

Nurses' satisfaction and experiences of redeployment during COVID-19- A cross-sectional survey

Ginger Chu (✉ g.chu@newcastle.edu.au)

University of Newcastle Australia

Kristy Connelly

John Hunter Hospital

Alexandra Mexon

John Hunter Hospital

Ben Britton

John Hunter Hospital

Julie Tait

John Hunter Hospital

Victoria Pitt

University of Newcastle Australia

Kerry Inder

University of Newcastle Australia

Research Article

Keywords: COVID-19, Nursing, redeployment, deployment, pandemic

Posted Date: March 21st, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-1429392/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Version of Record: A version of this preprint was published at June - August 2023 on September 28th, 2023. See the published version at <https://doi.org/10.37464/2023.403.1047>.

Abstract

Background: Literature suggested that redeployment to an unfamiliar environment is a risk to nurses' mental health. During the COVID-19 pandemic, many health professionals, particularly nurses, were required to be redeployed to different units to meet the changing demands of health service. This study aimed to evaluate nurses' satisfaction and experiences of redeployment during COVID-19 and identify factors influencing redeployment satisfaction.

Methods: A cross-sectional survey was developed to explore level of satisfaction and understand redeployment experiences. A total of 600 nurses from a tertiary teaching hospital in Australia were invited to complete an online survey from July to August 2020 with an estimated 25% of these experiencing redeployment as result of COVID-19 pandemic. Logistic regression was used to identify what impacts redeployment satisfaction. Redeployment experiences were analysed using iterative thematic approach.

Results: A total of 98 surveys were analysed, with an estimated response rate of 65%. Forty-four percent of redeployed nurses were dissatisfied with redeployment and 53% reported a negative redeployment experience. Nurses who had a negative redeployment experience were five times more likely to be dissatisfied with redeployment (OR: 5.17, 95% CI: 2.12-12.5). These results were reflected in the qualitative findings where nurses reported that a positive redeployment experience such as "feeling welcome" and being given "fair patient allocation" eased their anxiety of being redeployed and created a positive perception on redeployment.

Conclusion: Redeployment of healthcare workers during a pandemic is inevitable. This study highlighted that a large proportion of redeployed nurses feel dissatisfied with redeployment. Creating a positive redeployment experience is an important consideration to improve nurses' satisfaction. In order to reduce the negative impact of dissatisfaction, more research needs to investigate how the negative redeployment experienced by nurses impacts on quality care and patient safety.

Introduction

The COVID-19 pandemic has strained hospital systems globally, associated with the rapid and prolonged increase in patients presenting to hospitals with severe respiratory symptoms, many requiring oxygen, and some requiring ventilation. Since the outbreak of COVID-19 in January 2020 and the associated variants, there have been more than 428 million cases reported internationally and over 5 million related deaths at the time of reporting [1].

The ability of COVID-19 to cause serious illness and death was evident in a meta-analysis of 24,983 patients infected with COVID-19, of which 32% (95% CI: 26 to 38) experienced an Intensive Care Unit (ICU) admission [2]. In response to this increased demand of hospitalization and ICU beds, hospitals repurposed services and reallocated resources to ensure sufficient care. These changes resulted in alterations in work allocation, with many health professionals, particularly nurses being redeployed to support the clinical demand associated with the COVID-19 pandemic surge [3].

Few studies to date have investigated nurses' experiences and challenges of redeployment [4, 5]. A study conducted in New York after a hurricane disaster showed that more than 50% of redeployed nurses had an extremely stressful redeployment experience [4]. Similarly, a qualitative study of ICU nurses regarding short-term redeployment showed that most nurses worried about their capability of practice when redeployed to units where they had limited recency of practice [5]. Prior studies mainly focus on short-term redeployment, with limited exploration of long-term deployment as being experienced with the current global pandemic. Understanding nurses' satisfaction and experiences of redeployment during a pandemic is important, as this information can inform policy and prepare nurses for future surge demands. So far, there are no published studies on nurses' perceptions of redeployment during COVID-19. This study aimed to evaluate nurses' satisfaction and experiences of redeployment during COVID-19 and evaluate factors impact on satisfaction.

Methods

Study design

A descriptive, cross-sectional study design using a brief online survey. This study was deemed a clinical evaluation activity and an ethical review waiver was granted by Hunter New England Local Health District Human Research Ethics Committee (AU202107-03). The development of the manuscript followed the recommendations of the STROBE reporting guidelines [6].

Survey Design

A 10-item survey was developed collaboratively with an expert panel of clinical nurses, nurse managers, nurse educators and psychologists. The survey focused on staff satisfaction as well as factors that may influence redeployment satisfaction.

The first four questions reported demographic and employment characteristics. Age was the only demographic question and included the age group (less than 20 years, then 10-year age groups up until 60 years, then greater than 60 years). Employment questions included classification (registered nurse, endorsed enrolled nurse, enrolled nurse, or assistant in nursing), length of service in current position (ranging from less than 12 months to greater than 10 years) and the primary service of employment (medical or surgical services).

Three questions specifically related to redeployment: i) self-reported timeframe since last redeployment to a unit or ward other than where they are primarily employed, ii) perceived satisfaction with being deployed (Likert response ranging from very satisfied to very dissatisfied), and iii) rate of overall previous deployment experience (positive or negative).

The final three were open-ended questions requiring the respondents to expand and explain why and how they rated their experience as either negative or positive and provide any suggestions to improve redeployment experience [7].

Setting/Participants

This study was conducted in a large regional tertiary referral teaching hospital in new South Wales, Australia. There are 18 inpatient wards, two intensive care units, an emergency department, delivery suite and mental health inpatient unit in this facility. The survey was emailed (via SelectSurvey.NET V5.0) to all nurse managers in nine medical and four surgical wards to distribute to their nursing staff. At the time of survey administration, the wards participating in the survey had approximately 600 nurses employed. According to staff roster book, approximately 25% of staff have been redeployed since the beginning of COVID-19 pandemic in January 2020, therefore, it is anticipated that 150 nurses who will be qualified to attend the survey. The anonymous survey was open for completion between July and August 2020 for a six-week period. One reminder email was sent two weeks after the initial email. Consent was implied by survey completion and survey responses were automatically saved in SelectSurvey where only one project member has access to the data.

Redeployment process

To prepare for surge patients with respiratory symptoms, a 32-bed respiratory ward was re-designated for COVID-19 patients. The nurses employed in this ward were asked to identify concerns of caring for COVID-19 patients. Those nurses who identified as vulnerable for reasons such as older than 60 years of age, pregnancy, underlying health conditions or being the primary carer of an elderly family member were given the opportunity to be redeployed to other wards that were designated as COVID-19 “green” zones. Approximately 10–15% of regular staff self-identified as vulnerable.

Staff in the wards that were designated as a COVID-19 green zone, were asked to identify if they have previous experience or are willing to undertake training in critical care areas such as acute respiratory care, emergency department and ICU. A 1-day critical training program including skills such as venipuncture, low flow oxygen management and basic mechanical ventilation were offered to nurses who were willing to support the surge capacity. As the COVID-19 situation escalated, more medical and surgical wards were closed in preparation for a surge of COVID-19 patients resulting in more nurses required to be redeployed. Most staff were given an option to either undertake the redeployment opportunity or take paid leave entitlement; except when redeployment was the result of unexpected patient flow where prior notification was difficult to achieve.

Data Analysis

Data was extracted from SelectSurvey online tool and questions were analysed using Stata version 16 (Stata Corporation, College Station, Texas, USA). Logistic regression was used to assess the association between binary outcomes (satisfaction vs dissatisfaction) and dependent variables. Pairwise deletion approach was used to manage missing data [8]. All significance tests were two-sided where a statistical value of $p \leq 0.05$ was considered statistically significant.

Open-ended responses were analyzed using an iterative thematic approach. This approach entails detailed readings of raw data to derive main concepts or themes [9]. Cross-case comparison and

mapping were applied to new emerging themes. To enhance the rigor of analysis, two authors (GC & KC) regularly discussed each step of the analysis and themes. The summary of the themes and quotes were also reviewed by two other authors (AM & BB) independently.

Results

Of the 600 nurses who were emailed the survey, a total of 106 nurses completed the survey. Of these respondents, seven indicated never being redeployed and further one did not rate overall redeployment experience, leaving 98 respondents included in the analysis. Based on the estimation that 25% of the 600 nurses experienced redeployment, the response rate was approximately 65%. The majority of respondents were Registered Nurses (85%), were less than 40 years of age (62%), primarily employed with surgical services (66%) and reported five or more years of experience in their current position (52%). (Table 1).

Table 1
Demographic and employment / deployment characteristics of
study participants

Variable	Number	Percentage
Demographic		
<i>Age</i>		
20–29	32	30
30–39	34	32
40–49	23	22
50–59	15	14.1
> 60	2	1.9
Employment		
<i>Classification</i>		
Registered Nurse	90	85
Endorse Enrolled Nurse	15	14.1
Enrolled Nurse	0	0
Assistant in Nursing	1	0.9
<i>Years of current employment</i>		
< 12 months	18	17
1–3 years	16	15
3–5 years	17	16
> 5 < 10 years	26	25
> 10 years	29	27
<i>Primary place of employment</i>		
Medical	36	34
Surgical	70	66
Redeployment		
<i>Time since last being redeployed</i>		
This month	26	26
1–6 months	55	56

Variable	Number	Percentage
6–12 months	10	10
> 12 months	8	8.0
<i>Satisfaction with being redeployed</i>		
Very satisfied	2	2.2
Satisfied	5	5.3
Neutral	45	48.4
Dissatisfied	32	34.4
Very dissatisfied	9	9.7
<i>Redeployment experience</i>		
Positive	40	43
Negative	53	57

Of these, most respondents (82%) were redeployed within the last 6 months. Only few respondents (7.7%) were satisfied with redeployment, close to half (48%) did not have opinion (neutral) and the remainders being dissatisfied (44%). Less than half (43%) of respondents reported a positive redeployment experience. A summary of redeployment satisfaction and experience is outlined in Table 1.

In the binary logistic regression analysis, the response of “neutral” was treated as “satisfied” due to many respondents also indicating that they were not “dissatisfied” with redeployment in their open-ended responses, and therefore were clustered into the “satisfied” group. There was no association between age, classification, place of employment or frequency of redeployment and staff satisfaction. A significant positive relationship was identified between staff satisfaction and overall experience, where respondents who had a positive redeployment experience were five times more likely to be satisfied with redeployment (OR: 5.17, 95% CI: 2.12–12.57, $p < 0.0001$) (Table 2).

Table 2
Association of participant characteristics and redeployment satisfaction (n = 98)

	OR	95% CI	P Value
Age groups	0.93	0.64–1.35	0.70
Classification	1.27	0.41–3.98	0.68
Years of current employment	0.82	0.62–1.09	0.18
Primary Place of Employment	1.13	0.49–2.63	0.78
Time since last being redeployed	1.35	0.83–2.21	0.23
Redeployment experience	5.17	2.12–12.57	< 0.0001

Qualitative findings

The following qualitative findings described respondents' perception of what constitute a positive redeployment experience and elements that contributed to their negative experiences. The number of respondents who provided comments regarding positive experience, negative experience and suggestions were 63, 70 and 62, respectively. Three common themes emerged from the qualitative feedback: "friendly and welcoming", "patient allocation" and "preparation and support".

Welcome and friendliness

Most respondents described that friendliness of staff and the feeling of being welcomed into the team created a positive redeployment experience. One respondent indicated that she was very anxious initially, but with the support of the staff, she felt her redeployment experience was positive. Simple steps such as a quick orientation to the ward and staff, checking in and having an access code for treatment rooms created a friendly and welcoming environment. The following quotes are examples of these elements.

Being deployed can be stressful...what makes a redeployment positive is ward staff reaction, if they support you, introduce themselves and [provide] a quick "tour" of the ward, code for the medication room/staff toilet and the team leader checking you are going ok...

"Sometimes it's just a simple acknowledgment by those around you to make you feel part of the team"

The staff of the ward were very accommodating and helpful, given a quick orientation to the ward and passcodes

...staff checking in on me throughout the shift, making sure I go on my break, offering help... all great things

An aspect of this theme is the emotional impact on the respondents when they perceived themselves as unwelcomed, some described that they felt isolated or like a burden, while others reported that these

negative experiences affected their motivation to come to work. It is not unreasonable to assume that these negative emotions impact on quality of care provided, an issue also raised by respondents:

...did not feel welcome on the ward. Was not orientated to the ward...walked into room where a patient was deceased and [I was] left to attend care without help...being deployed to another ward is very hard on mental health and anxiety builds, not wanting to come to work...

...as a junior staff I feel it can be very dangerous for patients as we are expected to care for some sickest patients with minimum help...

...it is very stressful...staff were not friendly...I was not familiar with the specialty, and this ultimately affect patient standards of care and management...

Patient allocation

This theme was an important factor that respondents contributed to either a positive or negative redeployment experience. Some respondents perceived patient allocation as how they were valued by the team and when the allocation was received as “fair” or “adequate” they felt there were respected. The perception of fair or adequate patient allocation appeared to be based on the respondent’s confidence and capability of managing patients they were allocated.

“I was given patients that were more suitable for my skills and knowledge”

I felt [I was] treated equally and not given [patient]loads that are out of scope, they were appropriate for my experience...

I was able to discuss patient allocation after stating that I was not familiar with the patient conditions and care requirement, and the allocation was changed

Many of the respondents reported that most of time they were given the “heaviest” patients. Respondents described the “heaviest” patient load as related to patient acuity, challenging behaviors or in some situations staff perception of a patient, and considered allocation to this load as being unfair treated by the regular ward staff:

...people who are redeployed are usually given the hardest/heaviest patient load...which is not always fair

“I found that because I was not the regular staff, was given the behavioral difficult or confused patients...”

...I was sent to a ward where I was in high activity room. I felt I was constantly being criticized...verging on bullying...

These themes demonstrated the challenging situations faced by nurses when being deployed. Whilst there are challenges, many believed there are strategies that can be put in place by health managers to improve staff’s satisfaction and experience towards redeployment.

Preparation and support

Respondents were asked to provide suggestions to improve redeployment experiences, most respondents felt inadequately prepared and supported to care for patients with complex needs when redeployed to a specialty area that was outside their own specialty experience. Some indicated that if patient allocation was based on their knowledge and skills, it would improve their redeployment experience:

...[having] appropriate patient load based on skills and experience

It would be great if we could have secondments between units to build up a staffing pool with greater knowledge and skills

Strategies to prepare and support redeployed nurses reported included “structured orientation” and “buddy system”. These suggestions were reflective of the themes above, in which when staff felt welcomed and were confident to care for patients they were allocated to, it improves their redeployment experience.

Discussion

This descriptive cross-sectional study explored nurses’ experience of redeployment during COVID-19 and identified factors associated with redeployment satisfaction. The results indicate that over 50% of redeployed nurses had a negative redeployment experience. Positive redeployment experience is a strong determinant of nurses’ redeployment satisfaction. Key themes emerging from qualitative feedback showed that feeling welcomed/supported and having adequate orientation and patient allocation were important elements to create a positive experience.

When asked about redeployment satisfaction, only 7.5% of redeployed staff in this study were satisfied with their redeployment experience. This is considerably low when compared with a previous study, which indicated that among 63 redeployed junior doctors 76% were satisfied with their redeployment experience [10]. This study demonstrated that positive redeployment experience is the key determinant of staff satisfaction. When redeployed to a new team, it is common to feel unsupported and undervalued due to uncertainty of team dynamics [11]. Therefore, it is unsurprising that feeling welcomed and supported were the key factors identified by the respondents to result in a positive experience. An international study of 362 undergraduate nurses found that feeling supported by the team was the fundamental need when first introduced to a new team; without fulfillment of this need, higher level needs such as self-learning and competence would not be achieved [13]. Contemporary patient care is delivered in a team environment and can only be improved when multidisciplinary team is working effectively together [14]. Nurse managers need to recognise that creating a positive redeployment environment by making staff feel welcomed into the team, not only would increase staff satisfaction but also improve quality of patient care.

Another key theme concerning the redeployment experience was patient allocation. Many respondents felt that they did not have the skills or capability to manage patients they were allocated. During pandemic, it is not unusual for doctors and nurses to work beyond their usual competencies [15]. This study highlighted that most redeployed staff did not feel confident to care for patients they were allocated to. Lack of confidence from staff can affect how patients perceive staff's ability. Clinical competence is a strong element to quality of care and patient safety [16] and key to patient satisfaction [17]. Therefore, it is important to ensure training and education are provided to redeployed staff in order to maintain patient safety. The Australian Health Practitioner Regulation Agency (AHPRA) has recognized that not every nursing skill or competence is transferrable, and issued a statement indicating that when flexibility of nursing practice is required during the COVID-19 crisis, nurses must be working in the role that they have been educated and trained in and are competent in [18]. Strategies to deliver training and adequate patient allocation must be considered in redeployment processes to ensure patient safety.

Strengths of this study include the use of both quantitative and qualitative design to explore redeployment experiences in more depth. This study, to the best of our knowledge, is the first study that examines the experience of redeployed nurses during the COVID-19 pandemic and explores factors associated with redeployment satisfaction. Limitations include the absence of data on gender and a sampling focus on nurses in medical and surgical wards only, which reduces the generalizability of the data to nurses in different clinical settings. Additionally, respondents' experiences were obtained from opened questions not interviews, although opened questions provide an opportunity for every respondents to voice their opinion, the researchers cannot clarify the status of responses thus the data can lack some of the key strengths of qualitative research such as conceptual richness [7]. Due to the high number of respondents who provided feedback through the open-ended questions and the depth of responses, the researchers were confident that the data can be used to corroborate and elaborate the findings from closed questions and identify key themes relevant to redeployment experience. While the response rate was estimated, respondents are generally representative of a standard-size tertiary teaching hospital with good representation of nurses of different ages and years of experience. Participants reported a range of redeployment experiences; hence, the sample reasonably reflects the perspectives of redeployed nurses. It would be of value to replicate these results using larger sample sizes in future studies and to use longitudinal design to investigate effective strategies to improve nurses' satisfaction.

Conclusion

COVID-19 pandemic has created an unprecedented demand on workforce, particularly nursing profession. Redeployment of significant numbers of staff under a rapid changing environment is a massive task that needs to be planned early and communicated well. A structured orientation program, adequate support and a warm welcoming from the team can create positive redeployment experience, which may reduce staff dissatisfaction associated with redeployment and are important to be considered when planning staff redeployment.

Abbreviations

ICU

Intensive Care Unit

AHPRA

Australian Health Practitioner Regulation Agency.

Declarations

Ethical approval and consent to participate

All methods were carried out in accordance with relevant guidelines and regulations. Informed consent was obtained from all participants who were provided with written information about the study/survey by email with completion of the survey implying consent. The study was approved by Hunter New England Local Health District Human Research Ethics Committee (AU202107-03).

Consent for publication

Not applicable

Availability of data and materials

The dataset used are available from the corresponding author upon reasonable request, and with permission of the Hunter New England Local Health District, John Hunter Hospital.

Competing interests

The authors declare no competing or conflict of interest.

Funding

Not applicable

Authors' contributions

GC, KC, AM, BB, JT: study conception, design, data collection, analysis and interpretation, and critical revision of manuscript. GC, VP, KI: contributed to the data analysis and interpretation, drafting and critical revision of manuscript.

Acknowledgement

The authors would like to acknowledge the generous contributions of all nurses who participated in this study.

References

1. **WHO Coronavirus (COVID-19) Dashboard** [<https://www.who.int>]
2. Abate SM, Ahmed Ali S, Mantfardo B, Basu B: **Rate of Intensive Care Unit admission and outcomes among patients with coronavirus: A systematic review and Meta-analysis.** *PloS one* 2020, **15**(7):e0235653-e0235653.
3. Considine J, Shaban RZ, Patrick J, Holzhauser K, Aitken P, Clark M, Fielding E, FitzGerald G: **Pandemic (H1N1) 2009 Influenza in Australia: Absenteeism and redeployment of emergency medicine and nursing staff.** *Emerg Med Australas* 2011, **23**(5):615–623.
4. VanDevanter N, Kovner CT, Raveis VH, McCollum M, Keller R: **Challenges of nurses' deployment to other New York City hospitals in the aftermath of Hurricane Sandy.** *Journal of urban health: bulletin of the New York Academy of Medicine* 2014, **91**(4):603–614.
5. Matlakala MC: **The views of intensive care nurses regarding short-term deployment.** *Curationis* 2015, **38**(1).
6. von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP: **The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies.** *The Lancet* 2007, **370**(9596):1453–1457.
7. O'Cathain A, Thomas KJ: **"Any other comments?" Open questions on questionnaires – a bane or a bonus to research?** *BMC Medical Research Methodology* 2004, **4**(1):25.
8. Kang H: **The prevention and handling of the missing data.** *Korean journal of anesthesiology* 2013, **64**(5):402–406.
9. Neale J: **Iterative categorization (IC): a systematic technique for analysing qualitative data.** *Addiction (Abingdon, England)* 2016, **111**(6):1096–1106.
10. Sykes A, Pandit M: **Experiences, challenges and lessons learnt in medical staff redeployment during response to COVID-19.** *BMJ Leader* 2021, **5**(2):98.
11. Lion P, McClenaghan F, Hall A, Mackinnon S, Navaratnam AV: **ENT trainees' experience of redeployment during the coronavirus disease 2019 pandemic: a qualitative study.** *The Journal of laryngology and otology* 2021, **135**(5):391–395.
12. Levett-Jones T, Lathlean J, Maguire J, McMillan M: **Belongingness: A critique of the concept and implications for nursing education.** *Nurse Educ Today* 2007, **27**(3):210–218.
13. Levett-Jones T, Lathlean J: **The ascent to competence conceptual framework: an outcome of a study of belongingness.** *J Clin Nurs* 2009, **18**(20):2870–2879.
14. Babiker A, El Hussein M, Al Nemri A, Al Frayh A, Al Juryyan N, Faki MO, Assiri A, Al Saadi M, Shaikh F, Al Zamil F: **Health care professional development: Working as a team to improve patient care.** *Sudanese journal of paediatrics* 2014, **14**(2):9–16.
15. Coughlan C, Nafde C, Khodatars S, Jeanes AL, Habib S, Donaldson E, Besi C, Kooner GK: **COVID-19: lessons for junior doctors redeployed to critical care.** *Postgraduate Medical Journal* 2021, **97**(1145):188.

16. Kieft RAMM, de Brouwer BBJM, Francke AL, Delnoij DMJ: **How nurses and their work environment affect patient experiences of the quality of care: a qualitative study.** BMC Health Services Research 2014, **14**(1):249.
17. Aiken LH, Sloane DM, Ball J, Bruyneel L, Rafferty AM, Griffiths P: **Patient satisfaction with hospital care and nurses in England: an observational study.** BMJ Open 2021, **8**(1):e019189.
18. **COVID-19 guidance for nurses and midwives** [<https://www.nursingmidwiferyboard.gov.au/Codes-Guidelines-Statements/COVID19-guidance.aspx>]