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The gender pay gap in the Australian nursing workforce: A retrospective observational study

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ABSTRACT

Aim: To explore the gender pay gap among the Australian nursing workforce and identify reasons for such a gap.
Background: Gender discrimination exists in nursing, with men having a higher rate of pay and a faster rate of career progression, irrespective of experience and qualifications. In addition, men are shown to have a greater representation in leadership roles compared to the proportion of men in the profession.
Methods: The study uses a retrospective, observational survey design of graduate nurses from all Australian universities.
Findings: The gender wage gap was around 4% at six months after graduation, increasing to 13% at three years after graduation, favouring nurses who are men. Men also reported being more overqualified than women upon graduation. In addition, graduates who were overqualified had a 21% disparity in pay. Nursing graduates from non-English speaking backgrounds and lower socioeconomic backgrounds had an increased probability of being underemployed.
Conclusions: Overall, nurses who were men are earning a higher wage than women nurses upon graduation and at three years post-graduation in Australia. These findings, despite an enterprise bargaining agreement, are consistent with the gender pay disparity gap in Australia and with international research on this topic. Of note from this study is the notion that men are working unsociable hours and weekends and are, therefore, receiving penalty rates that increase their wages. This notion is also consistent with the current ideology in Australia of men being breadwinners despite changes in gender equality in the country.
Implications for nursing management: Organisations need to offer flexible work environments that will allow women to re-enter the workforce while caring for dependents. This can include shorter shifts allowing women to work flexible hours to care for dependents, job sharing with other nurses of similar skill level and working across multiple areas to allow for flexibility. In addition, healthcare organisations should increase support and promote positive practice environments, including wages in order to sustain and retain the future workforce.

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Summary of relevance

Problem or issue

Reasons for the gender pay disparity gap and the impact of experience and perception of underemployment and over-qualification among the Australian nursing workforce is unknown.

What is already known

Gender discrimination exists in nursing with men having a higher rate of pay and a faster career progression irrespective of experience and qualifications.

What this paper adds

Nurses that were men are earning a higher wage compared to women upon graduation and at 3 years post-graduation. Of note from this study, is the notion that men are working unsociable hours and weekends and are, therefore, receiving penalty rates that increase their wages.

1. Introduction

Gender is one of the main social determinants of health, as it is a driver for inequalities, discrimination and exclusion (Manandhar, Hawkes, Buse, Nosrati, & Magar, 2018). Gender disparity refers to the differences in opportunities between men and women, ability to access resources, status, power and roles, which are usually set out by societal, political and cultural expectations (European Insitute for Gender Equality, 2023; Manandhar et al., 2018). In addition, sexual orientation, sexual identity, socioeconomic status, ethnicity and class can also impact gender parity (European Insitute for Gender Equality, 2023).

The Global Gender Gap Index, which focuses on the binary genders of men and women, benchmarks gender parity across 146 countries focusing on economic participation and opportunity, educational attainment, political empowerment and health and survival (World Economic Forum, 2022). Traditionally, access to resources, well-being and status has favoured men usually due to institutional laws, justice and culture (European Insitute for Gender Equality, 2023). However, most countries have shown an improvement in gender parity for binary genders over the last two years, with the global gender gap closing by 62% between 2020 and 2022 (World Economic Forum, 2022). In 2023, Australia was ranked 26 for gender equality (World Economic Forum, 2022) in the world and is the 4th highest with respect to the level of tertiary-educated women in the Organisation for Economic Co-operation and Development (OECD, 2023). These figures indicate that while there is a high number of tertiary-educated women in Australia, there are areas that require improvement in terms of gender equality in the country. The Australian government has committed $65 million dollars in 2022/2023 for gender equality initiatives, with a specific focus on ending violence against women and children, advancing economic empowerment and enhancing the voice of women in decision-making and leadership (Department of Foreign Affairs and Trade, 2023).

In 1969, it became a legal requirement for Australian businesses to pay men and women the same amount if performing the same roles (National Australian Museum, 2020). This requirement was further enforced through the Workplace Gender Equality Act of 2012 (Government, 2016). However, figures from 2022 indicate a national gender pay gap of 13.3%, which equates to men earning AUS$1 to every 87c earned by a woman (Workplace Gender Equality Agency, 2023). This gender pay disparity is identified as soon as individuals graduate from an Australian university, with figures showing that, on average, men earn AUS$69,400 compared to women earning AUS $67,400 across all study areas (Quality Indicators for Learning and Teaching, 2023). In addition, men dominate in leadership roles across women-dominant professions (Workplace Gender Eqaulity Agency, 2019).

In 2018, 53% of all Australians were employed in a gender-dominant profession, with healthcare, social services, education and training identified as female-dominant professions and mining, construction and transport identified as male-dominant professions (Workplace Gender Eqaulity Agency, 2019). In nursing and midwifery, 88.35% of the profession is women (Department of Health and Aged Care, 2021); however, the median annual salaries on graduation are noticeably different between men and women (Li, Duffield, & Doleman, 2022), at AUS$68,900 and AUS$67,800, respectively, in 2022 (Quality Indicators for Learning and Teaching, 2023). This is despite the fact that in the Australian industrial landscape, nursing wages are determined by an enterprise agreement made under the Fair Work Act 2009. In addition, other forms of collective agreements operate in each state for the public and private sectors. In the private sector, these agreements largely align with the wages and conditions of the public sector (Australian Nursing & Midwifery Federation, 2022). As such, nurses working in the public sector in the same State/Territory as a first-year registered nurse (RN) would earn the same salary according to the industrial agreement. However, differences may be noted in the private sector (Australian Nursing & Midwifery Federation, 2022).

A recent integrative review of gender discrimination in nursing identified a gender pay gap favouring nurses who were men, with men also experiencing a faster rate of career progression irrespective of experience and qualifications (Gauci, Elmir, O'reilly, & Peters, 2022). Further, in a study exploring nursing pay by gender in the UK, Punshon et al. (2019) identified an over-representation of men in senior nursing roles in the United Kingdom compared to the proportion of men in the profession. Perception of gender disparity in the nursing profession has been shown to increase job stress and burnout, decrease job satisfaction and result in a higher rate of nurse turnover (Gauci et al., 2022). These negative outcomes are a concern considering the estimated future shortage of 14 million nurses (International Council of Nurses, 2021).

While it is known that a gender pay disparity exists in the Australian nursing workforce from the time of graduation, the impact of experience and perception of underemployment and over-qualification is unknown. Therefore, the aim of this study is to explore the reasons for such a gap. For the purpose of this study, gender was gathered from a survey that only focused on the traditional binary genders of men and women. Therefore, these traditional binary genders will be discussed in relation to gender pay disparity. However, we acknowledge the evolving discourse that recognises gender as a spectrum beyond biological determination and the discrimination and marginalisation that these individuals may experience.

2. Methods

2.1. Design

This study uses a retrospective, observational study design based on a national survey of graduates.

2.2. Data collection

This study uses data from a national graduate survey from Australian universities, the Graduate Outcomes Survey-Longitudinal (GOS-L) (Quality Indicators for Learning and Teaching, 2023). The GOS-L is commissioned by the Australian Federal Department of Education as part of the Quality Indicators for Learning and Teaching surveys to measure student or graduate outcomes. Graduates who have completed a higher education qualification are invited to participate in the survey by their respective institutions at around six

Table 1
Demographics and employment activities of Australian nursing graduates.

Variable	Full sample	Female	Male
Female	0.90	–	–
	(0.30)	–	–
Age	32.61	32.37	34.70
	(10.80)	(10.79)	(10.72)
Six-month outcomes			
Employed at six months	0.91	0.91	0.90
	(0.29)	(0.28)	(0.30)
Unavailable for work at six months	0.02	0.02	0.02
	(0.12)	(0.12)	(0.14)
Unemployed at six months	0.07	0.07	0.08
	(0.26)	(0.26)	(0.27)
Engaged in further study at six months	0.09	0.09	0.11
	(0.29)	(0.28)	(0.32)
Three-year outcomes			
Employed at three years	0.92	0.92	0.92
	(0.27)	(0.27)	(0.27)
Unavailable for work at three years	0.05	0.05	0.04
	(0.21)	(0.21)	(0.20)
Unemployed at three years	0.03	0.03	0.03
	(0.18)	(0.18)	(0.18)
Engaged in further study at three years	0.26	0.26	0.28
	(0.44)	(0.44)	(0.45)
Observations	4250	3813	437

Standard deviations are presented in parentheses.

months after graduation. Survey participants who completed the six-month survey are followed up again at three years after graduation. Institutional graduate data were sent to the Social Research Centre, based at the Australian National University, for collation into a national dataset. The national dataset was requested and obtained through one of the authors' institutions via a data-sharing agreement entered into by all universities. The 2019, 2020 and 2021 waves of the GOS-L are used in this study, with the years indicating the year of the three-year follow-up survey. Response rates were 56%, 50% and 49% for the 2019, 2020 and 2021 waves, respectively. Demographic information on the survey participants, including gender (men and women genders only) and age, was drawn from administrative student unit record data in the universities' databases.

2.3. Sample/participants

The study sample consisted of graduate nurses who reside in Australia and completed a Bachelor of Nursing or Bachelor of Nursing Honours degree, excluding midwifery. The study sample consisted of 4250 graduate nurses who completed the survey at six months and three years post-graduation. The summary statistics for the full study sample and by gender are presented in Table 1.

Women comprised 90% of the sample. Women nurse graduates had a mean age of 32 years, while the average age of graduate nurses who were men was slightly older, at 35 years. Broadly speaking, the labour force activity of women and nursing graduates who were men was similar in terms of proportions in employment, unemployment, availability for work and engagement in further study at six months and three years after graduation. The mean characteristics of the sample are presented in Table 1.

3. Data analysis

3.1. Measures

Our main outcome of interest is the annual salary of the graduates, reported in Australian Dollars. In addition, we also look at the employment outcomes of unemployment, employment as an RN, overqualification, underemployment and earnings. These are defined as follows. Unemployment is defined as those who are not in but are seeking paid employment. Occupation was coded in the data according to the Australian and New Zealand Standard Classification of Occupations, which contains the category 'Registered Nurses'.

We measure self-reported overqualification through the Scale of Perceived Overqualification (SPOQ). The SPOQ consists of eight Likert questions assessing the dynamics between education, skills, qualification and requirements of the job. Responses ranged from 1 = Strongly disagree to 5 = Strongly agree, with a 3 indicating a neutral response of neither disagree or agree. A mean SPOQ score of 3.5 or above indicated that respondents were overqualified. Underemployment is defined as those in part-time employment but seeking full-time work. These measures were all coded as binary variables.

3.2. Analysis

Gender differentials in the employment outcomes of unemployment, employment as an RN, overqualification and underemployment were assessed using binary logistic regression models. To assist interpretation of the logistic regression results, average marginal effects were calculated.

Gender differences in salaries were examined through linear regression models, specifically via the estimation of Mincerian earnings models that have been extensively used in the labour economics literature. Mincerian earnings models are log-linear models where the outcome earnings variable is transformed and expressed in logarithmic format. Furthermore, age is used in Mincerian earnings models as a proxy for work experience. A commentary and explanation of the Mincerian earnings function can be found in Rodel and Arvin (2017). In addition, the decomposition of

Table 2
Results from the logistic regression model of employment outcomes.

Variable	Unemployed Six months	Unemployed Three years	RN Six months	RN Three years	Overqualified Six months	Overqualified Three years	Underemployed Six months	Underemployed Three years
Female	−0.000	0.002	−0.040	0.020	−0.017	−0.029**	0.003	0.003
	(0.013)	(0.009)	(0.026)	(0.021)	(0.016)	(0.012)	(0.014)	(0.010)
Age	0.000	0.000	0.001	−0.002***	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
RN	–	–	–	–	−0.217***	−0.081***	−0.103***	−0.007
	–	–	–	–	(0.010)	(0.009)	(0.009)	(0.007)
Part-time study	0.019*	0.007	−0.057***	−0.044***	−0.001	0.010	−0.007	0.009
	(0.010)	(0.007)	(0.021)	(0.017)	(0.013)	(0.011)	(0.012)	(0.007)
Honours	(a)	−0.036	−0.052	−0.102**	−0.000	0.037	−0.054	−0.020
	(a)	(0.031)	(0.060)	(0.046)	(0.038)	(0.024)	(0.052)	(0.031)

Note: ***, ** and * indicates statistical significance at the one, five and ten percent levels, respectively.
(a) denotes the variable for honours being omitted from the regression model as all graduates who completed honours were employed.
Standard errors are presented in parentheses.

earnings techniques developed by Blinder (1973) and Oaxaca (1973) was used to examine if gender earnings gaps, if any, can be attributed to differences in human capital endowments or to unequal treatment of human capital characteristics across genders.

4. Ethics

The data used in this study was from an existing non-identifiable survey data where informed consent was provided by respondents. Therefore, ethics approval was not required for this study. All data were stored as per the NHMRC guidelines (National Health and Medical Research Council, 2015).

5. Findings

5.1. Models for employment outcomes

The results from the logistic regression models of employment outcomes are presented in Table 2. Further, Table 2 presents the average marginal effects estimated for four employment outcomes, namely unemployment, becoming an RN, overqualification and underemployment, at six months and three years after graduation.

The marginal effects presented in Table 2 indicate that gender was only associated with the employment outcome of being overqualified, with the other estimates on gender being statistically insignificant. Specifically, women graduate nurses were 3% less likely to be overqualified at three years after graduation. The age of the graduate nurses was not associated with the employment outcomes examined, with nearly all estimates being statistically insignificant and the only significant estimate for the outcome of being an RN at three years after graduation being significant but at a very small 0.2% effect size.

Graduates who had studied part-time during their university studies were 2% more likely to be unemployed at six months after graduation, but this effect dissipated at three years. They were also less likely to be employed as RNs, by 6% at six months and 4% at three years, respectively. Part-time study was, however, not associated with overqualification or underemployment. Honours study was associated with a reduced 10% probability of being an RN at three years after graduation but not with any other employment outcome.

Graduate nurses who identified as Indigenous were not associated with any statistically significant effects on employment outcomes. Graduates from a Non-English speaking background (NESB) were associated with an increased probability of unemployment by 3%, a reduced probability of being an RN by 12% and an increased probability of underemployment by 5%, at six months. They were, however, not associated with any employment outcomes in the longer term at three years after graduation. Graduates who had a physical or mental disability had an increased 2% probability of unemployment at three years after graduation but were not associated with different odds of unemployment at six months. Disability was also not associated with changes in the likelihood of being an RN at either time points, nor with underemployment. However, disability was associated with a 5% increased probability of overqualification for the entire sample at six months, reducing to 3% at three years after graduation. For graduates from a low-socioeconomic status (SES) background, there was a 2% increased probability of unemployment at six months, a 3% increased probability of being an RN at three years and a 2% increased probability of being underemployed, with other estimates being statistically insignificant.

5.2. Models for graduate earnings

Results from the linear regression models for nursing graduate salaries are presented in Table 3. The outcome variable for these models is the natural logarithm of annual salaries. The first three columns of Table 2 present the results for the full sample, RNs and non-RNs, at six months after graduation. The last three columns of Table 2 present the results for the same groups but at three years after graduation.

It can be seen from Table 2 that a gender wage gap for graduate nurses is evident. The gender wage gap was around 4% at six months after graduation, increasing to 13% at three years after graduation. The regression results for stratified samples of RNs and non-RNs indicate that the gender earnings gap also exists for RNs, at around 6% six months after graduation, doubling to 13% three years after graduation. For non-RNs, there was no statistically significant earnings gap at six months, but a 14% earnings gap was observed at three years. The gender earnings gap at three years after graduation was of similar magnitude for RNs and non-RNs.

Further, RNs earned around 6% more than non-RNs at six months, but there was no distinguishable earnings difference at three years after graduation. Overqualification was associated with sizable earnings reduction, at around 21% at six months. At three years after graduation, the overqualification earnings reduction reduced, but was still substantial at 9%. Similar patterns of earnings disadvantage associated with overqualification were observed in the non-RN sample. Interestingly, overqualification was not associated with earnings reduction in the RN sample.

As expected, graduate nurses who were underemployed consistently earned less than their counterparts who had adequate levels of employment. Further, the effects associated with underemployment were sizable, with effect sizes at six months after graduation ranging from 22% for non-RNs to 28% in the full sample. At three years after graduation, the effect of underemployment on salaries was reduced to 13% for the full sample. Furthermore, the estimated earnings disadvantage for non-RNs was still the same at 22% but was statistically insignificant for RNs.

There were also earnings differences across sectors of employment. Compared to the reference group who were employed in the public sector, those in the private sector and not-for-profit sector earned less. This was particularly so for those in the private sector, who earned up to 9% less than those in the public sector at both six months and three years after graduation.

Graduate nurses who completed honours had a salary advantage of 15% at six months after graduation and 16% at three years after graduation. The honours premia was particularly large for non-RNs, at 17% six months after graduation and 37% three years after graduation. In contrast, the honours premia for RNs was 8% at six months after graduation and was statistically insignificant at three years after graduation.

The regression models also contained variables for age and its quadratic term as a proxy for work experience. These results indicated that work experience, as proxied by age, was not associated with salaries in the short term at six months but had a positive association at three years. To draw out the effects of work experience more, the analyses were rerun for two age groups: those who were 25 years old and below and those 26 years and above (full results not presented, available on request). The results for these models on samples by age group indicate that salary differences by gender widened with age or work experience. Specifically, the coefficient for women was statistically insignificant for the sample aged 25 years and younger at both six months and three years. For those aged 26 years and older, gender wage gaps of 5% and 16% were present at six months and three years, respectively.

Table 3
Results from the Models of Nursing Graduate Salaries.

	Full sample	RNs	Non-RNs	Full sample	RNs	Non-RNs
Variables	Six months	Six months	Six months	Three years	Three years	Three years
Female	-0.043***	-0.055***	-0.028	-0.131***	-0.128***	-0.139***
	(0.016)	(0.016)	(0.040)	(0.030)	(0.037)	(0.051)
RN	0.058***			-0.030		
	(0.012)			(0.024)		
Overqualified	-0.211***	-0.028	-0.255***	-0.090**	-0.023	-0.117**
	(0.018)	(0.026)	(0.030)	(0.036)	(0.051)	(0.051)
Underemployed	-0.280***	-0.272***	-0.221***	-0.127**	-0.058	-0.222**
	(0.021)	(0.026)	(0.038)	(0.058)	(0.077)	(0.087)
Private sector	-0.080***	-0.069***	-0.087***	-0.085***	-0.088***	-0.068*
	(0.012)	(0.012)	(0.028)	(0.023)	(0.029)	(0.036)
Not-for-profit	0.008	-0.011	0.009	-0.070*	0.007	-0.180***
	(0.021)	(0.022)	(0.044)	(0.040)	(0.052)	(0.063)
Weekly hours worked	0.014***	0.010***	0.019***	0.012***	0.012***	0.013***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Age	0.004	-0.001	0.012	0.015**	0.008	0.022**
	(0.003)	(0.003)	(0.007)	(0.006)	(0.008)	(0.010)
Age-squared/1000	-0.017	0.026	-0.114	-0.218***	-0.144	-0.296**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Honours	0.145***	0.076*	0.173*	0.155**	0.023	0.366***
	(0.039)	(0.040)	(0.090)	(0.075)	(0.095)	(0.122)
Constant	10.317***	10.599***	9.962***	10.586***	10.696***	10.389***
	(166.198)	(169.854)	(70.908)	(90.606)	(72.664)	(55.410)
Personal characteristics	Yes	Yes	Yes	Yes	Yes	Yes
University study characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3127	2223	904	3027	1970	1057
Adjusted R^2	0.469	0.287	0.572	0.116	0.0967	0.174

Note: ***, ** and * indicates statistical significance at the one, five and ten percent levels, respectively.
't'-statistics are presented in parentheses.

Table 4
Results from the Blinder–Oaxaca decomposition analyses of earnings.

	Full sample		RN sample	
	Six months	Three years	Six months	Three years
Predicted male earnings	10.91***	11.22***	10.99***	11.24***
Predicted female earnings	10.84***	11.05***	10.90***	11.06***
Raw wage gap	0.07***	0.17***	0.09***	0.17***
Endowment effect	0.03**	0.05***	0.04***	0.05***
Coefficient effect	0.04***	0.12***	0.05***	0.12***

Note: Earnings are expressed in logarithmic format. ***, ** and * indicates statistical significance at the one, five and ten percent levels, respectively.

5.3. Decomposition of earnings analysis

In order to explore the gender earnings gap for graduate nurses further, Blinder–Oaxaca decomposition analyses of earnings were undertaken. The decomposition models were run for the full sample and the RN sample at both time points, and these results are presented in Table 4. The decomposition analysis indicated that the raw wage gap for both the full and RN samples was sizable, at 7% for the full sample and 9% for the RN sample, at six months after graduation. At three years, the raw wage gap widened to 17% for both samples. However, it is the split into the endowment and coefficient effects that is of greater interest here. Of the 7% wage gap for the full sample at six months, 3% can be attributed to differences in human capital endowments between men and women graduate nurses, while 4% can be attributed to coefficient effects, or how the translation of human capital endowments into earnings in the labour market. This 'split' in effects can be observed for all the samples and time points, with the coefficient effect accounting for larger shares of the raw wage gap. Furthermore, the dominance of the coefficient effect enlarged at the three-year time point, accounting for 12% points in the 17% raw wage gap. Therefore, at three years after graduation, nearly 70% of the raw wage gap observed is due to differential compensation of human capital endowments between men and women nurse graduates.

6. Discussion

The aim of this present study was to explore the gender wage gap among Australian nursing graduates at six months and three years post-graduation with an exploration into the decomposition of earnings. The results of this study showed that 90% of graduate nurses were women, which is in keeping with the binary gender split for nursing in Australia. The data showed that a gender wage gap was evident at both six months and three years, at 4% and 13%, respectively, indicating that despite nursing being a profession dominated by women, men are paid more (Li et al., 2022; Quality Indicators for Learning and Teaching, 2023). While this notable disparity at three years is in keeping with the 2022 national gender wage gap of 13.3% (Workplace Gender Equality Agency, 2023), it is surprising as wages and conditions of work for Australian nurses are controlled through the enterprise agreement made under the Fair Work Act 2009 (Australian Nursing & Midwifery Federation, 2022). In this current study, men at 3 years earned $39.50 per hour compared to women who earned $38 per hour. These findings, therefore, suggest that men may be receiving penalty payments associated with working weekends and non-sociable hours and /or are being promoted more quickly following graduation. Research on nursing career trajectories suggests that men experience a faster rate of career progression compared to women (Gauci et al., 2022) and are over-represented in senior positions in comparison to the proportion of men in the workforce (Punshon et al., 2019). In addition, the cohort of men had an average age of 35 years in this study, which may also suggest that they have undertaken previous study and work that resulted in them reporting being overqualified more than women upon graduation.

In addition, results indicated that the gender wage gap widened with age or work experience. For those aged over 26 years, the wage gap of 5% and 16% were present at six months and three years, respectively. In this cohort, the average age of females was 32.37 years. In 2020, over 50% of women giving birth in Australia for the first time were 30 years or older (Australian Insitute of Family Studies, 2023). Women in this study worked on average 32 h compared to men who worked on average 36 h. These findings may suggest that

women are working more sociable hours and are forced to make career choices based on having dependents, which may result in them being less likely to work full time compared to men (Boniol et al., 2019).

Traditional gender role expectations persist in Australia. Research including 76,866 observations and 11,986 surveys of Australian men and women showed that respondents were most satisfied when the household was a dual-income earner, with men earning more than women or when men were in the breadwinner role and women were housemakers (Blom & Hewitt, 2019). These findings indicate that the traditional gender role expectations of men and women are still present in Australian society, which may be fuelling gender disparity in this country, including pay. In light of these gender role ideologies, flexible work environments such as alternative shifts away from the transitional 8–12 h, shorter shifts, introduction of new roles (e.g., remote working [telehealth]), using experienced nurses to onboard new graduates at family friendly times, job sharing and enabling nurses to work across settings are needed to support the workforce.

The current study also indicates that nursing graduates who reported being overqualified were largely not employed as RNs, which resulted in a 21% wage disparity. Nursing graduates who were employed as RNs and who reported being overqualified were also found not to have an earnings penalty in the labour market. These findings suggest that graduates are working in lower-skilled roles and are not utilising the skills, knowledge or competencies developed during their degree (Erdogan & Bauer, 2021; Li et al., 2022). This is in keeping with the 26% of Australian graduates reporting unemployment at six months post-graduation (Doleman, Duffield, Li, & Watts, 2022). In addition, figures indicate that nurses in the public sector receive higher remuneration than those working in the private and the not-for-profit sector. However, research has long shown a strong association between pay rates, job satisfaction and retention of nurses within the workforce (Bimpong, Khan, Slight, Tolley, & Slight, 2020; Halcomb & Bird, 2020). That is, as the rate of satisfaction with pay decreases, so does job satisfaction, while thoughts of leaving the workforce increase. Considering the current shortages that are being experienced (Ahpra, Nursing, & Midwifery Board, 2022), and that 10,177 enrolled and RNs were not practising in Australia in 2022 wages now more than ever need to be assessed to retain and sustain the future workforce. Nurses may not enter the workforce anticipating large salaries, but they do wish to be paid appropriately (Scott, Witt, Duffield, & Kalb, 2015). Throughout the pandemic, as roles and responsibilities changed, the expectations placed on nurses have increased this focus on receiving adequate remuneration. Increasingly salary is a driving force in nurses going on strike (Bruderlin, 2022; NSW Nurses & Midwives', 2022) for better pay.

Results from this study also showed that those from lower socioeconomic status groups had an increased probability of underemployment at both 6 months and 3 years. Those who are not able to attain employment remain economically disadvantaged and also face a range of structural barriers that prevent them from finding employment, including limited job opportunities (Cunningham, Orsmond, & Price, 2014). In addition, graduates from NESBs had less probability of being an RN and be underemployed at 6 months and 3 years. In Australia, graduates who are on student visas and do not hold residency, citizenship or working visas are ineligible for employment as a nurse (Department of Health, 2023), which restricts employment opportunities. Considering the shortage of nurses in Australia since the COVID-19 pandemic, ways to improve employment opportunities for graduates from lower SES and those from NESBs need to be reviewed in order to fill vacancy rates.

7. Implications for nursing management

In the present study, gender wage disparity was identified with women earning less than men, which may indicate that men are working less sociable hours and weekends compared to women who may have responsibilities with dependents. Industrial Awards in this country mean that working unsociable hours attracts penalty rates of 12.5% for working the afternoon shift between Monday and Friday, 15% for working night shift Monday to Friday, 150% for working ordinary hours midnight Friday and midnight Saturday and 175% for working between midnight Saturday and midnight Sunday. In addition, penalty rates also apply for nurses working overtime exceeding the ordinary hours on any day or shift of 150% for Monday to Saturday per hour, 200% for Sundays and 250% for public holidays (Australian Government, 2022). The traditional role expectations of men and women that appear to still be present in Australian society (Blom & Hewitt, 2019) may be fuelling the gender disparity in Australia and may be preventing women from returning to full-time employment in nursing. Considering this, organisations need to offer flexible work environments that will allow women to re-enter the workforce. This can include shorter shifts allowing women to work flexible hours around caring for dependents, job sharing with other nurses of similar skill levels and working across multiple areas to allow for flexibility. Importantly, there is no 'one size fits all' approach to resolving the issues. Each nurse will have their own circumstances that limit workforce participation. Addressing these will require an individualised approach so that they can increase their hours of employment and, in turn, their salaries.

In Australia, strikes in Western Australia and New South Wales have been related to dissatisfaction with pay levels (Bruderlin, 2022; NSW Nurses & Midwives', 2022), which has been shown to impact on job satisfaction and retention (Abdullah & Nusari, 2019). There also needs to be consistency of pay between those working in public, private and not-for-profit organisations to promote nursing job satisfaction; this is particularly important given pay differentials between the acute and aged care sectors for RNs. Buchan and colleagues (Buchan, Catton, & Shaffer, 2022) are urging healthcare organisations to increase support and promote positive practice environments, including wages, in order to sustain and retain the future workforce. Making sure that both men and women have equal opportunities to contribute to the nursing profession should be a main priority of healthcare organisations, including the ability to access overtime or penalty rates and seek promotion.

8. Limitations

Attrition rates to the graduate survey at the three-year follow could have been a limitation; however, Guthrie and Johnson (1997) identified that the graduate survey is representative of the Australian graduate population. While this reference is old, no newer studies have explored this representation. A limitation in the data is the inability to specify genders outside of the binary men and women gender roles. Therefore, potentially creating gender bias in the data that is being collected. These results also do not take into consideration the impact of the COVID-19 pandemic on university policy or the workforce, including graduate nurse positions.

9. Conclusions

Overall, the findings from this present study indicate that nurses who are men are earning a higher wage than women nurses upon graduation and at three years post-graduation in Australia. These findings, despite an enterprise bargaining agreement, are consistent with the gender pay disparity gap of Australia and international research on this topic. Of note from this study is the notion that male nurses are working unsociable hours and weekends and are, therefore, receiving penalty rates that increase their wages. Organisations should review flexible working arrangements and career pathways to make sure that both men and women have equal opportunities to contribute to the nursing workforce. Future research should focus on

the benefit of creating flexible and supporting working conditions to assist women to re-enter the workforce or to work around dependents. In addition, offering adequate wages to RNs and employing and utilising the skills of those graduates from lower SES and NESBs will increase job satisfaction and, in turn, will promote retention of the workforce, which is important for future workforce sustainability of any country. In addition, future research on gender pay disparity, including the LGBTQI+ community, is needed to promote inclusivity in the nursing workforce and prevent gender bias.

Authorship contribution statement

All authors made substantial contributions to conception and design of the study. All authors were responsible for the interpretation of data, drafting of the manuscript or revising it critically for important intellectual content and approving the version to be published.

CRediT authorship contribution statement

Gemma Doleman: Conceptualization, Methodology, Validation, Writing – original draft, Writing – review & editing, Visualization. **Christine Duffield:** Conceptualization, Methodology, Validation, Writing – original draft, Writing – review & editing, Visualization. **Ian Li:** Conceptualization, Methodology, Formal analysis, Validation, Writing – original draft, Writing – review & editing, Visualization.

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Ethical statement

This study relied on non-identifiable, extant survey data where respondents provided informed consent. As such, ethics approval was not required.

Conflict of interest

None.

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