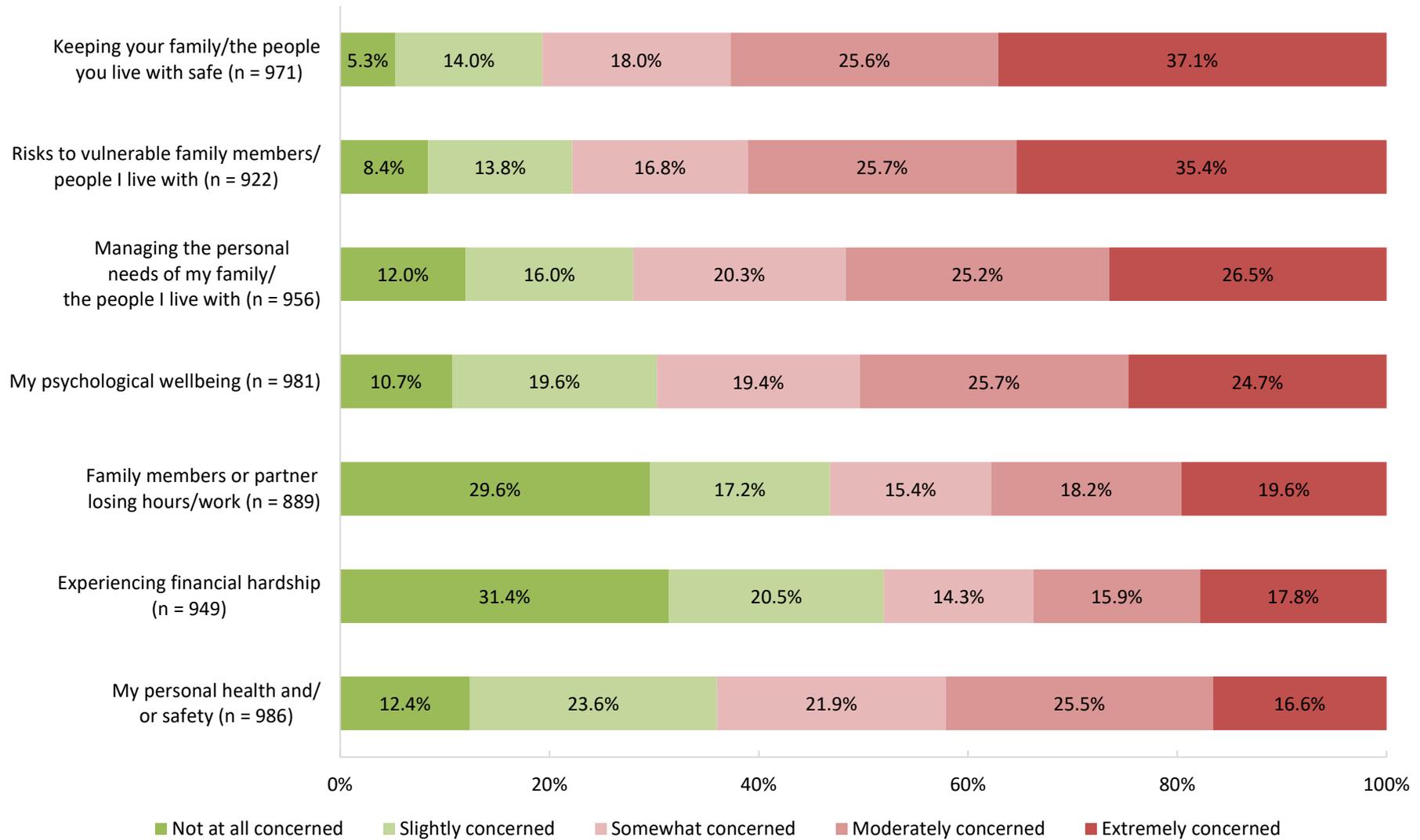
Participants were also asked how concerned they were about risks to their mental health given their work role and COVID-19 both at the beginning of the pandemic and at the time of completing the survey. At the beginning of the pandemic, approximately half ( $n = 549$ , 52.9%) of respondents were not at all or only slightly concerned about risks to mental health due to their work role and 28.6% ( $n = 291$ ) were moderately or extremely concerned (Figure 41). Concern for mental health appeared to increase such that, at the time of the survey, 36.9% ( $n = 377$ ) of respondents were not at all or only slightly concerned about risks to mental health and 42.4% ( $n = 433$ ) of respondents were moderately or extremely concerned at the time of the survey.



**Figure 41.** Concern about risks to mental health at the start of the pandemic and at the time of the survey.

### Concerns about home life because of COVID-19

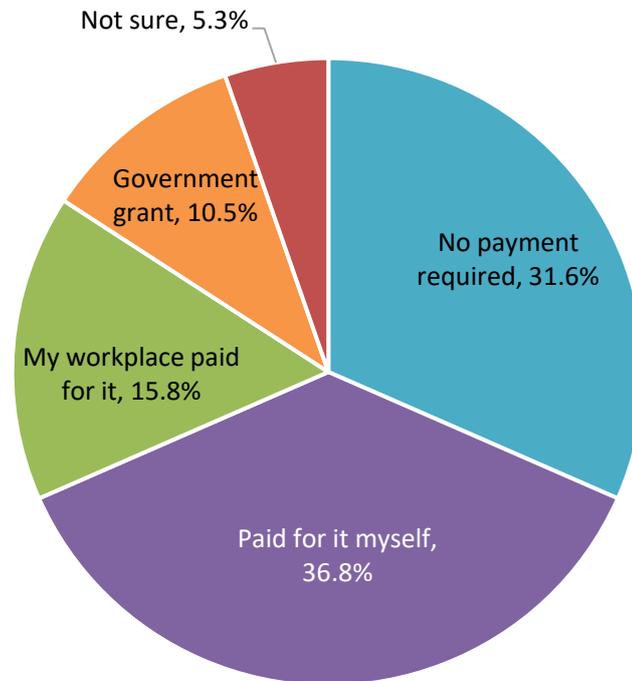
Respondents were asked to indicate their level of concern when responding to a series of statements related to impacts on their home life (Figure 42). At a personal level, 50.4% ( $n = 494$ ) of respondents indicated that they were moderately or extremely concerned about their own psychological wellbeing. This was greater than the proportion that were moderately or extremely concerned with their own personal health and safety ( $n = 415$ , 42.1%). At a family level, 62.7% ( $n = 609$ ) respondents were moderately or extremely concerned with keeping their family or the people they lived with safe. Other significant concerns for respondents because of COVID-19 were risk to vulnerable family members ( $n = 563$ , 61.1%) and managing the personal needs of family/people they live with ( $n = 494$ , 41.7%). Experiencing financial hardship and partners losing work/hours were not as high a concern as other factors, but over a third were moderately or extremely concerned about these issues.



**Figure 42.** Current personal concerns because of COVID-19 among all respondents.

### Self-isolation and accommodation

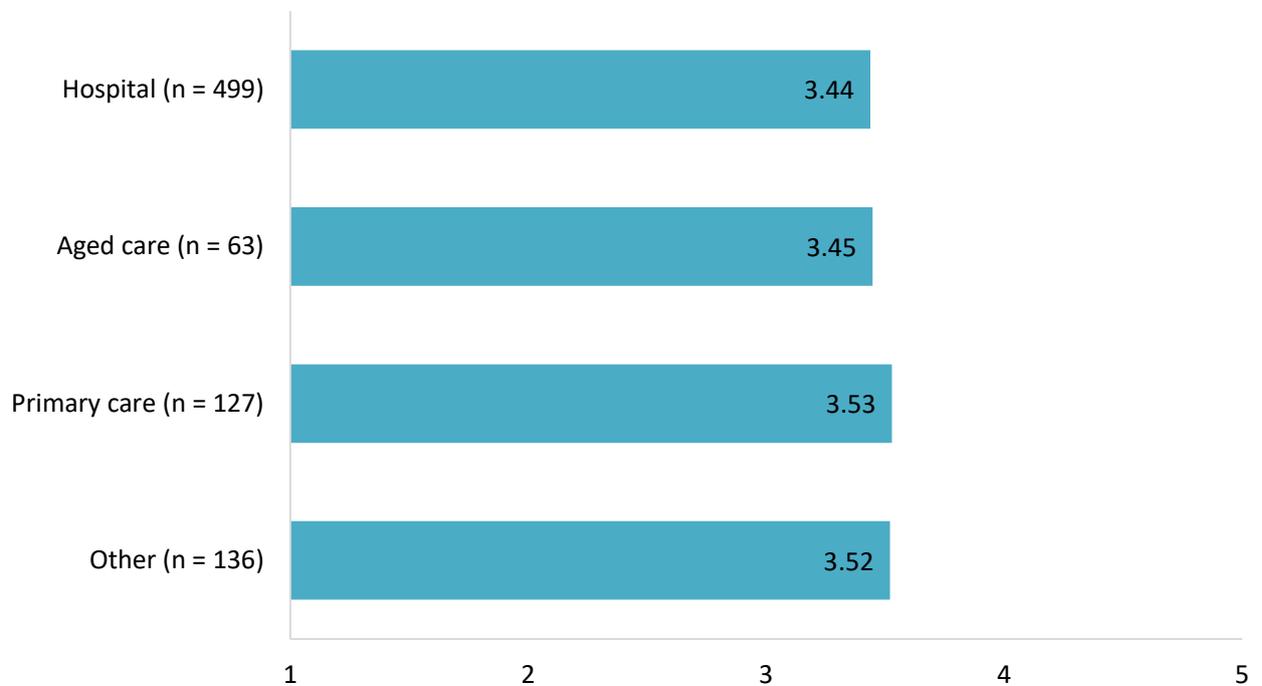
Respondents were asked questions regarding self-isolation and accommodation during the pandemic. Approximately one-quarter of respondents ( $n = 233$ , 23.6%) chose to isolate from the people they lived with. Of those, the majority ( $n = 192$ , 83.5%) isolated in their own residence. Of the 16.5% ( $n = 38$ ) who isolated in an alternative accommodation, approximately one-third paid for it themselves and another third indicated that no payment was required (Figure 43).



**Figure 43.** Source of payment for alternative accommodation of respondents ( $n = 38$ ).

## Resilience

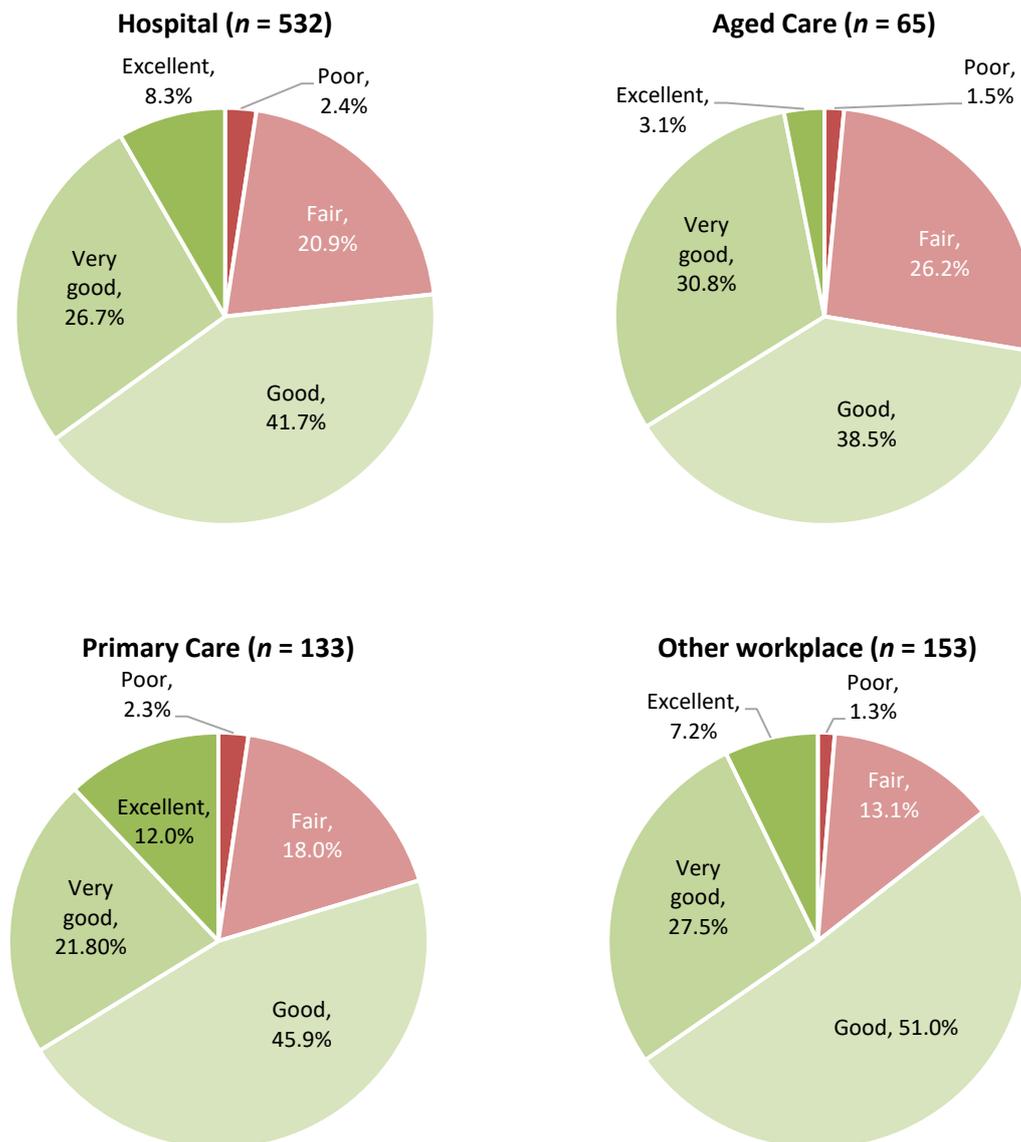
Resilience was measured using the Brief Resilience Scale (BRS).<sup>18</sup> Scores below 3 indicate low resilience, 3 to 4.3 average resilience, and scores greater than 4.3 high resilience.<sup>19</sup> The whole sample reported an average level of resilience ( $n = 825$ ,  $M = 3.47$ ,  $SD = 0.72$ ). Level of resilience was similar for respondents working across different types of workplaces; Figure 44).



**Figure 44.** Resilience mean scores by main workplace, as measured by the BRS.

## General health

Respondents were asked to assess their health over the past four weeks. Most respondents rated their health positively, indicating that their health was excellent, very good or good ( $n = 692$ , 78.4%). Approximately one in five respondents assessed their health as fair or poor ( $n = 191$ , 21.6%). Self-rated health according to main workplace is depicted in Figure 45. Respondents working in aged care were the most likely to assess their health as fair or poor, and the least likely to rate their health as excellent.

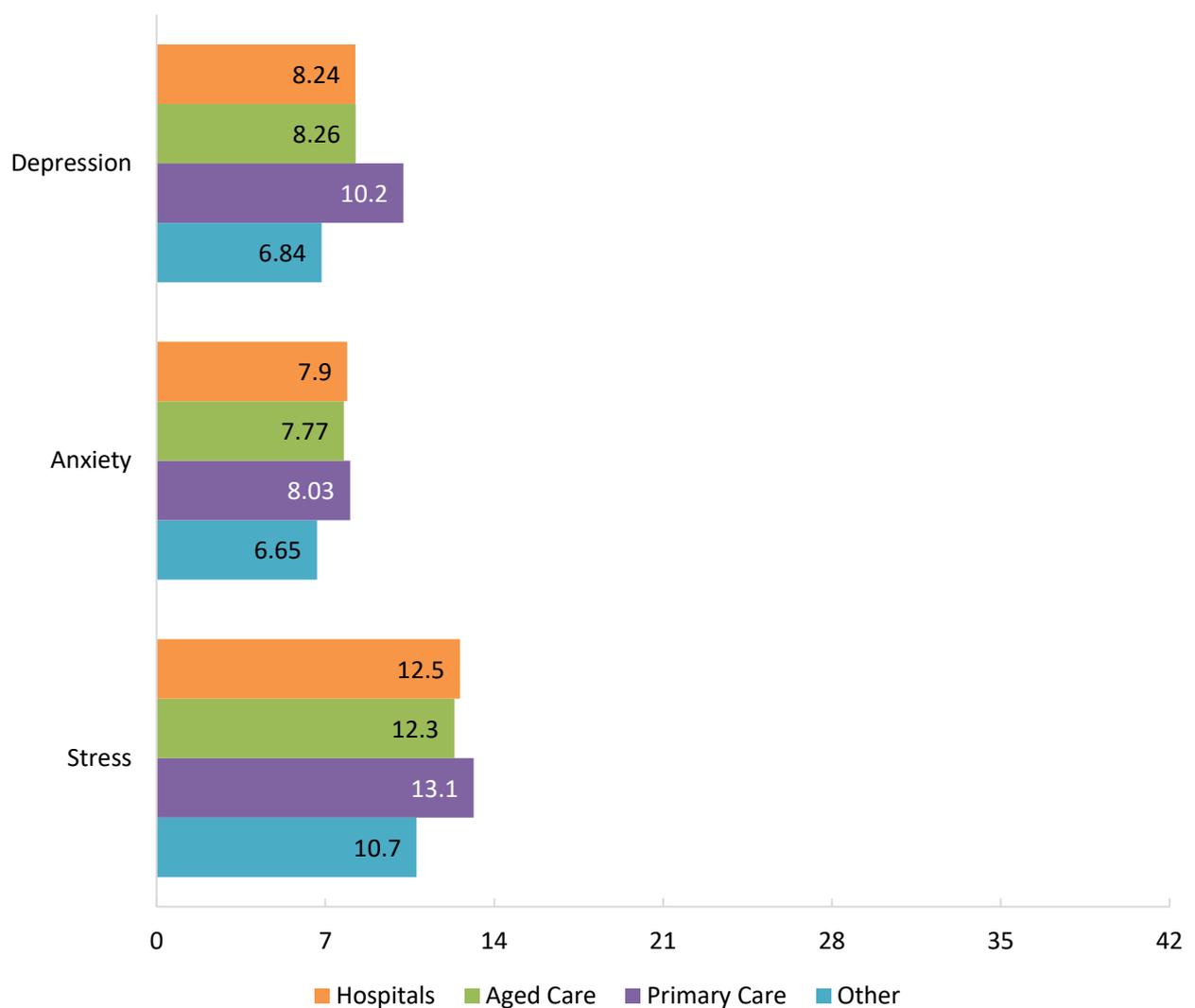


**Figure 45.** Self-rated health by main workplace.

### Depression, anxiety, and stress

To assess mental health among respondents, the Depression Anxiety Stress Scales (DASS-21)<sup>20</sup> was used to measure self-reported depression, anxiety, and stress. Higher subscale scores (range: 0 – 42) indicate more severe symptoms of depression, anxiety, and stress. On average, respondents reported symptoms of depression ( $n = 804$ ,  $M = 8.32$ ,  $SD = 9.30$ ), anxiety ( $n = 804$ ,  $M = 7.70$ ,  $SD = 8.70$ ), and stress ( $n = 486$ ,  $M = 12.35$ ,  $SD = 9.85$ ) in the normal range.<sup>21</sup>

Workplace comparisons showed that mean subscale scores were highest for respondents working in primary care (Figure 46); mean scores for this group were slightly above the overall sample mean for anxiety ( $M = 8.03$ ,  $SD = 9.64$ ) and depression ( $M = 10.23$ ,  $SD = 10.60$ ). Respondents working in “other” types of workplaces reported the lowest scores on depression ( $M = 6.84$ ,  $SD = 9.28$ ), anxiety ( $M = 6.65$ ,  $SD = 8.16$ ), and stress ( $M = 10.78$ ,  $SD = 9.22$ ).



**Figure 46.** Depression, anxiety and stress mean scores by main workplace, as measured by DASS-21.

Depression, anxiety, and stress scores were also analysed according to symptom severity (Table 8). Results showed that while response patterns were similar across all four sectors, respondents working in hospital or primary care environments tended to have higher symptom severity across all three mental health measures as indicated by the higher proportion with moderate, severe, or very severe scores.

**Table 8.** Depression, anxiety, and stress symptom severity scores by work sector and overall.

		<b>Hospital</b>	<b>Primary care</b>	<b>Aged care</b>	<b>Other workplace</b>	<b>Total</b>
<b>Depression (n=531)</b>	Normal	63.7%	58.1%	67.7%	73.3%	67.0%
	Mild	13.3%	9.7%	6.5%	6.1%	10.1%
	Moderate	13.3%	16.1%	17.7%	12.2%	11.1%
	Severe	4.7%	6.5%	1.6%	2.3%	7.8%
	Extremely severe	4.9%	9.7%	6.5%	6.1%	4.0%
<b>Anxiety (n=531)</b>	Normal	57.2%	61.3%	61.3%	65.9%	59.6%
	Mild	8.6%	5.6%	8.1%	3.8%	7.3%
	Moderate	16.9%	8.9%	14.5%	17.4%	15.5%
	Severe	6.8%	7.3%	6.5%	3.8%	6.3%
	Extremely severe	10.5%	16.9%	9.7%	9.1%	11.2%
<b>Stress (n=532)</b>	Normal	66.0%	66.1%	66.1%	71.8%	67.0%
	Mild	9.7%	7.3%	16.1%	11.5%	10.1%
	Moderate	12.3%	12.1%	6.5%	7.6%	11.1%
	Severe	7.8%	9.7%	6.5%	6.9%	7.8%
	Extremely severe	4.1%	4.8%	4.8%	2.3%	4.0%

## Staffing levels, skill mix and nurse wellbeing

Depression, anxiety, stress, disengagement and exhaustion were also examined by respondent's personal concerns over staffing, skills mix and workload, as these were noted to be frequently reported concerns among respondents (see Figure 17, p.44). Those who were not at all, slightly or somewhat concerned were compared with those who were moderately or extremely concerned across each of these wellbeing indicators. Those who were moderately or extremely concerned over staffing levels, skill mix and workload had statistically significantly higher scores for depression, anxiety, stress, disengagement and exhaustion compared with those who were not at all, slightly or somewhat concerned across the three work factors (Table 9).

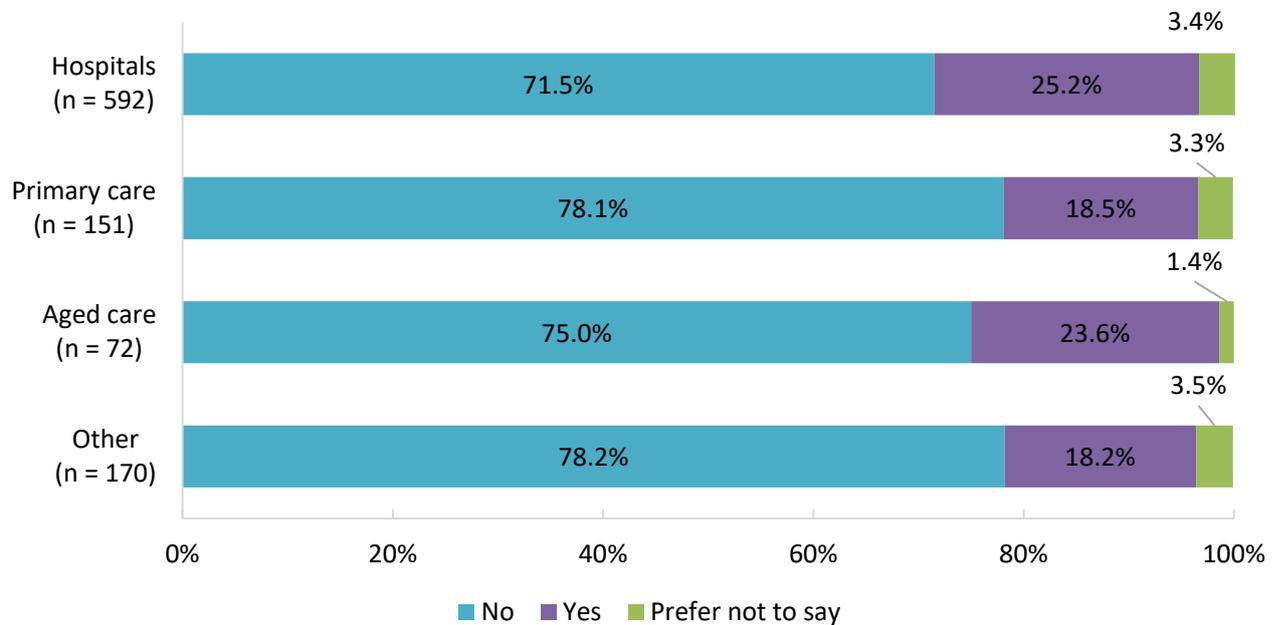
**Table 9.** Differences in DASS and OLBI scores by levels of concern for staffing and skills mix.

	Mean score difference* (95% CI)	t statistic	p value
<b>Staffing levels</b>			
Depression (DASS)	4.66 (3.26 to 6.07)	6.50	<0.001
Stress (DASS)	5.18 (3.69 to 6.67)	6.83	<0.001
Anxiety (DASS)	3.70 (2.38 to 5.03)	5.50	<0.001
Disengagement (OLBI)	0.25 (0.18 to 0.33)	6.61	<0.001
Exhaustion (OLBI)	0.25 (0.18 to 0.33)	6.61	<0.001
<b>Skills mix</b>			
Depression	4.18 (2.84 to 5.51)	6.14	<0.001
Stress	4.18 (2.77 to 5.60)	5.81	<0.001
Anxiety	3.15 (1.90 to 4.40)	4.93	<0.001
Disengagement	0.24 (0.17 to 0.31)	6.52	<0.001
Exhaustion	0.32 (0.24 to 0.39)	8.56	<0.001
<b>Workload</b>			
Depression	5.47 (4.22 to 6.71)	8.60	<0.001
Stress	7.00 (5.70 to 8.30)	10.64	<0.001
Anxiety	4.99 (3.82 to 6.15)	8.41	<0.001
Disengagement	0.26 (0.19 to 0.33)	7.56	<0.001
Exhaustion	0.45 (0.38 to 0.52)	13.18	<0.001

\*difference in concern between the two groups who were not at all, slightly or somewhat concerned (the control group) as compared with those that were moderately or extremely concerned (the comparison group). A t-statistic value greater than zero (i.e., >0) indicates poorer outcomes for those who were moderately or extremely concerned (i.e., their scores were worse than for those in the control group).

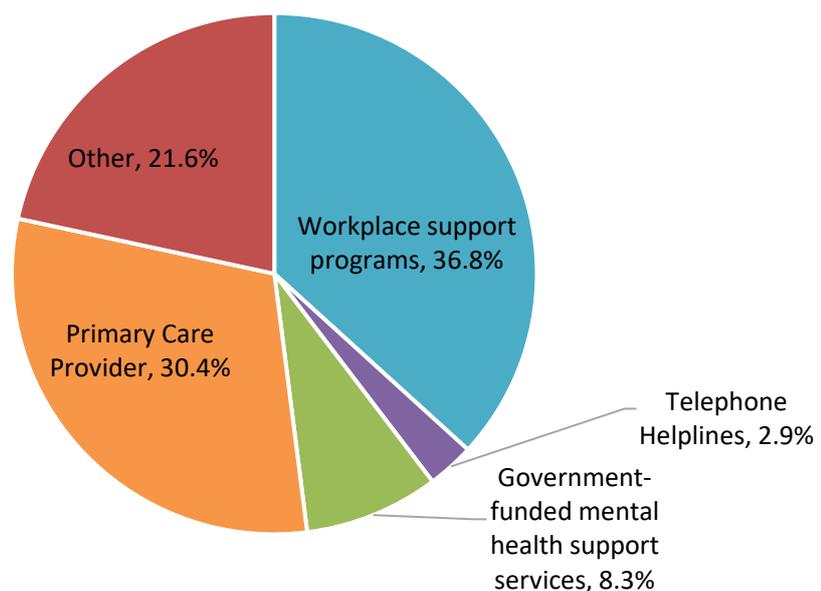
## Psychological support

Respondents were asked if they had sought mental health or wellbeing support from external providers since the start of the pandemic (Figure 47). Of those who responded ( $n = 985$ ), 22.8% reported they had. Respondents working in hospitals and aged care more frequently reported seeking psychological support.



**Figure 47.** Psychological help-seeking according to main workplace.

Of those that reported seeking mental health or wellbeing support, the most common source was from workplace support programs, followed by primary care providers (Figure 48).



**Figure 48.** Services where respondents sought wellbeing support ( $n = 204$ ).

## Comparison with other RBRC COVID-19 and workforce wellbeing surveys

Two similar workforce climate surveys during the COVID-19 pandemic were undertaken by RBRC in the years 2020 and 2021. The survey on the Australian nursing, midwifery, and care worker workforce ran from August to October 2020 ( $n = 11,902$ ). The survey on the Canadian nursing workforce ran from May to July 2021 ( $n = 5,200$ ).

Comparisons with key items from these surveys with the Nursing Now Survey are reported in this section in order to map similarities and differences in the international experience of the nursing and midwifery workforce. Minor variations in question wording and response options for local contextual differences are accounted for in the analyses and, where applicable, variations in response options are noted.

### Respondents and Occupational demographics

#### Age

The mean age of respondents across the three surveys was similar: Nursing Now ( $M = 44.5$ ,  $SD = 12.0$ ), Canada ( $M = 44.4$ ,  $SD = 21.9$ ) and Australia ( $M = 48.3$ ,  $SD = 12.3$ ).

#### Gender

There was little variation between the three surveys. The majority of respondents in Nursing Now (87.6%), Canada (92.8%) and Australia (91.4%) identified as female. Males represented between 5.9-11.8% and gender non-binary represented 0.2-0.5% across the three surveys (Table 10).

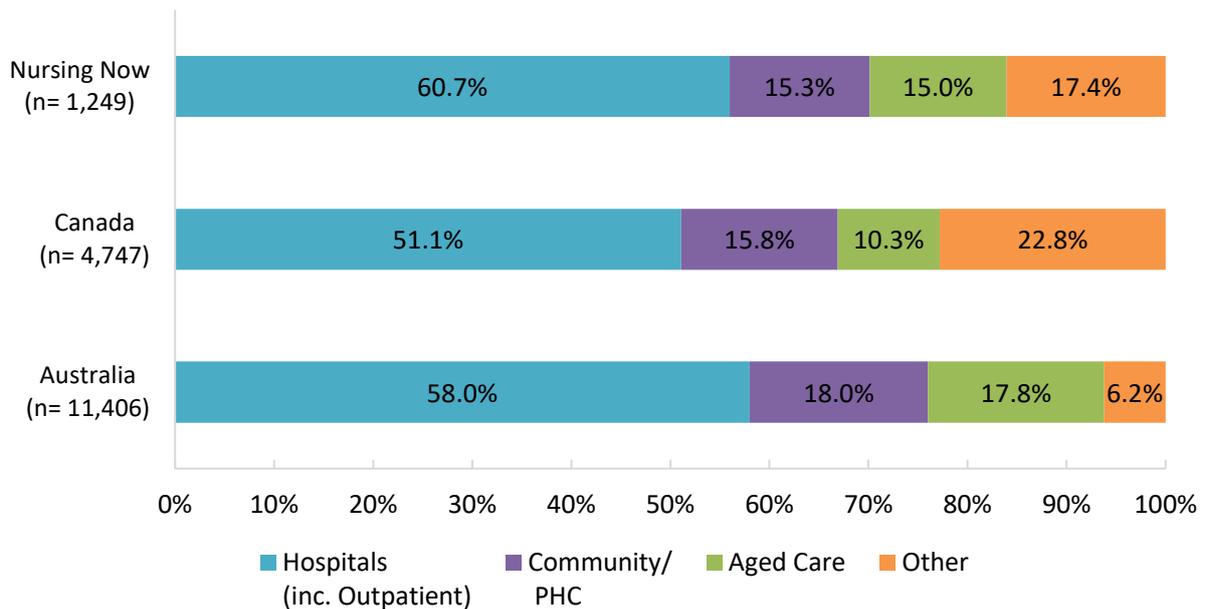
**Table 10.** Age and Gender across the three surveys

	Age		Gender		
	Min	Max	Males	Females	Gender non-binary
Nursing Now	20	85	11.8%	87.6%	0.2%
Canada	18	89	5.9%	92.8%	0.5%
Australia	18	81	8.0%	91.4%	0.2%

#### Professional qualifications and Workplace

Most respondents in the Nursing Now (78.2%), Canada (87.9%) and Australia (68.6%) were registered nurses. The Canadian sample had the proportionally largest representation from nurses as the survey was not promoted to midwives, followed by the Nursing Now sample, which was primarily targeting the nursing workforce as part of its promotional campaign (though neither survey limited responses from a single profession). The Australian survey had the lowest proportion of registered nurses due to the survey being promoted to both nurses and midwives of the Australian Nursing and Midwifery Federation.

More than half of the respondents from Nursing Now (60.7%), Canada (51.1%) and Australia (58.0%) reported that their main workplace was a hospital (Figure 49).



**Figure 49.** Main Workplace across three surveys.

## Healthcare leadership and policy

### COVID-19 workplace preparedness

Respondents were asked how they would rate their workplaces preparedness to manage COVID-19 cases identified in their workplace when the pandemic was declared and at the time of completing the survey. When the pandemic was declared (11 March 2020), two-thirds of respondents from Nursing Now (70.8%), Canada (65.1%) and more than half of respondents from Australia (57.6%) reported fair, poor or very poor on their workplace’s preparedness. This picture shifted at the time of completing the survey, where three-quarters of respondents from Nursing Now (74.8%) and Canada (77.3%) reported good to excellent on their workplace’s preparedness. Note, this was not captured in the Australian survey.

### COVID-19 infection prevention and control training

Most respondents from Nursing Now (81.0%), Canada (79.9%) and Australia (85.6%) reported having received COVID-19 infection prevention and control training from their employer. Similarly, most respondents from Nursing Now (81.7%), Canada (88.4%) and Australia (76.9%) reported being moderately or extremely confident to practice safely as a result of their COVID-19 training.

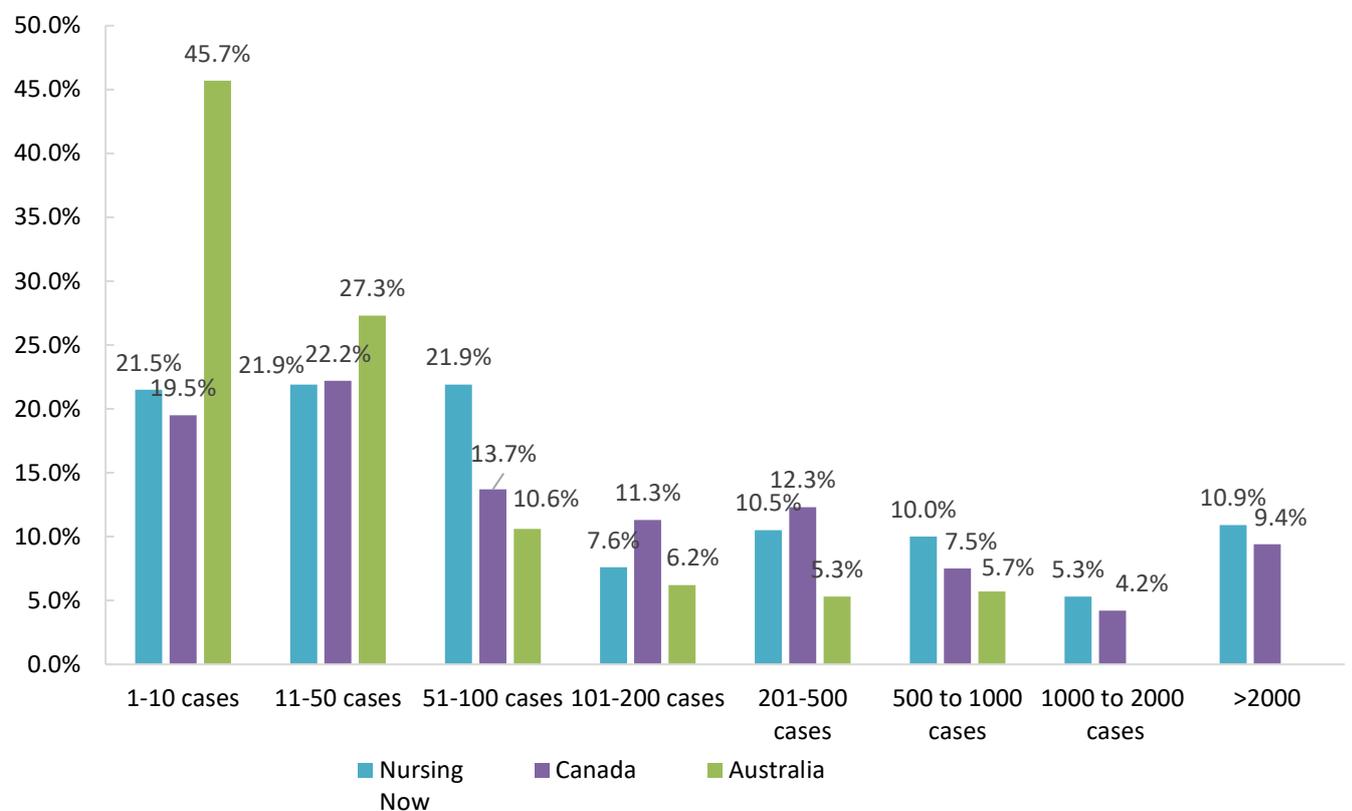
### COVID-19 in the workplace and care for cases

Respondents were asked whether they had provided direct care to patients/clients with confirmed or suspected COVID-19 in their workplace. Most respondents from the Nursing Now survey reported their workplace had provided care to one or more patients/clients with *suspected* COVID-19 ( $n = 917$ , 78.0%) or *confirmed* COVID-19 ( $n = 823$ , 70.2%). These values were lower than the Canadian sample (87.6% and 82.0%, respectively), but higher than the Australian sample (69.3% and

40.0%, respectively). This pattern could be indicative of the timing of the survey (i.e., Australia was the first survey, followed by Nursing Now and finally Canada).

A higher proportion of respondents from Nursing Now (56.9%) than those from the Canada (36.3%) or Australia (33.9%) had been assigned or asked to care for patients with COVID-19.

Respondents also indicated how many cases had been cared for at their workplace. Nursing Now and Canadian samples showed similar patterns with a higher proportion of sites caring for 51 or greater patients with COVID-19, whereas for the Australian sample, there were far fewer participants reporting that their workplace had care for 51 or more cases of COVID. This is likely due to the timing of the surveys (i.e., Australia was in the field approximately 6-10 months prior to the Nursing Now and Canada surveys), and the relatively fewer number of COVID-19 cases in Australia compared to many other countries in the world including Canada (Figure 50).

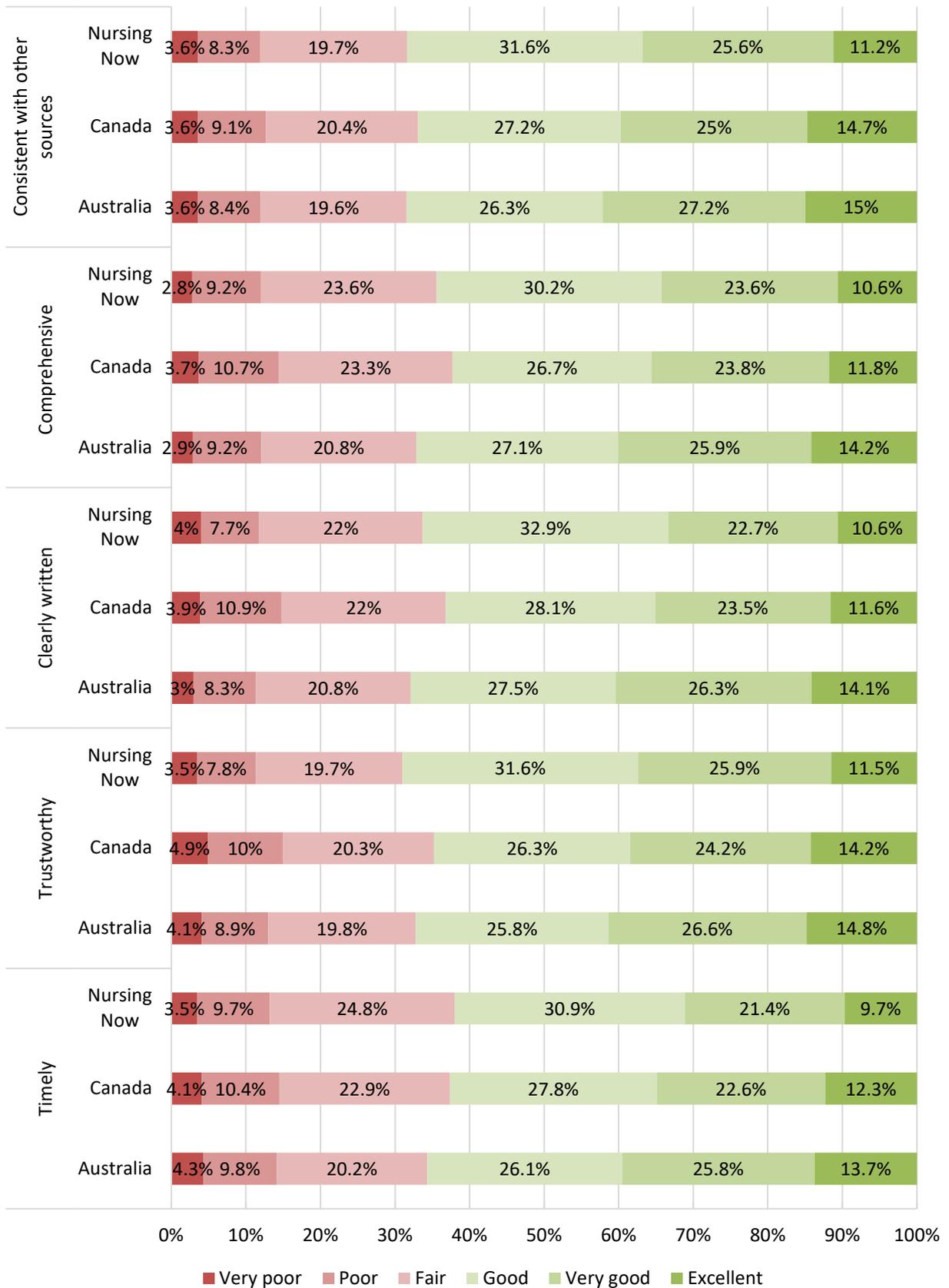


**Figure 50.** Reported cases of confirmed or suspected COVID-19 cases cared for at the start of the pandemic

*Note.* The Australian survey options permitted recording of cases up to >500 only.

#### COVID-19 Information at your workplace

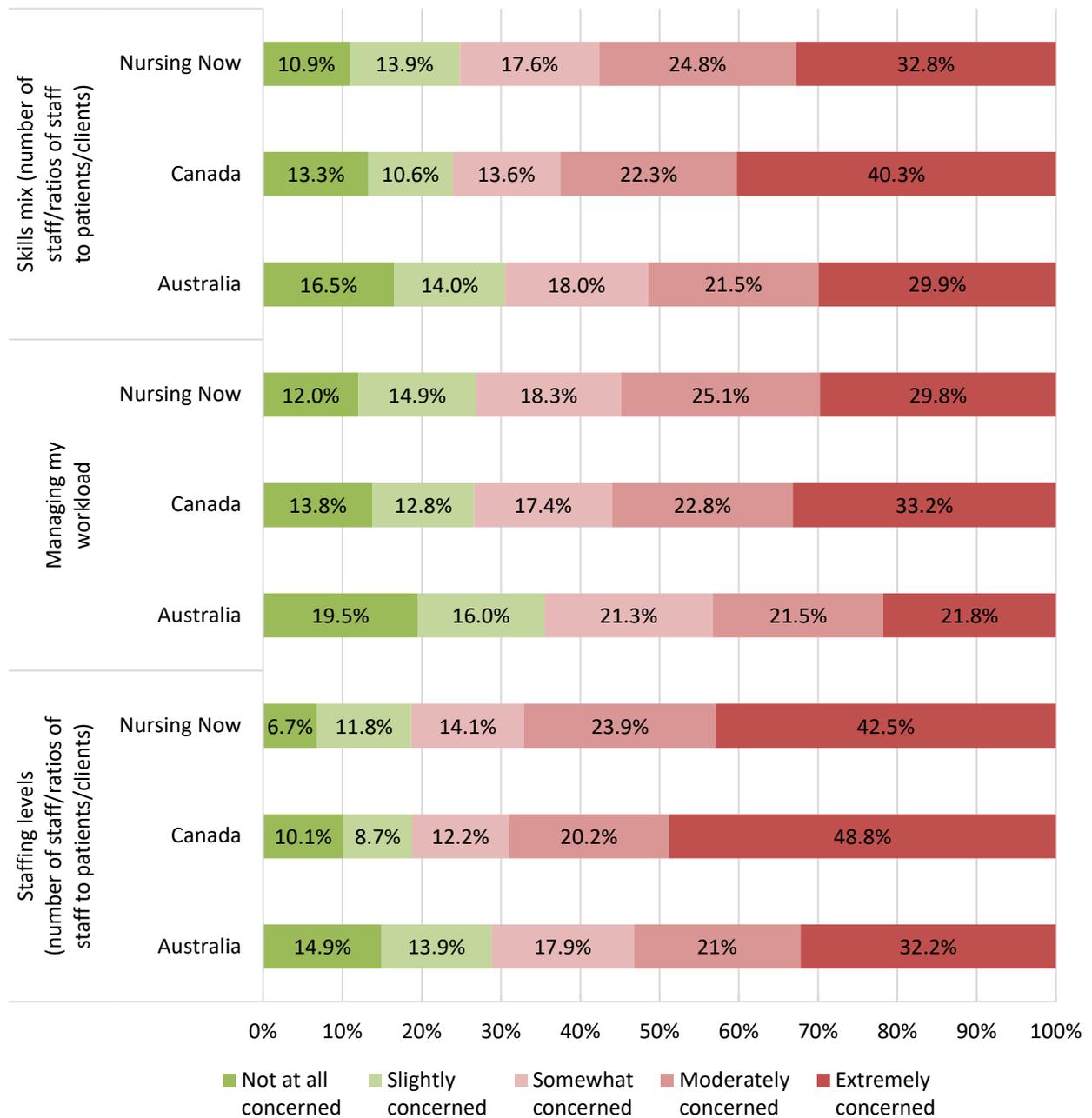
Respondents were asked to rate the COVID-19 information provided at their workplace in terms of being timely, trustworthy, clearly written, comprehensive, and consistent with other sources (Figure 51). Across all categories, at least 60.0% of respondents rated the information as good to excellent in all three surveys.



**Figure 51.** Ratings of COVID-19 information provision at respondents' workplaces.

*Concerns about workplace because of COVID-19*

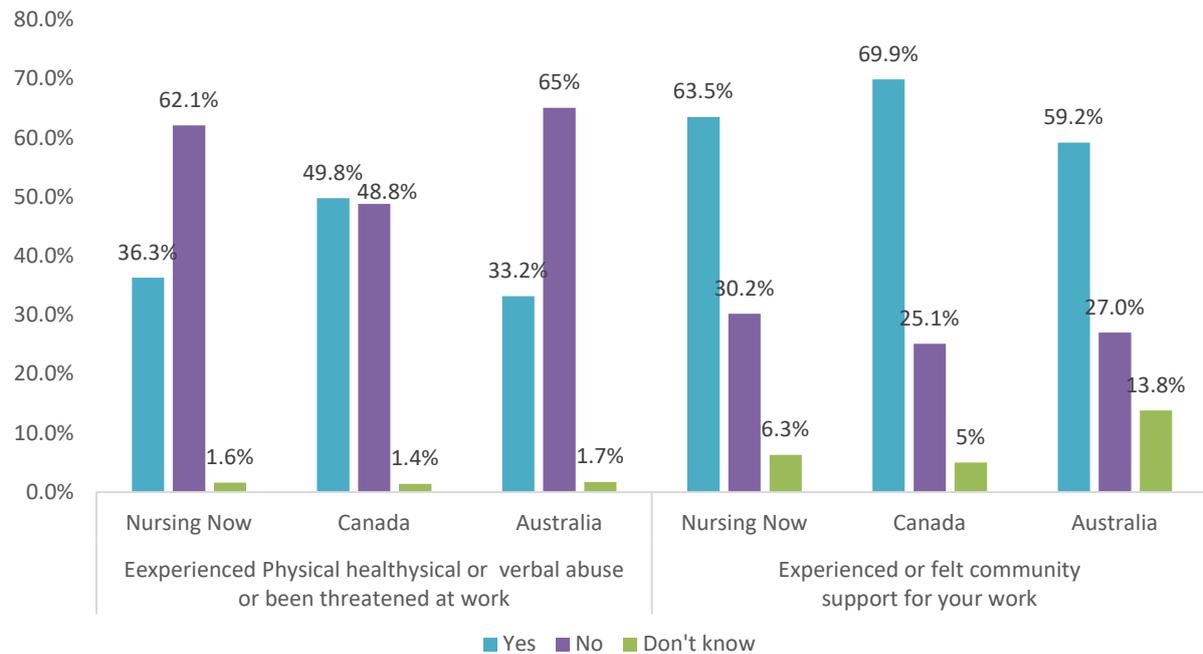
Respondents were asked to indicate their level of concern when responding to a series of statements related to impacts on their workplace. The three factors of greatest concern are reported in Figure 52 below. A large proportion of the respondents from Nursing Now (81.5%), Canada (81.2%) and Australia (71.1%) were somewhat to extremely concerned by staffing levels. A similar proportion of respondents from Nursing Now (75.2%), Canada (76.2%) and Australia (69.4%) were somewhat to extremely concerned about the number of the skill mix of staff. A similar proportion of respondents from Nursing Now (73.2%), Canada (73.4%) and Australia (64.6%) were somewhat to extremely concerned about managing their workload.



**Figure 52.** Workplace concerns for respondents from Nursing Now, Canada and Australia

### Community support and harassment

Respondents were asked questions regarding: (i) experiences of abuse or threats at work from the public or patients at work, and (ii) community support for their work (Figure 53). One-third of respondents from Nursing Now (36.3%), Australia (33.3%) and half of the respondents from Canada (49.8%) reported experiencing physical or verbal abuse or been threatened by members of the public/patients/clients at work. Approximately, two thirds of respondents from Nursing Now (69.9%) and Canada (63.5%) reported experiencing community support for their work. It was slightly lower in the Australian sample (59.2%).

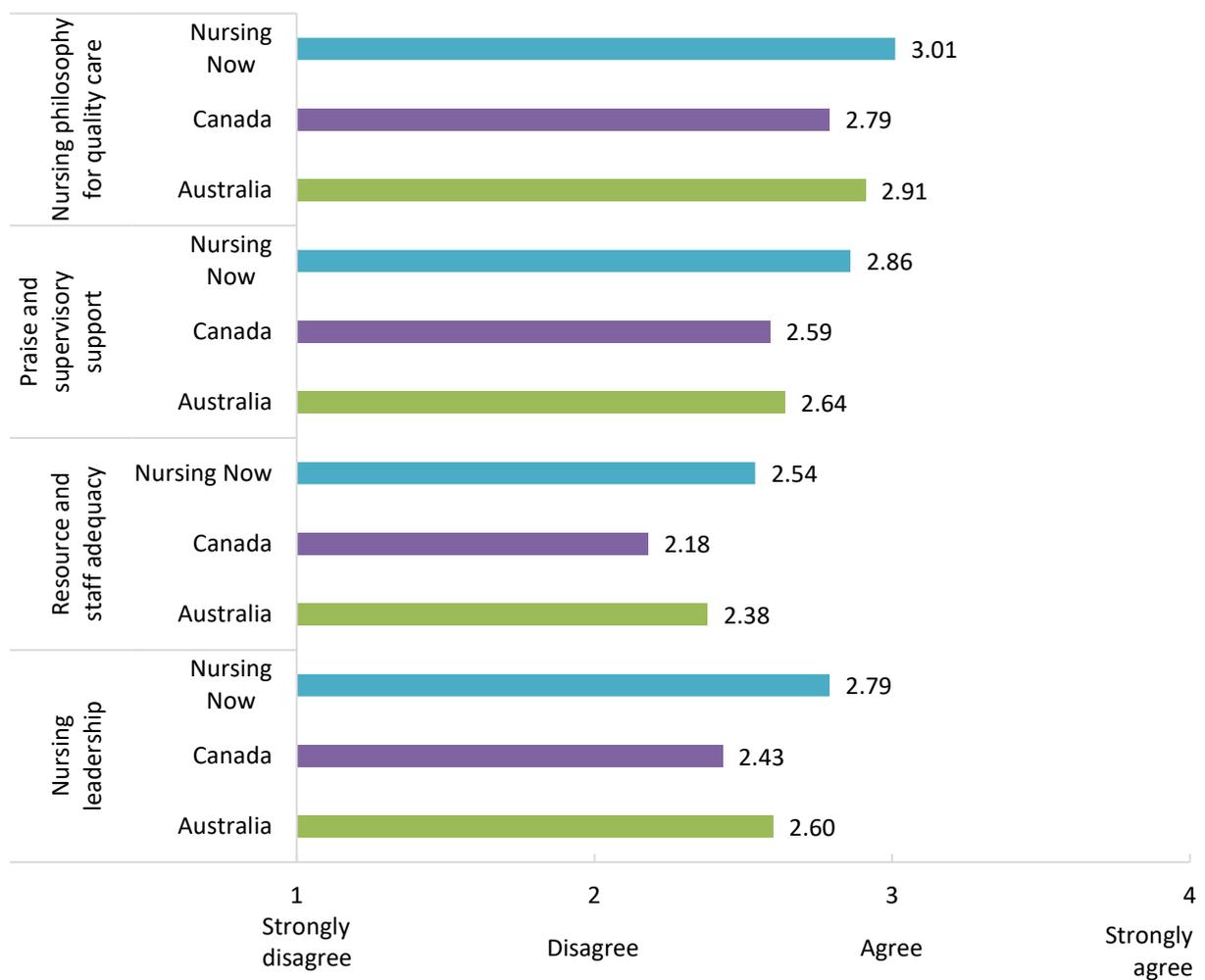


**Figure 53.** Community support and harassment for respondents from Nursing Now, Canada and Australia

## The nursing practice environment and its impact

### The practice Environment

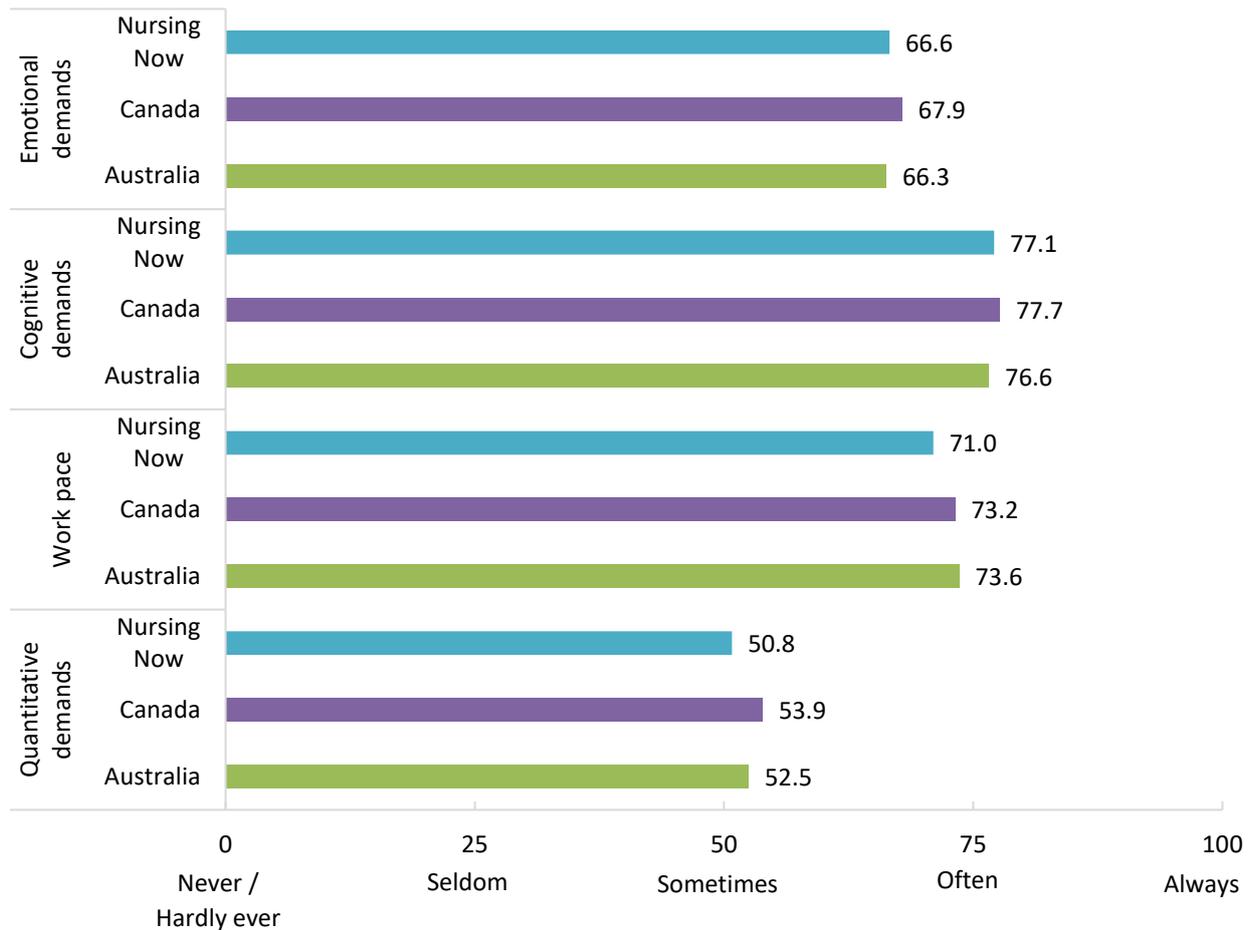
On average, there was a tendency to agree that nursing philosophy for quality care, praise and supervisory support were present in the practice environment for all respondents from Nursing Now ( $M = 3.01$ ,  $SD = 0.79$ ), Canada ( $M = 2.79$ ,  $SD = 0.73$ ) and Australia ( $M = 2.91$ ,  $SD = 0.64$ ). There was also a tendency to agree that nursing leadership for Nursing Now ( $M = 2.79$ ,  $SD = 0.91$ ) and Australia ( $M = 2.60$ ,  $SD = 0.69$ ). However, Canada ( $M = 2.43$ ,  $SD = 0.77$ ) was closer to the neutral midpoint indicating neither agreement nor disagreement for nursing leadership in the workplace. For resource and staffing adequacy, Nursing Now ( $M = 2.54$ ,  $SD = 1.00$ ), Canada ( $M = 2.18$ ,  $SD = 0.83$ ) and Australia ( $M = 2.38$ ,  $SD = 0.74$ ) were closer to the neutral midpoint indicating neither agreement nor disagreement was present in the workplace (Figure 54).



**Figure 54.** PES subscales mean scores for Nursing Now, Canada and Australia

### Workplace demands

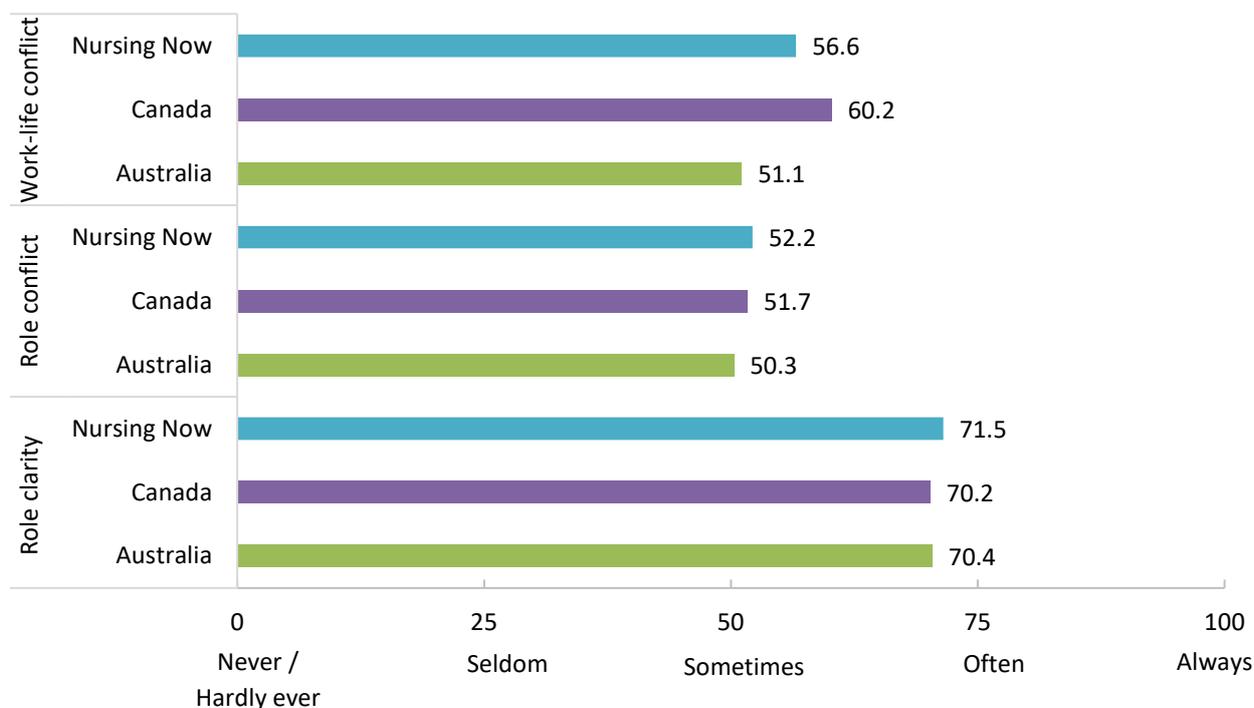
Workplace demands were measured by the COPSOQ-III and the pattern of results across the three study for each of the four sub-scales were similar. On average, respondents reported often working in a cognitively demanding environment with a high work pace. They reported working in environment where it was sometimes-to-often emotionally demanding and sometimes quantitatively demanding (Figure 55).



**Figure 55.** COPSOQ-III workplace demand mean scores for Nursing Now, Canada and Australia

### Work-life conflict, role conflict and role clarity

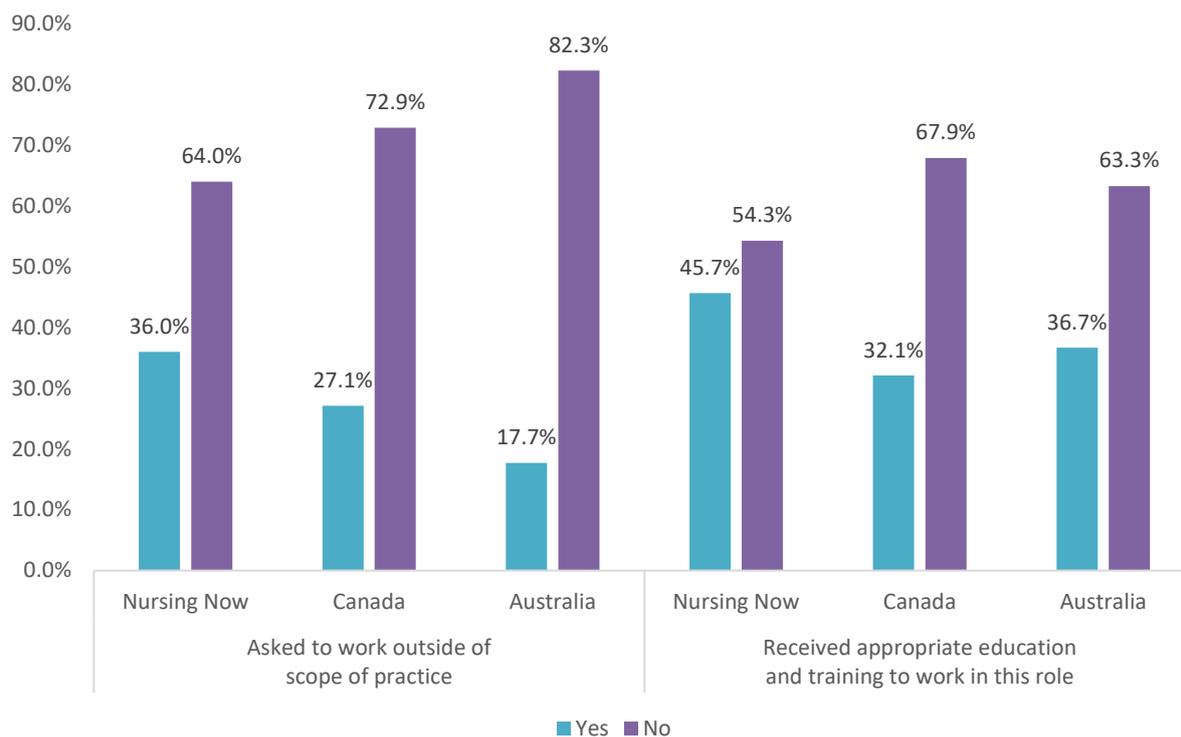
Overall, respondents from Nursing Now ( $M = 56.6$ ,  $SD = 29.5$ ), Canada ( $M = 60.2$ ,  $SD = 31.2$ ) and Australia ( $M = 51.1$ ,  $SD = 29.8$ ) had moderate levels of work-life conflict. Similarly, responses from Nursing Now ( $M = 52.2$ ,  $SD = 25.2$ ), Canada ( $M = 51.7$ ,  $SD = 27.6$ ) and Australia ( $M = 50.3$ ,  $SD = 26.6$ ) had a moderate level of role conflict. Respondents reported often experiencing role clarity across the three surveys (Figure 56).



**Figure 56.** Work-life conflict, role conflict and role clarity for Nursing Now, Canada and Australia, as measured by the COPSOQ-III.

### Scope of practice and training

Over one-third of respondents from Nursing Now (36.0%), over a quarter from Canada (27.1%) and fewer than one in five from Australia (17.7%) reported that they were asked to work outside their usual scope of practice. Of those respondents, over half from Nursing Now (54.3%), and approximately two-thirds from Canada (67.9%) and Australia (63.3%) reported that they did not receive appropriate education and training to work within scope (Figure 57).

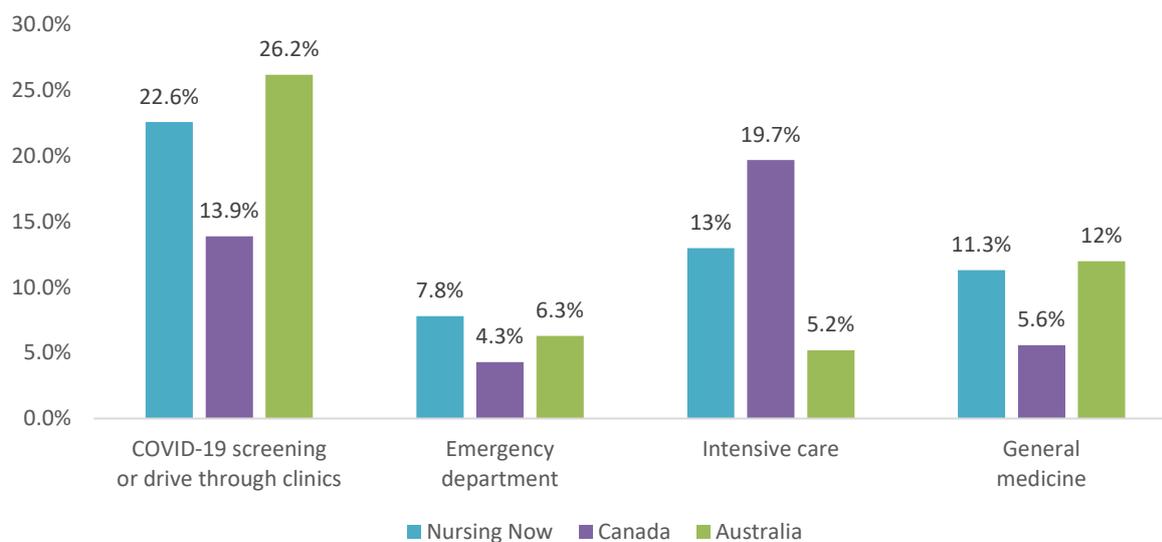


**Figure 57.** Scope of practice and training of respondents from Nursing Now, Canada and Australia

*Workplace redeployment*

Few respondents from Nursing Now (12.1%), Canada (14.9%) and Australia (18.8%) were deployed to a different geographic area, long term care or other speciality of work due to COVID-19.

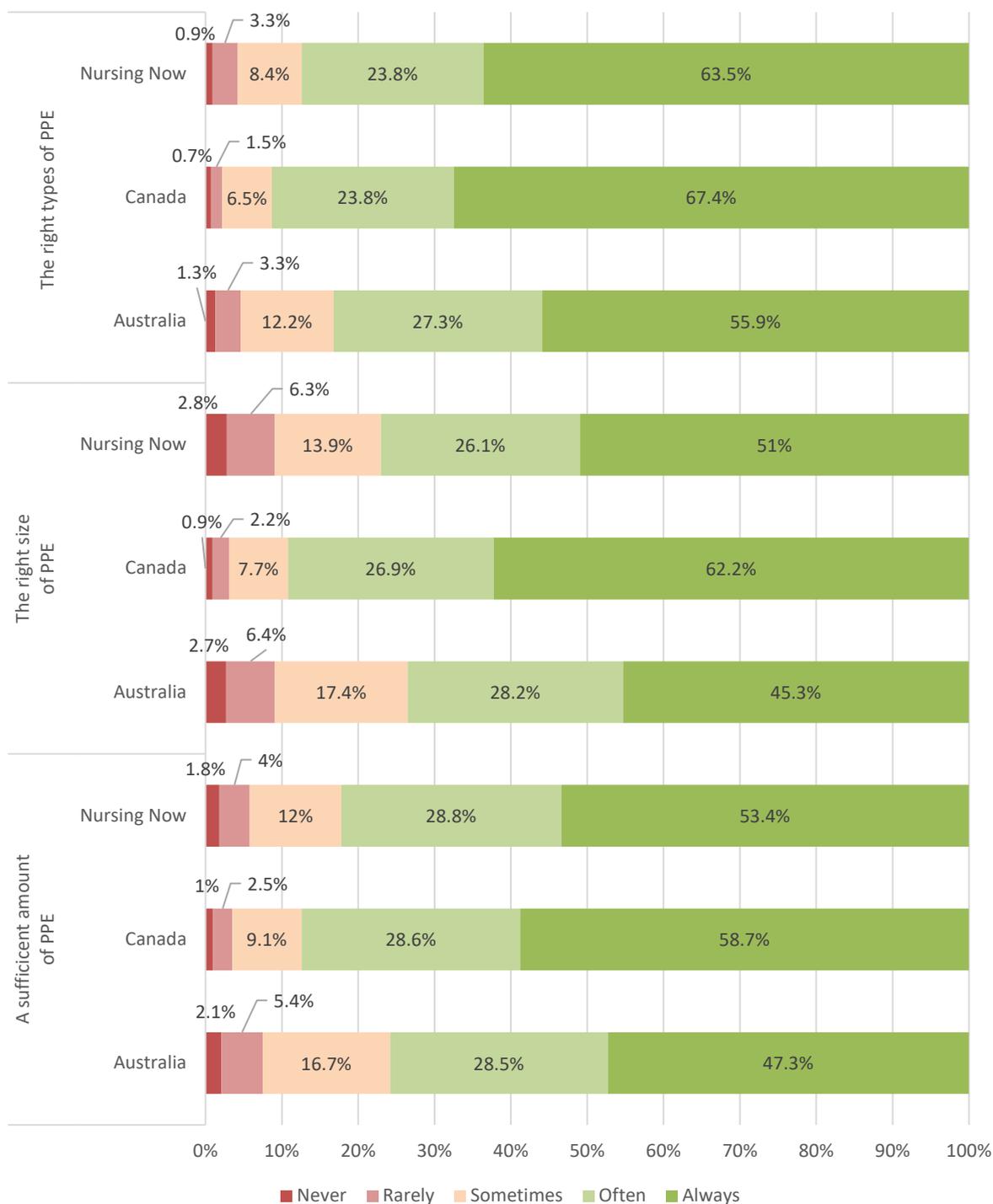
Approximately half of the respondents from Nursing Now (46.6%) Canada (52.1%) and Australia (55.5%) who were redeployed did not receive education and training for their position. Across all three surveys, nurses who were redeployed to other areas, were most likely to be redeployed to COVID-19 screening areas or intensive care (Figure 58).



**Figure 58.** Area of work for nurses who were redeployed

### Personal Protective Equipment access

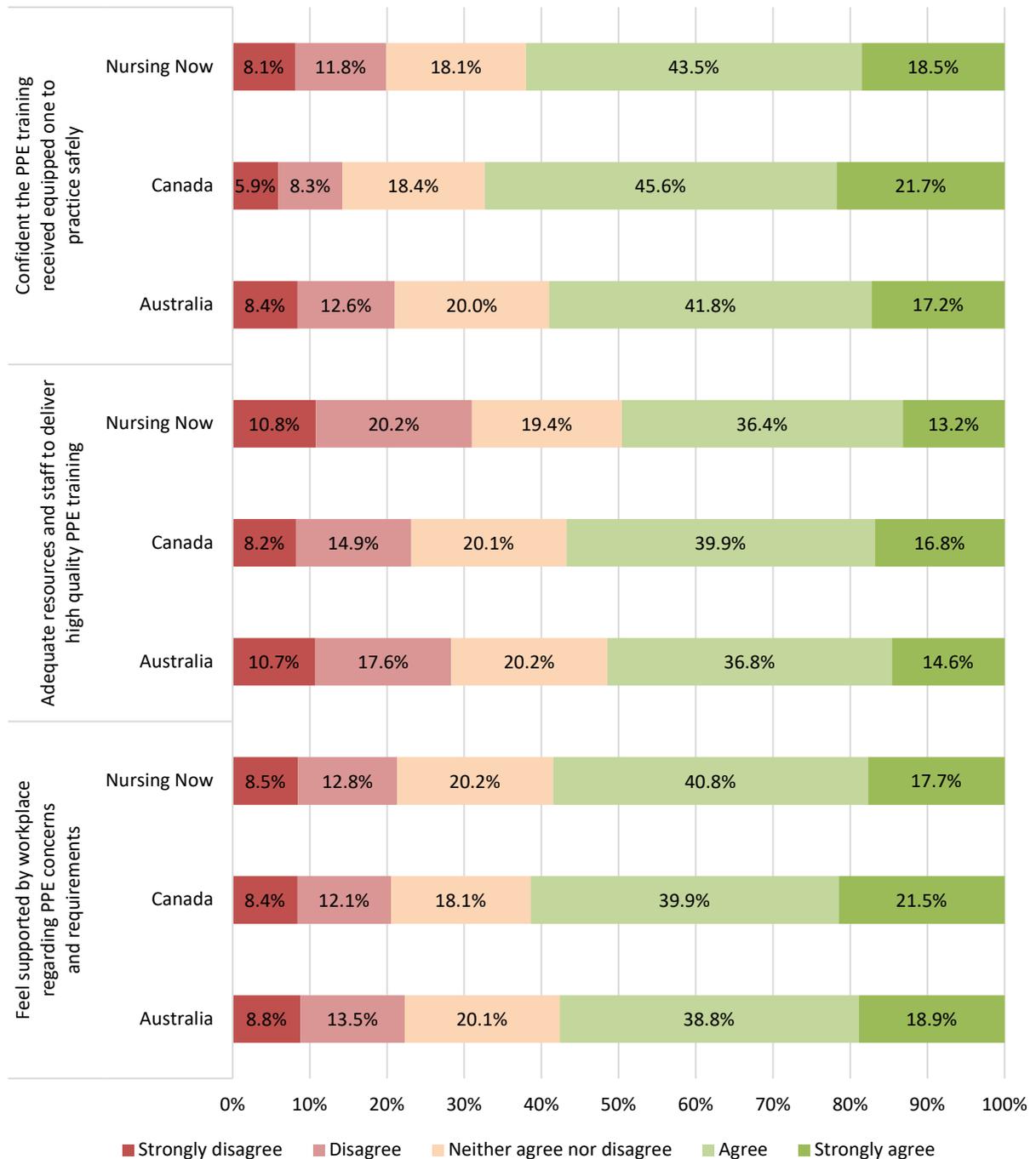
Respondents were asked a series of questions regarding personal protective equipment (PPE) at their primary workplace (Figure 59). At the time of the survey, more than 74.0% of respondents from Nursing Now, Canada and Australia reported often to always having the right type, right size, and enough PPE. Response patterns were similar across the three surveys with the Canadian sample tending to have more favourable responses followed by Nursing Now then the Australian sample.



**Figure 59.** Personal protective equipment availability, Nursing Now, Canada and Australia surveys

### Personal Protective Equipment support and training

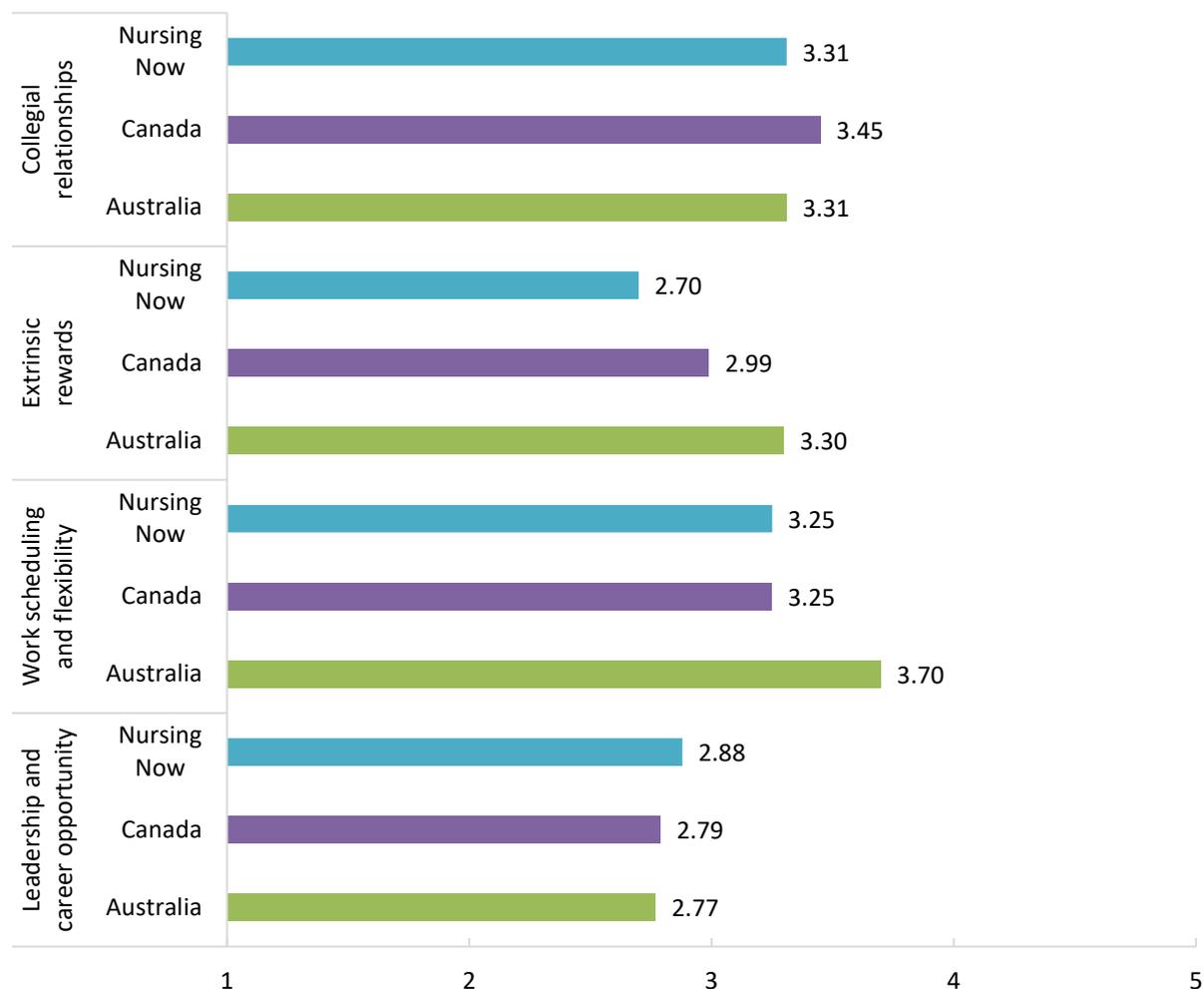
More than half of the respondents from Nursing Now (58.5%), Canada (61.4%) and Australia (57.7%) reported that they agree to strongly agree to feeling supported about their workplace regarding PPE concerns and requirements. Approximately half of the respondents from Nursing Now (49.6%), Canada (56.7%) and Australia (51.4%) reported having adequate resources and staff to deliver high quality PPE training. Over half of the respondents from Nursing Now (62.0%), Canada (67.3%) and Australia (59.0%) agreed to strongly agreed that they felt confident that the PPE training that they received had equipped them to practice safely during the COVID-19 pandemic (Figure 60).



**Figure 60.** PPE organisational support and training, Nursing Now, Canada and Australia surveys

### Job satisfaction

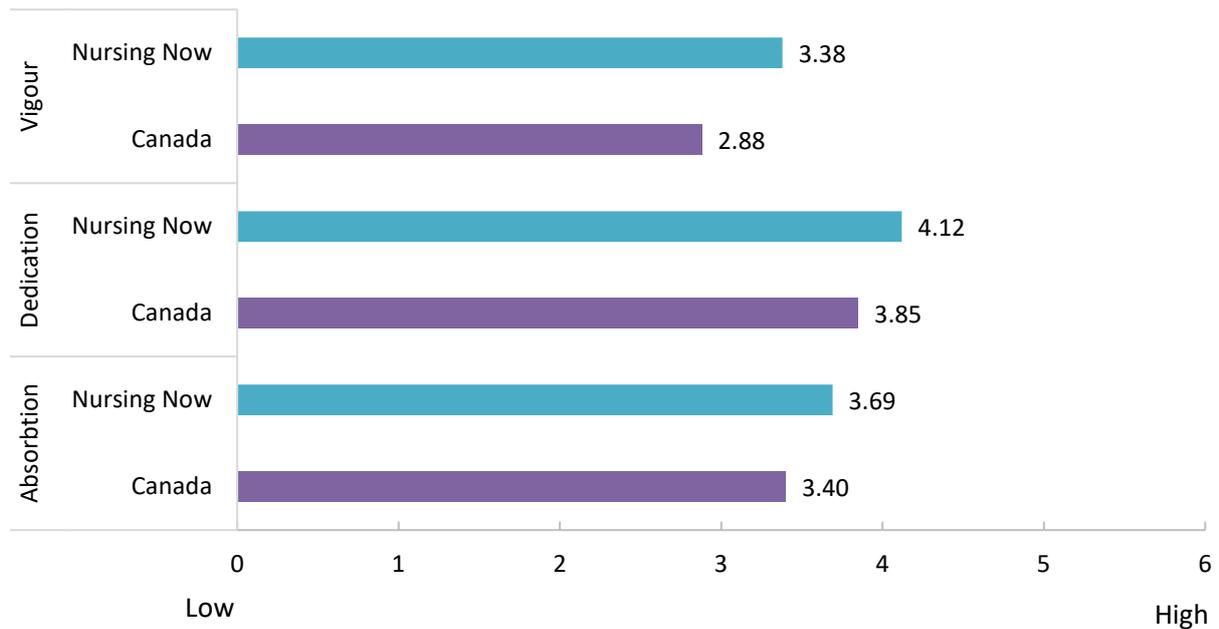
Overall, respondents from Nursing Now ( $M = 3.38$ ,  $SD = 1.02$ ), Canada ( $M = 3.45$ ,  $SD = 1.00$ ) and Australia ( $M = 3.31$ ,  $SD = 0.89$ ) indicated some satisfaction with collegial relationships as measured by the MMSS. Similarly, Nursing Now ( $M = 3.25$ ,  $SD = 1.18$ ) and Canada ( $M = 3.25$ ,  $SD = 1.16$ ) indicated some satisfaction for work scheduling and flexibility within their workplace while Australia ( $M = 3.70$ ,  $SD = 0.87$ ) rated this higher. Respondents from all three surveys expressed some dissatisfaction with leadership and career opportunities and extrinsic rewards (Figure 61).



**Figure 61.** Job satisfaction sub-scale mean scores for Nursing Now, Canada and Australia, as measured by the MMSS.

### Work engagement

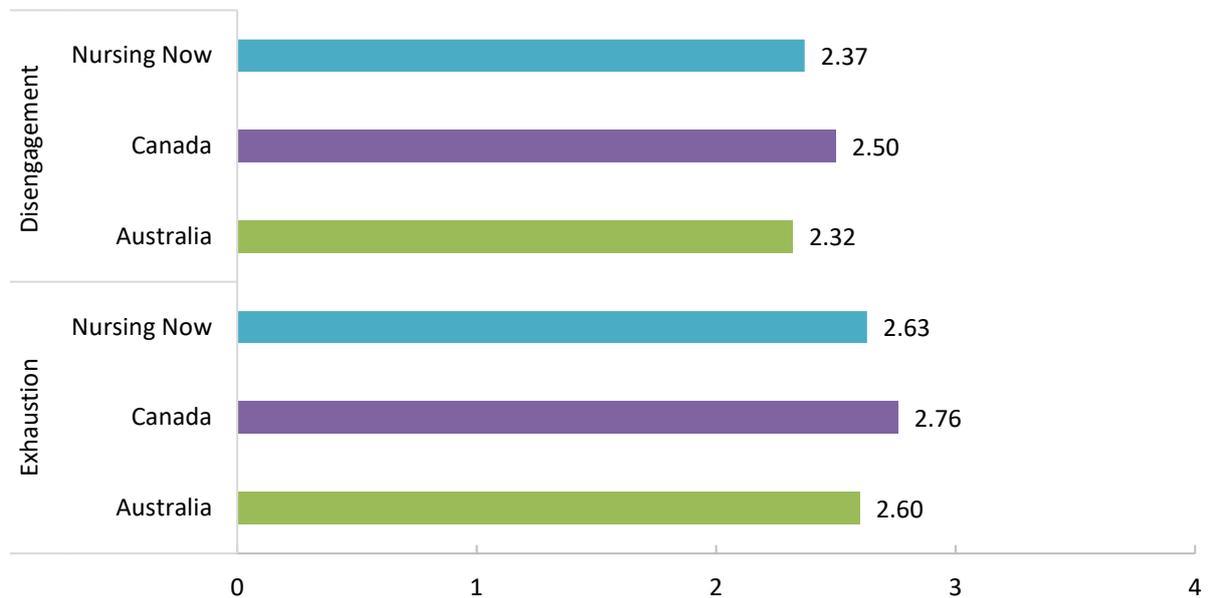
The UWES-9 was used to measure three indices of work engagement: absorption, dedication and vigour (Figure 62). On average, respondents from Nursing Now ( $M = 4.12$ ,  $SD = 1.33$ ) and Canada ( $M = 3.85$ ,  $SD = 1.30$ ) reported often feeling a sense of dedication. Similarly, respondents from Nursing Now ( $M = 3.69$ ,  $SD = 1.28$ ) and Canada ( $M = 3.40$ ,  $SD = 1.24$ ) reported often feeling a sense of absorption in their role. Respondents reported sometimes feeling a sense of vigour in their role from both Nursing Now ( $M = 3.38$ ,  $SD = 1.43$ ) and Canada ( $M = 2.88$ ,  $SD = 1.43$ ). These questions were not included in the Australian study.



**Figure 62.** Work engagement subscale mean scores for Nursing Now and Canada, as measured by the UWES-9.

### Burnout

Overall, respondents from Nursing Now ( $M = 2.63, SD = 0.54$ ), Canada ( $M = 2.76, SD = 0.56$ ) and Australia ( $M = 2.60, SD = 0.49$ ) indicated above average levels of exhaustion as measured by the OLBI. Scores for disengagement were slightly lower than those for exhaustion (Figure 63). Canada displayed the highest levels of burnout as measured by these indicators among the three samples.



**Figure 63.** Burnout subscale mean scores for Nursing Now, Canada and Australia, as measured by the OLBI.

Responses were also classified based on published cut-off scores for exhaustion and disengagement (Table 11). Those who scored high on both, were classified as burnt-out. Comparison shows that respondents from Canada ( $n = 1940, 67.9\%$ ) were more burnt out than respondents from Nursing Now ( $n = 493, 57.7\%$ ) and Australia ( $n = 4349, 56.2\%$ ).

**Table 11.** Distribution of Burnout classification for Nursing Now, Canada and Australia

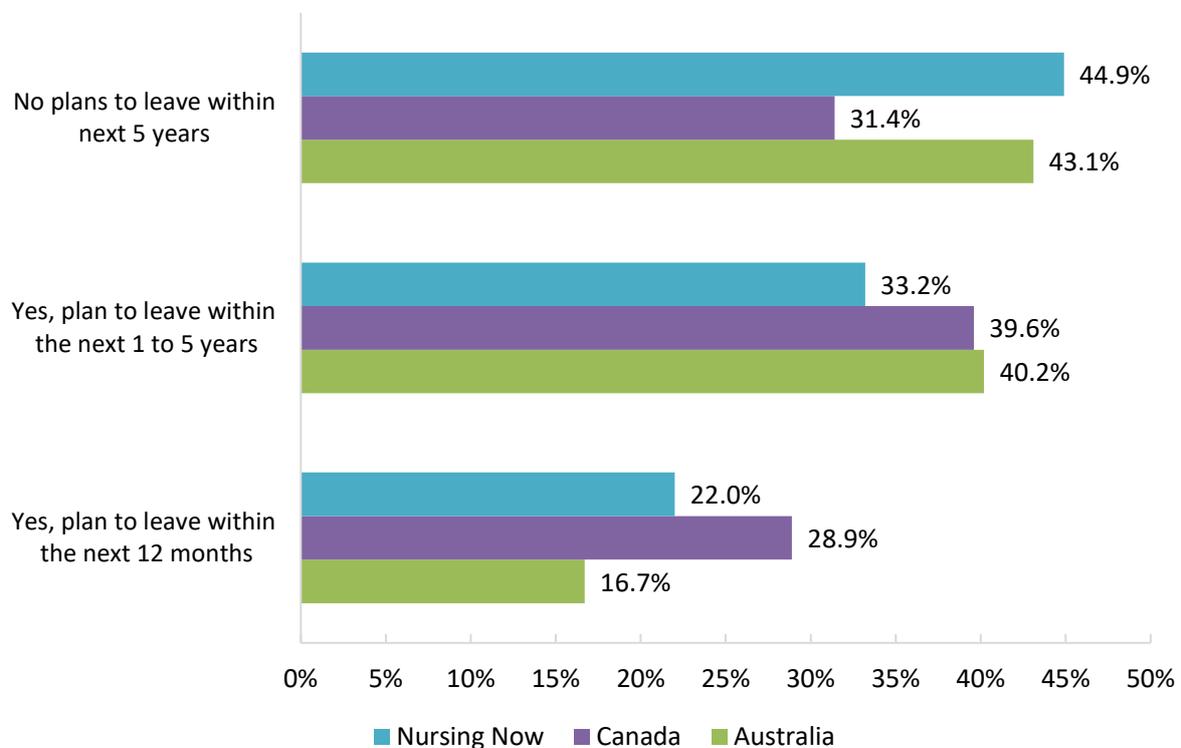
	Normal	Exhausted	Disengaged	Burnt out
Nursing Now	19.3%	7.4%	15.6%	57.7%
Canada	14.3%	5.8%	12.0%	67.9%
Australia	20.0%	9.2%	14.7%	56.2%

### Intentions to leave

Over half of the respondents from Nursing Now (55.2%), Canada (68.5%) and Australia (56.9%) had plans to leave within the next 5 years (Figure 64). Of those who did plan to leave their job, approximately one-third from Nursing Now (36.5%) and Canada (32.3%), and one-quarter of respondents from Australia (26.8%) were not intending to exit the profession entirely.

Of those who did plan to leave their current job, similar proportions of respondents from Nursing Now (17.1%), Canada (12.6%) and Australia (16.9%) intended to exit their profession to work in another field. Similar proportions of respondents from Nursing Now (23.9%), Canada (29.4%) and Australia (29.6%) intended to retire.

Almost three-quarters of respondents from Nursing Now (73.5%) and almost two-thirds of respondents from Canada (64.2%) reported that they were more than five years away from being eligible to retire. This question was not included in the Australian survey.



**Figure 64.** Responses regarding intentions to leave current position across three surveys.

### Nurse wellbeing and access to support

#### Physical health and Mental health concerns

With respect to physical health concerns, almost two-thirds of respondents from Nursing Now (60.0%) and Canada (61.0%) were somewhat to extremely concerned about their physical health at the start of the pandemic. At the time of the survey these proportions had decreased to about half of the respondents from Nursing Now (51.6%) and Canada (44.4%), respectively.

With respect to mental health, this pattern was reversed. At the start of the pandemic almost half of the respondents from Nursing Now (47.0%) and Canada (45.2%) were somewhat to extremely concerned about their mental health. This concern had increased at the time of the surveys for both participants from Nursing Now (63.0%) and Canada (64.2%).

In the Australian survey, respondents were only asked one question that encompassed their overall health. Here, three-quarters of respondents (75.5%) were somewhat to extremely concerned about their mental and physical health at the start of the pandemic, which reduced to almost two-third (63.8%) being somewhat to extremely concerned at the time of the survey (Figure 65).

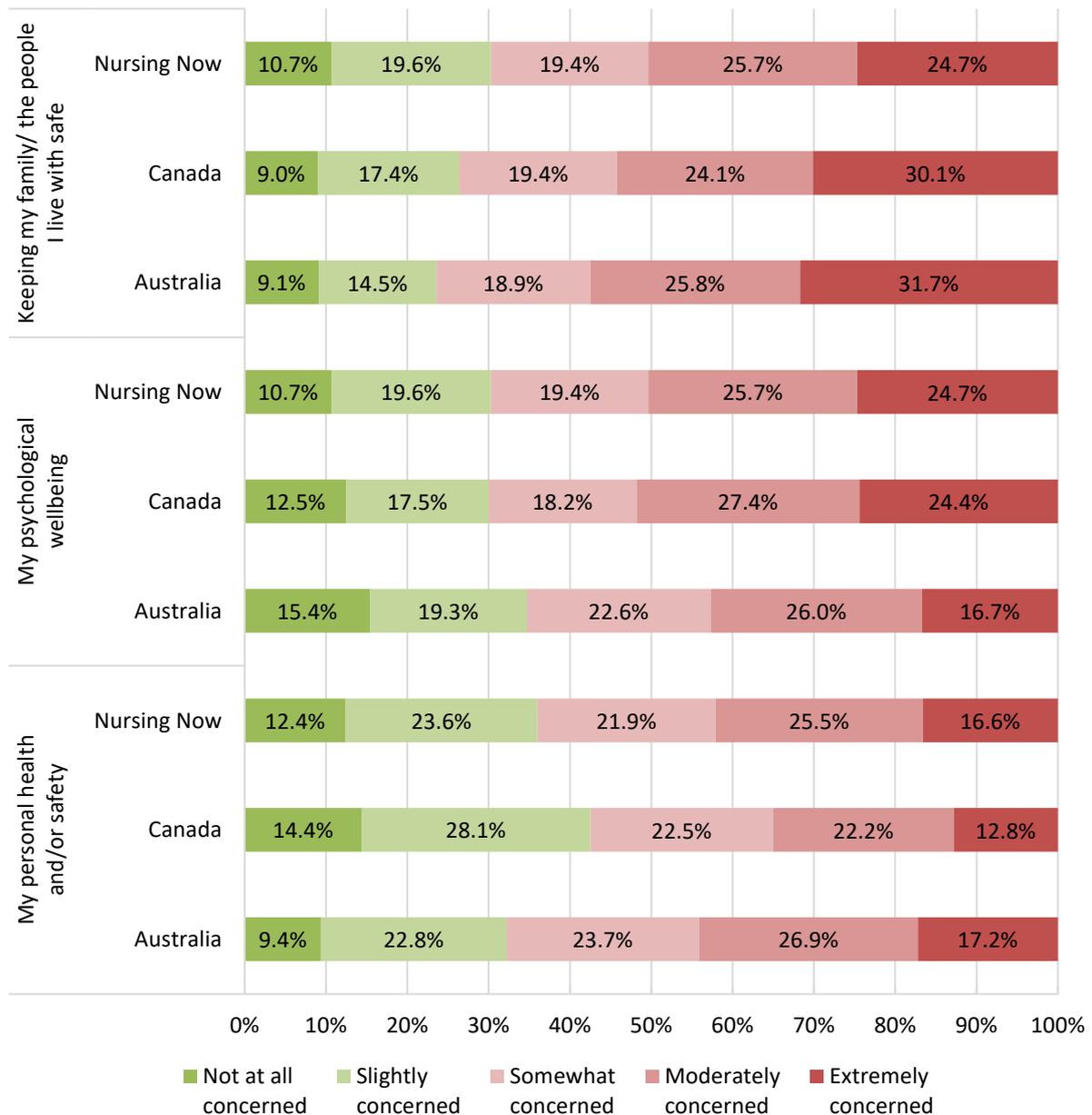


**Figure 65.** Physical and mental concerns at the start of the pandemic and at the time of the survey for Nursing Now, Canada and Australia

Notes. Australia was not asked to rate mental and physical health separately.

*Concerns about home life because of COVID-19*

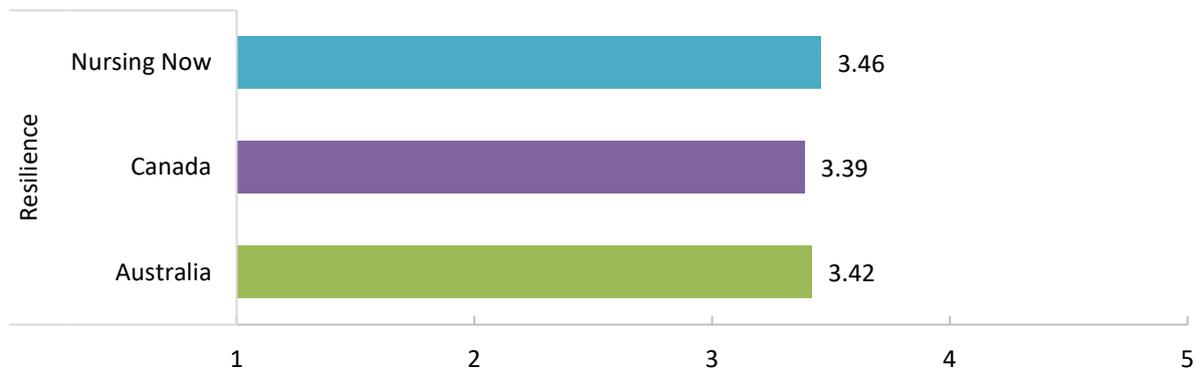
Respondents were asked to indicate their level of concern when responding to a series of statements related to impacts on their home life. Figure 66 below shows the three areas of greatest concern to respondents. Over two-thirds of respondents from Nursing Now (80.7%), Canada (73.6%) and Australia (76.4%) were somewhat to extremely concerned about keeping their family / the people they live with safe. Approximately two-thirds of respondents from Nursing Now (69.8%), Canada (70.0%) and Australia (65.3%) were somewhat to extremely concerned about their psychological wellbeing. Over half of the respondents from Nursing Now (64.0%), Canada (57.5%) and Australia (67.8%) were somewhat to extremely concerned about their personal health and/ or safety.



**Figure 66.** Concerns about home life for respondents from Nursing Now, Canada and Australia

### Resilience

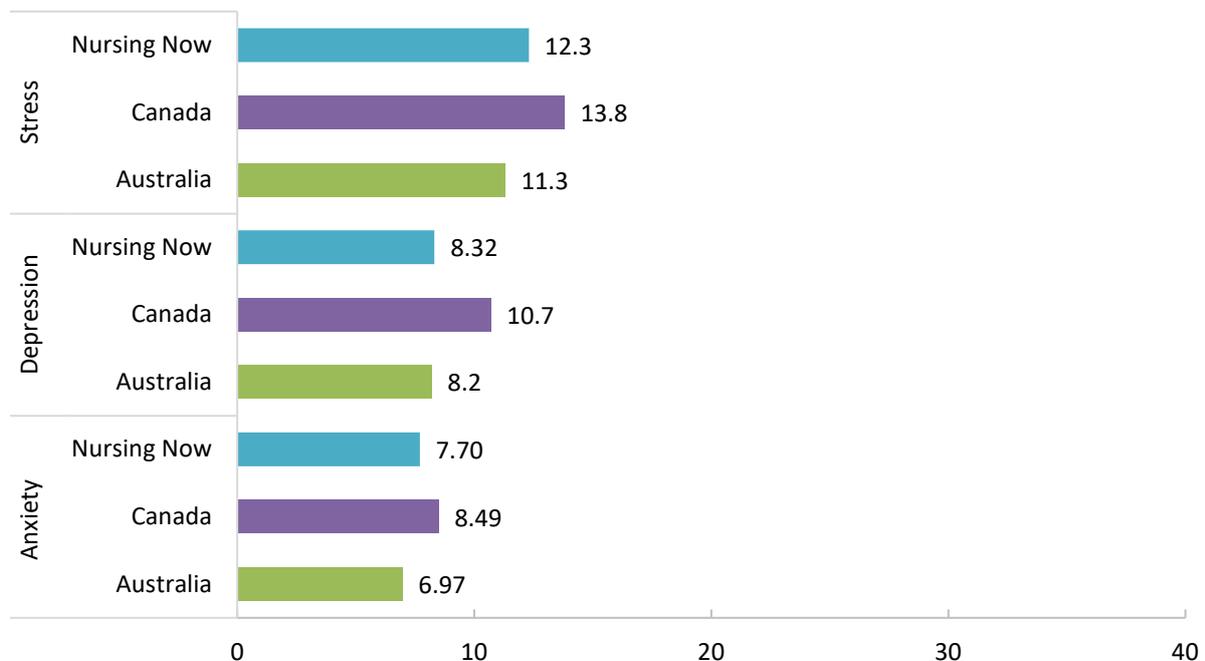
Resilience was measured using the Brief Resilience Scale (BRS). Overall, Nursing Now ( $M = 3.46$ ,  $SD = 0.71$ ), Canada ( $M = 3.39$ ,  $SD = 0.77$ ) and Australia ( $M = 3.42$ ,  $SD = 0.74$ ) reported an above average level of resilience. There was little difference across the three surveys (Figure 67).



**Figure 67.** Resilience mean scores for Nursing Now, Canada and Australia, as measured by the BRS

### Depression, anxiety and stress

On average, respondents from Nursing Now ( $M = 8.32$ ,  $SD = 9.29$ ) and Australia ( $M = 8.20$ ,  $SD = 9.35$ ) reported symptoms of depression in the normal range as measured by the DASS-21. Canada ( $M = 10.7$ ,  $SD = 10.6$ ) reported symptoms in the mild range. Respondents from Nursing Now ( $M = 7.70$ ,  $SD = 8.70$ ) and Australia ( $M = 6.97$ ,  $SD = 8.09$ ) reported anxiety symptoms in the normal range and Canada ( $M = 8.49$ ,  $SD = 9.05$ ) reported mild anxiety symptoms. For stress, respondents from Nursing Now ( $M = 12.3$ ,  $SD = 9.85$ ), Canada ( $M = 13.8$ ,  $SD = 10.0$ ) and Australia ( $M = 11.3$ ,  $SD = 8.94$ ) reported a normal range (Figure 68).



**Figure 68.** Depression, Anxiety and Stress mean scores, as measure by the DASS-21

Depression, anxiety, and stress scores were also analysed according to symptom severity (Table 12). Results showed that while response patterns were similar across all three surveys, respondents from Canada tended to have higher symptom severity across all three mental health measures compared with those from the Nursing Now or the Australian samples, as indicated by the higher proportion with moderate, severe, or very severe scores. Results patterns were as follows:

- **Depression:** between 33.0% (Nursing Now) and 45.2% (Canada) had mild to extremely severe symptom severity.
- **Anxiety:** between 35.1% (Australia) and 44.3% (Canada) had mild to extremely severe symptom severity.
- **Stress:** between 27.1% (Australia) and 39.2% (Canada) had mild to extremely severe symptom severity.

**Table 12.** Depression, anxiety, and stress symptom severity scores by survey.

		<b>Nursing Now</b>	<b>Canada</b>	<b>Australia</b>
<b>Depression</b>	Normal	67.0%	54.8%	65.7%
	Mild	10.1%	12.1%	11.0%
	Moderate	11.1%	16.4%	12.2%
	Severe	7.8%	6.4%	5.0%
	Extremely severe	4.0%	10.3%	6.0%
<b>Anxiety</b>	Normal	59.6%	55.7%	64.9%
	Mild	7.3%	8.2%	7.2%
	Moderate	15.5%	16.2%	13.8%
	Severe	6.3%	7.0%	4.8%
	Extremely severe	11.2%	13.0%	9.3%
<b>Stress</b>	Normal	67.0%	60.8%	72.9%
	Mild	10.1%	10.7%	9.8%
	Moderate	11.1%	13.0%	8.2%
	Severe	7.8%	10.4%	6.1%
	Extremely severe	4.0%	5.1%	3.0%

## Discussion

The Nursing Now global survey was open to nurses and midwives across 125 countries. The timing of the survey coincided with the downward trend of the second European wave, increasing case numbers across North America and other parts of the world, and more virulent strains of the virus emerging. At the time, the ongoing global surges of COVID-19 meant that nurses and midwives had not had a reprieve from the first wave of the pandemic. While many of the initial concerns regarding health risk are still evident and ongoing, these have been superseded by concerns over the workforce environment and its impact on staff.

This study supported similar research conducted in Australia in late 2020 and Canada in mid-2021 with a very similar pattern of findings across the three surveys. Together, these studies suggest that nurses and, where applicable, midwives, have had a near universally similar experience to the pandemic as it relates to their experience of the work environment. Together, findings from these surveys have identified areas for further investment required by health systems and services to mitigate risk of harm – both physical and psychological – to nurses and midwives. These include: (i) healthcare leadership and its relationship to influence robust policy; (ii) strengthening the practice environment to be more robust to extreme events like the COVID-19 pandemic; and (iii) investment in initiatives and support services that facilitate health and wellbeing among staff. A brief summary discussion along with considerations for policy and practice are provided below.

### Healthcare leadership

Leadership is fundamental to advancing the professions.<sup>22</sup> The State of the World's Nursing report 2020, co-authored by WHO, ICN and Nursing Now, identified that the world must strengthen both current and future nursing leaders to ensure they maintain influence at healthcare decision making tables.<sup>23</sup> In addition, effective nurse and midwife leadership is required to address global, regional, and local challenges for maintaining long-term nursing and midwifery workforce stability. This survey supported a workforce perception of average nursing leadership present in the practice environment, along with insufficient staff and inappropriate skill mix to effectively deal with the healthcare burden. During times of staffing pressures, effective leaders can contribute to enhanced quality and safety structures within their organisations.<sup>24</sup> Supporting nurses and midwives through tailored and meaningful leadership programs are suggested by leading nursing and midwifery organisations.<sup>25</sup> Nurse leaders can then develop the skills necessary to rapidly identify and effectively respond to major events threatening health care delivery in their communities.

However, to effectively strengthen healthcare leadership, significant steps must be taken to address the predicted resource gap of a 7.8 million shortage of nurses and midwives worldwide by 2030. It is particularly important in developing countries and environments where the nursing and midwifery role is crucial to community healthcare. In this survey over half of nurses and midwives intended to leave their current position within the next five years (22% within the next 12 months) and seventeen percent intended to exit the profession entirely. Globally, 17% of the nursing workforce are over the age of 55 years and expected to retire within the next 10 years,<sup>23</sup> which will need to be considered as part of global and regional workforce strategies.

## COVID-19 and the practice environment

The risk of HCWs testing positive for COVID-19 was over seven times higher than for non-essential workers.<sup>26</sup> Furthermore, the majority of COVID-19 clusters and outbreaks were found in the health and social care sector.<sup>27</sup> While most staff reported received infection prevention and control training, less than half were confident to practice safely despite the training. Most of those who tested positive believed they had contracted COVID-19 through workplace exposure. There is an expectation that HCWs provide care to patients, so it is vital that employers and governments commit to providing a safe work environment in which to practice,<sup>28</sup> which includes reviewing the quality of training provided to staff.

A significant contributor to the high rates of HCW infection early in the pandemic was the lack of sufficient and appropriate PPE.<sup>29</sup> This was a significant challenge for Governments and healthcare providers to overcome.<sup>30</sup> Inpatient care settings where PPE was reused and nursing homes with inadequate PPE presented the greatest risk of infection.<sup>31</sup> Workplaces have a duty of care to HCWs to provide adequate and appropriate PPE.<sup>32</sup> At the time of this survey, initial issues of PPE supply and availability had been mostly addressed, with the majority of respondents reporting having the right types of PPE. However, over a third reported not having breaks while working in full PPE. It is important that PPE concerns and requirements continue to be addressed to ensure effective control of COVID-19, as well as the occupational health of staff.

Stigmatisation of HCWs can occur during pandemic events including public support for restricting freedom of HCWs and avoiding HCWs for fear of contracting COVID-19.<sup>33</sup> While, two-thirds of respondents to this study reported experiencing community support for the work they do, one-third had experienced abuse or felt threatened at work, and approximately one in six had experienced stigmatisation outside of work. Protecting HCW rights is an important Government and employer responsibility to mitigate risk of public stigmatisation and violence and abuse at work.

## Workforce wellbeing, burnout, and access to support

The pandemic has significantly impacted nurses' wellbeing and risk of burnout. Research suggests that HCWs have significantly higher levels of burnout than white collar workers.<sup>34</sup> Burnout is associated with chronic stress exposure and can occur during pandemic events.<sup>35</sup> A recent review found the prevalence of burnout (about one-third of HCWs) similar with earlier outbreaks (e.g., SARS, MERS).<sup>35</sup> This study indicated that a high proportion of nurses and midwives are suffering from burnout, comparable with other international studies conducted earlier in the pandemic.<sup>36, 37</sup> Results suggest that workforce factors like staffing levels and skills mix have a relationship with burnout with those most concerned having higher levels of burnout and poorer mental health indices.

It is widely recognised that HCWs are at increased risk of poor mental health outcomes when dealing with the pandemic.<sup>38</sup> Managers need to proactively take steps to protect the mental wellbeing of staff.<sup>38</sup> While it is identified that some countries have dedicated teams to provide mental health support for HCW,<sup>39</sup> in this survey, sixty percent of respondents rated access to workplace psychological or mental health support as very poor to fair and less than a quarter had sought well-being support. This is similar to findings from other studies.<sup>40</sup> Evidence-based psychological support for HCWs during the COVID-19 pandemic should include strategies and interventions aimed at the individual/peer to peer, teams, and managers and leaders in organisations.<sup>9, 41</sup>

## Strengths and Limitations

Strengths of this survey include the international focus with responses from Europe, North, Central and South America, Africa, Asia and Oceania, and the translation into three languages: English, Spanish and French. The study provided international data for comparative purposes using validated tools and instruments used in other nursing and midwifery surveys. Limitations included the cross-sectional design, lack of other language options, overall limited response rate of less than 1,500 respondents, and over-representation of participants from North America and Europe. It is possible that the limited responses reflect survey fatigue by nurses and midwives and only those that were highly motivated completed the survey. Nevertheless, the survey has provided insight into nurse's voices after the first wave of the pandemic and as it entered its second year as a global crisis.

## Considerations for policy, practice, support and research

Based on the findings of this research, the following considerations are made to advance policy, practice, support and future research direction to address the health, wellbeing, and safety of the nursing workforce. These considerations are primarily focused on the leadership, management and coordination, safety, and support and wellbeing of frontline staff. While they have been derived at a time of significant health system challenge, they can also be extended to health system improvement more broadly. Recognising and committing to the resources required to maintain a thriving working environment in healthcare will lead to better outcomes for all. Recommendations for future areas of strategic research are also identified.

Area	Consideration
<b>Healthcare leadership and policy</b>	
<ol style="list-style-type: none"> <li>1. <b>Leadership:</b> Empowering strong nursing and/or midwifery leadership in healthcare settings from mid-level clinicians through to the executive level to ensure nurses/midwives and their colleagues have a place at decision-making tables and a strong voice regarding current challenges and suggestions for improvements to policy and practice of organisations and the health system more broadly.</li> <li>2. <b>Staffing and skill mix:</b> It is imperative that governments actively plan to improve both staffing and skill-mix to address current and future workforce shortages and to have the capacity to respond to post-pandemic needs and future emergencies.</li> <li>3. <b>Workforce coordination:</b> The deployment of staff across the healthcare sector should be considered within the context of minimizing multi-site placements that result in increased risk and exposure for the clinician and community.</li> </ol>	
<b>The practice environment and its impact</b>	
<ol style="list-style-type: none"> <li>4. <b>Prioritise worker safety:</b> Active engagement from healthcare administration to ensure the health, wellbeing and safety of staff is prioritised as a core business objective. This to include violence and abuse of staff, vaccine access, secured time away from work (e.g., vacation time), and a PPE policy that includes adequate and appropriate PPE, breaks from wearing PPE and long-term use of PPE.</li> <li>5. <b>System design:</b> Design effective systems for the rapid deployment of staff across the healthcare system to respond to emergencies. Key considerations are to identify and address major system or industrial barriers that may hinder movement, flexibility, and protection of workers during a pandemic or other prolonged health care situations.</li> <li>6. <b>Education:</b> Provide standardised, consistent messaging, education and training regarding PPE use, donning, wearing, and doffing that is tailored to the working environment.</li> <li>7. <b>Communication:</b> Provision of consistent, evidence-informed information through trusted communication channels and to relevant staff to ensure accuracy of information and direction.</li> </ol>	
<b>Wellbeing and access to support</b>	
<ol style="list-style-type: none"> <li>8. <b>Evidence-based support:</b> Adoption of evidence-based programs designed to provide structured, tailored and meaningful support including regular debriefing processes, and that actively engage staff, especially during times of significant disruption and/or significant trauma.</li> <li>9. <b>Wellbeing monitoring systems:</b> Systems established to periodically monitor occupational health and wellbeing are adopted, monitored, and embedded as part of business activity reporting, and that include both predictors and performance outcomes of wellbeing. This is to be considered as a standardised approach to the health and wellbeing of staff, pre, during, and post the management of a pandemic (or significant disruption to the health care environment) to monitor long term impact and staff sustainability.</li> </ol>	

### Strategic research

10. **Longitudinal research:** Large, longitudinal research studies are undertaken (e.g., cohort studies) that focus on the inter-relationship between health system and organisational policies, the working environment, and the health, safety, and wellbeing of its workforce.
11. **Cross-sectional monitoring:** Undertake a repeat concise workforce and wellbeing survey biennially. Comparators can be considered at national, regional or international levels.
12. **Policy-setting research:** a structured program of policy-focused research that engages key stakeholders internationally to address current challenges related to workforce sustainability and wellbeing.

## Conclusion

The *COVID-19 and workforce wellbeing: A survey of the international nursing workforce* survey was the last focused work administered through Nursing Now global campaign. The campaign aimed to improve health by raising the profile and status of nursing worldwide in celebration of the World Health Organization 2020 International Year of the Nurse and Midwife. At the time, the impending health crisis of a pandemic was unforeseen. This study has, from a workforce stability, sustainability, safety and wellbeing perspective, identified many gaps that still need to be addressed in the current pandemic. There is an urgent need to strategically address the challenge healthcare systems are facing worldwide with respect to supporting their workforce including the growing nursing and midwifery shortages. Alongside those from other similar studies internationally, the findings describe the near universality of the nursing and midwifery experience of a health workforce under immense strain. Findings support key policy messages of organisations like the International Council of Nurses, the International Congress of Midwives, and the World Health Organization.

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## Appendix A: Detailed methodology

### Procedure

Ethical approval for the study was granted by the University of South Australia (UniSA) Human Research Ethics Committee (HREC; Application ID: 203244).

### Participants

The survey was primarily targeted at nurses and midwives connected through the Nursing Now campaign. It was not possible to determine a response rate based on those who saw the survey promotion, as it was made publicly available on the Nursing Now website and via their social media platform accounts. Snowballing of the survey to other nurses and midwives was allowed.

### Materials

#### Survey development

The survey tool was first developed by RBRC for use in the Australian context and was intended to cover all healthcare settings. Nursing Now and the RAO provided additional input to survey design to broaden the applicability to the international context. To this end, questions were made broadly generalisable and each question was reviewed to minimise risk of individuals or groups of respondents not thinking questions were relevant to them.

The survey was developed and formatted in two parts, the first comprising questions about COVID-19 that were generated by the research team or adapted from other surveys, and the second comprising validated tools used to assess workplace climate. The survey was pilot tested with nurses and midwives within the close working networks of Nursing Now and the RAO (approximately 6-8 people per organisation). The survey was refined based on feedback from pilot testing before final distribution. There were 250 questions in the final survey addressing the domains (Figure 69).



**Figure 69.** Domains assessed within the COVID-19 and Workforce Wellbeing Survey.

#### Part I: Demographics and COVID-19 factors

Part I of the survey encompassed demographic questions and assessed the impacts of COVID-19 on the work environment, personal concerns, and PPE. For purposes of international benchmarking, healthcare COVID-19 surveys circulating at the time of the survey were reviewed and where appropriate, modified and contextualised for the current survey. These included questions from the following sources: the Italian healthcare survey,<sup>42</sup> the ICON study,<sup>43</sup> the PanSurg SSFAFE Wellbeing

Survey,<sup>44</sup> American Nurses Association COVID-19 Surveys,<sup>45</sup> PPE Survey,<sup>30</sup> and National Nurses United Covid-19 Employer Preparedness Survey.<sup>46</sup>

#### *Respondent demographics*

Respondents were asked a range of questions that sought socio-demographic information, including gender, age, postcode, relationship status, first nation status, region of birth, migration for work, caring responsibilities, as well as health conditions or risk factors. Regions of the world were based on the United Nations (UN) geoscheme coding<sup>47</sup> with some minor modifications based on the Australian Bureau of Statistics (ABS) classification system<sup>48</sup>; Southern Europe was split into two regions – Southern Europe and South-Eastern Europe, Northern Asia was included as an option, the Caribbean was included in Central America, and New Zealand was separated from Australia.

Respondents were also asked a range of occupational demographic questions, including job classification, years worked as a nurse and/or midwife or care worker, primary role, employment status, primary workplace, and work setting. Respondents with a dual nursing/midwifery registration were asked to indicate their primary position.

#### *COVID-19 preparedness, workplace plans and training*

Eight survey items addressed organisational preparedness for the COVID-19 pandemic. One item asked survey respondent to rate their workplace's preparedness to manage COVID-19 cases when the pandemic was declared on a scale of 1 (*Very poor*) to 6 (*Excellent*). Respondents were also asked about whether their workplace had in place: designated COVID-19 areas, plans and protocols to respond to COVID-19 at the time of the pandemic or currently, and infection control and prevention training. Response options were generally "Yes", "No", "Unsure", and "Not applicable". Those who had received training were further asked to rate their confidence to practice safely because of their training on a scale of 1 (*Not at all confident*) to 5 (*Extremely confident*).

#### *Care for patients/clients with COVID-19 in the workplace*

Seven survey items were included to assess whether respondents and/or their workplaces had cared for clients with suspected or confirmed COVID-19, how many suspected or confirmed cases had been cared for in their workplaces, in what settings care had been provided and the estimated patient to nurse ratio.

#### *COVID-19 information*

Six survey items assessed the COVID-19 information provided within the workplace, as well as useful outside sources of COVID-19 information. Respondents were asked to rate the COVID-19 information provided within their workplace regarding being timely, trustworthy, clearly written, comprehensive, and consistent with other sources. Response options ranged from 1 (*Very poor*) to 5 (*Excellent*). An additional survey item asked whether respondents had found useful workplace related information regarding COVID-19 from other various sources.

#### *Organisational preparedness*

Respondents were asked to rate the quality of their primary workplaces' COVID-19 policies and procedures in 18 different areas (e.g., staff screening for risk factors/symptoms, support for new graduates or inexperienced staff, managing staff abuse). Response options ranged from 1 (*Very poor*) to 6 (*Excellent*). Respondents were also permitted to select 'Don't know' or 'Not applicable'.

### *COVID-19 health concerns around work, staff testing, and missed work*

Respondents were asked a range of questions about their COVID-19 related health concerns and experiences with COVID-19 testing. Four questions asked respondents to rate their concern about risks to their physical and mental health due to COVID-19 at the start of the pandemic and at the time of the survey on a scale of 1 (*Not at all concerned*) to 5 (*Extremely concerned*). Respondents were also asked several questions about whether they had been tested for COVID-19 (*Yes/No*), whether they had tested positive (*Yes/No/Decision pending*), whether they believed the virus was acquired due to workplace exposure (*Yes/No/Unsure*), and whether they had experienced any work-related distress associated with a positive result (*Yes/No*). Respondents were also asked how many times they had been tested, if they had missed work for COVID-19 related reasons, what type of leave they took to cover missed days, and if they had been vaccinated for COVID-19.

### *Personal concerns due to COVID-19 and mental health support*

Respondents were asked to what level they were concerned about seven personal factors (e.g., psychological wellbeing, risks to vulnerable family members/people I live with, experiencing financial hardship) and ten work-related factors (e.g., welfare of my colleagues, job security in general, staffing levels). Responses ranged from 1 (*Not at all concerned*) to 5 (*Extremely concerned*). Respondents were asked one binary response (*Yes/No*) question about whether they had sought mental health/wellbeing support from external providers, and one check box question about the service(s) they sought help from.

### *Self-isolation and related behaviours*

Four items addressed self-isolation among respondents. Two binary response questions asked respondents whether they chose to isolate from those they live with (*Yes/No*), and whether that isolation was at their own residence or at an alternative accommodation. One multiple choice question addressed who paid for any alternative accommodation. Respondents were given the opportunity to describe any other self-isolating behaviours they felt they had to adopt to protect themselves, their family/friends, or the community.

### *Community support and harassment*

Three survey items addressed community support and harassment. Respondents were asked whether they had experienced or felt community support for their work, whether they had experienced abuse or felt threatened by members of the public/clients at work, and whether they had experienced abuse or felt threatened by members of the public in settings outside of work. Response options were "*Yes*", "*No*", "*Unsure*".

### *Workplace changes*

Respondents were asked a number of questions about workplace changes, including workload changes (four items), give up work (four items), working outside of or advancing scope of practice (three items), work schedule changes (two items), and redeployment (three items).

### *Personal Protective Equipment (PPE) at primary workplace*

A mix of eleven multiple choice and open-ended survey questions addressed PPE at respondents' primary workplaces. Questions addressed the types, size, and amount of PPE, workplace policies and processes related to PPE, re-use of PPE, reporting of PPE concerns to employers, support received from employers regarding PPE concerns, the adequacy of resources and staff to delivery PPE training, and confidence that the PPE training equipped respondents to practice safely during the pandemic.

## Part II: Workforce climate

**Part II** of the survey assessed domains of workforce climate. Domains included the nursing practice environment, psychosocial workplace conditions, occupational demand and resources, job satisfaction, resilience, burnout, and mental health. Domains were measured using previously validated questionnaires and subscales.

### *Practice environment*

A modified version of the Practice Environment Scale – Nursing Work Index (PES-NWI)<sup>13</sup> was included in the survey to assess the nursing practice environment. Respondents were asked the extent to which they agreed that certain desirable aspects of the practice environment were present in their current workplace, including nursing leadership (4 items; e.g., “A Director of Nursing/Midwifery which is highly visible and accessible to staff”), adequate staffing and resources (3 items; e.g., “Adequate support services allow me to spend time with my patients”), praise and supervisory support (3 items; “A supervisory staff that is supportive of the nurses/midwives”), and a nursing philosophy for quality care (3 items; e.g., “A clear philosophy of nursing/midwifery that pervades the patient care environment”). Scale response options ranged from 1 (*Strongly agree*) to 4 (*Strongly disagree*).

Response options were reverse coded prior to scoring so that higher scores indicated greater agreement that the aspect of the practice environment was present in the workplace. Following this, item scores were averaged for each subscale (score range 1 – 4). A mean score of 2.5 reflected the neutral mid-point (i.e., neither agreement nor disagreement), while scores above 2.5 showed agreement and scores below 2.5 disagreement. Respondents with only one missing item on the nursing leadership subscale were retained for subscale scoring (i.e., available item analysis). Subscale scores were not calculated for respondents with missing data on the remaining practice environment subscales because of the small number of subscale items. The adapted subscales were found to have good internal consistency ( $\alpha$  range: .86 - .94).

### *Psychosocial workplace conditions*

The Copenhagen Psychosocial Questionnaire Version 3 (COPSOQ-III)<sup>14</sup> was used in the survey to assess psychosocial workplace conditions and demands. There are short, medium, and long versions of the COPSOQ-III, with the long version containing eight domains and 45 scales. Four domains and eight scales were included in this research (Table 13). Respondents answered COPSOQ-III items on 5-point interval scales; values ranged from 0 – 100 and response options varied across survey questions (e.g., *Always* [100] to *Never/hardly ever* [0], *A very large extent* [100] to *A very small extent* [0]). Each scale was scored in the direction of the construct being measured, consequently one quantitative demand item was reverse coded prior to scoring. Mean scores were calculated for scales with more than one item (score range: 0 – 100). Scores were not calculated for respondents with missing data because of the small number of items for each scale. Internal consistency ranged from acceptable to high across subscales ( $\alpha$  range: .68 - .92).

**Table 13.** COPSOQ-III domains and scales included in the COVID and Wellbeing Survey

Domain	Scales	N items	$\alpha$	Definition
<b>Demands at work</b>	Quantitative demands	3	.68	How much work is expected to be satisfactorily completed at work
	Work pace	2	.70	How fast work tasks need to be performed
	Cognitive demands	3	.81	Work tasks that require cognitive effort
	Emotional demands	3	.75	Work involves dealing with other people's feelings
<b>Interpersonal relations and leadership</b>	Role clarity	2	.77	Understanding of role at work
	Role conflict	2	.77	Conflicting demands within a task or conflict when prioritising work tasks
<b>Work-individual interface</b>	Work life conflict	3	.92	Consequences of work for private life
<b>Health and wellbeing</b>	Self-rated health	1	-	Assessment of own general health over the past four weeks

### *Job satisfaction*

A modified version of the McCloskey/Mueller Satisfaction Scale (MMSS)<sup>15</sup> was used to measure job satisfaction among respondents. Fourteen items assessed level of satisfaction with four job characteristics, including extrinsic rewards (3 items; e.g., satisfaction with salary/wages), collegial relationships (3 items; e.g., satisfaction with opportunities for social contact at work), work scheduling and flexibility (4 items; e.g., satisfaction with compensation for working weekends), and leadership and career opportunity (4 items; e.g., satisfaction with opportunities for career advancement). Items were measured on a 5-point Likert-type scale ranging from *Very dissatisfied* (5) to *Very satisfied* (1).

Responses to MMSS items were reverse coded prior to scoring so that higher scores indicated greater satisfaction in line with the original measure,<sup>15</sup> and then item scores were averaged for each subscale (score range 1 – 5). Respondents were retained for scoring if they were missing only one item for subscales with four items; scores were not calculated for respondents with missing data on the shorter three item subscales. The revised subscales showed good internal consistency ( $\alpha$  range: .80 - .89).

### *Resilience*

Resilience was measured using the Brief Resilience Scale (BRS).<sup>18</sup> This short 6-item scale measured the ability to bounce back from stressful experiences. Respondents were asked the extent to which they agreed with items (e.g., “It is hard for me to snap back when something bad happens”) on a 5-point Likert-type scale, ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Three negatively worded items were reverse coded before calculating the mean (score range: 1 – 5). Respondents with only one missing item on the scale were retained during scoring. Scores may be interpreted using the following cut-offs: < 3 = low resilience, 3 to 4.3 = average resilience, and > 4.3 = high resilience.<sup>19</sup> Internal consistency for the scale was high ( $\alpha = .84$ ).

### Depression, anxiety, and stress

The 21-item Depression Anxiety Stress Scale (DASS-21)<sup>20</sup> was used to measure self-reported depression (7 items; i.e., low or dysphoric mood), anxiety (7 items; i.e., physical arousal, panic, and fear) and stress (7 items; i.e., tension, intolerance, and overreaction to adverse experiences). Respondents were asked to indicate to what extent statements applied to them over the last week on a scale of 0 (*Did not apply to me at all*) to 3 (*Applied to me very much, or most of the time*). Subscale item scores were summed and multiplied by two (score range: 0 – 42) to enable comparison with the full 42-item DASS measure. Respondents who were missing only one item on a subscale were retained for scoring and case mean substitution was used to replace the missing value prior to calculating the total score. Higher subscale scores indicate greater symptom severity, with scores rated as normal, mild, moderate, severe, and extremely severe based on a normative sample<sup>1</sup> (see Lovibond and Lovibond<sup>21</sup> for score ranges). Internal consistency was high across the three subscales ( $\alpha$  range: .87 - .91).

**Table 14.** Cut-off scores for severity labels for DASS-21

	Depression	Anxiety	Stress
<b>Normal</b>	0-9	0-7	0-14
<b>Mild</b>	10-13	8-9	15-18
<b>Moderate</b>	14-20	10-14	19-25
<b>Severe</b>	21-27	15-19	26-33
<b>Extremely Severe</b>	28+	20+	34+

### Work engagement

Work engagement was measured using the brief version of the Utrecht Work Engagement Scale (UWES-9).<sup>16</sup> Nine items measure frequency of occurrence across three areas of work engagement: vigour (3 items; e.g., “At work I feel bursting with energy”), dedication (3 items; e.g., “My job inspires me”), and absorption (3 items; e.g., “I am immersed in my work”). Items were measured on a 6-point scale ranging from *Never* (0) to *Always/Every day* (6).

Response items were scored so that higher scores indicated greater frequency of occurrence, and then averaged for each subscale. Respondents were retained for scoring if they were missing only one item (i.e., two of three items complete per subscale). The subscales showed good internal consistency ( $\alpha$  range: .77 - .89).

### Burnout

Burnout was measured using the most recent version of the Oldenburg Burnout Inventory OLBI;<sup>17</sup> which is job-related but not occupationally specific (e.g., items do not reference working with people). The OLBI contains two subscales: disengagement (8 items) and exhaustion (8 items). The disengagement subscale assesses negative attitudes towards and disconnection from work. The exhaustion subscale assesses emotional, physical, and cognitive strain. Respondents were asked to indicate their degree of agreement with each of the items on the scale, with response options ranging from 1 (*Strongly agree*) to 4 (*Strongly disagree*). Four items on each subscale were reverse coded before scoring so that higher subscale scores reflected greater burnout. Afterward, mean

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<sup>1</sup> Please note, severity ratings do not indicate more severe disorders.

subscale scores were calculated (score range: 1 – 4). Respondents with only one missing item on each subscale were retained during scoring. Internal consistency was good for both the exhaustion subscale ( $\alpha = .86$ ) and the disengagement subscale ( $\alpha = .80$ ). To formulate the four burnout groups, scores  $\geq 2.25$  is high exhaustion and scores  $\geq 2.1$  is considered as high (Table 15).<sup>49</sup>

**Table 15.** Oldenburg Burnout Inventory (OLBI) classification, description and cut-off scores.

Classification	Description	Cut-offs
Non-burnout	Low exhaustion and low engagement	Exhaustion < 2.25 Disengagement < 2.1
Disengaged	Low exhaustion and high engagement	Exhaustion < 2.25 Disengagement $\geq$ 2.1
Exhausted	High exhaustion and low disengagement	Exhaustion $\geq$ 2.25 Disengagement < 2.1
Burnout	High exhaustion and high disengagement	Exhaustion $\geq$ 2.25 Disengagement $\geq$ 2.1

### Data analysis

Quantitative data analyses were performed using Statistical Package for Social Sciences (SPSS) v24.0.<sup>50</sup> Descriptive analyses were performed on survey items, with valid percent reported throughout. Where applicable, the mean (*M*) and standard deviation (*SD*) were calculated and reported.

## Appendix B: Supplementary results

### Participant demographics

#### Age

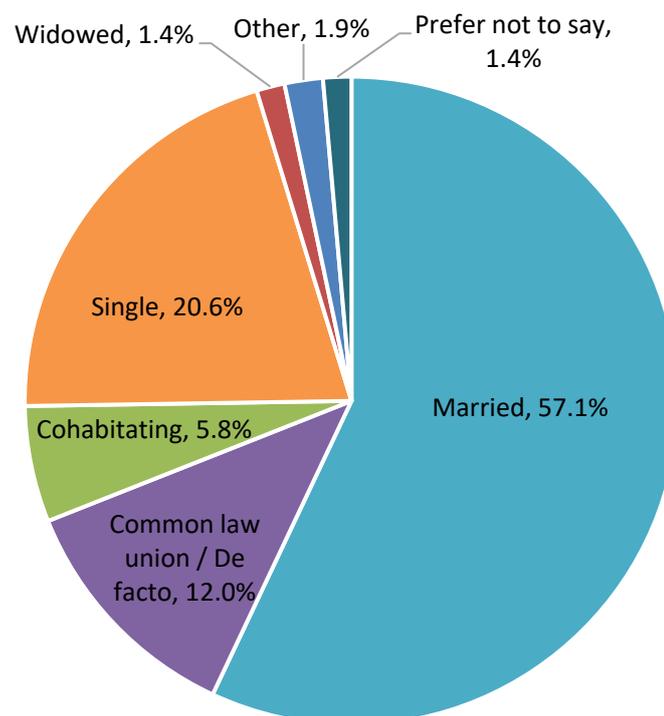
The mean age of respondents was 44.5 years ( $SD = 12.1$  years). Median age of respondents was 45 years (Interquartile Range [IQR] = 26 – 64 years).

#### Gender

Respondents largely identified as female ( $n = 1,164$ , 87.6%), followed by male ( $n = 157$ , 11.8%), and gender non-binary ( $n = 3$ , 0.2%). Five respondents preferred not to disclose their gender.

#### Marital status

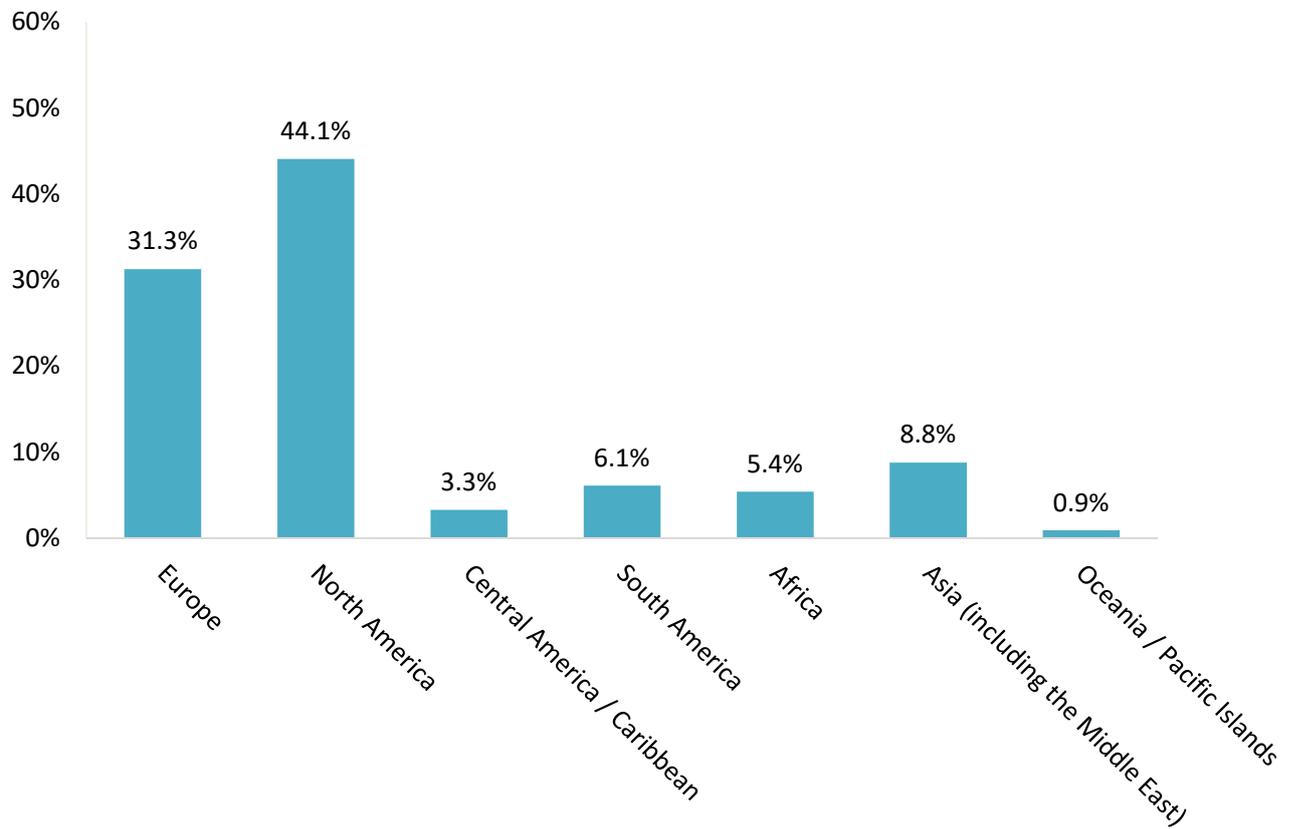
Nearly three-quarters (74.8%) of respondents indicated they were in a relationship (Figure 70). Most respondents reported being married ( $n = 754$ ), with the remaining respondents reporting being in a common law union / de facto relationship ( $n = 158$ ), or cohabiting ( $n = 76$ ). One in five people reported being single ( $n = 272$ ). Few people ( $n = 18$ ) identified as widowed.



**Figure 70.** Marital status of respondents ( $n = 1321$ ).

### Region of birth

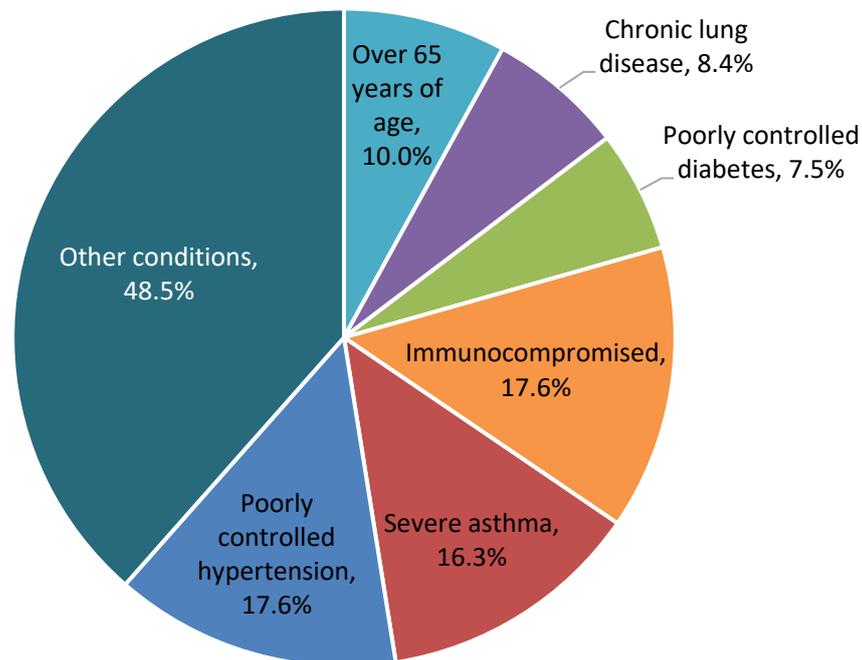
The largest proportion of respondents were born in North America ( $n = 569$ ), followed by Europe ( $n = 404$ ) and Asia ( $n = 114$ ; Figure 71). Of those who responded ( $n = 1,289$ ), 20% ( $n = 260$ ) indicated that they identify as a First Nations person. A minority of respondents ( $n = 109$ , 8.2%) reported they had migrated to another country for work.



**Figure 71.** Region of birth of respondents ( $n = 1289$ ).

### Personal health and carer responsibilities

Respondents were asked whether they had any health conditions or risk factors prior to the pandemic that they felt put them at high risk for COVID-19. Just under one in five ( $n = 248$ , 18.7%) of the 1,323 respondents indicated “yes”. Respondents who replied yes to this question were then asked to select which condition(s) they had which put them at risk. Of the conditions selected by respondents, immunocompromised ( $n = 42$ ) and poorly controlled hypertension ( $n = 42$ ) were the most frequently selected, followed by severe asthma ( $n = 39$ ; Figure 72). A range of other conditions were reported in the “other condition” category, such as controlled hypertension, cardiac conditions, cancer, obesity, autoimmune conditions, allergies, asthma (not severe), and pregnancy.



**Figure 72.** Conditions or risk factors for COVID-19 among respondents ( $n = 239$ ).

Note. Multiple responses allowed; hence percent sum greater than 100.

Just under half of respondents ( $n = 561$ , 42.3%) reported having childcare responsibilities at home and one-quarter of respondents ( $n = 337$ , 25.5%) reported having caregiver responsibilities other than children at home. When asked if their caregiving responsibilities had changed in response to COVID-19, 71.1% ( $n = 510$ ) reported their responsibilities had moderately or significantly increased. One quarter ( $n = 172$ , 24%) reported their responsibilities had not changed, and 4.9% ( $n = 35$ ) reported their carer responsibilities had decreased.



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