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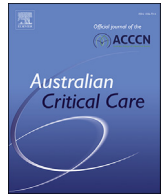
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Research paper

Perceptions of gender equity among critical care and other health professionals: A cross-sectional survey



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ABSTRACT

Objective: The objective of this study was to determine the association between gender and perceived gender equity in the critical care workforce and other health specialties.

Design and setting: We conducted an online cross-sectional survey between September and November 2020. Data on demographics and perceptions of equity including the representation of women across departments and in leadership roles, knowledge of and access to flexible work practices and carers leave, and opportunities for promotion were collected.

Participants: The study population included health professionals from critical care (defined as intensive care and emergency) and other specialties. We conducted a descriptive gender-disaggregated analysis.

Results: A total of 478 respondents (70% women) completed the survey. The mean age of respondents was 43.9 ± 11.2 years. Approximately half of respondents were medical practitioners ($n = 235$, 54%), followed by nurses ($n = 135$, 36%)—the remainder were from other professions. The critical care workforce accounted for 280 (64%) of responder practice settings. Statistically significant differences were reported between genders on issues such as having confidence that their department would resolve equity issues (87 [70.7%] men vs. 146 [48.2%] women; $p = 0.007$), access to flexible work practices (5/124 [4.0%] men vs. 20/305 [6.6%] women $p = 0.001$), and taking unpaid leave for carer responsibilities (91 [30.3%] women vs 9 [7.4%] men, $p < 0.001$).

Conclusions: This work highlights differences in how men and women perceive gender equity, particularly in the critical care workforce. These findings are important to understand health care practitioners' perceptions of gender equity, as these perceptions inform behaviour.

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1. Introduction

Women account for an estimated 67% of the global health and social-sector workforce and on average earn 28% less than men.¹ Systemic differences in gender distribution by health occupation exist in all regions of the world. Men account for the majority of

physician, dentist, and pharmacist workforce, and women comprise the majority of the nursing and midwifery workforce.¹

Compared to other specialties, intensive care medicine has some of the lowest representation of women physicians.² A global survey of the societies of intensive care medicine in 2018³ reported that women physicians are underrepresented in training programs, specialist positions, and in academic faculty and leadership roles. A qualitative study of 48 intensive care physicians and trainees in Canada indicated that 80% of women respondents experienced being either personally (underestimated or belittled) or professionally (not provided with leadership opportunity) impacted by

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gender inequity, compared to 30% of male respondents. The lower recruitment of women to intensive care medicine and lack of opportunities for career progression are likely to be influenced by long and inflexible hours, predominant male leadership, and a lack of women in role modelling positions.^{4,5} In addition to these factors, other gender-specific factors may include imposter syndrome, unconscious bias, lack of training, and bullying and harassment.⁴

Despite widespread recognition of a large gender gap in intensive care medicine⁶ and other health specialties, there are data gaps on the challenges and barriers to professional progress, including a lack of quantitative data regarding factors influencing career progress, availability, and use of flexible working arrangements and parental leave.

The aim of this study was to assess the association between gender and perceived gender inequity among the critical care workforce (defined as intensive care and emergency) and other health specialties and identify gender-specific factors influencing perceived career progression and success.

2. Methods

We conducted an online survey of members of the health workforce, predominantly targeting adult critical care health professionals (defined as those working in intensive care and/or emergency) and other members of the health workforce engaged in the CODA Change (CODA) initiative.⁷ CODA is a not-for-profit education organisation that aims to engage and connect the healthcare community on urgent threats to health. Delegates of these events include people from all over the world, from a wide range of backgrounds and experiences. The original design of this study was to gather data in real time at the 2020 CODA conference and provide just-in-time data analysis, providing actionable recommendations for the attendees to carry forward to their places of work. This was disrupted by the COVID-19 pandemic.

A key focus of the survey was on the experience of bias and inequity in relation to gender within different health disciplines and specialty areas. The survey was designed by the study steering committee with the approach to questions and style of responses based on the United Kingdom (UK) Athena Survey of Science, Engineering and Technology, a survey conducted across UK universities to determine the experience of bias and inequality in academic fields of science, engineering, and technology.⁸ The survey was tested by all six members of the study steering committee. The steering committee members included three intensive care physicians (one male and two females) and three intensive care nurses (all female).

All survey respondents were anonymous, that is, we did not collect any identifiable data such as initials or date of birth. We collected data on gender, defined as self-identity influenced by social, environmental, cultural and behavioural factors and choices,⁹ sexual orientation, discipline (defined as a particular occupation, e.g., nursing), and practice setting (specialty area of work in which a professional of any health occupation may practice, e.g., intensive care). Due to a small number of respondents working outside intensive care and emergency (critical care), we grouped practice setting into categories of intensive care, emergency, and other. We asked respondents about employment type (continuing/indefinite, fixed term, full time, part time, casual, other), years of experience, and rates of pay in US dollars (US\$).

We asked questions about perceived gender balance including representation of women overall and in senior positions. We asked questions about perceived gender equity such as opportunities for, as well as barriers to career development. We collected information on factors perceived to be associated with career success and

information on knowledge of leave policies and entitlements. A 'prefer not to answer' option was included for all questions to minimise discomfort of answering questions that may be perceived to be sensitive. The survey questions are available in the supplementary materials.

The survey was administered between September and November 2020 using Research Electronic Data Capture, with data stored on secure servers at The George Institute for Global Health. The survey was distributed via Twitter, via CODA (26,700 followers) and The George Institute for Global Health (14,000 followers) accounts. In addition to CODA's email distribution list, we distributed the survey to professional organisations including the Australian College of Critical Care Nurses and The Australian College of Emergency Medicine, Women in Intensive, Australian and New Zealand Intensive Care Society Clinical Trials Group (ANZICS CTG), and the ANZICS CTG Intensive Care Research Coordinator Interest Group. Given the focus of the survey on perceptions of gender equity, we targeted groups such as Women in Intensive and the Australian College of Critical Care Nurses and therefore acknowledge the possibility of over-representation of women respondents in interpreting our findings.

Ethics approval was obtained from the University of New South Wales (HC200607). Prior consent was provided by all participants. We report on the survey as per the *Checklist for Reporting of Survey Studies* checklist.¹⁰

2.1. Statistical analysis

We conducted a descriptive gender-disaggregated analysis. Approximately symmetric continuous variables are reported as mean \pm standard deviation with differences tested using the Student *t* test. Skewed continuous variables are reported as median and interquartile range with differences assessed using the Mann–Whitney U test. Categorical data are reported as proportions (%) and are assessed using chi-square or Fisher's exact tests, as appropriate.

2.2. Sample size

From an estimated population size of 3000 delegates involved with the CODA initiative and assuming a 5% margin of error and a confidence level of 95%, a 10–20% response rate of 300–600 respondents would provide us with adequate power to understand perceptions in the field.

3. Results

3.1. Demographics

Of 478 respondents, 305 (70.1%) were women and most identified as heterosexual (85.1%). The mean age of respondents was 43.9 ± 11.2 years. Two hundred thirty-five (54%) were medical doctors, 157 (36%) were nurses, and 40 (10%) others including paramedics, allied health, academics, or medical imaging. Intensive care (36.8%, $n = 161$) and emergency medicine (27.2%, $n = 119$) accounted for the majority of responders' practice settings (64% overall), with other practice settings grouped together as others and including primary care (4.3%, $n = 19$), prehospital care (6%, $n = 26$), anaesthetics (7.1%, $n = 31$), surgery (3%, $n = 13$), general medicine (3.2%, $n = 14$), academic (3.89%, $n = 17$), and other (8.5%). Only 1% of respondents identified as either having a nonbinary gender or preferred not to answer questions about their gender identity. Subsequently, results are reported overall and by binary gender grouping (women and men).

Participants were from Australia (71%, $n = 308$), the United States (6%, $n = 26$), the UK (5%, $n = 23$), Canada (4%, $n = 17$), New Zealand (4%, $n = 16$), and other countries (10%). The 10% of other countries included Brazil, European countries such as Greece, Germany, and the Netherlands, South Africa, and Ireland (Table 1).

3.2. Perceptions of gender balance and equal treatment by discipline

When asked about perceptions of gender balance by discipline (medicine/nursing/other), 127 (54.0%) of medical respondents felt that there were more men in medicine, compared to 3 (1.9%) nursing respondents and 15 (36.6%) respondents from other disciplines. When asked about gender equity by discipline (medicine/nursing/other), medical and other non-nursing respondents more commonly reported unequal treatment of men and women within their discipline (54.9%, $n = 129$ and 60%, $n = 24$, respectively), whereas 82 (52.2%) of nurses perceived equal treatment of men and women (Table 2).

3.3. Perceptions of confidence on issues related to gender equity

Compared to women, men were more likely to feel confident in knowing who to approach within their department to raise issues about gender inequality (77 [62.1%] men vs. 142 [46.9%] women; $p = 0.007$) and also had more confidence that their department would be responsive to concerns being raised (87 [70.7%] men vs. 146 [48.2%] women; $p = 0.007$) (Fig. 1).

3.4. Flexible work practices

There was a significant difference between men and women respondents in perception of the availability and access to flexible work hours ($p = 0.035$). A higher proportion of women had flexibility in work denied, despite it being available (5/124 [4.0%] men vs. 20/305 [6.6%] women $p = 0.001$). Compared to men, women were more likely to report denied access to job share (1/124 [0.8%] men vs 12/303 [4.1%] women, $p = 0.001$) and more likely to report using a job-share arrangement (10/124 [8.3%] men vs 48/303 [16.3%] women; $p < 0.001$) (Fig. 2). There was a significant difference in the perception of accessing part-time hours between women and men (with $p = 0.013$, $\chi^2 = 12.73$ (4 degrees of freedom)).

3.5. Carers responsibilities

Among women respondents, 160 [52.6%] had taken parental leave, whereas 50 [40.7%] men had taken parental leave. More women reported taking unpaid parental leave (91 [30.3%] women vs 9 [7.4%] men, $p < 0.001$) and less reported taking shared parental leave (5 [1.7%] women vs 4 [4.1%] men, $p = 0.005$). Women were more likely to report returning to work with fewer hours than were men (61 [36.5%] women vs 3 [5.8%] men, $p < 0.001$). Overall, 157 (37.4%) of all responders believed having caring responsibilities negatively influences career success. In women, this perceived negative impact was more common than in men (137 [46%] women vs. 20 [16.4%] men, $p < 0.001$). While there was no statistically significant difference, men were twice as likely to have carers leave

Table 1
Characteristics of survey respondents overall and by gender.

Characteristics	All ($n = 435$)	Men ($n = 125$)	Women ($n = 305$)
Age (years) mean (SD)	43.9 (11.18)	46.75 (12.49)	42.82 (10.46)
Experience (years) mean (SD)	17.24 (10.67)	18.65 (10.65)	16.78 (10.67)
Salary (\$US) n (%)			
<\$20,000	5 (1.17%)	3 (2.44%)	2 (0.66%)
\$20–45,000	16 (3.74%)	2 (2.44%)	13 (4.26%)
\$45–85,000	144 (33.64%)	27 (21.95%)	117 (38.36%)
\$85–135,000	108 (25.23%)	27 (21.95%)	81 (26.56%)
\$135–185,000	44 (10.28%)	15 (12.2%)	29 (9.51%)
>\$185,000	94 (21.96%)	43 (34.96%)	51 (16.72%)
Prefer not to answer	17 (3.97%)	5 (4.07%)	12 (3.93%)
Sexual orientation			
Heterosexual	372 (85.13%)	105 (84%)	264 (86.6%)
Homosexual	31 (7.09%)	9 (7.2%)	20 (6.6%)
Bisexual/pansexual/other	18 (4.12%)	11 (8.8%)	21 (6.8%)
Profession			
Medicine	236 (54.38%)	84 (35.9%)	150 (64.1%)
Nursing	157 (36.18%)	30 (19.3%)	125 (80.6%)
Other	38 (9.5%)	9 (23.68%)	29 (76.32%)
Speciality			
Intensive care	161 (36.84%)	43 (34.4%)	115 (37.7%)
Emergency medicine	119 (27.23%)	51 (40.8%)	67 (21.97%)
Other	37 (8.47%)	31 (24.8%)	123 (40.33%)
Position			
Continuing/indefinite	179 (41.15%)	60 (48.8%)	113 (37.1%)
Fixed term	39 (8.97%)	11 (8.9%)	28 (9.2%)
Full-time (>35 h/week)	133 (30.57%)	37 (30.08%)	95 (31.15%)
Part-time (<35 h/week)	63 (14.48%)	12 (9.76%)	51 (16.72%)
Casual	11 (2.53%)	3 (2.44%)	8 (2.62%)
Other	10 (2.30%)	0 (0%)	10 (3.28%)
Country			
Australia	308 (71.3%)	81 (65.9%)	224 (74.9%)
The United States	26 (6.02%)	13 (10.6%)	13 (4.3%)
The United Kingdom	23 (5.32%)	7 (5.7%)	16 (5.3%)
Canada	17 (3.94%)	2 (1.6%)	15 (5%)
New Zealand	16 (3.70%)	4 (3.3%)	11 (3.6%)
Other countries	42 (9.72%)	16 (12.9%)	24 (6.9%)

Note "All" total includes gender diverse, hence does not equal male plus female.
SD: standard deviation

Table 2
Perception of workforce gender balance and equity by medicine nursing, and other disciplines.

	Total N = 432	Medicine N = 235	Nursing N = 156	Others N = 41	P-value
Gender balance					<0.001
More women in my discipline	193 (44.7%)	31 (12.2%)	143 (91.7%)	19 (46.3%)	
Roughly equal numbers of women and men	94 (21.8%)	77 (32.8%)	10 (6.4%)	7 (17.1%)	
More men in my discipline	145 (33.6%)	127 (54.0%)	3 (1.9%)	15 (36.6%)	
Treatment of women and men					0.02
Men and women are not treated equally	214 (49.5%)	129 (54.9%)	61 (38.8%)	24 (60%)	
Neutral	31 (7.2%)	15 (6.4%)	14 (8.9%)	2 (5%)	
Men and women are treated equally	187 (43.3%)	91 (38.7%)	82 (52.2%)	14 (35%)	

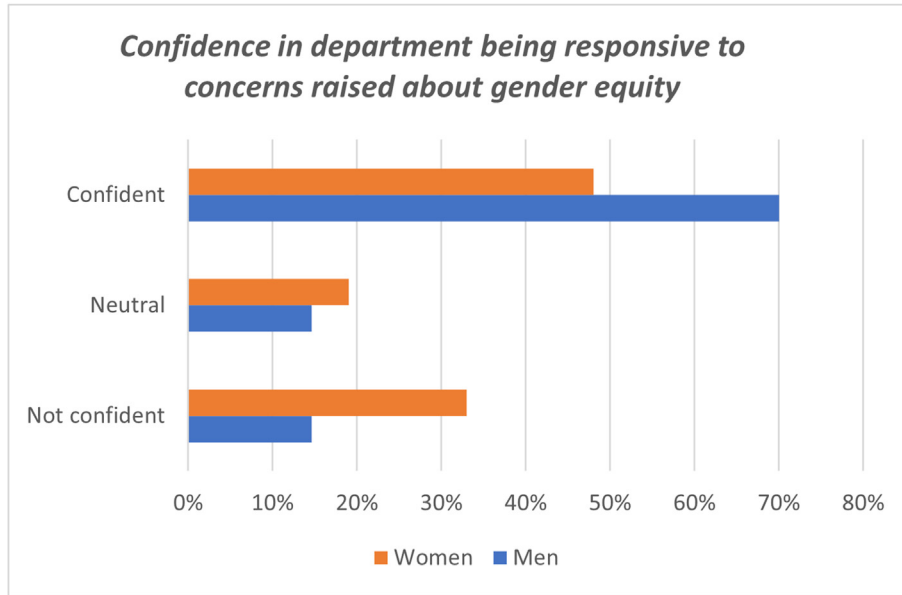


Fig. 1. Perceived confidence in department to be responsive to concerns about gender equity.

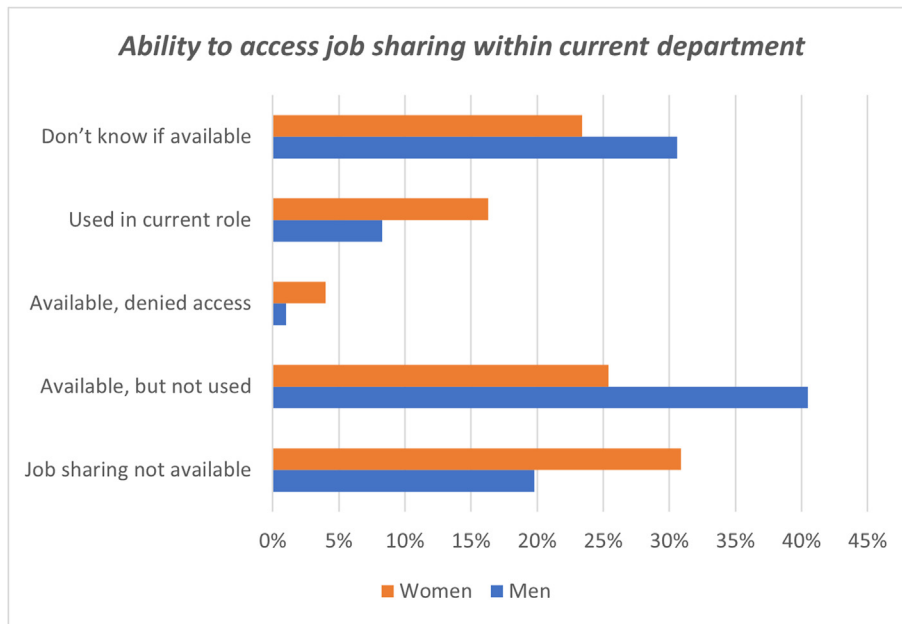


Fig. 2. Perceived ability to access job sharing within current department.

denied compared to women (8 [6.5%]men vs. 10 [3.3%]women, $p = 0.145$).

3.6. Representation in senior positions, access to opportunities and development, and receiving positive feedback

Overall, men were perceived as being more likely to hold senior positions (285/427 [66.7%] respondents, Fig. 3). When asked about recruitment and selection for new opportunities, 170 (39.8%) responders believed men to be more advantaged, 43 (10.1%) believed women to be more advantaged, and 214 (50.1%) believed there was no difference. When asked about formal training and career development opportunities, 22 (5.1%) believed women to be advantaged, 257 (60.2%) believed there was no difference, and 148 (34.7%) believed men to be more advantaged. When asked about who was more advantaged in terms of receiving positive feedback from management, 43 (10.1%) believed women were more advantaged, 285 (66.9%) believed there was no difference, and 98 (23.0%) believed men to be more advantaged. There was a significant difference in many of these perceptions (senior positions, access to opportunities and development, receiving positive feedback) when assessing the data by gender ($p < 0.001$), with men often less likely to report receiving an advantage over women (Table 3).

4. Discussion

We explored perceptions of gender equity among health professionals who primarily worked in critical care (intensive care and emergency). Respondents from medicine were most likely to report unequal treatment of men and women in their discipline. Men were more likely to feel confident that concerns raised in relation to gender equity would be responded to within their department. Men were perceived to be more represented in senior positions, and there was a gender difference in perception of who was more advantaged in terms of opportunity for career progression, with men believing women were more likely to be favoured and vice versa. Women were more likely to report being denied access to flexible working and job-share arrangements, but they were also more likely to request these compared to men.

This work fills an important data gap by describing challenges and barriers to professional progress for women. It is important to

understand healthcare practitioners' perceptions of gender equity as these perceptions inform their behaviour, specifically, their engagement at work, longevity in their profession, ambitions, and progression within the profession.^{11,12} In addition, these perceptions may also be shared by students or prospective clinicians, affecting their decision to enter certain specialties.¹³ Importantly, a clinicians' confidence in how their concerns would be responded to is highly likely to inform a decision to raise a concern and thereby contribute to cultural change.

Our findings support those from previous research indicating a gap in perceived gender equity among intensive care health professionals. We identified similar thematic issues as Parsons Leigh et al.,⁵ who defined barriers to equity such as the cycle of predominantly male leadership, a lack of opportunity for female mentorship, and interestingly, the observation of different perceptions of equity when stratifying results by gender, with men less likely to identify equity issues compared to women. We included questions on aspects of the organisation of work that are known to predominately impact women including flexible work practices, carer responsibilities, and taking parental leave. While women were more likely to access part-time appointments, job shares, and carers leave, they were also more likely to be denied job share and part-time appointments. Women perceived flexible work to be less available to them. This may be explained by a lack of confidence to ask, but our results indicate that women actively have requests for flexibility denied. Men were twice as likely to have carers leave denied, and they perceived it to be less available, compared to women. Carers leave is an important issue, as it is perceived in the workplace as a negative to career progression, which can have long-term impacts on career progression and financial status, such as the so-called "motherhood penalty".^{14–16}

The differences in perception related to raising concerns is a new finding. This might be a reflection of broader organisational culture and gender equality issues, such as the "minority tax", whereby the burden of work for organisational change falls on the under-represented group.¹⁷ In this case, perhaps women perceive the lack of response to raising concerns as shifting the onus on women (and other gender minorities) to both prove the issues that exist and fix them. The minority tax is consistently documented elsewhere, such as academic medicine,¹⁸ radiology,¹⁹ and surgery.²⁰ Women are also expected to perform at higher standards than their

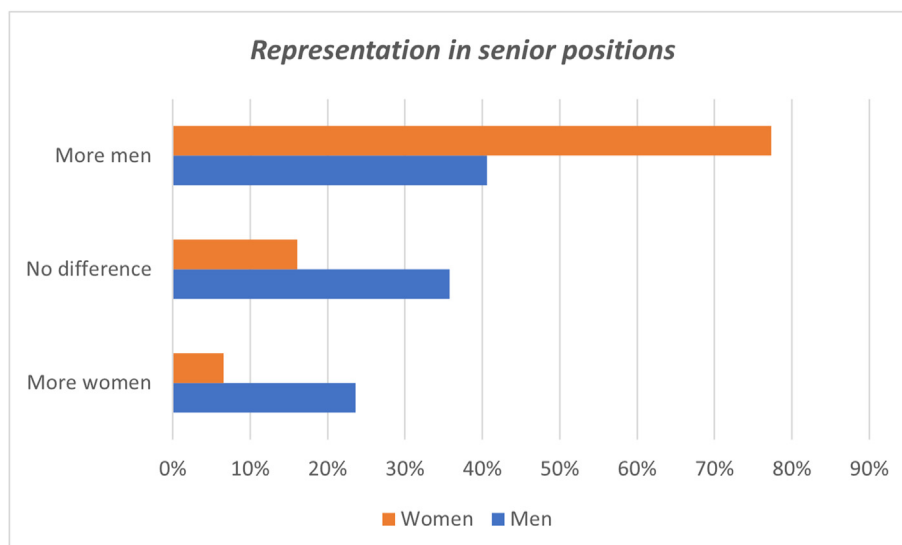


Fig. 3. Perceptions of representation in senior positions.

Table 3
Perceptions of departmental confidence on issues related to gender equity, flexible work practices and representation in leadership positions, new opportunities, and receiving positive feedback.

	Total N = 427	Men N = 124	Women N = 303	P-value
Know who to approach with concerns about gender equity				0.007
Do not know who to approach	154 (36.1%)	31 (25.0%)	123 (40.6%)	
Unsure who to approach	54 (12.5%)	16 (12.9%)	38 (12.5%)	
Know who to approach	219 (51.3%)	77 (62.1%)	142 (46.9%)	
Confidence in department being responsive to concerns raised about gender equity				<0.001
Not confident about departmental responsiveness	118 (27.7%)	18 (14.6%)	100 (33%)	
Neutral	75 (17.6%)	18 (14.6%)	57 (18.8%)	
Confident about departmental responsiveness	233 (54.7%)	87 (70.7%)	146 (48.2%)	
Ability to access flexible working hours/days within department				0.035
Not available	100 (23.31%)	22 (17.7%)	78 (25.57%)	
Is available but did not use	68 (15.85%)	29 (23.4%)	39 (12.79%)	
Available but denied access	25 (5.83%)	5 (4.0%)	20 (6.56%)	
Used in current role	202 (47.09%)	56 (45.2%)	146 (47.87%)	
Do not know if available	34 (7.93%)	12 (9.7%)	22 (7.21%)	
Ability to access job sharing within current department				0.001
Job sharing not available	115 (27.64%)	24 (19.83%)	91 (30.85%)	
Available but not used	124 (29.81%)	49 (40.5%)	75 (25.42%)	
Available denied access	13 (3.13%)	1 (0.83%)	12 (4.07%)	
Used in current role	58 (13.94%)	10 (8.26%)	48 (16.27%)	
Don't know if available	106 (25.48%)	37 (30.58%)	69 (23.39%)	
Ability to access part-time hours within current department				0.013
Part-time work is not available	63 (14.72%)	12 (9.68%)	51 (16.78%)	
Available but not used	130 (30.37%)	52 (41.94%)	78 (25.66%)	
Available denied access	16 (3.74%)	3 (2.42%)	13 (4.28%)	
Used in current role	182 (42.52%)	46 (37.1%)	136 (44.74%)	
Do not know if available	37 (8.64%)	11 (8.87%)	26 (8.55%)	
Representation in senior positions				<0.001
More women	49 (11.5%)	29 (23.6%)	20 (6.6%)	
No difference	93 (21.7%)	44 (35.8%)	49 (16.1%)	
More men	285 (66.7%)	50 (40.6%)	235 (77.3%)	
Advantaged in recruitment and selection for new opportunities				<0.001
Women more advantaged	43 (10.1%)	32 (25.8%)	11 (3.6%)	
No difference	214 (50.12%)	70 (56.4%)	144 (47.5%)	
Men more advantaged	170 (39.8%)	22 (17.7%)	148 (48.8%)	
Advantaged in allocation of formal training and career development				<0.001
Women more advantaged	22 (5.15%)	13 (10.57%)	9 (2.96%)	
No difference	257 (60.2%)	92 (74.8%)	165 (54.28%)	
Men more advantaged	148 (34.7%)	18 (14.63%)	130 (42.76%)	
Advantaged in receiving positive feedback from management				<0.001
Women more advantaged	43 (10.1%)	17 (13.82%)	26 (8.58%)	
No difference	285 (66.9%)	94 (76.42%)	191 (63.04%)	
Men more advantaged	98 (23%)	12 (9.76%)	86 (28.38%)	

male counterparts, which may explain the difference in perception²¹—women feel that they have to work harder to be heard or noticed. In fact, data supports that women do have to work harder to receive equivalent recognition, especially if they are from a minority group.²² To prevent the minority tax, inclusive leadership identifies and removes it by providing administrative support, that is, formal recognition of workload that is championed by the dominant group.¹⁷

Just over one-third of our respondents were nurses, most of whom were women (80.6%). This is consistent with global health workforce data,¹ with estimates that men make up around 10% of the nursing workforce globally (except for the African region, which has around 35% men in their nursing workforce).¹ While our respondents perceived opportunities for women to be mostly equal to men in nursing, this is not supported by other data. Globally, nurses suffer from a gender pay gap, largely explained by working hours, the heavier load of unpaid work, and domestic responsibilities.^{23–26} Male nurses consistently earn more than their female counterparts in western health settings.^{23,27} Despite male nurses making up the minority portion of the nursing workforce in the United Kingdom, they have a disproportionately higher representation in leadership roles.²⁵

Most nurse respondents felt that women had the advantage or that there was no difference in advantage despite the evidence being contrary, whereas medicine and allied health respondents all felt men were advantaged. This could be explained by nursing workforce norms and organisational structures whereby women have been socialised to consider their role as caring for family and less likely to be suitable for management roles due to caring responsibilities.²⁶ It may also reflect differences in gender balance between critical care nursing and critical care medicine—one heavily female-dominated (nursing) and the other male-dominated (medicine); this is likely to influence norms and expectations within the professions.²⁸ Our study did not explore differences in perception across practice settings and non-critical care specialties.

This study highlights differences in perception of gender equity in the health workforce, which is relevant for healthcare employers and managers. The implications for practice include systemic and individual change in critical care organisations. For example, there is a clear need for transparent career-progression processes relative to opportunity, transparent flexible work practices (such as suitable meeting times, alternative working locations where appropriate), and clear pathways for escalating issues related to gender equity. At

an individual level, managers and employers should consider their own perceptions and biases, which might influence their decisions regarding gender equity issues.

4.1. Limitations

This study has several limitations. First, the survey was sampled from a community of primarily critical care health professionals (those who work in intensive care or emergency settings), making it difficult to extrapolate results outside of this setting. Second, social media was used to recruit participants, meaning perspectives of those who do not use social media may have been missed, and, similarly, there is a possibility that participants may have inadvertently completed the survey twice. There was an over representation of women respondents, who may have been more motivated to complete the survey due to negative experiences. The male-identifying respondents may already view gender equity as a valuable topic for research, which may not give a representative view of all men working in healthcare professions. Recruiting participants from multiple countries may also be problematic due to the differing gender equity laws internationally. Other limitations include our lack of defining career success or senior position, due to the broad range of leadership roles available. Due to a small number of respondents in various categories, we were unable to provide a detailed analysis of subgroups, such as those who identify as nonbinary. In terms of transgender representation, the results are similar to the Williams Institute data, which estimates that 0.6% of adults are transgender.²⁹ While our participant sample size met the statistical threshold based on the conference delegate numbers, it went out to a broader audience, and a perception survey measured the individual's perception at that place and time. This perception may change and is not the same as counting women and men within professions or a department, for example, and as it explored perceptions of gender equity, this is limited in terms of applicability as it refers to individuals' perceived disadvantage, as opposed to objective disadvantage. Finally, we acknowledge that the survey was conducted during the first year of the COVID-19 pandemic. This may have negatively impacted perceptions at an unprecedented time for health workers.

5. Conclusion

Gender inequity remains an important issue within the critical care workforce. It is crucial for the critical care workforce to address systemic barriers for women and to enact cultural change. Health organisations must ensure equitable access to flexible work policies, transparent processes for promotion and development, and pathways for the escalation of issues related to equity.

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CRediT authorship contribution statement

All authors have made substantial contributions to conception and design of the study as well as data acquisition, analysis, and interpretation. All authors have been involved in draughting the manuscript or revising it critically for important intellectual content; and all authors have given final approval of the version to be published. Each author takes public responsibility of the paper and have agreed to be accountable for all aspects of the work in

ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and revised.

Conflict of interest

No conflicts declared.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.aucc.2023.07.003>.

References

- [1] Boniol MMM, Xu L, Wuliji T, Khassoum D, Campbell J. Gender equity in the health workforce: analysis of 104 countries. World Health Organization; 2019.
- [2] Parsons Leigh J, de Grood C, Ahmed S, Bosma K, Burns KEA, Fowler R, et al. Improving gender equity in critical care medicine: a protocol to establish priorities and strategies for implementation. *BMJ Open* 2020;10(6):e037090.
- [3] Venkatesh B, Mehta S, Angus DC, Finfer S, Machado FR, Marshall J, et al. Women in Intensive Care study: a preliminary assessment of international data on female representation in the ICU physician workforce, leadership and academic positions. *Crit Care* 2018;22(1):211.
- [4] Yong SA, Moore CL, Lussier SM. Towards gender equity in intensive care medicine: ten practical strategies for improving diversity. *College of Intensive Care Medicine* 2021:132–6.
- [5] Leigh JP, Grood C, Ahmed SB, Ulrich AC, Fiest KM, Straus SE, et al. Toward gender equity in critical care medicine: a qualitative study of perceived drivers, implications, and strategies. *Crit Care Med* 2019;47(4):e286–91.
- [6] Vincent J-L, Juffermans NP, Burns KEA, Ranieri VM, Pourzitaki C, Rubulotta F. Addressing gender imbalance in intensive care. *Crit Care* 2021;25(1):147.
- [7] CODA. <https://codachange.org/#about>; 2022.
- [8] ASSET. 2016: National survey examining STEM academics' experiences of gender equality. <https://www.advance-he.ac.uk/guidance/equality-diversity-and-inclusion/employment-and-careers/asset-2016>; 2016.
- [9] Clayton JA, Tannenbaum C. Reporting sex, gender, or both in clinical research? *JAMA* 2016;316(18):1863–4.
- [10] Sharma A, Minh Duc NT, Luu Lam Thang T, Nam NH, Ng SJ, Abbas KS, et al. A consensus-based checklist for reporting of survey studies (CROSS). *J Gen Intern Med* 2021;36(10):3179–87.
- [11] Chartrand TL, Bargh JA. The chameleon effect: the perception-behavior link and social interaction. *J Pers Soc Psychol* 1996;70(6):893–910.
- [12] Henderson LR, Dam R, Shah SGS, Ovseiko PV, Kiparoglou V. Perceptions of gender equity and markers of achievement in a national Institute for health research biomedical research centre: a qualitative study. *Health Res Pol Syst* 2022;20(1):102.
- [13] Winkel AF, Telzak B, Shaw J, Hollond C, Magro J, Nicholson J, et al. The role of gender in careers in medicine: a systematic review and thematic synthesis of qualitative literature. *J Gen Intern Med* 2021;36(8):2392–9.
- [14] Ehrlich U, Möhring K, Drobnic S. What comes after caring? The impact of family care on women's employment. *J Fam Issues* 2020;41(9):1387–419.
- [15] Dias FA, Chance J, Buchanan A. The motherhood penalty and the fatherhood premium in employment during covid-19: evidence from the United States. *Res Soc Stratif Mobil* 2020;69:100542.
- [16] Fasang AE, Aisenbrey S, Schömann K. Women's retirement income in Germany and Britain. *Eur Socio Rev* 2012;29(5):968–80.
- [17] Coe IR, Wiley R, Bekker L-G. Organisational best practices towards gender equality in science and medicine. *Lancet* 2019;393(10171):587–93.
- [18] Rodríguez JE, Campbell KM, Pololi LH. Addressing disparities in academic medicine: what of the minority tax? *BMC Med Educ* 2015;15(1):6.
- [19] Pandit R, Minton LE, Smith EN, Spalluto LB, Porter KK. Equal pay for equal work in radiology: expired excuses and solutions for change. *Clin Imag* 2022;83:93–8.
- [20] Oseni TO, Kelly BN, Pei K, Nielsen M, Pitt SC, Diego E, et al. Diversity efforts in surgery: are we there yet? *Am J Surg* 2022;224(1):259–63.
- [21] Gerull KM, Loe M, Seiler K, McAllister J, Salles A. Assessing gender bias in qualitative evaluations of surgical residents. *Am J Surg* 2019;217(2):306–13.
- [22] Witteman HO, Hendricks M, Straus S, Tannenbaum C. Are gender gaps due to evaluations of the applicant or the science? A natural experiment at a national funding agency. *Lancet* 2019;393(10171):531–40.
- [23] Muench U, Sindelar J, Busch SH, Buerhaus PI. Salary differences between male and female registered nurses in the United States. *JAMA* 2015;313(12):1265–7.

- [24] Walters V, Lenton R, French S, Eyles J, Mayr J, Newbold B. Paid work, unpaid work and social support: a study of the health of male and female nurses. *Soc Sci Med* 1996;43(11):1627–36.
- [25] RCN RCoN. Gender and nursing as a profession. 2020.
- [26] Andrews ME, Stewart NJ, Morgan DG, D'Arcy C. More alike than different: a comparison of male and female RNs in rural and remote Canada. *J Nurs Manag* 2012;20(4):561–70.
- [27] Muench U, Busch SH, Sindelar J, Buerhaus PI. Exploring explanations for the female-male earnings difference among registered nurses in the United States. *Nurs Econ* 2016;34(5):214–23.
- [28] Karpowitz CF, Mendelberg T, Shaker LEE. Gender inequality in deliberative participation. *Am Polit Sci Rev* 2012;106(3):533–47.
- [29] Flores AR, Herman J, Gates GJ, Brown TN. How many adults identify as transgender in the United States?. 2016.